MONITORING *the* FUTURE

NATIONAL SURVEY RESULTS
ON DRUG USE
1975-2012

2012
Volume 1

Secondary School Students

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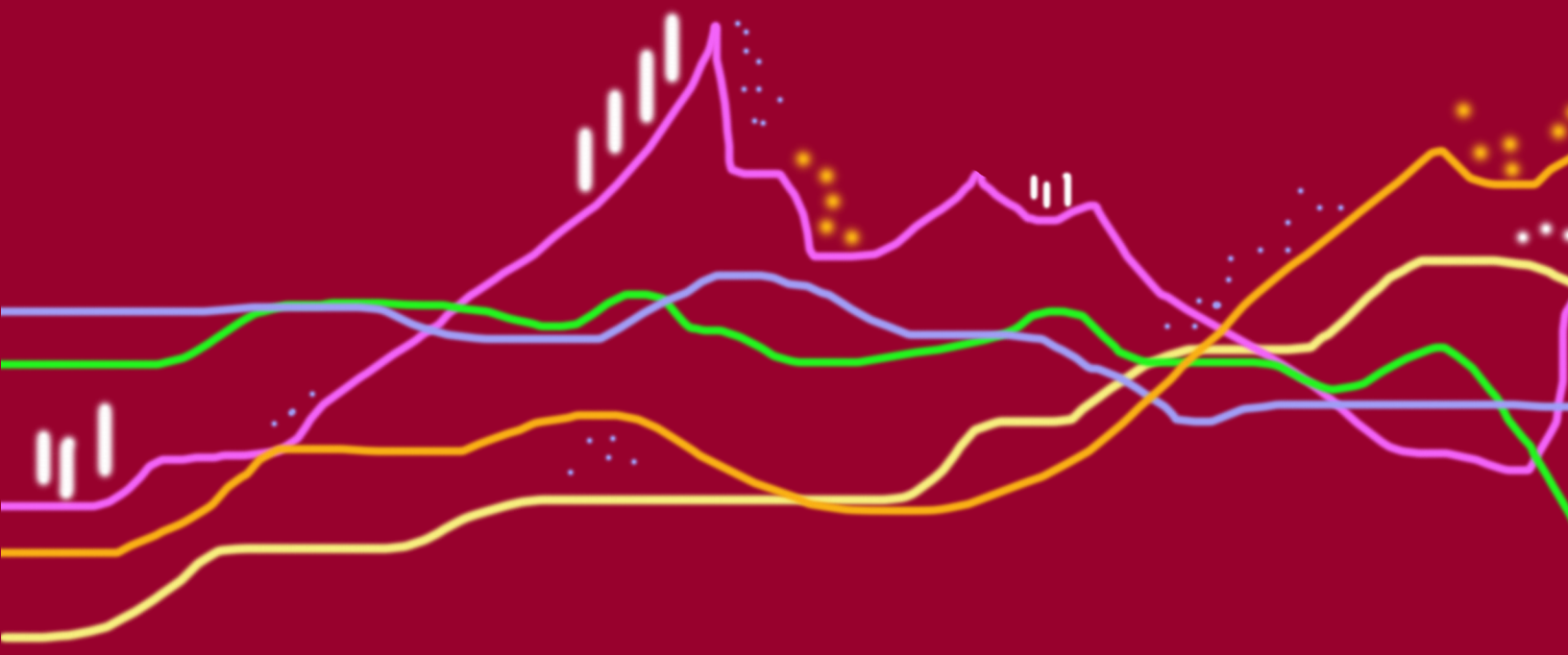

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NATIONAL SURVEY RESULTS ON DRUG USE, 1975–2012

Volume I

Secondary School Students

by

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The University of Michigan
Institute for Social Research

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Chapter 1

INTRODUCTION

Monitoring the Future (MTF) is an investigator-initiated study that originated with and is conducted by a team of research professors at the University of Michigan's Institute for Social Research. Since its onset in 1975, it has been continuously funded by the National Institute on Drug Abuse—one of the National Institutes of Health—under a series of peer-reviewed, competitive research grants. The 2012 survey, reported here, is the 38th consecutive survey.

MTF contains ongoing series of national surveys of both American adolescents and adults. It has provided the nation with a vital window into the important but largely hidden problem behaviors of illegal drug use, alcohol use, tobacco use, anabolic steroid use, and psychotherapeutic drug use. For nearly four decades it has provided a clearer view of the changing topography of these problems among adolescents and adults, a better understanding of the dynamics of factors that drive some of these problems, and a better understanding of some of their consequences. It has also given policymakers and nongovernmental organizations in the field some practical approaches for intervening.

A widespread epidemic of illicit drug use emerged in the 1960s among American youth, and since then dramatic changes have occurred in the use of nearly all drugs involved, as well as alcohol and tobacco. Of particular importance, as discussed in detail below, many new illicit drugs have emerged, along with some new forms of cigarettes and alcoholic beverages. Among the newly abused substances are some new classes of drugs, including over-the-counter medications, drugs taken for strength enhancement, new forms of tobacco, and a number of so-called "club drugs." More recently synthetic drugs, including synthetic marijuana and bath salts, which were developed to sidestep restrictions of the Drug Enforcement Administration, have been added to MTF coverage. Unfortunately, while many new substances have been added to the list, very few have been removed because they have remained popular. Throughout these many changes, substance use among the nation's youth has remained a major concern for parents, teachers, youth workers, health professionals, law enforcement, and policymakers, largely because substance use is one of the greatest and yet most preventable causes of morbidity and mortality both during and after adolescence.

This annual monograph series has been the primary vehicle for disseminating MTF's epidemiological findings. The latest two-volume monograph presents the results of the 38th survey of drug use and related attitudes and beliefs among American high school seniors, the 33rd such survey of American college students, and the 22nd such survey of 8th- and 10th-grade students. Importantly, results are also reported for high school graduates followed in a series of panel studies through age 50.

Results from the samples of 8th, 10th, and 12th graders are contained in *Volume I*, which is preceded by two national press releases and an advance summary report.[1] Results on college students and other adults are reported each year in *Volume II*, which is published a few months after *Volume I*.[2] A monograph on risk and protective behaviors for the spread of HIV/AIDS among young adults was added in 2009 and a more recent monograph was published in 2012.[3] (In years prior to 2009, findings from the study on risk and protective behaviors for the spread of HIV/AIDS were contained in *Volume II*.) Copies of all MTF publications, including press releases, are available on the project website, *www.monitoringthefuture.org*.

CONTENT AREAS COVERED

Two of the major topics included in the present volume are (a) the *prevalence and frequency* of use of a great many drugs among American secondary school students in 8th, 10th, and 12th grades and (b) *historical trends* in use by students in those grades. Distinctions are made among important demographic subgroups in these populations based on gender, college plans, region of the country, population density, parents' education, and race/ethnicity. MTF has demonstrated that key attitudes and beliefs about drug use are important determinants of usage trends, in particular the amount of risk perceived to be associated with the various drugs and disapproval of using them; thus, those measures also are tracked over time, as are students' perceptions of certain relevant aspects of the social environment—in particular, perceived availability, peer norms, use by friends, and exposure to use of the various drugs. Data on grade of first use, discontinuation of use, trends in use in lower grades, and intensity of use are also reported.

Drug Classes

Initially, 11 separate classes of drugs were distinguished in order to heighten comparability with a parallel series of publications based on the National Survey of Drug Use and Health (NSDUH): marijuana (including hashish), inhalants, hallucinogens, cocaine, heroin, narcotics other than heroin (both natural and synthetic), amphetamines, sedatives, tranquilizers, alcohol, and tobacco. Separate statistics are now presented for a number of subclasses of drugs within these more general categories: PCP and LSD (both hallucinogens), barbiturates and methaqualone (both sedatives), methamphetamine, crystal methamphetamine ("ice"), and crack and other cocaine.

A number of the drugs just mentioned appeared on the American scene after MTF began and were added to the 12th-grade questionnaires, and for the most part to the follow-up questionnaires, in subsequent years. For example, trend data for PCP and nitrites have been available since 1979, when questions about their use were added because of increasing concern

[1]The most recent edition of the advance summary is: Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2013). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2012*. Ann Arbor: Institute for Social Research, The University of Michigan. Available online at http://monitoringthefuture.org/pubs/monographs/mtf-overview2012.pdf.

[2]Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2012). *Monitoring the Future national survey results on drug use, 1975–2011. Volume II: College students and adults ages 19–50.* Ann Arbor: Institute for Social Research, The University of Michigan. Available online at http://monitoringthefuture.org/pubs/monographs/mtf-vol2_2011.pdf.

[3]Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M.E. (2012). *HIV/AIDS: Risk & protective behaviors among American young adults, 2004-2011*. Ann Arbor: Institute for Social Research, The University of Michigan. Available online at http://www.monitoringthefuture.org/pubs/monographs/mtf-hiv-aids_2011.pdf.

over their rising popularity and possibly deleterious effects. (Nitrites—one of the few classes of drugs to fade from widespread use—was dropped from the study in 2010.) Also because of increasing concerns, a single question about crack cocaine was added to the 1986 survey, and more detailed questions on crack and other cocaine were added in 1987.

In the intervening years many additional categories of abusable substances have been added to the MTF questionnaires, in many but not all cases the questionnaires used with all three grades. Relatively few substances have been dropped due to their having very low prevalence rates. The substances added and dropped are shown in Table 1-1 sequentially by year and within year by the grades affected.

Questions about the use of ecstasy (methylenedioxymethamphetamine, or MDMA) were added in 1989 to the young adult follow-up surveys and in 1996 to the 8th-, 10th-, and 12th-grade surveys. Questions about crystal methamphetamine (ice) were added to the 12th-grade and follow-up surveys in 1990. Questions about anabolic steroids were added in 1989 because of reports of their increasing illicit use among young people. Questions about smokeless tobacco were added in 1986, while cigarette use has been covered since MTF's inception. In 1991, questions about getting drunk were added to the long-standing set of questions on alcohol use that already contained a measure on the frequency of having five or more drinks in a row during the prior two weeks. A question about the club drug Rohypnol was added to the secondary school questionnaires in 1996 and to the follow-up questionnaires in 2002. Special questions on the use of heroin by injection, as well as by other means, were added in 1995 because use by methods other than injection appeared to be rising. The 1999 survey incorporated new questions on the use of methamphetamine, and the 2000 survey added questions on the use of two additional club drugs, GHB and ketamine, as well as bidis (a type of flavored cigarette). GHB and Ketamine were dropped from the 8th- and 10th-grade questionnaires in 2012 but remained in the 12th-grade questionnaires. Bidis were dropped from the 8th- and 10th-grade questionnaires in 2006 and from the 12th-grade questionnaires in 2011. Ritalin, kreteks (another type of flavored cigarette), androstenedione, and creatine all were added in 2001. OxyContin and Vicodin were included in the surveys starting in 2002. Kreteks was then dropped from the 8th- and 10th-grade questionnaires in 2006. For 12th graders only, a question about flavored alcoholic beverages (sometimes called malternatives or alcopops) was added in the 2003 surveys. In 2004 the standard set of prevalence questions (lifetime, annual, and past 30-day use) replaced the single question about use of flavored alcoholic beverages in the 12th-grade survey and was also added to the surveys for 8th and 10th grades as well as to the follow-ups. In 2005, at the suggestion of the sponsor, a new set of questions was introduced on the subject of *prescribed* stimulant use for the treatment of attention deficit hyperactivity disorder. In 2006, a question on use of nonprescription cough or cold medicines "to get high" was added—these medicines usually contain dextromethorphan which, when taken in large doses, can alter consciousness. Three new substances were added to the study in 2009: salvia, Adderall and Provigil. Both the Adderall and Provigil questions asked about use not under a doctor's orders and salvia, of course, is not a prescribed drug. The Provigil question was dropped from the study in 2012 due to low prevalence. In 2010, questions about smoking tobacco using a hookah and smoking small cigars were added to the 12th-grade and follow-up surveys. In 2011, questions were added to 12th-grade and follow-up questionnaires about synthetic marijuana, dissolvable tobacco, and snus, while use of alcoholic drinks containing caffeine was added in all grades as

well as in follow-ups. The synthetic marijuana, dissolvable tobacco, and snus questions were added to the 8th- and 10th-grade questionnaires in 2012. Questions about the use of so-called bath salts were added to the 8th-, 10th-, and 12th-grade questionnaires in 2012.

The large number of substances that have been added over the years illustrates the dynamic and multidimensional nature of the country's drug problem. Obviously, as time passes and new trends develop, additional drugs will be added to the study's coverage; occasionally ones that prove to have very low prevalence (like kreteks, bidis, and Provigil) will be dropped. It is important, given this rapidly shifting smorgasbord of drugs, that information be gathered fairly quickly to inform legislators, regulatory agencies, scientific institutes, scientists and practitioners in the field, and parents and educators to what extent newer drugs are making inroads in the youth population and what subgroups are proving most vulnerable.

Most of the information reported here deals with illicit use of controlled substances. The major exceptions are alcohol, cigarettes, smokeless tobacco, inhalants, nonprescription stimulants, creatine, cough and cold medicines, and salvia. In the questions about illicit use of psychotherapeutic drugs, respondents are asked to exclude any use under medical supervision.[4]

Throughout this report we have chosen to focus attention on drug use at the higher frequency levels rather than simply to report proportions that have ever used various drugs. This is done to help differentiate levels of seriousness, or extent, of drug involvement. While there is no public consensus on what levels or patterns of use constitute abuse, there is a consensus that higher levels of use are more likely to have detrimental effects for the user and for society. We have also introduced indirect measures of dosage per occasion by asking respondents about the duration and intensity of highs they usually experience with each type of drug. These items have shown some interesting trends over the years, as is detailed in chapter 7.

Attitudes, Beliefs, and Early Experiences

Separate chapters are devoted to the following variables related to a number of licit and illicit drugs:

- grade of first use;
- noncontinuation of use;
- respondents' own attitudes and beliefs;
- perception of drug availability; and
- perception of attitudes and behaviors of others in the social environment.

Some of these variables have proven to be very important in explaining changes in use.

Over-the-Counter Substances

Chapter 10 discusses use of *nonprescription* stimulants, including diet pills, stay-awake pills, and "look-alike" pseudoamphetamines. Questions on these substances were added beginning in 1982

[4]Medically supervised use of such drugs is addressed in the 1977, 1978, 1981, and 1983 volumes in this series, which provided some data on the topic, as did the following article: Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1987). Psychotherapeutic, licit, and illicit use of drugs among adolescents: An epidemiological perspective. *Journal of Adolescent Health Care, 8*, 36–51. Volume I now contains a section in Chapter 10 dealing with the use of stimulants in the treatment of ADHD.

because their use appeared to be on the rise, and it seemed that some respondents inappropriately included these substances in their answers about amphetamine use. That inappropriate inclusion affected some of the observed trends in amphetamine use until the clarification in 1982. Tables on the performance-enhancing substances androstenedione (andro)—previously an over-the-counter substance—and creatine are also included, and the degree of overlap in the reporting of steroid and andro use is examined.

Cumulative Lifetime Daily Marijuana Use

Chapter 10 also presents trend results from a set of questions about cumulative lifetime marijuana use at a daily or near-daily level. These questions were added to enable us to develop a more complete individual history of daily use over a period of years. They reveal some important facts about frequent users of this drug.

Trends in Use of Specific Alcoholic Beverages

In 2003, tables were added to appendix D giving the prevalence and trend estimates for use of specific classes of alcoholic beverages. Twelfth-grade data are reported for beer, liquor, wine, wine coolers, and flavored alcoholic beverages. For 8th and 10th grades, the measures were restricted to beer and wine coolers (though the category of wine coolers was dropped from the questionnaires in 2004 to make space for the more general class of flavored alcoholic beverages). Results on these various beverage classes are discussed in chapters 4 and 5.

Sources of Prescription Drugs

MTF has previously reported on the growing importance of prescription-type psychotherapeutic drugs used without medical supervision. In 2007, new questions regarding where users secured several such drugs were added to one 12th-grade questionnaire form. A section in chapter 10 reports responses to these questions, as well as to other questions which have since been elaborated. Since 2008 chapter 10 also contains estimates of the proportion of 12th-grade students who use *any* psychotherapeutic drugs in each prevalence period; these estimates can be made only for 12th graders, because estimates of use of sedatives and narcotics other than heroin are not available for students in the lower grades.

Synopses of Other MTF Publications

Chapter 10 contains short synopses of several other MTF publications produced during the past year (journal articles, chapters, occasional papers, etc.). References to the full documents are provided, and some are available for download from the MTF website.

Appendixes

Appendix A addresses the issue of whether missing the absentees and school dropouts from the MTF sample coverage affects the results and, if so, to what extent. For illustrative purposes, the appendix provides estimates of prevalence and trend results adjusted for these missing segments of the population for marijuana and cocaine.

Appendix B gives the exact definitions of the various demographic subgroups discussed.

Appendix C provides a guide on how to calculate confidence intervals for point estimates and how to calculate statistics that test the significance of changes over time or of differences between subgroups. While many tables in these volumes already contain such statistics for selected point estimates and change intervals, some readers may wish to conduct additional computations. This appendix contains the necessary formulas and design-effect corrections to permit such computations.

Appendix D addresses the issue of cross-time trends in the use of numerous drugs for various demographic subgroups—specifically, subgroups differentiated on the basis of gender, college plans, region of the country, community size, parental education level (a proxy for socioeconomic status), and racial/ethnic group. Until this year, a large set of tables was included in Appendix D in this volume. Beginning this year, a link is provided in Appendix D to a separate Occasional Paper which provides all of those same trend tables; in addition, the Occasional Paper provides graphical presentations of the trends in color, which are much easier to comprehend than the tabular data.[5]

Appendix E provides trends for 12th grade only on individual drugs within the following five general classes: hallucinogens other than LSD, amphetamines, tranquilizers, narcotics other than heroin, and sedatives.

Appendix F provides trends in drug use for the *three grades combined*, as well as the absolute decline and the proportional decline in the prevalence of each drug since the most recent *peak* level (since 1991). Such tables are helpful in getting a quick read on the trends. By combining the three grades, however, much of the meaningful detail available from grade-specific estimates is lost.

PURPOSES AND RATIONALE FOR THIS RESEARCH

Perhaps no social problem has proven more clearly appropriate for, and in need of, the application of systematic research and reporting than that of substance abuse. Often these behaviors are hidden from public view; also, they can change rapidly and frequently. Substance abuse behaviors are of great importance to the well-being of the nation, and many legislative and programmatic interventions are aimed at them, particularly in response to the increases in adolescent smoking and illicit drug use we reported in the 1970s and again in the 1990s.

Young people are often at the leading edge of social change, and this has been particularly true of drug use. The massive upsurge in illicit drug use during the last 40 or so years has proven to be largely a youth phenomenon, and MTF documented that the relapse in the drug epidemic in the early 1990s initially occurred almost exclusively among adolescents. Adolescents and adults in their 20s fall into the age groups at highest risk for illicit drug use; moreover, for some drug users, use that begins in adolescence continues well into adulthood. The original epidemic of illicit drug use in the 1960s began on the nation's college campuses and then spread downward

[5]Graphic presentations of these trends are available in Occasional Paper No. 79 on the MTF website (*http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf*). Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2013). *Demographic subgroup trends for various licit and illicit drugs, 1975–2012* (Monitoring the Future Occasional Paper No. 79). Ann Arbor, MI: Institute for Social Research, The University of Michigan. 452pp.

in age, but the more recent relapse phase in the 1990s first manifested itself among secondary school students and then started moving upward in age as those cohorts matured. One of MTF's many important purposes is to develop an accurate description of these important changes as they are unfolding. A reasonably accurate picture of the basic size and contours of the illicit drug use problem among young Americans is a prerequisite for informed public debate and policymaking. In the absence of reliable *prevalence* data, substantial misconceptions can develop and resources can be misallocated.

In the absence of reliable *trend* data, early detection and localization of emerging problems are more difficult and societal responses more lagged. For example, MTF provided early evidence that cigarette smoking among American adolescents was rising sharply in the early 1990s, which helped stimulate and support some extremely important policy initiatives that culminated in the tobacco settlement between the tobacco industry and the states. More recently, MTF documented and described the sharp rise and subsequent decline in ecstasy use, illustrating the important role that *perceived risk* played in these changes, as it has done for a number of other drugs in the past. The study also helped draw attention to the rise in steroid and androstenedione use among adolescents in the late 1990s, resulting in some legislative and regulatory action. It exposed a rise in the use of narcotic drugs other than heroin (especially certain prescription-type analgesics), stimulating an initiative at the White House Office of National Drug Control Policy aimed at reducing use. In addition to early detection and localization of problems, valid trend data make assessments of the impact of major historical and policy-induced events much less conjectural.

Finally, the accurate empirical comparison of subgroup differences has challenged conventional wisdom in some important ways. Accurately characterizing not only differences, but also differential changes among subgroups, has been an important scientific contribution from MTF. For example, dramatic racial/ethnic differences in cigarette smoking have emerged during the life of the study—differences that were almost nonexistent when MTF began in 1975. Further, the misinformed assumption that African-American students use illicit drugs more than White students has been disproven since the beginning of the study, with African Americans in actuality having lower rates of use of most substances.

MTF also monitors a number of factors—peer norms regarding drugs, beliefs about the dangers of drugs, and perceived availability—that we believe help explain the historical changes observed in drug use. Monitoring these factors has made it possible to examine a central policy issue in this nation's war on drugs—namely, the relative importance of supply versus demand factors in bringing about some of the observed declines and increases in drug use. We have also developed a general theory of drug epidemics that uses many of these concepts to help explain the rises and declines that occur in use and emphasizes the importance of demand-side factors.[6]

In addition to accurately assessing prevalence and trends and trying to determine their causes, MTF has a substantial number of other important research objectives that include (a) helping to determine which young people are at greatest risk for developing various short- and long-term

[6]See Johnston, L. D. (1991). Toward a theory of drug epidemics. In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93–132). Hillsdale, NJ: Lawrence Erlbaum. (This chapter is also available online at http://www.monitoringthefuture.org/pubs/chapters/ldj1991theory.pdf.)

patterns of drug abuse; (b) gaining a better understanding of the lifestyles and value orientations associated with various patterns of drug use, and monitoring how subgroup differences are shifting over time; (c) determining the immediate and more general aspects of the social environment associated with drug use and abuse; (d) determining how major transitions in the social environment (e.g., entry into military service, civilian employment, college, homemaking, and unemployment) or in social roles (e.g., engagement, marriage, pregnancy, parenthood, divorce, and remarriage) affect changes in drug use; (e) determining the life course trajectories and comorbidity of the various drug-using behaviors from early adolescence to adulthood, and distinguishing such age effects from cohort and period effects; (f) evaluating possible explanations of period and age effects, including determining the effects of social legislation on various types of substance use; (g) examining possible consequences of using various drugs; (h) examining linkages between educational success or failure and substance use; and (i) determining the changing connotations of drug use and changing patterns of multiple drug use among youth.[7]

We believe that the differentiation of period, age, and cohort effects in the use of various substances has been a particularly important contribution of MTF, and it is one that the study's cohort-sequential research design is especially well suited to make. Readers interested in publications dealing with any of these other areas should visit the MTF website at *www.monitoringthefuture.org* or send an e-mail to *mtfinformation@umich.edu*.

In recent years we have also begun to publish on factors related to the spread of HIV/AIDS. These include number of sexual partners, gender of sexual partners, condom use, injection drug use, injection drug use using shared needles, illicit drug use and alcohol use more generally, and getting tested for HIV/AIDS. Most of the research objectives listed above for licit and illicit drug use can also be addressed in relation to these very important behaviors. Initially the emphasis has been on measuring and reporting prevalence and trends in HIV/AIDS-related behaviors in the general population of young adults who are high school graduates ages 21–40. We have also begun to measure the extent to which these various risk and protective behaviors are correlated. Increasingly, as the numbers of cases cumulate, we will be looking at cross-time prediction and differences associated with age, period, and cohort effects.

Thus, our efforts over the years, and going into the future, cover both the epidemiology and etiology of substance use and related risk behaviors. Including both sets of efforts within the same large scale study, keeping measurement constant across historical and developmental time, allows us to provide the nation scientifically reliable estimates of historical trends of substance use as well as the developmental trends and possible causes, correlates, and consequences of substance use and other risk behaviors from adolescence through adulthood.

[7]For an elaboration and discussion of the full range of MTF research objectives in the domain of substance abuse, see Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., & Bachman, J. G. (2006). *The aims and objectives of the Monitoring the Future study and progress toward fulfilling them as of 2006* (Monitoring the Future Occasional Paper No. 65). Ann Arbor, MI: Institute for Social Research. Available online at http://www.monitoringthefuture.org/pubs/occpapers/occ65.pdf.

TABLE 1-1
New and Deleted Prevalence of Use Questions for 8th, 10th, and 12th Graders

Drug Name	Year in which added	Grades in which added			Year in which dropped	Grades in which dropped		
		8th	10th	12th		8th	10th	12th
Nitrites	1979			X	2010			X
PCP	1979			X				
Nonprescription Diet Pills	1982			X				
Look-Alikes	1982			X				
Stay-Awake Pills	1982			X				
Smokeless Tobacco [a]	1986 & 1992			X	1990			X
Crack [b]	1986–1987, 1990			X				
Cocaine Powder	1987			X				
Steroids	1989			X				
Crystal Methamphetamine (Ice)	1990			X				
Been Drunk	1991			X				
Heroin With a Needle	1995	X	X	X				
Heroin Without a Needle	1995	X	X	X				
Ecstasy (MDMA)	1996	X	X	X				
Rohypnol	1996	X	X	X	2002 [c]			X
Methamphetamine	1999	X	X	X				
GHB	2000	X	X	X	2012	X	X	
Ketamine	2000	X	X	X	2012	X	X	
Bidis	2000	X	X		2006	X	X	
	2000			X	2011			X
Kreteks	2001	X	X	X	2006	X	X	
Androstenedione	2001	X	X	X				
Creatine	2001	X	X	X				
Ritalin	2001	X	X	X				
OxyContin	2002	X	X	X				
Vicodin	2002	X	X	X				
Flavored Alcoholic	2003			X				
Beverages (Alcopops) [d]	2004	X	X					
ADHD Stimulant-type drug—prescribed	2005	X	X	X				
ADHD Non-stimulant-type drug—prescribed	2005	X	X	X				
Any Prescription Drug—not prescribed [e]	2005			X				
Over-the-counter Cough/Cold Medicines	2006	X	X	X				
Adderall	2009	X	X	X				
Salvia	2009			X				
	2010	X	X					
Provigil	2009			X	2012			X
Tobacco using a Hookah	2010			X				
Small Cigars	2010			X				
Synthetic Marijuana	2011			X				
	2012	X	X					
Alcohol Beverages containing Caffeine [f]	2011	X	X	X				
Dissolvable Tobacco Products	2011			X				
	2012	X	X					
Snus	2011			X				
	2012	X	X					
Bath Salts (synthetic stimulants)	2012	X	X	X				

Source. The Monitoring the Future study, the University of Michigan.

Note. All prescription-type drugs listed refer to use without a doctor's orders, unless otherwise noted.

[a]Smokeless tobacco was added to one questionnaire form in 1986, dropped in 1990, then added to a different questionnaire form in 1992.

[b]A question on annual use of crack was added to a single form in 1986. The standard triplet questions (lifetime, annual, and 30-day use) were added to two forms in 1987 and to all forms in 1990.

[c]For 12th grade only: Lifetime and 30-day prevalence of use questions were dropped in 2002. A question on annual use remains in the study.

[d]For 12th grade only: A question on annual use of Alcopops was added to a single form in 2003. In 2004 it was replaced by the standard triplet questions (lifetime, annual, and 30-day use) about use of flavored alcoholic beverages.

[e]For 12th grade only: The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers…without a doctor telling you to use them.

[f]For all grades: In 2012 the alcoholic beverages containing caffeine question text was changed. See text for details.

Chapter 2

KEY FINDINGS
AN OVERVIEW AND INTEGRATION ACROSS FIVE POPULATIONS

Monitoring the Future, now having completed its 38th year of data collection, has become one of the nation's most relied-upon scientific sources of valid information on trends in licit and illicit psychoactive drug use among American adolescents, college students, young adults, and more recently, middle-aged adults. During the last nearly four decades, the study has tracked and reported on the use of an ever-growing array of such substances in these populations.

This annual series of monographs is the primary mechanism through which the epidemiological findings from MTF are reported. Findings from the inception of the study in 1975 through 2012 are included—the results of 38 national in-school surveys and 36 national follow-up surveys.

MTF has conducted in-school surveys of nationally representative samples of (a) 12th-grade students each year since 1975 and (b) 8th- and 10th-grade students each year since 1991. In addition, beginning with the class of 1976, the project has conducted follow-up mail surveys on representative subsamples of the respondents from each previously participating 12th-grade class. These follow-up surveys now continue well into adulthood.

A number of important findings have been summarized in this chapter to provide the reader with an overview of the key results. Because so many populations, drugs, and prevalence intervals are discussed here, a single integrative set of tables (Tables 2-1 through 2-4) show the 1991–2012 trends for all drugs on five populations: 8th-grade students, 10th-grade students, 12th-grade students, full-time college students modal ages 19–22, and all young adults modal ages 19–28 who are high school graduates. (Note that the young adult group includes the college student population.) *Volume II* also contains data on older age bands based on the longer term follow-up surveys: specifically, ages 35, 40, 45, and 50. (The age band will be extended to age 55 in 2013.)

TRENDS IN DRUG USE—THE ADVENT OF COHORT EFFECTS

Early in the 1990s, we reported an increase in use of several illicit drugs among secondary school students, and some important changes among the students in terms of certain key attitudes and beliefs related to drug use. In the volume reporting 1992 survey results, we noted the beginning of such reversals in both use and attitudes among 8th graders, the youngest respondents surveyed in this study, and also a reversal in attitudes among 12th graders. Specifically, the proportions seeing great risk in using drugs began to decline, as did the proportions saying they disapproved of use. As we suggested then, those reversals indeed

presaged "an end to the improvements in the drug situation that the nation may be taking for granted." The use of illicit drugs rose sharply in all three grade levels after 1992, in what we refer to as the "relapse phase" in the larger epidemic of illicit drug use, as negative attitudes and beliefs about drug use continued to erode. This pattern continued into the mid-1990s, and beyond that for some drugs.

Then in 1997, for the first time in six years, the overall rate of ***illicit drug*** use finally showed a decline among 8th graders. Although marijuana use continued to rise that year among 10th and 12th graders, their use of several other drugs leveled off, and relevant attitudes and beliefs also began to reverse in many cases. In 1998, illicit drug use continued a gradual decline among 8th graders and also started to decline at 10th and 12th grades. In 1999 and 2000, the decline continued for 8th graders, while use held fairly level among 10th and 12th graders. In 2002 and 2003, use by 8th and 10th graders decreased significantly, and use by 12th graders finally began to drop; declines then continued for all three grades in 2004 and for several years thereafter. But in 2008, illicit drug use increased once again among 8th and 12th graders, followed by some increase in 8th and 10th grades in 2009, signaling an end to the immediately preceding period of decline. In 2010 the overall rate of illicit drug use increased for all grades, although only the increase among 8th graders was significant. In 2011 the increase continued among 10th and 12th graders and declined some at 8th grade. We expected a continued increase into 2012, in part because of the ongoing trend toward increased use and in part because some states have been moving to legalize the medical use (and simply the recreational use) of marijuana, which may serve to normalize use of marijuana, the most used of all illicit substances. Instead, in 2012, we found non-significant declines in illicit drug use in all three grades (when rates for all three grades were combined, there was also a non-significant decline).

As will be illustrated below in the discussion of specific drugs, the increase in use of many drugs during the 1990s among secondary school students, combined with fairly level rates of use among college students and young adults, resulted in some unusual reversals in the usage rates by age (see Figure 2-1). In the early years of the epidemic, illicit drug use rates were clearly higher in the college-age group (and eventually the young adults) than they were among secondary school students. But by the late 1990s, the highest rates of active use (i.e., use within the prior year or prior 30 days) were found in the late secondary school years. In fact, in 1996 and 1997 both 10th and 12th graders actually had higher annual prevalence rates for illicit drug use (i.e., higher percentages reporting any use within the prior year) than either college students or all young adults. This changed somewhat after 2001, as the earlier heavier using cohorts of adolescents began to comprise the college student and young adult populations, while at the same time use among the incoming secondary school students was declining.

- As can be seen by the divergence of trends for the different age groups, something other than a simple secular trend in drug use was taking place; important cohort differences were emerging.

- In 2012, the rank order by age group for annual prevalence of using ***any illicit drug*** was 12th graders (40%), college students (37%), 19- to 28-year-olds (34%), 10th graders (30%), and 8th graders (13%). With respect to using ***any illicit drug other than marijuana*** in the past 12 months, there was less variability: 19- to 28-year-olds, 12th

graders, and college students all were at 17%, 10th graders at 11%, and 8th graders at 6%.

"Bath Salts," so-called because they are sold over the counter as apparently innocuous products like bath salts but really contain strong stimulants, have been given much attention in the news recently; however, there has been very little scientific information about the prevalence of their use. We believe that the 2012 MTF survey provides the first national survey data on their use. Fortunately, we find the annual prevalence rates in 2012 to be very low, at 0.8%, 0.6%, and 1.3% in grades 8, 10, and 12, respectively.

- From the early 1990s until 1997, ***marijuana*** use rose sharply among secondary school students, as did their use of a number of ***other illicit drugs***, though more gradually. As previously stated, we have called this period a "relapse phase" in the longer term epidemic. An increase in marijuana use also began to occur among U.S. college students, largely reflecting "generational replacement" (i.e., a cohort effect), wherein earlier cohorts were replaced in the college population by more recent ones who were more drug-experienced before they left high school. This resurgence in illicit drug use spread *up* the age spectrum in a reversal of the way the epidemic spread several decades earlier. In the 1960s the epidemic began on the nation's college campuses, and then diffused downward in age to high school students and eventually to middle school students. This time the increases began in middle schools and radiated up the age spectrum. The graduating class cohorts in the middle and late 1990s carried with them the pattern of heavier drug use that emerged while they were in secondary school in the early 1990s.

  Increases during the 1990s in use of ***any illicit drug*** (including use of ***marijuana*** and use of ***other illicit drugs*** treated as a class) were substantially larger, in both proportional and absolute terms, in the three secondary school grades than in either the college or young adult populations. Among college students and young adults, the annual prevalence of use of ***any illicit drug*** held remarkably stable from 1991 through 1997, at the same time use rose appreciably among adolescents (see Figure 2-1). We predicted that, as generational replacement continued to occur, we would likely see some increase in use of illicit drugs by the young adults. As would be expected given their younger age range (19–22), the increase happened sooner and more sharply among the college students than among the young adults in general (age range 19–28). Peak rates (since 1990) in annual prevalence of ***any illicit drug*** were reached in 1996 among 8th graders, in 1997 among 10th and 12th graders, in 2001 among college students, and in 2011 in the young adult segment. Similarly, the more recent declines in use among secondary students have thus far shown up only modestly and briefly among college students, and hardly at all among young adults (see Figure 2-2).

  Again, these diverging trends across the different age strata clearly show that changes during the 1990s reflected some important cohort effects rather than broad secular trends that would have appeared simultaneously in all of the age groups. During all of the previous years of the study, the use of most drugs moved in parallel across most age groups, indicating that secular change was prevailing then.

- Similar to the use patterns for illicit drugs, the trend for ***cigarette*** smoking evidenced a generational replacement effect during the 1990s in that college students showed a sharp increase in smoking beginning in 1995, as the heavier smoking cohorts of secondary school students from the early to mid-1990s entered college. This has been a more typical pattern of change for cigarettes, however, since differences in cigarette smoking rates among class cohorts tend to remain through the life course and also tend to account for much of the overall change in use observed at any given age.

  In the early 1990s, cigarette smoking among 8th and 10th graders rose by about 50%—a particularly sharp and worrisome rise (based on 30-day prevalence rates shown in Table 2-3, and daily and half-pack rates shown in Table 2-4); MTF was the first study to draw national attention to this momentous development. Smoking also rose among 12th graders, beginning a year later.

  The increase in current smoking ended among 8th and 10th graders in 1996, among 12th graders in 1997, and among college students in 1999. The nation then entered a period of appreciable decline in smoking rates that first began among 8th graders in 1997 and then began radiating up the age spectrum as those cohorts aged. (The 8th-grade 30-day prevalence rate fell by about three fourths, from 21% in 1996 to 4.9% in 2012.) Among the college and the young adult strata, the declines have been less sharp so far, but they are continuing. The 30-day smoking prevalence rate for college students in 2012 (13%) was down more than half from the recent peak of 31% in 1999, with the decline accelerating after 2005 as the cohort effect worked its way up the age bands. Smoking among the young adult subgroup, on the other hand, has dropped by only about one third (to 20% by 2012) since its recent peak rate of 31% in 1998. The decline in smoking rates among secondary school students had been decelerating in all three grades in recent years; there was some evidence in 2010 that the decline had halted among 8th and 10th graders, and that a turnaround might be occurring. Fortunately, all three grades showed further declines in 2011 and 2012 (including a significant drop among 8th graders). (The recent decline may be due at least in part to a 2009 increase in federal taxes on tobacco products.)

- During the 1990s, the annual prevalence of ***marijuana*** use tripled among 8th graders (from 6% in 1991 to 18% in 1996), more than doubled among 10th graders (from 15% in 1992 to 35% in 1997), and nearly doubled among 12th graders (from 22% in 1992 to 39% in 1997). Among college students, however, the increase in marijuana use, presumably due to a generational replacement effect, was much more gradual. Annual prevalence of use rose by about one third, from 27% in 1991 to 36% in 1998. Marijuana use began to decline in 1997 among 8th graders and then did the same in 1998 among 10th and 12th graders. The rate of decline was rather modest, however, perhaps due in part to effects of the public debates over medical use of marijuana during that period. In 2001, use remained level in all three grades, but between 2001 and 2004 all three grades showed significant declines in their annual prevalence of marijuana use, with the proportional decline greatest among 8th graders. Eighth graders have shown the most steady long-term decline since their recent peak, which occurred in 1996, although the decline halted in 2008, after a decline of more than four-tenths since 1996. After 2007

use began to increase among 8th graders. Declines had been occurring in the upper grades after 1997, but mostly after about 2001, with their annual prevalence rates having fallen from recent peaks by 31% and 18% (roughly between 1997 and 2008) for 10th and 12th graders, respectively. The decline halted in 2009 among 10th graders and in 2008 among 12th graders. In 2010 marijuana use increased for all three grades, though only the 8th-grade change was statistically significant; in 2011 use in 10th and 12th grades continued to increase, but 8th grade-use declined slightly for reasons that we cannot explain. Eighth grade use continued to decline in 2012, while use declined among 10th graders and leveled among 12th graders. Annual marijuana use among college students declined modestly from recent peak levels of 36% in 2001 to 30% in 2006. Thereafter use rose to 35% by 2012. Young adults showed very little change during that interval (see Table 2-2). What seems clear is that the long decline in marijuana use over roughly a 10 year period ended a few years back among secondary school students and has now ended among college students. We noted in 2010 that if a new cohort effect emerges, then within a few years we are likely to see an increase in marijuana use among college students and young adults generally. In 2011 both groups showed some increase in marijuana use—for young adults a significant increase of 2.3 percentage points. We believe it is possible that some of this increase in use reflects a secular trend. If the debate over medical marijuana use is reducing the perceived risk of that drug, the effect could well be occurring across various age groups.

- ***Daily marijuana use*** in all of these groups rose substantially after 1992, reaching peak levels in a somewhat staggered fashion as that just described (see Table 2-4). Daily use began a slow decline after 1999 among 8th graders until 2007, after 2001 until 2009 among 10th graders, and after 2003 until 2010 among 12th graders, consistent with a cohort effect pattern. Use at all three grade levels was fairly level after 2004. In 2010 daily use at all three grade levels increased significantly, and it increased further in all grades in 2011, reaching 1.3%, 3.6%, and 6.6% in grades 8, 10, and 12, respectively. There was little further change in 2012. College student and young adult rates of daily use have been fairly level in recent years. In general, prevalence of daily marijuana use has been slow to decline, even though annual and 30-day prevalence figures were dropping. Although the rates today are low relative to the peaks reported in the late 1970s, the 6.6% figure for 12th graders in 2011 is the highest observed in some 30 years. The fact that daily marijuana use was rising through 2011 in all three grades serves as a reminder that a relapse in the epidemic of marijuana use, as occurred in the early 1990s, could still occur. The role of the many debates on legalizing marijuana for medical use, the actual legalization for recreational use in some states, and the experiences those states have with the new laws likely will have an impact on present and future secular trends in use.

  The amount of perceived risk associated with using marijuana fell during the earlier period of increased use in the late 1970s, and fell again during the more recent resurgence of use in the 1990s. Indeed, perceived risk among 12th graders began to decline a year *before* use began to rise in the upturn of the 1990s, making perceived risk a leading indicator of change in use. (The same may have happened in 8th grade, as well, but we do not have data starting early enough to check that possibility.) The decline in perceived

risk halted after 1997 for 8th and 10th graders, and annual prevalence began to decline a year or two later. Perceived risk also declined prior to the recent rebound in marijuana use. Again, perceived risk has been a leading indicator of change in use, as it has proven to be for a number of drugs. As discussed in *Volume I*, chapter 8, these attitudes, as well as the behaviors that they predict, show evidence of cohort effects over the past decade and a half.

Personal disapproval of marijuana use slipped considerably among 8th graders between 1991 and 1996 and among 10th and 12th graders between 1992 and 1997, as use rose considerably. For example, the proportions of 8th, 10th, and 12th graders who said they disapproved of trying marijuana once or twice fell by 17, 21, and 19 percentage points, respectively, during their respective intervals of decline. Subsequently, disapproval began to rise among 8th graders after roughly 1997 and continued through 2007, while it began to rise in the upper grades in 2002 and also continued through 2007 among 10th and 12th graders, as use declined gradually. Since 2007 or 2008 there has been some reversal on this attitude as well as in use, with disapproval falling steadily in the upper grades and less consistently in grade 8 (see Figure 8-1b in Chapter 8).

- ***Synthetic marijuana***, so named because it contains synthetic versions of some of the cannabinoids found in marijuana, is a recent and important addition to the smorgasbord of drugs available to American young people. These designer chemicals are sprayed onto herbal materials that are then sold in small packets under such brand names as Spice and K-2. They have been readily available as over-the-counter drugs on the Internet, in head shops and gas stations, etc. While many of the most widely used chemicals were scheduled by the Drug Enforcement Administration in March of 2011, making their sale no longer legal, purveyors of these products have skirted the restrictions by making small changes in the chemical composition of the cannabinoids used. Use of these products was first measured in MTF in 2011 in a tripwire question for 12th graders, asking about their frequency of use in the prior 12 months. Annual prevalence was found to be 11.4%, making synthetic marijuana the second most widely used class of illicit drug after marijuana. In spite of the DEA's scheduling of the most common ingredients, use among 12th graders remained unchanged in 2012, with 11.3% annual prevalence. Eighth and 10th graders were also asked about use of these drugs in 2012, and their annual prevalence rates were 4.4% and 8.8%, respectively, making synthetic marijuana the second most widely used illicit drug among 10th graders, as well, and the third among 8th graders behind marijuana and inhalants. There is a relatively low level of perceived risk for trying synthetic marijuana once or twice, despite growing evidence of serious problems resulting from the use of these drugs.

- Among 12th graders, the proportions using ***any illicit drug other than marijuana*** in the past year rose from a low of 15% in 1992 to a high of 21% in 1999 (see Table 2-2); these levels were substantially below the 34% peak rate reached two decades earlier, in 1981. All of the younger groups showed significant increases between 1992 and 1997, with use beginning to increase in 1992 among 8th graders, in 1993 among 10th and 12th graders, and in 1995 among college students—reflecting strong evidence of a cohort effect. Use peaked in 1996 among 8th and 10th graders, in 1997 among 12th graders, around 2004

for college students and in 2008 for young adults. The 8th graders have shown a gradual but considerable decline of one half in their use of illicit drugs other than marijuana, treated as a class, since 1996 (13.1% annual prevalence in 1996 to 5.5% in 2012). The decline among 10th graders paused from 1998 to 2001 with a net decline of about a third in annual prevalence from 18.4% in 1996 to 11.3% in 2008; use leveled again for several years and then declined further in 2011. It now stands at 10.8%. Twelfth-grade use also showed some decline beginning after 2001 (21.6%), and stands just 4.6 percentage points lower (17.0%) in 2012. College students so far have shown only a slight decline in use of any illicit drug other than marijuana, from a high of 18.6% in 2004 to 17.1% in 2012—a rate virtually identical to that for high school seniors. Use among young adults has remained at about the same level of annual use, between 17% and 19%, since 2003.

- Between 1989 and 1992 we noted an increase among 12th graders, college students, and young adults in their use of ***LSD***, a drug quite popular in the late 1960s and early 1970s. In 1992 the newly added populations (8th and 10th graders) were also showing an increase in LSD use; for several more years, modest increases persisted in all five populations. Use of LSD peaked in 1995 among college students and young adults and in 1996 among 8th, 10th, and 12th graders, after which LSD use gradually declined in all five populations until 2005 for 8th, 10th, and 12th graders. Overall, the pattern for LSD use seems more consistent with secular change than a cohort effect. The different age groups moved in parallel for the most part, likely in response to historical events in the environment, including a sharp reduction in LSD availability after 2001.

  The proportion of 12th graders seeing great risk associated with trying LSD declined by 4.3-percentage-points between 1991 and 1992, just prior to the significant increase in LSD use in 1993. The decline in perceived risk continued through 1997, halted in 1998, and has resumed since 2009. The proportion of 12th graders disapproving of LSD use began to decline in 1992, and continued to decline through 1996.

  Because LSD was one of the earliest drugs to be popularly used in the American drug epidemic, young people in the 1990s may have been relatively unaware of the risks of use. They had less opportunity to learn vicariously about the consequences of use by observing others around them or to learn from intense media coverage of the issue, which occurred some years earlier. We were concerned that this type of generational forgetting of the dangers of a drug, which occurs as a result of generational replacement, could set the stage for a whole new epidemic of use. In fact, perceived harmfulness of LSD began to decline after 1991 among 12th graders. Perceived risk and disapproval among 8th and 10th graders, first measured in 1993, both showed declines until 1997 or 1998, after which they leveled among 10th graders but then declined considerably more among 8th graders. In 2004, twelfth graders' personal disapproval of trying LSD increased significantly, with little change since. Because the decline in use in the last few years has generally *not* been accompanied by expected changes in these attitudes and beliefs, we suspected that some displacement by another drug might have been taking place, at least through 2001. The most logical candidate is ***ecstasy*** (***MDMA***), which, like LSD, is used for its hallucinogenic effects; ecstasy was popular in the club and rave scenes, and was very much on the rise through 2001. After 2001, a sharp decline in the reported

availability of LSD in all five populations (which corresponded to the closing of a major LSD lab by the Drug Enforcement Administration) very likely played a major role in the sharp decline in use of LSD among all groups. However, we want to caution that 8th graders' attitudes, in particular, are changing such as to make them receptive to LSD use some time in the future, should a plentiful supply re-emerge. Fortunately, 8th and 10th graders report declining availability in 2012.

- Questions about the use of ***ecstasy*** (***MDMA***) have been included in the follow-up surveys of college students and young adults since 1989; however, because of our concern about stimulating interest in an attractive-sounding and little-known drug, these questions were not added to the secondary school surveys until 1996. From 1989 to 1994, the annual prevalence rates tended to be quite low in the older age groups for whom we had data, but in 1995 these rates increased substantially—from 0.5% in 1994 to 2.4% in 1995 among college students, and from 0.7% to 1.6% over the same time span among young adults generally.

  When usage data were first gathered on secondary school students in 1996, the 10th and 12th graders actually showed higher rates of annual use (both 4.6%) than the college students (2.8%). Ecstasy use then fell steadily in all three grades between 1996 and 1998, though it did not fall in the older age groups. But between 1998 and 2001, use rose sharply in all five populations. In fact, annual prevalence more than doubled in that three-year period among 12th graders, college students, and young adults, and nearly doubled in the lower grades. In 2000 even the 8th graders showed a significant increase in use. Ecstasy use for all five age groups declined slightly in 2002, but significantly only for 10th graders; declined again in 2003, with significant drops for all groups except the college students; and showed some decline again in 2004, with the largest decreases among college students and young adults. This pattern suggests that both cohort effects and a secular trend were at work. Once again, this decline in use among 12th graders was predicted by an increase in perceived risk in 2001—an increase that continued through 2005. Among college students the annual prevalence fell by half in 2004 alone, and all five groups are at rates that are still much lower than their recent peaks in 2001. Since 2005 or 2006, there has been some rebound in use among all five populations, including a significant increase in the lower grades in 2010. Except for the significant decline in use among 8th graders, there was little systematic change in 2011. In 2012 there were significant declines in annual prevalence in all three grades.

  Ecstasy use among all five populations has been moving fairly synchronously since 1999, which suggests a secular trend (some change in events in the social environment) that affected everyone. An important change during this period was the increasing availability of information on the adverse effects of ecstasy use via stories in the popular media, dissemination of the scientific evidence by the National Institute on Drug Abuse, and an anti-ecstasy media campaign by the Partnership for a Drug-Free America and the Office of National Drug Control Policy, initiated in 2002.

  Availability of ecstasy increased dramatically through 2001, as reported by 12th graders and substantiated by law enforcement data on ecstasy seizures. Of the 12th graders

surveyed in 1991, only 22% thought they could get ecstasy fairly easily, but a decade later (in 2001) 62% thought that they could. After 2001, however, the perceived availability of ecstasy began decreasing in all three grades, possibly due in part to the steep decline in the number of users who serve as supply points for others. The decreases continued through 2012 in the lower grades. In 12th grade, the decline in perceived availability halted in 2007, followed by some further downturn in 2008, then leveled. (See Figure 8-6 in *Volume I*, chapter 8 for a graphic presentation of the trends in ecstasy use, availability, and perceived risk for 12th graders.) However, perhaps the most important change that has been taking place since 2005 is a continual decline in perceived risk for ecstasy use among 8th, 10th, and 12th graders, possibly as a result of generational forgetting. The 2011 and 2012 data for 10th and 12th graders showed a leveling. In our 2009 MTF report, we suggested that this decline in perceived risk was leaving high school students increasingly vulnerable to a possible rebound in use of ecstasy; indeed, there was some evidence that just such a rebound was occurring, at least through 2010 or 2011, but there has been a decline in use recently.

- Between 1982 and 1992, annual prevalence rates for ***amphetamine*** use (other than use that was ordered by a physician) among 12th graders fell by nearly two thirds, from 20.3% to 7.1%. Rates among college students fell even more over the same interval, from 21.1% to 3.6%. During the relapse phase in the drug epidemic in the 1990s, annual amphetamine use increased by about half among 8th and 10th graders between 1991 and 1996, and also increased among 12th graders and college students between 1992 and 1996. After 1996 the age groups diverged, with amphetamine use declining gradually among 8th and 10th graders—where use is now only half of what it was in 1996—but continuing to rise among 12th graders, college students, and young adults until about 2002. The declines continued through 2012 for 8th graders, through 2008 for 10th graders, whose use leveled for a few years and then declined a bit before leveling again in 2012, and through 2009 for 12th graders whose use then increased through 2011 before leveling. College students showed a leveling after 2000, followed by some decline through 2008, but their annual prevalence rates have increased some in the last few years. Young adults were stable between 2000 and 2008, but have increased significantly since then. This pattern of cross-age-group change suggests a cohort effect at work for amphetamine use. Since the late 1990s there has been a greater difference between use among 8th graders and the older students, suggesting that an age effect has emerged, possibly due to the older students becoming more likely to use amphetamines to aid their academic performance. ("To help me study" is the highest endorsed reason for amphetamine use among 2012 twelfth graders.)

  Among 12th graders, the increase in nonmedical use of amphetamines (and a concurrent decrease in disapproval) began in 1993; this followed a sharp drop in perceived risk a year earlier (which, as we have noted for a number of drugs, often serves as a leading

indicator). Following a period of decline, perceived risk among 12th graders increased gradually from 1995 through 2009.[8]

- Use of the amphetamine ***Ritalin*** outside of medical supervision showed a distinct increase around 1997—with annual prevalence among 12th graders going from 0.1% in 1992 to 2.8% in 1997—and then stayed level for a few years (see appendix E in *Volume I*, Table E-2[9]). Because of its increasing importance, a differently structured question was introduced for Ritalin use in 2001 (2002 in the follow-ups of college students and young adults). This new question, which we prefer to the original, does not use a prior branching question and produced somewhat higher prevalence rates. Results from the new question suggest an ongoing, gradual decline in Ritalin use, which continued into 2009 in all five populations. The decline continued further in 2010 among 8th and 10th graders, but use leveled in 2010 among 12th graders, college students, and young adults. There were no significant changes in 2011 or 2012.

- Another amphetamine used in the treatment of the symptoms of attention deficit hyperactivity disorder (ADHD) is ***Adderall***. A new question on its use was introduced in 2009; annual prevalence rates in 2009 through 2012 were higher than those for Ritalin in all five populations. This suggests that Adderall may have to some degree replaced the use of Ritalin and may help to account for the declines that we have been observing for the latter drug. Annual prevalence of Adderall changed rather little between 2009 and 2012 in 8th and 10th grades, although the rates seem to be drifting down. In 12th grade, however, annual prevalence has risen from 5.4% in 2009 to 7.6% in 2012. The absolute prevalence rates are fairly high, particularly among college students (9.0% in 2012).

- ***Methamphetamine*** questions were introduced in 1999 because of rising concern about use of this drug; but a decline in use has been observed among all five populations in the years since then, although young adults did not show declines until 2005. In 2007 this decline continued in all five populations, and was significant in grades 8 and 12, with little further change thereafter, except for a jump up among 12th graders in 2011 and among young adults in 2012. In 2012 use in all five populations was at very low rates of annual prevalence—particularly among college students (0.2%). These substantial declines occurred during a period in which there were many stories in the media suggesting that methamphetamine use was a *growing* problem—an example of the importance of having accurate epidemiological data available against which to test conventional wisdom.

[8]In 2011 the question on perceived risk was modified to include Adderall and Ritalin as examples, which seems to have lowered the level of perceived risk (pep pills and bennies were deleted from the list of examples in 2011). These changes were included in the 2012 surveys.

[9]As discussed in appendix E of *Volume I*, the absolute prevalence rates for Ritalin are probably higher than the statistics indicate, but the trend story is likely quite accurate. See Table 2-2 for more accurate estimates of the absolute annual prevalence rates in recent years; these estimates are based on a new question that does not require the respondent to indicate some amphetamine use before being branched to a question about Ritalin use.

- Measures on the use of ***crystal methamphetamine*** (***ice***) (a crystallized form of methamphetamine that can be smoked, much like crack) have been included in MTF since 1990. The use of crystal methamphetamine increased between the early and late 1990s among the three populations asked about their use: 12th graders, college students, and young adults. However, use never reached very high levels. The estimates are less stable than usual due to the relatively small samples asked about this drug, but it appears that among 12th graders crystal methamphetamine use held fairly steady from 1999 through 2005 (when it was 2.3%); since then it has declined to 0.8% in 2012. Use rose somewhat among college students and other young adults until 2005, before dropping substantially since then. After their peak levels were reached in 2005, college students and young adults showed substantial drops in annual prevalence to 0.6% by 2012. (See Table 2-2.)

- ***Inhalants*** are defined as fumes or gases that are inhaled to get high, and they include common household substances such as glues, aerosols, butane, and solvents of various types. Among 12th graders there was a long-term gradual increase in the use of inhalants (unadjusted for nitrite inhalants) from 1976 to 1987, followed by a leveling for a few years and then a further increase in the early 1990s. This troublesome increase in inhalant use also occurred among students in the lower grades, and was followed by a reversal in all 3 grades after 1995. After reaching a low point by 2002 or 2003 in grades 8, 10, and 12, use of inhalants increased some in all grades, but then declined in all grades. Perceived risk for inhalant use among 8th and 10th graders declined fairly steadily after 2001, quite possibly as a result of generational forgetting of the dangers of these drugs; by 2012 the percent of 8th and 10th graders seeing great risk in trying inhalants fell by 11 and 8 percentage points. A new anti-inhalant campaign could well be effective in offsetting this decline in perceived risk in recent years, much as a similar campaign appeared to do in the mid-1990s.

- ***Amyl and butyl nitrites***, one class of inhalants, became somewhat popular in the late 1970s, but their use has been almost eliminated in the years since then. The annual prevalence rate among 12th-grade students was 6.5% in 1979 but only 0.9% in 2009. (Because of this decrease in use, and to allow for the addition of other questions, the questions on nitrite use were dropped from the study in 2010.) When nitrites were included in the definition of inhalants, they masked the increase that was occurring in the use of other inhalants, because their use was declining at the same time that the use of the other inhalants was increasing (Figure 5-4c in *Volume I*).

- ***Crack cocaine*** use spread rapidly from the early to mid-1980s. Still, among 12th graders, the use of crack remained relatively low during this period (3.9% annual prevalence in 1987). Clearly, crack had quickly attained a reputation as a dangerous drug, and by the time of our first measurement of perceived risk in 1987, it was seen as the most dangerous of all drugs. Annual prevalence dropped sharply in the next few years, reaching 1.5% by 1991, where it remained through 1993. Perceived risk began a long and substantial decline after 1990—again serving as a leading indicator of use. (The decline in perceived risk may be an example of generational forgetting.) Annual prevalence

among 12th graders rose gradually after 1993, from 1.5% to 2.7% by 1999. It finally declined slightly in 2000 and then held level through 2007. Since then, some additional decline has occurred, and in 2011 it showed a further, significant decline to 1.0%. In 2012 annual prevalence for crack cocaine was at 1.2%.

Among 8th and 10th graders, crack use rose gradually in the 1990s: from 0.7% in 1991 to 2.1% by 1998 among 8th graders, and from 0.9% in 1992 to 2.5% in 1998 among 10th graders. And, as just discussed, use among 12th graders peaked in 1999 at 2.7% and among young adults at 1.4%. Since those peak years, crack use has declined appreciably—by more than half among 8th, 10th, and 12th graders—yet it held fairly steady among college students and young adults, at least until 2007, when use among college students finally began to decline. The 2012 prevalence rates for this drug are relatively low—between 0.3% and 1.2% in all five groups. Twelfth graders have the highest prevalence rate. Annual crack prevalence among the college-bound has generally been considerably lower than among those not bound for college (e.g., 0.7% for college-bound vs. 2.4% for non-college-bound in 2011) but in 2012 the difference had diminished (1.0% for the college-bound and 1.9% for the non-college-bound).

We believe that the particularly intense and early media coverage of the hazards of crack cocaine likely had the effect of capping an epidemic early by deterring many would-be users and motivating many experimenters to desist use. As has been mentioned, when we first measured crack use in 1987, it had the highest level of perceived risk of any illicit drug. Also, it did not turn out to be "instantly addicting" upon first-time use, as had been widely reported. In some earlier years, 1994 and 1995 for example, 3% of 12th graders reported ever trying crack; however, only about 2% used in the prior 12 months and only about 1.0% used in the prior 30 days. It thus appears that, among the small numbers of 12th graders who have ever tried crack, the majority did not establish a pattern of continued use, let alone develop an addiction.

Perceived risk and disapproval associated with crack dropped in all three grade levels in 1993, foretelling the rise in use that occurred in all three grades between 1994 and 1999 in the case of the 12th graders. Because more than a decade had passed since the 1986 media frenzy over crack and its dangers, it is quite possible that generational forgetting of the risks of this drug contributed to the declines in perceived risk and disapproval. Indeed, perceived risk of crack use eroded steadily at all grade levels from 1991 (or 1992 for 12th graders) through 2000. There was not much systematic change in risk or disapproval of crack after that, though disapproval did rise some in all grades and perceived risk has increased some among the 12th graders since 2009.

- Use of ***cocaine***[10] in general began to decline a year earlier than crack, probably because crack was still in the process of diffusing to new parts of the country, being still quite new. Between 1986 and 1987 the annual prevalence rate for cocaine dropped

[10]Unless otherwise specified, all references to cocaine concern the use of cocaine in any form, including crack.

dramatically, by about one fifth in all three populations being studied at that time—12th graders, college students, and young adults. The decline occurred when young people finally began to view experimental and occasional use—the type of use in which they are most likely to engage—as more dangerous. This change was probably influenced by the extensive media campaigns that began in the preceding year, but also almost surely by the highly publicized cocaine-related deaths in 1986 of sports stars Len Bias and Don Rogers. By 1992 the annual prevalence of cocaine use had fallen by about two thirds among the three populations for which long-term data are available (12th graders, college students, and young adults).

During the resurgence of illicit drug use in the 1990s, however, cocaine use in all five populations increased some, both beginning and ending in a staggered pattern by age, consistent with a cohort effect. Use rose among 8th graders from 1991 to 1998, among 10th and 12th graders from 1992 to 1999, among college students from 1994 to 2004, and among young adults from 1996 through 2004. As with crack, all five populations showed some decline in cocaine use in 2008 through 2011 with little change in 2012. Annual prevalence rates in 2012 were 1.2%, 2.0%, 2.7%, 3.1%, and 4.1% for the five populations, respectively. For a few years (1996–1999) 12th graders had higher prevalence rates than did the young adults; but because of the staggered declines in use, young adults have had the highest prevalence rates in all years since then (see Table 2-4).

The story regarding attitudes and beliefs about cocaine use is informative. Having risen substantially after 1986, the perceived risk of using cocaine showed some (nonsignificant) decline in 1992 among 12th graders. In 1993, perceived risk for cocaine powder fell sharply in all grades and disapproval began to decline in all grades, though not as sharply as perceived risk. During this time cocaine use was making a comeback. The decline in perceived risk had virtually ended by 1995 among 8th graders, by 1998 among 10th graders, and by 2001 among 12th graders, suggesting a cohort effect at work in this important belief, which tends to drive use.

The perceived availability of cocaine among 12th graders rose steadily from 1983 to 1989, suggesting that availability played *no* role in the substantial downturn in use that occurred after 1986. After 1989, however, perceived availability fell some among 12th graders—which may be explained in part by the greatly reduced proportions of 12th graders who said they have any friends who use, because friendship circles are an important part of the supply system.

- ***PCP*** use fell sharply among 12th graders between 1979 and 1982, from an annual prevalence of 7.0% to 2.2%. It reached a low point of 1.2% in 1988, rose some in the 1990s during the relapse period in the drug epidemic, reaching 2.6% by 1996, and then declined to 1.1% by 2002, with little change thereafter (0.9% in 2012). For young adults, the annual prevalence rate has fluctuated between 0.1% and 0.6%, but has remained quite low since 2002.

- Looking at the long-term trends, we see that the annual prevalence of ***heroin*** use among 12th graders fell by half between 1975 (1.0%) and 1979 (0.5%), then stabilized for 15

years, through 1994. Heroin use was also stable in the early 1990s among the other four populations covered here. Then, in 1994 for 8th graders and in 1995 for all other groups, use suddenly increased, with rates doubling or tripling in one or two years for 12th graders, college students, and young adults, and then remaining at the new higher levels among all five populations for the rest of the decade. After the period 1999 to 2001, heroin use fell back to lower levels than were observed in the mid- to late-1990s. Most of that decline was in heroin use without a needle, which we believe was largely responsible for the increase in use in the first half of the 1990s. In sum, all age groups except for the young adults had annual prevalence rates of heroin use in 2012 that were well below recent peaks (by roughly one half to two thirds). Young adults have still remained at peak rates (0.5–0.6% in 2008–2012), perhaps due in part to a cohort effect working its way up the age spectrum. Twelfth graders did show a significant increase to 0.9% annual prevalence in 2010 for heroin use with a needle, though there was no evidence of such an increase in any of the other four populations, which left us cautious about that finding. However, the 2011 rate provided some confirmation that an increase did occur—annual prevalence was at 0.6%, which, except for 2010, was higher than any rate reported since 1995 when this question was first asked. There is little evidence of any ongoing trend at present—indeed, the 12th graders' annual prevalence for heroin use with a needle was down to 0.4% in 2012, suggesting that if there was an increase in use, it was short lived.

Two factors very likely contributed to the upturn in heroin use in the 1990s. One is a long-term decline in the perceived risk of harm, probably due to generational forgetting, because it had been a long time since the country had experienced a heroin epidemic along with accompanying publicity about its casualties. The second factor, not unrelated to the first, is that in the 1990s the greatly increased purity of heroin allowed it to be used by means other than injection. This may have lowered an important psychological barrier for some potential users, making heroin use less aversive and seemingly less addictive and less risky in general, because avoiding injection reduces the likelihood of transmission of HIV, hepatitis, or other serious blood-borne diseases. By introducing some new questions on heroin use in 1995, we were able to show that significant proportions of past-year users in all five populations were indeed taking heroin by means other than injection at that point (see Table 2-2 and chapter 4 in both *Volume I* and *Volume II* for details).

The risk perceived to be associated with heroin fell for more than a decade after the study began, with 60% of the 1975 twelfth graders seeing a great risk of trying heroin once or twice, and only 46% of the 1986 twelfth graders saying the same. Between 1986 and 1991, perceived risk rose some, from 46% to 55%, undoubtedly reflecting the newly recognized threat of HIV infection associated with heroin injection. After 1991, however, perceived risk began to fall once again (to 51% by 1995), this time perhaps reflecting the fact that the newer heroin available on the street could be administered by methods other than injection. Between 1996 and 1998, perceived risk among 12th graders rose—possibly as the result of an anti-heroin campaign launched by the Partnership for a Drug-Free America in June 1996, as well as the visibility of heroin-related deaths of some celebrities in the entertainment and fashion design worlds (what we call the "unfortunate role models"). The perceived risk of trying heroin decreased among 12th graders in 1999,

however, foretelling a significant increase in their use of the drug in 2000. In 2001, as the perceived risk of trying heroin increased slightly, 12th-graders' use declined significantly. In recent years there has been little systematic change in the perceived risk of heroin use.

Questions about the degree of risk perceived to be associated with heroin use were introduced into the questionnaires for 8th and 10th graders in 1995. The questions asked specifically and only about use "without using a needle" because we thought this was the form of heroin use of greatest concern at that point. (Similar questions were asked of 12th graders, as well, in one of the six questionnaire forms used in 12th grade.) In general, perceived risk for ***heroin use without a needle*** began rising after 1995, leveled for awhile, and then began rising further. Perceived risk held fairly steady among 8th and 10th graders since it was first measured, at least until 2010, when 8th graders showed some decline in perceived risk associated with this behavior.

- The use of ***narcotics other than heroin*** is reported only for 12th graders and older populations because we believe that younger students are not accurately discriminating among the drugs that should be included or excluded from this general class. Use declined gradually over most of the first half of the study in these three older groups. Twelfth graders had an annual prevalence rate in 1977 of 6.4%, which fell to 3.3% by 1992. But after about 1992 or 1993, all of the older age groups showed continuing increases for a decade or more, through 2003 or 2004, before stabilizing. An updating of the list of examples given in the question stem in 2002 (to include Vicodin and OxyContin) led to an increase in reported prevalence. After a considerable increase in use from 1992 through 2001, during the relapse phase of the general epidemic and going beyond it, the use of narcotics other than heroin remained relatively constant at high levels through 2010; it then showed some decline in 2011 and 2012 among college students and young adults, and in 2012 among 12th graders (Table 2-2).

  The specific drugs in this class are listed in Table E-4 in appendix E of *Volume I*. Among these, ***Vicodin***, ***codeine***, ***OxyContin***, and ***Percocet*** are commonly mentioned by 12th graders in recent years.

- In 2002, specific questions were added for ***Vicodin*** and ***OxyContin***, and the observed prevalence rates suggest that these two drugs likely help to account for the upturn in use of the general class of narcotics other than heroin. In 2003, Vicodin had attained surprisingly high prevalence rates in the five populations under study here—an annual prevalence of 2.8% in 8th grade, 7.2% in 10th grade, 10.5% in 12th grade, 7.5% among college students, and 8.6% among young adults. In 2012 the rates were down some in all age groups: 1.3%, 4.4%, 7.5%, 3.8%, and 6.3%, respectively. OxyContin started with lower annual prevalence rates than those for Vicodin across all age groups in 2002 but given the highly addictive nature of this narcotic drug, the rates were not inconsequential. Annual prevalence for OxyContin increased in 2003 with slight further increases and leveling through 2011. In 2012 it dropped somewhat in all five populations to annual prevalence rates below the 2003 levels: 1.6%, 3.0%, 4.3%, 1.2%, and 2.3% for 8th, 10th, and 12th grades, college students, and young adults. OxyContin use showed significant

increases in 2009 among college students and young adults; but these were more than offset by significant decreases in 2010, suggesting that the 2009 values were overestimates (attributable to sampling error). (None of the changes in OxyContin use seen in 2011 or 2012 reached statistical significance.) Because OxyContin has received considerable adverse publicity in recent years, it is possible that perceived risk (which we did not measure for this drug until 2012) will increase. But because its use appears to have originated in several fairly delimited geographic areas, it seems likely that OxyContin was diffusing to new communities for some time, which may have delayed its turnaround in use. We believe a similar process happened earlier when crack and ecstasy use were rising. Questions on perceived risk of Vicodin and OxyContin were added to the 8th and 10th grade questionnaires in 2012.

- Annual prevalence of ***tranquilizer*** use among 12th graders saw a long and substantial decline from 11% in 1977 to 2.8% in 1992. After 1992, use increased significantly among 12th graders (as has been true with most drugs), reaching 7.7% in 2002 (but the question was revised slightly in 2001 to include Xanax as an example of a tranquilizer, so a small portion of the increase may be an artifact). Since then, annual prevalence has leveled or even dropped a bit (5.3% in 2012). Reported tranquilizer use also increased modestly among 8th graders, from 1.8% in 1991 to 3.3% in 1996, before declining to 2.6% in 1998. It remained between 2.4% and 2.8% until 2011, when it declined significantly to 2.0%. It was at 1.8% in 2012. As with a number of other drugs, the downturn in use began considerably earlier among 8th graders compared to their older counterparts. Among 10th graders, annual prevalence remained stable between 1991 and 1994 at around 3.3%, and then increased significantly to 7.3% by 2001 (possibly including some artifact, as noted above). Since 2001 tranquilizer use has declined very gradually in all three grades. After a period of stability, college student use showed an increase between 1994 and 2003 (to 6.9%), more than tripling in that period. Since then there has been a gradual decline there as well, to 3.4% by 2012. For the young adult sample, after a long period of decline, annual prevalence more than doubled between 1997 and 2002, with little change thereafter (5.3% in 2012). Thus, while there was a considerable increase in use in all five populations, which reflected in part a cohort effect that first began in the early 1990s among 8th graders, that increase is clearly over and there has been some downward correction in recent years. Most of the reported tranquilizer use in recent years has involved ***Valium***, ***Xanax***, and more recently ***Klonopin*** (see Table E-3 in appendix E of *Volume I*).

- The long-term gradual decline in ***sedative*** (***barbiturate***) use among 12th graders, which has been observed since the start of the study in 1975, halted in 1992. (Data are not included here for 8th and 10th graders, again because we believe that these students have more problems with proper classification of the relevant drugs.) Use among 12th graders then rose considerably during the relapse phase in the drug epidemic, from 2.8% in 1992 to 6.7% by 2002—but still well below the peak rate of 10.7% in 1975; use has shown a modest improvement since 2002 (4.5% in 2012). The 2012 annual prevalence of this class of drugs was lower among young adults (2.7%) and college students (2.2%) than among 12th graders. Use among college students began to rise a few years later than it did among 12th graders, again likely reflecting a cohort effect, but in 2011 it was at its

lowest point since 1998. There followed a small increase in 2012. Among young adults, sedative (barbiturate) use increased since the early 1990s, rising from 1.6% in 1992 to 4.4% in 2004. It stands at 2.7% in 2012, after declining in the past four years.

- ***Methaqualone***, although another sedative drug, has shown a trend pattern quite different from barbiturates. Methaqualone use rose among 12th graders from 1975 to 1981, when annual prevalence reached 7.6%. Its use then fell sharply, declining to 0.2% by 1993 before rising some during the general drug resurgence in the 1990s, although only to 1.1% by 1996. Prevalence rates have shown little consistent change since then, with use standing at 0.4% in 2012. Use also fell in the 1980s among young adults and college students, who had annual prevalence rates by 1989—the last year they were asked about this drug—of only 0.3% and 0.2%, respectively. In the late 1980s, shrinking availability may well have played a role in the decline, as legal manufacture and distribution of methaqualone ceased. Because of very low usage rates, only 12th graders are now asked about use of this drug. Methaqualone is one of the very few illegal drugs, the use of which has dropped to relatively negligible levels during the life of MTF. PCP is another.

- Clearly use of most of the several classes of ***psychotherapeutic drugs***—sedatives (barbiturates), tranquilizers, and narcotics other than heroin—has become a larger part of the nation's drug abuse problem. While the rise in use appears to have halted, most rates remain relatively high. During much of the 1990s and into the 2000s, we were seeing a virtually uninterrupted increase among 12th graders, college students, and young adults in the use of all of these drugs, which had fallen from favor from the mid-1970s through the early 1990s. These drugs continued to rise, even after the increase in use of most illegal drugs ended in the late 1990s and began to reverse.

- For many years, five classes of illicitly used drugs—***marijuana***, ***amphetamines***, ***cocaine***, ***LSD***, and ***inhalants***—had an impact on appreciable proportions of young Americans in their late teens and 20s. In 2012, twelfth graders showed annual prevalence rates for these drugs of 36.4%, 7.9%, 2.7%, 2.4%, and 2.9%, respectively, reflecting declines in most of them, especially LSD. Among college students in 2012, the comparable annual prevalence rates were 34.9%, 11.1%, 3.1%, 1.9%, and 1.5%; for all young adults the rates were 30.2%, 7.8%, 4.1%, 1.6%, and 1.1%. Because ***LSD*** use has fallen so precipitously since 2001 in all five populations, it no longer ranks as one of the major drugs of abuse, whereas ***narcotics other than heroin*** have become quite important due to the long-term rise in use that began in the 1990s. These narcotics now have annual prevalence rates of 5–8% among 12th graders, college students, and young adults. ***Tranquilizers*** have also become more important due to a similar rise in use, with prevalence rates in 2012 of about 3–5% across the same three populations, as have ***sedatives*** (***barbiturates***), with rates of 4.5%, 2.2%, and 2.7%, respectively. The increase in use of these prescription-type drugs, combined with the decline in use of many illegal drugs, means that the misuse of prescription-type drugs clearly has become a more important part of the nation's drug problem.

- ***Ecstasy*** (***MDMA***) joined this set of long-established, more prevalent drugs for a period of time, but annual prevalence rates for ecstasy dropped considerably between 2000 and 2009, making ecstasy less prevalent than a number of other illicit drugs. In 2012 annual use declined significantly for all three grades. The 2012 rates are less than half the peak rates in 2001.

- In 8th grade, ***inhalants*** rank second only to marijuana among the illicitly used drugs in terms of thirty-day, annual and lifetime prevalence. Because the use of inhalants reflects a form of illicit psychoactive drug use, and because of its importance among the younger adolescents, an additional index of "any illicit drug use including inhalants" was introduced in Tables 2-1 through 2-3. The inclusion of inhalants makes relatively little difference in the illicit drug index prevalence rates for the older age groups, but considerable difference for the younger ones. For example, in 2012 the proportion of 8th graders reporting any illicit drug use in their lifetime, exclusive of inhalants, was 19%, whereas including inhalants raised the figure to 25%.

- Several drugs have been added to MTF's coverage in recent years, and they are all discussed in *Volumes I* and *II*. These include ***ketamine***, ***GHB***, and ***Rohypnol***, which are so-called "club drugs" (in addition to LSD and ecstasy). In general, these drugs have low prevalence rates that have declined over the past several years among 8th, 10th, and 12th graders. For that reason GHB and ketamine were dropped from the 8th and 10th grade surveys in 2012. For 12th graders, the 2012 annual prevalence rate was 1.5% for ***ketamine*** and 1.4% for ***GHB***. Annual prevalence of ***Rohypnol*** was 0.4% for 8th graders and 0.5% for 10th graders in 2012. (The Rohypnol question for 12th graders was changed in 2002 and in 2012 stood at 1.5%.) There was little change this year in the use of these three drugs.

- The two narcotic drugs added to our coverage in 2002—***OxyContin*** and ***Vicodin***—show considerably higher prevalence rates, as noted earlier.

- In 2009 a question on past-year use of ***Adderall***, an amphetamine used to treat ADHD, was added to the MTF study for all three grades and for the follow-up respondents. The 2012 annual prevalence rates were 1.7%, 4.5%, 7.6%, 9.0%, and 7.4% for 8th graders, 10th graders, 12th graders, college students, and young adults, respectively. The high rate of use among college students likely stems from its being used to stay awake and alert while studying for exams and doing assigned course work. Adderall use has not shown a clear trend in most of the five populations in the past four years, with the exception that it has been rising among 12th graders, from 5.4% in 2009 to 7.6% in 2012. This increase could reflect a greater use of this drug among high school seniors attempting to enhance their academic performance, much as college students appear to have been doing for at least several years.

- Questions on use of ***Provigil*** (a prescription stay-awake drug used for narcolepsy, shift work, etc.) were added to the 12th-grade and follow-up questionnaires in 2009. In 2011 rates of Provigil use in the past year by 12th graders, college students, and young adults

were 1.5%, 0.2%, and 0.3%, respectively, suggesting that this drug had not made serious inroads in terms of non-medically supervised use. Given the low use, questions on Provigil were dropped from the study in 2012.

- Questions on use of ***salvia*** (a plant-based psychoactive drug with dissociative effects, which is currently legal in most states) also were added to the 12th-grade and follow-up questionnaires in 2009. Salvia was added to the 8th and 10th grade questionnaires in 2010. Unlike Provigil, the rates for annual prevalence of salvia were not inconsequential; in 2011, the rates were 1.6% among 8th graders, 3.9% among 10th graders, 5.9% among 12th graders, 3.2% for college students, and 2.5% for young adults. But in 2012 the rates for salvia use declined in all five populations, significantly so in three of them, suggesting that the popularity of this drug may have peaked.

- ***Anabolic steroid*** use occurs predominantly among males. In 2012 the annual prevalence rates for males in 8th, 10th, and 12th grades were 0.8%, 1.3%, and 1.7%, compared with 0.3%, 0.4%, and 0.7% for females. Between 1991 and 1998, the overall annual prevalence rate was fairly stable among 8th and 10th graders, ranging between 0.9% and 1.2%. In 1999, however, use jumped from 1.2% to 1.7% in both grades. Almost all of that increase occurred among males, from 1.6% in 1998 to 2.5% in 1999 in 8th grade and from 1.9% to 2.8% in 10th grade. Thus, rates among males increased by about half in a single year, which corresponded to stories in the news media about the use of androstenedione, a steroid precursor, by baseball home-run king Mark McGwire. Since then, among all 8th graders, anabolic steroid use has declined by almost two thirds to 0.6% in 2012. Among 10th graders, use continued to increase, reaching 2.2% in 2002, suggesting a cohort effect, but then declined by more than half to 0.8% by 2012. Among 12th graders, annual prevalence rose significantly to 2.4% in 2001, but then decreased to 1.3% by 2012. Use generally has been much lower among college students and young adults, and has declined to 0.3–0.4%% annual prevalence in 2012 in these groups.

- Two other substances used primarily by males to develop physique and physical strength were added to the question set in 2001. One is ***androstenedione,*** a precursor to anabolic steroids and available over the counter until early 2005. Among males, where use has tended to be more concentrated, the 2012 annual prevalence rates were 0.7%, 1.3%, and 1.3% in grades 8, 10, and 12, respectively. Among females, the rates were 0.3%, 0.5%, and 0.6%. As discussed in chapter 10 of *Volume I*, the proportion of young males who report past-year use of ***androstenedione*** and/or ***steroids*** was appreciable. In 2001, when the "andro" question was introduced, the annual prevalence rate for androstenedione and/or steroids was 8.0% for 12th-grade boys. The rate fell considerably in all three grades since then; in 2012 it was 2.2% among 12th-grade boys.

- ***Creatine*** is another substance taken to enhance physique; it is not classified as a drug but rather as a type of protein supplement. Because we believed its use was often combined with the use of steroids and androstenedione, we introduced a question on it in 2001 and found prevalence of use to be very high. Among males, who again are the primary users, the 2012 annual prevalence for creatine was 2.9%, 13.1%, and 17.9% in grades 8, 10, and

12. In other words, one in every six 12th-grade boys used creatine in the prior year. For girls, the rates were far lower at 0.8%, 1.0%, and 1.1%, respectively.

- Beginning in 1982, MTF included a set of questions about the use of *nonprescription* stimulants, including stay-awake pills, diet pills, and the so-called "look-alikes" (see chapter 10 of *Volume I* for more detailed findings). One important finding shown in that chapter (Table 10-3) is that the use of each of these over-the-counter substances is correlated positively with the respondent's use of illicit drugs. *In other words, there is a more general propensity to use or not use psychoactive substances, regardless of their legal status.*[11]

- The annual prevalence among 12th graders of over-the-counter ***stay-awake pills***, which usually contain caffeine as their active ingredient, nearly doubled between 1982 and 1988, increasing from 12% to 26%. After 1988 this statistic fell considerably reaching 3.2% by 2010, the lowest level ever reported. Use rose slightly since then, to 3.8% in 2012.

- The ***look-alike stimulants*** have also shown considerable falloff since we first measured their use in 1982. Among 12th graders, annual prevalence decreased from 10.8% in 1982 to 5.2% in 1991. Their use rose only slightly during the relapse phase of the illicit drug epidemic in the 1990s, reaching 6.8% in 1995—roughly where it stayed through 2001. Since then the use of look-alikes decreased to 1.7% by 2010, the lowest level ever reported. Its use increased slightly since then, to 2.1% in 2012.

- Among 12th graders, annual prevalence rates for over-the-counter ***diet pills*** have fluctuated widely over the life of the study. Annual prevalence declined from 21% in 1983 to 8% a decade later, increased to 15% by 2002, then declined significantly to 4.3% by 2010, the lowest point since the questions were added in 1982. Use of this class of drugs increased in 2012, to 5.5%. Among 12th-grade girls in 2012 substantial proportions were using over-the-counter diet pills--10.6% had tried diet pills by the end of senior year, 7.0% used them in the past year, and 4.2% used them in just the past 30 days.

- One additional type of over-the-counter drug was added to the 8th-, 10th-, and 12th-grade questionnaires in 2006—***dextromethorphan***, a cough suppressant found in many cough and cold medications. Respondents were asked, "How often have you taken cough or cold medicines to get high?" The proportions indicating such use in the prior 12 months were 4%, 5%, and 7% in grades 8, 10, and 12 in 2006—not inconsequential proportions. In 2012, the rates were similar (3%, 5%, and 6%). The 12th graders did show a significant 1.2 percentage-point decline in 2011 but there was little change in 2012.

[11]For a more extended discussion and documentation of this point, see Johnston, L.D. (2003). Alcohol and illicit drugs: The role of risk perceptions. In Dan Romer (Ed.), *Reducing adolescent risk: Toward an integrated approach* (pp. 56-74). Thousand Oaks, CA: Sage. Available at http://www.monitoringthefuture.org/pubs/chapters/ldj2003.pdf.

College–Noncollege Differences in Illicit Drug Use

- For analytic purposes, "college students" are defined here as those respondents one to four years past high school who are actively enrolled full-time in a two- or four-year college in March of the year of the survey. For nearly all categories of illicit drugs, college students show *lower* rates of use than their age-mates not in college. However, for a few categories of drugs—including ***any illicit drug***, ***marijuana***, and ***hallucinogens***—college students show annual usage rates that are about average for all high school graduates their age. (College students are about average on the index of any illicit drug use because they have average rates of marijuana use, which largely drives the index.)

- Although college-bound 12th graders have generally had below-average rates of use on *all* of the ***illicit drugs*** while they were in high school, these students' eventual use of some illicit drugs attained equivalence with, or even exceeded, the rates of their age-mates who do not attend college. As MTF results have shown, this college effect of "catching up" is largely explainable in terms of differential rates of leaving the parental home after high school graduation and of getting married. College students are more likely than their age peers to have left the parental home, and they tend to defer marriage, leaving them comparatively less constrained.[12]

- In general, the substantial decline in ***illicit substance use*** among American college students after 1980 paralleled that of their age peers not in college. Further, for the 12-year period 1980 to 1992, all young adult high school graduates through age 28, as well as college students taken separately, showed trends that were highly parallel, for the most part, to trends among 12th graders (see chapter 9 of *Volume II*). However, after 1992 a number of drugs showed an increase in use among 12th graders (as well as 8th and 10th graders), but *not* among college students and young adults for some period of time.

  This divergence, combined with the fact that the upturn began first among 8th graders (in 1992), suggests that cohort effects were emerging for illicit drug use, as discussed earlier. Indeed, as those heavier using cohorts of 12th graders entered the college years, we saw a lagged increase in the use of several drugs in college. For example, annual prevalence reached a low point among 12th graders in 1992 for a number of drugs (e.g., ***cocaine***, ***amphetamines***, ***sedatives*** [***barbiturates***], ***tranquilizers***, ***narcotics other than heroin***, and ***any illicit drug other than marijuana***) before rising thereafter. Among college students, those same drugs reached a low two years later in 1994, and then began to rise gradually. Then, in 1998, as ***marijuana*** use already was declining in secondary school, we saw a sharp increase in its use among college students. Consistent with our earlier predictions, the evidence for cohort effects resulting from generational replacement is quite substantial.

[12]Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (1997). *Smoking, drinking, and drug use in young adulthood: The impacts of new freedoms and new responsibilities.* Mahwah, NJ: Lawrence Erlbaum Associates. See also Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Bryant, A. L., & Merline, A. C. (2002). *The decline of substance use in young adulthood: Changes in social activities, roles, and beliefs.* Mahwah, NJ: Lawrence Erlbaum Associates.

Male–Female Differences in Substance Use

- Regarding gender differences in the three older populations (12th graders, college students, and young adults), males are more likely to use most *illicit drugs*, and the differences tend to be largest at the higher frequency levels. For example, 2012 ***daily marijuana*** use rates among 12th graders are 9.1% for males versus 3.6% for females; among all young adults (ages 19 to 30) the rates are 7.7% for males versus 3.9% for females; and among college students the rates are 8.1% for males versus 2.3% for females.

- The 8th- and 10th-grade samples evidence fewer and smaller gender differences in the use of drugs than the older populations—perhaps because girls tend to date and then emulate older boys, who are in age groups considerably more likely to use drugs. While the rate of prior-year ***marijuana*** use is slightly higher for males, the rate for the use of ***any illicit drug other than marijuana*** generally has tended to be slightly higher for females, though this difference did not hold in 2010 or 2012. There is little gender difference in 2012 among 8th and 10th graders in their use of ***LSD***, ***MDMA***, ***cocaine***, ***crack***, ***other cocaine***, ***heroin***, ***OxyContin***, ***Vicodin***, ***amphetamines***, ***Adderall***, ***methamphetamine***, and ***Rohypnol***. The use of ***inhalants***, ***tranquilizers***, ***alcohol***, and ***flavored alcoholic beverages*** is slightly higher among females in those grades. Alcohol used to the point of ***being drunk*** is slightly higher among females in 8th grade and among males in 10th grade.

TRENDS IN ALCOHOL USE

- Several findings about ***alcohol*** use in these age groups are noteworthy. First, despite the fact that it is illegal for virtually all secondary school students and most college students to purchase alcoholic beverages, they have had a substantial amount of experience with alcohol. Alcohol has been tried by 30% of 8th graders, 54% of 10th graders, 69% of 12th graders, 81% of college students, and 87% of young adults (19 to 28 years old). Current use (use in past 30 days) is also widespread. Most important, perhaps, is the prevalence of ***occasions of heavy drinking***—five or more drinks in a row at least once in the prior two-week period—which was reported by 5% of 8th graders, 16% of 10th graders, 24% of 12th graders, 37% of college students, and 36% of young adults who were surveyed in 2012. Heavy drinking peaks in the early 20s and recedes with age after that, reflected by the 33% rate found among 29- to 30-year-olds.

  Alcohol use did not increase as use of other illicit drugs decreased among 12th graders from the late 1970s to the early 1990s, although it was common to hear such a "displacement hypothesis" asserted. MTF demonstrates that the opposite seems to be true. After 1980, when illicit drug use was declining, the ***monthly prevalence of alcohol use*** among 12th graders also declined gradually, but substantially, from 72% in 1980 to 51% in 1992. ***Daily alcohol use*** declined by half over the same interval, from a peak of 6.9% in 1979 to 3.4% in 1992; the prevalence of drinking ***five or more drinks in a row*** during the prior two-week interval fell from 41% in 1983 to 28% in 1993—nearly a one-

third decline. When illicit drug use rose again in the 1990s, alcohol use (particularly binge drinking) rose some as well—albeit not as sharply as marijuana use. In the late 1990s, as illicit drug use leveled in secondary schools and began a gradual decline, similar trends were observed for alcohol. Therefore, long-term evidence indicates that alcohol use moves much more in concert with illicit drug use than counter to it. From 2007 through 2011, however, alcohol use continued its long term decline, reaching historic lows in the life of the study, whereas marijuana use was rising gradually. In 2012 the story became more complicated, with marijuana use still rising among college students, leveling among 12th graders and actually declining a bit among 8th and 10th graders. Thirty-day alcohol use rose in all groups except the 8th graders in 2012 (who had a significant decline of 1.7 percentage points); the increase of 4.2 percentage points among college students was significant.

College–Noncollege Differences in Alcohol Use

- Trends in ***alcohol*** use among college students are quite different than those for 12th graders or noncollege respondents of the same age as the college students (see Figure 9-14 in *Volume II*). From 1980 to 1993, college students showed considerably less drop-off in monthly prevalence of ***alcohol*** use (82% to 70%) than did 12th graders (72% to 51%), and also less decline in ***occasions of heavy drinking*** (from 44% to 40%) than either 12th graders (41% to 28%) or their noncollege age-mates (41% to 34%). Because both the noncollege 19- to 22-year-olds and high school students were showing greater declines, the college students stood out as having maintained a high rate of episodic heavy (or binge) drinking. Since 1993, this behavior has changed little among college students—their rate of binge drinking in 2012 was 37%, down modestly from their 1993 rate of 40%—and the rate among noncollege age-mates was at 30% in 2012—down from 34% in 1993. The 12th graders' rate, after increasing to 32% in 1998, dropped to 25% by 2006 where it remained through 2009; it then declined significantly to 22% in 2011—a new low—before increasing significantly to 24% in 2012. College students continue to stand out as having a relatively high rate of binge drinking, though at 37% it is still substantially below where it was in 1993.

  College-bound 12th graders are consistently less likely than their non-college-bound counterparts to report occasions of heavy drinking, yet the higher rates of such drinking among college students compared to noncollege peers indicate that these 12th graders catch up to and pass their peers in binge drinking after high school graduation. As stated above, we have shown that this differential change after high school is largely attributable to the fact that college students are more likely to leave the parental home and less likely to get married in the four years after high school graduation than their age mates. An MTF journal article also shows that membership in a fraternity or sorority is associated with a greater than average increase in heavy episodic drinking and marijuana use in college.[13]

[13]McCabe, S. E., Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Kloska, D. D. (2005). Selection and socialization effects of fraternities and sororities on U.S. college student substance use: A multi-cohort national longitudinal study. *Addiction, 100,* 512–524.

- Since 1980, college students have generally had ***daily drinking*** rates that were slightly lower than their age peers, suggesting that they were more likely to confine their drinking to weekends, when they tend to drink a lot. The rate of daily drinking among the *noncollege* group fell from 8.3% in 1980 to 3.2% in 1994, rose to 5.8% by 2000, and dropped to 3.9% in 2012. Daily drinking by the *college* group also dropped in approximately the same time period, from 6.5% in 1980 to 3.0% in 1995, then increased to 5.0% in 2002; since then it has been between 3.6% and 4.6%.

Male–Female Differences in Alcohol Use

- Given that the physiological impacts of five drinks are considerably greater for the typical young female versus the typical young male, it is not surprising that we find substantial gender differences in the prevalence of having ***five or more drinks in a row***. Among 12th graders, the rates in 2012 are 20% for females versus 27% for males. This difference has generally been diminishing since MTF began; in 1975 there was a 23-percentage-point difference, versus a 7-point difference in 2012. The proportions indicating in 2012 that they have ***been drunk*** in the prior 30 days are only slightly closer at 25% and 31% for females and males, respectively.

- Among college students and young adults generally, there are also substantial gender differences in alcohol use, with college males drinking the most. In 2012, for example, 41% of college males reported having ***five or more drinks in a row*** over the previous two weeks versus 34% of college females. Since MTF began, this gender difference has narrowed gradually, with the rate declining somewhat for males and increasing somewhat for females.

- College males report considerably higher rates of ***daily drinking*** than college females (4.7% vs. 3.3% in 2012). A similar gender difference also exists in the noncollege group (4.9% vs. 3.2% in 2012).

TRENDS IN CIGARETTE SMOKING

A number of very important findings about ***cigarette smoking*** among American adolescents and young adults have emerged during the life of the study, and we believe that one of the study's more important contributions to the long-term health of the nation has been to document and call public attention to these trends. Despite the demonstrated health risks associated with smoking, young people have continued to establish regular cigarette habits during late adolescence in sizeable proportions, and, during the first half of the 1990s, in rapidly growing proportions. In fact, since MTF began in 1975, cigarettes have consistently remained the class of abusable substances most frequently used on a daily basis by high school students.

- During most of the 1980s, when smoking rates were falling steadily among adults, we reported that smoking among adolescents was *not* declining. Then the situation went from bad to worse. Among 8th and 10th graders, the ***current*** (***past 30-day***) ***smoking*** rate increased by about half between 1991 (when their use was first measured) and 1996; among 12th graders, the current smoking rate rose by nearly one third between 1992 and

1997. MTF played an important role in bringing these disturbing increases in adolescent smoking to public attention during those years, which was the historical period in which major social action was initiated in the White House, the Food & Drug Administration, the Congress, and eventually the state attorneys general, culminating in the 1998 Tobacco Master Settlement agreement between the industry and the states.

Fortunately—and largely as a result of that settlement, we believe—there have been some important declines in current smoking since 1996 among 8th and 10th graders, and since 1997 among 12th graders. In fact, the declines more than offset the increases observed earlier in the 1990s. In 2009, 7% of 8th graders (down from 14% in 1991 and 21% in 1996) reported smoking one or more cigarettes in the prior 30 days—a decline of two thirds from the recent peak rate. Some 13% of 10th graders were current smokers in 2009 (down from 21% in 1991 and 30% in 1996), representing a drop of nearly six tenths from the recent peak rate. And in 2010, 19% of 12th graders were current smokers (versus 28% in 1991 and 37% in 1997), representing a drop of nearly half from the recent peak. In recent years these declines decelerated, however, and in 2010 they stopped among 8th and 10th graders. Fortunately, there was some further decline in 2011 and 2012 in all three grades under study. Daily use for all three grades is now at the lowest point since recent peaks in 1996 (for 8th and 10th graders) and 1997 (for 12th graders).

Several of the important attitudinal changes that accompanied these declines in use ended some years ago, leading us to conclude that further improvement in smoking rates will likely have to come from changes in the environment—for example, enacting such policies as tobacco tax increases, further reducing the places in which smoking is permitted, and providing effective quit-smoking programs. In 2009, federal taxes on tobacco products were in fact raised, which may well have contributed to the resumption of declines in use starting in 2011. Despite these very important improvements in the past decade and a half, nearly one fifth (17%) of young Americans are current smokers by the time they complete high school. Other research consistently shows that smoking rates are substantially higher among those who drop out before graduating, so the estimates here, based on high school seniors, are low for the age cohort as a whole.[14]

Among college students, the peak rate in current smoking (31%) was not reached until 1999—reflecting a cohort effect—after which it declined moderately to 24% in 2005. In 2006 a significant decline brought it down to 19%. By 2012 current smoking among college students stood at 13%, having fallen more than half since 1999. Young adults 19 to 28 years old have shown more modest change in rates of current smoking between 2001 (30%) and 2012 (20%)—a decline of one third including a significant decrease in 2012. However, we would expect that, as the cohort effects continue to work their way up the age spectrum, smoking will decrease more in this age group as well.

[14]For a recent analysis showing much higher smoking rates among 8th graders who later dropped out before completing high school, see Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008). *The education–drug use connection: How successes and failures in school relate to adolescent smoking, drug use, and delinquency*. New York: Lawrence Erlbaum Associates/Taylor & Francis.

- The dangers that survey participants perceive to be associated with ***pack-a-day smoking*** differ greatly by grade level, and seem to be unrealistically low at all grade levels. Currently, about three quarters of 12th graders (78%) think that pack-a-day smokers run a great risk of harming themselves physically or in other ways, but only 63% of the 8th graders think the same. All three grades showed a decrease in perceived risk between 1993 and 1995, as use was rising rapidly, but a slightly larger and offsetting increase in perceived risk occurred between 1995 and 2000, presaging the subsequent downturn in smoking. After 2000 there was a slight upward drift in perceived risk at all three grade levels, but it leveled off after 2004 in the lower grades and after 2006 at 12th grade. In recent years the upward drift has resumed in all three grades.

- Disapproval of ***cigarette smoking*** was in decline for a considerable period: from 1991 through 1996 among 8th and 10th graders, and from 1992 to 1996 among 12th graders. Since then there was a fairly steady increase in disapproval of cigarette smoking in all three grades—at least until 2007 or 2008, when the increase halted. In 2011 and 2012 all three grades showed some further increase in the proportions of students disapproving of smoking. Undoubtedly the heavy media coverage of the tobacco issue (the settlement with the state attorneys general, the congressional debate, the eventual state settlements, etc.) had an important influence on these attitudes and beliefs. However, that coverage diminished considerably in 1998, raising the question of whether those changes in youth attitudes would continue. It may well be, of course, that the removal of certain kinds of cigarette advertising and promotion, combined with national- and state-level antismoking campaigns and subsequent significant increases in cigarette prices, have served to sustain and prolong these changes. In terms of media effects, MTF has shown important changes, including more recent substantial declines, in reported recall by students of antismoking ads resulting from both state and national campaigns.[15]

Age- and Cohort-Related Differences in Cigarette Smoking

- Initiation of smoking occurs most often in grades 6 through 9 (i.e., at modal ages 11–12 to 14–15), although according to the 2012 eighth graders, 5% had already initiated smoking before grade 6. The initiation rate trails off considerably by 12th grade, although, as we have shown in our follow-up studies, a number of the light smokers in 12th grade make the transition to heavy smoking in the first two years after high school. Analyses presented in this volume and elsewhere have shown that cigarette smoking evidences a clear cohort effect. That is, if a class (or birth) cohort establishes an unusually high rate of smoking at an early age relative to other cohorts, the rate is likely to remain high throughout the life cycle relative to that of other birth cohorts at equivalent ages.

- As we reported in the "Other Findings from the Study" chapter in the 1986 volume in this series, some 53% of 12th graders who were half-pack-a-day (or more) smokers in senior

[15]Johnston, L. D., Terry-McElrath, Y. M., O'Malley, P. M., & Wakefield, M. (2005). Trends in recall and appraisal of anti-smoking advertising among American youth: National survey results, 1997–2001. *Prevention Science, 6,* 1–19. Also unpublished data.

year in 1985 said that they had tried to quit smoking but could not. Of those who had been daily smokers in 12th grade, nearly three quarters were still daily smokers seven to nine years later (based on the 1985 follow-up survey), despite that in high school only 5% thought they would "definitely" be smoking five years hence. A subsequent analysis, based on the 1995 follow-up survey, showed similar results. Nearly two thirds (63%) of those who had been daily smokers in 12th grade were still daily smokers seven to nine years later, although in high school only 3% of them had thought they would "definitely" be smoking five years hence. Clearly, the smoking habit is established at an early age, is difficult to break for those young people who have initiated use, and young people greatly overestimate their own ability to quit. Additional data from 8th- and 10th-grade students show us that younger adolescents are even more likely than older ones to seriously underestimate the dangers of smoking.

- MTF surveys of 8th and 10th graders also show that cigarettes are readily available to teens in 2012, even though perceived availability has been dropping for some years in these two grades; 51% of 8th graders and 73% of 10th graders say that cigarettes would be "fairly easy" or "very easy" for them to get, if they wanted them. There was little change in reported availability between 1992 (when these questions were first asked) and 1997. After that, however, perceived availability of cigarettes decreased significantly for 8th and 10th graders, quite likely reflecting the impact of new regulations and related enforcement efforts aimed at reducing the sale of cigarettes to children (including the Synar amendment, which required states to pass and enforce laws prohibiting the sale and distribution of tobacco products to persons under 18).[16] (Twelfth graders are not asked this question.)

College–Noncollege Differences in Cigarette Smoking

- A striking difference in smoking rates has long existed between college-bound and non-college-bound 12th graders. For example, in 2012, smoking a half pack or more per day is nearly four times as prevalent among the non-college-bound 12th graders as among the college bound (9.5% vs. 2.6%). Among respondents of college age (one to four years past high school), those not in college also show dramatically higher rates of half-pack-a-day smoking than those who are in college—11.1% versus 2.4%, respectively. Clearly, these important differences precede college attendance.

- In the first half of the 1990s, smoking rose among college students and their same-age peers, although the increases were not as steep for either group as they were among 12th graders. But in 1998 and 1999, while smoking was declining among secondary school students at all grades, smoking continued to increase among college students and their noncollege age peers, reflecting the cohort effect from earlier, heavier smoking classes of 12th graders moving into the older age groups. Between 1991 and 1999, the 30-day prevalence of cigarette smoking by college students rose from 23% to 31%, or by about

[16]For a more detailed examination of recent changes in youth access to cigarettes, see Johnston, L. D., O'Malley, P. M., & Terry-McElrath, Y. M. (2004). Methods, locations, and ease of cigarette access for American youth, 1997–2002. *American Journal of Preventive Medicine, 27*, 267–276.

one third, and daily smoking rose from 14% to 19%, also by about one third. The year 2000 showed, for the first time in several years, a decline in college student smoking; that continued with a significant decline to 23% in 2003, and another significant decline to 19% in 2006. The rate in 2012 was 13%. (Because of the smaller numbers of cases in the college student samples, the trend lines are not always as smooth as they are for most of the other groups discussed here.) A much more modest decline has also been observed among their noncollege peers, but only since 2001; and the difference between their smoking rates and those of 12th graders in the same year have grown very large. A number of in-depth analyses of MTF panel data have revealed that the differences in smoking rates between those who do and do not attend college are evident by the end of 12th grade and have their roots in earlier educational successes and failures.[17]

Male–Female Differences in Cigarette Smoking

- In the 1970s, 12th-grade females caught up to and passed 12th-grade males in rates of ***current smoking***. Both genders then showed a decline in use followed by a long, fairly level period, with use by females consistently higher, but with the gender difference diminishing. In the early 1990s, another crossover occurred when rates rose more among males than females, and males have been consistently slightly higher in rates of current smoking since 1991 among 12th graders. In the lower grades, the genders have had similar smoking rates since their use was first measured in 1991, although in the past couple of years a small difference has emerged, with slightly more males smoking than females.

- Among college students, females had a slightly higher probability of being daily smokers from 1980 through 1994—although this long-standing gender difference was not seen among their age peers who were not in college. However, a crossover occurred between 1994 and 2001, with college males exceeding college females in daily smoking—an echo of the crossover among 12th graders in 1991. Since about 2001 there has been little consistent gender difference in smoking among college students.

RACIAL/ETHNIC COMPARISONS

The three largest ethnic groups in the population—Whites, African Americans, and Hispanics—are examined here for 8th, 10th, and 12th graders. (Sample size limitations simply do not allow accurate characterization of smaller racial/ethnic groups unless data from a number of years are combined. Separate publications from the study have done just that.) A number of interesting findings emerge from the comparison of these three groups; the reader is referred to chapters 4

[17]Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (1997). *Smoking, drinking, and drug use in young adulthood: The impacts of new freedoms and new responsibilities*. Mahwah, NJ: Lawrence Erlbaum Associates. Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Bryant, A. L., & Merline, A. C. (2002). *The decline of substance use in young adulthood: Changes in social activities, roles, and beliefs*. Mahwah, NJ: Lawrence Erlbaum Associates. Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008). *The education–drug use connection: How successes and failures in school relate to adolescent smoking, drinking, drug use, and delinquency*. New York: Lawrence Erlbaum Associates/Taylor & Francis.

and 5 of *Volume I* for a full discussion and to MTF Occasional Paper 79[18] for both tabular and graphic documentation of differences among these three ethnic groups across all drugs.[19]

- African-American 12th graders have consistently shown lower usage rates than White 12th graders for most drugs, both licit and illicit. At the lower grade levels, where few have yet dropped out of school, African-American students also have lower usage rates for many drugs, though not all. The differences are quite large for some drugs, including ***inhalants***, ***LSD*** specifically, ***hallucinogens other than LSD***, ***ecstasy*** (***MDMA***), ***salvia***, ***narcotics other than heroin***, ***OxyContin***, ***Vicodin***, ***amphetamines***, ***Ritalin***, ***Adderall***, ***sedatives*** (***barbiturates***), and ***tranquilizers***.

- African-American students currently have a much lower 30-day prevalence rate of ***cigarette smoking*** than do White students (9% vs. 21% among 12th graders in 2012), partly because the smoking rate among African-American students declined from 1980 to 1992, while the rate for White students remained fairly stable. After 1992, smoking rates rose among both White and African-American 12th graders, but less so among the latter. After 1996 (or 1998 in the case of 12th graders) smoking among White students showed a sharp and continuing decline in all three grades for some years, which considerably narrowed the smoking differences between the races, despite some decline among African Americans as well; but there remain substantial differences. Smoking rates among Hispanic students have tended to fall in between the other two groups in the upper grades, and track close to the White smoking rates at 8th grade.

- In 12th grade, ***occasions of heavy drinking*** are much less likely to be reported by African-American students (11%) than White (26%) or Hispanic students (22%).

- In 12th grade, of the three racial/ethnic groups, Whites have tended to have the highest rates of use on a number of drugs, including ***marijuana***, ***hallucinogens***, ***LSD*** specifically, ***hallucinogens other than LSD***, ***salvia***, ***narcotics other than heroin***,

[18]Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2013). Demographic subgroup trends among adolescents for forty-six classes of licit and illicit drugs, 1975–2012 (Monitoring the Future Occasional Paper No. 79). Ann Arbor, MI: Institute for Social Research, University of Michigan. Available at: http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf .

[19]We periodically publish comparisons that contain a number of the smaller racial/ethnic groups in the population, based on data combined for a number of contiguous years in order to attain adequate sample sizes. The first was Bachman, J. G., Wallace, J. M., Jr., O'Malley, P. M., Johnston, L. D., Kurth, C. L., & Neighbors, H. W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976–1989. *American Journal of Public Health, 81*, 372–377. More recent articles are: Bachman, J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Wallace, J. M., Jr. (2011). Racial/ethnic differences in the relationship between parental education and substance use among U.S. 8th-, 10th-, and 12th-grade students: Findings from the Monitoring the Future Project. *Journal of Studies on Alcohol and Drugs, 72*(2), 279-285. doi: 10.1037/a0031464; Wallace, J. M., Jr., Bachman J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Cooper, S. M. (2002). Tobacco, alcohol and illicit drug use: Racial and ethnic differences among U.S. high school seniors, 1976–2000. *Public Health Reports, 117 (Supplement 1)*, S67–S75; Wallace, J. M., Jr., Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Cooper, S. M., & Johnston, L. D. (2003). Gender and ethnic differences in smoking, drinking, and illicit drug use among American 8th, 10th, and 12th grade students, 1976–2000. *Addictions, 98*, 225–234; and Delva, J., Wallace, J. M., Jr., O'Malley, P. M., Bachman, J. G., Johnston, L. D., & Schulenberg, J. E. (2005). The epidemiology of alcohol, marijuana, and cocaine use among Mexican American, Puerto Rican, Cuban American, and other Latin American 8th-grade students in the United States: 1991–2002. *American Journal of Public Health, 95*, 696–702. See also Bachman, J. G., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (2010). *Impacts of parental education on substance use: Differences among White, African-American, and Hispanic students in 8th, 10th, and 12th grades (1999–2008)* (Monitoring the Future Occasional Paper No. 70). Ann Arbor, MI: Institute for Social Research. Available at http://www.monitoringthefuture.org/pubs/occpapers/occ70.pdf.

OxyContin specifically, ***Vicodin*** specifically, ***amphetamines***, ***Ritalin*** specifically, ***Adderall*** specifically, ***sedatives*** (***barbiturates***), ***tranquilizers***, ***alcohol***, ***getting drunk***, ***cigarettes***, and ***smokeless tobacco***.

- Hispanics have tended to have the highest usage rate in terms of annual prevalence in 12th grade for a number of the most dangerous drugs, such as ***crack*** and ***crystal methamphetamine*** (***ice***). From 2009 to 2012, Whites were highest for ***heroin*** use and from 2009 to 2011 African Americans were highest for ***heroin use with a needle***. In 2012 Whites and African Americans had the same rates for heroin use with a needle. (The difference between Whites and Hispanics appears to have been eliminated in 2012 for marijuana, salvia, and Ritalin as use by Hispanics has risen.) Further, in 8th grade, Hispanics have the highest rate of ***illicit drug*** use overall and the highest rates for most drugs. For example, in 8th grade, the 2012 annual prevalence of ***marijuana*** use for Hispanics is 17%, versus 10% for Whites and 12% for African Americans; the two-week prevalence of ***binge drinking*** is 10% for Hispanics, 5% for Whites, and 4% for African Americans. Hispanics have the highest rates of use for many drugs in 8th grade, but not for as many in 12th, which suggests that their considerably higher dropout rate (compared to Whites and African Americans) may change their relative ranking by 12th grade.

- With regard to trends, 12th graders in all three racial/ethnic groups exhibited a decline in ***cocaine*** use from 1986 through 1992, although the decline was less steep among African-American 12th graders because their earlier increase in use was not as large as the increase among White and Hispanic students.

- For virtually ***all of the illicit drugs***, the three groups have tended to trend in parallel. Because White 12th graders had the highest level of use on a number of drugs—including ***amphetamines***, ***sedatives*** (***barbiturates***), and ***tranquilizers***—they also had the largest declines; African Americans have had the lowest rates and, therefore, the smallest declines. As mentioned above, there is a convergence between Whites and Hispanics in 12th grade for ***marijuana***, ***salvia***, and ***Ritalin***.

For a more detailed consideration of racial/ethnic differences in substance use, see the last section of chapter 5 in *Volume I*.

DRUG USE IN EIGHTH GRADE

It is useful to focus specifically on the youngest age group in the study—the 8th graders, most of whom are 13 or 14 years old—in part because the worrisome levels of both licit and illicit drug use that they report help illustrate the nation's urgent need to continue to address the substance abuse problems among its youth. Further, it is a well-established fact that the earlier young

people start to use drugs, both licit and illicit, the more likely they are to experience adverse outcomes.[20,21,22]

- Among 8th graders in 2012, about one third (30%) reports having tried ***alcohol*** (more than just a few sips), and between one in seven or eight (13%) indicates having already been ***drunk*** at least once.

- About one sixth of 8th graders in 2012 (16%) has tried ***cigarettes***, and one in twenty (4.9%) reports having smoked in the prior month. Shocking to many adults is the fact that only 63% of 8th graders recognize that there is great risk associated with smoking one or more packs of cigarettes per day. While an increasing proportion of youth will recognize the risk by 12th grade, for many this is too late, because they will have developed a smoking habit by then.

- Among 8th grade males in 2012, 10.4% tried s***mokeless tobacco***, 4% used it in the past month, and 0.8% used it daily. Rates are much lower among females.

- One 8th grader in eight (12%) reports ever trying ***inhalants***, and 1 in 37 (2.7%) reports inhalant use in just the month prior to the 2012 survey. This is the only class of drugs for which use is substantially higher in 8th grade than in 10th or 12th grade.

- ***Marijuana*** has been tried by one in every six 8th graders (15%) and has been used in the prior month by about 1 in every 15 (6.5%). Some 1.1% use it on a daily or near-daily basis in 8th grade.

- A surprisingly large number of 8th graders (4.5%) say they have tried prescription-type ***amphetamines*** without medical instruction; 1.3% say they have used them in the prior 30 days.

- For most of the ***other illicit drugs***, relatively few 8th graders in 2012 say they have tried them. (This is consistent with the retrospective reports from 12th graders concerning the grades in which they first used the various drugs.) But the proportions having at least some experience with them is not inconsequential. Even a rate as low as 3% represents about one child in every 30-student classroom. The 2012 eighth-grade proportions reporting any lifetime experience with the other illicit drugs are: ***tranquilizers*** (3.0%), ***hallucinogens other than LSD*** (2.3%), ***ecstasy*** (2.0%), ***cocaine other than crack*** (1.6%),

[20]Merline, A.C., O'Malley, P.M., Schulenberg, J.E., Bachman, J.G., & Johnston, L.D. (2004). Substance use among adults 35 years of age: Prevalence, adulthood predictors, and impact of adolescent substance use. *American Journal of Public Health, 94,* 96-102.

[21]Zucker, R. A. (2006). Alcohol use and the alcohol use disorders: A developmental-biopsychosocial systems formulation covering the lifecourse. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology:Vol. 3. Risk, disorder, and adaptation* (2nd ed., pp. 620–656). Hoboken, NJ: Wiley.

[22]Office of the Surgeon General. (2007). *The Surgeon General's call to action to prevent and reduce underage drinking.* Rockville, MD: Department of Health and Human Services.

LSD (1.3%), ***methamphetamine*** (1.3%), ***steroids*** (1.2% overall, 2.4% among males), ***crack*** (1.0%), ***Rohypnol*** (1.0%), and ***heroin*** (0.8%).

- In total, 25% of all 8th graders in 2012 have tried some ***illicit drug*** (including inhalants), while 8.7%, or one in eleven, have tried ***some illicit drug other than marijuana*** or ***inhalants***. Put another way, in an average 30-student classroom of 8th graders, about eight have used some illicit drug other than marijuana, including inhalants; and about three have used some illicit drug other than marijuana or inhalants.

- The very large number of 8th graders who have already begun using the so-called "gateway drugs" (***tobacco***, ***alcohol***, ***inhalants***, and ***marijuana***) suggests that a substantial number are also at risk of proceeding further to such drugs as LSD, cocaine, amphetamines, and heroin.

DRUG USE BY AGE 50

Because we have now followed graduating 12th graders into their 50s, we can characterize the drug-using history of today's 50-year-olds (at least those who are high school graduates). This is important, not only because it shows how use by these respondents has developed over the three decades since they left high school, but also because most of them are now themselves the parents of adolescents and young adults. Their own past experiences with drug use may complicate communications with their children regarding drugs; worse, the continuing active use of substances by some of them may set an unfortunate example. The level of lifetime use they have attained is striking (see chapter 4 of *Volume II* for greater detail and discussion).

- Among 50-year-old high school graduates in 2012, we estimate that about three quarters (74%) have tried ***marijuana***, and that about two thirds (64%) have tried an ***illicit drug other than marijuana***. (These estimates are adjusted to correct for panel attrition, as described in chapter 4 of *Volume II*.)

  Their current behavior is far less extreme than those statistics might suggest, but it is not by any means negligible. One in eight (12%) indicates using ***marijuana*** in the last 12 months, and one in ten (10%) indicates using ***any other illicit drug*** in the same period. Their past-month prevalence rates are lower—7.3% and 6.2%, respectively, for marijuana and any other illicit drug. About 1 in 43 (2.3%) is a ***current daily marijuana*** user, though substantially more indicate that they have used marijuana daily at some time in the past.

- High proportions of 50-year-old respondents in 2012 have had some experience during their lifetime of using (outside of medical regimen) several of the specific illicit drugs other than marijuana. These include ***cocaine*** in any form (41%), ***amphetamines*** (36%), ***tranquilizers*** (28%), ***narcotics other than heroin*** (24%), ***sedatives*** (***barbiturates***) (22%), and ***hallucinogens*** of any type (19%). In sum, today's adults in their 50s tend to be a very drug-experienced segment of the population, as might be expected due to the fact that they graduated from high school near the peak of the drug epidemic. To repeat, 74% have tried marijuana and 64% have tried some illicit drug other than marijuana.

- Illicit drugs other than marijuana that have been used in just the prior 12 months by this age group (outside of medical regimen) include ***narcotics other than heroin*** (4.4%), ***tranquilizers*** (4.3%), ***cocaine*** (1.8%), and ***noncrack forms of cocaine*** (1.6%). Little active use is reported by these respondents for ***amphetamines***, ***crack***, or ***heroin***. (Of course, we would not expect many *heavy users* of heroin or crack to have remained in the panel studies for this long.)

- ***Alcohol*** consumption is relatively high among 50-year-olds, with two thirds (66%) indicating that they consumed at least one alcoholic drink in the prior 30 days, 11% reporting current ***daily drinking*** (defined as drinking on 20 or more occasions in the prior 30 days), and 19% indicating ***recent occasions of heavy drinking*** (defined as five or more drinks in a row on at least one occasion in the prior two weeks). The rate of recent occasions of heavy drinking is much lower than was exhibited by members of this cohort when they were of high school and college ages.

- About one in six or seven (15%) 50-year-old high school graduates currently smokes ***cigarettes***. Almost all of those are current ***daily smokers*** (14%).

SUMMARY AND CONCLUSIONS

We can summarize the findings on trends as follows: For more than a decade—from the late 1970s to the early 1990s—the use of a number of ***illicit drugs*** declined appreciably among 12th-grade students, and declined even more among American college students and young adults. These substantial improvements—which seem largely explainable in terms of changes in attitudes about drug use, beliefs about the risks of drug use, and peer norms against drug use—have some extremely important policy implications. One clear implication is that these various substance-using behaviors among American young people are malleable—they *can* be changed. It has been done before. The second is that demand-side (rather than supply-side) factors appear to have been pivotal in bringing about most of those changes. The levels of ***marijuana*** availability, as reported by 12th graders, have held fairly steady throughout the life of the study. (Moreover, among students who abstained from marijuana use, as well as among those who quit, availability and price rank very low on their lists of reasons for not using.) And, in fact, the perceived availability of ***cocaine*** was actually rising during the beginning of the sharp decline in cocaine and crack use in the mid- to late- 1980s, which occurred when the perceived risk associated with that drug rose sharply. (See the last section of chapter 9, *Volume I*, for more examples and further discussion of this point.)

However, improvements are surely not inevitable; and when they occur, they should not be taken for granted. Relapse is always possible and, indeed, just such a relapse in the longer term epidemic occurred during the early to mid-1990s, as the country let down its guard on many fronts. (See chapter 8 of *Volume I* for a more detailed discussion.)

In 1992, eighth graders exhibited a significant increase in annual use of ***marijuana***, ***cocaine***, ***LSD***, and ***hallucinogens other than LSD***, as well as an increase in ***inhalant*** use. (In fact, all five

populations showed some increase in ***LSD*** use, continuing a longer term trend for college students and young adults.) Further, the attitudes and beliefs of 12th graders regarding drug use began to soften.

In 1993, use of several drugs began to rise among 10th and 12th graders, as well, fulfilling our earlier predictions based on their eroding beliefs about the dangers of drugs and their decreasing disapproval of drug use. Increases occurred in a number of the so-called "gateway drugs"—***marijuana***, ***cigarettes***, and ***inhalants***—that we argued boded ill for the later use of other drugs in the usual sequence of drug use involvement. Indeed, the proportion of students reporting the use of ***any illicit drug other than marijuana*** rose steadily after 1991 among 8th and 10th graders and after 1992 among 12th graders. (The proportions using increased by more than half among 8th graders, with annual prevalence rising from 8.4% in 1991 to 13.1% in 1996.) The softening attitudes about ***crack*** and ***other forms of cocaine*** also provided a basis for concern—and indeed the use of both increased fairly steadily through about 1998.

Over the years, MTF has demonstrated that changes in perceived risk and disapproval have been important causes of change in the use of a number of drugs. These beliefs and attitudes are almost certainly influenced by the amount and nature of public attention paid to the drug issue in the historical period during which young people are growing up. A substantial decline in attention to this issue in the early 1990s very likely explains why the increases in perceived risk and disapproval among students ceased and began to backslide. News coverage of the drug issue plummeted between 1989 and 1993 (although it made a considerable comeback as surveys—including MTF—began to document that the nation's drug problem was worsening again), and the media's *pro bono* placement of ads from the Partnership for a Drug-Free America also fell considerably. (During that period, MTF 12th graders showed a steady decline in their recalled exposure to such ads, and in the judged impact of such ads on their own drug-taking behavior.)

Also, the deterioration in the drug abuse situation first began among our youngest cohorts—perhaps because as they were growing up they had not had the same opportunities for vicarious learning from the adverse drug experiences of people around them and people portrayed in the media—those we have called the "unfortunate role models." Clearly, there was a danger that, as the drug epidemic subsided in the 1980s and early 1990s, newer cohorts would have far less opportunity to learn through informal means about the dangers of drugs—that what we have called a generational forgetting of those risks would occur through a process of generational replacement of older, more drug-savvy cohorts with newer, more naive ones. *This suggests that as drug use subsides, as it did by the early 1990s, the nation must redouble its efforts to ensure that such naive cohorts learn these lessons about the dangers of drugs through more formal means—from schools, parents, and focused messages in the media, for example—and that this more formalized prevention effort be institutionalized so that it will endure for the long term.*

Clearly, for the foreseeable future, American young people will be aware of the psychoactive potential of a host of drugs and will continue to have access to them—a situation quite different from the one that preceded the late 1960s. (Awareness and access are two necessary conditions

for an epidemic.[23]) That means that each new generation of young people must learn the reasons that they should *not* use drugs. Otherwise, their natural curiosity and desire for new experiences will lead a great many to use.

One lesson evident from the changes of the past decade or so is that the types of drugs most in favor can change substantially over time. The illegal drugs began to decline in use in the late 1990s, while prescription drugs, and even over-the-counter drugs, began to gain favor. Today a good many of the drugs having the highest prevalence rates among teens are of this type, including narcotic drugs other than heroin.

Unfortunately, a second relapse phase in America's youth epidemic of drug use may now be beginning, as indicated by the upturn in marijuana use in recent years. Perceived risk for marijuana (and for Ecstasy) has been falling, and recalled exposure to anti-drug ads has declined sharply in recent years. To a considerable degree the issue has fallen off the national screen (just as happened in the late 1980s and early 1990s), as other urgent matters (including two wars, the rise of terrorism, and a major recession) have competed for attention. Indeed, this confluence of events is very reminiscent of the period preceding the first relapse—including a considerable decrease in the levels of drug use, little attention paid to the issue by the media or government, a sharp drop in funding for anti-drug prevention programs and ad campaigns, a war and a recession. While marijuana use, specifically, is now receiving more attention, that attention has been focused on the medical use and full legalization, not so much on the consequences of use.

Another lesson that derives from the MTF epidemiological data is that social influences that tend to reduce the *initiation* of substance use also have the potential to deter *continuation* by those who have already begun to use, particularly if they are not yet habitual users. Chapter 5 of *Volume I* shows how increased quitting rates have contributed importantly to downturns in the use of a number of drugs at different historical periods. The lesson is that primary prevention should not be the only goal of intervention programs; early-stage users may be persuaded to quit when their beliefs and attitudes regarding drugs are changed.

The following facts help to put into perspective the magnitude and variety of substance use problems that presently remain among American young people:

- A quarter (25%) of today's 8th graders have tried an ***illicit drug*** (if inhalants are included as an illicit drug), and half (50%) of 12th graders haves done so.

- By their late 20s, nearly three of five (59%) of today's young adults have tried an ***illicit drug***, and a third (33%) has tried some ***illicit drug other than marijuana***, usually in addition to marijuana. (These figures do not include inhalants.)

[23]Johnston, LD (1991). Toward a theory of drug epidemics. In L Donhew, HE Sypher, and WJ Bukiski (Eds.), *Persuasive communication and drug abuse prevention (*pp.93-131). Hillsdale, NJ, Earlbaum. Available at www.monitoringthefuture.org/pubs/chapters/ldj1991theory.pdf

- Today, about one in eight young adults (12% in 2012) has tried ***cocaine***, and 4.9% have tried it by their senior year of high school, when they are 17 or 18 years old. One in every 48 twelfth graders (2.1%) has tried ***crack***. Among young adults 29–30 years of age, 1 in 30 (3.3%) has tried crack.

- One in every 15 twelfth graders (6.5%) in 2012 smokes ***marijuana daily***. Among young adults ages 19 to 28, the percentage is about the same (5.6%). Among those same 12th graders in 2012, nearly one in every five (18%) has been a daily marijuana smoker at some time for at least a month, and among young adults the comparable figure is 17%, about one in six.

- About one in four 12th graders (24%) had ***five or more drinks in a row*** on at least one occasion in the two weeks prior to the survey, and we know that such behavior tends to increase among young adults one to four years past high school—that is, in the peak college years. Indeed, 41% of all male college students report such binge drinking.

- Even with considerable improvements in smoking rates among American adolescents since the late 1990s, about one sixth (17%) of 12th graders in 2012 currently smoke ***cigarettes***, and one in eleven (9%) is already a current ***daily smoker***. In addition, we know from studying previous cohorts that many young adults increase their rates of smoking within a year or so after they leave high school.

  Despite the substantial improvement in this country's drug situation in the 1980s and early 1990s, and then some further improvement beginning in the late 1990s, American secondary school students and young adults show a level of involvement with ***illicit drugs*** that is among the highest in the world's industrialized nations.[24] Even by longer term historical standards in the U.S. these rates remain extremely high, though in general they are not as high as in the peak years of the epidemic in the late 1970s. ***Heavy drinking*** also remains widespread and troublesome, though it has been declining gradually over a long period and now is near historical lows among teens. Of course, the continuing initiation to ***cigarette smoking*** of a large, albeit decreased proportion of young people remains a matter of great public health concern. Unfortunately, the declines in youth smoking have decelerated sharply in all grades in recent years and negative youth attitudes about smoking and smokers leveled off several years ago after rising considerably. The improvements in youth smoking overall may be nearing an end unless there is further change in environmental factors, such as cigarette prices (including taxes), advertising and promotion of cigarettes, places where smoking is permitted, and the

[24]A published report from an international collaborative study, modeled largely after MTF, provides comparative data from national school surveys of 15- to 16-year-olds that was completed in 2011 in 36 European countries. It also includes 2011 MTF data from 10th graders in the United States. See Hibell, B., Guttormsson, U, Ahlström, S., Balakireva, O., Bjarnasson, T., Kokkevi, A., & Kraus, L. (Eds.). (2012). *The 2011 ESPAD report Substance Use among Students in 36 European countries.* Stockholm: The Swedish Council for Information on Alcohol and Other Drugs, The European Monitoring Centre for Drugs and Drug Addiction, the Council of Europe Co-operation Group to Combat Drug Abuse and Illicit Trafficking in Drugs (the Pompidou Group). See also, Johnston, L. et al., American teens are lesslikely than European teens to use cigarettes and alcohol, but more likely to use illicit drugs. National press release from the University of Michigan's News and Information Services, June 1, 2012. Available at http://www.ns.umich.edu/new/releases/20420-american-teens-are-less-likely-than-european-teens-to-use-cigarettes-and-alcohol-but-more-likely-to-use-illicit-drugs.

availability of quit-smoking services. There was, in fact, an increase in federal taxes on tobacco in 2009, with the final rule becoming effective in August, 2010, and this may help to explain why all three grades showed further declines in prevalence in 2011 and 2012.

After a long period of improvement, there was evidence in recent years that the use of ***smokeless tobacco*** has been on the rise among adolescents. Fortunately, the 2011 and 2012 surveys showed some small though non-significant declines in all three grades, possibly also as a result of the increase in the federal tobacco tax. The fairly recent rise in smokeless tobacco use may well be a result of the introduction and promotion of new products such as snus.

- Of particular note, abusable prescription drugs (with the notable exception of ***amphetamines***) showed very limited declines from the mid-1990s into the early 2000s, despite the gradual (and in some cases sharp) declines in the use of many of the illegal drugs during that same period. In 2012 ***tranquilizer use*** held steady at slightly below recent peak levels. The use of ***narcotics other than heroin*** among 12th graders (the only grade reported for these drugs) is still near peak levels, though it has declined a bit over the past three years. ***Sedative*** (***barbiturate***) use (also reported for 12th graders only) has shown a gradual decline since 1975, but it did not continue into 2012. Perceived risk tends to be relatively low for these prescription-type drugs, which we believe is a major reason why their use is relatively high.

- Finally, we note the seemingly unending capacity of pharmacological experts and amateurs to discover new substances with abuse potential that can be used to alter mood and consciousness (e.g., bath salts and synthetic marijuana), and of young people to discover the abuse potential of existing products (such as ***Robitussin*** and plants like ***salvia)*** and to rediscover older drugs (such as ***LSD*** and ***heroin***). While as a society we have made significant progress on a number of fronts in the fight against drug abuse, we must remain vigilant against the opening of new fronts, as well as the reemergence of trouble on older ones. In particular, we must guard against generational forgetting in our newest cohorts of adolescents due to a lack of public attention to the issue during the time that they are growing up.

  One of the dynamics that keeps the drug epidemic rolling is the emergence of new drugs whose hazards are little known. In 1999 we saw this happen with the drug ***ecstasy*** (***MDMA***). Other drugs like ***Rohypnol***, ***ketamine***, ***GHB***, and ***OxyContin*** appeared in the 1990s and have been added to the list of drugs under study. Recently, questions on use of ***salvia***, ***Adderall***, and ***Provigil*** have been added to the questionnaires. In 2011 we added ***synthetic marijuana***, which turned out to be the second most used illicit drug after natural marijuana, and in 2012 we added ***bath salts***. The spread of such new drugs appears to be facilitated and hastened today by young people's widespread use of web-based social networks. We predict a continuous flow of such new substances onto the scene, and believe that the task of rapidly documenting their emergence, establishing their adverse consequences, and quickly demystifying them will remain an important means by which policymakers, researchers, and educators deal with the continuing

> threats posed by such drugs. We also anticipate that there will be rediscoveries of older substances, as has been occurring in recent years with respect to the various psychotherapeutic prescription drugs, including ***tranquilizers***, ***sedatives*** (***barbiturates***), and ***narcotic drugs***.

The drug problem is not an enemy that can be vanquished. It is more a recurring and relapsing problem that must be contained to the extent possible on an ongoing basis. Therefore, it is a problem that requires an ongoing, dynamic response—one that takes into account the continuing generational replacement of our children, the generational forgetting of the dangers of drugs that can occur with that replacement, and the perpetual stream of new abusable substances that will threaten to lure young people into involvement with drugs.

TABLE 2-1
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Any Illicit Drug [a]																							
8th Grade	18.7	20.6	22.5	25.7	28.5	31.2	29.4	29.0	28.3	26.8	26.8	24.5	22.8	21.5	21.4	20.9	19.0	19.6	19.9	21.4	20.1	18.5	-1.6
10th Grade	30.6	29.8	32.8	37.4	40.9	45.4	47.3	44.9	46.2	45.6	45.6	44.6	41.4	39.8	38.2	36.1	35.6	34.1	36.0	37.0	37.7	36.8	-0.9
12th Grade	44.1	40.7	42.9	45.6	48.4	50.8	54.3	54.1	54.7	54.0	53.9	53.0	51.1	51.1	50.4	48.2	46.8	47.4	46.7	48.2	49.9	49.1	-0.8
College Students	50.4	48.8	45.9	45.5	45.5	47.4	49.0	52.9	53.2	53.7	53.6	51.8	53.9	52.2	52.3	50.6	50.5	49.5	51.4	49.1	49.2	50.5	+1.3
Young Adults	62.2	60.2	59.6	57.5	57.4	56.4	56.7	57.0	57.4	58.2	58.1	59.0	60.2	60.5	60.4	59.7	59.8	59.3	59.3	58.4	59.1	58.9	-0.3
Any Illicit Drug other than Marijuana [a,b]																							
8th Grade	14.3	15.6	16.8	17.5	18.8	19.2	17.7	16.9	16.3	15.8‡	17.0	13.7	13.6	12.2	12.1	12.2	11.1	11.2	10.4	10.6	9.8	8.7	-1.1
10th Grade	19.1	19.2	20.9	21.7	24.3	25.5	25.0	23.6	24.0	23.1‡	23.6	22.1	19.7	18.8	18.0	17.5	18.2	15.9	16.7	16.8	15.6	14.9	-0.8
12th Grade	26.9	25.1	26.7	27.6	28.1	28.5	30.0	29.4	29.4	29.0‡	30.7	29.5	27.7	28.7	27.4	26.9	25.5	24.9	24.0	24.7	24.9	24.1	-0.9
College Students	25.8	26.1	24.3	22.0	24.5	22.7	24.4	24.8	25.5	25.8‡	26.3	26.9	27.6	28.0	26.5	26.3	25.3	22.6	25.6	24.8	24.3	23.8	-0.5
Young Adults	37.8	37.0	34.6	33.4	32.8	31.0	30.5	29.9	30.2	31.3‡	31.6	32.8	33.9	35.2	34.0	34.8	34.2	34.7	32.8	33.3	33.2	32.8	-0.4
Any Illicit Drug including Inhalants [a,c,d]																							
8th Grade	28.5	29.6	32.3	35.1	38.1	39.4	38.1	37.8	37.2	35.1	34.5	31.6	30.3	30.2	30.0	29.2	27.7	28.3	27.9	28.6	26.4	25.1	-1.4
10th Grade	36.1	36.2	38.7	42.7	45.9	49.8	50.9	49.3	49.9	49.3	48.8	47.7	44.9	43.1	42.1	40.1	39.8	38.7	40.0	40.6	40.8	40.0	-0.9
12th Grade	47.6	44.4	46.6	49.1	51.5	53.5	56.3	56.1	56.3	57.0	56.0	54.6	52.8	53.0	53.5	51.2	49.1	49.3	48.4	49.9	51.8	50.3	-1.4
College Students	52.0	50.3	49.1	47.0	47.0	49.1	50.7	55.4	54.4	54.6	53.1	52.3	54.1	52.9	53.9	53.3	52.5	51.0	51.1	50.0	49.7	52.0	+2.3
Young Adults	63.4	61.2	61.2	58.5	59.0	58.2	58.4	58.5	58.5	59.5	59.0	59.6	60.6	62.5	61.4	61.2	61.2	60.2	59.3	59.3	59.5	59.5	0.0
Marijuana/Hashish																							
8th Grade	10.2	11.2	12.6	16.7	19.9	23.1	22.6	22.2	22.0	20.3	20.4	19.2	17.5	16.3	16.5	15.7	14.2	14.6	15.7	17.3	16.4	15.2	-1.2
10th Grade	23.4	21.4	24.4	30.4	34.1	39.8	42.3	39.6	40.9	40.3	40.1	38.7	36.4	35.1	34.1	31.8	31.0	29.9	32.3	33.4	34.5	33.8	-0.8
12th Grade	36.7	32.6	35.3	38.2	41.7	44.9	49.6	49.1	49.7	48.8	49.0	47.8	46.1	45.7	44.8	42.3	41.8	42.6	42.0	43.8	45.5	45.2	-0.3
College Students	46.3	44.1	42.0	42.2	41.7	45.1	46.1	49.9	50.8	51.2	51.0	49.5	50.7	49.1	49.1	46.9	47.5	46.8	47.5	46.8	46.6	49.1	+2.5
Young Adults	58.6	56.4	55.9	53.7	53.6	53.4	53.8	54.4	54.6	55.1	55.7	56.8	57.2	57.4	57.0	56.7	56.7	55.9	56.0	55.9	56.3	56.5	+0.2
Inhalants [c,d]																							
8th Grade	17.6	17.4	19.4	19.9	21.6	21.2	21.0	20.5	19.7	17.9	17.1	15.2	15.8	17.3	17.1	16.1	15.6	15.7	14.9	14.5	13.1	11.8	-1.3
10th Grade	15.7	16.6	17.5	18.0	19.0	19.3	18.3	18.3	17.0	16.6	15.2	13.5	12.7	12.4	13.1	13.3	13.6	12.8	12.3	12.0	10.1	9.9	-0.2
12th Grade	17.6	16.6	17.4	17.7	17.4	16.6	16.1	15.2	15.4	14.2	13.0	11.7	11.2	10.9	11.4	11.1	10.5	9.9	9.5	9.0	8.1	7.9	-0.2
College Students	14.4	14.2	14.8	12.0	13.8	11.4	12.4	12.8	12.4	12.9	9.6	7.7	9.7	8.5	7.1	7.4	6.3	4.9	6.9	5.5	3.7	5.7	+2.0
Young Adults	13.4	13.5	14.1	13.2	14.5	14.1	14.1	14.2	14.2	14.3	12.8	12.4	12.2	11.6	10.3	10.9	9.1	9.5	8.9	7.9	7.2	7.2	+0.1
Nitrites [e]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.6	1.5	1.4	1.7	1.5	1.8	2.0	2.7	1.7	0.8	1.9	1.5	1.6	1.3	1.1	1.2	1.2	0.6	1.1	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	1.4	1.2	1.3	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hallucinogens [b,f]																							
8th Grade	3.2	3.8	3.9	4.3	5.2	5.9	5.4	4.9	4.8	4.6‡	5.2	4.1	4.0	3.5	3.8	3.4	3.1	3.3	3.0	3.4	3.3	2.8	-0.5
10th Grade	6.1	6.4	6.8	8.1	9.3	10.5	10.5	9.8	9.7	8.9‡	8.9	7.8	6.9	6.4	5.8	6.1	6.4	5.5	6.1	6.1	6.0	5.2	-0.8
12th Grade	9.6	9.2	10.9	11.4	12.7	14.0	15.1	14.1	13.7	13.0‡	14.7	12.0	10.6	9.7	8.8	8.3	8.4	8.7	7.4	8.6	8.3	7.5	-0.8
College Students	11.3	12.0	11.8	10.0	13.0	12.6	13.8	15.2	14.8	14.4‡	14.8	13.6	14.5	12.0	11.0	10.6	9.1	8.5	8.0	7.8	7.4	7.6	+0.3
Young Adults	15.7	15.7	15.4	15.4	16.1	16.4	16.8	17.4	18.0	18.4‡	18.3	19.6	19.7	19.3	17.6	17.2	16.0	14.8	14.2	13.9	13.0	12.2	-0.8

(Table continued on next page.)

TABLE 2-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
LSD																								
8th Grade	2.7	3.2	3.5	3.7	4.4	5.1	4.7	4.1	4.1	3.9	3.4	2.5	2.1	1.8	1.9	1.6	1.6	1.9	1.7	1.8	1.7	1.3	-0.4	
10th Grade	5.6	5.8	6.2	7.2	8.4	9.4	9.5	8.5	8.5	7.6	6.3	5.0	3.5	2.8	2.5	2.7	3.0	2.6	3.0	3.0	2.8	2.6	-0.2	
12th Grade	8.8	8.6	10.3	10.5	11.7	12.6	13.6	12.6	12.2	11.1	10.9	8.4	5.9	4.6	3.5	3.3	3.4	4.0	3.1	4.0	4.0	3.8	-0.2	
College Students	9.6	10.6	10.6	9.2	11.5	10.8	11.7	13.1	12.7	11.8	12.2	8.6	8.7	5.6	3.7	3.5	3.3	4.3	3.3	4.0	3.7	3.1	-0.7	
Young Adults	13.5	13.8	13.6	13.8	14.5	15.0	15.0	15.7	16.2	16.4	16.0	15.1	14.6	13.4	11.2	10.1	9.6	8.1	7.3	7.2	6.1	6.2	+0.1	
Hallucinogens other than LSD [b]																								
8th Grade	1.4	1.7	1.7	2.2	2.5	3.0	2.6	2.5	2.4	2.3‡	3.9	3.3	3.2	3.0	3.3	2.8	2.6	2.5	2.4	2.7	2.8	2.3	-0.5	
10th Grade	2.2	2.5	2.8	3.8	3.9	4.7	4.8	5.0	4.7	4.8‡	6.6	6.3	5.9	5.8	5.2	5.5	5.7	4.8	5.4	5.3	5.2	4.5	-0.7	
12th Grade	3.7	3.3	3.9	4.9	5.4	6.8	7.5	7.1	6.7	6.9‡	10.4	9.2	9.0	8.7	8.1	7.8	7.7	7.8	6.8	7.7	7.3	6.6	-0.8	
College Students	6.0	5.7	5.4	4.4	6.5	6.5	7.5	8.7	8.8	8.2‡	10.7	11.0	12.8	10.1	10.6	10.1	8.5	8.2	7.8	7.1	6.9	7.2	+0.3	
Young Adults	8.4	8.0	7.6	7.4	7.8	7.9	8.5	9.4	9.3	9.9‡	12.0	15.0	16.4	15.6	15.4	14.9	14.1	13.0	13.0	12.6	12.1	11.1	-1.0	
PCP [g]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
12th Grade	2.9	2.4	2.9	2.8	2.7	4.0	3.9	3.9	3.4	3.4	3.5	3.1	2.5	1.6	2.4	2.2	2.1	1.8	1.7	1.8	2.3	1.6	-0.7	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Young Adults	3.1	2.0	1.9	2.0	2.2	1.9	2.4	2.7	2.3	2.3	3.1	2.5	3.0	2.7	2.0	2.4	2.1	2.2	1.6	1.6	1.7	1.1	-0.6	
Ecstasy (MDMA) [h]																								
8th Grade	—	—	—	—	—	3.4	3.2	2.7	2.7	4.3	5.2	4.3	3.2	2.8	2.8	2.5	2.3	2.4	2.2	3.3	2.6	2.0	-0.6	
10th Grade	—	—	—	—	—	5.6	5.7	5.1	6.0	7.3	8.0	6.6	5.4	4.3	4.0	4.5	5.2	4.3	5.5	6.4	6.6	5.0	-1.6	ss
12th Grade	—	—	—	—	—	6.1	6.9	5.8	8.0	11.0	11.7	10.5	8.3	7.5	5.4	6.5	6.5	6.2	6.5	7.3	8.0	7.2	-0.9	
College Students	2.0	2.9	2.3	2.1	3.1	4.3	4.7	6.8	8.4	13.1	14.7	12.7	12.9	10.2	8.3	6.9	5.4	6.2	6.5	6.2	6.8	8.7	+1.9	
Young Adults	3.2	3.9	3.8	3.8	4.5	5.2	5.1	7.2	7.1	11.6	13.0	14.6	15.3	16.0	14.9	14.4	13.1	13.1	11.5	12.3	11.3	11.4	+0.1	
Cocaine																								
8th Grade	2.3	2.9	2.9	3.6	4.2	4.5	4.4	4.6	4.7	4.5	4.3	3.6	3.6	3.4	3.7	3.4	3.1	3.0	2.6	2.6	2.2	1.9	-0.3	
10th Grade	4.1	3.3	3.6	4.3	5.0	6.5	7.1	7.2	7.7	6.9	5.7	6.1	5.1	5.4	5.2	4.8	5.3	4.5	4.6	3.7	3.3	3.3	0.0	
12th Grade	7.8	6.1	6.1	5.9	6.0	7.1	8.7	9.3	9.8	8.6	8.2	7.8	7.7	8.1	8.0	8.5	7.8	7.2	6.0	5.5	5.2	4.9	-0.3	
College Students	9.4	7.9	6.3	5.0	5.5	5.0	5.6	8.1	8.4	9.1	8.6	8.2	9.2	9.5	8.8	7.7	8.5	7.2	8.1	6.6	5.5	5.2	-0.3	
Young Adults	21.0	19.5	16.9	15.2	13.7	12.9	12.1	12.3	12.8	12.7	13.1	13.5	14.7	15.2	14.3	15.2	14.7	14.8	13.9	13.6	12.5	11.9	-0.5	
Crack [i]																								
8th Grade	1.3	1.6	1.7	2.4	2.7	2.9	2.7	3.2	3.1	3.1	3.0	2.5	2.5	2.4	2.4	2.3	2.1	2.0	1.7	1.5	1.5	1.0	-0.4	s
10th Grade	1.7	1.5	1.8	2.1	2.8	3.3	3.6	3.9	4.0	3.7	3.1	3.6	2.7	2.6	2.5	2.2	2.3	2.0	2.1	1.8	1.6	1.4	-0.2	
12th Grade	3.1	2.6	2.6	3.0	3.0	3.3	3.9	4.4	4.6	3.9	3.7	3.8	3.6	3.9	3.5	3.5	3.2	2.8	2.4	2.4	1.9	2.1	+0.2	
College Students	1.5	1.7	1.3	1.0	1.8	1.2	1.4	2.2	2.4	2.5	2.0	1.9	3.1	2.0	1.7	2.3	1.3	1.4	1.0	1.2	0.8	0.7	-0.1	
Young Adults	4.8	5.1	4.3	4.4	3.8	3.9	3.6	3.8	4.3	4.6	4.7	4.3	4.7	4.2	4.1	4.4	3.9	4.3	3.3	3.6	2.9	2.7	-0.2	
Other Cocaine [j]																								
8th Grade	2.0	2.4	2.4	3.0	3.4	3.8	3.5	3.7	3.8	3.5	3.3	2.8	2.7	2.6	2.9	2.7	2.6	2.4	2.1	2.1	1.8	1.6	-0.2	
10th Grade	3.8	3.0	3.3	3.8	4.4	5.5	6.1	6.4	6.8	6.0	5.0	5.2	4.5	4.8	4.6	4.3	4.8	4.0	4.1	3.4	3.0	3.0	0.0	
12th Grade	7.0	5.3	5.4	5.2	5.1	6.4	8.2	8.4	8.8	7.7	7.4	7.0	6.7	7.3	7.1	7.9	6.8	6.5	5.3	5.1	4.9	4.4	-0.4	
College Students	9.0	7.6	6.3	4.6	5.2	4.6	5.0	7.4	7.8	8.1	8.3	8.6	8.5	9.3	8.1	6.2	8.0	7.1	7.9	6.7	5.4	5.1	-0.3	
Young Adults	19.8	18.4	15.1	13.9	12.4	11.9	11.3	11.5	11.8	11.7	12.1	12.8	13.5	14.4	13.3	14.4	14.0	13.9	13.5	13.1	12.2	11.8	-0.4	

(Table continued on next page.)

TABLE 2-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Heroin [j,k]																							
8th Grade	1.2	1.4	1.4	2.0	2.3	2.4	2.1	2.3	2.3	1.9	1.7	1.6	1.6	1.6	1.5	1.4	1.3	1.4	1.3	1.3	1.2	0.8	-0.3 s
10th Grade	1.2	1.2	1.3	1.5	1.7	2.1	2.1	2.3	2.3	2.2	1.7	1.8	1.5	1.5	1.5	1.4	1.5	1.2	1.5	1.3	1.2	1.1	-0.1
12th Grade	0.9	1.2	1.1	1.2	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	1.5	1.5	1.5	1.4	1.5	1.3	1.2	1.6	1.4	1.1	-0.3
College Students	0.5	0.5	0.6	0.1	0.6	0.7	0.9	1.7	0.9	1.7	1.2	1.0	1.0	0.9	0.5	0.7	0.5	0.7	0.8	0.7	0.6	0.5	-0.2
Young Adults	0.9	0.9	0.9	0.8	1.1	1.3	1.3	1.6	1.7	1.8	2.0	1.8	1.9	1.9	1.7	1.9	1.6	1.9	1.6	1.8	1.7	1.6	-0.1
With a Needle [l]																							
8th Grade	—	—	—	—	1.5	1.6	1.3	1.4	1.6	1.1	1.2	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.6	-0.2
10th Grade	—	—	—	—	1.0	1.1	1.1	1.2	1.3	1.0	0.8	1.0	0.9	0.8	0.8	0.9	0.9	0.7	0.9	0.8	0.8	0.7	-0.1
12th Grade	—	—	—	—	0.7	0.8	0.9	0.8	0.9	0.8	0.7	0.8	0.7	0.7	0.9	0.8	0.7	0.7	0.6	1.1	0.9	0.7	-0.2
College Students	—	—	—	—	0.4	0.1	0.2	0.5	0.8	0.7	0.2	0.3	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.1	0.3	0.2	-0.1
Young Adults	—	—	—	—	0.4	0.4	0.3	0.4	0.6	0.4	0.6	0.4	0.5	0.4	0.6	0.6	0.5	0.5	0.5	0.8	0.7	0.5	-0.2
Without a Needle [l]																							
8th Grade	—	—	—	—	1.5	1.6	1.4	1.5	1.4	1.3	1.1	1.0	1.1	1.0	0.9	0.9	0.7	0.9	0.8	0.7	0.7	0.5	-0.2
10th Grade	—	—	—	—	1.1	1.7	1.7	1.7	1.6	1.7	1.3	1.3	1.0	1.1	1.1	1.0	1.1	0.8	1.0	0.9	0.8	0.8	0.0
12th Grade	—	—	—	—	1.4	1.7	2.1	1.6	1.8	2.4	1.5	1.6	1.8	1.4	1.3	1.1	1.4	1.1	0.9	1.4	1.3	0.8	-0.5 s
College Students	—	—	—	—	0.5	1.0	1.2	2.1	1.0	2.5	1.3	1.2	1.1	1.0	0.3	0.8	0.4	0.7	0.4	0.4	0.4	0.5	+0.2
Young Adults	—	—	—	—	0.9	1.3	1.5	1.7	1.9	2.1	2.1	1.8	2.2	2.1	1.8	2.4	1.9	2.1	1.9	1.8	1.6	1.7	+0.1
Narcotics other than Heroin [m,n]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	6.6	6.1	6.4	6.6	7.2	8.2	9.7	9.8	10.2	10.6	9.9‡	13.5	13.2	13.5	12.8	13.4	13.1	13.2	13.2	13.0	13.0	12.2	-0.8
College Students	7.3	7.3	6.2	5.1	7.2	5.7	8.2	8.7	8.7	8.9	11.0‡	12.2	14.2	13.8	14.4	14.6	14.1	12.4	14.0	12.2	12.4	10.3	-2.0
Young Adults	9.3	8.9	8.1	8.2	9.0	8.3	9.2	9.1	9.5	10.0	11.5‡	13.9	16.8	17.6	17.8	18.7	18.8	19.5	18.5	19.0	18.2	17.6	-0.5
Amphetamines [m,o]																							
8th Grade	10.5	10.8	11.8	12.3	13.1	13.5	12.3	11.3	10.7	9.9	10.2	8.7	8.4	7.5	7.4	7.3	6.5	6.8	6.0	5.7	5.2	4.5	-0.7
10th Grade	13.2	13.1	14.9	15.1	17.4	17.7	17.0	16.0	15.7	15.7	16.0	14.9	13.1	11.9	11.1	11.2	11.1	9.0	10.3	10.6	9.0	8.9	-0.2
12th Grade	15.4	13.9	15.1	15.7	15.3	15.3	16.5	16.4	16.3	15.6	16.2	16.8	14.4	15.0	13.1	12.4	11.4	10.5	9.9	11.1	12.2	12.0	-0.2
College Students	13.0	10.5	10.1	9.2	10.7	9.5	10.6	10.6	11.9	12.3	12.4	11.9	12.3	12.7	12.3	10.7	11.2	9.1	11.8	12.1	13.4	14.4	+1.0
Young Adults	22.4	20.2	18.7	17.1	16.6	15.3	14.6	14.3	14.1	15.0	15.0	14.8	15.2	15.9	14.6	15.6	15.3	14.6	14.9	16.1	16.5	17.4	+1.0
Methamphetamine [p,q]																							
8th Grade	—	—	—	—	—	—	—	—	4.5	4.2	4.4	3.5	3.9	2.5	3.1	2.7	1.8	2.3	1.6	1.8	1.3	1.3	0.0
10th Grade	—	—	—	—	—	—	—	—	7.3	6.9	6.4	6.1	5.2	5.3	4.1	3.2	2.8	2.4	2.8	2.5	2.1	1.8	-0.3
12th Grade	—	—	—	—	—	—	—	—	8.2	7.9	6.9	6.7	6.2	6.2	4.5	4.4	3.0	2.8	2.4	2.3	2.1	1.7	-0.3
College Students	—	—	—	—	—	—	—	—	7.1	5.1	5.3	5.0	5.8	5.2	4.1	2.9	1.9	1.9	1.0	1.1	0.6	0.3	-0.4
Young Adults	—	—	—	—	—	—	—	—	8.8	9.3	9.0	9.1	8.9	9.0	8.3	7.3	6.7	6.3	4.7	4.3	3.2	3.5	+0.3
Crystal Methamphetamine (Ice) [q]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	3.3	2.9	3.1	3.4	3.9	4.4	4.4	5.3	4.8	4.0	4.1	4.7	3.9	4.0	4.0	3.4	3.4	2.8	2.1	1.8	2.1	1.7	-0.4
College Students	1.3	0.6	1.6	1.3	1.0	0.8	1.6	2.2	2.8	1.3	2.3	2.0	2.9	2.2	2.4	1.7	1.3	1.1	0.7	0.8	0.2	0.6	+0.4
Young Adults	2.9	2.2	2.7	2.5	2.1	3.1	2.5	3.4	3.3	3.9	4.0	4.1	4.7	4.7	4.4	4.7	3.7	3.6	3.4	2.8	3.1	2.6	-0.5

(Table continued on next page.)

TABLE 2-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Sedatives (Barbiturates) [m,r]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	6.2	5.5	6.3	7.0	7.4	7.6	8.1	8.7	8.9	9.2	8.7	9.5	8.8‡	9.9	10.5	10.2	9.3	8.5	8.2	7.5	7.0	6.9	-0.1	
College Students	3.5	3.8	3.5	3.2	4.0	4.6	5.2	5.7	6.7	6.9	6.0	5.9	5.7	7.2	8.5	6.3	5.9	6.4	6.0	5.3	3.6	3.5	-0.1	
Young Adults	8.2	7.4	6.5	6.4	6.7	6.6	6.5	6.9	7.4	8.1	7.8	8.0	8.7	9.7	10.0	9.5	9.8	10.6	9.5	8.6	7.9	7.2	-0.6	
Methaqualone [m,s]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	1.3	1.6	0.8	1.4	1.2	2.0	1.7	1.6	1.8	0.8	1.1	1.5	1.0	1.3	1.3	1.2	1.0	0.8	0.7	0.4	0.6	0.8	+0.2	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Tranquilizers [b,m]																								
8th Grade	3.8	4.1	4.4	4.6	4.5	5.3	4.8	4.6	4.4	4.4‡	5.0	4.3	4.4	4.0	4.1	4.3	3.9	3.9	3.9	4.4	3.4	3.0	-0.3	
10th Grade	5.8	5.9	5.7	5.4	6.0	7.1	7.3	7.8	7.9	8.0‡	9.2	8.8	7.8	7.3	7.1	7.2	7.4	6.8	7.0	7.3	6.8	6.3	-0.5	
12th Grade	7.2	6.0	6.4	6.6	7.1	7.2	7.8	8.5	9.3	8.9‡	10.3	11.4	10.2	10.6	9.9	10.3	9.5	8.9	9.3	8.5	8.7	8.5	-0.2	
College Students	6.8	6.9	6.3	4.4	5.4	5.3	6.9	7.7	8.2	8.8‡	9.7	10.7	11.0	10.6	11.9	10.0	9.1	8.6	9.2	8.1	7.1	6.4	-0.7	
Young Adults	11.8	11.3	10.5	9.9	9.7	9.3	8.6	9.6	9.6	10.5‡	11.9	13.4	13.8	14.9	14.5	15.0	14.5	15.8	13.8	14.3	13.8	13.3	-0.5	
Any Prescription Drug [t]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.0	23.9	22.2	21.5	20.9	21.6	21.7	21.2	-0.6	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Rohypnol [u]																								
8th Grade	—	—	—	—	—	1.5	1.1	1.4	1.3	1.0	1.1	0.8	1.0	1.0	1.1	1.0	1.0	0.7	0.7	0.9	2.0	1.0	-1.0	s
10th Grade	—	—	—	—	—	1.5	1.7	2.0	1.8	1.3	1.5	1.3	1.0	1.2	1.0	0.8	1.3	0.9	0.7	1.4	1.2	0.8	-0.4	
12th Grade	—	—	—	—	—	1.2	1.8	3.0	2.0	1.5	1.7	—	—	—	—	—	—	—	—	—	—	—	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Alcohol [v]																								
Any Use																								
8th Grade	70.1	69.3‡	55.7	55.8	54.5	55.3	53.8	52.5	52.1	51.7	50.5	47.0	45.6	43.9	41.0	40.5	38.9	38.9	36.6	35.8	33.1	29.5	-3.6	sss
10th Grade	83.8	82.3‡	71.6	71.1	70.5	71.8	72.0	69.8	70.6	71.4	70.1	66.9	66.0	64.2	63.2	61.5	61.7	58.3	59.1	58.2	56.0	54.0	-2.0	
12th Grade	88.0	87.5‡	80.0	80.4	80.7	79.2	81.7	81.4	80.0	80.3	79.7	78.4	76.6	76.8	75.1	72.7	72.2	71.9	72.3	71.0	70.0	69.4	-0.6	
College Students	93.6	91.8	89.3	88.2	88.5	88.4	87.3	88.5	88.0	86.6	86.1	86.0	86.2	84.6	86.6	84.7	83.1	85.3	82.6	82.3	80.5	81.0	+0.4	
Young Adults	94.1	93.4	92.1	91.2	91.6	91.2	90.7	90.6	90.2	90.7	89.9	90.2	89.3	89.4	89.1	88.9	87.9	88.4	87.9	87.5	87.4	86.5	-0.9	
Been Drunk [w]																								
8th Grade	26.7	26.8	26.4	25.9	25.3	26.8	25.2	24.8	24.8	25.1	23.4	21.3	20.3	19.9	19.5	19.5	17.9	18.0	17.4	16.3	14.8	12.8	-2.1	ss
10th Grade	50.0	47.7	47.9	47.2	46.9	48.5	49.4	46.7	48.9	49.3	48.2	44.0	42.4	42.3	42.1	41.4	41.2	37.2	38.6	36.9	35.9	34.6	-1.3	
12th Grade	65.4	63.4	62.5	62.9	63.2	61.8	64.2	62.4	62.3	62.3	63.9	61.6	58.1	60.3	57.5	56.4	55.1	54.7	56.5	54.1	51.0	54.2	+3.2	
College Students	79.6	76.8	76.4	74.4	76.6	76.2	77.0	76.8	75.1	74.7	76.1	75.1	74.9	73.4	72.9	73.1	71.6	72.5	69.1	70.5	67.9	70.0	+2.1	
Young Adults	82.9	81.1	81.4	80.7	82.1	80.7	81.4	79.8	81.6	80.4	81.1	81.2	80.9	80.1	79.9	80.9	80.1	80.1	78.2	79.0	78.9	78.9	+0.1	
Flavored Alcoholic Beverages [g,p]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	37.9	35.5	35.5	34.0	32.8	29.4	30.0	27.0	23.5	-3.5	ss
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	58.6	58.8	58.1	55.7	53.5	51.4	51.3	48.4	46.7	-1.7	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	71.0	73.6	69.9	68.4	65.5	67.4	62.6	62.4	60.5	-1.9	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	79.0	84.5	80.9	80.6	78.6	78.1	77.4	76.7	76.6	-0.1	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	83.2	84.6	84.4	84.0	82.6	83.5	81.4	82.2	82.4	+0.2	

(Table continued on next page.)

TABLE 2-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Cigarettes																								
Any Use																								
8th Grade	44.0	45.2	45.3	46.1	46.4	49.2	47.3	45.7	44.1	40.5	36.6	31.4	28.4	27.9	25.9	24.6	22.1	20.5	20.1	20.0	18.4	15.5	-2.8	sss
10th Grade	55.1	53.5	56.3	56.9	57.6	61.2	60.2	57.7	57.6	55.1	52.8	47.4	43.0	40.7	38.9	36.1	34.6	31.7	32.7	33.0	30.4	27.7	-2.6	ss
12th Grade	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	64.6	62.5	61.0	57.2	53.7	52.8	50.0	47.1	46.2	44.7	43.6	42.2	40.0	39.5	-0.5	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Smokeless Tobacco [x]																								
8th Grade	22.2	20.7	18.7	19.9	20.0	20.4	16.8	15.0	14.4	12.8	11.7	11.2	11.3	11.0	10.1	10.2	9.1	9.8	9.6	9.9	9.7	8.1	-1.6	
10th Grade	28.2	26.6	28.1	29.2	27.6	27.4	26.3	22.7	20.4	19.1	19.5	16.9	14.6	13.8	14.5	15.0	15.1	12.2	15.2	16.8	15.6	15.4	-0.1	
12th Grade	—	32.4	31.0	30.7	30.9	29.8	25.3	26.2	23.4	23.1	19.7	18.3	17.0	16.7	17.5	15.2	15.1	15.6	16.3	17.6	16.9	17.4	+0.5	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Steroids [y,z]																								
8th Grade	1.9	1.7	1.6	2.0	2.0	1.8	1.8	2.3	2.7	3.0	2.8	2.5	2.5	1.9	1.7	1.6	1.5	1.4	1.3	1.1	1.2	1.2	-0.1	
10th Grade	1.8	1.7	1.7	1.8	2.0	1.8	2.0	2.0	2.7	3.5	3.5	3.5	3.0	2.4	2.0	1.8	1.8	1.4	1.3	1.6	1.4	1.3	-0.1	
12th Grade	2.1	2.1	2.0	2.4	2.3	1.9	2.4	2.7	2.9	2.5	3.7	4.0	3.5	3.4	2.6	2.7	2.2	2.2	2.2	2.0	1.8	1.8	0.0	
College Students	1.4	1.7	1.9	0.5	0.8	0.6	1.6	0.9	1.3	0.6	1.5	1.2	1.2	1.6	1.0	1.9	0.6	1.6	1.3	0.7	1.1	0.4	-0.7	
Young Adults	1.7	1.9	1.5	1.3	1.5	1.5	1.4	1.4	1.9	1.4	1.4	1.6	1.8	1.9	1.8	1.8	1.7	1.8	1.8	1.7	1.3	1.7	+0.5	

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 2-4

TABLE 2-2
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Any Illicit Drug [a]																								
8th Grade	11.3	12.9	15.1	18.5	21.4	23.6	22.1	21.0	20.5	19.5	19.5	17.7	16.1	15.2	15.5	14.8	13.2	14.1	14.5	16.0	14.7	13.4	-1.3	
10th Grade	21.4	20.4	24.7	30.0	33.3	37.5	38.5	35.0	35.9	36.4	37.2	34.8	32.0	31.1	29.8	28.7	28.1	26.9	29.4	30.2	31.1	30.1	-0.9	
12th Grade	29.4	27.1	31.0	35.8	39.0	40.2	42.4	41.4	42.1	40.9	41.4	41.0	39.3	38.8	38.4	36.5	35.9	36.6	36.5	38.3	40.0	39.7	-0.3	
College Students	29.2	30.6	30.6	31.4	33.5	34.2	34.1	37.8	36.9	36.1	37.9	37.0	36.5	36.2	36.6	33.9	35.0	35.2	36.0	35.0	36.3	37.3	+1.0	
Young Adults	27.0	28.3	28.4	28.4	29.8	29.2	29.2	29.9	30.3	30.8	32.1	32.4	33.0	33.7	32.8	32.1	32.5	33.8	33.3	33.2	34.7	34.0	-0.7	
Any Illicit Drug other than Marijuana [a,b]																								
8th Grade	8.4	9.3	10.4	11.3	12.6	13.1	11.8	11.0	10.5	10.2‡	10.8	8.8	8.8	7.9	8.1	7.7	7.0	7.4	7.0	7.1	6.4	5.5	-0.9	
10th Grade	12.2	12.3	13.9	15.2	17.5	18.4	18.2	16.6	16.7	16.7‡	17.9	15.7	13.8	13.5	12.9	12.7	13.1	11.3	12.2	12.1	11.2	10.8	-0.4	
12th Grade	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	20.7	20.4‡	21.6	20.9	19.8	20.5	19.7	19.2	18.5	18.3	17.0	17.3	17.6	17.0	-0.5	
College Students	13.2	13.1	12.5	12.2	15.9	12.8	15.8	14.0	15.4	15.6‡	16.4	16.6	17.9	18.6	18.5	18.1	17.3	15.3	16.9	17.1	16.8	17.1	+0.3	
Young Adults	14.3	14.1	13.0	13.0	13.8	13.2	13.6	13.2	13.7	14.9‡	15.4	16.3	18.1	18.8	18.5	18.4	18.1	18.9	17.4	18.5	17.6	17.2	-0.4	
Any Illicit Drug including Inhalants [a,c,d]																								
8th Grade	16.7	18.2	21.1	24.2	27.1	28.7	27.2	26.2	25.3	24.0	23.9	21.4	20.4	20.2	20.4	19.7	18.0	19.0	18.8	20.3	18.2	17.0	-1.2	
10th Grade	23.9	23.5	27.4	32.5	35.6	39.6	40.3	37.1	37.7	38.0	38.7	36.1	33.5	32.9	31.7	30.7	30.2	28.8	31.2	31.8	32.5	31.5	-1.1	
12th Grade	31.2	28.8	32.5	37.6	40.2	41.9	43.3	42.4	42.8	42.5	42.6	42.1	40.5	39.1	40.3	38.0	37.0	37.3	37.6	39.2	41.5	40.2	-1.3	
College Students	29.8	31.1	31.7	31.9	33.7	35.1	35.5	39.1	37.4	37.0	38.2	37.7	36.0	35.9	37.9	35.5	36.8	35.7	35.0	34.5	36.5	36.9	+0.4	
Young Adults	27.8	29.2	28.9	29.2	30.4	30.2	30.1	30.6	30.6	31.2	33.2	32.4	32.7	34.9	32.8	32.6	33.2	33.5	33.1	33.3	34.2	34.2	0.0	
Marijuana/Hashish																								
8th Grade	6.2	7.2	9.2	13.0	15.8	18.3	17.7	16.9	16.5	15.6	15.4	14.6	12.8	11.8	12.2	11.7	10.3	10.9	11.8	13.7	12.5	11.4	-1.1	
10th Grade	16.5	15.2	19.2	25.2	28.7	33.6	34.8	31.1	32.1	32.2	32.7	30.3	28.2	27.5	26.6	25.2	24.6	23.9	26.7	27.5	28.8	28.0	-0.8	
12th Grade	23.9	21.9	26.0	30.7	34.7	35.8	38.5	37.5	37.8	36.5	37.0	36.2	34.9	34.3	33.6	31.5	31.7	32.4	32.8	34.8	36.4	36.4	0.0	
College Students	26.5	27.7	27.9	29.3	31.2	33.1	31.6	35.9	35.2	34.0	35.6	34.7	33.7	33.3	33.3	30.2	31.8	32.3	32.8	32.7	33.2	34.9	+1.7	
Young Adults	23.8	25.2	25.1	25.5	26.5	27.0	26.8	27.4	27.6	27.9	29.2	29.3	29.0	29.2	28.2	27.7	28.5	28.6	29.3	28.7	31.0	30.2	-0.7	
Synthetic Marijuana [p,q]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.4	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.8	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.3	-0.1	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.5	4.3	-4.2	s
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.4	5.0	-2.4	ss
Inhalants [c,d]																								
8th Grade	9.0	9.5	11.0	11.7	12.8	12.2	11.8	11.1	10.3	9.4	9.1	7.7	8.7	9.6	9.5	9.1	8.3	8.9	8.1	8.1	7.0	6.2	-0.8	
10th Grade	7.1	7.5	8.4	9.1	9.6	9.5	8.7	8.0	7.2	7.3	6.6	5.8	5.4	5.9	6.0	6.5	6.6	5.9	6.1	5.7	4.5	4.1	-0.4	
12th Grade	6.6	6.2	7.0	7.7	8.0	7.6	6.7	6.2	5.6	5.9	4.5	4.5	3.9	4.2	5.0	4.5	3.7	3.8	3.4	3.6	3.2	2.9	-0.3	
College Students	3.5	3.1	3.8	3.0	3.9	3.6	4.1	3.0	3.2	2.9	2.8	2.0	1.8	2.7	1.8	1.5	1.5	1.1	1.2	1.7	0.9	1.5	+0.7	
Young Adults	2.0	1.9	2.1	2.1	2.4	2.2	2.3	2.1	2.3	2.1	1.7	1.6	1.4	1.7	1.3	1.3	0.8	1.4	0.9	1.2	0.8	1.1	+0.3	
Nitrites [e]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	0.9	0.5	0.9	1.1	1.1	1.6	1.2	1.4	0.9	0.6	0.6	1.1	0.9	0.8	0.6	0.5	0.8	0.6	0.9	—	—	—	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	0.2	0.1	0.4	0.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Hallucinogens [b,f]																								
8th Grade	1.9	2.5	2.6	2.7	3.6	4.1	3.7	3.4	2.9	2.8‡	3.4	2.6	2.6	2.2	2.4	2.1	1.9	2.1	1.9	2.2	2.2	1.6	-0.6	s
10th Grade	4.0	4.3	4.7	5.8	7.2	7.8	7.6	6.9	6.9	6.1‡	6.2	4.7	4.1	4.1	4.0	4.1	4.4	3.9	4.1	4.2	4.1	3.5	-0.6	
12th Grade	5.8	5.9	7.4	7.6	9.3	10.1	9.8	9.0	9.4	8.1‡	9.1	6.6	5.9	6.2	5.5	4.9	5.4	5.9	4.7	5.5	5.2	4.8	-0.4	
College Students	6.3	6.8	6.0	6.2	8.2	6.9	7.7	7.2	7.8	6.7‡	7.5	6.3	7.4	5.9	5.0	5.6	4.9	5.1	4.7	4.9	4.1	4.5	+0.5	
Young Adults	4.5	5.0	4.5	4.8	5.6	5.6	5.9	5.2	5.4	5.4‡	5.4	4.7	5.2	4.7	4.5	4.1	3.8	3.8	3.9	4.2	3.7	3.6	-0.2	

(Table continued on next page.)

TABLE 2-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
LSD																								
8th Grade	1.7	2.1	2.3	2.4	3.2	3.5	3.2	2.8	2.4	2.4	2.2	1.5	1.3	1.1	1.2	0.9	1.1	1.3	1.1	1.2	1.1	0.8	-0.3	
10th Grade	3.7	4.0	4.2	5.2	6.5	6.9	6.7	5.9	6.0	5.1	4.1	2.6	1.7	1.6	1.5	1.7	1.9	1.8	1.9	1.9	1.8	1.7	-0.1	
12th Grade	5.2	5.6	6.8	6.9	8.4	8.8	8.4	7.6	8.1	6.6	6.6	3.5	1.9	2.2	1.8	1.7	2.1	2.7	1.9	2.6	2.7	2.4	-0.3	
College Students	5.1	5.7	5.1	5.2	6.9	5.2	5.0	4.4	5.4	4.3	4.0	2.1	1.4	1.2	0.7	1.4	1.3	2.6	2.0	2.1	2.0	1.9	-0.1	
Young Adults	3.8	4.3	3.8	4.0	4.6	4.5	4.4	3.5	4.0	3.7	3.4	1.8	1.2	0.9	0.8	1.2	1.1	1.4	1.7	1.5	1.7	1.6	-0.1	
Hallucinogens other than LSD [b]																								
8th Grade	0.7	1.1	1.0	1.3	1.7	2.0	1.8	1.6	1.5	1.4‡	2.4	2.1	2.1	1.9	2.0	1.8	1.6	1.6	1.5	1.8	1.8	1.3	-0.5	s
10th Grade	1.3	1.4	1.9	2.4	2.8	3.3	3.3	3.4	3.2	3.1‡	4.3	4.0	3.6	3.7	3.5	3.7	3.8	3.3	3.5	3.5	3.5	3.0	-0.5	
12th Grade	2.0	1.7	2.2	3.1	3.8	4.4	4.6	4.6	4.3	4.4‡	5.9	5.4	5.4	5.6	5.0	4.6	4.8	5.0	4.2	4.8	4.3	4.0	-0.3	
College Students	3.1	2.6	2.7	2.8	4.0	4.1	4.9	4.4	4.5	4.4‡	5.5	5.8	7.1	5.6	5.0	5.4	4.7	4.4	4.1	4.4	3.4	3.9	+0.5	
Young Adults	1.7	1.9	1.9	2.0	2.5	2.8	3.1	3.0	3.0	3.4‡	3.5	4.0	4.9	4.5	4.2	3.8	3.6	3.4	3.3	3.7	3.2	2.9	-0.3	
PCP [g]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	1.4	1.4	1.4	1.6	1.8	2.6	2.3	2.1	1.8	2.3	1.8	1.1	1.3	0.7	1.3	0.7	0.9	1.1	1.0	1.0	1.3	0.9	-0.3	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	0.3	0.3	0.2	0.3	0.3	0.2	0.5	0.6	0.6	0.3	0.6	0.3	0.3	0.1	0.6	0.2	0.3	0.4	0.1	0.2	0.3	*	-0.3	
Ecstasy (MDMA) [h]																								
8th Grade	—	—	—	—	—	2.3	2.3	1.8	1.7	3.1	3.5	2.9	2.1	1.7	1.7	1.4	1.5	1.7	1.3	2.4	1.7	1.1	-0.6	s
10th Grade	—	—	—	—	—	4.6	3.9	3.3	4.4	5.4	6.2	4.9	3.0	2.4	2.6	2.8	3.5	2.9	3.7	4.7	4.5	3.0	-1.6	sss
12th Grade	—	—	—	—	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	4.5	4.0	3.0	4.1	4.5	4.3	4.3	4.5	5.3	3.8	-1.6	s
College Students	0.9	2.0	0.8	0.5	2.4	2.8	2.4	3.9	5.5	9.1	9.2	6.8	4.4	2.2	2.9	2.6	2.2	3.7	3.1	4.3	4.2	5.8	+1.6	
Young Adults	0.8	1.0	0.8	0.7	1.6	1.7	2.1	2.9	3.6	7.2	7.5	6.2	4.5	3.5	3.0	3.0	2.5	3.3	3.1	3.5	3.6	4.1	+0.4	
Salvia [p,q]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.7	1.6	1.4	-0.2	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.7	3.9	2.5	-1.3	sss
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.7	5.5	5.9	4.4	-1.5	ss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.8	3.6	3.2	1.3	-1.9	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.5	3.4	2.5	1.1	-1.4	s
Cocaine																								
8th Grade	1.1	1.5	1.7	2.1	2.6	3.0	2.8	3.1	2.7	2.6	2.5	2.3	2.2	2.0	2.2	2.0	2.0	1.8	1.6	1.6	1.4	1.2	-0.3	
10th Grade	2.2	1.9	2.1	2.8	3.5	4.2	4.7	4.7	4.9	4.4	3.6	4.0	3.3	3.7	3.5	3.2	3.4	3.0	2.7	2.2	1.9	2.0	+0.1	
12th Grade	3.5	3.1	3.3	3.6	4.0	4.9	5.5	5.7	6.2	5.0	4.8	5.0	4.8	5.3	5.1	5.7	5.2	4.4	3.4	2.9	2.9	2.7	-0.1	
College Students	3.6	3.0	2.7	2.0	3.6	2.9	3.4	4.6	4.6	4.8	4.7	4.8	5.4	6.6	5.7	5.1	5.4	4.4	4.2	3.5	3.3	3.1	-0.2	
Young Adults	6.2	5.7	4.7	4.3	4.4	4.1	4.7	4.9	5.4	5.4	5.8	5.8	6.6	7.1	6.9	6.6	6.2	6.0	5.2	4.7	4.7	4.1	-0.6	
Crack [i]																								
8th Grade	0.7	0.9	1.0	1.3	1.6	1.8	1.7	2.1	1.8	1.8	1.7	1.6	1.6	1.3	1.4	1.3	1.3	1.1	1.1	1.0	0.9	0.6	-0.3	s
10th Grade	0.9	0.9	1.1	1.4	1.8	2.1	2.2	2.5	2.4	2.2	1.8	2.3	1.6	1.7	1.7	1.3	1.3	1.3	1.2	1.0	0.9	0.8	-0.2	
12th Grade	1.5	1.5	1.5	1.9	2.1	2.1	2.4	2.5	2.7	2.2	2.1	2.3	2.2	2.3	1.9	2.1	1.9	1.6	1.3	1.4	1.0	1.2	+0.2	
College Students	0.5	0.4	0.6	0.5	1.1	0.6	0.4	1.0	0.9	0.9	0.9	0.4	1.3	1.3	0.8	1.0	0.6	0.5	0.3	0.4	0.3	0.3	0.0	
Young Adults	1.2	1.4	1.3	1.1	1.1	1.1	1.0	1.1	1.4	1.2	1.3	1.0	1.0	1.3	1.2	1.1	1.0	0.9	0.7	0.5	0.6	0.5	-0.1	
Other Cocaine [j]																								
8th Grade	1.0	1.2	1.3	1.7	2.1	2.5	2.2	2.4	2.3	1.9	1.9	1.8	1.6	1.6	1.7	1.6	1.5	1.4	1.3	1.3	1.1	1.0	-0.1	
10th Grade	2.1	1.7	1.8	2.4	3.0	3.5	4.1	4.0	4.4	3.8	3.0	3.4	2.8	3.3	3.0	2.9	3.1	2.6	2.3	1.9	1.7	1.8	+0.1	
12th Grade	3.2	2.6	2.9	3.0	3.4	4.2	5.0	4.9	5.8	4.5	4.4	4.4	4.2	4.7	4.5	5.2	4.5	4.0	3.0	2.6	2.6	2.4	-0.2	
College Students	3.2	2.4	2.5	1.8	3.3	2.3	3.0	4.2	4.2	4.1	4.1	5.0	5.1	6.3	5.0	3.8	5.3	4.2	4.2	4.0	3.0	3.0	0.0	
Young Adults	5.4	5.1	3.9	3.6	3.9	3.8	4.3	4.5	4.8	4.8	5.3	5.6	6.1	6.4	6.3	5.9	5.6	5.5	5.0	4.8	4.3	4.0	-0.3	

(Table continued on next page.)

TABLE 2-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Heroin [j,k]																								
8th Grade	0.7	0.7	0.7	1.2	1.4	1.6	1.3	1.3	1.4	1.1	1.0	0.9	0.9	1.0	0.8	0.8	0.8	0.9	0.7	0.8	0.7	0.5	-0.2	
10th Grade	0.5	0.6	0.7	0.9	1.1	1.2	1.4	1.4	1.4	1.4	0.9	1.1	0.7	0.9	0.9	0.9	0.8	0.8	0.9	0.8	0.8	0.6	-0.1	
12th Grade	0.4	0.6	0.5	0.6	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	0.8	0.9	0.8	0.8	0.9	0.7	0.7	0.9	0.8	0.6	-0.1	
College Students	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.6	0.2	0.5	0.4	0.1	0.2	0.4	0.3	0.3	0.2	0.3	0.4	0.2	0.1	0.1	0.0	
Young Adults	0.1	0.2	0.2	0.1	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.2	0.4	0.3	0.4	0.4	0.3	0.5	0.6	0.5	0.5	0.5	0.0	
With a Needle [l]																								
8th Grade	—	—	—	—	0.9	1.0	0.8	0.8	0.9	0.6	0.7	0.6	0.6	0.7	0.6	0.5	0.6	0.5	0.5	0.6	0.5	0.4	-0.1	
10th Grade	—	—	—	—	0.6	0.7	0.7	0.8	0.6	0.5	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.4	-0.1	
12th Grade	—	—	—	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.7	0.6	0.4	-0.2	
College Students	—	—	—	—	0.1	*	0.1	0.2	0.1	0.1	0.1	*	0.1	0.1	0.3	0.3	*	0.0	0.1	0.0	0.2	0.2	0.0	
Young Adults	—	—	—	—	0.1	0.1	0.1	0.1	0.1	*	0.3	*	*	0.1	0.2	0.3	0.1	0.1	0.1	0.2	0.4	0.3	-0.1	
Without a Needle [l]																								
8th Grade	—	—	—	—	0.8	1.0	0.8	0.8	0.9	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.4	0.5	0.4	0.3	-0.2	s
10th Grade	—	—	—	—	0.8	0.9	1.1	1.0	1.1	1.1	0.7	0.8	0.5	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.0	
12th Grade	—	—	—	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.8	0.7	0.8	0.6	1.0	0.5	0.6	0.8	0.7	0.4	-0.3	s
College Students	—	—	—	—	0.0	0.8	0.4	0.9	0.3	0.8	0.6	0.2	0.1	0.6	0.2	0.3	0.2	0.3	0.1	0.3	0.2	0.1	-0.1	
Young Adults	—	—	—	—	0.3	0.4	0.4	0.7	0.6	0.5	0.9	0.2	0.4	0.3	0.4	0.5	0.3	0.4	0.6	0.4	0.2	0.4	+0.2	
Narcotics other than Heroin [m,n]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	3.5	3.3	3.6	3.8	4.7	5.4	6.2	6.3	6.7	7.0	6.7‡	9.4	9.3	9.5	9.0	9.0	9.2	9.1	9.2	8.7	8.7	7.9	-0.8	
College Students	2.7	2.7	2.5	2.4	3.8	3.1	4.2	4.2	4.3	4.5	5.7‡	7.4	8.7	8.2	8.4	8.8	7.7	6.5	7.6	7.2	6.2	5.4	-0.8	
Young Adults	2.5	2.5	2.2	2.5	3.0	2.9	3.3	3.4	3.8	4.1	5.0‡	7.1	8.5	9.0	8.7	9.1	8.7	9.1	8.4	9.0	7.9	7.3	-0.6	
OxyContin [m,p,aa,bb]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	1.3	1.7	1.7	1.8	2.6	1.8	2.1	2.0	2.1	1.8	1.6	-0.3	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	3.0	3.6	3.5	3.2	3.8	3.9	3.6	5.1	4.6	3.9	3.0	-0.9	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	4.0	4.5	5.0	5.5	4.3	5.2	4.7	4.9	5.1	4.9	4.3	-0.7	
College Students	—	—	—	—	—	—	—	—	—	—	—	1.5	2.2	2.5	2.1	3.0	2.8	3.6	5.0	2.3	2.4	1.2	-1.3	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	1.9	2.6	3.1	3.1	3.1	2.9	3.9	5.2	3.2	2.8	2.3	-0.5	
Vicodin [m,p,aa,bb]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	2.5	2.8	2.5	2.6	3.0	2.7	2.9	2.5	2.7	2.1	1.3	-0.8	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	6.9	7.2	6.2	5.9	7.0	7.2	6.7	8.1	7.7	5.9	4.4	-1.4	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	9.6	10.5	9.3	9.5	9.7	9.6	9.7	9.7	8.0	8.1	7.5	-0.7	
College Students	—	—	—	—	—	—	—	—	—	—	—	6.9	7.5	7.4	9.6	7.6	6.7	6.7	8.4	4.9	5.8	3.8	-2.0	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	8.2	8.6	8.9	9.3	9.1	8.9	9.1	8.9	7.8	7.1	6.3	-0.8	
Amphetamines [m,o]																								
8th Grade	6.2	6.5	7.2	7.9	8.7	9.1	8.1	7.2	6.9	6.5	6.7	5.5	5.5	4.9	4.9	4.7	4.2	4.5	4.1	3.9	3.5	2.9	-0.6	
10th Grade	8.2	8.2	9.6	10.2	11.9	12.4	12.1	10.7	10.4	11.1	11.7	10.7	9.0	8.5	7.8	7.9	8.0	6.4	7.1	7.6	6.6	6.5	-0.1	
12th Grade	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1	10.2	10.5	10.9	11.1	9.9	10.0	8.6	8.1	7.5	6.8	6.6	7.4	8.2	7.9	-0.3	
College Students	3.9	3.6	4.2	4.2	5.4	4.2	5.7	5.1	5.8	6.6	7.2	7.0	7.1	7.0	6.7	6.0	6.9	5.7	7.5	9.0	9.3	11.1	+1.8	
Young Adults	4.3	4.1	4.0	4.5	4.6	4.2	4.6	4.5	4.7	5.4	5.8	5.9	5.8	6.2	5.1	5.6	5.6	5.3	6.0	7.1	7.2	7.8	+0.6	
Ritalin [m,p,q,bb]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	2.9	2.8	2.6	2.5	2.4	2.6	2.1	1.6	1.8	1.5	1.3	0.7	-0.6	
10th Grade	—	—	—	—	—	—	—	—	—	—	4.8	4.8	4.1	3.4	3.4	3.6	2.8	2.9	3.6	2.7	2.6	1.9	-0.8	
12th Grade	—	—	—	—	—	—	—	—	—	—	5.1	4.0	4.0	5.1	4.4	4.4	3.8	3.4	2.1	2.7	2.6	2.6	0.0	
College Students	—	—	—	—	—	—	—	—	—	—	—	5.7	4.7	4.7	4.2	3.9	3.7	3.2	1.7	1.9	2.3	1.8	-0.5	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	2.9	2.9	2.7	2.5	2.6	2.4	2.4	1.7	1.7	1.5	1.6	+0.1	

(Table continued on next page.)

TABLE 2-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Adderall [m,p,q,bb]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	2.3	1.7	1.7	0.0
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.7	5.3	4.6	4.5	-0.1
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.4	6.5	6.5	7.6	+1.1
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.2	9.0	9.8	9.0	-0.8
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.8	7.0	6.6	7.4	+0.7
Provigil [m,q]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.3	1.5	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.0	0.2	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.5	0.5	0.3	—	—
Methamphetamine [p,q]																							
8th Grade	—	—	—	—	—	—	—	—	3.2	2.5	2.8	2.2	2.5	1.5	1.8	1.8	1.1	1.2	1.0	1.2	0.8	1.0	+0.2
10th Grade	—	—	—	—	—	—	—	—	4.6	4.0	3.7	3.9	3.3	3.0	2.9	1.8	1.6	1.5	1.6	1.6	1.4	1.0	-0.4
12th Grade	—	—	—	—	—	—	—	—	4.7	4.3	3.9	3.6	3.2	3.4	2.5	2.5	1.7	1.2	1.2	1.0	1.4	1.1	-0.3
College Students	—	—	—	—	—	—	—	—	3.3	1.6	2.4	1.2	2.6	2.9	1.7	1.2	0.4	0.5	0.3	0.4	0.2	0.0	-0.2
Young Adults	—	—	—	—	—	—	—	—	2.8	2.5	2.8	2.5	2.7	2.8	2.4	1.9	1.5	1.0	0.9	0.7	0.5	1.0	+0.4
Crystal Methamphetamine (Ice) [q]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.0	2.0	2.1	2.3	1.9	1.6	1.1	0.9	0.9	1.2	0.8	-0.3
College Students	0.1	0.2	0.7	0.8	1.1	0.3	0.8	1.0	0.5	0.5	0.6	0.8	0.9	1.1	1.4	0.6	0.7	0.1	0.1	0.5	0.1	0.6	+0.5
Young Adults	0.3	0.4	0.8	0.9	1.2	0.9	0.9	1.1	0.9	1.2	1.1	1.4	1.3	1.5	1.6	1.1	1.1	0.8	0.8	0.5	0.5	0.6	+0.1
Sedatives (Barbiturates) [m,r]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.4	2.8	3.4	4.1	4.7	4.9	5.1	5.5	5.8	6.2	5.7	6.7	6.0‡	6.5	7.2	6.6	6.2	5.8	5.2	4.8	4.3	4.5	+0.2
College Students	1.2	1.4	1.5	1.2	2.0	2.3	3.0	2.5	3.2	3.7	3.8	3.7	4.1	4.2	3.9	3.4	3.6	3.7	3.1	2.5	1.7	2.2	+0.5
Young Adults	1.8	1.6	1.9	1.8	2.1	2.2	2.4	2.5	2.8	3.4	3.7	3.9	3.9	4.4	4.2	3.9	4.2	4.7	3.8	3.3	3.2	2.7	-0.5
Methaqualone [m,s]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.5	0.6	0.2	0.8	0.7	1.1	1.0	1.1	1.1	0.3	0.8	0.9	0.6	0.8	0.9	0.8	0.5	0.5	0.6	0.3	0.3	0.4	+0.1
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers [b,m]																							
8th Grade	1.8	2.0	2.1	2.4	2.7	3.3	2.9	2.6	2.5	2.6‡	2.8	2.6	2.7	2.5	2.8	2.6	2.4	2.4	2.6	2.8	2.0	1.8	-0.2
10th Grade	3.2	3.5	3.3	3.3	4.0	4.6	4.9	5.1	5.4	5.6‡	7.3	6.3	5.3	5.1	4.8	5.2	5.3	4.6	5.0	5.1	4.5	4.3	-0.3
12th Grade	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5	5.8	5.7‡	6.9	7.7	6.7	7.3	6.8	6.6	6.2	6.2	6.3	5.6	5.6	5.3	-0.2
College Students	2.4	2.9	2.4	1.8	2.9	2.8	3.8	3.9	3.8	4.2‡	5.1	6.7	6.9	6.7	6.4	5.8	5.5	5.0	5.4	4.9	4.2	3.4	-0.8
Young Adults	3.5	3.4	3.1	2.9	3.4	3.2	3.1	3.8	3.7	4.6‡	5.5	7.0	6.8	7.4	6.7	6.5	7.1	6.8	6.4	6.3	5.9	5.3	-0.6
Any Prescription Drug [t]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.1	16.8	15.8	15.4	14.4	15.0	15.2	14.8	-0.4
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Over-the-counter Cough/Cold Medicines [p,q]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.2	4.0	3.6	3.8	3.2	2.7	3.0	+0.3
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.3	5.4	5.3	6.0	5.1	5.5	4.7	-0.8
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	5.8	5.5	5.9	6.6	5.3	5.6	+0.3
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 2-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Rohypnol [u]																								
8th Grade	—	—	—	—	—	1.0	0.8	0.8	0.5	0.5	0.7	0.3	0.5	0.6	0.7	0.5	0.7	0.5	0.4	0.5	0.8	0.4	-0.4	
10th Grade	—	—	—	—	—	1.1	1.3	1.2	1.0	0.8	1.0	0.7	0.6	0.7	0.5	0.5	0.7	0.4	0.4	0.6	0.6	0.5	-0.2	
12th Grade	—	—	—	—	—	1.1	1.2	1.4	1.0	0.8	0.9‡	1.6	1.3	1.6	1.2	1.1	1.0	1.3	1.0	1.5	1.3	1.5	+0.2	
College Students	—	—	—	—	—	—	—	—	—	—	—	0.7	0.4	0.3	0.1	0.2	0.1	0.3	0.0	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	0.3	0.5	0.1	0.1	0.2	0.3	0.2	0.1	—	—	—	—	
GHB [p,cc]																								
8th Grade	—	—	—	—	—	—	—	—	—	1.2	1.1	0.8	0.9	0.7	0.5	0.8	0.7	1.1	0.7	0.6	0.6	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	1.1	1.0	1.4	1.4	0.8	0.8	0.7	0.6	0.5	1.0	0.6	0.5	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	1.9	1.6	1.5	1.4	2.0	1.1	1.1	0.9	1.2	1.1	1.4	1.4	1.4	0.0	
College Students	—	—	—	—	—	—	—	—	—	—	—	0.6	0.3	0.7	0.4	*	0.1	0.2	0.0	0.1	0.1	0.0	-0.1	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	0.8	0.6	0.5	0.3	0.2	0.4	0.3	0.2	0.3	0.3	0.4	+0.1	
Ketamine [p,dd]																								
8th Grade	—	—	—	—	—	—	—	—	—	1.6	1.3	1.3	1.1	0.9	0.6	0.9	1.0	1.2	1.0	1.0	0.8	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	2.1	2.1	2.2	1.9	1.3	1.0	1.0	0.8	1.0	1.3	1.1	1.2	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	2.5	2.5	2.6	2.1	1.9	1.6	1.4	1.3	1.5	1.7	1.6	1.7	1.5	-0.2	
College Students	—	—	—	—	—	—	—	—	—	—	—	1.3	1.0	1.5	0.5	0.9	0.2	0.4	0.1	0.7	0.6	0.4	-0.2	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	1.2	0.9	0.6	0.5	0.5	0.3	0.4	0.5	0.8	0.5	0.8	+0.3	
Alcohol [v]																								
Any Use																								
8th Grade	54.0	53.7‡	45.4	46.8	45.3	46.5	45.5	43.7	43.5	43.1	41.9	38.7	37.2	36.7	33.9	33.6	31.8	32.1	30.3	29.3	26.9	23.6	-3.3	sss
10th Grade	72.3	70.2‡	63.4	63.9	63.5	65.0	65.2	62.7	63.7	65.3	63.5	60.0	59.3	58.2	56.7	55.8	56.3	52.5	52.8	52.1	49.8	48.5	-1.2	
12th Grade	77.7	76.8‡	72.7	73.0	73.7	72.5	74.8	74.3	73.8	73.2	73.3	71.5	70.1	70.6	68.6	66.5	66.4	65.5	66.2	65.2	63.5	63.5	0.0	
College Students	88.3	86.9	85.1	82.7	83.2	82.9	82.4	84.6	83.6	83.2	83.0	82.9	81.7	81.2	83.0	82.1	80.9	82.1	79.4	78.6	77.4	79.2	+1.8	
Young Adults	86.9	86.2	85.3	83.7	84.7	84.0	84.3	84.0	84.1	84.0	84.3	84.9	83.3	84.4	83.8	84.4	84.0	83.6	83.8	82.7	83.5	82.5	-1.0	
Been Drunk [w]																								
8th Grade	17.5	18.3	18.2	18.2	18.4	19.8	18.4	17.9	18.5	18.5	16.6	15.0	14.5	14.5	14.1	13.9	12.6	12.7	12.2	11.5	10.5	8.6	-1.9	ss
10th Grade	40.1	37.0	37.8	38.0	38.5	40.1	40.7	38.3	40.9	41.6	39.9	35.4	34.7	35.1	34.2	34.5	34.4	30.0	31.2	29.9	28.8	28.2	-0.6	
12th Grade	52.7	50.3	49.6	51.7	52.5	51.9	53.2	52.0	53.2	51.8	53.2	50.4	48.0	51.8	47.7	47.9	46.1	45.6	47.0	44.0	42.2	45.0	+2.9	
College Students	69.1	67.3	65.6	63.1	62.1	64.2	66.8	67.0	65.4	64.7	68.8	66.0	64.7	67.1	64.2	66.2	64.8	66.8	61.5	63.8	60.1	61.5	+1.3	
Young Adults	62.0	60.9	61.1	58.8	61.6	59.9	63.2	59.6	63.2	60.6	63.1	61.8	62.9	63.8	63.5	65.7	65.8	66.0	65.5	64.8	64.0	64.6	+0.7	
Flavored Alcoholic Beverages [g,p,ee]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	30.4	27.9	26.8	26.0	25.0	22.2	21.9	19.2	17.0	-2.2	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	49.7	48.5	48.8	45.9	43.4	41.5	41.0	38.3	37.8	-0.4	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	55.2	55.8	58.4	54.7	53.6	51.8	53.4	47.9	47.0	44.4	-2.6	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	63.2	67.0	63.5	62.6	65.0	66.1	60.3	63.0	58.1	-4.9	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	62.7	58.4	58.5	58.9	58.3	57.0	52.0	56.3	54.8	-1.5	
Alcoholic Beverages containing Caffeine [p,w]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.8‡	10.9	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22.5‡	19.7	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.4‡	26.4	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.6‡	33.8	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.1‡	36.7	—	
Cigarettes																								
Any Use																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
College Students	35.6	37.3	38.8	37.6	39.3	41.4	43.6	44.3	44.5	41.3	39.0	38.3	35.2	36.7	36.0	30.9	30.7	30.0	29.9	28.1	25.8	23.4	-2.3	
Young Adults	37.7	37.9	37.8	38.3	38.8	40.3	41.8	41.6	41.1	40.9	41.1	39.1	38.6	39.0	39.1	36.9	36.2	35.0	33.9	33.0	31.5	29.8	-1.7	

(Table continued on next page.)

TABLE 2-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Bidis [p,ff]																							
8th Grade	—	—	—	—	—	—	—	—	—	3.9	2.7	2.7	2.0	1.7	1.6	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	6.4	4.9	3.1	2.8	2.1	1.6	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	9.2	7.0	5.9	4.0	3.6	3.3	2.3	1.7	1.9	1.5	1.4	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kreteks [p,ff]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	2.6	2.6	2.0	1.9	1.4	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	6.0	4.9	3.8	3.7	2.8	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	10.1	8.4	6.7	6.5	7.1	6.2	6.8	6.8	5.5	4.6	2.9	3.0	0.0
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tobacco using a Hookah [s]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.1	18.5	18.3	-0.3
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.9	25.7	-2.2
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.1	19.1	-1.0
Small Cigars [s]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.1	19.5	19.9	+0.4
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.6	20.3	-3.3
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.2	18.0	-1.2
Dissolvable Tobacco [p,s]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.6	+0.1
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0	0.3	+0.3
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.3	0.6	+0.3
Snus [p,s]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.9	7.9	0.0
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.5	4.7	-1.8
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.1	5.7	-0.4
Steroids [y,z]																							
8th Grade	1.0	1.1	0.9	1.2	1.0	0.9	1.0	1.2	1.7	1.7	1.6	1.5	1.4	1.1	1.1	0.9	0.8	0.9	0.8	0.5	0.7	0.6	-0.1
10th Grade	1.1	1.1	1.0	1.1	1.2	1.2	1.2	1.2	1.7	2.2	2.1	2.2	1.7	1.5	1.3	1.2	1.1	0.9	0.8	1.0	0.9	0.8	-0.1
12th Grade	1.4	1.1	1.2	1.3	1.5	1.4	1.4	1.7	1.8	1.7	2.4	2.5	2.1	2.5	1.5	1.8	1.4	1.5	1.5	1.5	1.2	1.3	0.0
College Students	0.6	0.2	0.9	0.2	0.4	0.2	0.7	0.2	0.9	0.1	0.6	0.5	0.3	0.6	0.5	0.8	0.6	0.1	0.7	0.3	0.2	0.3	0.0
Young Adults	0.5	0.4	0.3	0.4	0.5	0.3	0.5	0.4	0.6	0.4	0.4	0.4	0.5	0.5	0.5	0.3	0.7	0.4	0.7	0.8	0.2	0.4	+0.2
Bath Salts (Synthetic stimulants) [p,q]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 2-4.

TABLE 2-3
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Any Illicit Drug [a]																								
8th Grade	5.7	6.8	8.4	10.9	12.4	14.6	12.9	12.1	12.2	11.9	11.7	10.4	9.7	8.4	8.5	8.1	7.4	7.6	8.1	9.5	8.5	7.7	-0.9	
10th Grade	11.6	11.0	14.0	18.5	20.2	23.2	23.0	21.5	22.1	22.5	22.7	20.8	19.5	18.3	17.3	16.8	16.9	15.8	17.8	18.5	19.2	18.6	-0.6	
12th Grade	16.4	14.4	18.3	21.9	23.8	24.6	26.2	25.6	25.9	24.9	25.7	25.4	24.1	23.4	23.1	21.5	21.9	22.3	23.3	23.8	25.2	25.2	0.0	
College Students	15.2	16.1	15.1	16.0	19.1	17.6	19.2	19.7	21.6	21.5	21.9	21.5	21.4	21.2	19.5	19.2	19.3	18.9	20.7	19.2	21.4	22.3	+0.9	
Young Adults	15.1	14.8	14.9	15.3	15.8	15.8	16.4	16.1	17.1	18.1	18.8	18.9	19.9	19.1	18.6	18.5	18.9	19.3	19.8	18.9	20.6	19.9	-0.7	
Any Illicit Drug other than Marijuana [a,b]																								
8th Grade	3.8	4.7	5.3	5.6	6.5	6.9	6.0	5.5	5.5	5.6‡	5.5	4.7	4.7	4.1	4.1	3.8	3.6	3.8	3.5	3.5	3.4	2.6	-0.8	s
10th Grade	5.5	5.7	6.5	7.1	8.9	8.9	8.8	8.6	8.6	8.5‡	8.7	8.1	6.9	6.9	6.4	6.3	6.9	5.3	5.7	5.8	5.4	5.0	-0.5	
12th Grade	7.1	6.3	7.9	8.8	10.0	9.5	10.7	10.7	10.4	10.4‡	11.0	11.3	10.4	10.8	10.3	9.8	9.5	9.3	8.6	8.6	8.9	8.4	-0.4	
College Students	4.3	4.6	5.4	4.6	6.3	4.5	6.8	6.1	6.4	6.9‡	7.5	7.8	8.2	9.1	8.2	8.2	8.1	7.3	8.4	8.1	8.2	7.8	-0.4	
Young Adults	5.4	5.5	4.9	5.3	5.7	4.7	5.5	5.5	6.0	6.4‡	7.0	7.7	8.3	8.5	8.2	8.1	8.6	8.9	8.5	8.6	8.4	7.8	-0.6	
Any Illicit Drug including Inhalants [a,c,d]																								
8th Grade	8.8	10.0	12.0	14.3	16.1	17.5	16.0	14.9	15.1	14.4	14.0	12.6	12.1	11.2	11.2	10.9	10.1	10.4	10.6	11.7	10.5	9.5	-1.0	
10th Grade	13.1	12.6	15.5	20.0	21.6	24.5	24.1	22.5	23.1	23.6	23.6	21.7	20.5	19.3	18.4	17.7	18.1	16.8	18.8	19.4	20.1	19.3	-0.8	
12th Grade	17.8	15.5	19.3	23.0	24.8	25.5	26.9	26.6	26.4	26.4	26.5	25.9	24.6	23.3	24.2	22.1	22.8	22.8	24.1	24.5	26.2	25.2	-1.0	
College Students	15.1	16.5	15.7	16.4	19.6	18.0	19.6	21.0	21.8	22.6	21.9	21.9	21.6	21.7	19.0	19.7	18.1	18.9	21.3	20.5	20.6	20.0	-0.6	
Young Adults	15.4	15.3	15.1	16.1	16.1	16.4	16.9	16.7	17.4	18.8	19.2	19.5	20.1	19.6	18.0	18.4	19.1	19.3	20.3	19.6	20.3	19.1	-1.2	
Marijuana/Hashish																								
8th Grade	3.2	3.7	5.1	7.8	9.1	11.3	10.2	9.7	9.7	9.1	9.2	8.3	7.5	6.4	6.6	6.5	5.7	5.8	6.5	8.0	7.2	6.5	-0.7	
10th Grade	8.7	8.1	10.9	15.8	17.2	20.4	20.5	18.7	19.4	19.7	19.8	17.8	17.0	15.9	15.2	14.2	14.2	13.8	15.9	16.7	17.6	17.0	-0.6	
12th Grade	13.8	11.9	15.5	19.0	21.2	21.9	23.7	22.8	23.1	21.6	22.4	21.5	21.2	19.9	19.8	18.3	18.8	19.4	20.6	21.4	22.6	22.9	+0.3	
College Students	14.1	14.6	14.2	15.1	18.6	17.5	17.7	18.6	20.7	20.0	20.2	19.7	19.3	18.9	17.1	16.7	16.8	17.0	18.5	17.5	19.4	20.5	+1.0	
Young Adults	13.5	13.3	13.4	14.1	14.0	15.1	15.0	14.9	15.6	16.1	16.7	16.9	17.3	16.5	15.8	15.7	16.0	16.0	17.0	16.1	18.3	17.7	-0.6	
Inhalants [c,d]																								
8th Grade	4.4	4.7	5.4	5.6	6.1	5.8	5.6	4.8	5.0	4.5	4.0	3.8	4.1	4.5	4.2	4.1	3.9	4.1	3.8	3.6	3.2	2.7	-0.6	s
10th Grade	2.7	2.7	3.3	3.6	3.5	3.3	3.0	2.9	2.6	2.6	2.4	2.4	2.2	2.4	2.2	2.3	2.5	2.1	2.2	2.0	1.7	1.4	-0.3	
12th Grade	2.4	2.3	2.5	2.7	3.2	2.5	2.5	2.3	2.0	2.2	1.7	1.5	1.5	1.5	2.0	1.5	1.2	1.4	1.2	1.4	1.0	0.9	-0.2	
College Students	0.9	1.1	1.3	0.6	1.6	0.8	0.8	0.6	1.5	0.9	0.4	0.7	0.4	0.4	0.3	0.4	0.1	0.4	0.1	0.5	0.3	0.2	0.0	
Young Adults	0.5	0.6	0.7	0.5	0.7	0.5	0.5	0.7	0.8	0.5	0.4	0.5	0.3	0.3	0.2	0.3	0.2	0.4	0.2	0.1	0.1	0.3	+0.1	
Nitrites [e]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	0.4	0.3	0.6	0.4	0.4	0.7	0.7	1.0	0.4	0.3	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.6	—	—	—	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	*	0.1	0.2	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Hallucinogens [b,f]																								
8th Grade	0.8	1.1	1.2	1.3	1.7	1.9	1.8	1.4	1.3	1.2‡	1.6	1.2	1.2	1.0	1.1	0.9	1.0	0.9	0.9	1.0	1.0	0.6	-0.4	s
10th Grade	1.6	1.8	1.9	2.4	3.3	2.8	3.3	3.2	2.9	2.3‡	2.1	1.6	1.5	1.6	1.5	1.5	1.7	1.3	1.4	1.6	1.4	1.2	-0.2	
12th Grade	2.2	2.1	2.7	3.1	4.4	3.5	3.9	3.8	3.5	2.6‡	3.3	2.3	1.8	1.9	1.9	1.5	1.7	2.2	1.6	1.9	1.6	1.6	0.0	
College Students	1.2	2.3	2.5	2.1	3.3	1.9	2.1	2.1	2.0	1.4‡	1.8	1.2	1.8	1.3	1.2	0.9	1.3	1.7	1.0	1.4	1.2	1.1	-0.1	
Young Adults	1.1	1.5	1.2	1.4	1.7	1.2	1.5	1.4	1.3	1.2‡	1.2	0.9	1.2	0.9	0.8	0.7	0.9	0.9	0.8	1.0	0.9	0.6	-0.2	
LSD																								
8th Grade	0.6	0.9	1.0	1.1	1.4	1.5	1.5	1.1	1.1	1.0	1.0	0.7	0.6	0.5	0.5	0.4	0.5	0.5	0.5	0.6	0.5	0.3	-0.2	
10th Grade	1.5	1.6	1.6	2.0	3.0	2.4	2.8	2.7	2.3	1.6	1.5	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.5	0.7	0.7	0.5	-0.1	
12th Grade	1.9	2.0	2.4	2.6	4.0	2.5	3.1	3.2	2.7	1.6	2.3	0.7	0.6	0.7	0.7	0.6	0.6	1.1	0.5	0.8	0.8	0.8	0.0	
College Students	0.8	1.8	1.6	1.8	2.5	0.9	1.1	1.5	1.2	0.9	1.0	0.2	0.2	0.2	0.1	0.3	0.3	0.8	0.3	0.7	0.5	0.4	0.0	
Young Adults	0.8	1.1	0.8	1.1	1.3	0.7	0.9	1.0	0.8	0.8	0.7	0.3	0.2	0.1	0.1	0.2	0.2	0.4	0.2	0.4	0.3	0.3	-0.1	

(Table continued on next page.)

TABLE 2-3 (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Hallucinogens other than LSD [b]																								
8th Grade	0.3	0.4	0.5	0.7	0.8	0.9	0.7	0.7	0.6	0.6‡	1.1	1.0	1.0	0.8	0.9	0.7	0.7	0.7	0.7	0.8	0.7	0.5	-0.3	ss
10th Grade	0.4	0.5	0.7	1.0	1.0	1.0	1.2	1.4	1.2	1.2‡	1.4	1.4	1.2	1.4	1.3	1.3	1.4	1.0	1.1	1.2	1.1	0.9	-0.2	
12th Grade	0.7	0.5	0.8	1.2	1.3	1.6	1.7	1.6	1.6	1.7‡	1.9	2.0	1.5	1.7	1.6	1.3	1.4	1.6	1.4	1.5	1.2	1.3	+0.1	
College Students	0.6	0.7	1.1	0.8	1.6	1.2	1.2	0.7	1.2	0.8‡	0.8	1.1	1.7	1.2	1.1	0.7	1.1	1.3	0.8	1.2	0.8	0.7	-0.1	
Young Adults	0.3	0.5	0.6	0.6	0.6	0.6	0.7	0.5	0.6	0.7‡	0.6	0.8	1.2	0.9	0.8	0.6	0.8	0.7	0.7	0.8	0.6	0.4	-0.2	
PCP [g]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	0.5	0.6	1.0	0.7	0.6	1.3	0.7	1.0	0.8	0.9	0.5	0.4	0.6	0.4	0.7	0.4	0.5	0.6	0.5	0.8	0.8	0.5	-0.2	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	0.1	0.2	0.2	0.1	*	0.1	0.1	0.2	0.2	*	*	0.1	0.1	0.1	*	*	*	0.1	*	0.0	0.1	0.0	-0.1	
Ecstasy (MDMA) [h]																								
8th Grade	—	—	—	—	—	1.0	1.0	0.9	0.8	1.4	1.8	1.4	0.7	0.8	0.6	0.7	0.6	0.8	0.6	1.1	0.6	0.5	-0.1	
10th Grade	—	—	—	—	—	1.8	1.3	1.3	1.8	2.6	2.6	1.8	1.1	0.8	1.0	1.2	1.2	1.1	1.3	1.9	1.6	1.0	-0.5	s
12th Grade	—	—	—	—	—	2.0	1.6	1.5	2.5	3.6	2.8	2.4	1.3	1.2	1.0	1.3	1.6	1.8	1.8	1.4	2.3	0.9	-1.3	sss
College Students	0.2	0.4	0.3	0.2	0.7	0.7	0.8	0.8	2.1	2.5	1.5	0.7	1.0	0.7	0.8	0.6	0.4	0.6	0.5	1.0	0.7	1.4	+0.7	
Young Adults	0.1	0.3	0.3	0.2	0.4	0.3	0.6	0.8	1.3	1.9	1.8	1.3	0.8	0.6	0.6	0.7	0.5	0.6	0.6	0.8	0.7	1.0	+0.2	
Cocaine																								
8th Grade	0.5	0.7	0.7	1.0	1.2	1.3	1.1	1.4	1.3	1.2	1.2	1.1	0.9	0.9	1.0	1.0	0.9	0.8	0.8	0.6	0.8	0.5	-0.3	s
10th Grade	0.7	0.7	0.9	1.2	1.7	1.7	2.0	2.1	1.8	1.8	1.3	1.6	1.3	1.7	1.5	1.5	1.3	1.2	0.9	0.9	0.7	0.8	+0.1	
12th Grade	1.4	1.3	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.1	2.1	2.3	2.1	2.3	2.3	2.5	2.0	1.9	1.3	1.3	1.1	1.1	0.0	
College Students	1.0	1.0	0.7	0.6	0.7	0.8	1.6	1.6	1.2	1.4	1.9	1.6	1.9	2.4	1.8	1.8	1.7	1.2	1.3	1.0	1.2	1.1	-0.1	
Young Adults	2.0	1.8	1.4	1.3	1.5	1.2	1.6	1.7	1.9	1.7	2.2	2.2	2.4	2.2	2.2	2.3	2.1	1.9	1.8	1.4	1.5	1.3	-0.2	
Crack [i]																								
8th Grade	0.3	0.5	0.4	0.7	0.7	0.8	0.7	0.9	0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.5	0.3	-0.2	s
10th Grade	0.3	0.4	0.5	0.6	0.9	0.8	0.9	1.1	0.8	0.9	0.7	1.0	0.7	0.8	0.7	0.7	0.5	0.5	0.4	0.5	0.4	0.4	0.0	
12th Grade	0.7	0.6	0.7	0.8	1.0	1.0	0.9	1.0	1.1	1.0	1.1	1.2	0.9	1.0	1.0	0.9	0.9	0.8	0.6	0.7	0.5	0.6	+0.1	
College Students	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.1	0.3	0.4	0.4	0.1	*	0.1	0.1	0.1	0.1	0.1	0.0	-0.1	
Young Adults	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.2	0.1	0.2	0.1	-0.1	
Other Cocaine [j]																								
8th Grade	0.5	0.5	0.6	0.9	1.0	1.0	0.8	1.0	1.1	0.9	0.9	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.5	0.6	0.3	-0.3	s
10th Grade	0.6	0.6	0.7	1.0	1.4	1.3	1.6	1.8	1.6	1.6	1.2	1.3	1.1	1.5	1.3	1.3	1.1	1.0	0.8	0.7	0.6	0.7	+0.1	
12th Grade	1.2	1.0	1.2	1.3	1.3	1.6	2.0	2.0	2.5	1.7	1.8	1.9	1.8	2.2	2.0	2.4	1.7	1.7	1.1	1.1	1.0	1.0	0.0	
College Students	1.0	0.9	0.6	0.3	0.8	0.6	1.3	1.5	1.0	0.9	1.5	1.4	1.9	2.2	1.8	1.3	1.6	1.1	1.2	1.0	1.2	1.3	+0.1	
Young Adults	1.8	1.7	1.1	1.0	1.3	1.1	1.5	1.5	1.6	1.5	1.8	2.0	2.1	2.1	1.9	1.9	2.0	1.7	1.6	1.5	1.4	1.3	-0.1	
Heroin [j,k]																								
8th Grade	0.3	0.4	0.4	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.3	0.4	0.4	0.4	0.4	0.4	0.2	-0.1	
10th Grade	0.2	0.2	0.3	0.4	0.6	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.0	
12th Grade	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	-0.1	
College Students	0.1	*	*	*	0.1	*	0.2	0.1	0.1	0.2	0.1	*	*	0.1	0.1	0.2	0.1	*	0.1	0.0	0.0	0.1	+0.1	
Young Adults	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	*	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.2	-0.1	
With a Needle [l]																								
8th Grade	—	—	—	—	0.4	0.5	0.4	0.5	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	-0.1	
10th Grade	—	—	—	—	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.0	
12th Grade	—	—	—	—	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.4	0.4	0.3	-0.2	
College Students	—	—	—	—	*	*	0.1	*	0.1	0.1	*	*	0.1	0.1	0.1	0.1	*	0.0	0.1	0.0	0.0	0.2	+0.2	
Young Adults	—	—	—	—	*	*	0.1	*	0.1	*	0.2	*	*	0.1	0.1	0.1	*	*	0.1	0.1	0.2	0.2	-0.1	

(Table continued on next page.)

TABLE 2-3 (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Without a Needle [l]																								
8th Grade	—	—	—	—	0.3	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	-0.1	
10th Grade	—	—	—	—	0.3	0.3	0.4	0.5	0.5	0.4	0.2	0.4	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.0	
12th Grade	—	—	—	—	0.6	0.4	0.6	0.4	0.4	0.7	0.3	0.5	0.4	0.3	0.5	0.3	0.4	0.2	0.3	0.4	0.4	0.2	-0.2	s
College Students	—	—	—	—	*	0.1	0.2	0.2	0.3	0.4	0.3	*	*	0.3	*	0.2	0.1	0.1	0.1	0.0	0.0	0.1	+0.1	
Young Adults	—	—	—	—	0.1	*	0.1	0.2	0.2	0.2	0.4	*	0.1	0.1	0.1	0.3	0.2	*	0.3	0.1	0.1	0.1	+0.1	
Narcotics other than Heroin [m,n]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	1.1	1.2	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.9	3.0‡	4.0	4.1	4.3	3.9	3.8	3.8	3.8	4.1	3.6	3.6	3.0	-0.6	s
College Students	0.6	1.0	0.7	0.4	1.2	0.7	1.3	1.1	1.0	1.7	1.7‡	3.2	2.3	3.0	3.1	3.1	2.2	2.3	2.7	2.3	2.1	2.2	+0.1	
Young Adults	0.6	0.7	0.7	0.6	0.9	0.7	0.9	0.9	1.2	1.4	1.7‡	2.9	2.9	3.0	3.5	3.2	3.4	3.6	3.2	3.4	2.9	2.7	-0.2	
Amphetamines [m,o]																								
8th Grade	2.6	3.3	3.6	3.6	4.2	4.6	3.8	3.3	3.4	3.4	3.2	2.8	2.7	2.3	2.3	2.1	2.0	2.2	1.9	1.8	1.8	1.3	-0.5	s
10th Grade	3.3	3.6	4.3	4.5	5.3	5.5	5.1	5.1	5.0	5.4	5.6	5.2	4.3	4.0	3.7	3.5	4.0	2.8	3.3	3.3	3.1	2.8	-0.3	
12th Grade	3.2	2.8	3.7	4.0	4.0	4.1	4.8	4.6	4.5	5.0	5.6	5.5	5.0	4.6	3.9	3.7	3.7	2.9	3.0	3.3	3.7	3.3	-0.3	
College Students	1.0	1.1	1.5	1.5	2.2	0.9	2.1	1.7	2.3	2.9	3.3	3.0	3.1	3.2	2.9	2.5	3.1	2.8	3.4	4.1	4.5	4.6	+0.1	
Young Adults	1.5	1.5	1.5	1.7	1.7	1.5	1.7	1.7	1.9	2.3	2.4	2.5	2.5	2.4	2.1	2.2	2.3	2.2	2.5	2.9	3.0	3.2	+0.2	
Methamphetamine [p,q]																								
8th Grade	—	—	—	—	—	—	—	—	1.1	0.8	1.3	1.1	1.2	0.6	0.7	0.6	0.6	0.7	0.5	0.7	0.4	0.5	+0.1	
10th Grade	—	—	—	—	—	—	—	—	1.8	2.0	1.5	1.8	1.4	1.3	1.1	0.7	0.4	0.7	0.6	0.7	0.5	0.6	+0.1	
12th Grade	—	—	—	—	—	—	—	—	1.7	1.9	1.5	1.7	1.7	1.4	0.9	0.9	0.6	0.6	0.5	0.5	0.6	0.5	0.0	
College Students	—	—	—	—	—	—	—	—	1.2	0.2	0.5	0.2	0.6	0.2	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	
Young Adults	—	—	—	—	—	—	—	—	0.8	0.7	1.0	1.0	0.7	0.6	0.7	0.5	0.6	0.3	0.3	0.2	0.3	0.4	+0.1	
Crystal Methamphetamine (Ice) [q]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	0.6	0.5	0.6	0.7	1.1	1.1	0.8	1.2	0.8	1.0	1.1	1.2	0.8	0.8	0.9	0.7	0.6	0.6	0.5	0.6	0.6	0.4	-0.2	
College Students	*	*	0.3	0.5	0.3	0.1	0.2	0.3	*	*	0.1	*	0.3	0.1	0.2	*	0.1	0.0	0.0	0.2	0.0	0.3	+0.3	
Young Adults	*	0.1	0.3	0.5	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.4	0.4	0.6	0.3	0.3	0.3	0.2	0.2	0.2	0.3	+0.1	
Sedatives (Barbiturates) [m,r]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	1.4	1.1	1.3	1.7	2.2	2.1	2.1	2.6	2.6	3.0	2.8	3.2	2.9‡	2.9	3.3	3.0	2.7	2.8	2.5	2.2	1.8	2.0	+0.2	
College Students	0.3	0.7	0.4	0.4	0.5	0.8	1.2	1.1	1.1	1.1	1.5	1.7	1.7	1.5	1.3	1.3	1.4	1.4	1.2	0.6	0.8	0.8	0.0	
Young Adults	0.5	0.5	0.6	0.6	0.8	0.8	0.9	0.9	1.1	1.3	1.7	1.5	1.5	1.8	1.7	1.5	1.6	1.9	1.2	1.1	1.1	1.1	0.0	
Methaqualone [m,s]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	0.2	0.4	0.1	0.4	0.4	0.6	0.3	0.6	0.4	0.2	0.5	0.3	0.4	0.5	0.5	0.4	0.4	0.2	0.3	0.2	0.2	0.3	+0.1	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Tranquilizers [b,m]																								
8th Grade	0.8	0.8	0.9	1.1	1.2	1.5	1.2	1.2	1.1	1.4‡	1.2	1.2	1.4	1.2	1.3	1.3	1.1	1.2	1.2	1.2	1.0	0.8	-0.2	
10th Grade	1.2	1.5	1.1	1.5	1.7	1.7	2.2	2.2	2.2	2.5‡	2.9	2.9	2.4	2.3	2.3	2.4	2.6	1.9	2.0	2.2	1.9	1.7	-0.2	
12th Grade	1.4	1.0	1.2	1.4	1.8	2.0	1.8	2.4	2.5	2.6‡	2.9	3.3	2.8	3.1	2.9	2.7	2.6	2.6	2.7	2.5	2.3	2.1	-0.2	
College Students	0.6	0.6	0.4	0.4	0.5	0.7	1.2	1.3	1.1	2.0‡	1.5	3.0	2.8	2.7	2.2	2.1	1.8	1.6	2.2	1.3	1.6	1.1	-0.5	
Young Adults	0.9	1.0	1.0	0.8	1.1	0.7	1.1	1.2	1.3	1.8‡	2.1	2.8	2.4	2.7	2.6	2.3	2.8	2.7	2.8	2.2	2.3	1.9	-0.5	

(Table continued on next page.)

TABLE 2-3 (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Any Prescription Drug [t]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.6	8.1	7.8	7.2	7.3	6.9	7.2	7.0	-0.2	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Rohypnol [u]																								
8th Grade	—	—	—	—	—	0.5	0.3	0.4	0.3	0.3	0.4	0.2	0.1	0.2	0.2	0.4	0.3	0.1	0.2	0.2	0.6	0.1	-0.4	s
10th Grade	—	—	—	—	—	0.5	0.5	0.4	0.5	0.4	0.2	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.0	
12th Grade	—	—	—	—	—	0.5	0.3	0.3	0.3	0.4	0.3	—	—	—	—	—	—	—	—	—	—	—	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Alcohol [v]																								
Any Use																								
8th Grade	25.1	26.1‡	24.3	25.5	24.6	26.2	24.5	23.0	24.0	22.4	21.5	19.6	19.7	18.6	17.1	17.2	15.9	15.9	14.9	13.8	12.7	11.0	-1.7	s
10th Grade	42.8	39.9‡	38.2	39.2	38.8	40.4	40.1	38.8	40.0	41.0	39.0	35.4	35.4	35.2	33.2	33.8	33.4	28.8	30.4	28.9	27.2	27.6	+0.4	
12th Grade	54.0	51.3‡	48.6	50.1	51.3	50.8	52.7	52.0	51.0	50.0	49.8	48.6	47.5	48.0	47.0	45.3	44.4	43.1	43.5	41.2	40.0	41.5	+1.5	
College Students	74.7	71.4	70.1	67.8	67.5	67.0	65.8	68.1	69.6	67.4	67.0	68.9	66.2	67.7	67.9	65.4	66.6	69.0	65.8	65.0	63.5	67.7	+4.2	s
Young Adults	70.6	69.0	68.3	67.7	68.1	66.7	67.5	66.9	68.2	66.8	67.0	68.3	67.0	68.4	68.6	68.7	69.5	68.9	69.4	68.4	68.8	69.5	+0.7	
Been Drunk [w]																								
8th Grade	7.6	7.5	7.8	8.7	8.3	9.6	8.2	8.4	9.4	8.3	7.7	6.7	6.7	6.2	6.0	6.2	5.5	5.4	5.4	5.0	4.4	3.6	-0.8	
10th Grade	20.5	18.1	19.8	20.3	20.8	21.3	22.4	21.1	22.5	23.5	21.9	18.3	18.2	18.5	17.6	18.8	18.1	14.4	15.5	14.7	13.7	14.5	+0.8	
12th Grade	31.6	29.9	28.9	30.8	33.2	31.3	34.2	32.9	32.9	32.3	32.7	30.3	30.9	32.5	30.2	30.0	28.7	27.6	27.4	26.8	25.0	28.1	+3.0	
College Students	45.0	45.0	43.8	42.8	37.9	40.3	46.4	44.3	44.6	43.9	44.7	44.4	40.4	47.4	43.1	47.6	46.8	45.3	42.4	43.6	39.9	40.1	+0.2	
Young Adults	35.4	35.6	34.2	34.3	33.0	33.2	35.6	34.2	37.7	35.7	36.8	37.1	37.8	39.0	39.0	42.1	41.4	40.7	40.5	39.4	39.5	39.1	-0.4	
Flavored Alcoholic Beverages [g,p]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	14.6	12.9	13.1	12.2	10.2	9.5	9.4	8.6	7.6	-1.0	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	25.1	23.1	24.7	21.8	20.2	19.0	19.4	15.8	16.3	+0.5	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	31.1	30.5	29.3	29.1	27.4	27.4	24.1	23.1	21.8	-1.3	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	34.1	30.9	26.2	27.5	35.8	32.3	31.5	29.5	31.3	+1.8	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	29.5	27.6	24.9	25.9	26.7	24.4	24.5	23.8	26.1	+2.3	
Cigarettes																								
Any Use																								
8th Grade	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	17.5	14.6	12.2	10.7	10.2	9.2	9.3	8.7	7.1	6.8	6.5	7.1	6.1	4.9	-1.2	s
10th Grade	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	25.7	23.9	21.3	17.7	16.7	16.0	14.9	14.5	14.0	12.3	13.1	13.6	11.8	10.8	-1.0	
12th Grade	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	24.4	25.0	23.2	21.6	21.6	20.4	20.1	19.2	18.7	17.1	-1.5	
College Students	23.2	23.5	24.5	23.5	26.8	27.9	28.3	30.0	30.6	28.2	25.7	26.7	22.5	24.3	23.8	19.2	19.9	17.9	17.9	16.4	15.2	12.5	-2.7	
Young Adults	28.2	28.3	28.0	28.0	29.2	30.1	29.9	30.9	30.3	30.1	30.2	29.2	28.4	29.2	28.6	27.0	26.2	24.6	23.3	22.4	21.3	19.7	-1.7	s
Smokeless Tobacco [x]																								
8th Grade	6.9	7.0	6.6	7.7	7.1	7.1	5.5	4.8	4.5	4.2	4.0	3.3	4.1	4.1	3.3	3.7	3.2	3.5	3.7	4.1	3.5	2.8	-0.7	
10th Grade	10.0	9.6	10.4	10.5	9.7	8.6	8.9	7.5	6.5	6.1	6.9	6.1	5.3	4.9	5.6	5.7	6.1	5.0	6.5	7.5	6.6	6.4	-0.2	
12th Grade	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	8.4	7.6	7.8	6.5	6.7	6.7	7.6	6.1	6.6	6.5	8.4	8.5	8.3	7.9	-0.4	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Steroids [y,z]																								
8th Grade	0.4	0.5	0.5	0.5	0.6	0.4	0.5	0.5	0.7	0.8	0.7	0.8	0.7	0.5	0.5	0.5	0.4	0.5	0.4	0.3	0.4	0.3	-0.1	
10th Grade	0.6	0.6	0.5	0.6	0.6	0.5	0.7	0.6	0.9	1.0	0.9	1.0	0.8	0.8	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4	-0.1	
12th Grade	0.8	0.6	0.7	0.9	0.7	0.7	1.0	1.1	0.9	0.8	1.3	1.4	1.3	1.6	0.9	1.1	1.0	1.0	1.0	1.1	0.7	0.9	+0.2	
College Students	0.3	0.2	0.2	0.2	0.1	*	0.2	0.2	0.4	*	0.3	*	0.1	*	*	*	0.1	*	0.2	0.0	0.2	0.0	-0.2	
Young Adults	0.2	0.1	*	0.1	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.2	0.3	0.5	0.2	0.1	-0.1	

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 2-4.

TABLE 2-4
Trends in 30-Day Prevalence of Daily Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–28)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Marijuana/Hashish Daily [gg]																								
8th Grade	0.2	0.2	0.4	0.7	0.8	1.5	1.1	1.1	1.4	1.3	1.3	1.2	1.0	0.8	1.0	1.0	0.8	0.9	1.0	1.2	1.3	1.1	-0.2	
10th Grade	0.8	0.8	1.0	2.2	2.8	3.5	3.7	3.6	3.8	3.8	4.5	3.9	3.6	3.2	3.1	2.8	2.8	2.7	2.8	3.3	3.6	3.5	0.0	
12th Grade	2.0	1.9	2.4	3.6	4.6	4.9	5.8	5.6	6.0	6.0	5.8	6.0	6.0	5.6	5.0	5.0	5.1	5.4	5.2	6.1	6.6	6.5	-0.1	
College Students	1.8	1.6	1.9	1.8	3.7	2.8	3.7	4.0	4.0	4.6	4.5	4.1	4.7	4.5	4.0	4.3	3.5	3.9	4.9	4.4	4.7	4.8	0.0	
Young Adults	2.3	2.3	2.4	2.8	3.3	3.3	3.8	3.7	4.4	4.2	5.0	4.5	5.3	5.0	4.9	5.0	5.0	5.1	5.4	5.3	6.1	5.6	-0.4	
Alcohol [v,gg]																								
Any Daily Use																								
8th Grade	0.5	0.6‡	1.0	1.0	0.7	1.0	0.8	0.9	1.0	0.8	0.9	0.7	0.8	0.6	0.5	0.5	0.6	0.7	0.5	0.5	0.4	0.3	0.0	
10th Grade	1.3	1.2‡	1.8	1.7	1.7	1.6	1.7	1.9	1.9	1.8	1.9	1.8	1.5	1.3	1.3	1.4	1.4	1.0	1.1	1.1	0.8	1.0	+0.2	
12th Grade	3.6	3.4‡	3.4	2.9	3.5	3.7	3.9	3.9	3.4	2.9	3.6	3.5	3.2	2.8	3.1	3.0	3.1	2.8	2.5	2.7	2.1	2.5	+0.4	
College Students	4.1	3.7	3.9	3.7	3.0	3.2	4.5	3.9	4.5	3.6	4.7	5.0	4.3	3.7	4.6	4.8	4.3	4.0	4.3	3.6	3.8	3.9	+0.1	
Young Adults	4.9	4.5	4.5	3.9	3.9	4.0	4.6	4.0	4.8	4.1	4.4	4.7	5.1	4.5	5.2	5.4	5.6	5.3	5.3	4.6	5.2	5.5	+0.3	
Been Drunk Daily [w,gg]																								
8th Grade	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	
10th Grade	0.2	0.3	0.4	0.4	0.6	0.4	0.6	0.6	0.7	0.5	0.6	0.5	0.5	0.4	0.4	0.5	0.5	0.3	0.4	0.3	0.2	0.4	+0.1	
12th Grade	0.9	0.8	0.9	1.2	1.3	1.6	2.0	1.5	1.9	1.7	1.4	1.2	1.6	1.8	1.5	1.6	1.3	1.4	1.1	1.6	1.3	1.5	+0.2	
College Students	0.5	0.2	0.3	0.8	0.5	0.1	1.3	0.8	1.0	0.7	0.5	0.8	1.1	0.8	0.5	0.6	0.7	0.5	0.7	0.3	1.3	0.4	-0.8	
Young Adults	0.5	0.4	0.4	0.5	0.3	0.4	0.9	0.5	0.9	0.5	0.4	0.6	0.8	0.7	0.5	0.6	0.6	0.5	1.0	0.7	0.7	0.4	-0.3	
5+ Drinks in a Row in Last 2 Weeks																								
8th Grade	10.9	11.3	11.3	12.1	12.3	13.3	12.3	11.5	13.1	11.7	11.0	10.3	9.8	9.4	8.4	8.7	8.3	8.1	7.8	7.2	6.4	5.1	-1.3	ss
10th Grade	21.0	19.1	21.0	21.9	22.0	22.8	23.1	22.4	23.5	24.1	22.8	20.3	20.0	19.9	19.0	19.9	19.6	16.0	17.5	16.3	14.7	15.6	+0.8	
12th Grade	29.8	27.9	27.5	28.2	29.8	30.2	31.3	31.5	30.8	30.0	29.7	28.6	27.9	29.2	27.1	25.4	25.9	24.6	25.2	23.2	21.6	23.7	+2.0	s
College Students	42.8	41.4	40.2	40.2	38.6	38.3	40.7	38.9	40.0	39.3	40.9	40.1	38.5	41.7	40.1	40.2	41.1	40.0	36.9	37.0	36.1	37.4	+1.2	
Young Adults	34.7	34.2	34.4	33.7	32.6	33.6	34.4	34.1	35.8	34.7	35.9	35.9	35.8	37.1	37.0	37.6	37.8	37.9	36.7	35.9	36.5	35.5	-1.0	
Cigarettes																								
Any Daily Use																								
8th Grade	7.2	7.0	8.3	8.8	9.3	10.4	9.0	8.8	8.1	7.4	5.5	5.1	4.5	4.4	4.0	4.0	3.0	3.1	2.7	2.9	2.4	1.9	-0.5	
10th Grade	12.6	12.3	14.2	14.6	16.3	18.3	18.0	15.8	15.9	14.0	12.2	10.1	8.9	8.3	7.5	7.6	7.2	5.9	6.3	6.6	5.5	5.0	-0.5	
12th Grade	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	23.1	20.6	19.0	16.9	15.8	15.6	13.6	12.2	12.3	11.4	11.2	10.7	10.3	9.3	-1.0	
College Students	13.8	14.1	15.2	13.2	15.8	15.9	15.2	18.0	19.3	17.8	15.0	15.9	13.8	13.8	12.4	9.2	9.3	9.2	8.0	7.6	7.3	5.2	-2.1	s
Young Adults	21.7	20.9	20.8	20.7	21.2	21.8	20.6	21.9	21.5	21.8	21.2	21.2	20.3	20.8	19.6	18.6	17.3	16.7	15.0	14.8	13.8	12.8	-1.0	
1/2 Pack+/Day																								
8th Grade	3.1	2.9	3.5	3.6	3.4	4.3	3.5	3.6	3.3	2.8	2.3	2.1	1.8	1.7	1.7	1.5	1.1	1.2	1.0	0.9	0.7	0.6	-0.1	
10th Grade	6.5	6.0	7.0	7.6	8.3	9.4	8.6	7.9	7.6	6.2	5.5	4.4	4.1	3.3	3.1	3.3	2.7	2.0	2.4	2.4	1.9	1.5	-0.3	
12th Grade	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	13.2	11.3	10.3	9.1	8.4	8.0	6.9	5.9	5.7	5.4	5.0	4.7	4.3	4.0	-0.3	
College Students	8.0	8.9	8.9	8.0	10.2	8.4	9.1	11.3	11.0	10.1	7.8	7.9	7.6	6.8	6.7	4.9	4.3	4.3	3.8	3.9	2.5	2.4	0.0	
Young Adults	16.0	15.7	15.5	15.3	15.7	15.3	14.6	15.6	15.1	15.1	14.6	14.2	13.9	13.5	12.5	11.9	11.1	10.2	9.3	9.3	7.5	7.6	+0.1	
Smokeless Tobacco Daily [x]																								
8th Grade	1.6	1.8	1.5	1.9	1.2	1.5	1.0	1.0	0.9	0.9	1.2	0.8	0.8	1.0	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.5	-0.3	
10th Grade	3.3	3.0	3.3	3.0	2.7	2.2	2.2	2.2	1.5	1.9	2.2	1.7	1.8	1.6	1.9	1.7	1.6	1.4	1.9	2.5	1.7	2.0	+0.3	
12th Grade	—	4.3	3.3	3.9	3.6	3.3	4.4	3.2	2.9	3.2	2.8	2.0	2.2	2.8	2.5	2.2	2.8	2.7	2.9	3.1	3.1	3.2	+0.1	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

Source. The Monitoring the Future study, the University of Michigan.

See footnotes on the next page.

Footnotes for Tables 2-1 through 2-4

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' * ' indicates less than 0.05% but greater than 0%. ' ‡ ' indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

Approximate Weighted *N*s	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
8th Graders	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200
10th Graders	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000
12th Graders	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800
College Students	1,410	1,490	1,490	1,410	1,450	1,450	1,480	1,440	1,440	1,350	1,340
Young Adults	6,600	6,800	6,700	6,500	6,400	6,300	6,400	6,200	6,000	5,700	5,800

Approximate Weighted *N*s	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
8th Graders	15,100	16,500	17,000	16,800	16,500	16,100	15,700	15,000	15,300	16,000	15,100
10th Graders	14,300	15,800	16,400	16,200	16,200	16,100	15,100	15,900	15,200	14,900	15,000
12th Graders	12,900	14,600	14,600	14,700	14,200	14,500	14,000	13,700	14,400	14,100	13,700
College Students	1,260	1,270	1,400	1,360	1,280	1,250	1,270	1,320	1,260	1,230	1,150
Young Adults	5,300	5,300	5,700	5,400	5,100	4,800	4,900	4,900	4,900	4,630	4,580

[a]For 12th graders, college students, and young adults only: Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of narcotics other than heroin and sedatives (barbiturates) has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b]In 2001 the question text was changed on half of the questionnaire forms for each age group. Other psychedelics was changed to other hallucinogens and shrooms was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. For 8th, 10th, and 12th graders only: The 2001 data presented here are based on the changed forms only; *N* is one half of *N* indicated. In 2002 the remaining forms were changed to the new wording. The data are based on all forms beginning in 2002. Data for any illicit drug other than marijuana and data for hallucinogens are also affected by these changes and have been handled in a parallel manner.

[c]For 12th graders, college students, and young adults only: Data based on five of six forms in 1991–1998; *N* is five sixths of *N* indicated. Data based on three of six forms beginning in 1999; *N* is three sixths of *N* indicated.

[d]Inhalants are unadjusted for underreporting of amyl and butyl nitrites.

[e]For 12th graders and young adults only: Data based on one of six forms; *N* is one sixth of *N* indicated. Questions about nitrite use were dropped from the young adult questionnaires in 1995 and from the 12th-grade questionnaires in 2010.

[f]Hallucinogens are unadjusted for underreporting of PCP.

[g]For 12th graders, college students, and young adults only: Data based on one of six forms; *N* is one sixth of *N* indicated. For 12th graders only: In 2011 the flavored alcoholic beverage question text was changed. Skyy Blue and Zima were removed from the list of examples. An examination of the data did not show any effect from the wording change.

[h]For 8th and 10th graders only: Data based on one of two forms in 1996; *N* is one half of *N* indicated. Data based on one third of *N* indicated in 1997–2001 due to changes in the questionnaire forms. Data based on two of four forms beginning in 2002; *N* is one half of *N* indicated. For 12th graders only: Data based on one of six forms in 1996–2001; *N* is one sixth of *N* indicated. Data based on two of six forms beginning in 2002; *N* is two sixths of *N* indicated. For college students and young adults only: Data based on two of six forms in 1991–2001; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2002; *N* is three sixths of *N* indicated.

[i]For college students and young adults only: Data based on five of six forms beginning in 2002; *N* is five sixths of *N* indicated.

[j]For 12th graders only: Data based on four of six forms; *N* is four sixths of *N* indicated. For college students and young adults only: Data based on four of six forms; *N* is four sixths of *N* indicated.

[k]In 1995, the heroin question was changed in one of two forms for 8th and 10th graders, in three of six forms for 12th graders, and in two of six forms for college students and young adults. Separate questions were asked for use with and without injection. In 1996, the heroin question was changed in all remaining 8th- and 10th-grade forms. Data presented here represent the combined data from all forms.

[l]For 8th and 10th graders only: Data based on one of two forms in 1995; *N* is one half of *N* indicated. Data based on all forms beginning in 1996. For 12th graders only: Data based on three of six forms; *N* is three sixths of *N* indicated. For college students and young adults only: Data based on two of six forms; *N* is two sixths of *N* indicated.

[m]Only drug use not under a doctor's orders is included here.

[n]For 12th graders, college students, and young adults only: In 2002 the question text was changed in half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced with Vicodin, OxyContin, and Percocet. The 2002 data presented here are based on the changed forms only; *N* is one half of *N* indicated. In 2003, the remaining forms were changed to the new wording. The data are based on all forms beginning in 2003.

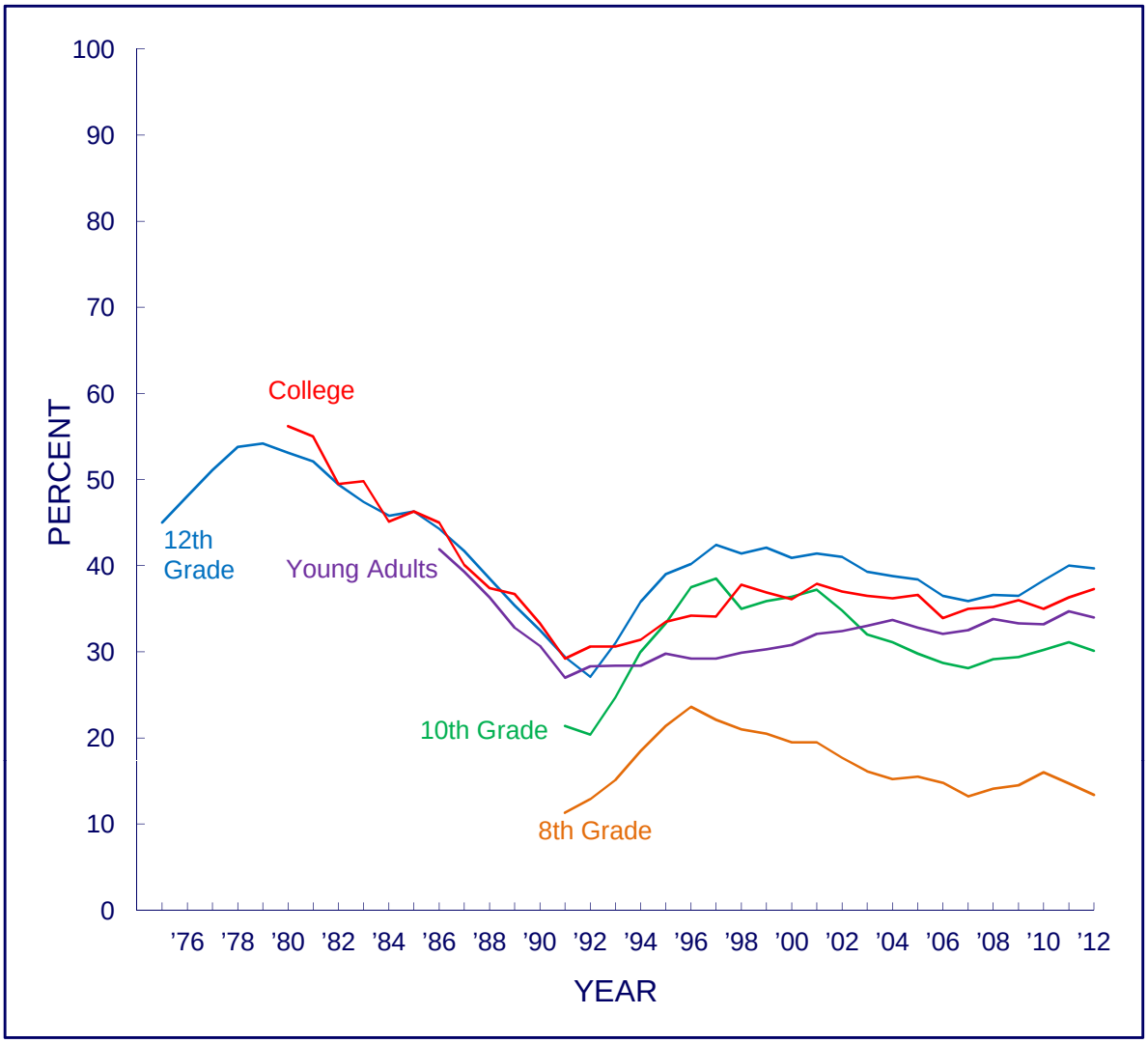
[o]In 2009, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. In 2010 the remaining forms were changed in a like manner. For 12th graders only: In 2011 the introduction to the question was changed slightly in one of six forms. Bennies, Benzedrine, and Methedrine were deleted from the list of examples. An examination of the data did not show any effect from the wording change.

(Footnotes continued on next page.)

Footnotes for Tables 2-1 through 2-4 (cont.)

[p]For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated. In 2011 the flavored alcoholic beverage question text was changed. Skyy Blue and Zima were removed from the list of examples. An examination of the data did not show any effect from the wording change.
[q]For 12th graders, college students, and young adults only: Data based on two of six forms; *N* is two sixths of *N* indicated. For college students and young adults only: Salvia and bath salts data based on one of six forms; *N* is one sixth of *N* indicated.
[r]For 12th graders only: In 2004 the question text was changed in half of the questionnaire forms. Barbiturates was changed to sedatives, including barbiturates. Goofballs, yellows, reds, blues, and rainbows were deleted from the list of examples; Phenobarbital, Tuinal, Nembutal, and Seconal were added. An examination of the data did not show any effect from the wording change. In 2005 the remaining forms were changed in a like manner.
[s]For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated. For college students and young adults only: Data based on three of six forms. *N* is three sixths of *N* indicated.
[t]The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers…without a doctor telling you to use them.
[u]For 8th and 10th graders only: Data based on one of two forms in 1996; *N* is one half of *N* indicated. Data based on three of four forms in 1997–1998; *N* is two thirds of *N* indicated. Data based on two of four forms in 1999–2001; *N* is one third of *N* indicated. Data based on one of four forms beginning in 2002; *N* is one sixth of *N* indicated. For 12th graders only: Data based on one of six forms in 1996–2001; *N* is one sixth of *N* indicated. Data based on two of six forms in 2002–2009; *N* is two sixths of *N* indicated. Data for 2001 and 2002 are not comparable due to changes in the questionnaire forms. Data based on one of six forms beginning in 2010; *N* is one sixth of *N* indicated. For college students and young adults only: Data based on two of six forms; *N* is two sixths of *N* indicated.
[v]For 8th, 10th, and 12th graders only: In 1993, the question text was changed slightly in half of the forms to indicate that a drink meant more than just a few sips. The 1993 data are based on the changed forms only; *N* is one half of *N* indicated for these groups. In 1994 the remaining forms were changed to the new wording. The data are based on all forms beginning in 1994. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005. For college students and young adults: The revision of the question text resulted in rather little change in the reported prevalence of use. The data for all forms are used to provide the most reliable estimate of change.
[w]For all grades: In 2012 the alcoholic beverage containing caffeine (like Four Loko or Joose) question text was changed to alcoholic beverage mixed with an energy drink (like Red Bull). The data in 2011 and 2012 are not comparable due to this question change. For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated. For college students and young adults only: been drunk data based on three of six forms; *N* is three sixths of *N* indicated. Alcoholic beverages containing caffeine data based on two of six forms; *N* is two sixths of *N* indicated.
[x]For 8th and 10th graders only: Data based on one of two forms for 1991–1996 and on two of four forms beginning in 1997; *N* is one half of *N* indicated. For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated. For 8th, 10th, and 12th graders only: Snus and dissolvable tobacco were added to the list of examples in 2011. An examination of the data did not show any effect from the wording change. For college students and young adults only: Questions about smokeless tobacco use were dropped from the analyses in 1989.
[y]For 8th and 10th graders only: In 2006, the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2007 the remaining forms were changed in a like manner. In 2008 the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2009 the remaining forms were changed in a like manner. For 12th graders only: Data based on two of six forms in 1991–2005; *N* is two sixths of *N* indicated. In 2006 a slightly altered version of the question was added to a third form. An examination of the data did not show any effect from the wording change. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated. In 2007 the remaining forms were changed in a like manner. In 2008 the question text was changed slightly in two of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2009 the remaining form was changed in a like manner.
[z]For college students and young adults only: Data based on two of six forms in 1999–2009; *N* is two sixths of *N* indicated. In 2008, the question text was changed slightly. Data based on three forms beginning in 2010; *N* is three sixths of *N* indicated.
[aa]For 12th graders only: Data based on two of six forms in 2002–2005; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated.
[bb]For college students and young adults only: Data based on two of six forms through 2009; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2010; *N* is three sixths of *N* indicated.
[cc]For 12th graders only: Data based on two of six forms in 2000; *N* is two sixths of *N* indicated. Data based on three of six forms in 2001; *N* is three sixths of *N* indicated. Data based on one of six forms beginning in 2002; *N* is one sixth of *N* indicated. For college students and young adults only: Data based on two of six forms; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2010; *N* is three sixths of *N* indicated.
[dd]For 12th graders only: Data based on two of six forms in 2000; *N* is two sixths of *N* indicated. Data based on three of six forms in 2001–2009; *N* is three sixths of *N* indicated. Data based on two of six forms beginning in 2010; *N* is two sixths of *N* indicated. For college students and young adults only: Data based on two of six forms; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2010; *N* is three sixths of *N* indicated.
[ee]For 12th graders only: The 2003 flavored alcoholic beverage data were created by adjusting the 2004 data to reflect the observed 2003 to 2004 change in a slightly different version of the flavored alcoholic beverage question. In 2004 the original question was revised to include wine coolers among the examples—a change that had very little effect on the observed prevalence-of-use rate.
[ff]For 12th graders only: Data based on two of six forms in 2000–2008; *N* is two sixths of *N* indicated. Beginning in 2009 data based on one of six forms; *N* is one sixth of *N* indicated.
[gg]Daily use is defined as use on 20 or more occasions in the past 30 days except for cigarettes and smokeless tobacco, for which actual daily use is measured, and for 5+ drinks, for which the prevalence of having five or more drinks in a row in the last two weeks is measured.

FIGURE 2-1
Trends in Annual Prevalence of an Illicit Drug Use Index across 5 Populations



Source. The Monitoring the Future study, the University of Michigan.

Notes. Illicit drug use index includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of narcotics other than heroin which is not under a doctor's orders, stimulants, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers. Beginning in 1982, the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

Chapter 3

STUDY DESIGN AND PROCEDURES

Monitoring the Future (MTF) incorporates several types of surveys into one study, yielding analytic power beyond the sum of those component parts. The components include cross-sectional studies, repeated cross-sectional studies, and panel studies of particular cohorts. The annual cross-sectional surveys provide point estimates of various behaviors and conditions in any given year for a number of subpopulations (e.g., 8th graders, 10th graders, 12th graders, college students, young adult high school graduates ages 19–30, 35-year-olds, 40-year-olds, etc.), as well as point estimates for various subgroups within these different populations. Repeating these annual cross-sectional surveys over time allows an assessment of change across history in consistent age segments of the population, as well as among subgroups. The panel study feature permits the examination of developmental change in the same individuals as they assume adult responsibilities, enter and leave various adult roles and environments, and continue further into adulthood. It also permits an assessment of a number of outcomes later in life that may be linked to substance use in adolescence and beyond.

With a *series* of panel studies of sequential graduating class cohorts, in what is known as a cohort-sequential design, we are able to offer distinctions among and explanations for three fundamentally different types of change: period, age, and cohort. It is this feature that creates the synergistic effect in terms of analytic and explanatory power.[25,26]

RESEARCH DESIGN AND PROCEDURES FOR THE TWELFTH–GRADE SURVEYS

Twelfth graders have been surveyed in the spring of each year since 1975. Each year's data collection has taken place in between 120 and 146 public and private high schools selected to provide an accurate representative cross-section of 12th graders throughout the coterminous United States (see Figure 3-1).

The Population under Study

Senior year of high school is an optimal point at which to monitor drug use and related attitudes of youth. First, completion of high school represents the end of an important developmental stage in this society, demarcating both the end of universal education and, for many, the end of living

[25]For a more detailed description of the study design, see Bachman, J. G., Johnston, L. D., O'Malley, P. M., & Schulenberg, J. E. (2011). *The Monitoring the Future project after thirty-seven years: Design and procedures* (Monitoring the Future Occasional Paper No.76). Ann Arbor, MI: Institute for Social Research. Available online at http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ76.pdf.

[26]For a more detailed description of the full range of research objectives of Monitoring the Future, see Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., & Bachman, J. G. (2006). *The aims and objectives of the Monitoring the Future study and progress toward fulfilling them as of 2006* (Monitoring the Future Occasional Paper No. 65). Ann Arbor, MI: Institute for Social Research. Available online at http://www.monitoringthefuture.org/pubs/occpapers/occ65.pdf.

full time in the parental home. Therefore, it is a logical point at which to take stock of cumulated influences. Further, completion of high school represents a jumping-off point, a point from which young people diverge into widely differing social environments and experiences. Thus senior year is a good time to take a "before" measure, allowing the subsequent calculation of changes that may be attributable to the environmental and role transitions occurring in young adulthood, including college attendance. Finally, there are some important practical advantages built into the original system of data collections around samples of 12th graders. The need for systematically repeated, large-scale samples from which to make reliable estimates of change requires that considerable emphasis be put on cost efficiency as well as feasibility. The last year of high school constitutes the final point at which a reasonably good national sample of an age-specific cohort can be drawn and studied economically.

The Omission of Dropouts

One limitation in the MTF study design is the exclusion of individuals who drop out of high school before graduation—approximately 10–15% of each age cohort nationally, according to U.S. Census statistics. Clearly, the omission of high school dropouts introduces biases in the estimation of certain characteristics of the entire age group; however, for most purposes, the small proportion of students who drop out sets outer limits on the bias. Further, since the bias from missing dropouts should remain relatively constant from year to year, their omission should introduce little or no bias in *change* estimates. Indeed, we believe the changes observed over time for those who are surveyed in the 12th grade are likely to parallel the changes for dropouts in most instances. Appendix A addresses in detail the likely effects of the exclusion of dropouts (as well as absentees from school) on estimates of drug use prevalence and trends among the entire age cohort.

Sampling Procedures and Sample Weights

A multistage random sampling procedure is used to secure the nationwide sample of 12th graders each year. Stage 1 is the selection of particular geographic areas, Stage 2 is the selection (with probability proportionate to size) of one or more high schools in each area, and Stage 3 is the selection of 12th graders within each high school. Up to about 350 twelfth graders in each school may be included. In schools with fewer 12th graders, the usual procedure is to include all of them in the data collection, though a smaller sample is sometimes taken (either by randomly sampling entire classrooms or by some other unbiased, random method) to accommodate the needs of the school. Weights are assigned to compensate for differential probabilities of selection at each stage of sampling. Final weights are normalized to average 1.0 (so that the weighted number of cases equals the unweighted number of cases overall). In order to be able to check observed trends in any given one-year interval, schools participate in the study for two consecutive years on a staggered schedule, with one half of them being replaced with a new random half-sample of schools each year. Therefore in any given year about half of the schools in the sample are participating for the first time and the other half are participating for their second and final year. This three-stage sampling procedure, with annual replacement of half of the sample of schools each year, has yielded the numbers of participating schools and students shown in Table 3-1.

Questionnaire Administration

About three weeks prior to the questionnaire administration date, parents of the target respondents are sent a letter by first-class mail, usually from the principal, announcing and describing the MTF study and providing them an opportunity to decline participation of their son or daughter if they wish. A flyer outlining the study in more detail is enclosed with the letter. Copies of the flyers are also given to the students by teachers in the target classrooms in advance of the date of administration. The flyers make clear that participation is entirely voluntary. Local Institute for Social Research representatives and their assistants conduct the actual questionnaire administrations following standardized procedures detailed in an instruction manual. The questionnaires are administered in classrooms during a normal class period whenever possible; however, circumstances in some schools require the use of larger group administrations. Teachers are asked to remain present in the classroom to help maintain order, but to remain at their desks so that they cannot see students' answers.

Questionnaire Format

Because many questions are needed to cover all of the topic areas in the MTF study, much of the questionnaire content for 12th graders is divided into six different questionnaire forms distributed to participants in an ordered sequence that ensures six virtually identical random subsamples. (Five questionnaire forms were used between 1975 and 1988.) About one third of each form consists of key, or "core," variables common to all forms. All demographic variables, and nearly all of the drug *use* variables included in this report, are contained in this core set of measures. Many questions on attitudes, beliefs, and perceptions of relevant features of the social environment are in fewer forms, and data are thus based on fewer cases—a single form would have one fifth as many cases in 1975–1988 (approximately 3,300 per year) and one sixth as many cases beginning in 1989 (approximately 2,500 per year). All tables in this report list the sample sizes upon which the statistics are based, stated in terms of the weighted number of cases (which, as explained above, is roughly equivalent to the actual number of cases).

RESEARCH DESIGN AND PROCEDURES FOR THE EIGHTH- AND TENTH-GRADE SURVEYS

In 1991, MTF was expanded to include nationally representative samples of 8th- and 10th-grade students surveyed on an annual basis. In general, the procedures used for the annual in-school surveys of 8th- and 10th-grade students closely parallel those used for 12th graders, including the selection of schools and students, questionnaire administration, and questionnaire format. A major exception is that only two different questionnaire forms were used from 1991 to 1996, expanding to four forms beginning in 1997. The same four questionnaire forms are used for both 8th and 10th graders; most of the content is drawn from the 12th-grade surveys, including the core section. Thus, key demographic variables and measures of drug use and related attitudes and beliefs are generally identical for all three grades. Many fewer questions about other values and attitudes are included in the 8th- and 10th-grade forms, in part because we think that many of them are likely to be more fully formed by 12th grade and, therefore, are best monitored there.

About 16,000 eighth-grade students in approximately 150 schools (mostly middle schools) and about 15,000 tenth-grade students in approximately 130 schools are surveyed each year (see Table 3-1).

Mode of Administration

From 1991 to 1993, follow-ups for 8th and 10th graders were administered similarly to those for 12th graders.[27] When follow-up surveys of new 8th- and 10th-grade cohorts were discontinued, the collection of personal identification information was no longer necessary. For confidentiality reasons, this personal information had been gathered on a tear-off sheet at the back of each questionnaire. We believed that there were potential advantages in moving toward a fully anonymous procedure for these grade levels, including the following: (a) school cooperation might be easier to obtain; (b) any suppression effect on self-reported substance use that the confidential mode of administration might have could be both eliminated and quantified; and (c) if there *were* any mode of administration effect, it would be removed from the national data, which are widely compared with results of state and local surveys (nearly all of which use anonymous questionnaires), thus making those comparisons more valid. Therefore, in 1998, the half sample of schools beginning their two-year participation in MTF received fully anonymous questionnaires, while the half sample participating for their second and final year continued to get confidential questionnaires. In 1999 and thereafter, all questionnaires administered to 8th and 10th graders have been fully anonymous.

A careful examination of the 1998 results, based on the two equivalent half samples at grades 8 and 10, revealed that there was no effect of this methodological change among 10th graders and only a very modest effect, if any, in self-reported substance use rates among 8th graders (with prevalence rates slightly higher in the anonymous condition).[28] All tables and figures in *Volume I* combine data from both half samples of 8th graders surveyed in a given year. This is also true for 10th graders, for whom we found no methodological effect, and 12th graders, for whom we assumed no such effect since none was found for 10th graders. (See this chapter's later section entitled "Representativeness and Sample Accuracy" for a further discussion of half samples among all three grades.)

Questionnaire Forms and Sample Proportions

Another benefit of not interlocking the 8th- and 10th-grade samples was that we could consider having more forms of the questionnaire. Beginning in 1997, the number of forms was expanded to four, but the four forms are not distributed in equal numbers. Forms 1, 2, 3, and 4 are assigned to one third, one third, one sixth, and one sixth of the students, respectively. Thus, if a question appears on only one form, it is administered to either one third or one sixth of the sample. A question in two forms may be assigned to one third of the sample (one sixth plus one sixth), one half of the sample (one third plus one sixth), or two thirds of the sample (one third plus one third). No questions appear on exactly three forms. Footnotes to the tables indicate what

[27]A book reporting results from analyses of these panels was published in 2008. See Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008). *The education–drug use connection: How successes and failures in school relate to adolescent smoking, drinking, drug use, and delinquency.* New York: Lawrence Erlbaum Associates/Taylor & Francis.

[28]We have examined in detail the effects of administration mode using multivariate controls to assess the effects of the change on 8th-grade self-report data. Our findings generally show even less effect than is to be found without such controls. See O'Malley, P. M., Johnston, L. D., Bachman, J. G., & Schulenberg, J. E. (2000). A comparison of confidential versus anonymous survey procedures: Effects on reporting of drug use and related attitudes and beliefs in a national study of students. *Journal of Drug Issues, 30,* 35–54.

proportion of all respondents in each grade complete the question, if that proportion is other than the entire sample.

The two additional forms were introduced to allow for more questions. The new Forms 1 and 2 substantially follow the content of the previous Forms 1 and 2, but each is now assigned to a third of the sample instead of half. Form 3 builds on Form 1, with some questions omitted to make room for more content; and Form 4 builds on the content of Form 2 in a similar manner. Much of the new content was placed in both of the two new forms (Forms 3 and 4), each of which is administered to one sixth of the sample, in order to assign one third of the total sample to those new measures.

RESEARCH DESIGN AND PROCEDURES FOR THE TWELFTH-GRADE FOLLOW-UP SURVEYS

Beginning with the graduating class of 1976, some members of each 12th-grade class have been selected to be surveyed by mail after high school. From the 13,000–19,000 twelfth graders originally surveyed in a given senior class, a representative sample of 2,400 is randomly chosen for follow-up. In order to ensure that drug-using populations are adequately represented in the follow-up surveys, 12th graders reporting 20 or more occasions of marijuana use in the previous 30 days (i.e., daily users), or *any* use of the other illicit drugs in the previous 30 days, are selected with higher probability (by a factor of 3.0) than the remaining 12th graders. Differential weighting is then used in all follow-up analyses to compensate for these differential sampling probabilities. Because those in the drug-using stratum receive a weight of only 0.33 in the calculation of all statistics to correct for their overrepresentation at the selection stage, there are actually more follow-up respondents than are reported in the weighted *N*s given in the tables; and in recent years actual numbers average about 23% higher than the weighted numbers. The 2,400 participants selected from each 12th-grade class are randomly split into two groups of 1,200 each—one group to be surveyed on even-numbered calendar years in a series of biannual follow-up surveys, and the other group to be surveyed on odd-numbered years also in a series of biannual follow-up surveys. This two-year cycle is intended to reduce respondent burden, thus yielding better retention rates. By alternating the two half samples, MTF collects data from every graduating class each year (through age 30), even though any given respondent participates only every other year.

Until 2002, each respondent was surveyed biennially up to seven times; at the seventh follow-up, which would occur either 13 or 14 years after graduation, the respondents had reached modal age 31 or 32. In 2002, as a cost-saving measure, the seventh biennial follow-up was discontinued, and since then each respondent is surveyed every other year until modal age 29 or 30. Additional follow-ups occur at modal ages 35, 40, 45, 50, and beginning in 2013, age 55. Data like these, gathered on representative national samples over such a large portion of the life span, are extremely rare and can provide needed insight into the etiology and life-course history of substance use and relevant behaviors, including those related to HIV transmission.

Follow-Up Procedures

Using information provided by 12th-grade respondents on a tear-off card (requesting the respondent's name, address, phone number(s), and recently email address), mail contact is maintained with the subset of people selected for inclusion in the follow-up panels. Newsletters are sent to them each year, providing a summary of results on a variety of survey topics. Name and address corrections are requested from both the U.S. Postal Service and the individual. Questionnaires are sent in the spring to each individual biennially through age 30, then at 5-year intervals. A check, made payable to the respondent, is attached to the front of each questionnaire.[29] Reminder letters and postcards are sent at fixed intervals thereafter; telephone callers attempt to gather up-to-date location information for those respondents with whom we are trying to make contact; and, finally, those whom we can contact but who have not responded receive a prompting phone call from the Survey Research Center's phone interviewing facility in Ann Arbor, Michigan. If requested, a second copy of the questionnaire is sent. No questionnaire content is administered by phone. If a respondent asks not to be contacted further, that wish is honored.

Follow-Up Questionnaire Format

The questionnaires used in the follow-up surveys of 19- to 30-year-olds parallel those used in 12th grade. Many of the questions are the same (including the core section dealing with drug use), and respondents are consistently mailed the same version (or form) of the questionnaire that they first received in 12th grade, so that *changes over time* in their behaviors, attitudes, experiences, and so forth can be measured. Questions specific to high school status and experiences are dropped in the follow-up, and questions relevant to post–high school status and experiences are added (mostly in the core section). These deal with college attendance, military service, civilian employment, marriage, parenthood, and so on. For the five-year surveys beginning at age 35, both half-samples from a class cohort are surveyed simultaneously and only one questionnaire form is used. Much of the questionnaire content is maintained but streamlined with a focus on the major family and work issues relevant to respondents ages 35 to 50; we have also added measures of substance use disorders and health outcomes.

For the early follow-up cohorts, the numbers of cases on single-form questions were one fifth the size of the total follow-up sample because five different questionnaire forms were used. Beginning with the class of 1989, a sixth form was introduced in 12th grade. That new questionnaire form was first sent to follow-up respondents ages 19 to 30 in 1990. Single-form data since then have *N*s one sixth the total follow-up sample size. In the follow-up studies in this age-band, single-form samples from a single cohort are too small to make reliable estimates; therefore, in most cases where they are reported, the data from several adjacent cohorts are combined.

[29]Until 1991, the follow-up checks were for $5. After an experiment indicated that an increase was warranted, the check amount was raised to $10 beginning with the class of 1992. The check amount was raised to $20 in 2004, and to $25 beginning in 2008.

REPRESENTATIVENESS AND SAMPLE ACCURACY

School Participation

Schools are invited to participate in the MTF study for a two-year period. For each school that declines to participate, a similar school (in terms of size, geographic area, urbanicity, etc.) is recruited as a replacement. In 2012, either an original school or a replacement school was obtained in 96% of the sample units. With very few exceptions, each school participating in the first year has agreed to participate in the second year as well. Figure 3-2 provides the year-specific school participation rates and the percentage of units filled since 1977. As shown in the figure, replacements for declining schools are obtained in the vast majority of cases.

Two questions are sometimes raised with respect to school participation rates: (a) Are participation rates sufficient to ensure the representativeness of the sample? (b) Does variation in participation rates over time contribute to changes in estimates of drug use?

With respect to participation rates ensuring that the sample is representative, the selection of a comparable replacement school, demographically close to the original school, occurs in practically all instances in which an original school refuses. This almost entirely removes problems of bias in region, urbanicity, and the like that might result from certain schools refusing to participate. Other potential biases could be more subtle, however. If, for example, it turned out that most schools with "drug problems" refused to participate, the sample would be seriously biased. And if any other single factor were dominant in most refusals, that reason for refusal might also suggest a source of serious bias. However, the reasons given for a school refusing to participate tend to be varied and are often a function of happenstance specific to that particular year; only a very small proportion object specifically to the drug-related survey content.

If it were the case that schools differed substantially in drug use, then which particular schools participated could have a greater effect on estimates of drug use. However, the great majority of variance in drug use lies *within* schools, not between schools.[30] For example, between 1991 and 2002, the between-schools variance for annual marijuana use was 4.0–5.3% of the total variance for each of the three grades; for inhalant use, 1.6–2.7%; for cocaine use, 1.2–2.2%; for alcohol use, 3.5–6.1%; and for cigarette use, 2.1–5.2%. To the extent that schools tend to be fairly similar in drug use, which particular schools participate (within a selection framework that seeks national representation) has a small effect on estimates of drug use.[31] Further, some, if not most, of the between-schools variance is due to differences related to factors such as region and urbanicity, which remain well controlled in the present sampling design.

[30]O'Malley, P. M., Johnston, L. D., Bachman, J. G., Schulenberg, J. E., & Kumar, R. (2006). How substance use differs among American secondary schools. *Prevention Science, 7*, 409–420.

[31]Among participating schools, there is very little difference in substance use rates between the schools that were original selections, taken as a set, and the schools that were replacements. Averaged over the years 1991 through 2000, for grades 8, 10, and 12 combined, the difference between original schools and replacement schools averaged 0.03% in the observed prevalence rates averaged across a number of drug use measures: two indexes of annual illicit drug use, the annual prevalence of each of the major illicit drug classes, and several measures of alcohol and cigarette use. For the individual drugs and drug indexes, the differences between the original and replacement schools, averaged across grades and years, fell within $\pm$0.9%.

With respect to participation rates and changes in estimates of drug use, it is extremely unlikely that results have been significantly affected by changes in school participation rates. If changes in participation rates seriously affected prevalence estimates, there would be noticeable bumps up or down in concert with the changing rates. But this series of surveys produces results that are very smooth and change in an orderly fashion from one year to the next. Moreover, different substances trend in distinctly different ways. We have observed, for example, marijuana use decreasing while cocaine use was stable (in the early 1980s), alcohol use declining while cigarette use held steady (in the mid- to late 1980s), ecstasy use rising sharply while cocaine use showed some decline (late 1990s, early 2000s); and marijuana use continuing to rise while alcohol use hit historic lows (2011). All of these patterns are explainable in terms of psychological, social, and cultural factors and cannot be explained by the common factor of changes in school participation rates.

Of course, there could be some sort of constant bias across the years; but even in the unlikely event that there is, it seems highly improbable that it would be of much consequence for policy purposes, given that it would not affect trends and likely would have a very modest effect on prevalence rates. Thus we have a high degree of confidence that school refusal rates have not seriously biased the survey results.

Nevertheless, securing the cooperation of schools has become more difficult in recent years. This is a problem common to the field, not specific to MTF. Therefore, beginning with the 2003 survey, we have provided payment to schools as a means of increasing their incentive to participate. (By that time, several other ongoing school-based survey studies already were using payments to schools.)

At each grade level, half of each year's sample comprises schools that started their participation the previous year, and half comprises schools that began participating in the current year. (Both samples are national replicates, meaning that each is drawn to be nationally representative by itself.) This staggered half sample design is used to check on possible errors in the year-to-year trend estimates due to school turnover. For example, separate sets of one-year trend estimates are computed based on students in the half sample of schools that participated in both 2010 *and* 2011, then based on the students in the half sample that participated in both 2011 *and* 2012, and so on. Thus, each one-year *matched half sample* trend estimate derived in this way is based on a constant set of schools (about 65 in 12th grade, for example, over a given one-year interval). When the trend data derived from the matched half sample (examined separately for each class of drugs) are compared with trends based on the total sample of schools, the results are usually highly similar, indicating that the trend estimates are affected little by school turnover or shifting participation rates. As would be expected, the *absolute* prevalence-of-use estimates for a given year are not as accurate using just the half sample because the sample size is only half as large.

Student Participation

In 2012, completed questionnaires were obtained from 91% of all sampled students in 8th grade, 87% in 10th grade, and 83% in 12th grade (see Table 3-1 for response rates in earlier years). In the large majority of cases, students are missed due to absence from class at the time of data collection; for reasons of cost efficiency, we typically do not schedule special follow-up data collections for absent students. Because students with fairly high rates of absenteeism also report above-average rates of drug use, some degree of bias is introduced into the prevalence estimates

by missing the absentees. Much of that bias could be corrected through the use of special weighting based on the reported absentee rates provided by the students who *did* respond; however, we decided not to use such a weighting procedure because the bias in overall drug use estimates was determined to be quite small *and* the necessary weighting procedures would have introduced greater sampling variance in the estimates.[32] Appendix A in this report illustrates the changes in trend and prevalence estimates that would result if corrections for absentees had been included. Of course, some students simply refuse, when asked, to complete a questionnaire. However, the proportion of explicit refusals amounts to less than 1.7% of the target sample for each grade.

Sampling Accuracy of the Estimates

Confidence intervals (95%) are provided in Tables 4-1a through 4-1d for lifetime, annual, 30-day, and daily prevalence of use for 8th-, 10th-, and 12th-grade students. As can be seen in Table 4-1a, confidence intervals for lifetime prevalence for 12th graders average less than ±1.4% across a variety of drug classes. That is, if we took a large number of samples of this size from the universe of all schools containing 12th graders in the coterminous United States, 95 times out of 100 the sample would yield a result that would be less than 1.4 percentage points divergent from the result we would get from a comparable massive survey of *all* 12th graders in *all* schools. This is a high level of sampling accuracy, permitting detection of fairly small changes from one year to the next. Confidence intervals for the other prevalence periods (last 12 months, last 30 days, and current daily use) are generally smaller than those for lifetime use. In general, confidence intervals for 8th and 10th graders are very similar to those observed for 12th graders. Some drugs (smokeless tobacco, PCP, and others, as indicated in the footnotes for Tables 2-1 to 2-4) are measured on only one or two questionnaire forms; these drugs will have somewhat larger confidence intervals due to their smaller sample sizes. Appendix C provides information on how to calculate confidence intervals around other point estimates, as well as information needed to compare trends across time or to test the significance of differences between subgroups in any given year.

PANEL RETENTION

We discuss here the nature of the panel attrition problem generally, the response rates for MTF panel surveys in recent years, and evidence relevant to assessing the impact of attrition on the study's research results.

The Problem of Panel Attrition

Virtually all longitudinal studies of drug use experience attrition, which is often differential with respect to substance use.[33] In addition, survey response rates in general have been declining over

[32]See appendix A in the following publication for a discussion of this point: Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1984). *Drugs and American high school students: 1975–1983* (DHHS (ADM) 85-1374). Washington, DC: U.S. Government Printing Office.

[33]McGuigan, K. A., Ellickson, P. L., Hays, R. D., & Bell, R. M. (1997). Adjusting for attrition in school-based samples: Bias, precision, and cost trade-off of three methods. *Evaluation Review, 21,* 554–567.

the past few decades,[34] highlighting an important challenge in the conduct of population-based research.

A vital feature of the MTF panel studies is their very low cost per respondent. There are many advantages to collecting panel data through low-cost mail surveys, as we have done since the outset of the study. Indeed, given the number of questionnaires sent each year (roughly 17,500) across the entire coterminous United States and elsewhere in the world, using low-cost mail surveys have been our best (and really the only) cost-effective option. (But, given the rapid proliferation of internet use by young adults, we are conducting experiments within the ongoing surveys to test web-based survey options as a means to engage more respondents in the panel studies and improve data collection.)

One disadvantage of this mode of data collection is that attrition rates tend to be higher than those that might be obtained with much more expensive methods, such as intensive personal tracking and interviewing. Certainly there exist a few large epidemiological/etiological surveys that have better retention rates, but their procedures are extremely expensive and not realistic for an ongoing effort like this one. Nevertheless, our retention rates compare favorably with those of most longitudinal studies (including interview studies) reported in the field.

Response Rates

The MTF survey data on American college students—an important subgroup in the panel surveys—now encompasses 33 years. We know about our respondents' actual college attendance only from those who are invited to and do complete follow-up questionnaires; however, we can use 12th-grade questionnaire answers (i.e., college intentions/expectations and program of study) to predict college attendance with a high degree of accuracy. MTF's retention of 12th graders identified as "college-bound" remains reasonably good. Among those participants in high school who were targeted for follow-up, *and* who reported planning to attend college and being enrolled in a college-prep curriculum, the follow-up retention rates for the three most recent classes surveyed at each follow-up point were: 54% in the first follow-up, one to two years past high school (based on the classes of 2010–2011); 54% in the second follow-up, three to four years past high school (based on the classes of 2008–2009); and 54% in the third follow-up, five to six years past high school (based on the classes of 2006–2007). These rates compare quite favorably with another national survey of substance use among college students, the Harvard College Alcohol Study, which had cross-sectional response rates of 59% in 1997 and 1999, and 52% in 2001.[35] To date in *Volume II*, we have reported only on college students who are one to four years past high school graduation. As the average age of attendance rises, having the extended age coverage will be of growing importance.

Retention rates in the biennial follow-ups of *all* panel members modal ages 19–30 (corresponding to the first six follow-ups) decline with the length of the follow-up interval, of

[34]Kim, J., Gershenson, C., Glaser, P., & Smith, T.W. (2011). The polls—trends: Trends in surveys on surveys. *Public Opinion Quarterly, 75*(1), 165-191; Groves, R.M. (2006). Nonresponse rates and nonresponse bias in household surveys. *Public Opinion Quarterly, 70(5),* 646-675**.**

[35]Wechsler, H., Lee, J. E., Kuo, M., Seibring, M., Nelson, T. F., & Lee, H. (2002). Trends in college binge drinking during a period of increased prevention efforts: Findings from 4 Harvard School of Public Health College Alcohol Study surveys: 1993–2001. *Journal of American College Health, 50,* 203–217.

course. For the five surveys from 2008 to 2012, the response rate in the first follow-up (corresponding to one to two years past high school) averaged 52%; and for the second through sixth follow-ups (corresponding to 3–12 years past high school) response rates averaged 47%. Among long-term respondents—the 35-, 40-, 45-, and 50-year-olds—the retention rates are quite good, apparently because some of the decline with age in retention rates reflects cohort differences. Among the 35-year-old respondents surveyed from 2008 to 2012, corresponding to 17 years past high school, the average response rate was 44%. Among 40-year-old respondents surveyed from 2008 to 2012, corresponding to a 22-year follow-up interval, the average retention rate was 45%. Among 45-year-olds surveyed in 2008 to 2012, the average retention rate was 50%; and among 50-year-olds who have been surveyed only since 2008, the response rate averaged 56%. In sum, the response rates attained under the current design range from respectable to good, especially when the low-cost nature of the procedures, the very long time intervals involved, and the substantial length of the questionnaires are taken into account. More importantly, the evidence leaves us confident that the data resulting from these follow-up panels are reasonably accurate, which brings us to our adjustments for panel attrition and the comparison of our results with those from other sources.

The Impact of Panel Attrition on Research Results

An important purpose of the MTF follow-ups is to allow estimation of drug prevalence rates among American high school graduates at various age levels. Thus, we have always been concerned about making the appropriate adjustments to account for panel attrition. In essence, our standard adjustment process is a poststratification procedure in which we reweight the data obtained from the participating follow-up samples so that their reweighted *12th-grade* distribution on a given drug reproduces the original distribution of use observed for that drug, which was based on *all* participating 12th graders. This procedure is carried out separately for cigarettes, smokeless tobacco, alcohol, and marijuana, as well as other illicit drugs (combined). As expected, it produces prevalence estimates that are somewhat higher than those uncorrected for attrition, indicating that there is indeed some positive association between drug use and panel attrition. However, the adjustments are relatively modest, as documented next.

One reason the adjustments are modest is that attrition rates do not differ greatly by levels of 12th-grade substance use; they differ some, but less than one might expect. For example, among all respondents who had never used marijuana, an average of 79% of the classes of 1976–1998 participated in the first follow-up. The proportion responding is somewhat lower among those who had used marijuana just once or twice in the last 12 months: 75%. This proportion decreases gradually with increasing levels of marijuana use; but even among those who used marijuana on 20 or more occasions in the last 30 days in 12th grade, 67% participated in the first follow-up. The corresponding participation rates for the same drug use strata at the fourth follow-up (i.e., at modal ages 25–26) were 66%, 63%, and 56%, respectively. Thus, even among those who were quite heavy users of marijuana in high school, response rates at the fourth follow-up were only 10 percentage points lower than among those who had never used marijuana by 12th grade. That is not to say that we assume all types of drug users remain in the panels at comparably high rates. We believe that people who become dependent on or addicted to heroin or cocaine are unlikely to be retained in reasonable proportions. That is why we are careful not to quantify or characterize these special segments of the population. But we note that they constitute very low

proportions of the drug-using portion of the population, and even lower proportions of the entire adult population.

The National Survey on Drug Use and Health (NSDUH) provides the best available data against which to validate the estimates generated for adult age groups in MTF, because it is also based on national samples but uses cross-sectional surveys that do not carry the burden of panel attrition. Their results, of course, may be affected by their own nonresponse rates; but that will be true of any comparison survey. The overall response rate for NSDUH in 2011 was 74%.

In some earlier analyses, we compared the prevalence rates on a set of drugs—cigarettes, alcohol, marijuana, and cocaine—for which there was reasonable similarity in question wording across the two studies. The comparisons that follow are for the age group 19–28 in the MTF panel data, and for 19–29 in the NSDUH cross-sectional data. We used the most recent readily available comparable data (2009), but similar results are found in a number of prior years. Other things equal, NSDUH should have higher rates than MTF because it includes school dropouts. In fact, however, the MTF estimates for 30-day marijuana and 12-month cocaine use, when the post-stratification weights are applied, are actually higher than the NSDUH estimates: 17.0% versus 15.8% for marijuana, and 5.2% versus 5.1% for cocaine. Even when the post-stratification weights are not applied, the MTF estimates are only slightly lower than the NSDUH estimates: 15.3% versus 15.8% for marijuana, and 4.8% versus 5.1% for cocaine. The fact that the MTF estimates for both marijuana and cocaine are similar to those observed in NSDUH suggests that attrition does not produce substantially lower estimates of drug use than would be obtained if response rates were higher—particularly after our poststratification adjustments are applied.

Comparisons for alcohol and cigarettes show larger differences, with alcohol use consistently higher in MTF and cigarette use consistently higher in NSDUH. We believe it likely that both are due to definitional differences in the exact question wording. In 2009, MTF estimate of 30-day alcohol prevalence was 69.1% (69.4% with poststratification) versus 65.9% in NSDUH. For cigarettes, the 30-day MTF prevalence estimate was 21.0% (23.3% with poststratification), versus 36.7% in NSDUH. (Because cigarette smoking rates are particularly high among dropouts, some of this difference should be explainable by differences in the populations covered by the two studies.) It is worth noting that the nature and magnitude of the differences between MTF and NSDUH estimates tend to be quite consistent for each of the four drugs at least as far back as 1992.

Even with attrition, substantial proportions of recent drug users remain in the MTF follow-up samples. In recent years, about 15–18% of the 19- to 28-year-old respondents reported marijuana use in just the prior 30 days, and about 4–7% reported cocaine use in the past 12 months. These proportions and the underlying numbers of actual cases are quite adequate for analytic purposes.

A point worth emphasizing here is that, in the MTF panel, attrition is not as great a problem as in a cross-sectional study because much is already known about each of the follow-up nonrespondents, including their substance use, based on extensive questionnaire responses in 12th grade (and, for many, in subsequent years as well). Thus, adjustments can be made utilizing data that are highly informative about the missing individuals.

Effects on Relational Analyses

While differential attrition (uncorrected) may contribute to some bias in point estimates and other univariate statistics, such attrition tends to have less influence on bivariate and multivariate statistics. This was found to be true in a secondary analyses of data from seven panel studies that followed adolescents over time,[36] and we have found this to be true in MTF panel analyses[37] and in analyses with other panel data sets.[38] Thus, differential attrition may be of less concern in multivariate panel analyses focused on understanding the course, causes, and consequences of substance use. Still, as we summarized above, correcting for attrition can be important, and we continue to do it.

VALIDITY OF MEASURES OF SELF-REPORTED DRUG USE

Are sensitive behaviors such as drug use honestly reported? Like most studies dealing with sensitive behaviors, we have no direct, totally objective validation of the present measures; however, the considerable amount of existing inferential evidence strongly suggests that the MTF self-report questions produce largely valid data. Here we briefly summarize this evidence.[39]

First, using a three-wave panel design, we established that the various measures of self-reported drug use have a high degree of reliability—a necessary condition for validity.[40] In essence, respondents were highly consistent in their self-reported behaviors over a three- to four-year time interval. Second, we found a high degree of consistency among logically related measures of use within the same questionnaire administration. Third, the proportion of 12th graders reporting some illicit drug use has reached two thirds of all respondents in peak years and over 80% in some follow-up years, constituting *prima facie* evidence that the degree of underreporting must be very limited. Fourth, 12th graders' reports of use by their unnamed friends—about whom they would presumably have considerably less reason to conceal information about use—have been highly consistent with self-reported use in the aggregate, in terms of both prevalence *and* trends in prevalence, as discussed in chapter 9. Fifth, we have found self-reported drug use to relate in

[36]Cordray, S., & Polk, K. (1983). The implication of respondent loss in panel studies of deviant behavior. *Journal of Research in Crime and Delinquency, 20,* 214–242.

[37]Bryant, A. L., Schulenberg, J. E., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (2000). Understanding the links among school misbehavior, academic achievement, and cigarette use: A national panel study of adolescents. *Prevention Science, 1*(2), 71–87; Schulenberg, J. E., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (1994). High school educational success and subsequent substance use: A panel analysis following adolescents into young adulthood. *Journal of Health and Social Behavior, 35,* 45–62.

[38]Bachman, J. G., O'Malley, P. M., & Johnston, J. (1978). *Youth in Transition: Vol. 6. Adolescence to adulthood: A study of change and stability in the lives of young men.* Ann Arbor, MI: Institute for Social Research; Schulenberg, J. E., Bryant, A. L., & O'Malley, P. M. (2004). Taking hold of some kind of life: How developmental tasks relate to trajectories of well-being during the transition to adulthood. *Development and Psychopathology, 16,* 1119–1140.

[39]A more complete discussion may be found in: Johnston, L. D., & O'Malley, P. M. (1985). Issues of validity and population coverage in student surveys of drug use. In B. A. Rouse, N. J. Kozel, & L. G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57 (ADM) 85-1402). Washington, DC: U.S. Government Printing Office; Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1984). *Drugs and American high school students: 1975–1983* (DHHS (ADM) 85-1374). Washington, DC: U.S. Government Printing Office; Wallace, J. M., Jr., & Bachman, J. G. (1993). Validity of self-reports in student-based studies on minority populations: Issues and concerns. In M. de LaRosa (Ed.), *Drug abuse among minority youth: Advances in research and methodology* (NIDA Research Monograph No. 130). Rockville, MD: National Institute on Drug Abuse.

[40]O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1983). Reliability and consistency in self-reports of drug use. *International Journal of the Addictions, 18,* 805–824.

consistent and expected ways to a number of other attitudes, behaviors, beliefs, and social situations—strong evidence of construct validity. Sixth, the missing data rates for the self-reported use questions are only very slightly higher than for the preceding nonsensitive questions, in spite of explicit instructions to respondents immediately preceding the drug section to leave blank those questions they feel they cannot answer honestly. Seventh, an examination of consistency in reporting of lifetime use conducted on the long-term panels of graduating seniors found quite low levels of recanting of earlier reported use of the illegal drugs.[41] There was a higher level of recanting for the psychotherapeutic drugs, suggesting that adolescents may actually overestimate their use of some drugs because of misinformation about definitions, and this misinformation is corrected as they get older. Finally, the great majority of respondents, when asked, say they would answer such questions honestly if they were users.[42]

As an additional step to assure the validity of the data, we check for logical inconsistencies in the answers to the triplet of questions about use of each drug (i.e., lifetime, annual, and 30-day use), and if a respondent exceeds a minimum number of inconsistencies across the set of drug use questions, his or her record is deleted from the data set. Similarly, we check for improbably high rates of use of multiple drugs and delete such cases, assuming that the respondents are not taking the task seriously. Fortunately, very few cases have to be eliminated for these reasons.

This is not to argue that self-reported measures of drug use are necessarily valid in all studies. In MTF we have gone to great lengths to create a situation and set of procedures in which respondents recognize that their confidentiality will be protected. We have also tried to present a convincing case as to why such research is needed. The evidence suggests that a high level of validity has been obtained. Nevertheless, insofar as any remaining reporting bias exists, we believe it to be in the direction of underreporting. Thus, with the possible exception of the psychotherapeutic drugs, we believe our estimates to be lower than their true values, even for the obtained samples, but not substantially so.

Consistency and Measurement of Trends

MTF is designed to be sensitive to changes from one time period to another. A great strength of this study is that the measures and procedures have been standardized and applied consistently across many years. To the extent that any biases remain because of limits in school and/or student participation, and to the extent that there are distortions (lack of validity) in the responses of some students, it seems very likely that such problems will exist in much the same proportions from one year to the next. In other words, biases in the survey estimates will tend to be consistent from one year to another, meaning that our measurement of *trends* should be affected very little. The smooth and consistent nature of most trend curves reported for the various drugs provides rather compelling empirical support for this assertion.

[41]Johnston, L. D., & O'Malley, P. M. (1997). The recanting of earlier reported drug use by young adults. In L. Harrison (Ed.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (NIDA Research Monograph No. 167, pp. 59–80). Rockville, MD: National Institute on Drug Abuse.

[42]For a discussion of reliability and validity of student self-report measures of drug use like those used in MTF across varied cultural settings, see Johnston, L. D., Driessen, F. M. H. M., & Kokkevi, A. (1994). *Surveying student drug misuse: A six-country pilot study*. Strasbourg, France: Council of Europe. Available at http://monitoringthefuture.org/pubs/monographs/surveying_student_drug_misuse_1994.pdf

TABLE 3-1
Sample Sizes and Response Rates

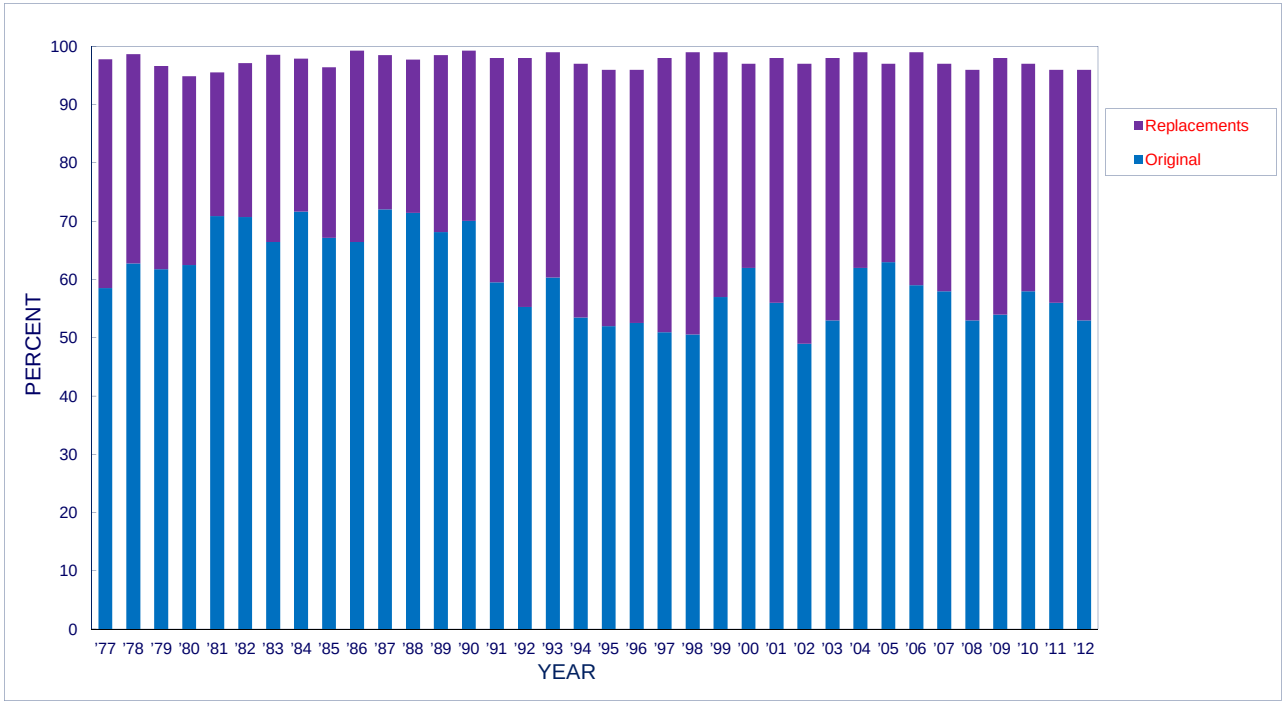
	Number of Public Schools			Number of Private Schools			Total Number of Schools				Total Number of Students				*Student Response Rate (%)*		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	Total	8th	10th	12th	Total	*8th*	*10th*	*12th*
1975	—	—	111	—	—	14	—	—	125	—	—	—	15,791	—	—	—	*78*
1976	—	—	108	—	—	15	—	—	123	—	—	—	16,678	—	—	—	*77*
1977	—	—	108	—	—	16	—	—	124	—	—	—	18,436	—	—	—	*79*
1978	—	—	111	—	—	20	—	—	131	—	—	—	18,924	—	—	—	*83*
1979	—	—	111	—	—	20	—	—	131	—	—	—	16,662	—	—	—	*82*
1980	—	—	107	—	—	20	—	—	127	—	—	—	16,524	—	—	—	*82*
1981	—	—	109	—	—	19	—	—	128	—	—	—	18,267	—	—	—	*81*
1982	—	—	116	—	—	21	—	—	137	—	—	—	18,348	—	—	—	*83*
1983	—	—	112	—	—	22	—	—	134	—	—	—	16,947	—	—	—	*84*
1984	—	—	117	—	—	17	—	—	134	—	—	—	16,499	—	—	—	*83*
1985	—	—	115	—	—	17	—	—	132	—	—	—	16,502	—	—	—	*84*
1986	—	—	113	—	—	16	—	—	129	—	—	—	15,713	—	—	—	*83*
1987	—	—	117	—	—	18	—	—	135	—	—	—	16,843	—	—	—	*84*
1988	—	—	113	—	—	19	—	—	132	—	—	—	16,795	—	—	—	*83*
1989	—	—	111	—	—	22	—	—	133	—	—	—	17,142	—	—	—	*86*
1990	—	—	114	—	—	23	—	—	137	—	—	—	15,676	—	—	—	*86*
1991	131	107	117	31	14	19	162	121	136	419	17,844	14,996	15,483	48,323	*90*	*87*	*83*
1992	133	106	120	26	19	18	159	125	138	422	19,015	14,997	16,251	50,263	*90*	*88*	*84*
1993	126	111	121	30	17	18	156	128	139	423	18,820	15,516	16,763	51,099	*90*	*86*	*84*
1994	116	116	119	34	14	20	150	130	139	419	17,708	16,080	15,929	49,717	*89*	*88*	*84*
1995	118	117	120	34	22	24	152	139	144	435	17,929	17,285	15,876	51,090	*89*	*87*	*84*
1996	122	113	118	30	20	21	152	133	139	424	18,368	15,873	14,824	49,065	*91*	*87*	*83*
1997	125	113	125	27	18	21	152	131	146	429	19,066	15,778	15,963	50,807	*89*	*86*	*83*
1998	122	110	124	27	19	20	149	129	144	422	18,667	15,419	15,780	49,866	*88*	*87*	*82*
1999	120	117	124	30	23	19	150	140	143	433	17,287	13,885	14,056	45,228	*87*	*85*	*83*
2000	125	121	116	31	24	18	156	145	134	435	17,311	14,576	13,286	45,173	*89*	*86*	*83*
2001	125	117	117	28	20	17	153	137	134	424	16,756	14,286	13,304	44,346	*90*	*88*	*82*
2002	115	113	102	26	20	18	141	133	120	394	15,489	14,683	13,544	43,716	*91*	*85*	*83*
2003	117	109	103	24	20	19	141	129	122	392	17,023	16,244	15,200	48,467	*89*	*88*	*83*
2004	120	111	109	27	20	19	147	131	128	406	17,413	16,839	15,222	49,474	*89*	*88*	*82*
2005	119	107	108	27	20	21	146	127	129	402	17,258	16,711	15,378	49,347	*90*	*88*	*82*
2006	122	105	116	29	18	20	151	123	136	410	17,026	16,620	14,814	48,460	*91*	*88*	*83*
2007	119	103	111	32	17	21	151	120	132	403	16,495	16,398	15,132	48,025	*91*	*88*	*81*
2008	116	103	103	28	19	17	144	122	120	386	16,253	15,518	14,577	46,348	*90*	*88*	*79*
2009	119	102	106	26	17	19	145	119	125	389	15,509	16,320	14,268	46,097	*88*	*89*	*82*
2010	120	105	104	27	18	22	147	123	126	396	15,769	15,586	15,127	46,482	*88*	*87*	*85*
2011	117	105	110	28	21	19	145	126	129	400	16,496	15,382	14,855	46,733	*91*	*86*	*83*
2012	115	107	107	27	19	20	142	126	127	395	15,678	15,428	14,343	45,449	*91*	*87*	*83*

Source. The Monitoring the Future study, the University of Michigan.

FIGURE 3-1
Schools included in 1 Year's Data Collection
8th, 10th, and 12th Grades

Source. The Monitoring the Future study, the University of Michigan.
Note. One dot equals one school.

FIGURE 3-2
School Participation Rates



Percent of slots filled by...	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12
Original	59	63	62	63	71	71	66	72	67	66	72	71	68	70	59	55	60	53	52	53	51	51	57	62	56	49	53	62	63	59	58	53	54	58	56	53
Replacements	39	36	35	32	25	26	32	26	29	33	26	26	30	29	39	43	39	44	44	43	47	48	42	35	42	48	45	37	34	40	39	43	44	39	40	43
Total	98	99	97	95	96	97	99	98	96	99	99	98	99	99	98	98	99	97	96	96	98	99	99	97	98	97	98	99	97	99	97	96	98	97	96	96

Source: The Monitoring the Future study, the University of Michigan.

Chapter 4

PREVALENCE AND FREQUENCY OF DRUG USE

Drug use can be measured in terms of prevalence (the proportion of a defined population or subpopulation who have used a drug once or more in a particular time interval) or frequency (how many times a drug was used within a defined time interval). In this chapter, both of these important dimensions of drug use are addressed in relation to each of the three time intervals used in MTF—lifetime, past 12 months, and past 30 days—utilizing data from the most recently completed cross-sectional surveys of 8th-, 10th-, and 12th- grade students, conducted in the spring of 2012. We also examine how use varies across a number of important demographic subgroups—defined by gender, college plans, region of the country, population density (or urbanicity), socioeconomic status (as measured by the average educational level of the parents), and racial/ethnic identification.

In addition, the prevalence of current *daily* use is provided for selected drugs, as are the prevalence and frequency of being drunk and of having five or more drinks in a row in the past two weeks. For cigarettes, the rate of smoking a half pack or more per day is included, in addition to a measure of daily smoking. For a few drug classes added to MTF in recent years, only the prevalence and frequency of use in the past 12 months are reported, because, due to space limitations in the questionnaires, their use was addressed by only a single question. (We refer to such questions as "tripwire" questions, because their purpose is to alert us to an emerging problem. If the tripwire question reveals a sizeable problem, we usually convert our measurement of that drug to a full set of questions covering the three standard time intervals.)

It should be noted that all prevalence statistics are based on students in attendance on the day of survey administration. Selected prevalence rate estimates for 12th-grade students, reflecting adjustments for missing absentees, as well as for dropouts, may be found in appendix A. On the day of the survey in 2012, 17% of 12th graders were absent. The adjustments are not particularly large and have virtually no effect on trend estimates. The absentee and dropout adjustments for 8th and 10th graders would be much smaller than those shown in appendix A for 12th graders, because 8th and 10th graders generally have considerably lower rates of absenteeism (9% and 13%, respectively, in 2012) and far lower rates of dropping out, estimated at 2% and 5%, respectively (see appendix A).

PREVALENCE AND FREQUENCY OF DRUG USE IN 2012: ALL STUDENTS

Prevalence of Lifetime, Annual, and 30-Day Use

Prevalence-of-use estimates are provided in Tables 4-1a through 4-1d for lifetime, past 12 months, past 30 days, and current daily use, respectively. These tables also include the 95% confidence intervals around each estimate, meaning that if samples of this size and type were drawn repeatedly from all students in that grade level in the coterminous United States, they would be expected to generate observed prevalence rates that fell within the confidence interval

95 times out of 100. The confidence intervals take into account the effects of sample stratification, the clustering of the sample in schools, and any unequal weighting. Of course, the single best estimate that we can make is the value actually observed in our sample—the point estimate.

To facilitate comparisons, Table 4-2 brings together the point estimates for all four prevalence periods.

Table 4-3 gives a more detailed breakdown for ***heroin*** by mode of administration, differentiating use with and without a needle.

The key findings are summarized below:

- About half of all 12th graders (49%) in 2012 reported ***any illicit drug use*** at some time in their lives (see Table 4-2). Over one third (37%) of 10th graders and about one fifth (19%) of 8th graders said they have used an illicit drug at some time.

- ***Marijuana*** is by far the most widely used illicit drug. Nearly half of all 12th graders (45%), about one third of 10th graders (34%), and about one in seven 8th graders (15%) reported some marijuana use in their lifetime. Among 12th graders, 36% reported some use in the past year, and 23% reported some use in the past month. Among 10th graders, the corresponding rates are 28%, and 17%, respectively, and among 8th-grade students, 11% and 7%.

- Current ***daily marijuana use*** or near daily use (defined as use on 20 or more occasions in the past 30 days) is also noteworthy. *About one in 15 twelfth graders (6.5%) used marijuana daily in the month prior to the survey, as did 1 in 29 tenth graders (3.5%) and 1 in 91 eighth graders (1.1%).* Long-term daily use of marijuana is covered in a special section of chapter 10.

- Of all the students in each grade reporting any illicit drug use, not including inhalants, in their lifetime, roughly half reported using ***only marijuana***: 53% of all 8th-grade users of any illicit drug which amounts to 10% of the *total* 8th-grade sample, 60% of all 10th-grade users of any illicit drug or 22% of the total 10th-grade sample, and 51% of 12th-grade users of any illicit drug or 25% of the total 12th-grade sample. (These figures are not explicitly provided in the tables but can be derived from the information therein.) Put another way, 40% to 50% of those 8th, 10th, and 12th graders who have ever used an illicit drug have used an illicit drug other than marijuana, usually in addition to marijuana.

- ***Synthetic marijuana*** (sold as K-2, Spice, etc.) was measured with a "tripwire" question for the first time in 8th and 10th grades in 2012: Annual prevalence rates for the three grades were 4.4%, 8.8%, and 11.3%. Synthetic marijuana was the second most widely used illicit drug in the past 12 months among 10th and 12th graders, and the third most used among 8th graders.

- When inhalants are included in the index of illicit drug use, the proportions categorized as having ever used an illicit drug rise, especially for 8th graders. The percentages using ***any illicit drug including inhalants*** in their lifetime are 25% for 8th graders, 40% for 10th graders, and 50% for 12th graders.

- The proportions having used ***any illicit drug other than marijuana*** (***or inhalants***) are striking. In 2012, the lifetime prevalence rates were 9% in 8th grade, 15% in 10th grade, and 24% in 12th grade. Thus, one in four high school seniors has tried an illicit drug other than marijuana.[43]

- ***Inhalants*** rank high in lifetime prevalence among the illicit drugs: second for 8th graders (12%) and 10th graders (10%), and fifth for 12th graders (7.9%). Inhalants also rank second highest in 30-day prevalence among the illicit drugs for 8th (2.7%) and fourth (1.4%) among 10th graders, but twelfth for 12th graders (0.9%). Note that the youngest respondents report the highest rates of use; this is the only class of drugs for which active use declines with age during adolescence.

  The seemingly anomalous finding of *lifetime* inhalant prevalence declining across grade levels could be due to various factors. There might be lower lifetime prevalence at older ages because the eventual school dropout segment is included only in the lower grades. If those who will become dropouts are unusually likely to use inhalants, lifetime use rates could decline with grade level. That would lead to a relatively stable difference between the grades in lifetime use (because dropout rates have been fairly stable in recent years); however, the degree of difference has changed some over time (see Table 2-1), with larger differences emerging in the mid-1990s. Another possible factor is changing validity of reporting with age; but in order to account for the trend data, one would have to hypothesize that this tendency became stronger in the 1990s, and we have no reason to believe that it did. Cohort differences may be a factor, but cannot completely explain the large changes in lifetime prevalence. It seems likely that all of these factors contribute to the differences observed in the retrospective reporting by different ages, and possibly some additional factors as well.

- ***Amyl and butyl nitrites***, a specific class of inhalants, were removed from the 12th-grade questionnaire after 2009 (8th and 10th graders were not asked this question). In 2009, they were tried by 1.1% of 12th graders. These inhalants have been sold legally in the past and have gone by such street names as "poppers" or "snappers" and such brand names as Locker Room and Rush. When questions about nitrite use specifically were first included on one 12th-grade questionnaire form in 1979, we discovered that some users of amyl and butyl nitrites did not report themselves as inhalant users, although they should have. We were able to estimate the degree to which inhalant use was being

[43]For 12th graders, use of "any illicit drug other than marijuana" includes any use of LSD, hallucinogens other than LSD, crack, other cocaine, or heroin; *and/or* any use that is not under a doctor's orders of narcotics other than heroin, amphetamines, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers. For 8th and 10th graders, the list of drugs is the same except that the use of narcotics other than heroin and sedatives (barbiturates) has been excluded both from the illicit drug indexes and from separate presentation in this volume. Questions on these drugs were included in the questionnaires given to 8th and 10th graders, but the results led us to believe that some respondents were including nonprescription drugs in their answers, resulting in exaggerated prevalence rates.

underreported. As a result, we introduced an ***inhalants adjusted*** prevalence estimate, which corrected for the under-inclusion of nitrite use. Such correction made little difference in recent years due to very low rates of nitrite use, and separate questions about nitrite use were dropped from the 12th-grade questionnaires beginning in 2010 to make room for other questions.[44]

- For 8th graders, ***marijuana*** and ***inhalant*** use are followed in the lifetime prevalence rankings by ***amphetamines***, at 4.5%.[45] Among 10th graders, the ranking for lifetime prevalence of use is ***marijuana*** (34%), ***inhalants*** (10%), and ***amphetamines*** (9%). Among 12th graders, lifetime use rates are higher for ***marijuana*** (45%), ***narcotics other than heroin*** (12%), ***amphetamines*** (12%), and ***tranquilizers*** (8.5%) than for ***inhalants*** (7.9%). Considerably lower prevalence rates are found for the specific class ***methamphetamine***, with 1.3%, 1.8%, and 1.7% of 8th, 10th, and 12th graders, respectively, reporting any lifetime use. ***Crystal methamphetamine*** ("***ice***") also has a low lifetime prevalence among 12th graders (1.7%); use is not asked in the lower grades.

- ***Bath salts*** (synthetic stimulants) were asked about, with a "tripwire" question, for the first time in 2012. These are often marketed as "bath salts," but are actually products containing designer drugs—synthetic cathinones, which are stimulants that have effects similar to amphetamines. The annual prevalence rates are low: 0.8%, 0.6%, and 1.3% for 8th, 10th, and 12th grades, respectively.

- ***Hallucinogens*** are another fairly widely used class of substances. Lifetime prevalence of use is 2.8% for 8th graders, 5.2% for 10th graders, and 7.5% for 12th graders. Until 2001, hallucinogen prevalence rates ranked this high primarily due to the prevalence of LSD use. In 2012, larger proportions of students—2.3%, 4.5%, and 6.6%, respectively, for the three grade levels—indicate using ***hallucinogens other than LSD*** (particularly "***shrooms***" or ***psylocibin***) compared to 1.3%, 2.6%, and 3.8% for ***LSD***.

- ***Ecstasy*** (***MDMA***), another drug used for its somewhat hallucinogenic properties, is reported at higher rates than those for LSD in all three grades. In 2012, the lifetime prevalence rates for this drug stood at 2.0%, 5.0%, and 7.2% in grades 8, 10, and 12, respectively, while annual prevalence stood at 1.1%, 3.0%, and 3.8%.

- A tripwire question about use of ***salvia*** (or salvia divinorum) in the past 12 months was added in 2009 for 12th graders and for 8th and 10ths graders in 2010. Salvia is an herb with hallucinogenic properties, common to southern Mexico and Central and South America. Although it currently is not a drug regulated by the Controlled Substances Act, several states have passed legislation to regulate its use, as have several countries. The

[44]Because the data to adjust inhalant and hallucinogen use for 12th graders are available from only a single questionnaire form in a given year, the original uncorrected variables will be used in most relational analyses. We believe relational analyses will be least affected by these underestimates and that the most serious impact is on prevalence estimates, which have been adjusted appropriately. Today, the levels of use for nitrites and PCP—the two drugs used to adjust the estimates for inhalants and hallucinogens, respectively—are so low that these adjustments are hardly relevant any longer. Therefore, questions about their use were never included in the 8th- and 10th-grade questionnaires, the 12th-grade adjustment of daily use data for these two drugs was dropped in the tables, and nitrite use was dropped altogether beginning in 2010.

[45]For findings on specific amphetamines, see appendix E.

Drug Enforcement Agency has listed salvia as a drug of concern and is considering classifying it as a Schedule I drug, like LSD or marijuana. The drug has an appreciable annual prevalence: 1.4%, 2.5%, and 4.4% among 8th, 10th, and 12th graders in 2012.

- When specific questions about ***PCP*** use were added in 1979, we discovered that some PCP users did not report themselves as users of hallucinogens, even though PCP is explicitly included as an example in the questions on hallucinogens. Thus, from 1979 onward, we have included the ***hallucinogens adjusted*** prevalence and trend estimates for 12th graders to correct for this known underreporting. As with the correction for under-reporting of nitrites, this adjustment has made very little difference in recent years among 12th graders because the rate of PCP use has become so low.

- Lifetime prevalence of use among 12th graders for ***PCP*** now stands at 1.6%, considerably lower than the lifetime prevalence of the other widely used hallucinogens, ***LSD*** (3.8%) and ***ecstasy*** (7.2%).

- Lifetime prevalence rates for ***cocaine*** use by 8th, 10th, and 12th graders are 1.9%, 3.3%, and 4.9%, respectively.

- ***Crack***, a form of cocaine that comes in small chunks or "rocks," can be smoked to produce a rapid and intense but short-lasting high. It currently has a relatively low lifetime prevalence rate in all grade levels: 1.0% for 8th, 1.4% for 10th, and 2.1% for 12th graders.

  Of all students reporting *any* cocaine use in their lifetime, significant proportions have some experience with crack: About one half of 8th-grade cocaine users (53%) and about two fifths of 10th-grade and 12th-grade users (42% and 43% respectively) reported using crack (data derivable from Table 4-1). Note that crack accounts for more of the cocaine use reported at younger ages.

- ***Heroin*** is one of the least commonly used illicit drugs at each grade level. Lifetime use in 2012 is 0.8% for 8th graders, 1.1% for both 10th and 12th graders. For many years, the heroin available in the United States had such a low purity that the only practical way to use it was by injection, usually intravenously. However, due to high production in various countries, purity rose substantially, thus making smoking and snorting more common modes of administration. Because of these changes, in 1995 we added separate questions on heroin use with and without a needle. We found that significant proportions of those reporting any heroin use in the previous 12 months reported using ***heroin without a needle***. In 2012, 20% of 8th graders who indicated using heroin in the past year reported using only without a needle, 60% reported using only with a needle, and 20% reported using both ways. Put another way, the prevalence of past year use for 8th graders by each of the three methods was 0.1%, 0.3%, and 0.1%. The proportions of 10th graders were 0.2%, 0.2%, and 0.2%, respectively, and the proportions for 12th grade were 0.2%, 0.2%, and 0.2%, respectively. See Table 4-3 for more detail on heroin use by mode of administration.

- ***Narcotics other than heroin*** now constitute the class of drugs that is second highest in ranking among 12th graders, at 12% lifetime prevalence. Data for 8th and 10th graders are not reported for narcotics other than heroin due to questionable validity.

- Tripwire questions about use without a doctor's orders of ***OxyContin*** and ***Vicodin***, two specific narcotic analgesics, were introduced in 2002. The results for OxyContin, a brand of oxycodone, show annual prevalence rates in 2012 of 1.6%, 3.0%, and 4.3% for grades 8, 10, and 12, respectively. Rates for Vicodin use are considerably higher, with the comparable prevalence rates being 1.3%, 4.4%, and 7.5%, respectively. These prevalence rates are far higher than for heroin.

- ***Tranquilizers*** also fall in the top third of the prevalence rankings of illicit drugs, with lifetime prevalence rates of 3.0%, 6.3%, and 8.5% for grades 8, 10, and 12, respectively.

- ***Methaqualone*** is used by many fewer 12th graders, at 0.8% lifetime prevalence of use, than the much broader subclass of ***sedatives*** (***barbiturates***), at 6.9% lifetime prevalence of use.[46] Because methaqualone use has become so limited among 12th graders, questions on this drug have not been included in the 8th- and 10th-grade questionnaires. The sedative (barbiturate) questions are included in the 8th- and 10th-grade questionnaires, but the results are not reported because we suspect that these respondents inappropriately include the use of non-prescription drugs.

- The illicit drug classes remain in roughly the same order whether ranked by lifetime, annual, or monthly prevalence of use, as Figure 4-1 illustrates. The only important change in ranking occurs for ***inhalant*** use among 10th and 12th graders, for whom inhalants rank lower for current use than for lifetime use. This variation occurs because use of a number of inhalants such as glues and aerosols tends to be discontinued at a relatively early age.

- Two other drugs that were thought to be increasingly common at the time, ***GHB*** and ***ketamine***, were added to the MTF survey in 2000. These two drugs were each measured with a single tripwire question asking about frequency of use in the prior 12 months. A single tripwire question about ***Rohypnol*** use had been introduced earlier, in 1996. None of these drugs turned out to have particularly high annual prevalence rates (see Table 4-2). In 2011, GHB, which stands for gamma-hydroxybutyrate (a central nervous system depressant) and goes by such street names as "grievous bodily harm" and "G," had annual prevalence rates of 0.6%, 0.5%, and 1.4% in grades 8, 10, and 12, respectively. GHB is known as a "date rape drug" because of its ability to induce amnesia of events that occurred while under the influence. There was considerable adverse publicity in the media about this drug a few years ago, which may explain the limited rates of use. Because of these limited rates, GHB was dropped from the 8th- and 10th-grade

[46]Barbiturates were the dominant form of sedatives in use when these questions were first introduced, but have been largely displaced by the nonbarbiturate sedatives now on the market. In 2004, half of the questionnaires used the original question about barbiturates, while the other half had a question asking about "sedatives, which include barbiturates . . . ." These two versions yielded 12th-grade prevalence rates that were almost identical, suggesting that, in the past, the users of nonbarbiturate sedatives had been including them in their answers about barbiturate use. In 2005, the remaining questionnaire forms were changed as well.

questionnaires in 2012; annual prevalence for 12th grade was 1.4%. Rohypnol, another so-called date rape drug, had annual prevalence rates of only 0.4%, 0.5%, and 1.5% in grades 8, 10, and 12, respectively, in 2012. Ketamine, known as "***special K***" and "***K***," had only slightly higher annual prevalence rates in 2011: 0.8%, 1.2%, and 1.7% in grades 8, 10, and 12, respectively. It is an anesthetic used mostly in veterinary medicine, and can induce dreamlike states and hallucinations. Like GHB, ketamine was dropped from the 8th and 10th grade questionnaires in 2012; annual prevalence for 12th grade was 1.5%. Fortunately, these three so-called "club drugs" never attained very great popularity among teens.

- ***Alcohol*** and ***cigarettes*** are the two major licit drugs included in the MTF surveys, though even these are legally prohibited for purchase by those the age of most of our respondents. Alcohol use is more widespread than use of illicit drugs. About seven out of ten 12th-grade students (69%) have at least tried alcohol, and approximately four out of ten (42%) are current drinkers—that is, they reported consuming some alcohol in the 30 days prior to the survey (Table 4-2). Even among 8th graders, the proportion of students reporting any alcohol use in their lifetime is nearly one third (30%), and about one ninth (11%) are current (past 30-day) drinkers.[47]

- Of greater concern than just any use of alcohol is its use to the point of inebriation: in 2012, 13% of 8th graders, 35% of 10th graders, and 54% of 12th graders said they have ***been drunk*** at least once in their lifetime. The prevalence rates of self-reported drunkenness during the 30 days immediately preceding the survey are strikingly high—4%, 15%, and 28%, respectively, for grades 8, 10, and 12.

- Another measure of heavy drinking asks respondents to report how many occasions during the previous *two-week* period they had consumed ***five or more drinks in a row***. Prevalence rates for this behavior, which is also referred to as binge drinking or episodic heavy drinking, are 5%, 16%, and 24% for the three grades, respectively.

- Prevalence of ***cigarettes*** is generally higher than each of the illicit drugs, except for marijuana. Two fifths (40%) of 12th graders reported having tried cigarettes at some time, and nearly one fifth (17%) smoked in the prior 30 days. Even among 8th graders, one sixth (16%) reported having tried cigarettes and 5% reported smoking in the prior 30 days. Among 10th graders, 28% reported having tried cigarettes, and 11% reported smoking in the prior 30 days. The percentages reporting smoking cigarettes in the prior 30 days are actually lower in all three grades in 2012 than the percentages reporting using marijuana in the prior 30 days: 4.9% for cigarettes vs. 6.5% for marijuana in 8th grade,

[47]In 1993 the text of the alcohol prevalence-of-use question was changed slightly in half of the questionnaire forms used at each grade such that the respondent was told explicitly to *exclude* those occasions when they had "just a few sips" of an alcoholic beverage. In 1994 this change was made to the remaining forms. The 2012 data presented here are all based on the revised question. In figures in this volume, the 1993 data are presented only for the revised question. As would be expected, the prevalence rates dropped slightly as a result of this methodological change, with the largest shifts observed in the lifetime prevalence measures and among 8th-grade respondents. In 2004, there was another minor wording change in half of the forms to encompass the broader range of alcoholic beverages that were becoming more popular, with the wording ". . . alcoholic beverages including beer, wine, and liquor, and any other beverage that contains alcohol." Previously we had asked about ". . . beer, wine, wine coolers, or liquor . . ." An examination of the data did not show any effect from dropping the explicit mention of wine coolers and replacing it with "any other beverage that contains alcohol." The remaining questionnaire forms were changed in the same manner in 2005.

10.8% vs. 17.0% in 10th grade, and 17.1% vs. 22.9% in 12th grade. These numbers reflect mostly the considerable decline in cigarette use that has occurred in recent years though the recent increase in marijuana use has contributed, as well. Among 10th and 12th graders, *lifetime* prevalence of marijuana use in 2012 is also higher than lifetime prevalence of cigarette use; among 8th graders, lifetime rates of marijuana and cigarette use are similar. (Annual prevalence of cigarettes is not assessed.) As noted below, however, *daily* use in the prior 30 days is considerably higher for cigarettes than for marijuana or alcohol in all three grades.

- A question about ***bidis***, a type of flavored cigarette imported from India, was included in the MTF questionnaires for the first time in 2000, with a single tripwire question asking about the frequency of use in the past year. Some observers had been concerned that bidis might become popular among American youth, but that does not seem to have been the case. The 2010 proportion of 12th graders using bidis during the past year was only 1.4%. Thirty-day and daily use would most likely be lower. In 2006, the question on bidis was dropped from the 8th- and 10th-grade questionnaires to allow room for other questions, and in 2011 the question was also dropped from the 12th-grade questionnaires due to the very low prevalence rate.

- A question about ***kreteks***, a type of clove cigarette that was usually imported from Indonesia, was added in 2001 to the list of tripwire questions. Because the prevalence rates turned out to be low, this question also was dropped in 2006 from the 8th- and 10th-grade questionnaires to make room for other questions. In 2012, only 3.0% of 12th graders reported any use of kreteks in the prior 12 months.

- ***Smokeless*** or "spit" ***tobacco*** is used by a surprisingly large number of young people. Among 8th, 10th, and 12th graders, lifetime prevalence rates are 8%, 15%, and 17%, respectively, and past 30 day prevalence was 2.8%, 6.4%, and 7.9%, respectively. As discussed later in this chapter, the rates are considerably higher among males than among females.

- Two recent developments regarding tobacco use include smoking by using hookah water pipes, and the smoking of small cigars. Questions about these forms of tobacco use in the prior 12 months (annual prevalence) are asked only of 12th graders. In 2012, 18% of them reported using a ***hookah*** to smoke tobacco in the prior 12 months, and 20% reported smoking ***small cigars***.

- In 2011 questions were introduced to the 12th-grade questionnaires to assess two other forms of tobacco use that have gained in popularity recently—***snus*** and ***dissolvable tobacco***. The question about ***snus***—a moist form of snuff that is placed under the upper lip—asks on how many occasions in the past 12 months the student "…used snus (a small packet of tobacco that is put in the mouth)." Among 12th graders in 2011, 7.9% reported having used snus in the last 12 months; this rate remained unchanged in 2012. In 2012 the question about use of snus was added to the questionnaires given to 8th and 10th graders, and their annual prevalence rates were 2.4% and 6.9%, respectively.

The question about ***dissolvable tobacco*** products asks on how many occasions in the past 12 months the student "… used dissolvable tobacco products (Ariva, Stonewall, Orbs)." These products, in the form of pellets, strips, or sticks, actually dissolve in the mouth, unlike other forms of chewing tobacco. Among 12th graders in 2011 only 1.5% reported having used in the prior 12 months and in 2012 it was 1.6%. The question was introduced for 8th and 10th grades in 2012, and the annual prevalence rates were 1.0% and 1.6%, respectively. It appears that these products have not yet made significant inroads among secondary school students.

- Questions about ***anabolic steroids*** were added in 1989. Like some other drugs covered by MTF, their distribution and sale are legally controlled and they often find their way into an illicit market. They also carry a particular danger for HIV transmission when taken by injection. However, in contrast to most drugs, they are usually taken not for their direct psychoactive effects (although they may have some) but rather for muscle building and physical performance enhancement. Clearly, potential unintended consequences, including the transmission of HIV, make illicit use a public health concern.[48]

  The overall prevalence rates for anabolic steroids are modest relative to many other drugs. For 8th, 10th, and 12th graders, *lifetime* prevalence rates in 2012 were 1.2%, 1.3%, and 1.8%, respectively, while *annual* prevalence rates were 0.6%, 0.8%, and 1.3%, and past *30-day* prevalence rates were 0.3%, 0.4%, and 0.9%, respectively. However, the prevalence rates for males are distinctly higher, with annual prevalence at 0.8%, 1.3%, and 1.7%, for the three grades respectively, compared to 0.3%, 0.4%, and 0.7% for females.

- ***Androstenedione***, a precursor to anabolic steroids which is also used to enhance strength and physique, was legal to purchase over the counter until 2005, when it was scheduled as a controlled substance by the Drug Enforcement Administration. Concern grew about adolescents' use of androstenedione when their reported use of anabolic steroids increased sharply in 1999, a year marked by press reports of androstenedione use by the prominent professional baseball player Mark McGwire. A single tripwire question was added in 2001 to determine how widespread use was, partly to ascertain whether some of the increase in reported steroid use was actually due to androstenedione use. The 2012 annual prevalence rates for androstenedione were 0.6%, 0.9%, and 1.0% in 8th, 10th, and 12th grades, respectively. As with steroids, the prevalence rates tend to be higher among males; in this case, annual prevalence is at 0.7%, 1.3%, and 1.3% for males versus 0.3%, 0.5%, and 0.6% for females. In the questionnaire forms containing both drugs, we find that a significant proportion of students reporting anabolic steroid use in 2012 also reported using androstenedione: 19%, 46%, and 39% in grades 8, 10, and 12, respectively. Therefore, it is possible that some of the reported steroid use is, in fact,

[48]In 2006, the question about steroid use was changed in one of the three 12th-grade forms in which it occurred, and in two of the four 8th- and 10th-grade forms. The change was intended to assure that respondents were including only anabolic steroids and not corticosteroids in their answers. The phrase ". . . that are sometimes prescribed by doctors to promote healing from certain types of injuries" was replaced with the phrase ". . . are prescription drugs sometimes prescribed by doctors to treat certain conditions." A comparison of the prevalence rates generated by the two question wordings revealed no evidence of any effect of the change. In 2007 the remaining forms were changed in the same manner.

androstenedione use and that some of the increase in reported steroid use in the late 1990s was indeed due to increasing use of androstenedione.[49]

- Tables 10-17a through 10-17c help deal with the issue of double counting, showing the total proportion of students using *either* ***steroids*** *or* ***androstenedione***. Our estimate of the proportion of males using *either* of these drugs in the prior 12 months is 1.3% in 8th grade, 2.0% in 10th grade, and 2.2% in 12th grade, meaning that 1 in 45 twelfth-grade males have used one of these drugs in just the prior year.

- Another physique-enhancing substance is ***creatine***, though it is not usually considered a drug at all but rather a type of over-the-counter protein supplement believed to help build muscle mass. Because we thought that a number of males were probably using this substance along with steroids and/or androstenedione, we added a tripwire question about its use in 2001. Use was even more widespread than we expected, which is troublesome given the limited knowledge about its long-term effects. In 2012, the proportion of males reporting use of creatine in the prior 12 months was 2.9%, 13.1%, and 18.0% in grades 8, 10, and 12. Many fewer females reported use—0.8%, 1.0%, and 1.1%, respectively.

Frequency of Lifetime, Annual, and 30-Day Use

While this volume focuses primarily on *prevalence*-of-use rates for different time periods, more detailed information about the *frequency* with which various drugs have been used is important for understanding severity of substance use.

Table 4-4a provides data on frequency of use of various drugs for lifetime, 12-month, and 30-day periods. Table 4-4b provides additional frequency-of-use estimates for alcohol, cigarettes, and smokeless tobacco.

- As shown in these tables, a good proportion of lifetime users of ***many drugs*** could best be characterized as experimental users, reporting use on only one or two occasions.

- At the other extreme, certain drugs stand out for having had relatively high proportions reporting use on 20 or more occasions in their lifetime. For example, 5%, 15%, and 28% of all 8th, 10th, and 12th graders, respectively, consumed ***alcohol*** on 20 or more occasions in their lifetime. Indeed, 0.9%, 5.4%, and 17.1% indicate having ***been drunk*** on 20 or more occasions.

- ***Cigarette*** use is measured on a different frequency scale, making direct comparison with other drugs difficult, but there can be little doubt that *cigarettes rank first in frequent use*.

- Among illicit drugs, ***marijuana*** shows the highest proportions reporting frequent use, with 4%, 13%, and 21% of 8th, 10th, and 12th graders, respectively, reporting use on 20 or more occasions in their lifetime.

[49]Viewed the opposite way, the proportion of those reporting any androstenedione use in the prior 12 months who *also* reported any steroid use in the same interval is 18%, 47%, and 68% for 8th, 10th, and 12th graders, respectively. In other words, from one tenth to one half of androstenedione users are also reporting steroid use, which sets outer limits on the degree to which these two questions are double-counting the same behaviors.

- Most other illicit drugs have far lower frequencies of using on 20 or more occasions. However, young people may tend to underestimate the frequency with which they have engaged in these behaviors in their lifetime or over a 12-month period, so the extent of frequent use may be somewhat underestimated.[50]

Prevalence of Current Daily Use

Frequent use of illicit or licit drugs is a great concern for the health and safety of adolescents. Table 4-2, Table 5-4 in chapter 5, and Figure 4-2 show the prevalence of current daily or near-daily use of the various classes of illicit drugs for 12th graders. Table 4-2 also provides prevalence rates of selected drugs for which meaningful estimates could be made for 8th and 10th graders. For all drugs except cigarettes and smokeless tobacco, respondents are considered current daily users if they report use on 20 or more occasions in the preceding 30 days. Respondents are considered daily users of cigarettes if they explicitly state the use of one or more cigarettes per day in the past 30 days, and daily users of smokeless tobacco if they state using "about once a day" or more often in the past 30 days.

- Across all three grade levels in 2012, there are more current daily users of ***cigarettes*** than of any other drug class: 1.9%, 5.0%, and 9.3% in grades 8, 10, and 12, respectively. Many of these daily smokers say that they currently smoke a half pack or more per day (0.6%, 1.5%, and 4.0% of all respondents in grades 8, 10, and 12, respectively).

- Daily use of ***smokeless tobacco*** is considerably lower than daily use of cigarettes, at 0.5%, 2.0%, and 3.2% for 8th, 10th, and 12th grades, respectively. The rates among males are quite a bit higher, however, as discussed later in this chapter.

- Proportions using ***tobacco daily*** in either or both forms (i.e., cigarettes and/or smokeless tobacco) are slightly higher than the proportions that use cigarettes alone. These rates are only slightly higher because 20%–50% of daily smokeless tobacco users are also daily users of cigarettes (data not shown).

- For many years, ***alcohol*** was the next most frequently used drug on a daily basis at all three grade levels, but because daily marijuana use rose substantially in the 1990s, it now exceeds daily alcohol use. The daily prevalence rates for alcohol in 2012 were 0.3%, 1.0%, and 2.5% in grades 8, 10, and 12, respectively.

- ***Marijuana*** is now used on a daily or near-daily basis by 1.1%, 3.5%, and 6.5% of 8th, 10th, and 12th graders; in 12th grade, this means 1 in 15 students. (See chapter 10 for specific information on levels of past daily use and cumulative daily use of marijuana over the lifetime.)

- Daily use of all ***other illicit drugs*** is reported by 0.3% or less of 12th-grade respondents (see Table 4-2). While low, these figures are not inconsequential, because 1% of the high school class of 2012, for example, represents in excess of 30,000 individuals nationwide.

[50]Bachman, J. G., & O'Malley, P. M. (1981). When four months equal a year: Inconsistencies in student reports of drug use. *Public Opinion Quarterly, 45*, 536–548. Reprinted in E. Singer & S. Presser (Eds.), 1989, *Survey research methods.* Chicago: University of Chicago Press.

NONCONTINUATION RATES

One indication of the proportion of people who try a drug but do not continue to use it can be derived from calculating the percentage of those who ever used a drug (once or more) but did *not* use it in the 12 months preceding the survey.[51] We use the word "noncontinuation" rather than "discontinuation" because the latter might imply discontinuing an established pattern of use, whereas our current operational definition includes noncontinuation by experimental users as well as established users. Figure 4-3 provides these noncontinuation rates for most drug classes and all three grades in 2012; drugs are ordered from lowest to highest rates among 12th graders. This figure shows that noncontinuation rates vary widely among the various drugs.

- Among 12th graders, the highest noncontinuation rate is observed for ***inhalants*** (64%), followed by ***heroin without a needle (***50%). Many inhalants are used primarily at a younger age, and use is often not continued into 12th grade. The rank ordering for noncontinuation of other drugs is as follows: ***crystal methamphetamine*** (***ice***), ***methaqualone***, ***ecstasy*** (***MDMA***), and ***cocaine powder*** (all between 46–50%); and ***cocaine in general***, ***crack***, ***heroin in general***, ***hallucinogens other than LSD***, ***methamphetamine***, ***LSD***, ***tranquilizers***, ***hallucinogens*** (***adjusted***), ***narcotics other than heroin***, ***sedatives*** (***barbiturates***), ***amphetamines***, and ***steroids*** (all between 30% and 44%). The drugs least likely to have been discontinued include ***marijuana*** and ***cigarettes*** (both at 20%), ***smokeless tobacco*** (18%), ***being drunk*** (17%), and ***alcohol*** (9%). Note that several psychotherapeutic drugs are among those most likely to have their use continued. It is important to recognize, however, that substantial proportions of students who try the various illicit drugs do not continue use, even into later adolescence. (Note that the use of ***heroin with a needle*** and ***PCP*** are not included due to the very low case counts.)

- Because a relatively high proportion of marijuana users continue to use ***marijuana*** at some level over an extended period (as is documented further in Chapter 10), it has consistently had one of the lowest noncontinuation rates in the senior year of any of the illicit drugs (20% in 2012).

  It is noteworthy that, of all the 12th graders who have ever used ***crack*** (2.1%), only about one quarter (0.6%) report current use and 0.1% of the total sample report current daily use. While there is no question that crack is highly addictive, evidence from MTF has consistently suggested that it is not addictive on the first use, as was often alleged.

- In contrast to illicit drugs, noncontinuation rates for the two licit drugs are extremely low. ***Alcohol***, tried by the great majority of 12th graders (69%), is still used in the senior year by nearly all who have ever tried it (64% of all 12th graders), yielding a noncontinuation rate for alcohol of only 9%.

[51]This operationalization of noncontinuation has an inherent problem in that users of a given drug who initiated use during the past year by definition cannot be noncontinuers. Thus, the definition tends to understate the noncontinuation rate, particularly for drug use initiated late in high school rather than in earlier years or for newly popular drugs.

- Noncontinuation had to be defined differently for ***cigarettes*** because respondents are not asked to report on their cigarette use in the past year. The noncontinuation rate is thus defined as the percentage of those who say they ever smoked "regularly" and who also reported no smoking at all during the past 30 days. Of the 12th graders who said they were ever regular smokers, only 20% have ceased active use.

- Noncontinuation is defined for ***smokeless tobacco*** much the same way as for cigarettes. It also has a relatively low rate of noncontinuation by senior year—only 18% of lifetime regular users did not use in the past 30 days.

- In addition to providing 12th-grade data, Figure 4-3 presents comparable data on noncontinuation rates based on responses of 8th and 10th graders. The drugs have been left in the same order as the rank-ordered drugs in 12th grade to facilitate comparison across grades.

PREVALENCE COMPARISONS FOR IMPORTANT SUBGROUPS

MTF examines differences in prevalence of drug use associated with gender, college plans, region of the country, population density, parents' education level, and racial/ethnic identification. Tables 4-5 through 4-8 provide statistics on usage rates for these various subgroups for all three grades.

Gender Differences

In general, higher proportions of males than females are involved in illicit drug use, especially heavy use; however, this picture is a somewhat complicated one.

- For all three grades annual ***marijuana*** use is higher among males than among females, and ***daily marijuana use*** is roughly two to three times as high among males.

- Males have considerably higher prevalence rates than females on most other illicit drugs, too—at least by 12th grade. The annual prevalence rates for 12th-grade males, compared to 12th-grade females, are more than twice as high for ***hallucinogens other than LSD***, ***heroin without a needle***, ***GHB***, and ***steroids***. Annual prevalence also tends to be one-and-one-half to two times as high among 12th-grade males as among females for ***synthetic marijuana***, ***hallucinogens***, ***LSD***, ***salvia***, ***cocaine***, ***crack***, ***cocaine powder***, ***heroin***, ***heroin with a needle***, ***OxyContin***, ***Rohypnol***, and ***ketamine***. Further, males account for an even greater share of the frequent or heavy users of many of these drugs.

- For many drugs, however, there is little gender difference in use in the lower grades. For some drugs, females actually have higher rates of annual use in 8th grade, including ***any illicit drug other than marijuana***, ***synthetic marijuana***, ***inhalants***, ***ecstasy*** (***MDMA***), ***cocaine***, ***crack***, ***cocaine powder***, ***heroin without a needle***, ***Vicodin***, ***amphetamines***, ***Ritalin***, ***Adderall***, ***methamphetamine***, ***bath salts*** (***synthetic stimulants***), ***tranquilizers***, and ***over-the-counter cough and cold medicines***. Thus, the gender differences observed in 12th grade, with males more likely to use most drugs, seem to emerge over the course

of middle to late adolescence. These gender differences in the early grades may result in part from females tending to mature earlier and associating with older males (this gender difference may then dissipate as same-age males catch up in physical maturity and substance use opportunities).

- Annual prevalence rates for ***amphetamine*** use are higher among females than among males in grade 8, but males have a slightly higher rate of use in grades 10 and 12. Indeed, it is probably due to their higher use of amphetamines in 8th grade—some of which may be for the purpose of weight loss—that females show higher levels of using some ***illicit drug other than marijuana*** in 8th grade.

- Among 12th graders, males are somewhat more likely to report using some ***illicit drug other than marijuana*** during the last year (18% for males vs. 15% for females); among 10th graders the differences are still smaller (11% for males, 10% for females); and among 8th graders, slightly more females report such use (6.0% vs. 4.8%) (see Table 4-6 and Figure 5-7 in chapter 5). If going beyond marijuana is an important threshold point in the sequence of illicit drug use, then fairly similar proportions of both genders were willing to cross that threshold at least once during the year. However, on average, female users take fewer types of drugs and tend to use them with less frequency than their male counterparts.

- Frequent ***alcohol*** use tends to be disproportionately concentrated among males. ***Daily alcohol*** use, for example, is reported by 3.6% of 12th-grade males versus 1.2% of 12th-grade females. Males are also more likely to drink large quantities of alcohol in a single sitting: 27% of 12th-grade males reported drinking ***five or more drinks in a row*** in the prior two weeks versus 20% of 12th-grade females.[52] These gender differences have generally been observable at all three grade levels, but they become considerably larger in the upper grades. This year, females in 8th grade showed about the same rate of ***being drunk*** in the prior 30 days as did males (3.8% versus 3.3% for males), whereas in 12th grade the rate for males (31%) was higher than the rate for 12th-grade females (25%). This developmental difference is consistent with the pattern for illicit drugs.

- ***Cigarette*** smoking rates (30-day, daily, and half pack or more per day) are currently slightly higher among males than among females in all three grades; these gender differences are largest at 12th grade and for half-pack-a-day smoking. One minor exception is 30-day prevalence, which is slightly higher among females in 8th grade (4.9% for females vs. 4.6% for males).

- Use of ***smokeless*** or "spit" ***tobacco*** is almost exclusively a male behavior. Although 14% of 12th-grade males in 2012 reported some use in the prior month, only 1.6% of females did. Rates of daily use by males are 0.8%, 3.9%, and 5.7% among 8th, 10th, and 12th

[52]Because females tend to weigh less than males and may metabolize alcohol somewhat differently, a given quantity of ingested alcohol would, on average, lead to higher blood alcohol concentrations for females. Therefore, the difference in terms of a fixed number of drinks, such as five or more drinks, may not reflect a difference in intoxication rates. However, the difference in self-reported 30-day prevalence of drunkenness among 12th graders is six percentage points (31% for males vs. 25% for females),which is quite close to the gender difference in having five or more drinks in a row (27% vs. 20%).

graders. The comparable statistics for females are only 0.1%, 0.3%, and 0.3%, respectively.

- The use of other tobacco products like ***small cigars***, ***dissolvable tobacco***, and ***snus*** also tends to be concentrated among males (Table 4-6).

- Similarly, the use of ***anabolic steroids*** is heavily concentrated among males; for example, 12th-grade males have an annual prevalence rate of 1.7% compared to only 0.7% for females. The same is true in 12th grade for ***androstenedione***, a precursor of anabolic steroids, which in 2012 had an annual prevalence of 1.3% for males versus 0.6% for females (see Chapter 10, Table 10-15c).

Differences Related to College Plans

Overall, students who say they probably or definitely will complete four years of college (referred to here as the "college-bound") have lower rates of illicit drug use in secondary school than those who say they probably or definitely will not. (See Tables 4-5 through 4-8 and Figures 5-8 and 5-9 in chapter 5.)

While the great majority of students at all three grade levels expect to complete college, the proportion indicating college plans is higher at the lower grade levels, even though future high school dropouts (11–15% of each cohort) are still contained in these samples. Cohort shifts in college attendance that have taken place since MTF began may partially explain this apparent anomaly; but there is probably a considerable age effect, as well, wherein early aspirations become reality-tested (and adjusted) as secondary school experience cumulates.

For any given drug, the differences between these two self-identified groups of college- or non-college-bound students tend to be greatest in 8th grade, perhaps due to the inclusion of future dropouts, or the tendency of non-college-bound students to have an earlier age of initiation of use, or both.

- Annual ***marijuana*** use, for example, is reported by 35% of college-bound 12th graders versus 42% of the non-college-bound; but among 8th graders it is reported by only 10% of the college-bound versus 28% of the non-college-bound.

- Among 2012 twelfth graders, 16% of the college-bound report using ***any illicit drug other than marijuana*** in the prior year versus 19% of the non-college-bound.

- Frequent use of many illicit drugs shows larger contrasts related to college plans (see Table 4-8). ***Daily marijuana*** use, for example, is about eight times as likely among the non-college-bound as among the college-bound in 8th grade, four times as likely in 10th grade, and twice as likely in 12th grade.

- An examination of Table 4-6 will show that quite large ratio differences may be found between the college-bound and the non-college-bound for annual prevalence of use on virtually ***all illicit drugs other than marijuana***; ratios tend to be highest in the earlier grades. In all cases, the non-college-bound have higher annual prevalence rates.

- Frequent ***alcohol*** use is also considerably more prevalent among the non-college-bound. For example, ***daily drinking*** is reported by 3.8% of the non-college-bound 12th graders versus 2.1% of the college-bound. ***Binge drinking*** (five or more drinks in a row at least once during the preceding two weeks) is reported by 28% of the non-college-bound 12th graders versus 23% of the college-bound. There are also modest differences between the non-college-bound and college-bound 12th graders in lifetime (74% vs. 68%), annual (67% vs. 62%), and 30-day (44% vs. 41%) prevalence of alcohol use. In the lower grades, there are even larger differences in the various drinking measures between those who expect to go to college and those who do not (see Tables 4-5 though 4-8). As shown in earlier editions of *Volume II* in this monograph series, the college-bound eventually increase their binge drinking to a level exceeding that of the non-college-bound—an important reversal with age.

- At all three grade levels, more non-college-bound students use ***steroids*** compared to college-bound students.

- By far, the largest and most dramatic difference in substance use between the college- and non-college-bound involves ***cigarette*** smoking—2.6% of college-bound 12th graders report smoking a ***half pack or more daily*** compared to 9.5% of the non-college-bound. Proportional differences are even larger in the lower grades: 0.4% versus 3.0%, respectively, in 8th grade and 1.0% versus 6.8% in 10th grade. (The absence of dropouts by 12th grade undoubtedly reduces the ratio, as dropouts have very high rates of smoking.)

- Smoking tobacco with a ***hookah,*** on the other hand, does not differ by college plans among 12th graders (the only ones asked the question), with 18% of both groups reporting doing so in the past 12 months.

- As with cigarette use, ***smokeless tobacco*** use, including the use of ***snus***, is substantially higher among the non-college-bound than among the college-bound at all three grades. Use of ***dissolvable tobacco*** products is higher among the non-college-bound among 8th and 10th graders, but does not differ among 12th graders.

Regional Differences

Figure 4-4 provides a regional division map showing the states included in the four regions of the country as defined by the United States Census Bureau—the Northeast, Midwest, South, and West (see appendix B for detailed descriptions). The study design is intended to permit such regional comparisons, but is not designed to permit state level estimates, which would require far larger samples. Regional differences in drug use rates are provided in Tables 4-5 through 4-8 for grades 8, 10, and 12; Figures 5-10a through 5-10c provide graphical displays for selected drugs for 12th graders.

- In the 2012 data, overall rates of ***any illicit drug*** use differ some among the regions, but the differences are not consistent across grades. Among 12th graders, the West (46%) and Northeast (41%) are highest, with the South (38%) and Midwest (35%) somewhat lower (Table 4-6 and Figure 5-10a in chapter 5). Among 10th graders, the Midwest (at 26%) is

lower than other three regions (from 30-33%). Among 8th graders, the West and the South (both at 16%) are highest while the Northeast and the Midwest (both at 10%) are lower.

- ***Marijuana*** use shows a regional pattern very similar to that for any illicit drug, not surprising given that marijuana (the most prevalent illicit drug) tends to drive the index.

- Regional variation in use in the past 12 months of any ***illicit drug other than marijuana*** is relatively small, ranging from 4% to 7% among 8th graders, 9% to 12% among 10th graders, and 15% to 20% among 12th graders.

- In the past, there were large, consistent regional differences in ***crystal methamphetamine*** use, with the West tending to have the highest rate. The differences have diminished, though. In 2012, 12th-grade use is about the same in the Midwest (1.0%), the Northeast (0.9%), and the West (0.9%), while a bit lower in the South (0.6%).

- The largest observed regional differences were previously in ***cocaine*** use, with the West tending to have the highest level of use. Recent regional differences in annual prevalence of use are much smaller, ranging from 0.6% to 1.4% in 8th grade, from 1.3% to 2.7% in 10th grade, and from 2.1% to 4.1% in 12th grade.

- For some years, the South has generally had the highest rate of ***tranquilizer*** use at all three grades, but this remains true in 2012 only for 8th and 10th grades. Among 12th graders there is little variation, with all regions at 5% or 6%.

- The South also generally has had the highest rate of ***sedative*** (***barbiturate***) use (reported only for 12th grade). In 2012, however, annual prevalence does not vary significantly by region (all between 4% and 5%).

- ***Rohypnol***—which, like tranquilizers and sedatives (barbiturates), is a central nervous system depressant—does not show consistent regional differences across grades.

- Use of ***ecstasy*** varies some by region in 2012, with annual prevalence highest in the West for 10th and 12th grades; among 12th graders, for example, rates in the West stand at 5.9%, in the Northeast at 3.7%, in the South at 3.2%, and in the Midwest at 2.4%. Among 8th graders there is only modest variation by region, with the Midwest at 0.3% and the three other regions between 1.2% and 1.4%.

- For many years, the 30-day prevalence rates of ***alcohol*** use among 12th graders have been somewhat lower in the South and West than in the Northeast and Midwest regions, though there has been less regional difference in the lower grades. In 2012, regional differences are more modest, though among 12th graders the Northeast still has a higher 30-day prevalence (48%) than the other regions (37–43%).

- ***Daily smoking*** at all three grade levels shows lower rates in the West than the other regions (Table 4-8).

- Among 12th graders in 2012, smoking tobacco with a ***hookah*** is highest in the West (26%), lowest in the South (12%), with the Northeast (18%) and Midwest (19%) in between.

- Use of ***smokeless tobacco*** has tended to be highest in the South and Midwest, and that remains true for 10th and 12th grades in 2012. For 8th graders, the South has again the highest rate of smokeless tobacco use at 4%, while the other regional rates are 2–3%. The use of ***snus*** in the past 12 months is highest in the South and lowest in the West in all three grades in 2012.

Differences Related to Population Density

Three levels of population density (or urbanicity) have been distinguished for analytical purposes: (a) large Metropolitan Statistical Areas (large MSAs), (b) other metropolitan statistical areas (other MSAs), and (c) non-MSAs. (See appendix B for exact definitions.)

Differences in drug use across these various-sized communities (and across the four regions) are generally small, reflecting how widely drug use has diffused through the population (see Tables 4-5 through 4-8). There are a few minor exceptions:

- In 12th grade, annual ***marijuana*** use is higher in large MSAs (40%) and other MSAs (37%) than in the non-MSAs (29%). The differences at 8th and 10th grades are not large.

- In 2012, use of ***synthetic marijuana*** in the past 12 months does not vary significantly by population density.

- ***Cigarette*** use generally has been inversely related to community size at all three grade levels (see Table 4-7).

- Among 12th graders, smoking tobacco with a ***hookah*** is positively related to population density, with 23% of those in large MSAs reporting use in the past 12 months, compared to 19% in other MSAs and only 9% in non-MSAs.

- ***Smokeless tobacco*** use tends to be highest in non-MSAs at all three grade levels. For example, among 12th graders, 30-day prevalence is 6.4% in large MSAs, 6.4% in other MSAs, and 14% in non-MSAs. Daily use of smokeless tobacco is concentrated in more rural areas (see Table 4-8). Similarly, use of ***snus*** is highest in non-MSAs in all three grades.

In the past, ***inhalant*** use and ***binge drinking*** showed differences across population densities though these differences have now largely disappeared. ***Inhalant*** use was generally highest in the non-MSAs. The recent ranges for inhalant use are 5.0%–6.6% in 8th grade, 3.6%–5.2% in 10th grade, and 2.7%–3.2% in 12th grade. Rates of ***binge drinking*** do not differ much by population density at present, with fairly comparable rates across all levels of population density in 2012 in all three grades.

Differences Related to Parental Education

The best measure of family socioeconomic status (SES) available in the MTF study is an index of parental education, which is based on the average of the educational levels reported for both parents by the respondent (or on the data for one parent, if data for both are not available). The respondent is instructed to indicate on the following scale the highest level of education each parent attained: (1) completed grade school or less, (2) some high school, (3) completed high school, (4) some college, (5) completed college, and (6) graduate or professional school after college. (It should be noted that the average educational level obtained by students' parents has risen over the years, as discussed in chapter 5.) Tables 4-5 through 4-8 give the distributions for the prevalence of use at each grade level.

By 12th grade there is little association between family SES and most drug use. This again speaks to the extent to which illicit drug use has permeated all social strata in American society.

However, an examination of Table 4-6 shows that in 8th grade, there tends to be a negative, largely ordinal relationship between socioeconomic level and annual prevalence of use of a number of drugs. The relationships are not always entirely ordinal because of racial and ethnic differences in SES, which will be discussed in the final section of this chapter.

- Many of the SES differences seen in 8th grade have disappeared by 10th or 12th grade. This is true for ***inhalants***, ***hallucinogens***, ***LSD***, ***hallucinogens other than LSD***, ***ecstasy***, ***Vicodin***, ***amphetamines***, ***methamphetamine***, and ***tranquilizers***; but *not* for ***marijuana***, ***synthetic marijuana***, ***heroin***, ***cocaine***, and ***crack***. For these latter drugs, the lower strata (or lowest stratum in some cases) generally continue to have the highest proportion of users, even at the upper grade levels. The diminished SES differences by 12th grade could be explained by the higher SES teenagers "catching up" with their more precocious peers from lower SES backgrounds, or by differential rates of dropping out among the strata, or both.

- In 2012 the annual prevalence of ***marijuana*** use, for example, is three times as high in the lowest SES stratum as in the highest one among 8th graders (19% vs. 6%), one and a half times higher among 10th graders (37% vs. 23%), and moderately higher among 12th graders (42% vs. 32%).

- Thirty-day prevalence of ***alcohol*** use is also negatively associated with SES in 8th grade, but that association declines in upper grades and showing little difference by 12th grade. The prevalence of getting ***drunk*** in the prior 30 days is also negatively associated with SES in 8th grade, but becomes positively correlated with SES by 12th grade.

- ***Daily cigarette smoking*** tends to bear a strong inverse relationship with parental education among 8th graders (see Table 4-8), but this relationship attenuates considerably among 12th graders, probably due to the absence of dropouts by 12th grade. The attenuation is much less for heavier smoking.

Racial/Ethnic Differences

Racial/ethnic comparisons are made here for African Americans, Hispanics, and Whites.[53] Although the MTF design did not include an oversampling of any minority groups, the large overall sample sizes at each grade level do produce fair numbers of African-American and Hispanic respondents each year. Additionally, in the findings presented in this volume, we routinely present combined data from two adjacent years to augment the sample sizes on which estimates for these two minority groups (as well as Whites) are based and, thus, increase the reliability of the estimates. Otherwise, misleading findings about the size of racial/ethnic differences may emerge, as well as (and perhaps more importantly) misleading findings about their trends. We caution the reader that the sampling error of differences among groups is likely to be larger than would be true for other demographic and background variables such as gender or college plans because African Americans and Hispanics are more likely to be clustered by neighborhood, and therefore by school.

The MTF question on race/ethnicity was changed beginning in 2005, as described in appendix B, in order to more accurately describe racial/ethnic composition of young people and to be more consistent with the guidelines of the Office of Management and Budget. In the original race/ethnicity question, respondents were asked "How do you describe yourself?" and were instructed to select *one* race/ethnicity category. In 2005, in half of the questionnaire forms, respondents were instructed to select one *or more* categories. About 6% selected more than one racial/ethnic group. The following method was used to combine data from the original question and the revised question: For the original question, respondents were assigned to the racial/ethnic group specified in their response. For the revised question, those checking only White and no other racial/ethnic group were categorized as White; those checking only Black or African American and no other racial/ethnic group were categorized as African American; and those checking one or more of the four Hispanic categories but no other racial/ethnic group were categorized as Hispanic. Respondents who checked more than one group (White, African American, or Hispanic), and respondents who checked any of the other racial/ethnic groups, have been excluded from analyses reporting racial/ethnic differences due to the small numbers of cases. In 2006, the race/ethnicity question was changed to the new "select one or more responses" version in the remaining forms.

Tables 4-5 to 4-8 give the *combined* 2011–2012 prevalence estimates for lifetime, annual, 30-day, and selected daily use for the three racial/ethnic groups at all three grade levels, along with the numbers of cases upon which the estimates are based.

[53]We recognize that these categories are broad. The Hispanic category encompasses people with various Latin American, Caribbean, and European origins, but for the purposes of this monograph the sample sizes are unfortunately too small to differentiate among them in any one year. For more complete treatments of racial/ethnic differences, in some of which additional subgroups are distinguished and males and females are examined separately within each racial/ethnic category, see Bachman, J. G., Wallace, J. M., Jr., O'Malley, P. M., Johnston, L. D., Kurth, C. L., & Neighbors, H. W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976–1989. *American Journal of Public Health, 81,* 372–377; Wallace, J. M., Jr., Bachman J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Cooper, S. M. (2002). Tobacco, alcohol, and illicit drug use: Racial and ethnic differences among U.S. high school seniors, 1976–2000. *Public Health Reports, 117 (Supplement 1),* S67–S75; Delva, J., Wallace, J. M., Jr., O'Malley, P. M., Bachman, J. G., Johnston, L. D., & Schulenberg, J. E. (2005). The epidemiology of alcohol, marijuana, and cocaine use among Mexican American, Puerto Rican, Cuban American, and other Latin American 8th-grade students in the United States: 1991–2002. *American Journal of Public Health, 95,* 696–702; and Wallace, J. M., Jr., Vaughn, M. G., Bachman, J. G., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (2009). Race/ethnicity, socioeconomic factors, and smoking among early adolescent girls in the United States. Drug and Alcohol Dependence, 104(Suppl. 1), S42–S49.

- Two general points can be derived from the tables. First, for nearly ***all drugs***, 12th-grade African-American students report lifetime, annual, 30-day, and daily prevalence rates that are lower—sometimes dramatically so—than those for White or Hispanic 12th graders. Second, use rates for most drugs are generally lower for African-American students in 8th and 10th grades, as well; therefore, their low usage rates in 12th grade are almost certainly not due to differential dropout rates.

- The association between annual ***marijuana*** use and race/ethnicity varies by grade level. Hispanic students have the highest rate in all three grades in 2012. White students have the lowest rate of marijuana use in 8th grade but the second highest in 12th grade. African-American students have the second highest in 8th grade but the lowest rate in 12th grade.

- A number of other drugs have consistently been much less popular among African-American teens than among White teens, including ***inhalants***, ***hallucinogens***, ***LSD*** specifically, ***ecstasy***, ***cocaine*** (in recent years), ***crack***, ***powder cocaine***, ***OxyContin***, ***Vicodin***, ***amphetamines***, ***Ritalin***, ***Adderall***, ***methamphetamines***, ***sedatives*** (***barbiturates***), ***tranquilizers***, ***heroin***, and ***narcotics other than heroin***. The reasons for these large racial discrepancies are unclear.

- By 12th grade, White students have the highest lifetime and annual prevalence rates among the three major racial/ethnic groups for many substances, including ***LSD***, ***hallucinogens other than LSD***, ***narcotics other than heroin***, ***amphetamines***, ***sedatives*** (***barbiturates***), ***tranquilizers***, ***been drunk***, ***occasions of heavy drinking in the last two weeks***, ***cigarettes***, and ***smokeless tobacco***. The differentials for ***LSD*** and ***ecstasy*** have narrowed considerably in recent years as overall prevalence has declined substantially for these two drugs. Not all of these findings are replicated at lower grade levels, however. See Tables 4-5 and 4-6 for specifics.

- Hispanic 12th graders now have the highest (or close to highest) lifetime, annual, and 30-day prevalence rates for ***crack.*** The rate of ***cocaine*** use by Hispanic students has tended to be high compared to the other two racial/ethnic groups, particularly in the lower grades. It bears repeating that Hispanics have a considerably higher dropout rate than Whites or African Americans, based on Census Bureau statistics, which would tend to diminish any such differences by 12th grade.

- An examination of racial/ethnic comparisons at lower grade levels shows Hispanics having higher rates of use of many of the substances on which they have the highest prevalence of use in 12th grade, as well as for several other drugs. For example, in 8th grade, 2.7% of Hispanic students report ever having used ***crack***, compared to 0.8% of White students and 0.9% of African-American students. For ***other cocaine*** (i.e., powder cocaine), the lifetime prevalence of use in 8th grade for Hispanics, Whites, and African Americans is 3.7%, 1.3%, and 0.8%, respectively. In other words, in 8th grade—before most dropping out occurs—Hispanics have the highest rates of use of almost all substances, whereas by 12th grade Whites have the highest rates of use of most. Certainly the considerably higher dropout rate among Hispanics could explain this shift, and it may

be the most plausible explanation. Another explanation worth consideration is that Hispanics may tend to start using drugs at a younger age, but Whites overtake them at older ages. These explanations are not mutually exclusive, of course, and to some degree both explanations may hold true.[54]

- Table 4-8 shows that White students have by far the highest rates of ***daily cigarette smoking***. Among 12th graders, Whites have a 12.1% daily smoking rate, Hispanics 4.9%, and African Americans 4.7%. Similar differences are found in the lower grades.

- African-American students have the lowest 30-day prevalence rate for ***alcohol*** use. They also have the lowest rates for self-reports of having ***been drunk*** during the prior 30 days.

- Recent ***occasions of heavy drinking*** (having five or more drinks in a row during the prior two weeks) is also lowest among African Americans in all three grades; in 12th grade their rate is 11% versus 26% for Whites and 22% for Hispanics. In 8th grade, Hispanics have the highest rate at 10%, compared to 5% for Whites and 4% for African Americans.

Interactions between Race/Ethnicity and Parental Education

Substantial differences in racial/ethnic composition across levels of parental education complicate the subgroup comparisons in the previous two sections. How parental education relates to smoking, heavy drinking, and marijuana use when African-American, Hispanic, and White students are examined separately is shown in an Occasional Paper available on the MTF website at http://monitoringthefuture.org/pubs/occpapers/occ70.pdf [55] and in a journal article, the abstract of which is also available on the MTF website.[56] The key findings are outlined below:

- There are high proportions of Hispanic students in the bottom category of parental education, and the generally lower average levels of substance use among Hispanics in this one stratum contributes heavily to the departures from ordinal relationships noted in the section above on parental education.

- Patterns for the three racial/ethnic subgroups show distinct differences: Among African-American and Hispanic students the links between parental education and substance use are very weak, whereas among White students the links are somewhat stronger than those for the total samples (with all subgroups combined).

[54]A more extensive discussion of possible explanations (including the possibility of differential validity of reporting) can be found in Wallace, J. M., Jr., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (1995). Racial/ethnic differences in adolescent drug use: Exploring possible explanations. In G. Botvin, S. Schinke, & M. Orlandi (Eds.), *Drug abuse prevention with multi-ethnic youth* (pp. 59–80). Thousand Oaks, CA: Sage.

[55]Bachman, J. G., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (2010). *Impacts of* p*arental education on substance use: Differences among White, African-American, and Hispanic students in 8th, 10th, and 12th grades (1999–2008)* (Monitoring the Future Occasional Paper No. 70). Ann Arbor, MI: Institute for Social Research. Available online at http://www.monitoringthefuture.org/pubs/occpapers/occ70.pdf.

[56]Bachman, J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Wallace, J. M., Jr. (2011). Racial/ethnic differences in the relationship between parental education and substance use among U.S. 8th-, 10th-, and 12th-grade students: Findings from the Monitoring the Future project. *Journal of Studies on Alcohol and Drugs, 72*(2), 279-285.

TABLE 4-1a
Ninety-Five Percent Confidence Limits: Lifetime Prevalence of Use for 8th, 10th, and 12th Graders, 2012

(Approximate weighted Ns: 8th grade = 15,100, 10th grade = 15,000, 12th grade = 13,700)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug [a]	17.1	18.5	20.1	34.7	36.8	38.9	46.4	49.1	51.8
Any Illicit Drug other than Marijuana [a]	7.7	8.7	9.8	13.5	14.9	16.3	22.2	24.1	26.0
Any Illicit Drug including Inhalants [a,b]	23.4	25.1	26.8	37.9	40.0	42.2	46.5	50.3	54.2
Marijuana/Hashish	13.9	15.2	16.6	31.7	33.8	35.9	42.5	45.2	47.9
Inhalants [b]	10.7	11.8	13.0	8.9	9.9	11.0	6.6	7.9	9.4
Hallucinogens	2.2	2.8	3.5	4.4	5.2	6.2	6.5	7.5	8.7
Hallucinogens, Adjusted [c]	—	—	—	—	—	—	6.8	7.9	9.0
LSD	0.9	1.3	1.8	2.1	2.6	3.3	3.1	3.8	4.6
Hallucinogens other than LSD	1.9	2.3	2.7	3.9	4.5	5.1	5.9	6.6	7.3
PCP [d]	—	—	—	—	—	—	1.0	1.6	2.5
Ecstasy (MDMA) [e,f]	1.5	2.0	2.6	4.2	5.0	5.9	6.0	7.2	8.5
Cocaine	1.4	1.9	2.5	2.7	3.3	4.1	4.1	4.9	5.9
Crack	0.8	1.0	1.3	1.2	1.4	1.7	1.8	2.1	2.5
Other Cocaine [g]	1.1	1.6	2.1	2.4	3.0	3.7	3.5	4.4	5.6
Heroin	0.6	0.8	1.1	0.9	1.1	1.3	0.9	1.1	1.4
With a Needle [b]	0.4	0.6	0.8	0.5	0.7	0.9	0.5	0.7	1.1
Without a Needle [b]	0.3	0.5	0.6	0.6	0.8	1.0	0.5	0.8	1.1
Narcotics other than Heroin [h]	—	—	—	—	—	—	11.3	12.2	13.2
Amphetamines [h]	3.8	4.5	5.3	7.9	8.9	9.9	10.9	12.0	13.3
Methamphetamine [f,i]	1.0	1.3	1.9	1.3	1.8	2.4	1.3	1.7	2.4
Crystal Methamphetamine (Ice) [f]	—	—	—	—	—	—	1.2	1.7	2.3
Sedatives (Barbiturates) [h]	—	—	—	—	—	—	6.2	6.9	7.7
Sedatives, Adjusted [h,j]	—	—	—	—	—	—	6.5	7.2	8.0
Methaqualone [d,h]	—	—	—	—	—	—	0.4	0.8	1.5
Tranquilizers [h]	2.6	3.0	3.5	5.6	6.3	6.9	7.7	8.5	9.3
Rohypnol [d,k]	0.6	1.0	1.7	0.4	0.8	1.4	—	—	—
Alcohol	27.8	29.5	31.2	52.2	54.0	55.8	67.6	69.4	71.1
Been Drunk [f]	11.6	12.8	14.0	32.9	34.6	36.4	50.9	54.2	57.5
Flavored Alcoholic Beverages [d,i]	21.6	23.5	25.6	44.4	46.7	49.1	57.1	60.5	63.9
Cigarettes	14.2	15.5	16.9	26.1	27.7	29.4	37.6	39.5	41.4
Smokeless Tobacco [d,e]	6.8	8.1	9.7	13.6	15.4	17.4	14.1	17.4	21.3
Steroids [b,h]	0.9	1.2	1.4	1.1	1.3	1.6	1.4	1.8	2.3

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 4-1d.

TABLE 4-1b
Ninety-Five Percent Confidence Limits: Annual Prevalence of Use for 8th, 10th, and 12th Graders, 2012

(Approximate weighted Ns: 8th grade = 15,100, 10th grade = 15,000, 12th grade = 13,700)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug [a]	12.2	13.4	14.6	28.4	30.1	32.0	37.1	39.7	42.3
Any Illicit Drug other than Marijuana [a]	4.8	5.5	6.4	9.8	10.8	12.0	15.5	17.0	18.7
Any Illicit Drug including Inhalants [a,b]	15.8	17.0	18.4	29.6	31.5	33.3	36.5	40.2	43.9
Marijuana/Hashish	10.4	11.4	12.6	26.3	28.0	29.8	33.9	36.4	39.0
Synthetic Marijuana [f,i]	3.6	4.4	5.4	7.6	8.8	10.1	9.9	11.3	12.8
Inhalants [b]	5.5	6.2	7.0	3.5	4.1	4.7	2.2	2.9	3.8
Hallucinogens	1.2	1.6	2.1	2.9	3.5	4.3	4.0	4.8	5.6
Hallucinogens, Adjusted [c]	—	—	—	—	—	—	4.3	5.0	5.9
LSD	0.5	0.8	1.2	1.3	1.7	2.2	1.9	2.4	3.0
Hallucinogens other than LSD	1.0	1.3	1.6	2.6	3.0	3.5	3.5	4.0	4.6
PCP [d]	—	—	—	—	—	—	0.6	0.9	1.6
Ecstasy (MDMA) [e,f]	0.8	1.1	1.6	2.4	3.0	3.6	3.0	3.8	4.8
Salvia [f,i]	1.0	1.4	1.8	2.0	2.5	3.1	3.8	4.4	5.2
Cocaine	0.8	1.2	1.6	1.5	2.0	2.5	2.2	2.7	3.4
Crack	0.5	0.6	0.8	0.6	0.8	0.9	1.0	1.2	1.5
Other Cocaine [g]	0.7	1.0	1.4	1.4	1.8	2.3	1.8	2.4	3.2
Heroin	0.4	0.5	0.7	0.5	0.6	0.8	0.5	0.6	0.8
With a Needle [b]	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.6
Without a Needle [b]	0.2	0.3	0.4	0.3	0.4	0.6	0.2	0.4	0.6
Narcotics other than Heroin [h]	—	—	—	—	—	—	7.2	7.9	8.7
OxyContin [b,f,h]	1.1	1.6	2.2	2.3	3.0	3.9	3.6	4.3	5.1
Vicodin [b,f,h]	0.8	1.3	2.1	3.4	4.4	5.7	6.3	7.5	8.8
Amphetamines [h]	2.4	2.9	3.5	5.7	6.5	7.3	7.1	7.9	8.9
Ritalin [f,h,i]	0.4	0.7	1.2	1.3	1.9	2.6	1.9	2.6	3.4
Adderall [f,h,i]	1.2	1.7	2.3	3.7	4.5	5.5	6.5	7.6	9.0
Methamphetamine [f,i]	0.7	1.0	1.4	0.7	1.0	1.4	0.8	1.1	1.5
Crystal Methamphetamine (Ice) [f]	—	—	—	—	—	—	0.6	0.8	1.2
Bath Salts (Synthetic Stimulants) [f,i]	0.6	0.8	1.2	0.4	0.6	1.0	1.0	1.3	1.8
Sedatives (Barbiturates) [h]	—	—	—	—	—	—	4.0	4.5	5.1
Sedatives, Adjusted [h,j]	—	—	—	—	—	—	4.0	4.5	5.1
Methaqualone [d,h]	—	—	—	—	—	—	0.2	0.4	0.9
Tranquilizers [h]	1.5	1.8	2.2	3.8	4.3	4.8	4.8	5.3	6.0
OTC Cough/Cold Medicines [f,i]	2.5	3.0	3.6	4.1	4.7	5.5	4.6	5.6	6.7
Rohypnol [d,k]	0.2	0.4	0.8	0.2	0.5	0.9	1.0	1.5	2.2
GHB [d]	—	—	—	—	—	—	0.9	1.4	2.1
Ketamine [f]	—	—	—	—	—	—	1.2	1.5	2.0
Alcohol	22.1	23.6	25.2	46.7	48.5	50.4	61.6	63.5	65.3
Been Drunk [f]	7.6	8.6	9.6	26.6	28.2	29.9	41.8	45.0	48.3
Flavored Alcoholic Beverages [d,i]	15.4	17.0	18.8	35.7	37.8	40.0	41.1	44.4	47.7
Alcoholic Beverages containing Caffeine [f,i]	9.6	10.9	12.3	18.0	19.7	21.5	24.4	26.4	28.5
Cigarettes	—	—	—	—	—	—	—	—	—
Kreteks [d]	—	—	—	—	—	—	2.0	3.0	4.3
Tobacco using a Hookah [d]	—	—	—	—	—	—	16.4	18.3	20.3
Small cigars [d]	—	—	—	—	—	—	17.9	19.9	21.9
Smokeless Tobacco [d,e]	—	—	—	—	—	—	—	—	—
Snus [d]	1.8	2.4	3.2	5.8	6.9	8.1	6.3	7.9	9.8
Dissolvable Tobacco Products [d]	0.7	1.0	1.4	1.2	1.6	2.1	1.1	1.6	2.4
Steroids [b,h]	0.5	0.6	0.8	0.7	0.8	1.0	1.0	1.3	1.6
Androstenedione [f,i]	0.4	0.6	1.1	0.6	0.9	1.5	0.7	1.0	1.6
Creatine [f,i]	1.4	1.9	2.6	5.8	6.8	8.0	8.2	9.5	11.0

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 4-1d.

TABLE 4-1c
Ninety-Five Percent Confidence Limits: 30-Day Prevalence of Use for 8th, 10th, and 12th Graders, 2012

(Approximate weighted Ns: 8th grade = 15,100, 10th grade = 15,000, 12th grade = 13,700)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug [a]	6.8	7.7	8.6	17.3	18.6	20.0	23.2	25.2	27.3
Any Illicit Drug other than Marijuana [a]	2.2	2.6	3.1	4.4	5.0	5.6	7.5	8.4	9.5
Any Illicit Drug including Inhalants [a,b]	8.6	9.5	10.5	18.0	19.3	20.7	22.4	25.2	28.2
Marijuana/Hashish	5.7	6.5	7.4	15.8	17.0	18.4	21.0	22.9	25.0
Inhalants [b]	2.3	2.7	3.1	1.2	1.4	1.8	0.6	0.9	1.3
Hallucinogens	0.4	0.6	0.9	0.9	1.2	1.5	1.3	1.6	2.0
Hallucinogens, Adjusted [c]	—	—	—	—	—	—	1.5	1.8	2.3
LSD	0.2	0.3	0.5	0.4	0.5	0.8	0.6	0.8	1.1
Hallucinogens other than LSD	0.3	0.5	0.6	0.8	0.9	1.2	1.1	1.3	1.6
PCP [d]	—	—	—	—	—	—	0.3	0.5	1.0
Ecstasy (MDMA) [e,f]	0.3	0.5	0.7	0.8	1.0	1.4	0.6	0.9	1.4
Cocaine	0.3	0.5	0.7	0.6	0.8	1.1	0.8	1.1	1.5
Crack	0.2	0.3	0.4	0.3	0.4	0.5	0.5	0.6	0.8
Other Cocaine [g]	0.2	0.3	0.5	0.5	0.7	1.0	0.7	1.0	1.4
Heroin	0.2	0.2	0.4	0.3	0.4	0.5	0.2	0.3	0.5
With a Needle [b]	0.1	0.2	0.3	0.2	0.2	0.4	0.1	0.3	0.4
Without a Needle [b]	0.1	0.1	0.2	0.2	0.2	0.4	0.1	0.2	0.3
Narcotics other than Heroin [h]	—	—	—	—	—	—	2.7	3.0	3.4
Amphetamines [h]	1.1	1.3	1.6	2.4	2.8	3.3	2.9	3.3	3.8
Methamphetamine [f,i]	0.3	0.5	0.8	0.4	0.6	0.9	0.3	0.5	0.9
Crystal Methamphetamine (Ice) [f]	—	—	—	—	—	—	0.2	0.4	0.7
Sedatives (Barbiturates) [h]	—	—	—	—	—	—	1.8	2.0	2.3
Sedatives, Adjusted [h,j]	—	—	—	—	—	—	1.8	2.1	2.5
Methaqualone [d,h]	—	—	—	—	—	—	0.1	0.3	0.7
Tranquilizers [h]	0.6	0.8	1.0	1.5	1.7	2.0	1.8	2.1	2.4
Rohypnol [d,k]	0.0	0.1	0.5	0.1	0.2	0.6	—	—	—
Alcohol	9.9	11.0	12.2	26.0	27.6	29.2	39.7	41.5	43.4
Been Drunk [f]	3.0	3.6	4.3	13.2	14.5	15.8	25.2	28.1	31.1
Flavored Alcoholic Beverages [d,i]	6.7	7.6	8.6	15.0	16.3	17.6	19.6	21.8	24.0
Cigarettes	4.2	4.9	5.8	9.7	10.8	12.0	15.7	17.1	18.7
Smokeless Tobacco [d,e]	2.0	2.8	3.8	5.2	6.4	7.8	5.7	7.9	10.9
Steroids [b,h]	0.2	0.3	0.4	0.3	0.4	0.6	0.7	0.9	1.2

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 4-1d.

TABLE 4-1d
Ninety-Five Percent Confidence Limits: Daily Prevalence of Use for 8th, 10th, and 12th Graders, 2012

(Approximate weighted Ns: 8th grade = 15,100, 10th grade = 15,000, 12th grade = 13,700)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Marijuana/Hashish [l]	0.9	1.1	1.3	3.2	3.5	4.0	5.8	6.5	7.3
Alcohol									
Daily [l]	0.3	0.3	0.5	0.8	1.0	1.2	2.2	2.5	2.9
Been Drunk [f]	0.1	0.1	0.2	0.3	0.4	0.5	1.1	1.5	1.9
5+ Drinks in a Row in Last 2 Weeks	4.4	5.1	6.0	14.3	15.6	16.9	22.1	23.7	25.3
Cigarettes									
Daily	1.5	1.9	2.5	4.2	5.0	5.8	8.2	9.3	10.4
1/2 Pack+/Day	0.4	0.6	0.9	1.2	1.5	2.0	3.4	4.0	4.7
Smokeless Tobacco [d,e]	0.3	0.5	1.1	1.4	2.0	2.9	1.9	3.2	5.4

Source. The Monitoring the Future study, the University of Michigan.

See footnotes on the following page.

Footnotes for Tables 4-1a through 4-1d

Notes. ' — ' indicates data not available.

[a]For 12th graders only: Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of narcotics other than heroin and sedatives (barbiturates) has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b]For 12th graders only: Data based on three of six forms; *N* is three sixths of *N* indicated.

[c]For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

[d]For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated.

[e]For 8th and 10th graders only: Data based on two of four forms; *N* is one half of *N* indicated.

[f]For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated.

[g]For 12th graders only: Data based on four of six forms; *N* is four sixths of *N* indicated.

[h]Only drug use not under a doctor's orders is included here.

[i]For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated.

[j]For 12th graders only: Sedatives, adjusted data are a combination of barbiturate and methaqualone data. Data based on six forms of barbiturate data adjusted by one form of methaqualone data.

[k]For 8th and 10th graders only: Data based on one of four forms; *N* is one sixth of *N* indicated.

[l]Daily use of marijuana and alcohol is defined as use on 20 or more occasions in the past 30 days.

TABLE 4-2
Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, 2012

	Lifetime			Annual			30-Day			Daily		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted N =	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*13,700*
Any Illicit Drug [a]	18.5	36.8	49.1	13.4	30.1	39.7	7.7	18.6	25.2	—	—	—
Any Illicit Drug other than Marijuana [a]	8.7	14.9	24.1	5.5	10.8	17.0	2.6	5.0	8.4	—	—	—
Any Illicit Drug including Inhalants [a,b]	25.1	40.0	50.3	17.0	31.5	40.2	9.5	19.3	25.2	—	—	—
Marijuana/Hashish	15.2	33.8	45.2	11.4	28.0	36.4	6.5	17.0	22.9	1.1	3.5	6.5
Synthetic Marijuana [c,d]	—	—	—	4.4	8.8	11.3	—	—	—	—	—	—
Inhalants [b]	11.8	9.9	7.9	6.2	4.1	2.9	2.7	1.4	0.9	—	—	0.1
Hallucinogens	2.8	5.2	7.5	1.6	3.5	4.8	0.6	1.2	1.6	—	—	0.1
Hallucinogens, Adjusted [e]	—	—	7.9	—	—	5.0	—	—	1.8	—	—	—
LSD	1.3	2.6	3.8	0.8	1.7	2.4	0.3	0.5	0.8	—	—	0.1
Hallucinogens other than LSD	2.3	4.5	6.6	1.3	3.0	4.0	0.5	0.9	1.3	—	—	0.1
PCP [f]	—	—	1.6	—	—	0.9	—	—	0.5	—	—	0.1
Ecstasy (MDMA) [c,g]	2.0	5.0	7.2	1.1	3.0	3.8	0.5	1.0	0.9	—	—	0.1
Salvia [c,d]	—	—	—	1.4	2.5	4.4	—	—	—	—	—	—
Cocaine	1.9	3.3	4.9	1.2	2.0	2.7	0.5	0.8	1.1	—	—	0.1
Crack	1.0	1.4	2.1	0.6	0.8	1.2	0.3	0.4	0.6	—	—	0.1
Other Cocaine [h]	1.6	3.0	4.4	1.0	1.8	2.4	0.3	0.7	1.0	—	—	0.1
Heroin												
Any Use	0.8	1.1	1.1	0.5	0.6	0.6	0.2	0.4	0.3	—	—	0.1
With a Needle [b]	0.6	0.7	0.7	0.4	0.4	0.4	0.2	0.2	0.3	—	—	0.1
Without a Needle [b]	0.5	0.8	0.8	0.3	0.4	0.4	0.1	0.2	0.2	—	—	0.1
Narcotics other than Heroin [i]	—	—	12.2	—	—	7.9	—	—	3.0	—	—	0.2
OxyContin [b,d,i]	—	—	—	1.6	3.0	4.3	—	—	—	—	—	—
Vicodin [b,d,i]	—	—	—	1.3	4.4	7.5	—	—	—	—	—	—
Amphetamines [i]	4.5	8.9	12.0	2.9	6.5	7.9	1.3	2.8	3.3	—	—	0.3
Ritalin [c,d,i]	—	—	—	0.7	1.9	2.6	—	—	—	—	—	—
Adderall [c,d,i]	—	—	—	1.7	4.5	7.6	—	—	—	—	—	—
Methamphetamine [c,d]	1.3	1.8	1.7	1.0	1.0	1.1	0.5	0.6	0.5	—	—	*
Crystal Methamphetamine (Ice) [c]	—	—	1.7	—	—	0.8	—	—	0.4	—	—	0.2
Bath salts (Synthetic Stimulants) [c,d]	—	—	—	0.8	0.6	1.3	—	—	—	—	—	—
Sedatives (Barbiturates) [i]	—	—	6.9	—	—	4.5	—	—	2.0	—	—	0.1
Sedatives, Adjusted [i,j]	—	—	7.2	—	—	4.5	—	—	2.1	—	—	0.3
Methaqualone [f,i]	—	—	0.8	—	—	0.4	—	—	0.3	—	—	0.3
Tranquilizers [i]	3.0	6.3	8.5	1.8	4.3	5.3	0.8	1.7	2.1	—	—	0.1
Any Prescription Drug [k]	—	—	21.2	—	—	14.8	—	—	7.0	—	—	—
Over-the-Counter Cough/Cold Medication [c,d]	—	—	—	3.0	4.7	5.6	—	—	—	—	—	—
Rohypnol [f,l]	1.0	0.8	—	0.4	0.5	1.5	0.1	0.2	—	—	—	—
GHB [f]	—	—	—	—	—	1.4	—	—	—	—	—	—
Ketamine [c]	—	—	—	—	—	1.5	—	—	—	—	—	—
Alcohol												
Any Use	29.5	54.0	69.4	23.6	48.5	63.5	11.0	27.6	41.5	0.3	1.0	2.5
Been Drunk [c]	12.8	34.6	54.2	8.6	28.2	45.0	3.6	14.5	28.1	0.1	0.4	1.5
Flavored Alcoholic Beverages [d,f]	23.5	46.7	60.5	17.0	37.8	44.4	7.6	16.3	21.8	—	—	1.4
Alcoholic Beverages containing Caffeine [c,d]	—	—	—	10.9	19.7	26.4	—	—	—	—	—	—
5+ Drinks in a Row in Last 2 Weeks	—	—	—	—	—	—	—	—	—	5.1	15.6	23.7

(Table continued on next page.)

TABLE 4-2 (cont.)
Prevalence of Use of Various Drugs
for 8th, 10th, and 12th Graders, 2012

	Lifetime			Annual			30-Day			Daily		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted N =	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*13,700*
Cigarettes												
Any Use	15.5	27.7	39.5	—	—	—	4.9	10.8	17.1	1.9	5.0	9.3
1/2 Pack+/Day	—	—	—	—	—	—	—	—	—	0.6	1.5	4.0
Kreteks [f]	—	—	—	—	—	3.0	—	—	—	—	—	—
Tobacco using a Hookah [f]	—	—	—	—	—	18.3	—	—	—	—	—	—
Small cigars [f]	—	—	—	—	—	19.9	—	—	—	—	—	—
Dissolvable Tobacco Products [d,f]	—	—	—	1.0	1.6	1.6	—	—	—	—	—	—
Snus [d,f]	—	—	—	2.4	6.9	7.9	—	—	—	—	—	—
Smokeless Tobacco [f,g]	8.1	15.4	17.4	—	—	—	2.8	6.4	7.9	0.5	2.0	3.2
Steroids [b]	1.2	1.3	1.8	0.6	0.8	1.3	0.3	0.4	0.9	—	—	0.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available. ' * ' indicates less than 0.05% but greater than 0%.

[a]For 12th graders only: Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of narcotics other than heroin and sedatives (barbiturates) has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b]For 12th graders only: Data based on three of six forms; *N* is three sixths of *N* indicated.

[c]For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated.

[d]For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated.

[e]Adjusted for underreporting of PCP. See text for details. Data for the daily prevalence of use are no longer presented due to low rates of hallucinogen use and fairly stable rates of PCP use.

[f]For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated.

[g]For 8th and 10th graders only: Data based on two of four forms; *N* is one half of *N* indicated.

[h]For 12th graders only: Data based on four of six forms; *N* is four sixths of *N* indicated.

[i]Only drug use not under a doctor's orders is included here.

[j]For 12th graders only: Sedatives, adjusted data are based on six forms of barbiturate data adjusted by one form of methaqualone data.

[k]The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers … without a doctor telling you to use them.

[l]For 8th and 10th graders only: Data based on one of four forms; *N* is one sixth of *N* indicated due to changes in the questionnaire forms.

TABLE 4-3
Prevalence of Use of Heroin *with* and *without* a Needle for 8th, 10th, and 12th Graders, 2012

(Entries are percentages of all respondents.)

	Lifetime	Last 12 Months	Last 30 Days
8th Graders			
Used heroin only *with* a needle	0.4	0.3	0.1
Used heroin only *without* a needle	0.2	0.1	0.1
Used heroin both ways	0.2	0.1	*
Used heroin at all	0.8	0.5	0.2
Approximate weighted N =	*15,100*	*15,100*	*15,100*
10th Graders			
Used heroin only *with* a needle	0.3	0.2	0.1
Used heroin only *without* a needle	0.4	0.2	0.1
Used heroin both ways	0.4	0.2	0.1
Used heroin at all	1.1	0.6	0.4
Approximate weighted N =	*15,000*	*15,000*	*15,000*
12th Graders			
Used heroin only *with* a needle	0.4	0.2	0.2
Used heroin only *without* a needle	0.4	0.2	0.1
Used heroin both ways	0.3	0.2	0.1
Used heroin at all	1.1	0.6	0.3
Approximate weighted N =	*6,900*	*6,900*	*6,900*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates less than 0.05% but greater than 0%. Any apparent inconsistency between the total who used heroin at all and the sum of those who used with a needle, those who used without a needle, and those who used both ways is due to rounding. For 12th graders only: Data based on three of six forms except for used heroin at all, which is based on all six forms. The six-form *N* is approximately 13,700.

TABLE 4-4a
Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Marijuana			Synthetic Marijuana [a,b]			Inhalants [c]			Hallucinogens [d]			LSD			Hallucinogens other than LSD			PCP [e]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted N =	*15,100*	*15,000*	*13,700*	*5,000*	*5,000*	*4,600*	*15,100*	*15,000*	*6,900*	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*13,700*	—	—	*2,300*
Lifetime Frequency																					
No occasions	84.8	66.2	54.8	—	—	—	88.2	90.1	92.1	97.2	94.8	92.5	98.7	97.4	96.2	97.7	95.5	93.4	—	—	98.4
1–2 occasions	5.7	8.5	8.7	—	—	—	7.3	6.1	4.6	1.5	2.6	3.6	0.8	1.7	2.3	1.5	2.9	4.1	—	—	0.8
3–5 occasions	2.3	4.4	5.8	—	—	—	2.2	1.8	1.7	0.7	1.4	2.2	0.2	0.5	0.6	0.3	0.7	1.3	—	—	0.4
6–9 occasions	1.4	3.6	4.3	—	—	—	0.9	0.8	0.5	0.2	0.5	0.5	0.1	0.2	0.3	0.2	0.4	0.5	—	—	*
10–19 occasions	1.6	3.9	5.2	—	—	—	0.6	0.7	0.4	0.2	0.4	0.6	0.1	0.1	0.3	0.1	0.2	0.3	—	—	0.0
20–39 occasions	1.3	3.5	4.7	—	—	—	0.3	0.2	0.3	*	0.1	0.2	*	*	0.1	0.1	0.1	0.2	—	—	*
40 or more	3.0	9.8	16.4	—	—	—	0.6	0.3	0.4	0.3	0.2	0.4	0.1	0.2	0.2	0.1	0.2	0.2	—	—	0.3
Annual Frequency																					
No occasions	88.6	72.0	63.6	95.6	91.2	88.7	93.8	95.9	97.1	98.4	96.5	95.2	99.2	98.3	97.6	98.7	97.0	96.0	—	—	99.1
1–2 occasions	4.4	8.0	9.2	1.7	4.0	5.4	4.1	2.6	1.7	0.8	1.8	2.6	0.5	1.2	1.5	0.9	2.1	2.9	—	—	0.6
3–5 occasions	2.1	4.3	5.8	1.1	2.0	2.0	1.1	0.7	0.7	0.4	1.0	1.3	0.1	0.3	0.3	0.2	0.5	0.7	—	—	*
6–9 occasions	1.3	3.3	3.7	0.6	1.0	1.5	0.4	0.4	0.2	0.1	0.3	0.3	0.1	0.1	0.2	0.1	0.2	0.3	—	—	*
10–19 occasions	1.2	3.6	4.4	0.1	0.6	1.0	0.3	0.2	0.2	0.1	0.2	0.2	*	0.1	0.1	0.1	0.1	0.1	—	—	0.1
20–39 occasions	0.9	2.7	3.3	0.3	0.1	0.6	0.2	0.1	0.1	*	*	0.1	*	*	0.1	*	*	*	—	—	0.0
40 or more	1.5	6.0	10.0	0.6	1.1	0.7	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	—	—	0.1
30-Day Frequency																					
No occasions	93.5	83.0	77.1	—	—	—	97.3	98.6	99.1	99.4	98.8	98.4	99.7	99.5	99.2	99.5	99.1	98.7	—	—	99.5
1–2 occasions	2.9	6.3	7.3	—	—	—	1.8	1.0	0.5	0.3	0.7	0.9	0.2	0.3	0.5	0.3	0.6	1.0	—	—	0.2
3–5 occasions	1.2	3.0	3.7	—	—	—	0.4	0.2	0.2	0.2	0.2	0.4	0.1	0.1	0.1	0.1	0.1	0.2	—	—	0.0
6–9 occasions	0.7	2.0	2.3	—	—	—	0.2	0.2	0.1	*	0.1	0.1	*	*	0.1	0.1	0.1	*	—	—	0.2
10–19 occasions	0.6	2.3	3.0	—	—	—	0.1	*	*	*	0.1	0.1	*	*	*	*	*	*	—	—	0.0
20–39 occasions	0.3	1.4	2.3	—	—	—	0.1	*	0.0	*	*	*	*	*	*	*	*	*	—	—	0.0
40 or more	0.7	2.1	4.2	—	—	—	0.1	*	0.1	*	0.1	0.1	*	*	0.1	*	*	0.1	—	—	0.1

(Table continued on next page.)

TABLE 4-4a (cont.)
Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Ecstasy (MDMA) [b,f]			Salvia [a,b]			Cocaine			Crack			Other Cocaine [g]			Heroin			Heroin with a Needle [c]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted N =	*7,600*	*7,500*	*4,600*	5,000	5,000	*4,600*	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*9,100*	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*6,900*
Lifetime Frequency																					
No occasions	98.0	95.0	92.8	—	—	—	98.1	96.7	95.1	99.0	98.6	97.9	98.4	97.0	95.6	99.2	98.9	98.9	99.4	99.3	99.3
1–2 occasions	1.3	3.0	4.0	—	—	—	1.0	1.5	2.4	0.6	0.8	1.1	1.0	1.8	2.5	0.4	0.4	0.5	0.3	0.3	0.3
3–5 occasions	0.3	0.9	1.2	—	—	—	0.4	0.9	1.0	0.2	0.2	0.3	0.2	0.4	0.8	0.2	0.2	0.2	0.1	0.1	0.1
6–9 occasions	0.1	0.4	0.7	—	—	—	0.1	0.2	0.4	0.1	0.1	0.1	0.1	0.2	0.2	*	0.1	0.1	*	0.1	0.1
10–19 occasions	0.1	0.2	0.6	—	—	—	0.2	0.3	0.4	*	0.1	0.2	0.1	0.1	0.3	0.1	0.2	0.1	*	0.1	0.1
20–39 occasions	0.1	0.2	0.3	—	—	—	0.1	0.1	0.2	*	*	0.2	0.1	0.1	0.2	0.1	*	*	0.1	0.0	0.0
40 or more	0.1	0.2	0.3	—	—	—	0.2	0.3	0.5	0.1	0.2	0.3	0.1	0.2	0.3	0.1	0.2	0.2	*	0.1	0.2
Annual Frequency																					
No occasions	98.9	97.0	96.2	98.6	97.5	95.6	98.8	98.0	97.3	99.4	99.2	98.8	99.0	98.2	97.6	99.5	99.4	99.4	99.6	99.6	99.6
1–2 occasions	0.7	1.8	2.4	0.5	1.5	3.0	0.6	0.9	1.3	0.4	0.4	0.6	0.6	1.1	1.2	0.3	0.2	0.3	0.2	0.1	0.2
3–5 occasions	0.2	0.5	0.5	0.3	0.4	0.6	0.3	0.4	0.6	0.1	0.1	0.2	0.1	0.3	0.4	0.1	0.1	0.1	*	0.1	*
6–9 occasions	0.1	0.3	0.4	0.1	0.2	0.2	0.1	0.1	0.3	*	0.1	0.1	0.1	0.1	0.3	*	0.1	0.1	0.1	*	0.1
10–19 occasions	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	*	0.1	0.1	*	0.1	0.2	*	0.1	0.1	*	*	*
20–39 occasions	*	0.1	*	0.1	0.1	0.1	0.1	0.1	0.2	*	*	0.1	*	0.1	0.1	*	0.1	*	*	0.1	*
40 or more	*	0.1	0.2	0.2	0.2	0.3	0.1	0.2	0.2	*	0.1	0.2	*	0.1	0.1	*	0.1	0.1	*	*	0.1
30-Day Frequency																					
No occasions	99.5	99.0	99.1	—	—	—	99.6	99.2	98.9	99.7	99.6	99.4	99.7	99.3	99.0	99.8	99.6	99.7	99.8	99.8	99.8
1–2 occasions	0.4	0.7	0.6	—	—	—	0.2	0.3	0.5	0.1	0.2	0.3	0.2	0.3	0.6	0.1	0.1	0.1	0.1	0.1	0.1
3–5 occasions	0.1	0.1	0.2	—	—	—	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.2	0.2	*	0.1	0.1	*	0.1	*
6–9 occasions	0.0	0.1	0.1	—	—	—	*	0.1	0.1	*	*	0.1	*	0.1	0.1	*	*	*	*	*	*
10–19 occasions	*	0.1	*	—	—	—	*	*	0.1	*	*	*	*	*	0.1	*	0.1	*	*	*	*
20–39 occasions	*	0.0	*	—	—	—	*	*	*	*	0.0	0.0	*	*	*	*	*	*	*	0.0	0.0
40 or more	*	*	0.1	—	—	—	0.1	0.1	0.1	*	0.1	0.1	*	0.1	0.1	*	*	0.1	*	*	0.1

(Table continued on next page.)

TABLE 4-4a (cont.)
Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Heroin without a Needle [c]			Narcotics other than Heroin			OxyContin [a,c,h]			Vicodin [a,c,h]			Amphetamines [h,i]			Ritalin [a,b,h]			Adderall [a,b,h]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted N =	*15,100*	*15,000*	*6,900*	—	—	*13,700*	*5,000*	*5,000*	*6,900*	*5,000*	*5,000*	*6,900*	*15,100*	*15,000*	*13,700*	*5,000*	*5,000*	*4,600*	*5,000*	*5,000*	*4,600*
Lifetime Frequency																					
No occasions	99.5	99.2	99.2	—	—	87.8	—	—	—	—	—	—	95.5	91.1	88.0	—	—	—	—	—	—
1–2 occasions	0.3	0.4	0.4	—	—	4.7	—	—	—	—	—	—	2.6	3.8	4.7	—	—	—	—	—	—
3–5 occasions	0.1	0.1	0.1	—	—	2.5	—	—	—	—	—	—	0.7	1.9	2.1	—	—	—	—	—	—
6–9 occasions	*	0.1	0.1	—	—	1.4	—	—	—	—	—	—	0.5	1.0	1.5	—	—	—	—	—	—
10–19 occasions	*	0.1	*	—	—	1.5	—	—	—	—	—	—	0.2	0.8	1.4	—	—	—	—	—	—
20–39 occasions	*	*	0.0	—	—	0.9	—	—	—	—	—	—	0.1	0.5	0.8	—	—	—	—	—	—
40 or more	*	0.1	0.1	—	—	1.3	—	—	—	—	—	—	0.3	0.9	1.5	—	—	—	—	—	—
Annual Frequency																					
No occasions	99.7	99.6	99.6	—	—	92.1	98.4	97.0	95.7	98.7	95.6	92.5	97.1	93.5	92.1	99.3	98.1	97.4	98.3	95.5	92.4
1–2 occasions	0.2	0.2	0.2	—	—	3.6	0.9	1.6	2.0	0.8	2.4	3.5	1.7	3.0	3.4	0.3	1.0	1.0	0.7	2.3	3.5
3–5 occasions	*	0.1	0.1	—	—	1.5	0.2	0.5	1.1	0.2	0.7	1.7	0.5	1.6	1.7	0.1	0.2	0.5	0.3	0.8	1.4
6–9 occasions	*	*	*	—	—	1.1	0.2	0.3	0.5	0.1	0.5	0.8	0.2	0.7	1.0	0.1	0.2	0.3	0.2	0.7	1.0
10–19 occasions	*	*	*	—	—	0.9	0.0	0.2	0.2	*	0.2	0.7	0.2	0.6	0.8	*	0.1	0.2	0.1	0.2	0.7
20–39 occasions	*	0.1	0.0	—	—	0.4	0.1	*	0.2	0.1	0.2	0.4	0.1	0.3	0.4	*	0.1	0.2	0.1	0.1	0.3
40 or more	*	*	0.1	—	—	0.4	0.2	0.3	0.3	0.2	0.4	0.4	0.1	0.3	0.6	0.1	0.2	0.4	0.3	0.4	0.7
30-Day Frequency																					
No occasions	99.9	99.8	99.8	—	—	97.0	—	—	—	—	—	—	98.7	97.2	96.7	—	—	—	—	—	—
1–2 occasions	0.1	0.1	0.1	—	—	1.7	—	—	—	—	—	—	0.8	1.7	1.8	—	—	—	—	—	—
3–5 occasions	*	*	*	—	—	0.7	—	—	—	—	—	—	0.3	0.6	0.7	—	—	—	—	—	—
6–9 occasions	*	*	0.0	—	—	0.3	—	—	—	—	—	—	0.1	0.3	0.3	—	—	—	—	—	—
10–19 occasions	0.0	0.1	*	—	—	0.2	—	—	—	—	—	—	0.1	0.2	0.3	—	—	—	—	—	—
20–39 occasions	*	0.0	0.0	—	—	0.1	—	—	—	—	—	—	0.1	0.1	0.1	—	—	—	—	—	—
40 or more	*	*	0.1	—	—	0.1	—	—	—	—	—	—	*	*	0.2	—	—	—	—	—	—

(Table continued on next page.)

TABLE 4-4a (cont.)
Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Methamphetamine [a,b]			Crystal Methamphetamine (Ice) [b]			Bath Salts (Synthetic Stimulants) [a,b]			Sedatives (Barbiturates) [h]			Methaqualone [e,h]			Tranquilizers [h]			Over-the-Counter Cough/Cold Medicine [a,b]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted N =	*5,000*	*5,000*	*4,600*	—	—	*4,600*	*5,000*	*5,000*	*4,600*	—	—	*13,700*	—	—	*2,300*	*15,100*	*15,000*	*13,700*	*5,000*	*5,000*	*4,600*
Lifetime Frequency																					
No occasions	98.7	98.2	98.3	—	—	98.3	—	—	—	—	—	93.1	—	—	99.2	97.0	93.7	91.5	—	—	—
1–2 occasions	0.7	1.1	1.0	—	—	0.8	—	—	—	—	—	2.6	—	—	0.1	1.8	3.2	3.7	—	—	—
3–5 occasions	0.3	0.2	0.4	—	—	0.3	—	—	—	—	—	1.4	—	—	0.4	0.7	1.3	1.7	—	—	—
6–9 occasions	0.1	0.2	0.1	—	—	0.1	—	—	—	—	—	0.9	—	—	0.0	0.2	0.6	1.0	—	—	—
10–19 occasions	*	0.1	0.2	—	—	0.1	—	—	—	—	—	0.8	—	—	0.0	0.1	0.4	1.0	—	—	—
20–39 occasions	0.1	0.1	0.1	—	—	0.1	—	—	—	—	—	0.4	—	—	0.0	0.1	0.3	0.5	—	—	—
40 or more	0.2	0.1	0.1	—	—	0.2	—	—	—	—	—	0.7	—	—	0.3	0.2	0.4	0.7	—	—	—
Annual Frequency																					
No occasions	99.0	99.0	98.9	—	—	99.2	99.2	99.4	98.7	—	—	95.5	—	—	99.6	98.2	95.7	94.7	97.0	95.3	94.4
1–2 occasions	0.6	0.5	0.7	—	—	0.3	0.4	0.3	0.4	—	—	2.0	—	—	0.2	1.2	2.4	2.7	1.6	2.0	2.4
3–5 occasions	0.1	0.2	0.1	—	—	0.2	0.1	*	0.4	—	—	1.0	—	—	0.0	0.3	0.8	1.1	0.7	1.3	1.5
6–9 occasions	0.1	0.1	0.1	—	—	0.1	0.1	0.1	0.2	—	—	0.6	—	—	0.0	0.1	0.4	0.6	0.3	0.5	0.9
10–19 occasions	0.1	0.1	0.1	—	—	*	0.1	0.1	0.1	—	—	0.4	—	—	0.0	0.1	0.3	0.5	0.1	0.3	0.3
20–39 occasions	0.1	*	*	—	—	*	*	*	0.2	—	—	0.2	—	—	0.0	0.1	0.1	0.2	0.2	0.2	0.3
40 or more	0.1	0.1	0.1	—	—	0.2	0.1	0.1	0.2	—	—	0.3	—	—	0.3	*	0.2	0.3	0.2	0.4	0.3
30-Day Frequency																					
No occasions	99.5	99.4	99.5	—	—	99.6	—	—	—	—	—	98.0	—	—	99.7	99.2	98.3	97.9	—	—	—
1–2 occasions	0.3	0.3	0.3	—	—	0.2	—	—	—	—	—	1.2	—	—	*	0.5	1.0	1.3	—	—	—
3–5 occasions	*	0.2	0.1	—	—	0.0	—	—	—	—	—	0.3	—	—	0.0	0.1	0.4	0.4	—	—	—
6–9 occasions	0.1	0.0	0.1	—	—	*	—	—	—	—	—	0.2	—	—	0.0	0.1	0.2	0.2	—	—	—
10–19 occasions	0.1	*	*	—	—	*	—	—	—	—	—	0.2	—	—	0.0	*	0.1	0.1	—	—	—
20–39 occasions	0.0	*	*	—	—	0.1	—	—	—	—	—	*	—	—	0.0	*	*	0.1	—	—	—
40 or more	*	*	*	—	—	0.1	—	—	—	—	—	0.1	—	—	0.3	*	*	*	—	—	—

(Table continued on next page.)

TABLE 4-4a (cont.)
Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Rohypnol [a,e]			GHB [e]			Ketamine [b]			Alcohol			Been Drunk [b]			Flavored Alcoholic Beverages [a,e]			Alcoholic Beverages containing Caffeine [a,b]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted N =	*2,500*	*2,500*	*2,300*	—	—	*2,300*	—	—	*4,600*	*15,100*	*15,000*	*13,700*	*15,100*	*15,000*	*4,600*	*5,000*	*5,000*	*2,300*	*5,000*	*5,000*	*4,600*
Lifetime Frequency																					
No occasions	99.0	99.2	—	—	—	—	—	—	—	70.5	46.0	30.6	87.2	65.4	45.8	76.5	53.3	39.5	—	—	—
1–2 occasions	0.6	0.5	—	—	—	—	—	—	—	9.2	10.7	8.6	7.3	13.6	14.6	9.6	14.3	16.0	—	—	—
3–5 occasions	0.1	0.1	—	—	—	—	—	—	—	7.3	11.4	10.9	2.4	7.3	8.6	5.9	11.3	12.7	—	—	—
6–9 occasions	0.1	0.1	—	—	—	—	—	—	—	4.5	8.3	9.7	1.2	4.4	6.8	2.8	7.7	9.6	—	—	—
10–19 occasions	0.0	*	—	—	—	—	—	—	—	3.7	9.1	11.8	0.9	4.1	7.2	2.1	5.7	8.8	—	—	—
20–39 occasions	0.0	0.0	—	—	—	—	—	—	—	2.2	6.4	9.8	0.4	2.7	6.0	1.5	4.1	5.4	—	—	—
40 or more	0.1	*	—	—	—	—	—	—	—	2.5	8.1	18.5	0.5	2.7	11.1	1.6	3.5	8.0	—	—	—
Annual Frequency																					
No occasions	99.6	99.5	98.5	—	—	98.6	—	—	98.5	76.4	51.5	36.5	91.4	71.8	55.0	83.0	62.2	55.6	89.1	80.3	73.6
1–2 occasions	0.2	0.3	0.3	—	—	0.3	—	—	0.5	11.6	17.2	16.4	5.6	13.3	15.2	9.6	17.0	17.0	5.8	10.2	12.2
3–5 occasions	0.1	0.1	0.3	—	—	0.2	—	—	0.2	5.9	11.0	13.5	1.4	6.4	8.5	3.7	8.9	9.8	2.5	4.1	5.2
6–9 occasions	0.0	*	0.1	—	—	0.2	—	—	0.2	2.9	7.8	9.8	0.7	3.4	6.3	1.8	4.9	6.8	1.1	2.3	3.6
10–19 occasions	*	0.0	0.3	—	—	0.1	—	—	0.2	1.8	6.3	9.9	0.4	2.7	6.1	1.1	3.7	5.8	0.6	1.5	2.5
20–39 occasions	0.1	0.0	0.1	—	—	0.3	—	—	*	0.8	3.5	6.4	0.2	1.5	3.9	0.4	2.0	2.1	0.4	0.6	1.2
40 or more	*	*	0.5	—	—	0.3	—	—	0.3	0.7	2.8	7.6	0.2	1.0	5.1	0.4	1.3	3.0	0.6	0.9	1.8
30-Day Frequency																					
No occasions	99.9	99.8	—	—	—	—	—	—	—	89.0	72.5	58.5	96.4	85.5	71.9	92.4	83.7	78.2	—	—	—
1–2 occasions	0.1	0.2	—	—	—	—	—	—	—	7.3	15.6	19.6	2.6	9.5	14.2	4.9	9.9	12.0	—	—	—
3–5 occasions	*	*	—	—	—	—	—	—	—	2.0	6.6	10.4	0.4	2.9	6.3	1.3	3.3	4.6	—	—	—
6–9 occasions	0.0	0.0	—	—	—	—	—	—	—	0.9	2.7	5.6	0.2	1.2	4.0	0.6	1.7	2.6	—	—	—
10–19 occasions	0.1	0.0	—	—	—	—	—	—	—	0.5	1.7	3.5	0.2	0.5	2.0	0.4	0.7	1.1	—	—	—
20–39 occasions	0.0	0.0	—	—	—	—	—	—	—	0.2	0.5	1.2	*	0.2	0.5	0.1	0.2	0.3	—	—	—
40 or more	0.0	*	—	—	—	—	—	—	—	0.2	0.5	1.4	0.1	0.2	0.9	0.3	0.3	1.1	—	—	—

(Table continued on next page.)

TABLE 4-4a (cont.)
Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Kreteks [e]			Tobacco using a Hookah [e]			Small Cigars [e]			Dissolvable Tobacco Products [a,e]			Snus [a,e]			Steroids [c]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted. N =	—	—	*2,300*	—	—	*2,300*	—	—	*2,300*	*5,000*	*5,000*	*2,300*	*5,000*	*5,000*	*2,300*	*15,100*	*15,000*	*6,900*
Lifetime Frequency																		
No occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	98.8	98.7	98.2
1–2 occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.7	0.8
3–5 occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.2	0.2
6–9 occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.1
10–19 occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.2
20–39 occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*	*	0.1
40 or more	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.2	0.4
Annual Frequency																		
No occasions	—	—	97.0	—	—	81.7	—	—	80.1	99.0	98.4	98.4	97.6	93.1	92.1	99.4	99.2	98.7
1–2 occasions	—	—	1.5	—	—	6.9	—	—	7.5	0.5	0.7	0.5	1.1	2.8	2.6	0.4	0.4	0.5
3–5 occasions	—	—	0.7	—	—	4.0	—	—	3.5	0.1	0.3	0.1	0.5	1.5	1.1	0.1	0.1	0.2
6–9 occasions	—	—	0.3	—	—	2.7	—	—	3.1	0.2	0.2	0.2	0.3	0.6	1.1	0.1	0.1	0.2
10–19 occasions	—	—	0.1	—	—	1.7	—	—	2.6	0.1	*	0.1	0.1	0.5	0.6	*	0.1	0.1
20–39 occasions	—	—	0.0	—	—	0.8	—	—	1.1	0.1	0.1	0.1	0.2	0.4	0.6	*	0.1	*
40 or more	—	—	0.4	—	—	2.2	—	—	2.1	0.1	0.3	0.5	0.3	1.0	1.9	*	0.1	0.3
30-Day Frequency																		
No occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	99.7	99.6	99.1
1–2 occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.2	0.3
3–5 occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.2
6–9 occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*	0.1	0.1
10–19 occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*	0.1	*
20–39 occasions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*	*	*
40 or more	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*	*	0.3

(Table continued on next page.)

TABLE 4-4a (cont.)
Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day
8th, 10th, and 12th Graders, 2012

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available. ' * ' indicates less than 0.05% but greater than 0%.

[a]8th and 10th grades only: Data based on one of four forms.

[b]12th grade only: Data based on two of six forms.

[c]12th grade only: Data based on three of six forms.

[d]Unadjusted for known underreporting of PCP. See text for details.

[e]12th grade only: Data based on one of six forms.

[f]8th and 10th grades only: Data based on two of four forms.

[g]12th grade only: Data based on four of six forms.

[h]Only drug use not under a doctor's orders is included here.

[i]Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription stimulants.

TABLE 4-4b
Frequency of Occasions of Heavy Drinking, Cigarette Smoking, and Smokeless Tobacco Use for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	8th Grade	10th Grade	12th Grade
Think back over the LAST TWO WEEKS. How many times have you had five or more drinks in a row?			
None	94.9	84.4	76.3
Once	2.4	6.6	9.4
Twice	1.4	4.7	6.6
3 to 5 times	0.8	3.1	5.4
6 to 9 times	0.3	0.5	1.3
10 or more times	0.2	0.7	1.0
Approximate weighted N =	*15,100*	*15,000*	*13,700*
Have you ever smoked cigarettes?			
Never	84.5	72.3	60.5
Once or twice	9.8	14.3	17.9
Occasionally but not regularly	3.1	7.2	10.2
Regularly in the past	1.6	2.6	4.1
Regularly now	1.1	3.6	7.3
Approximate weighted N =	*15,100*	*15,000*	*13,700*
How frequently have you smoked cigarettes during the past 30 days?			
Not at all (includes "never" category from question above)	95.1	89.2	82.9
Less than one cigarette per day	3.0	5.8	7.9
One to five cigarettes per day	1.4	3.4	5.3
About one-half pack per day	0.3	0.9	2.4
About one pack per day	0.1	0.4	1.1
About one and one-half packs per day	0.1	0.1	0.2
Two packs or more per day	0.1	0.1	0.3
Approximate weighted N =	*15,100*	*15,000*	*13,700*
Have you ever taken or used smokeless tobacco (snuff, plug, dipping tobacco, chewing tobacco)?			
Never	91.9	84.6	82.6
Once or twice	5.3	8.2	8.1
Occasionally but not regularly	1.5	3.7	3.9
Regularly in the past	0.6	1.3	2.1
Regularly now	0.8	2.2	3.2
Approximate weighted N =	*7,600*	*7,500*	*2,300*
How frequently have you taken smokeless tobacco during the past 30 days?			
Not at all (includes "never" category from question above)	97.2	93.6	92.1
Once or twice	1.6	3.1	2.8
Once or twice per week	0.5	0.8	1.3
Three to five times per week	0.2	0.5	0.6
About once a day	0.2	0.5	0.6
More than once a day	0.3	1.6	2.6
Approximate weighted N =	*7,600*	*7,500*	*2,300*

Source. The Monitoring the Future study, the University of Michigan.

TABLE 4-5
Lifetime Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Approximate Weighted N [a]			Any Illicit Drug [b]			Any Illicit Drug other than Marijuana [b]			Marijuana			Inhalants [c,d]			Hallucinogens [d]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	*15,100*	*15,000*	*13,700*	18.5	36.8	49.1	8.7	14.9	24.1	15.2	33.8	45.2	11.8	9.9	7.9	2.8	5.2	7.5
Gender																		
Male	*7,200*	*7,200*	*6,600*	19.3	39.7	52.5	8.0	15.3	25.8	16.5	37.1	49.2	9.6	8.6	8.1	2.8	6.7	9.6
Female	*7,400*	*7,500*	*6,600*	17.5	34.0	45.1	9.1	14.4	21.6	13.6	30.6	40.5	13.9	11.1	7.7	2.6	3.8	4.9
College Plans																		
None or under 4 years	*980*	*1,300*	*2,100*	36.1	54.7	56.6	19.0	30.9	27.9	32.9	51.3	53.6	19.1	19.3	10.0	8.2	15.2	9.9
Complete 4 years	*13,700*	*13,400*	*10,900*	17.2	34.9	47.1	7.8	13.2	22.9	13.8	31.9	43.0	11.2	8.9	7.4	2.3	4.2	7.0
Region																		
Northeast	*2,800*	*2,900*	*2,300*	12.9	38.2	50.4	6.2	12.4	20.6	10.0	35.7	47.3	10.2	8.9	8.9	2.2	4.2	7.6
Midwest	*3,200*	*3,800*	*3,600*	14.5	31.9	43.7	5.9	13.5	23.6	12.2	28.6	39.4	9.2	8.7	8.1	1.5	4.5	6.4
South	*5,800*	*4,900*	*4,400*	22.0	38.2	47.8	11.0	17.0	23.1	17.6	34.5	43.5	13.0	10.5	6.1	3.5	5.4	6.4
West	*3,300*	*3,400*	*3,400*	21.2	39.1	55.6	9.4	15.4	28.1	18.3	36.7	52.1	13.5	11.1	9.4	3.3	6.5	10.0
Population Density																		
Large MSA	*5,200*	*4,700*	*4,300*	17.5	36.6	51.5	8.3	13.4	25.1	14.4	33.8	48.1	12.6	9.7	8.8	2.8	4.8	7.7
Other MSA	*6,900*	*7,100*	*6,700*	19.1	37.1	49.5	9.2	15.0	24.3	15.8	34.1	45.4	11.7	9.3	7.7	3.0	5.2	8.3
Non-MSA	*3,000*	*3,200*	*2,700*	19.1	36.5	44.4	8.3	16.6	21.7	15.3	32.9	40.1	10.7	11.4	6.9	2.3	5.8	5.2
Parental Education [e]																		
1.0–2.0 (Low)	*1,300*	*1,100*	*1,200*	31.5	52.6	56.8	14.0	25.3	25.5	27.8	47.5	52.6	17.7	16.4	9.2	4.1	8.2	6.1
2.5–3.0	*2,500*	*2,600*	*2,800*	26.0	42.4	51.5	11.5	16.7	25.4	22.2	39.8	48.2	13.7	11.6	7.9	3.4	6.6	8.0
3.5–4.0	*3,000*	*3,800*	*3,700*	20.3	38.2	50.5	9.4	14.6	25.6	16.7	35.6	46.3	13.1	10.9	7.7	3.2	4.8	8.3
4.5–5.0	*3,900*	*4,100*	*3,600*	13.5	33.2	46.9	6.1	13.0	22.5	10.6	30.4	42.7	9.6	8.1	9.1	2.0	4.7	7.3
5.5–6.0 (High)	*2,600*	*2,500*	*1,800*	11.2	28.9	42.3	6.7	11.9	20.6	7.6	26.2	38.6	9.6	7.5	5.6	2.0	4.1	6.3
Race/Ethnicity (2-year average) [f]																		
White	*16,300*	*17,600*	*16,300*	16.1	34.7	49.5	8.4	15.1	26.9	12.7	31.8	45.2	10.9	9.0	7.8	2.6	5.8	9.2
African American	*3,500*	*3,100*	*3,200*	19.8	40.6	44.7	6.5	8.4	12.0	17.2	38.3	42.1	10.6	8.5	4.7	1.8	2.1	2.4
Hispanic	*5,200*	*4,100*	*3,700*	26.8	44.4	52.7	13.4	19.2	22.7	22.8	40.4	48.7	17.4	14.7	9.5	4.6	6.3	5.7

(Table continued on next page.)

TABLE 4-5 (cont.)
Lifetime Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	LSD			Hallucinogens other than LSD			Ecstasy (MDMA) [g,h]			Cocaine			Crack			Other Cocaine [i]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	1.3	2.6	3.8	2.3	4.5	6.6	2.0	5.0	7.2	1.9	3.3	4.9	1.0	1.4	2.1	1.6	3.0	4.4
Gender																		
Male	1.2	3.5	4.7	2.3	5.8	8.6	1.8	5.1	7.7	1.9	3.9	5.8	1.0	1.7	2.5	1.5	3.6	5.3
Female	1.3	1.8	2.6	2.2	3.2	4.2	2.2	4.9	6.5	1.9	2.7	3.8	1.1	1.2	1.7	1.6	2.4	3.3
College Plans																		
None or under 4 years	4.3	8.4	5.3	6.6	13.2	8.8	5.6	12.3	9.4	6.4	10.8	7.8	4.3	5.6	3.6	5.2	9.8	6.9
Complete 4 years	1.0	2.1	3.4	1.9	3.6	6.1	1.7	4.3	6.4	1.5	2.5	4.1	0.8	1.0	1.8	1.2	2.3	3.7
Region																		
Northeast	1.0	2.1	4.2	1.7	3.7	6.5	1.9	2.7	5.4	1.5	1.9	4.6	1.0	0.8	1.6	1.1	1.7	3.8
Midwest	0.7	2.2	3.2	1.2	3.8	5.8	0.7	3.6	4.4	0.9	2.5	3.8	0.6	1.3	1.8	0.7	2.0	3.6
South	1.7	2.8	3.2	2.9	4.6	5.4	2.0	5.7	6.6	2.2	4.0	4.2	1.2	1.5	1.8	1.9	3.7	4.1
West	1.4	3.2	4.9	2.7	5.6	9.0	3.2	7.4	11.9	2.7	4.4	7.2	1.1	2.0	3.3	2.1	4.0	6.1
Population Density																		
Large MSA	1.4	2.6	3.4	2.3	4.1	7.1	1.9	5.6	8.5	2.0	3.4	5.3	1.2	1.5	2.5	1.6	3.2	4.8
Other MSA	1.4	2.5	4.5	2.5	4.5	7.0	2.3	5.0	7.4	2.0	3.2	5.0	1.0	1.3	2.1	1.7	2.7	4.6
Non-MSA	1.0	3.0	2.5	2.0	5.0	4.8	1.4	4.0	4.5	1.4	3.5	4.0	0.7	1.7	1.7	1.1	3.2	3.5
Parental Education [e]																		
1.0–2.0 (Low)	2.3	3.3	3.2	3.0	7.1	4.8	4.5	11.7	10.6	4.4	8.4	6.7	2.5	4.1	3.5	3.6	8.0	6.8
2.5–3.0	1.9	3.7	4.3	2.8	5.9	7.0	2.8	6.5	6.5	2.3	4.2	5.4	1.3	1.9	2.4	1.8	3.8	4.6
3.5–4.0	1.2	2.3	4.0	2.8	4.1	7.3	2.0	4.1	8.0	1.9	2.7	5.1	1.0	0.9	2.0	1.5	2.4	4.8
4.5–5.0	0.7	2.5	3.8	1.6	4.1	6.6	1.2	4.1	6.4	1.0	2.3	4.0	0.6	1.0	1.6	0.7	2.0	3.1
5.5–6.0 (High)	1.1	1.9	2.9	1.7	3.3	5.3	1.1	3.6	5.7	1.1	2.0	3.7	0.5	0.9	1.6	0.9	1.8	3.7
Race/Ethnicity (2-year average) [f]																		
White	1.2	2.8	4.6	2.2	5.1	8.2	1.5	4.6	7.4	1.6	2.7	5.3	0.8	1.1	1.8	1.3	2.5	5.0
African American	1.0	1.4	1.4	1.2	1.6	2.0	1.7	2.7	3.1	0.9	1.8	1.3	0.9	0.8	0.7	0.8	1.6	1.3
Hispanic	2.3	3.2	2.4	3.9	5.3	4.9	4.2	12.1	10.2	4.3	6.4	7.0	2.7	3.5	3.6	3.7	5.9	6.2

(Table continued on next page.)

TABLE 4-5 (cont.)
Lifetime Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Heroin, Any Use			Heroin with a Needle[c]			Heroin without a Needle[c]			Narcotics other than Heroin[j]			Amphetamines[j]			Methamphetamine[h,k]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	0.8	1.1	1.1	0.6	0.7	0.7	0.5	0.8	0.8	—	—	12.2	4.5	8.9	12.0	1.3	1.8	1.7
Gender																		
Male	0.8	1.1	1.3	0.6	0.8	0.9	0.4	0.8	1.0	—	—	14.0	3.8	9.0	12.7	1.1	1.7	1.9
Female	0.8	1.0	0.8	0.5	0.5	0.5	0.5	0.8	0.6	—	—	10.4	5.1	8.8	11.3	1.5	1.9	1.5
College Plans																		
None or under 4 years	2.9	4.1	1.7	2.1	2.7	1.5	1.6	3.4	1.2	—	—	15.5	10.1	17.5	14.5	6.4	6.2	2.7
Complete 4 years	0.7	0.8	1.0	0.5	0.4	0.5	0.4	0.5	0.6	—	—	11.3	4.1	8.0	11.4	1.0	1.4	1.5
Region																		
Northeast	0.8	0.7	1.0	0.6	0.4	0.6	0.3	0.4	0.4	—	—	10.0	3.1	8.0	10.3	0.9	1.1	0.8
Midwest	0.6	0.9	1.1	0.4	0.7	0.9	0.3	0.6	0.6	—	—	13.2	3.5	8.8	13.3	0.5	1.1	1.5
South	0.9	1.4	0.9	0.7	0.7	0.5	0.5	1.1	0.6	—	—	9.9	6.1	10.2	10.9	1.7	2.1	1.3
West	1.0	1.1	1.5	0.6	0.7	0.9	0.6	0.9	1.4	—	—	15.7	3.8	7.7	13.4	1.9	2.6	3.1
Population Density																		
Large MSA	1.0	1.1	1.2	0.7	0.7	1.0	0.6	0.8	0.7	—	—	12.0	4.1	7.8	13.6	1.2	1.7	2.2
Other MSA	0.8	0.8	1.1	0.6	0.6	0.6	0.4	0.6	0.8	—	—	12.2	4.8	9.0	11.8	1.5	1.3	1.6
Non-MSA	0.6	1.5	0.9	0.3	0.8	0.5	0.3	1.2	0.8	—	—	12.7	4.6	10.1	10.3	1.2	2.9	1.2
Parental Education[e]																		
1.0–2.0 (Low)	1.8	2.9	1.5	1.2	1.9	0.5	1.1	2.4	0.2	—	—	11.2	7.1	13.4	9.6	2.1	4.5	2.4
2.5–3.0	1.1	1.4	1.5	0.7	0.8	0.9	0.7	1.2	1.1	—	—	14.0	5.9	10.2	12.9	1.8	3.2	1.1
3.5–4.0	1.1	1.0	1.0	1.0	0.5	0.7	0.5	0.7	1.0	—	—	13.6	5.1	9.1	12.7	1.7	1.3	2.1
4.5–5.0	0.3	0.7	0.9	0.2	0.4	0.8	0.2	0.4	0.7	—	—	11.7	3.4	7.8	12.3	0.9	1.2	1.5
5.5–6.0 (High)	0.5	0.5	0.6	0.3	0.4	0.5	0.2	0.4	0.3	—	—	9.3	3.4	7.4	11.2	0.7	0.8	1.5
Race/Ethnicity (2-year average)[f]																		
White	0.7	1.0	1.2	0.4	0.6	0.8	0.4	0.7	1.0	—	—	14.9	5.0	9.7	14.8	1.0	1.8	1.9
African American	0.7	1.0	0.9	0.5	0.7	0.6	0.3	0.8	0.6	—	—	5.4	3.2	4.6	4.5	0.7	0.5	0.6
Hispanic	1.9	1.4	1.1	1.4	0.9	0.7	1.0	0.9	0.7	—	—	9.5	5.7	8.9	8.1	2.2	3.1	2.5

(Table continued on next page.)

TABLE 4-5 (cont.)
Lifetime Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Crystal Methamphetamine (Ice) [h]			Sedatives (Barbiturates) [j]			Tranquilizers [j]			Any Prescription Drug [l]			Rohypnol [m]			Alcohol		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	—	—	1.7	—	—	6.9	3.0	6.3	8.5	—	—	21.2	1.0	0.8	—	29.5	54.0	69.4
Gender																		
Male	—	—	1.7	—	—	6.6	2.5	5.8	8.1	—	—	22.1	0.7	0.8	—	28.4	53.0	69.4
Female	—	—	1.7	—	—	7.2	3.5	6.8	8.7	—	—	19.8	1.2	0.7	—	30.3	54.8	69.0
College Plans																		
None or under 4 years	—	—	2.7	—	—	8.2	5.8	13.7	10.9	—	—	24.4	4.4	2.7	—	45.2	69.1	74.0
Complete 4 years	—	—	1.3	—	—	6.6	2.8	5.5	7.8	—	—	20.2	0.8	0.6	—	28.3	52.5	68.1
Region																		
Northeast	—	—	1.4	—	—	5.9	2.0	4.4	7.5	—	—	17.5	0.6	1.4	—	24.0	58.3	74.7
Midwest	—	—	1.3	—	—	6.2	1.8	5.6	8.3	—	—	21.6	0.3	0.4	—	26.3	50.4	67.8
South	—	—	1.4	—	—	6.7	4.4	7.9	8.6	—	—	20.1	1.8	0.6	—	34.0	56.0	67.1
West	—	—	2.7	—	—	8.6	2.5	6.1	9.2	—	—	24.5	0.6	0.9	—	29.2	51.4	70.4
Population Density																		
Large MSA	—	—	1.8	—	—	6.6	2.5	5.2	8.1	—	—	22.0	0.9	1.2	—	27.5	52.6	71.3
Other MSA	—	—	1.7	—	—	7.4	3.5	6.3	8.8	—	—	21.2	0.9	0.5	—	30.4	53.4	68.3
Non-MSA	—	—	1.4	—	—	6.2	2.8	7.8	8.5	—	—	19.9	1.3	0.7	—	30.8	57.2	69.0
Parental Education [e]																		
1.0–2.0 (Low)	—	—	2.8	—	—	7.8	4.7	9.2	9.4	—	—	20.0	2.2	1.2	—	41.7	62.7	71.3
2.5–3.0	—	—	2.8	—	—	7.8	4.3	7.9	9.4	—	—	22.8	1.1	1.3	—	38.5	58.3	72.3
3.5–4.0	—	—	1.2	—	—	7.4	3.2	7.0	9.3	—	—	23.0	1.3	0.2	—	33.6	58.0	71.2
4.5–5.0	—	—	1.0	—	—	6.6	1.9	5.3	7.6	—	—	20.3	0.5	0.3	—	24.3	50.8	67.3
5.5–6.0 (High)	—	—	1.1	—	—	5.2	2.7	4.5	6.5	—	—	18.2	0.5	1.5	—	21.0	47.8	65.2
Race/Ethnicity (2-year average) [f]																		
White	—	—	1.3	—	—	7.5	3.2	7.0	10.1	—	—	24.4	1.2	1.1	—	28.3	55.6	71.4
African American	—	—	0.8	—	—	3.2	2.3	3.0	2.6	—	—	10.4	1.0	0.5	—	30.8	50.3	60.5
Hispanic	—	—	3.8	—	—	6.6	4.2	6.7	7.0	—	—	17.5	2.6	1.0	—	40.8	58.7	72.7

(Table continued on next page.)

TABLE 4-5 (cont.)
Lifetime Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Been Drunk [h]			Flavored Alcoholic Beverages [k,n]			Cigarettes			Smokeless Tobacco [g,n]			Steroids [c]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	12.8	34.6	54.2	23.5	46.7	60.5	15.5	27.7	39.5	8.1	15.4	17.4	1.2	1.3	1.8
Gender															
Male	11.8	34.2	56.3	20.0	40.4	57.8	16.2	29.6	42.5	10.4	24.6	27.4	1.4	1.8	2.4
Female	13.5	35.1	50.8	26.8	52.5	63.7	14.6	26.1	35.6	5.9	6.9	6.6	0.8	0.8	0.9
College Plans															
None or under 4 years	24.7	49.4	60.3	38.9	56.3	58.2	37.4	52.7	54.1	23.0	34.6	27.5	2.5	3.1	2.3
Complete 4 years	11.8	33.2	52.2	22.4	45.8	61.0	13.7	25.1	36.0	7.0	13.5	14.8	1.0	1.1	1.6
Region															
Northeast	10.5	39.7	63.2	20.7	49.5	61.9	11.2	26.0	38.8	5.9	12.1	18.4	0.9	1.0	1.6
Midwest	9.6	30.5	51.4	20.6	44.4	58.6	14.0	26.3	41.1	6.4	16.5	21.8	1.2	1.2	1.3
South	15.7	36.1	50.7	26.0	48.4	58.7	19.8	32.6	39.5	11.0	19.4	17.2	1.5	1.7	2.4
West	12.6	32.8	55.6	24.2	44.5	63.8	13.0	23.6	38.4	6.4	11.4	12.3	0.8	1.1	1.7
Population Density															
Large MSA	11.4	33.4	58.0	19.3	45.9	62.8	11.8	23.4	37.0	4.6	9.0	14.2	1.2	1.3	2.0
Other MSA	13.5	34.0	52.7	24.9	46.1	59.6	15.5	26.8	38.2	8.2	15.5	15.8	1.2	1.3	1.7
Non-MSA	13.3	37.8	52.2	27.3	49.1	59.1	22.2	36.2	46.9	13.7	24.1	26.4	1.0	1.4	1.8
Parental Education [e]															
1.0–2.0 (Low)	20.2	41.0	57.4	36.9	56.4	55.2	24.3	39.3	48.2	11.5	17.4	10.6	1.5	2.1	1.8
2.5–3.0	17.9	39.8	55.3	35.1	52.0	64.4	24.4	36.6	43.3	12.8	18.7	20.7	1.2	1.4	1.5
3.5–4.0	14.8	36.5	55.3	26.0	49.9	63.1	17.5	30.1	42.0	10.1	17.8	20.7	0.9	1.2	1.7
4.5–5.0	10.2	33.3	52.5	17.5	43.2	60.4	10.3	23.1	35.2	5.0	14.2	18.8	1.0	1.2	1.5
5.5–6.0 (High)	7.9	29.5	51.6	15.0	42.1	60.4	7.7	18.0	29.8	3.9	11.1	10.0	1.4	1.2	2.2
Race/Ethnicity (2-year average) [f]															
White	12.8	37.1	55.4	23.5	49.0	63.9	15.9	29.5	42.5	10.0	19.0	22.4	1.1	1.3	1.7
African American	11.1	27.8	35.2	25.6	40.2	53.5	15.8	23.7	25.7	6.2	6.4	6.1	1.3	1.8	2.0
Hispanic	18.0	36.7	50.5	30.7	51.9	63.3	18.9	32.2	40.8	8.3	11.3	7.5	1.0	1.2	1.4

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following table 4-8.

TABLE 4-6
Annual Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Approximate Weighted N [a]			Any Illicit Drug [b]			Any Illicit Drug other than Marijuana [b]			Marijuana			Synthetic Marijuana [h,k,o]			Inhalants [c,d]			Hallucinogens [d]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	*15,100*	*15,000*	*13,700*	13.4	30.1	39.7	5.5	10.8	17.0	11.4	28.0	36.4	4.4	8.8	11.3	6.2	4.1	2.9	1.6	3.5	4.8
Gender																					
Male	*7,200*	*7,200*	*6,600*	13.8	32.9	43.5	4.8	11.3	18.4	12.2	31.0	40.8	4.1	10.0	14.1	4.5	3.4	3.1	1.7	4.6	6.0
Female	*7,400*	*7,500*	*6,600*	12.7	27.5	35.1	6.0	10.4	14.9	10.4	25.3	31.3	4.6	7.7	7.9	7.9	4.8	2.6	1.5	2.5	3.1
College Plans																					
None or under 4 years	*980*	*1,300*	*2,100*	30.1	46.2	44.3	13.0	24.5	19.4	28.4	43.6	41.5	10.2	18.7	16.7	11.2	8.8	3.7	5.2	10.5	5.8
Complete 4 years	*13,700*	*13,400*	*10,900*	12.1	28.5	38.2	4.9	9.4	16.1	10.1	26.5	34.8	3.9	7.8	9.9	5.9	3.6	2.6	1.3	2.9	4.5
Region																					
Northeast	*2,800*	*2,900*	*2,300*	9.6	33.2	40.9	4.1	9.3	15.1	7.9	31.4	38.1	2.7	7.7	10.7	5.6	3.8	3.8	1.5	3.0	5.2
Midwest	*3,200*	*3,800*	*3,600*	9.9	26.3	35.3	3.7	10.4	17.2	8.5	23.7	32.0	2.4	9.2	14.2	5.5	3.8	2.5	0.8	3.2	4.5
South	*5,800*	*4,900*	*4,400*	15.8	30.3	37.5	7.3	12.4	16.0	13.2	27.9	33.9	5.6	10.0	9.3	6.4	4.2	2.2	2.0	3.4	4.2
West	*3,300*	*3,400*	*3,400*	15.6	31.6	46.1	5.4	10.3	19.5	14.1	30.2	43.0	5.5	7.4	11.1	7.2	4.4	3.4	1.8	4.5	5.5
Population Density																					
Large MSA	*5,200*	*4,700*	*4,300*	12.6	30.8	43.0	5.1	10.0	18.3	10.7	28.6	40.4	4.0	7.7	13.3	6.6	3.9	3.2	1.7	3.4	5.4
Other MSA	*6,900*	*7,100*	*6,700*	14.3	30.2	40.3	6.1	10.9	17.2	12.3	28.1	36.8	4.9	8.3	10.3	6.5	3.6	2.7	1.8	3.7	5.0
Non-MSA	*3,000*	*3,200*	*2,700*	12.7	29.2	32.9	5.0	11.9	14.7	10.8	27.0	29.2	3.8	11.4	10.8	5.0	5.2	2.8	1.1	3.4	3.2
Parental Education [e]																					
1.0–2.0 (Low)	*1,300*	*1,100*	*1,200*	22.0	39.8	45.4	8.3	16.8	16.5	19.2	37.1	42.0	5.9	10.5	10.7	8.9	5.4	3.0	2.5	4.9	3.3
2.5–3.0	*2,500*	*2,600*	*2,800*	18.4	34.5	40.9	7.2	11.7	18.0	16.3	33.0	37.6	6.4	13.4	12.3	7.8	4.7	3.4	1.9	4.5	5.1
3.5–4.0	*3,000*	*3,800*	*3,700*	15.4	31.8	40.8	6.5	10.9	17.6	13.0	29.7	37.5	5.5	9.0	12.8	6.8	3.9	2.3	2.0	3.3	4.8
4.5–5.0	*3,900*	*4,100*	*3,600*	9.6	27.5	38.5	3.5	9.7	16.8	8.2	25.5	35.0	2.9	7.2	11.0	5.0	3.9	3.1	1.0	3.2	5.0
5.5–6.0 (High)	*2,600*	*2,500*	*1,800*	7.9	24.8	34.8	4.4	9.1	15.2	5.8	22.9	32.2	1.8	6.4	8.5	5.2	3.6	2.8	1.2	2.8	4.5
Race/Ethnicity (2-year average) [f]																					
White	*16,300*	*17,600*	*16,300*	12.1	29.7	40.3	5.6	11.5	19.6	10.0	27.5	36.6	—	—	12.9	5.9	4.1	3.0	1.6	4.1	6.0
African American	*3,500*	*3,100*	*3,200*	13.5	30.6	35.0	3.9	5.8	7.6	12.4	29.1	33.2	—	—	6.0	5.6	2.4	1.9	1.1	1.4	1.6
Hispanic	*5,200*	*4,100*	*3,700*	19.3	34.3	40.5	8.1	12.6	13.6	17.2	31.8	37.3	—	—	9.9	9.0	5.7	4.1	2.8	4.2	2.9

(Table continued on next page.)

TABLE 4-6 (cont.)
Annual Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	LSD			Hallucinogens other than LSD			Ecstasy (MDMA) [g,h]			Salvia [h,k]			Cocaine			Crack			Other Cocaine [i]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	0.8	1.7	2.4	1.3	3.0	4.0	1.1	3.0	3.8	1.4	2.5	4.4	1.2	2.0	2.7	0.6	0.8	1.2	1.0	1.8	2.4
Gender																					
Male	0.8	2.3	2.9	1.3	4.0	5.3	0.9	3.3	4.1	1.4	3.7	5.6	1.1	2.3	3.3	0.6	0.9	1.4	0.9	2.1	2.8
Female	0.8	1.1	1.6	1.2	2.1	2.6	1.2	2.6	3.4	1.1	1.4	3.0	1.2	1.6	2.0	0.7	0.6	0.9	1.0	1.5	1.8
College Plans																					
None or under 4 years	3.3	6.3	3.1	3.8	8.7	4.7	3.0	8.3	4.8	5.2	8.2	5.9	4.6	6.8	4.2	2.8	3.5	1.9	3.8	6.2	3.2
Complete 4 years	0.6	1.3	2.2	1.1	2.4	3.9	0.9	2.4	3.4	1.1	1.9	3.9	0.9	1.5	2.3	0.5	0.5	1.0	0.7	1.4	2.0
Region																					
Northeast	0.7	1.4	2.9	1.2	2.8	4.0	1.2	1.9	3.7	0.5	3.6	5.3	1.1	1.3	2.1	0.8	0.5	0.8	0.8	1.1	1.8
Midwest	0.3	1.6	1.9	0.7	2.4	4.1	0.3	2.4	2.4	0.4	1.3	2.6	0.6	1.4	2.2	0.4	0.7	1.0	0.5	1.2	1.7
South	1.1	1.7	2.1	1.6	3.0	3.5	1.4	2.8	3.2	2.4	2.0	3.8	1.4	2.2	2.5	0.7	0.6	1.1	1.2	2.2	2.5
West	0.9	2.1	2.8	1.4	3.9	4.7	1.3	4.8	5.9	1.2	3.8	6.5	1.4	2.7	4.1	0.6	1.3	1.9	1.2	2.5	3.3
Population Density																					
Large MSA	0.9	1.8	2.5	1.4	2.8	4.8	1.1	3.8	5.1	1.9	2.3	5.0	1.3	2.1	2.9	0.8	1.0	1.2	1.1	2.0	2.6
Other MSA	0.8	1.7	2.7	1.4	3.2	4.0	1.3	2.9	3.7	1.3	2.6	4.7	1.2	1.7	2.9	0.6	0.5	1.3	1.0	1.6	2.6
Non-MSA	0.6	1.8	1.4	0.9	2.9	2.8	0.6	1.9	1.8	0.6	2.7	2.9	0.9	2.2	2.1	0.4	0.9	1.0	0.8	2.0	1.5
Parental Education [e]																					
1.0–2.0 (Low)	1.6	2.0	1.7	1.6	4.1	2.8	2.1	5.6	3.7	1.4	3.6	8.3	2.6	5.3	3.0	1.6	1.9	1.9	2.1	5.3	3.5
2.5–3.0	1.1	2.6	2.6	1.5	3.5	4.3	1.7	3.0	3.5	1.3	3.3	3.7	1.6	2.3	3.1	0.8	1.0	1.3	1.2	2.2	2.4
3.5–4.0	0.7	1.4	2.4	1.7	2.8	4.1	1.0	2.5	4.1	1.0	2.2	3.5	1.2	1.6	2.6	0.7	0.5	1.0	0.9	1.5	2.4
4.5–5.0	0.4	1.6	2.4	0.8	2.9	4.3	0.6	2.9	3.9	1.5	2.0	4.6	0.5	1.5	2.6	0.2	0.6	1.1	0.4	1.3	1.9
5.5–6.0 (High)	0.7	1.3	2.2	1.1	2.4	3.4	0.6	2.5	3.6	1.4	2.5	4.2	0.7	1.2	2.4	0.3	0.4	1.1	0.6	1.0	2.2
Race/Ethnicity (2-year average) [f]																					
White	0.7	1.9	3.1	1.3	3.5	4.9	1.0	3.2	4.9	1.2	3.4	5.3	1.0	1.6	3.1	0.6	0.6	1.1	0.8	1.5	2.8
African American	0.6	0.8	0.9	0.7	1.1	1.4	1.0	1.8	1.5	1.5	0.7	2.8	0.6	1.3	0.9	0.5	0.6	0.7	0.4	1.2	0.8
Hispanic	1.4	1.9	1.3	2.3	3.5	2.6	2.4	7.3	4.5	2.4	4.0	5.6	2.6	3.8	3.4	1.7	2.0	1.7	2.2	3.4	3.1

(Table continued on next page.)

TABLE 4-6 (cont.)
Annual Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Heroin, Any Use			Heroin with a Needle [c]			Heroin without a Needle [c]			Narcotics other than Heroin [j]			OxyContin [c,j,k]			Vicodin [c,j,k]			Amphetamines [j]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	0.5	0.6	0.6	0.4	0.4	0.4	0.3	0.4	0.4	—	—	7.9	1.6	3.0	4.3	1.3	4.4	7.5	2.9	6.5	7.9
Gender																					
Male	0.5	0.6	0.8	0.4	0.5	0.5	0.2	0.4	0.5	—	—	9.3	1.8	3.2	5.1	0.8	4.5	8.6	2.4	6.9	8.2
Female	0.5	0.6	0.4	0.3	0.3	0.3	0.3	0.4	0.2	—	—	6.5	1.2	2.8	3.1	1.7	4.4	5.9	3.3	6.2	7.5
College Plans																					
None or under 4 years	1.8	2.5	1.2	1.3	1.6	1.1	1.1	1.8	0.8	—	—	9.7	8.2	9.1	5.2	3.0	8.8	9.2	6.8	13.8	8.9
Complete 4 years	0.4	0.4	0.5	0.3	0.3	0.3	0.2	0.3	0.3	—	—	7.4	1.1	2.4	4.0	1.2	4.0	6.8	2.6	5.8	7.6
Region																					
Northeast	0.4	0.6	0.8	0.3	0.3	0.6	0.1	0.3	0.2	—	—	6.3	0.8	3.0	3.6	0.7	3.3	5.4	2.1	6.2	7.0
Midwest	0.4	0.6	0.7	0.3	0.5	0.6	0.2	0.4	0.3	—	—	9.1	0.9	2.0	4.5	1.8	4.6	9.7	2.2	6.4	9.0
South	0.6	0.6	0.4	0.5	0.3	0.2	0.3	0.5	0.1	—	—	6.1	2.6	3.5	4.3	1.5	3.4	4.9	4.0	7.5	7.0
West	0.5	0.6	0.8	0.3	0.4	0.4	0.4	0.5	0.8	—	—	10.0	1.0	3.4	4.5	1.1	6.6	9.7	2.2	5.2	8.5
Population Density																					
Large MSA	0.6	0.7	0.7	0.4	0.4	0.5	0.3	0.5	0.2	—	—	8.4	1.8	2.3	4.6	1.8	4.3	8.7	2.6	5.9	9.2
Other MSA	0.5	0.4	0.7	0.4	0.3	0.4	0.2	0.3	0.4	—	—	7.4	1.3	2.6	4.0	1.0	4.5	6.8	3.1	6.5	7.8
Non-MSA	0.3	0.9	0.5	0.2	0.5	0.2	0.2	0.6	0.5	—	—	8.3	1.7	4.9	4.6	1.6	4.5	7.3	3.0	7.3	6.1
Parental Education [e]																					
1.0–2.0 (Low)	0.9	1.7	1.3	0.6	1.2	0.4	0.7	1.3	0.1	—	—	7.2	1.4	4.4	4.3	1.7	6.6	6.8	3.8	9.8	6.0
2.5–3.0	0.8	0.8	0.8	0.5	0.5	0.4	0.4	0.6	0.5	—	—	9.0	2.7	4.1	4.2	1.2	5.8	9.0	3.7	6.8	7.8
3.5–4.0	0.8	0.5	0.4	0.7	0.3	0.3	0.3	0.4	0.2	—	—	8.4	1.2	3.9	4.6	1.3	4.9	7.8	3.4	6.7	8.0
4.5–5.0	0.2	0.5	0.5	0.1	0.3	0.5	0.1	0.3	0.5	—	—	8.0	1.2	1.7	4.4	1.3	3.6	7.1	1.9	6.1	8.7
5.5–6.0 (High)	0.3	0.3	0.4	0.2	0.3	0.3	0.1	0.1	0.2	—	—	6.0	1.4	2.2	3.5	1.0	3.1	5.5	2.6	5.7	8.4
Race/Ethnicity (2-year average) [f]																					
White	0.5	0.6	0.7	0.3	0.3	0.5	0.3	0.4	0.6	—	—	10.0	1.5	3.5	5.2	1.8	5.3	8.7	3.2	7.4	10.0
African American	0.5	0.8	0.8	0.4	0.5	0.5	0.1	0.6	0.4	—	—	3.4	1.5	1.8	2.8	1.2	1.7	3.8	1.9	2.9	2.9
Hispanic	1.0	1.0	0.4	0.7	0.6	0.2	0.6	0.6	0.3	—	—	5.5	2.1	3.6	3.2	2.1	5.6	7.1	3.6	6.1	4.7

(Table continued on next page.)

TABLE 4-6 (cont.)
Annual Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Ritalin [h,j,k]			Adderall [h,j,k]			Methamphetamine [h,k]			Crystal Methamphetamine (Ice) [h]			Bath Salts (Synthetic Stimulants) [h,k,o]			Sedatives (Barbiturates) [j]			Tranquilizers [j]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	0.7	1.9	2.6	1.7	4.5	7.6	1.0	1.0	1.1	—	—	0.8	0.8	0.6	1.3	—	—	4.5	1.8	4.3	5.3
Gender																					
Male	0.5	2.8	2.7	1.3	5.0	8.0	0.8	1.1	1.2	—	—	1.0	0.6	0.9	1.2	—	—	4.2	1.3	4.0	5.1
Female	0.8	1.0	1.9	1.9	4.1	6.9	1.1	0.9	0.9	—	—	0.7	0.9	0.4	1.1	—	—	4.7	2.3	4.5	5.5
College Plans																					
None or under 4 years	3.0	4.5	2.9	4.2	9.3	7.8	5.0	4.1	2.3	—	—	1.9	3.6	1.9	1.8	—	—	5.1	4.1	10.7	6.7
Complete 4 years	0.5	1.6	2.3	1.5	4.0	7.4	0.7	0.7	0.8	—	—	0.5	0.6	0.5	1.1	—	—	4.3	1.6	3.6	4.9
Region																					
Northeast	0.1	2.1	2.5	1.0	4.0	7.6	0.8	1.0	0.5	—	—	0.9	0.3	0.7	1.2	—	—	4.1	1.3	3.0	4.6
Midwest	0.1	2.1	2.4	1.0	5.3	10.1	0.3	0.5	0.9	—	—	1.0	0.5	0.8	1.3	—	—	4.4	1.0	4.3	5.3
South	1.4	1.9	2.8	2.6	5.5	6.4	1.2	1.0	0.9	—	—	0.6	1.3	0.5	1.7	—	—	4.4	2.7	5.3	5.3
West	0.5	1.2	2.5	1.3	2.5	6.6	1.4	1.4	1.8	—	—	0.9	0.7	0.6	1.0	—	—	5.0	1.3	3.9	6.0
Population Density																					
Large MSA	0.8	2.0	2.4	2.1	3.7	9.1	0.9	1.1	1.2	—	—	1.2	1.0	1.0	1.3	—	—	4.3	1.5	3.7	5.3
Other MSA	0.8	1.7	2.4	1.4	4.4	7.4	1.2	0.6	1.2	—	—	0.7	0.7	0.3	1.4	—	—	4.8	2.2	4.2	5.6
Non-MSA	0.2	2.1	3.1	1.5	5.7	6.2	0.7	1.7	0.5	—	—	0.7	0.8	0.8	1.2	—	—	4.0	1.5	5.2	4.9
Parental Education [e]																					
1.0–2.0 (Low)	0.7	1.2	4.1	1.1	5.4	5.8	1.5	2.5	1.4	—	—	1.1	0.9	0.7	2.1	—	—	5.1	3.2	5.5	5.3
2.5–3.0	0.8	3.2	2.5	1.9	6.3	6.3	1.3	1.7	0.6	—	—	1.6	0.6	0.9	1.7	—	—	5.0	2.4	5.4	5.9
3.5–4.0	1.1	1.5	2.7	1.5	4.8	8.4	1.4	0.7	1.3	—	—	0.6	0.8	0.4	0.8	—	—	4.8	1.9	5.0	5.7
4.5–5.0	0.3	1.7	2.1	1.4	4.1	9.4	0.6	0.8	1.2	—	—	0.4	0.6	0.7	1.2	—	—	4.3	1.1	3.6	4.9
5.5–6.0 (High)	0.6	1.8	2.0	1.7	2.9	6.6	0.7	0.3	0.7	—	—	0.2	0.8	0.2	1.3	—	—	3.7	1.5	3.2	4.6
Race/Ethnicity (2-year average) [f]																					
White	1.0	2.6	2.6	1.7	5.3	8.8	0.7	1.2	1.2	—	—	0.7	—	—	—	—	—	4.9	2.0	5.1	6.7
African American	1.0	1.1	1.6	1.4	1.7	2.1	0.6	0.3	0.5	—	—	0.8	—	—	—	—	—	2.1	1.2	1.8	1.6
Hispanic	1.2	2.2	2.7	1.7	3.8	3.7	1.5	1.8	1.2	—	—	2.1	—	—	—	—	—	3.7	2.4	4.0	3.9

(Table continued on next page.)

TABLE 4-6 (cont.)
Annual Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Any Prescription Drug [l]			Over-the-Counter Cough/Cold Medicines [h,k]			Rohypnol [m,n]			GHB [n]			Ketamine [n]			Alcohol			Been Drunk [h]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	—	—	14.8	3.0	4.7	5.6	0.4	0.5	1.5	—	—	1.4	—	—	1.5	23.6	48.5	63.5	8.6	28.2	45.0
Gender																					
Male	—	—	15.5	1.7	5.5	6.1	0.4	0.4	1.2	—	—	1.9	—	—	1.8	22.3	47.8	63.7	7.8	28.5	47.7
Female	—	—	13.7	3.9	4.1	4.5	0.3	0.5	0.7	—	—	0.4	—	—	0.9	24.7	49.2	62.9	9.3	28.1	41.3
College Plans																					
None or under 4 years	—	—	16.7	6.4	10.2	8.4	3.1	2.3	2.7	—	—	2.2	—	—	1.9	38.8	62.7	67.2	17.9	40.3	47.1
Complete 4 years	—	—	14.0	2.8	4.2	4.8	0.2	0.3	0.8	—	—	0.9	—	—	1.3	22.4	47.2	62.4	7.9	27.1	43.7
Region																					
Northeast	—	—	12.4	1.6	4.5	4.9	0.4	0.8	0.9	—	—	0.9	—	—	1.6	20.5	54.7	69.9	7.5	33.9	54.9
Midwest	—	—	15.6	2.6	4.3	5.8	0.1	0.3	1.1	—	—	0.8	—	—	1.2	19.6	45.0	63.1	6.2	25.0	44.2
South	—	—	13.5	3.9	5.7	5.6	0.6	0.5	2.3	—	—	2.1	—	—	1.9	27.2	49.6	59.4	10.1	28.9	39.7
West	—	—	17.0	3.0	4.0	5.8	0.4	0.5	1.1	—	—	1.3	—	—	1.5	23.6	45.6	64.7	9.1	25.9	46.0
Population Density																					
Large MSA	—	—	15.8	3.1	4.2	5.9	0.4	0.5	1.4	—	—	1.5	—	—	1.6	22.1	48.0	66.6	7.7	27.8	49.4
Other MSA	—	—	14.7	3.0	4.7	5.2	0.3	0.4	1.1	—	—	1.4	—	—	1.7	25.0	47.9	62.7	9.5	27.6	43.3
Non-MSA	—	—	13.2	2.8	5.5	6.0	0.6	0.5	2.6	—	—	1.1	—	—	1.0	23.0	50.6	60.6	8.0	30.1	42.6
Parental Education [e]																					
1.0–2.0 (Low)	—	—	13.3	4.6	6.2	5.7	1.6	0.8	1.4	—	—	2.5	—	—	3.1	31.8	54.7	64.7	13.4	32.5	45.1
2.5–3.0	—	—	16.1	3.3	5.9	5.5	0.5	0.8	1.1	—	—	1.0	—	—	1.3	31.1	51.4	65.0	12.3	31.2	43.5
3.5–4.0	—	—	15.5	4.0	5.8	5.6	0.4	0.0	1.4	—	—	0.4	—	—	0.9	26.9	52.3	65.4	10.3	29.1	47.0
4.5–5.0	—	—	14.6	1.9	3.5	6.0	0.3	0.2	1.4	—	—	1.7	—	—	1.2	20.1	46.4	62.4	6.6	28.2	44.9
5.5–6.0 (High)	—	—	13.0	2.0	3.6	5.3	0.2	1.1	1.1	—	—	1.2	—	—	2.0	17.0	44.5	60.4	5.0	25.9	45.6
Race/Ethnicity (2-year average) [f]																					
White	—	—	17.5	2.6	5.1	5.6	0.4	0.6	0.9	—	—	1.1	—	—	1.4	23.5	50.9	66.3	9.3	31.1	47.5
African American	—	—	6.5	3.0	2.7	3.8	0.7	0.3	1.8	—	—	2.1	—	—	2.0	22.4	41.0	52.4	6.5	18.6	24.2
Hispanic	—	—	10.9	3.8	6.5	5.4	1.2	0.3	1.5	—	—	1.7	—	—	1.6	33.4	51.1	64.0	12.6	28.2	40.2

(Table continued on next page.)

TABLE 4-6 (cont.)
Annual Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Flavored Alcoholic Beverages [k,n]			Alcoholic Beverages containing Caffeine [h,k]			Tobacco using a Hookah [n]			Small Cigars [n]			Dissolvable Tobacco Products [k,n,o]			Snus [k,n,o]			Steroids [c]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	17.0	37.8	44.4	10.9	19.7	26.4	—	—	18.3	—	—	19.9	1.0	1.6	1.6	2.4	6.9	7.9	0.6	0.8	1.3
Gender																					
Male	13.6	31.8	39.7	9.6	19.7	28.8	—	—	19.9	—	—	27.1	0.8	2.3	2.4	3.3	12.1	14.1	0.8	1.3	1.7
Female	20.1	43.4	49.0	11.9	19.8	23.7	—	—	17.0	—	—	12.9	1.0	0.9	0.4	1.5	2.1	1.2	0.3	0.4	0.7
College Plans																					
None or under 4 years	28.5	45.0	40.1	19.1	29.9	28.7	—	—	17.9	—	—	24.5	4.4	5.6	1.7	9.0	17.5	12.2	1.4	2.3	1.4
Complete 4 years	16.3	37.2	45.3	10.2	18.7	25.3	—	—	18.4	—	—	19.0	0.8	1.2	1.6	2.0	5.8	6.6	0.5	0.7	1.1
Region																					
Northeast	17.2	43.4	45.5	8.7	19.9	28.7	—	—	17.5	—	—	19.2	0.3	0.5	1.4	1.8	6.2	8.0	0.5	0.8	1.6
Midwest	13.3	35.1	45.3	8.6	18.5	30.2	—	—	18.6	—	—	28.4	0.8	1.7	0.8	2.0	7.8	8.3	0.5	0.7	0.9
South	18.5	38.9	40.6	12.4	19.5	21.9	—	—	12.1	—	—	12.8	1.4	1.7	2.2	3.4	8.4	8.8	0.8	1.0	1.6
West	18.0	34.5	47.2	12.3	21.1	26.4	—	—	26.2	—	—	20.5	1.1	2.1	2.0	1.6	4.2	6.2	0.5	0.7	1.0
Population Density																					
Large MSA	13.7	37.3	48.8	10.6	17.4	27.7	—	—	22.7	—	—	21.6	1.2	1.4	1.7	1.2	4.1	6.1	0.6	0.9	1.4
Other MSA	18.8	37.4	43.7	10.9	20.1	27.0	—	—	19.3	—	—	19.5	0.7	1.5	1.4	2.4	7.4	7.8	0.6	0.8	1.2
Non-MSA	18.6	39.6	39.3	11.3	21.8	22.6	—	—	9.1	—	—	18.3	1.3	1.9	2.1	4.5	9.6	10.8	0.6	0.7	1.0
Parental Education [e]																					
1.0–2.0 (Low)	25.6	43.2	38.7	13.8	23.7	20.3	—	—	18.1	—	—	12.8	1.2	2.2	1.1	2.2	4.9	4.8	0.6	1.1	1.5
2.5–3.0	24.5	39.5	47.6	14.4	23.2	25.9	—	—	16.8	—	—	18.6	1.3	2.2	2.5	3.9	8.5	8.9	0.6	0.9	1.0
3.5–4.0	18.3	40.9	41.4	13.3	22.8	30.3	—	—	19.4	—	—	20.5	1.4	2.3	1.6	3.9	8.3	6.8	0.4	0.7	1.1
4.5–5.0	13.9	36.1	47.5	8.9	18.8	26.8	—	—	19.6	—	—	23.2	0.7	0.6	1.3	1.5	6.3	10.0	0.5	0.9	1.0
5.5–6.0 (High)	11.8	36.9	47.0	6.9	12.4	24.2	—	—	17.6	—	—	19.7	0.6	1.1	0.7	1.1	5.4	6.2	0.9	0.7	1.8
Race/Ethnicity (2-year average) [f]																					
White	17.6	40.6	48.4	9.7	21.4	28.7	—	—	20.5	—	—	24.3	—	—	1.6	—	—	10.2	0.6	0.8	1.2
African American	16.7	28.8	35.7	10.5	14.4	14.8	—	—	5.9	—	—	5.9	—	—	1.5	—	—	3.4	0.7	1.0	1.6
Hispanic	21.5	40.1	46.6	17.2	25.0	26.3	—	—	18.5	—	—	13.6	—	—	1.0	—	—	4.4	0.4	0.8	1.0

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 4-8.

TABLE 4-7
Thirty-Day Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Approximate Weighted N [a]			Any Illicit Drug [b]			Any Illicit Drug other than Marijuana [b]			Marijuana			Inhalants [c,d]			Hallucinogens [d]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	*15,100*	*15,000*	*13,700*	7.7	18.6	25.2	2.6	5.0	8.4	6.5	17.0	22.9	2.7	1.4	0.9	0.6	1.2	1.6
Gender																		
Male	*7,200*	*7,200*	*6,600*	7.8	21.2	28.6	2.3	5.3	9.2	7.0	19.8	26.5	1.9	1.2	0.9	0.7	1.6	2.1
Female	*7,400*	*7,500*	*6,600*	7.3	16.1	21.2	2.8	4.6	7.1	6.0	14.4	18.8	3.4	1.6	0.8	0.5	0.8	0.8
College Plans																		
None or under 4 years	*980*	*1,300*	*2,100*	20.7	32.5	29.7	6.2	13.2	10.3	20.0	30.3	27.0	5.6	3.7	1.0	2.3	4.4	2.1
Complete 4 years	*13,700*	*13,400*	*10,900*	6.6	17.2	23.7	2.3	4.2	7.8	5.4	15.7	21.4	2.4	1.2	0.8	0.5	0.9	1.5
Region																		
Northeast	*2,800*	*2,900*	*2,300*	5.8	20.3	25.6	2.3	3.6	7.1	4.7	19.1	24.0	3.0	1.3	1.3	0.8	0.9	1.7
Midwest	*3,200*	*3,800*	*3,600*	5.1	16.1	21.7	1.7	5.4	8.7	4.4	14.4	19.5	2.2	1.4	0.8	0.3	1.1	1.6
South	*5,800*	*4,900*	*4,400*	9.1	19.1	24.9	3.2	5.7	8.0	7.5	17.2	22.3	2.5	1.5	0.6	0.7	1.2	1.4
West	*3,300*	*3,400*	*3,400*	9.2	19.2	29.0	2.6	4.5	9.6	8.2	18.0	26.6	3.2	1.5	0.9	0.7	1.5	1.8
Population Density																		
Large MSA	*5,200*	*4,700*	*4,300*	6.8	18.8	28.0	2.6	4.6	9.2	5.8	17.3	25.9	2.7	1.6	1.0	0.7	1.3	1.9
Other MSA	*6,900*	*7,100*	*6,700*	8.2	18.7	26.0	2.7	4.8	8.7	7.0	17.2	23.5	2.8	1.2	0.7	0.6	1.2	1.6
Non-MSA	*3,000*	*3,200*	*2,700*	7.9	18.2	18.9	2.5	5.9	6.7	6.5	16.3	16.7	2.1	1.8	1.0	0.4	1.0	1.1
Parental Education [e]																		
1.0–2.0 (Low)	*1,300*	*1,100*	*1,200*	12.9	23.9	29.2	3.6	9.0	7.4	11.4	21.0	26.7	4.4	2.4	1.0	0.9	2.3	1.1
2.5–3.0	*2,500*	*2,600*	*2,800*	11.2	22.8	25.7	3.4	5.5	8.4	9.9	21.3	23.2	3.5	1.9	1.0	0.7	1.3	1.6
3.5–4.0	*3,000*	*3,800*	*3,700*	8.8	18.9	25.8	2.9	4.2	9.1	7.2	17.5	23.2	2.8	1.0	0.5	0.4	0.9	1.5
4.5–5.0	*3,900*	*4,100*	*3,600*	4.9	16.7	24.5	1.6	4.6	8.4	4.1	15.4	22.3	2.0	1.6	0.9	0.4	1.2	1.7
5.5–6.0 (High)	*2,600*	*2,500*	*1,800*	4.0	15.3	22.4	2.2	4.1	7.9	3.1	14.0	20.3	1.8	0.9	1.0	0.6	0.7	1.8
Race/Ethnicity (2-year average) [f]																		
White	*16,300*	*17,600*	*16,300*	6.5	18.3	25.3	2.7	5.4	9.7	5.3	16.7	22.6	2.4	1.2	0.7	0.6	1.3	1.7
African American	*3,500*	*3,100*	*3,200*	8.4	19.9	23.7	2.5	3.2	4.3	7.6	18.8	22.3	2.9	1.4	1.1	0.7	0.8	1.0
Hispanic	*5,200*	*4,100*	*3,700*	11.8	20.6	24.0	4.2	6.0	6.4	10.4	18.5	22.0	4.3	2.6	1.3	1.3	1.8	1.1

(Table continued on next page.)

TABLE 4-7 (cont.)
Thirty-Day Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	LSD			Hallucinogens other than LSD			Ecstasy (MDMA) [g,h]			Cocaine			Crack			Other Cocaine [i]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	0.3	0.5	0.8	0.5	0.9	1.3	0.5	1.0	0.9	0.5	0.8	1.1	0.3	0.4	0.6	0.3	0.7	1.0
Gender																		
Male	0.4	0.7	1.0	0.5	1.3	1.8	0.4	1.1	1.2	0.5	0.8	1.5	0.3	0.4	0.8	0.4	0.8	1.2
Female	0.3	0.3	0.5	0.3	0.6	0.7	0.6	1.0	0.6	0.4	0.7	0.6	0.2	0.3	0.4	0.3	0.6	0.6
College Plans																		
None or under 4 years	1.7	2.0	1.2	1.4	3.5	1.7	1.8	3.7	1.0	2.0	3.2	1.7	1.2	1.8	0.8	1.6	2.9	1.2
Complete 4 years	0.2	0.4	0.7	0.4	0.7	1.2	0.4	0.8	0.9	0.3	0.5	0.8	0.2	0.2	0.5	0.2	0.5	0.8
Region																		
Northeast	0.3	0.6	0.9	0.7	0.6	1.4	0.8	0.4	1.3	0.5	0.5	0.9	0.4	0.2	0.6	0.4	0.5	0.8
Midwest	0.1	0.6	0.6	0.2	0.7	1.3	0.2	0.8	0.5	0.2	0.6	1.1	0.1	0.4	0.5	0.1	0.5	1.0
South	0.4	0.4	1.0	0.5	1.1	1.1	0.5	1.2	0.8	0.5	0.8	0.8	0.3	0.3	0.5	0.3	0.8	0.8
West	0.4	0.7	0.7	0.5	1.1	1.6	0.5	1.5	1.3	0.6	1.1	1.7	0.3	0.6	1.0	0.5	0.9	1.4
Population Density																		
Large MSA	0.4	0.6	1.0	0.6	1.0	1.5	0.4	1.2	1.2	0.5	0.9	1.1	0.3	0.6	0.7	0.4	0.7	1.1
Other MSA	0.3	0.6	0.8	0.5	1.0	1.3	0.6	0.9	0.9	0.4	0.6	1.2	0.2	0.3	0.7	0.4	0.6	1.1
Non-MSA	0.3	0.4	0.4	0.3	0.9	1.0	0.3	1.0	0.6	0.4	1.0	0.9	0.2	0.4	0.4	0.3	0.9	0.7
Parental Education [e]																		
1.0–2.0 (Low)	0.7	0.5	0.7	0.3	2.2	0.9	0.9	0.9	1.1	0.8	2.2	1.2	0.3	1.1	0.9	0.6	2.1	1.3
2.5–3.0	0.4	0.7	0.8	0.5	0.9	1.3	0.8	1.2	0.9	0.8	0.8	1.4	0.5	0.4	0.8	0.5	0.6	1.3
3.5–4.0	0.2	0.5	0.6	0.3	0.7	1.2	0.5	0.9	0.7	0.4	0.5	0.8	0.3	0.2	0.4	0.3	0.5	0.8
4.5–5.0	0.1	0.5	0.9	0.3	1.0	1.5	0.2	1.1	1.0	0.1	0.6	1.0	0.1	0.3	0.4	0.1	0.5	0.6
5.5–6.0 (High)	0.4	0.3	1.1	0.6	0.6	1.3	0.3	1.0	1.3	0.3	0.4	1.0	0.2	0.2	0.7	0.3	0.3	0.8
Race/Ethnicity (2-year average) [f]																		
White	0.3	0.5	0.8	0.5	1.0	1.3	0.4	1.0	1.5	0.4	0.5	1.1	0.2	0.2	0.5	0.3	0.4	1.0
African American	0.4	0.5	0.7	0.5	0.7	0.8	0.3	1.1	0.8	0.5	0.9	0.7	0.5	0.5	0.6	0.2	0.8	0.7
Hispanic	0.6	0.9	0.5	1.0	1.3	0.8	0.9	2.4	2.1	1.4	1.5	1.2	0.8	1.0	0.7	1.2	1.4	1.2

(Table continued on next page.)

TABLE 4-7 (cont.)
Thirty-Day Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Heroin, Any Use			Heroin with a Needle [c]			Heroin without a Needle [c]			Narcotics other than Heroin [j]			Amphetamines [j]			Methamphetamine [h,k]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	0.2	0.4	0.3	0.2	0.2	0.3	0.1	0.2	0.2	—	—	3.0	1.3	2.8	3.3	0.5	0.6	0.5
Gender																		
Male	0.3	0.5	0.4	0.3	0.3	0.3	0.2	0.3	0.2	—	—	3.6	1.1	3.0	3.6	0.5	0.5	0.5
Female	0.1	0.3	0.2	0.1	0.2	0.2	*	0.2	0.1	—	—	2.4	1.4	2.7	3.1	0.4	0.6	0.5
College Plans																		
None or under 4 years	1.1	1.7	0.8	0.8	1.0	0.8	0.4	1.2	0.3	—	—	4.2	3.2	6.4	4.1	3.4	2.3	0.7
Complete 4 years	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	—	—	2.8	1.2	2.5	3.2	0.3	0.4	0.4
Region																		
Northeast	0.3	0.3	0.4	0.2	0.1	0.3	0.1	0.1	0.2	—	—	2.4	1.1	2.3	2.9	0.5	0.7	0.5
Midwest	0.2	0.5	0.4	0.1	0.4	0.4	0.1	0.3	0.2	—	—	3.3	1.0	3.2	4.1	0.1	0.4	0.3
South	0.2	0.4	0.3	0.2	0.3	0.2	0.1	0.3	0.1	—	—	2.3	1.7	3.3	3.0	0.6	0.5	0.5
West	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	—	—	4.1	1.2	2.1	3.3	0.8	0.8	0.9
Population Density																		
Large MSA	0.3	0.4	0.3	0.2	0.2	0.2	0.1	0.3	0.2	—	—	3.3	1.4	2.5	3.6	0.7	0.6	0.8
Other MSA	0.2	0.3	0.3	0.2	0.2	0.3	0.1	0.2	0.1	—	—	2.8	1.3	2.7	3.6	0.5	0.3	0.4
Non-MSA	0.2	0.4	0.3	0.1	0.3	0.2	0.1	0.3	0.2	—	—	3.4	1.2	3.7	2.3	0.2	1.1	0.3
Parental Education [e]																		
1.0–2.0 (Low)	0.3	1.0	0.9	0.2	0.6	0.2	0.1	0.5	0.0	—	—	2.8	1.8	4.6	2.0	1.1	2.0	1.0
2.5–3.0	0.4	0.5	0.3	0.2	0.3	0.3	0.2	0.4	0.1	—	—	2.8	1.5	3.2	3.3	0.6	0.9	0.4
3.5–4.0	0.3	0.3	0.2	0.3	0.2	0.2	0.1	0.1	0.1	—	—	3.3	1.5	2.4	3.4	0.5	0.4	0.5
4.5–5.0	0.1	0.3	0.3	0.1	0.2	0.3	*	0.2	0.2	—	—	3.2	0.8	2.8	3.9	0.4	0.3	0.5
5.5–6.0 (High)	0.1	0.1	0.2	*	0.1	0.1	0.1	0.1	0.1	—	—	2.9	1.4	2.4	3.2	0.6	0.2	0.3
Race/Ethnicity (2-year average) [f]																		
White	0.2	0.3	0.3	0.1	0.1	0.3	0.1	0.2	0.2	—	—	4.0	1.5	3.4	4.2	0.3	0.4	0.5
African American	0.3	0.6	0.6	0.2	0.3	0.4	0.1	0.5	0.4	—	—	1.5	1.2	1.6	1.7	0.4	0.3	0.4
Hispanic	0.5	0.4	0.2	0.5	0.3	0.2	0.2	0.2	0.2	—	—	2.5	1.9	2.6	1.9	0.8	1.1	0.6

(Table continued on next page.)

TABLE 4-7 (cont.)
Thirty-Day Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Crystal Methamphetamine (Ice) [h]			Sedatives (Barbiturates) [j]			Tranquilizers [j]			Any Prescription Drug [l]			Rohypnol [m]			Alcohol		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	—	—	0.4	—	—	2.0	0.8	1.7	2.1	—	—	7.0	0.1	0.2	—	11.0	27.6	41.5
Gender																		
Male	—	—	0.6	—	—	1.7	0.5	1.6	1.9	—	—	7.3	0.2	0.1	—	10.3	28.0	43.8
Female	—	—	0.3	—	—	2.2	1.0	1.8	2.2	—	—	6.5	0.0	0.3	—	11.6	27.1	38.8
College Plans																		
None or under 4 years	—	—	1.2	—	—	2.5	1.6	4.7	2.8	—	—	8.5	2.3	0.6	—	23.3	40.9	44.2
Complete 4 years	—	—	0.2	—	—	1.9	0.7	1.4	1.8	—	—	6.5	0.0	0.2	—	10.0	26.3	40.7
Region																		
Northeast	—	—	0.5	—	—	1.6	0.6	1.1	2.1	—	—	5.7	0.1	0.1	—	9.3	33.3	48.1
Midwest	—	—	0.7	—	—	2.2	0.4	1.7	2.0	—	—	7.7	0.0	0.3	—	7.8	24.5	41.8
South	—	—	0.2	—	—	2.0	1.1	2.3	2.2	—	—	6.4	0.1	0.2	—	13.3	28.3	36.6
West	—	—	0.4	—	—	2.1	0.6	1.5	2.1	—	—	7.8	0.4	0.3	—	11.5	24.9	43.1
Population Density																		
Large MSA	—	—	0.7	—	—	1.9	0.5	1.5	2.0	—	—	7.4	0.0	0.4	—	10.3	27.4	44.1
Other MSA	—	—	0.3	—	—	2.4	0.9	1.6	2.3	—	—	7.3	0.2	0.1	—	11.8	26.9	41.8
Non-MSA	—	—	0.2	—	—	1.4	0.7	2.3	1.7	—	—	5.6	0.4	0.3	—	10.6	29.1	36.9
Parental Education [e]																		
1.0–2.0 (Low)	—	—	0.1	—	—	2.5	1.0	2.9	2.3	—	—	6.0	1.1	0.8	—	17.1	32.2	41.4
2.5–3.0	—	—	0.8	—	—	2.2	1.0	2.1	2.0	—	—	6.9	0.3	0.2	—	15.3	28.6	41.4
3.5–4.0	—	—	0.3	—	—	2.2	0.8	1.6	2.3	—	—	7.8	0.0	0.0	—	11.7	28.6	42.7
4.5–5.0	—	—	0.3	—	—	1.8	0.5	1.7	1.8	—	—	7.0	0.0	0.0	—	8.9	27.6	41.7
5.5–6.0 (High)	—	—	0.2	—	—	1.6	0.6	1.3	2.0	—	—	6.5	0.0	0.7	—	7.3	26.2	41.1
Race/Ethnicity (2-year average) [f]																		
White	—	—	0.2	—	—	2.1	1.0	2.0	2.7	—	—	8.4	0.2	0.3	—	10.7	29.1	43.8
African American	—	—	0.6	—	—	1.1	0.5	0.8	1.0	—	—	3.4	0.5	0.3	—	10.0	20.2	29.6
Hispanic	—	—	0.8	—	—	1.3	1.1	1.9	1.4	—	—	4.7	0.9	0.0	—	17.5	28.4	39.8

(Table continued on next page.)

TABLE 4-7 (cont.)
Thirty-Day Prevalence of Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Been Drunk [h]			Flavored Alcoholic Beverages [k,n]			Cigarettes			Smokeless Tobacco [g,n]			Steroids [c]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	3.6	14.5	28.1	7.6	16.3	21.8	4.9	10.8	17.1	2.8	6.4	7.9	0.3	0.4	0.9
Gender															
Male	3.3	15.4	30.6	6.1	13.5	19.9	4.6	12.0	19.3	4.0	11.2	13.5	0.4	0.8	1.3
Female	3.8	13.5	24.8	9.1	18.5	23.3	4.9	9.6	14.5	1.5	1.9	1.6	0.1	0.1	0.3
College Plans															
None or under 4 years	9.5	23.1	29.6	19.9	21.0	22.6	17.3	27.6	27.9	11.5	16.8	15.0	0.4	1.3	1.1
Complete 4 years	3.1	13.7	27.3	6.7	15.8	21.5	3.9	9.0	14.7	2.1	5.3	6.0	0.3	0.4	0.8
Region															
Northeast	3.5	18.6	34.7	7.2	19.4	20.6	4.2	10.9	18.8	2.6	4.3	7.1	0.2	0.4	1.4
Midwest	2.2	12.8	29.6	5.2	14.5	22.4	3.9	9.7	21.0	2.1	7.9	10.5	0.3	0.4	0.6
South	4.4	15.0	22.2	9.2	17.4	19.3	6.9	13.6	15.6	3.6	8.1	7.7	0.4	0.6	1.1
West	3.5	12.1	29.3	7.6	14.0	24.8	3.0	7.6	13.9	2.0	4.0	5.9	0.2	0.3	0.8
Population Density															
Large MSA	3.1	14.9	30.7	6.8	17.4	22.5	3.6	8.4	15.8	1.4	3.6	6.4	0.4	0.5	0.9
Other MSA	4.1	13.7	28.0	8.0	16.2	22.2	5.1	10.2	15.6	3.1	6.3	6.4	0.2	0.5	1.0
Non-MSA	3.2	15.7	24.1	8.2	14.7	19.5	6.9	15.4	23.1	4.2	10.5	14.1	0.3	0.3	0.7
Parental Education [e]															
1.0–2.0 (Low)	6.0	15.7	19.7	11.7	17.0	19.7	7.6	15.4	17.0	4.2	7.2	5.3	0.4	0.7	0.8
2.5–3.0	5.6	14.9	26.6	11.7	17.3	24.0	7.4	14.4	19.0	3.8	7.7	10.0	0.3	0.5	0.9
3.5–4.0	4.1	14.7	29.5	7.8	15.6	22.9	5.7	11.2	20.1	3.2	7.5	8.5	0.2	0.4	0.8
4.5–5.0	2.6	15.0	29.7	5.4	16.7	21.7	3.0	9.6	15.7	2.0	6.1	8.4	0.3	0.4	0.6
5.5–6.0 (High)	1.6	14.6	30.5	4.7	17.5	19.7	2.6	7.1	11.2	1.4	3.8	4.7	0.4	0.4	1.3
Race/Ethnicity (2-year average) [f]															
White	3.9	16.0	29.7	7.4	16.5	22.9	5.8	12.9	21.2	3.6	8.0	11.3	0.3	0.4	0.7
African American	2.7	7.6	14.3	8.8	10.7	17.2	4.0	6.7	8.6	1.8	2.3	1.0	0.3	0.9	1.1
Hispanic	5.5	12.5	21.2	10.8	17.7	26.8	5.5	8.3	13.2	3.1	4.4	2.5	0.3	0.5	0.8

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 4-8.

TABLE 4-8
Thirty-Day Prevalence of Daily Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

				Marijuana			Alcohol								
	Approximate Weighted N [a]			Daily			Daily			5+ Drinks [p]			Been Drunk [h]		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	*15,100*	*15,000*	*13,700*	1.1	3.5	6.5	0.3	1.0	2.5	5.1	15.6	23.7	0.1	0.4	1.5
Gender															
Male	*7,200*	*7,200*	*6,600*	1.6	4.6	9.1	0.4	1.4	3.6	4.6	16.4	27.2	0.2	0.5	1.7
Female	*7,400*	*7,500*	*6,600*	0.5	2.4	3.6	0.2	0.5	1.2	5.5	14.8	19.7	0.1	0.2	0.8
College Plans															
None or under 4 years	*980*	*1,300*	*2,100*	5.6	10.5	9.0	1.9	3.0	3.8	15.3	25.9	27.5	0.7	1.5	1.6
Complete 4 years	*13,700*	*13,400*	*10,900*	0.7	2.8	5.5	0.2	0.7	2.1	4.4	14.6	22.6	0.1	0.3	1.3
Region															
Northeast	*2,800*	*2,900*	*2,300*	0.8	3.2	7.1	0.3	1.2	3.3	4.3	19.5	29.0	0.1	0.2	1.2
Midwest	*3,200*	*3,800*	*3,600*	0.5	3.2	6.0	0.2	0.8	2.6	2.6	13.8	24.8	*	0.3	1.7
South	*5,800*	*4,900*	*4,400*	1.2	4.1	6.1	0.4	1.2	2.1	6.3	16.2	19.6	0.2	0.4	1.5
West	*3,300*	*3,400*	*3,400*	1.6	3.5	7.0	0.4	0.8	2.5	6.1	13.2	24.1	0.2	0.4	1.4
Population Density															
Large MSA	*5,200*	*4,700*	*4,300*	0.9	2.9	7.4	0.4	0.8	2.2	4.5	15.9	25.1	0.2	0.2	1.3
Other MSA	*6,900*	*7,100*	*6,700*	1.2	3.6	6.4	0.4	0.8	2.8	5.6	14.8	23.3	0.1	0.3	1.7
Non-MSA	*3,000*	*3,200*	*2,700*	1.2	4.3	5.2	0.2	1.5	2.4	5.1	16.6	22.4	0.1	0.6	1.1
Parental Education [e]															
1.0–2.0 (Low)	*1,300*	*1,100*	*1,200*	1.9	5.5	5.2	0.3	1.5	2.8	9.5	20.5	23.6	0.2	0.9	0.8
2.5–3.0	*2,500*	*2,600*	*2,800*	1.6	5.3	7.6	0.5	1.2	2.2	7.6	17.3	23.9	0.1	0.4	1.4
3.5–4.0	*3,000*	*3,800*	*3,700*	1.0	3.2	7.2	0.4	0.7	2.5	5.3	15.0	24.3	0.2	0.3	1.6
4.5–5.0	*3,900*	*4,100*	*3,600*	0.3	3.0	6.1	0.1	0.8	2.5	3.8	15.4	23.6	*	0.2	1.1
5.5–6.0 (High)	*2,600*	*2,500*	*1,800*	0.6	1.8	4.4	0.2	1.1	2.5	2.0	14.7	22.8	*	0.2	1.6
Race/Ethnicity (2-year average) [f]															
White	*16,300*	*17,600*	*16,300*	1.0	3.4	6.9	0.3	0.9	2.5	4.9	16.3	25.7	0.1	0.3	1.2
African American	*3,500*	*3,100*	*3,200*	1.0	4.0	6.0	0.3	0.5	1.5	4.3	8.2	11.3	0.2	0.1	1.5
Hispanic	*5,200*	*4,100*	*3,700*	2.1	3.2	4.8	0.7	1.1	2.3	9.9	17.1	21.8	0.3	0.5	1.0

(Table continued on next page.)

TABLE 4-8
Thirty-Day Prevalence of Daily Use of Various Drugs by Subgroups for 8th, 10th, and 12th Graders, 2012

(Entries are percentages.)

	Cigarettes						Smokeless Tobacco [g,n]		
	One or More Daily			Half Pack or More Daily			Daily		
	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	1.9	5.0	9.3	0.6	1.5	4.0	0.5	2.0	3.2
Gender									
Male	2.0	5.6	10.9	0.8	1.7	4.9	0.8	3.9	5.7
Female	1.6	4.4	7.3	0.3	1.3	2.8	0.1	0.3	0.3
College Plans									
None or under 4 years	8.0	17.0	18.4	3.0	6.8	9.5	2.3	6.2	8.4
Complete 4 years	1.4	3.7	7.0	0.4	1.0	2.6	0.4	1.6	2.0
Region									
Northeast	1.8	5.1	11.3	0.7	1.1	5.4	0.5	1.2	3.2
Midwest	1.3	4.4	11.6	0.5	1.5	5.2	0.2	2.5	3.7
South	2.9	6.9	9.0	0.8	2.3	4.0	0.7	2.9	4.3
West	0.8	2.6	5.8	0.3	0.8	1.8	0.5	0.9	1.3
Population Density									
Large MSA	1.4	3.6	8.3	0.4	0.9	3.2	0.2	0.7	2.1
Other MSA	2.0	4.7	8.2	0.6	1.4	3.4	0.5	1.7	1.9
Non-MSA	2.8	7.4	13.5	0.8	2.6	6.8	1.0	4.5	8.1
Parental Education [e]									
1.0–2.0 (Low)	2.6	8.0	9.6	0.7	3.9	4.9	0.3	1.5	3.1
2.5–3.0	3.3	7.5	11.6	1.0	2.5	5.3	0.6	3.4	5.9
3.5–4.0	2.2	4.5	11.2	0.7	1.3	4.7	1.0	2.2	3.1
4.5–5.0	0.9	4.3	7.1	0.1	1.0	2.3	0.3	1.7	2.3
5.5–6.0 (High)	1.0	2.8	4.7	0.4	0.5	2.0	0.2	1.3	1.9
Race/Ethnicity (2-year average) [f]									
White	2.4	6.2	12.1	0.7	2.1	5.4	0.9	2.4	4.6
African American	1.6	2.9	4.7	0.4	0.9	1.5	0.3	0.8	0.3
Hispanic	1.8	3.0	4.9	0.5	0.8	1.3	0.3	0.9	0.5

Source. The Monitoring the Future study, the University of Michigan.

See footnotes on the following page.

Footnotes for Tables 4-5 through 4-8

Notes. ' — ' indicates data not available. ' * ' indicates less than 0.05% but greater than 0%.

[a]Subgroup *N*s may vary depending on the number of forms in which the use of each drug was asked about.

[b]Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders, the use of narcotics other than heroin and sedatives (barbiturates) has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[c]12th grade only: Data based on three of six forms; *N* is three sixths of *N* indicated.

[d]Unadjusted for known underreporting of certain drugs. See text for details.

[e]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[f]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

[g]8th and 10th grades only: Data based on two of four forms; *N* is one half of *N* indicated.

[h]12th grade only: Data based on two of six forms; *N* is two sixths of *N* indicated.

[i]12th grade only: Data based on four of six forms; *N* is four sixths of *N* indicated.

[j]Only drug use not under a doctor's orders is included here.

[k]8th and 10th grades only: Data based on one of four forms; *N* is one third of *N* indicated.

[l]The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers …without a doctor telling you to use them.

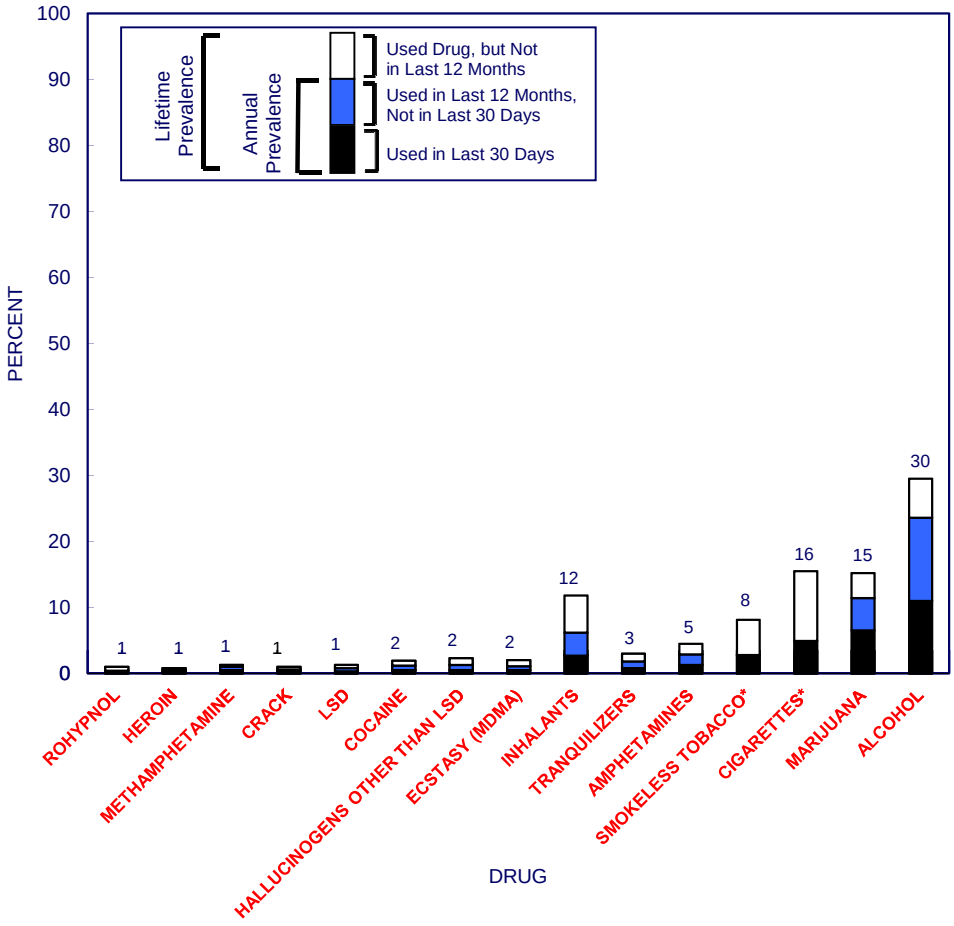
[m]8th and 10th grades only: Data based on one of four forms; *N* is one sixth of *N* indicated.

[n]12th grade only: Data based on one of six forms; *N* is one sixth of *N* indicated.

[o]Results for the three racial/ethnic groups are not presented because only limited numbers of cases are available in the first year in which a drug is introduced to the study.

[p]This measure refers to having five or more drinks in a row in the last two weeks.

FIGURE 4-1
Prevalence and Recency of Use of Various Types of Drugs in Grades 8, 10, and 12
2012

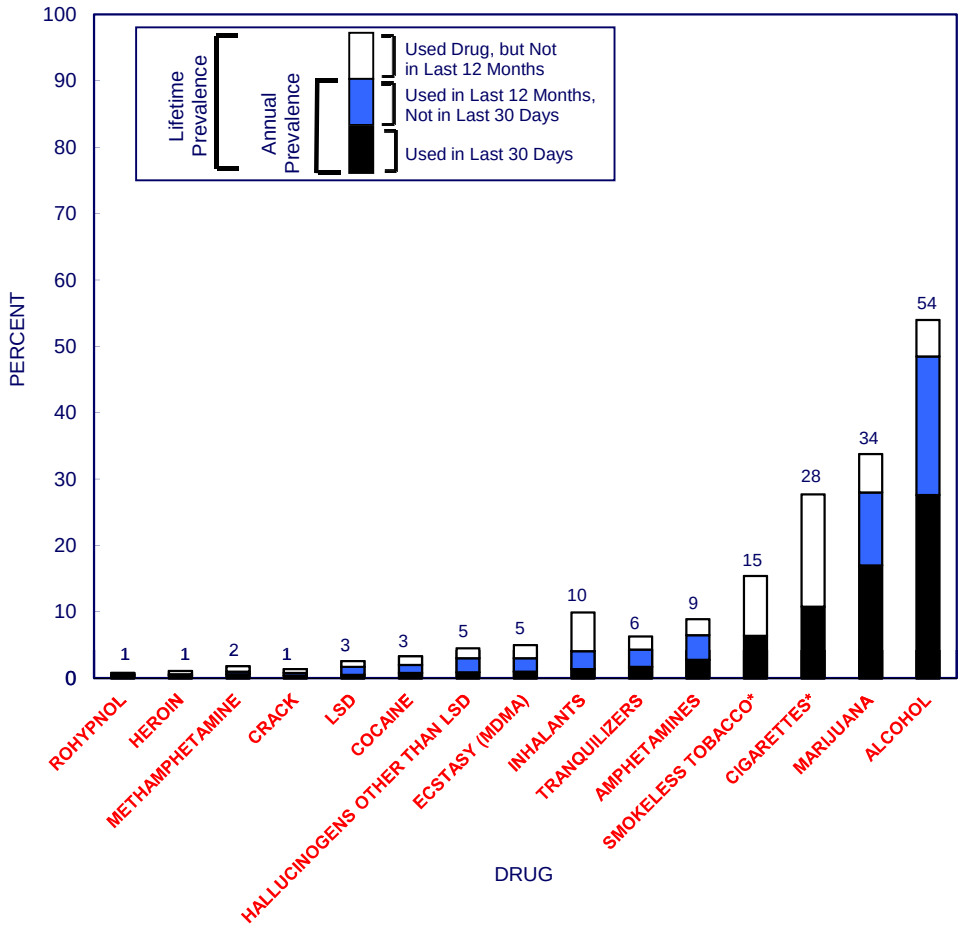


Source. The Monitoring the Future study, the University of Michigan.

*Annual use not measured for cigarettes and smokeless tobacco.

(Figure continued on next page.)

FIGURE 4-1 (cont.)
Prevalence and Recency of Use of Various Types of Drugs in Grades 8, 10, and 12
2012

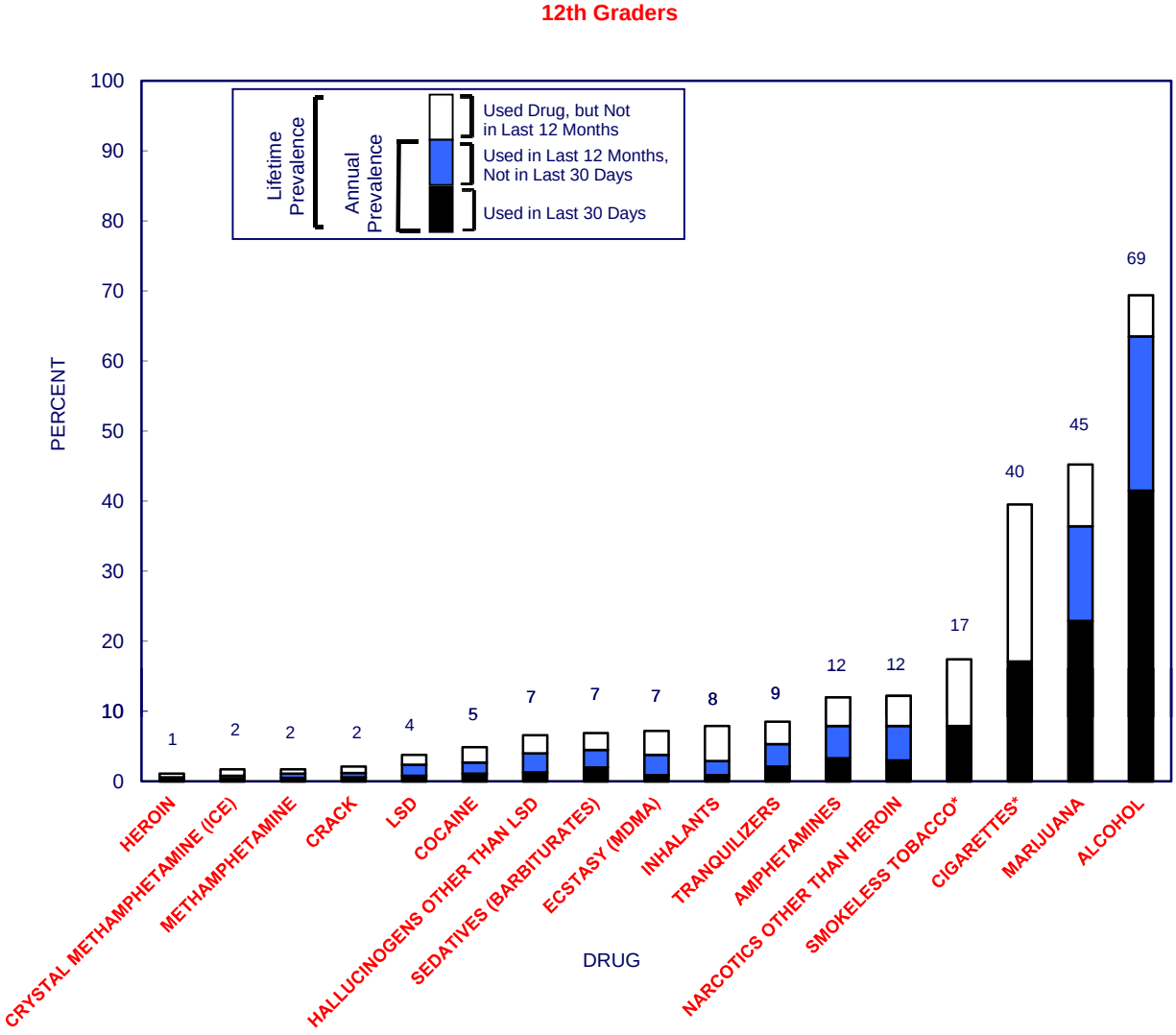


Source. The Monitoring the Future study, the University of Michigan.

*Annual use not measured for cigarettes and smokeless tobacco.

(Figure continued on next page.)

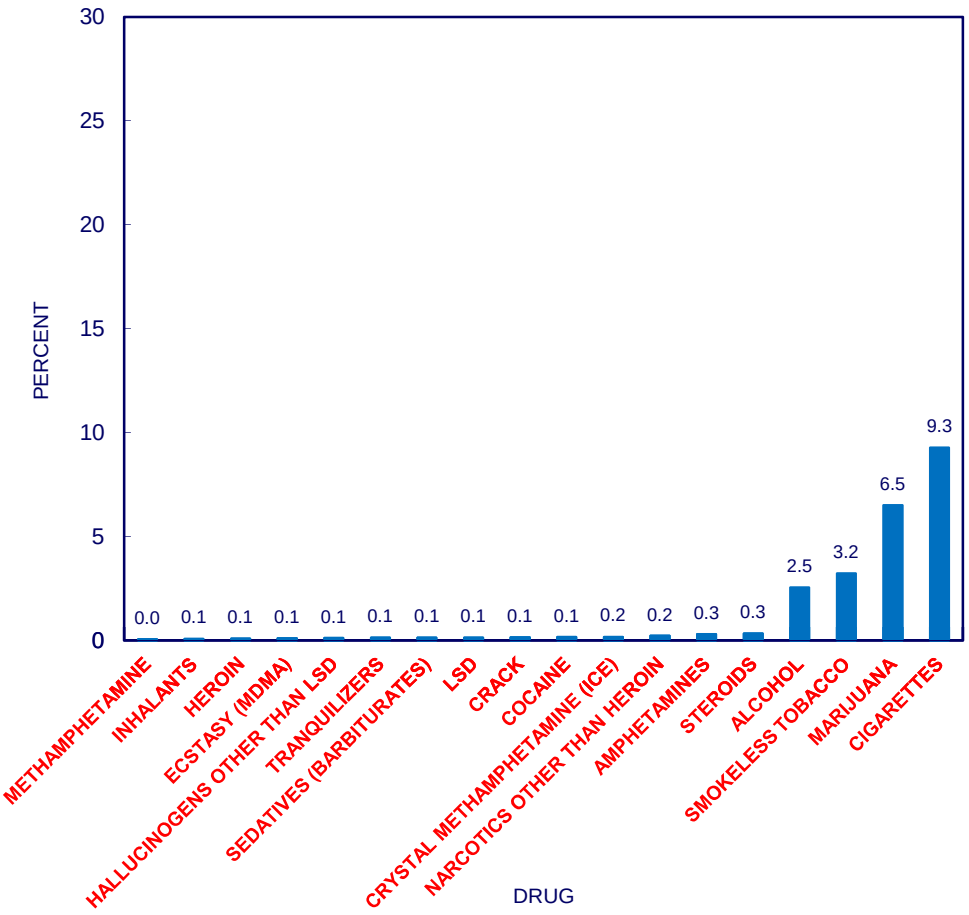
FIGURE 4-1 (cont.)
Prevalence and Recency of Use of Various Types of Drugs in Grades 8, 10, and 12
2012



Source. The Monitoring the Future study, the University of Michigan.

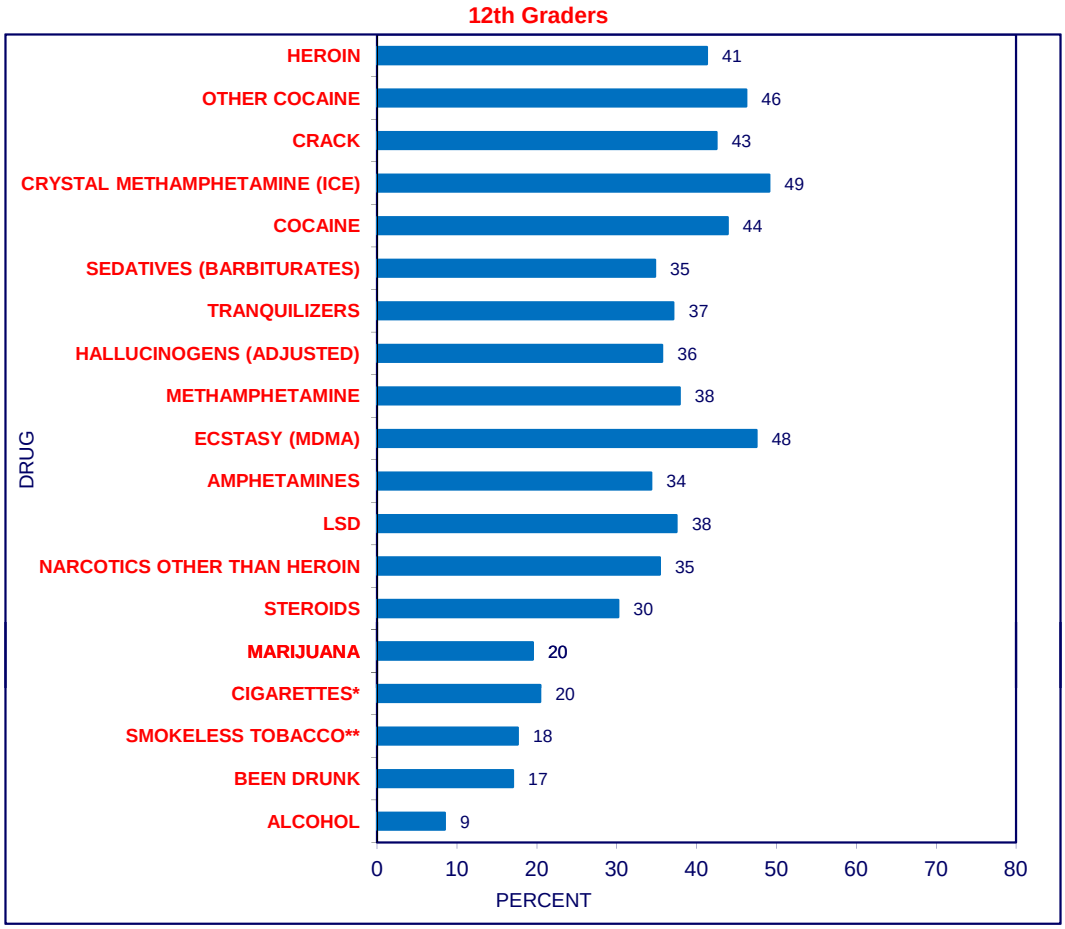
*Annual use not measured for cigarettes and smokeless tobacco.

FIGURE 4-2
Thirty-Day Prevalence of Daily Use of Various Types of Drugs in Grade 12
2012



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 4-3
Noncontinuation Rates: Percentage of Lifetime Users Who Did Not Use in Last 12 Months in Grades 8, 10, and 12 2012



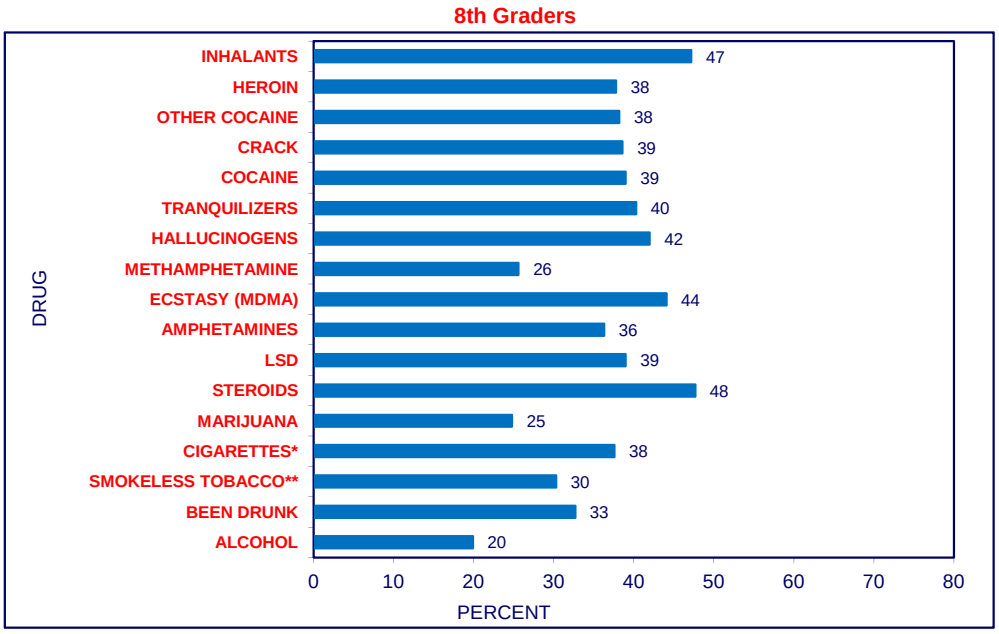
Source. The Monitoring the Future study, the University of Michigan.

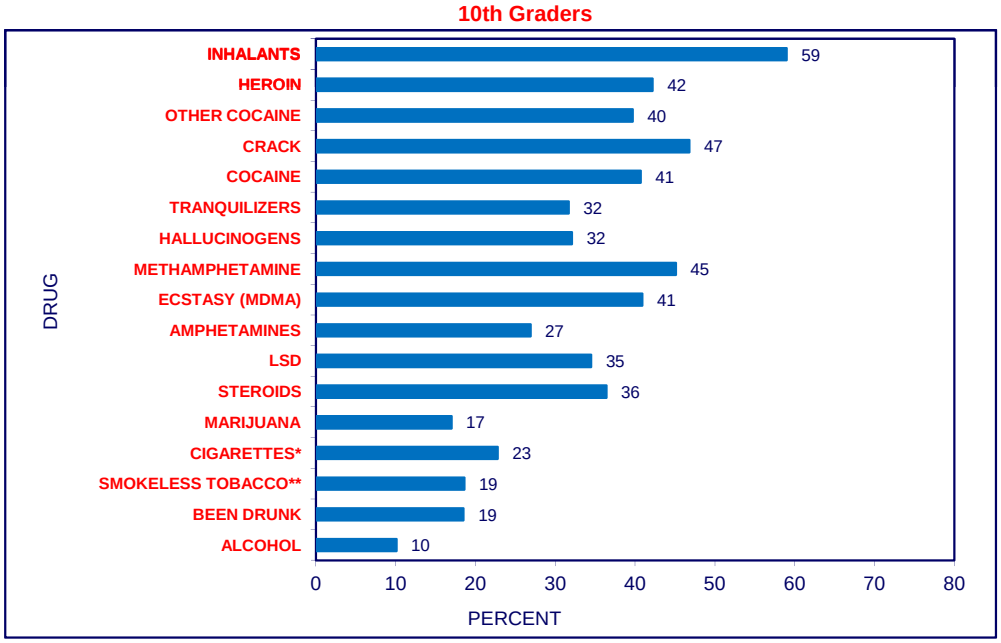
*Percent of regular smokers (ever) who did not smoke at all in the last 30 days.

**Percent of regular smokeless tobacco users (ever) who did not use smokeless tobacco in the last 30 days.

(Figure continued on next page.)

FIGURE 4-3 (cont.)
Noncontinuation Rates: Percentage of Lifetime Users Who Did Not Use in Last 12 Months in Grades 8, 10, and 12
2012



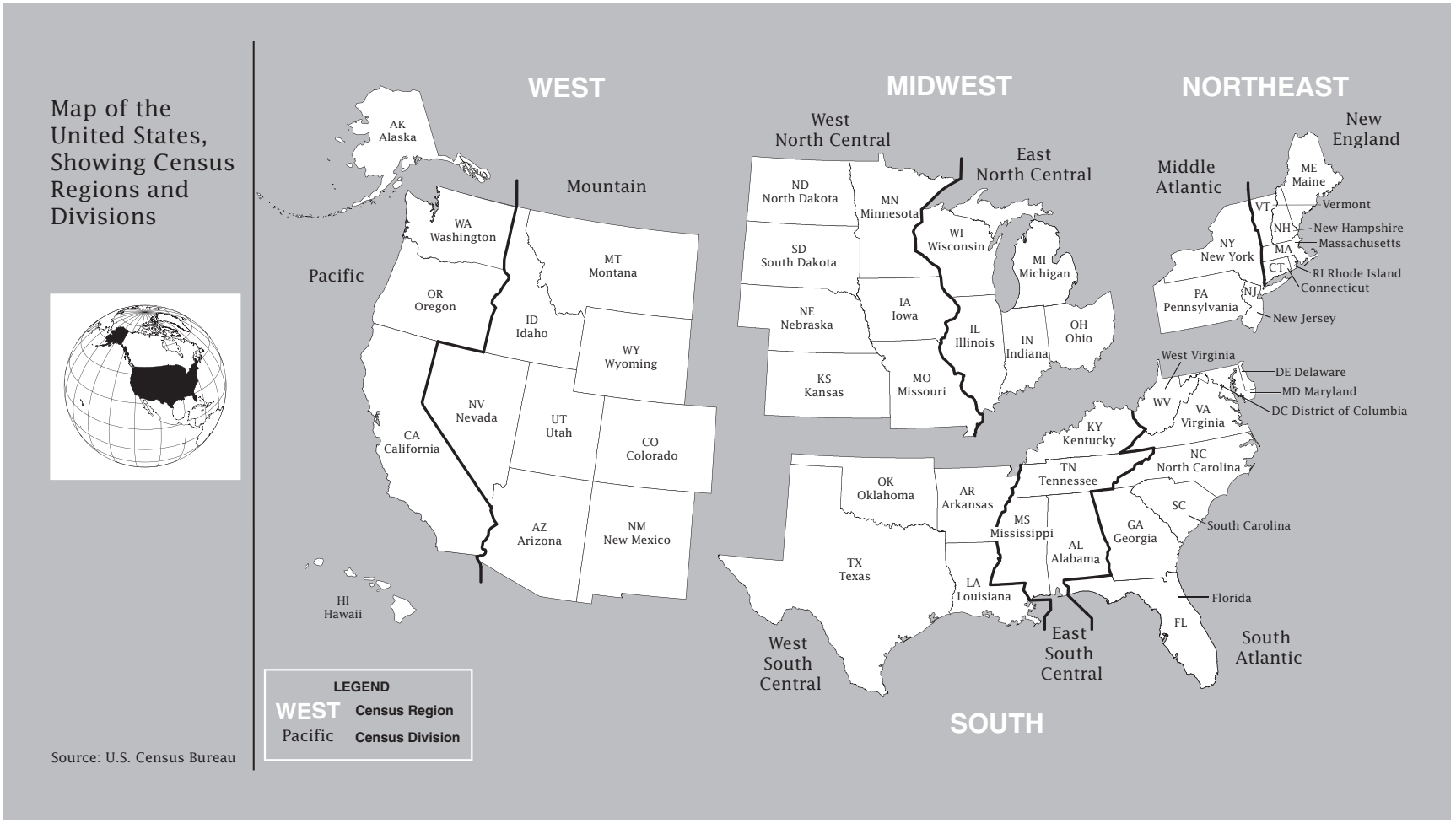


Source. The Monitoring the Future study, the University of Michigan.

*Percent of regular smokers (ever) who did not smoke at all in the last 30 days.

**Percent of regular smokeless tobacco users (ever) who did not use smokeless tobacco in the last 30 days.

FIGURE 4-4
States included in the 4 Regions of the Country



Chapter 5

TRENDS IN DRUG USE

The measurement of change over the years has been one of the most important contributions of Monitoring the Future to the worlds of substance abuse research, policy, and prevention. Measurements of change in the levels of drug use, in the types of drugs being used, and in the ages and types of people using them are perhaps the most important contributions; but measurement of change in related attitudes and beliefs about drug use and in surrounding conditions is also important. Such information has significant implications for public policy—for needs assessment, agenda setting, policy formulation, and policy evaluation. More generally, it has implications for the health of the nation. In this chapter, we review the many changes that have taken place over the past 37 years in the use of drugs, and we distinguish trends for various sectors of the population.

Data are presented and discussed first for 12th graders (based on 38 national surveys, 1975–2012), then for 8th and 10th graders (based on 22 national surveys, 1991–2012). For a variety of substances, the use measures discussed include lifetime use, use during the past 12 months, use during the past 30 days, and daily or near-daily use during the past 30 days.[57] Trends in noncontinuation rates among 12th graders are also examined here, with findings that have important implications for prevention strategy. Finally, we discuss the extent to which the trends in use have differed among key demographic subgroups defined on the dimensions of gender, college plans, region of the country, population density, socioeconomic status (parental education), and race/ethnicity. A separate occasional paper[58] available on the MTF web site provides greater detail on the subgroup trends observed.

TRENDS IN PREVALENCE OF USE, 1975–2012: TWELFTH GRADERS

Tables 5-1 through 5-4 give the long-term trends in lifetime, annual, 30-day, and current daily prevalence of use for all drugs, based on the past 37 graduating classes of 12th graders. Figures 5-1 through 5-4q provide graphic depictions of some of the more important trends.

- We know from some of our own earlier work and from other studies that in the late 1960s and early 1970s, prior to the launching of MTF, ***marijuana*** use rose quite sharply from

[57]The definitions of these behaviors remain the same as in the previous chapter. "Lifetime prevalence" refers to use on one or more occasions ever. "Annual prevalence" refers to use on one or more occasions in the 12 months preceding the survey. "Monthly prevalence" (sometimes referred to as "current use" or "past 30-day use") refers to use on one or more occasions in the 30-day period preceding the survey. For many drugs we also report findings on "daily use," which refers to use on 20 or more occasions during the prior 30 days. (Daily use is defined differently for cigarettes and smokeless tobacco. See text.)

[58]Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2013). *Demographic subgroup trends for forty-six classes of licit and illicit drugs, 1975–2012* (Occasional Paper No. 79). Ann Arbor, MI: Institute for Social Research. Available online at http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf.

relatively negligible levels in the youth population.[59] Based on MTF data, 1978 and 1979 marked the crest of this long and dramatic rise in marijuana use among American 12th graders (and, for that matter, among young people generally). As Tables 5-2 and 5-3 and Figure 5-4a illustrate, annual and 30-day prevalence of marijuana use leveled in 1978-1979, and in 1980 both statistics dropped for the first time. They continued to decline every year through 1992, except for a brief pause in 1985. Following this 12-year decline, the annual prevalence of marijuana use among 12th graders rose sharply beginning in 1993 in what we have termed the "relapse phase" in the drug epidemic, nearly doubling from 22% to 39% between 1992 and 1997. Thirty-day prevalence also rose significantly, doubling from the 1992 level of 12% to 24% in 1997. In 1998 these use rates began to turn around and by 2007, 30-day prevalence had declined to 19%. Annual prevalence declined to 32%, still only modestly lower than the recent peak level but considerably below the original peak in 1979. There were nonsignificant increases of 0.7 percentage points in both measures in 2008—an increase that we reported four years ago could mark the end of the long, gradual decline in marijuana use that we had observed for about the previous seven years. In 2009, annual and 30-day prevalence rates both rose (not significantly) to 33% and 21%, respectively. They rose again in 2010 to 35% and 21%, and again in 2011 to 36% for annual use and to 23% for 30-day use. In 2012 annual use leveled at 36% and 30-day prevalence at 23%. Whether this is just a pause in a longer-term rise or not is yet to be determined, though the continuing decline in perceived risk (discussed below) would suggest a further rise yet to come.

Lifetime prevalence of marijuana use by 12th graders peaked in 1979 and 1980 at 60%; it first began to drop after 1980, though more gradually than annual or 30-day use did.[60] Lifetime prevalence reached a low of 33% in 1992—in other words, only one third of the students in that class cohort had ever tried marijuana—but, during the relapse phase in the illicit drug epidemic, it increased to 50% among 12th graders by 1997. Lifetime use remained level between 1997 and 2001 and then began to decline, dropping to 42% for the class of 2007—a modest improvement. It remained at 42% in 2009 but then increased to 46% by 2011 before leveling in 2012 at 45%.

Important changes in young people's attitudes and beliefs about marijuana use have also occurred over this period, and these changes can account for much of the long-term decline in use, as well as the increase in use during much of the 1990s. Chapter 8 contains a more thorough discussion of this issue.

- Of particular importance were the even sharper fluctuations that occurred for active ***daily marijuana*** use or near-daily use, defined as use on 20 or more occasions in the last 30 days (see Table 5-4 and Figure 5-4a). Between 1975 and 1978, daily use by 12th graders increased almost twofold, from 6.0% to 10.7%—an increase that was documented by MTF and covered widely by the media. In 1979, this rapid and troublesome increase

[59]National Commission on Marihuana and Drug Abuse. (1973). *Drug use in America: Problem in perspective.* Washington DC: U.S. Government Printing Office. See also Johnston, L. D. (1973). *Drugs and American youth.* Ann Arbor, MI: Institute for Social Research.

[60]Lifetime use declines more gradually than annual or 30-day use because it reflects changes in initiation rates only, whereas annual and 30-day statistics reflect changes in both initiation *and* noncontinuation rates.

halted, followed by a rapid reversal. By 1992 the daily usage rate had dropped to 1.9%—a drop of about 80% in daily prevalence from the recent peak. As discussed in chapter 8, we attribute much of this dramatic decline in daily marijuana use during the 1980s to a very substantial increase in teens' concerns about possible adverse effects from regular use, and to a growing perception that peers disapproved of marijuana use, particularly regular use.

In 1993, for the first time in 15 years, daily marijuana use increased significantly among 12th graders, and it continued to increase significantly through 1997, reaching 5.8%—three times the rate in 1992. It then held fairly level through 2003, although annual and 30-day prevalence rates were declining. In 2004 and 2005, twelfth graders showed nonsignificant declines, after which the prevalence level held quite constant through 2009, when it was 5.2%. The daily prevalence rate then rose significantly in 2010 to 6.1%, and inched up to 6.6% in 2011 and 6.5% in 2012 or to about one in every fifteen 12th graders. These are the highest rates of daily marijuana use that the study has recorded in the past 30 years. (See chapter 10 for a discussion of cumulative daily marijuana use among 12th graders. It shows that the proportion reporting having used marijuana daily for a month or more at any time in the past is considerably higher than the proportion reporting daily marijuana use during just the month immediately preceding the survey.)

- Until 1978, the proportion of 12th graders involved in ***any illicit drug*** use increased steadily, primarily because of the increase in marijuana use (see Figures 5-1 to 5-4a). About 54% of the classes of 1978 and 1979 reported using at least one illicit drug during the prior 12 months, up from our first observation of 45% in the class of 1975. Between 1979 and 1984, however, the proportion who reported using any illicit drug during the prior year dropped by one to three percentage points annually until 1985, when there was a brief pause in the decline. In 1986 the decline resumed, with annual prevalence dropping significantly to 27% by 1992, exactly half the peak level experienced in 1979. As with marijuana, and largely due to marijuana, the annual prevalence of using any illicit drug then increased substantially from 27% in 1992 to 42% by 1997, leveled for a few years before falling modestly to 36% by 2007. It remained at 37% in both 2008 and 2009, before increasing non-significantly to 38% in 2010 and then to 40% in 2011, where it remained in 2012.

- As Table 5-1 and Figure 5-1 illustrate, between 1976 and 1981 there was a steady increase in the proportion of 12th graders using an ***illicit drug other than marijuana***.[61] The annual prevalence (see Table 5-2 and Figure 5-2), which rose from 25% to 34% between 1976 and 1981, declined steadily thereafter to 15% by 1992—less than half of

[61]Included under the definition of "any illicit drug other than marijuana" is any use of LSD, other hallucinogens, crack, other cocaine, or heroin; and/or any use that is not under a doctor's orders of narcotics other than heroin, amphetamines, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers. Not included are the following: alcohol, tobacco, and inhalants. Nitrites, PCP, and crystal methamphetamine (ice) are covered only to the extent that the respondents included their use in the more general questions asking about inhalants, hallucinogens, or amphetamines, respectively. This definition has been held constant by intent, despite the arrival of new drugs onto the scene over the years. While the addition of other drugs, like ecstasy, for example, might change the estimates slightly (particularly in some years when their use is highest), the changes would be very limited because the great majority of the users of those other drugs are also users of one or more of the drugs included in this set.

the 1981 prevalence. After 1992, however, annual prevalence of use rose again (along with the use of marijuana and a number of other drugs) to 21% by 1997, and has declined slightly since then (to 17% in 2012). Compared to the increases in 12th-grade marijuana use during the 1990s, the increases in use of illicit drugs other than marijuana, as a whole, were not as sharp in either absolute or proportional terms.

Most of the earlier rise in 12th graders' use of any illicit drug other than marijuana apparently resulted from the increasing popularity of cocaine between 1976 and 1979 and, then, to the increasing use of amphetamines between 1979 and 1981. As stated earlier in this volume, we believe that the upward shift in amphetamine use at that time was exaggerated by some respondents including use of over-the-counter stimulants in their reports of amphetamine use. Figures 5-1 through 5-3 show trends that, beginning in 1982, were based on questions reworded to help respondents to exclude the inappropriate reporting of these nonprescription amphetamines. (The use of over-the-counter stimulants is covered in chapter 10.)

- Although the overall proportion of 12th graders using ***illicit drugs other than marijuana*** has changed gradually and steadily over the years, much greater fluctuations have occurred for specific drugs within this general class. (See Tables 5-1 through 5-3 for the long-term trends in 12th graders' lifetime, annual, and 30-day prevalence for each class of drugs. Figures 5-4a through 5-4q graph these trends, along with the trends for 8th and 10th graders.) These fluctuations for some drugs within overall use trends are important to recognize because they show that, while the proportion willing to try any illicit drug may put outer limits on the amplitude of fluctuations for any single drug, the various subclasses of drugs must have important determinants specific to them. In particular, they include variables such as perceived risk, peer normative attitudes, assumed benefits, and availability, as well as novelty. (Such variables are discussed in chapters 8 and 9.) Next we describe the trends in these specific classes of drugs.

- From 1976 to 1979, ***cocaine*** (Figure 5-4h) exhibited a substantial increase in popularity among 12th graders, with annual prevalence doubling in just three years from 6.0% in 1976 to 12.0% in 1979. Then from 1979 to 1984, little or no further change was observed in any of the cocaine prevalence statistics for 12th graders, at least in the overall national statistics. (Subgroup differences in trends are discussed subsequently.) In 1985, we reported statistically significant increases in annual and monthly use of cocaine, then another leveling in 1986. Between 1986 and 1992, however, both annual and monthly use dropped by three quarters or more: from 12.7% to 3.1% for annual use and from 6.2% to 1.3% for monthly use. (Reasons for this steep decline in cocaine use—in particular the role of perceived risk—are discussed in chapter 8.) Annual prevalence of cocaine then rebounded along with annual prevalence of most other drugs during the relapse period of the drug epidemic; in fact, prior-year use of cocaine among 12th graders exactly doubled, jumping from 3.1% in 1992 to 6.2% in 1999, as did 30-day prevalence, from 1.3% to 2.6%. Finally, in 2000, the first significant decline in cocaine use in several years was observed; annual prevalence among 12th graders dropped to 5.0% and then leveled at about that level through 2007, before declining again and reaching 2.7% by 2012.

- Prior to 1986, indicators gathered routinely in MTF showed some indirect evidence of the rapid spread of ***crack***. For example, we found that the proportion of all 12th graders reporting that they had ever smoked cocaine (as well as used it in the past year) more than doubled between 1983 and 1986, from 2.4% to 5.7%. In the same period, the proportion of those who said that they had both used cocaine during the prior year, and at some time had been unable to stop using it when they tried doubled (from 0.4% to 0.8%). In addition, between 1984 and 1986, the proportion of 12th graders reporting active *daily* use of cocaine doubled (from 0.2% to 0.4%). We think it likely that the rapid advent of crack use during this period was reflected in all of these changes, though we did not yet have a direct measure of its use.

  Use of crack cocaine was first measured in 1986 by a single question contained in one questionnaire form, and asked only of respondents who had reported any use of cocaine in the past 12 months. It simply asked if crack was one of the forms of cocaine they had used. It was thus an estimate of the annual prevalence of crack use.

  In 1987, questions about crack use were introduced into two questionnaire forms, using our standard set of three questions that ask separately about frequency of use in lifetime, past 12 months, and past 30 days. These were subsequently added to all questionnaire forms beginning in 1990. Between 1986 and 1991, annual prevalence of crack use among 12th graders declined from 4.1% to 1.5%, or by nearly two thirds (see Figure 5-4h), after which it leveled for a couple of years. After 1993, during the first relapse phase in the illicit drug epidemic, annual prevalence of crack use rose steadily from 1.5% to 2.7% in 1999, before finally declining significantly in 2000 to 2.2%. By 2007 the rate was at 1.9%, and it fell further to 1.2% in 2012. It seems likely that crack use is disproportionately concentrated among dropouts relative to most other drugs, but we believe that trends among dropouts probably parallel those seen among 12th graders, who represent the great majority of that age group.

- Like cocaine use, ***inhalant*** use rose steadily in the late 1970s, but more slowly (see Figure 5-4c). Annual prevalence (unadjusted for the omission of nitrite inhalants) rose from 3.0% in 1976 to peak at 5.4% in 1979. Starting in 1979, when separate questions were introduced to measure the rising use of nitrite inhalants, an adjustment was introduced into the overall inhalant use measure to correct for the underreporting of nitrite inhalants that we had determined existed. Between 1979 and 1983, we reported some overall decline in this adjusted version—in part due to a substantial drop in the use of amyl and butyl nitrites, for which annual prevalence declined from 6.5% in 1979 to 3.6% by 1983. Both the adjusted and unadjusted inhalant measures increased modestly between 1983 and 1986, with annual use of inhalants (adjusted) increasing from 6.2% in 1983 to 8.9% in 1986, and that of nitrites increasing less, from 3.6% to 4.7%.

- After 1986 there was a steep decline in annual ***nitrite*** use (from 4.7% to 0.5% by 1992), but only a modest decline in overall inhalant use (adjusted), with annual prevalence of use falling from 8.9% in 1986 to 6.4% in 1992, before rising again to 8.5% by 1996. The gradual convergence of the unadjusted and adjusted inhalant prevalence rates (seen in Figure 5-4c) suggests that the number of 12th graders who used nitrites but did not report

themselves as inhalant users on the general inhalant use question diminished considerably by 1992, as would be expected in light of the overall decline in nitrite use. From 1992 to 1996, however, the annual prevalence of nitrite use rose slightly, from 0.5% to 1.6%—a large proportional change, but on a very low base. After 1996, nitrite use gradually declined to 0.6% in 2001; it stood at 0.9% in 2009 after which, because of its very low prevalence for some years, the question was dropped (in 2010) to make room for a question about another drug of concern.

This unusual pattern of change—in which inhalant use unadjusted for nitrites rose over much of the life of the study, while the version adjusted for nitrites stayed fairly level over the same time period (Figure 5-4c)—is worthy of further consideration. Essentially, ***inhalants other than nitrites*** rose in use, but after 1979 the increase was largely offset, or "masked" in the adjusted inhalants measure, by the sharp decline in the use of nitrites. In the class of 1976, when the inhalant questions were first introduced, 10.3% indicated any *lifetime* use (unadjusted for nitrites), versus 17.4% nearly a decade later in 1995—a substantial increase. Annual prevalence (unadjusted) nearly tripled over the same interval, from 3.0% to 8.0%. Between 1995 and 2003, annual prevalence dropped by half, from 8.0% to 3.9%. In 2004 and 2005, small increases were observed (to 5.0%) among 12th graders, but by 2012 it was down to 2.9%.

- ***Amphetamine*** use among 12th graders remained relatively unchanged between 1975 and 1978, began to increase in 1979, and then increased sharply between 1979 and 1981 (Figure 5-4b). From 1976 through 1981, reported annual prevalence rose by 10 percentage points (from 16% to 26%) and daily use tripled, from 0.4% to 1.2%. As stated earlier, we think these increases were somewhat exaggerated, particularly in the 1980 and 1981 surveys, by respondents who included non-amphetamine over-the-counter diet and stay-awake pills, as well as "look-alike" and "sound-alike" stimulants, in their answers. (See chapter 10 for data on the use of these nonprescription stimulants.) In 1982, we added new versions of the amphetamine use questions that were more explicit in instructing respondents not to include such nonprescription pills. (These were added to only three of the five forms of the questionnaire being used at the time; the amphetamine questions were left unchanged in the other two forms until 1984.) Between 1981 and 1982, prevalence rates dropped slightly as a result of this methodological change. In all tables and figures, data for 1975 through 1981 are based on the unchanged questions, providing comparable data across time for longer term trend estimates; data since 1982 are based on the revised questions, providing our best assessments of current prevalence and more recent trends in true amphetamine use.[62]

  In 1982 and 1983, the two years for which both adjusted and unadjusted statistics are available, the unadjusted data showed a modest amount of over-reporting (see Figure 5-4b). Both statistics suggest that a downturn in 12th graders' use of amphetamines began in 1982 and continued for a decade. For example, between 1982 and 1992 the annual prevalence for amphetamines (revised) fell by nearly two thirds, from 20% to 7%, while

[62]The unadjusted estimates for the earliest years of MTF were probably little affected by the improper inclusion of nonprescription amphetamines, since sales of the latter did not burgeon until after the 1979 data collection.

30-day use and current daily use both fell by more than two thirds. As with a number of other drugs, the trend lines veered upwards after 1992. Annual prevalence rose significantly from 7% in 1992 to 10% by 1997, was level from 1998 through 2002 (11%), and has recently declined some to 8% in 2012.

Table E-2 in appendix E gives trends for many of the ***specific amphetamines***. These more detailed questions about specific drugs within a class are asked only of 12th graders. They are contained in a single questionnaire form and are asked in a branching format, wherein a respondent must first indicate that he or she used the general class of drugs (e.g., amphetamines) in the prior year before being branched to the more detailed questions about which specific drugs were used. The three most widely used amphetamine-type stimulants at the beginning of the study were ***Benzedrine***, ***Methedrine***, and ***Dexedrine***, which had annual prevalence rates in 1976 (based on these branching questions) of 3.5%, 3.4%, and 2.9%, respectively. Benzedrine use peaked in 1977 at 4.1%, Methedrine in 1981 at 5.6%, and Dexedrine in 1981 at 5.1%. (Recall that 1981 was the peak year for overall amphetamine use.) The use of all three drugs dropped to much lower rates of use by 1987 and to negligible rates by 1991, with relatively little change since. In fact, Benzedrine and Methedrine were at such low rates of use that they were dropped from the study in 2011. It has always been the case that a significant portion of the respondents reporting amphetamine use indicate that they do not know the names of the ones that they used, or answer "other" on the predefined list (see Table E-2).

- In recent years, ***Ritalin***, as well as ***Adderall*** and ***Concerta*** (both added in 2007), along with ***methamphetamine*** and ***crystal methamphetamine*** (***ice***), have been the amphetamines most widely used by 12th graders. Based on the original question that asked about Ritalin use if a respondent first said that they used an amphetamine, nonmedical use of Ritalin grew from an annual prevalence of 0.1% in 1992 to 2.8% by 1997 and 1998. It remained at 2.2% to 2.6% for the next five years, before rising significantly in 2004 to 3.9%; it then decreased significantly to 1.3% by 2009, and was at 1.9% in 2012. A newer question added in 2001 asks about Ritalin use without using a branching question format; that new question yielded somewhat higher annual prevalence rates for this drug of 5.1% in 2001, 4.0% in 2002 and 2003, and 5.1% in 2004 (see Table 5-2). It also showed some decline since, reaching 2.1% in 2009 (increasing non-significantly to 2.6% in 2011, where it remained in 2012), suggesting that there may have been a real peak in 2004. While it is clear that the non-branching question yielded a higher absolute prevalence level, which we believe is more accurate, we consider it likely that the *trend pattern* generated by the branching question over the years has provided a relatively accurate picture of the trends.

- In 1990, a full set of prevalence questions was added about 12th graders' use of ***crystal methamphetamine*** (***ice***)—which can be smoked, much like crack—because of growing concern about the development of an epidemic in crystal methamphetamine use (see Tables 5-1 through 5-4). Despite this concern, crystal methamphetamine did not make much of an inroad into the national population of 12th graders, quite possibly because the dangerous reputation of crack, with which it has so many similarities, "rubbed off" on it. Annual prevalence of use held at about 1.3% from 1990, the first measurement point,

through 1992, and then use began to rise gradually during the incline phase in general illicit drug use, reaching 2.8% by 1996. This more than twofold increase gave crystal methamphetamine a slightly higher prevalence rate than crack had that year (2.1%). From 1996 through 2002, crystal methamphetamine use changed rather little, and stood at 3.0% in 2002. In 2003, however, a significant decline to 2.0% was observed; annual prevalence fell further to 0.8% by 2012 (see Figure 5-4j). So, by including this drug in the MTF study starting in 1990, we have been able to show that the great sense of alarm has not been justified, at least not for secondary school students. As noted below, the rates of crystal methamphetamine use were even lower among college students and young adult high school graduates generally.

- A general measure of ***methamphetamine*** (as opposed to crystal methamphetamine) use was introduced later, in 1999, at which time an annual prevalence of 4.7% was observed. Use has declined considerably since then; reaching 3.4% in 2004, and 1.1% by 2012 (see Figure 5-4j). In sum, methamphetamine use among 12th graders has fallen by about two thirds since its use was first measured in 1999—quite an important development.

- The sustained, gradual decline in ***sedative*** use (adjusted for the underreporting of methaqualone use; see Figure 5-4e) between 1975 and 1979 halted in 1980 and 1981. Annual prevalence among 12th graders, which had dropped steadily but slowly from 12% in 1975 to 10% in 1979, increased slightly to 11% by 1981. This increase probably reflects the increase then occurring in one of the classes of sedatives—methaqualone (discussed next). The longer-term decline resumed again in 1982, and over the next decade annual prevalence fell by three quarters from the peak level in 1975 to its lowest point of 2.9% in 1992. After 1992, annual use of sedatives increased (as it did for a number of other drugs), doubling to 6.0% by 1998 before leveling. Use changed rather little through 2004, but there was a significant increase in 2005, bringing annual prevalence up to 7.6%, the highest rate since 1983. Declines in subsequent years have brought the rate down to 4.5% by 2012.

  The overall trends for sedatives (adjusted) mask differential trends occurring for the two components of the measure (barbiturate and methaqualone use), as illustrated in Figure 5-4d and 5-4e. ***Barbiturate*** use among 12th graders declined steadily between 1975 and 1987 before leveling off. By 1992, annual prevalence of use (2.8%) was less than one third of the 1975 level (10.7%). It then rose steadily to reach 6.7% a decade later. It stood at 4.5% in 2012. ***Methaqualone*** use, on the other hand, rose sharply from 1978 until 1981. In fact, it was the only drug other than amphetamines that was still rising in 1981. But in 1982 the use of methaqualone also began to decline, helping to account for the overall sedative category resuming its decline that year. Annual prevalence for methaqualone plummeted from 7.6% in 1981 to 0.2% by 1993; it then inched up a bit during a relapse phase in the 1990s to 1.1% in 1996, where it remained in 1999. In 2012 it was 0.4%, a tiny fraction of its peak level. In fact, because of these very low prevalence rates, methaqualone questions were dropped from five of the six questionnaire forms

beginning in 1990. Therefore, since 1990 the overall sedative (adjusted) data have been based on the six-form barbiturate data adjusted by the one-form methaqualone data.[63]

- The use of ***tranquilizers*** among 12th graders peaked in 1977—near the beginning of the study (see Figure 5-4d)—following what was probably a considerable period of increase. There was then a long, steady decline for 15 years through 1992. Lifetime prevalence of use dropped by two thirds (from 18.0% in 1977 to 6.0% in 1992), annual prevalence by three fourths (from 10.8% to 2.8%), and 30-day prevalence by more than three fourths (from 4.6% to 1.0%). Following this period of substantial decline, annual use of tranquilizers began to rise after 1992, along with the use of most other illicit drugs, reaching 5.7% in 2000. In 2001 the estimates are based on a modified question, and the modification seemed to raise the prevalence rate by about a percentage point. Based on the revised question, which included Xanax among the examples given in the question, annual prevalence appeared to peak in 2002 (at 7.7%) and has since declined some, to 5.3% in 2012.

- The annual prevalence of ***heroin*** use among 12th graders declined rather steadily between 1975 (1.0%) and 1979 (0.5%) (Table 5-2 and Figure 5-4i), while lifetime prevalence also dropped by exactly half (from 2.2% in 1975 to 1.1% in 1979). This decline halted in 1979, and the statistics remained almost constant for a decade and a half. However, in 1995 a sharp (and statistically significant) increase occurred, with annual and 30-day prevalence rates roughly doubling, to 1.1% and 0.6%, respectively. (As discussed in chapter 2—see also Tables 5-6a through 5-6c in this chapter—we believe that the advent of new non-injection forms of heroin played an important role in this increase.) However, there was no further increase in annual or 30-day prevalence-of-use rates from 1995 through 1999 (see Tables 5-2 and 5-3), nor was there any increase during this period in the use of heroin by injection or by other means (see Tables 5-6a through 5-6c). The increase in heroin use was recognized fairly quickly and gave rise to some ameliorative actions, including an anti-heroin campaign by the Partnership for a Drug-Free America. This response may well explain the unusually quick leveling in use after one year of sharp increase. However, in 2000 heroin use among 12th graders increased significantly (up to 1.5% from 1.1% in 1999), probably due almost entirely to an increase in use without a needle, after which it declined significantly in 2001 (to 0.9%), and has evidenced little further change since then (0.6% in 2012).

  Beginning in 1995, the questions on heroin use were elaborated to differentiate use with and without a needle. As can be seen in Tables 5-6a through 5-6c, ***heroin use without a needle*** has accounted for much of the lifetime prevalence of heroin use among 12th graders since 1995. About one fourth of the users have used heroin both ways, but of the remainder, in general about two to five times as many have used heroin without a needle. (The ratios are different in the lower grades, as will be discussed later.) In 2008 there was a decline in use without a needle, reducing the difference between the two methods of

[63]As described in the previous chapter, the replacement of barbiturates by other non-barbiturate sedatives in recent years probably makes "barbiturates" a somewhat inappropriate label for the class of drugs being reported. Therefore, we have modified the title to "sedatives (barbiturates)."

use; there was little change in 2009, but in 2010 a significant increase was observed in annual ***heroin use with a needle***, from 0.3% to 0.7%. We withheld interpretation of this increase at the time because no similar change was observed in the other grades (and it does not take much sampling error to generate a change this small). We now think it is likely that there has been a real increase in this rate since 2009. The rate in 2011 was 0.6%, making both the 2010 and 2011 rates higher than any rate observed since 1995 (when a separate question about use with a needle was first introduced). Fortunately, this upward trend did not continue, and annual prevalence was down to 0.4% in 2012.

For the first 13 years of the study, the use of ***narcotics other than heroin*** remained quite stable, with annual prevalence fluctuating between 5.1% and 6.4% among 12th graders (see Figure 5-4k). There was a gradual decline in annual prevalence from 1987 (5.3%) to 1992 (3.3%). After 1992, as with so many drugs, use rose gradually, but steadily, more than doubling to 7.0% by 2000—the highest level seen since MTF began. The rate remained at 7.0% in 2002. Because the question text on half of the questionnaire forms was updated in 2002 with additional examples of narcotics other than heroin (to include OxyContin, Vicodin, and Percocet), we obtained a higher reported rate of use of other narcotics that year than with the older version of the question (9.4% versus 7.0%). (When we make a significant change in the wording of a question, we often use this sort of spliced design in which some respondents get the new version and others get the old version so that we can assess the impact of the wording change.) All questionnaire forms contained the new version of the question in 2003 and thereafter, and the observed rates remained essentially unchanged (9.3% in 2003 and 9.2% in 2009). Thus, after many years of steady increase, this important category of drugs finally seems to have leveled and possibly even declined some, because there was a non-significant 0.5 percentage point decline observed in 2010 (to 8.7%), no further change in 2011, and a non-significant decline to 7.9% in 2012. It is noteworthy that, although most other drugs showed some decline since the mid- to late-1990s, use of narcotics other than heroin continued to increase and did not show any decline until at least 2010.

Table E-4 in appendix E shows the trends for many of the ***specific narcotic drugs*** that make up this class. It shows some of the drugs responsible for the considerable rise in the overall class during the 1990s: ***codeine***, the annual prevalence of which rose from a low point of 1.0% in 1995 to 4.6% by 2004; ***opium***, which rose from a low of 0.4% in 1993 to 2.4% in 2003; and ***morphine***, which rose from a low of 0.2% in 1993 to 2.1% in 2004. The use of ***methadone*** and ***Demerol*** also rose during the 1990s, though their annual prevalence rates generally remained lower than the other three drugs.

Some additional drugs were added to this list in the 2002 questionnaire, including OxyContin, Vicodin, Percocet, Percodan, and Dilaudid. In the questionnaire form that asks about the larger set of specific narcotics as part of a branching question, in 2002 ***Vicodin*** had a prevalence level (4.1%) similar to codeine (4.4%), while the 2002 rates for the other new drugs on the list were lower—***OxyContin***, 1.6%; ***Percocet***, 1.9%; ***Percodan***, 0.6%; and ***Dilaudid***, 0.1%. Since then, Vicodin use rose some, and was at 4.3% in 2012. OxyContin use rose more and was at 3.0% in 2012; Percocet rose to 2.7%

in 2012. Percodan use changed rather little (0.5% in 2012); and Dilaudid use remained at negligible rates until it was dropped from MTF in 2007 (see Table E-4).

Although the statistics in Table E-4 may be useful in terms of tracking trends and telling us something about the *relative* popularity of these various drugs, experience with several drugs have taught us that students' answers on the *absolute* prevalence rates are likely to be higher if the question is not embedded in a branching question structure as these questions have been. Because two of these drugs were also included as separate "tripwire" questions (i.e., asking directly about the frequency of annual use), we can use responses to these questions to make a better estimate of the absolute prevalence rates. ***OxyContin*** use based on the tripwire question was higher in 2012 (at 4.3% annual prevalence) than it was for the embedded question (3.0%), though the trend line has been somewhat erratic. ***Vicodin*** showed little evidence of change in the free-standing question after 2002 (9.6% annual prevalence in 2002 and 9.7% in 2009) until 2010, when we observed a significant decline to 8.0%. It was at 8.1% in 2011 and 7.5% in 2012, while the prevalence rate from the embedded question was 4.3% in 2012. These prevalence rates are disturbingly high given the addictive potential of these two drugs; they are also appreciably higher than the rates derived from the branching questions.

- ***Hallucinogen*** use among 12th graders (unadjusted for underreporting of PCP) declined some in the mid-1970s (Figure 5-4f) from an annual prevalence of 11.2% in 1975 to 9.6% in 1978. This may well have been the tail end of a longer period of decline precipitated by rising concerns about the adverse effects of hallucinogens—particularly LSD—and especially concerns about possible brain and genetic damage. The use of hallucinogens (unadjusted for PCP use) then leveled for several years before beginning another sustained decline. The first hallucinogen figures adjusted for the underreporting of PCP use were available in 1979. Between then and 1984, annual prevalence of hallucinogens (adjusted) declined steadily from 11.8% to 7.3%. The rate remained fairly level through 1986, dropped a little more through 1988, and then remained level again through 1992. In 1993 this pattern of irregular declines ended, as (adjusted) annual prevalence rose significantly from 6.2% in 1992 to 10.7% by 1996, along with the use of other illicit drugs. Since 1996, use has declined by more than half, to 5.0% in 2012 based on a revised version of the question.[64] Without that question change, the decline would have been even greater.

- ***LSD***, one of the major drugs in the hallucinogen class, showed a modest decline in use among 12th graders from 1975 to 1977, followed by considerable stability through 1981 (Figure 5-4g). Between 1981 and 1985, there was a second period of gradual decline, with annual prevalence of use falling from 6.5% to 4.4%. However, after 1985, annual prevalence began to rise very gradually to 5.6% by 1992, making it one of the few drugs to show a rise in use prior to the relapse period in the overall drug epidemic. The increase continued through 1996, with annual prevalence reaching 8.8%, double the low point in

[64]In 2001 the question text for "other hallucinogens" was changed in half the questionnaire forms, with the term "other hallucinogens" replacing the older term "other psychedelics" and the word "shrooms" being added to the list of examples. (Shrooms is a street name for psilocybin, also called "magic mushrooms".) This had the effect of increasing reported use of this class of drugs. These changes were incorporated into all questionnaire forms beginning in 2002. The data for "other hallucinogens" and the derivative measures of "hallucinogens" and "any illicit drug other than marijuana" were based on the new question in the 2001 estimates and in all subsequent years.

1985. After 1996, annual prevalence declined, including sharp decreases in 2002 and 2003, reaching 1.7% in 2006, the lowest LSD prevalence rate recorded since MTF began. By 2012 the rate was up slightly to 2.4%, having risen by a significant 0.7 percentage points in 2010. We believe that the decline prior to 2002 might have resulted in part from a displacement of LSD by sharply rising ecstasy use. After 2001, when ecstasy use itself began to decline, the sharp further decline in LSD use likely resulted from a drop in the availability of LSD, because attitudes generally have not moved in a way that could explain the fall in use, while perceived availability has.

- The use of the hallucinogen ***PCP*** showed a very sharp decline among 12th graders after 1979, when use of this drug was first measured (see Figure 5-4f). Annual prevalence dropped from 7.0% in 1979 to 2.2% in 1982. After leveling for a few years, it dropped further to 1.3% in 1987, which is about where it remained until 1993. The speed with which this drug fell from popularity strongly suggests that it achieved a reputation as a dangerous drug very quickly. From 1993 to 1996, annual use increased—as did the use of most of the other illicit drugs—but only by a bit, to 2.6% by 1996. Also, as with most other drugs, the increase halted in 1997. By 2010 the annual prevalence for 12th graders was down to 1.0%, about four tenths of the recent peak rate of 2.6% in 1996. It stands at 0.9% in 2012.

- Table E-1 in appendix E shows trends for a number of specific ***hallucinogenic*** drugs. In the early years of MTF, ***mescaline***, ***concentrated THC***, ***peyote***, and ***PCP*** were far more widely used than they are today.

- ***Concentrated THC*** was at a peak annual prevalence of 5.7% in 1977, but fell to about 1% by 1984 and has varied relatively little since, although there was a slight upward surge in the mid-1990s. It stood at 1.5% in 2012.

- ***Mescaline*** was at a 5% peak from 1976 through 1978 (and possibly earlier), but fell below 1% by 1988 and has varied rather little since. Annual prevalence was 0.5% in 2012.

- ***Peyote*** use was at 1.8% annual prevalence at the first measurement in 1976 and by 1982 had fallen to 0.6%, about where it has remained since (0.5% in 2012).

- ***Psilocybin***, derived from mushrooms, also showed a decline in use among 12th graders between the mid-1970s and early 1980s, followed by a long period of low levels of reported use. Use rose from 1992 to 1996, however, along with use of many other drugs, before leveling again. But it is clear from the 2001 modification of the psilocybin question stem to include the popular term “shrooms” that many users no longer know the drug as psilocybin. The prevalence rate more than tripled between 2000 and 2001, jumping from 1.4% to 4.9%, even though use levels were stable immediately before and after the wording change. We believe that all of this increase was an artifact of the revision of the question, which clarified the meaning of psilocybin and led users to answer more accurately (for both the psilocybin question and the question about their use of hallucinogens other than LSD). Use reached a peak of 5.7% in 2004, then declined

some and has been about 4% in the last five years (4.4% in 2012). Psilocybin has been the most widely used drug in the general class of hallucinogens other than LSD after the question on use of the class was revised in 2001, and by a considerable margin.

- ***Ecstasy (MDMA***) had been in the surveys of young adults for several years before we added it in 1996 to the questionnaires given to secondary school students. (We had been concerned about the possibility of stimulating an interest among secondary school students in a previously little-known drug—particularly given its alluring name.) The trend story for this drug has been fairly dramatic. In 1996, we found that 6.1% of 12th graders had tried the drug and that 4.6% reported use in the prior 12 months. Annual prevalence fell to 3.6% in 1998, but in 1999 it increased sharply to 5.6% and then rose sharply again in 2000 to 8.2%. Use peaked in 2001 at 9.2%, thus showing nearly a tripling of the prevalence rate over a three-year period. Use then declined very sharply over the next few years, reaching 3.0% in 2005—one third what it was in 2001. Use rose gradually after 2005 and stood at 5.3% % in 2011, before declining significantly in 2012

  Chapter 8 shows that 12 graders' perceived risk for ecstasy jumped substantially in 2001 (from 38% in 2000 to 46%), likely helping to explain the deceleration in the rise in use that year. However, we know from other analyses that ecstasy was still diffusing to more communities in 2001, partially explaining the continued rise in use despite the increase in perceived risk. (As *Volume II* reveals, this dramatic increase in use through 2001 was not confined to teenagers.) The 2001 increases in perceived risk led us to predict the downturn in use that did in fact begin to occur in 2002—once again demonstrating the importance of these beliefs, both in restraining drug use *and* in allowing us to predict forthcoming changes in drug use. Perceived risk increased sharply again in 2002 and 2003 as use plummeted; but after 2003 the increase in risk was more gradual, reaching 60% by 2005, compared to 34% when it was first measured in 1997. Perceived risk has been dropping in recent years (to 49% by 2012, including a significant 3.7-percentage-point drop in 2009). The reported availability of ecstasy, which had risen substantially in the 1990s, probably played a role in its sudden resurgence. Perceived availability dropped modestly from 2001 to 2003, then took a large drop of almost ten percentage points in 2004, another large eight-percentage-point drop in 2005, and a seven-percentage-point drop in 2009 (see chapter 9). There has been little change since. Part of this decline in availability is probably due to there being so many fewer users from whom to get the drug. Availability did not begin to drop until use did, and it dropped more gradually than use. Because ecstasy was particularly popular at "raves" and dance clubs during its ascent in popularity, it is considered one of the "club drugs." Based on mass media reports, it appears that the rave phenomenon diminished and/or changed considerably after 2001.

- ***Rohypnol***, another "club drug," was added to MTF in 1996, in part because of the extensive publicity it received as a "date rape" drug. The annual prevalence rate among 12th graders has remained low (between 0.8% and 1.6%) in the years since, no doubt in part due to the early and extensive negative publicity it received. The peak prevalence of 1.4% occurred in 1998; use was down to 0.9% by 2001. As an economy measure, in 2002 the standard triplet question (asking about lifetime, past-year, and past-month use of Rohypnol) was replaced with a tripwire question asking only about use in the past year.

As a result of this change in the structure and location of the question, the 2002 annual prevalence (1.6%) is not necessarily comparable to the 2001 annual prevalence estimate (0.9%). Use of Rohypnol stood at 1.5% in 2012, about where it was a decade earlier (see Figure 5-4l).

- Use of ***steroids***, specifically anabolic steroids, has been included in MTF since 1989. Until 2009, the question was preceded by an introduction that stated, "Steroids, or anabolic steroids, are sometimes prescribed by doctors to promote healing from certain types of injuries. Some athletes, and others, have used them to try to increase muscle development." Since 2009, the slightly revised introduction has been, "Anabolic steroids are prescription drugs sometimes prescribed by doctors to treat certain conditions. Some athletes, and others, have used them to try to increase muscle development." The question then asks, "On how many occasions have you taken steroids on your own—that is, without a doctor telling you to take them?" Because the earlier version did not explicitly state that they must be prescription-controlled substances, we believe it likely that some respondents included what had been over-the-counter compounds like androstenedione in their answers. However, some special analyses presented in chapter 4 indicate that it has tended to be a limited number of self-reported steroid users who also reported using androstenedione in the same year (19%, 46%, and 39% of steroid users in grades 8, 10, and 12 in 2012). Among 12th graders, annual prevalence of steroid use stood at 1.9% in 1989, fell to a low of 1.1% by 1992, and then rose a little during the remainder of the 1990s to 1.8% by 1999. Use leveled in grade 12 at 1.7% in 2000, then rose significantly to 2.4% in 2001, and leveled again in 2002 at 2.5%, where it remained in 2004. However, in 2005 there was a significant drop in steroid prevalence to 1.5%, about where it remained through 2012 (1.3%; see Figure 5-4q).[65] The surge in use among 12th graders likely reflected a cohort effect as the increase in use among 10th graders from 1998–2000—discussed below—worked its way up the age spectrum. (See chapter 10 for information on two other substances used for physical enhancement—***androstenedione*** and ***creatine***.)

- As these varied patterns of use show, the overall proportion of 12th graders using ***any illicit drugs other than marijuana*** in their lifetime has changed over the years, but the mix of drugs they use has changed even more. A number of drug classes showed dramatic declines (particularly in the 1980s), some showed substantial increases, and some remained fairly stable. Further, the periods in which they either increased or decreased varied considerably, although between 1992 and 1996 the use of many drugs increased and by 1997 the use of most had stabilized. Since then, most have declined in use to some degree, sometimes very sharply, as was seen with LSD and ecstasy; however, this is not true of all illicit drugs, as the use of narcotics other than heroin illustrates.

- With respect to the licit drugs, in the last half of the 1970s there was a small upward shift in the prevalence of ***alcohol*** use among 12th graders (see Figure 5-4m). To illustrate,

[65]In late 2004 the Anabolic Steroid Control Act of 2004 was passed, giving the Drug Enforcement Administration authority to schedule a wide range of products as Schedule III controlled substances. The act became effective in January of 2006, rendering most steroids as illegal to sell or possess.

between 1975 and 1979 the annual prevalence-of-use rate rose steadily from 85% to 88%, the monthly rate from 68% to 72%, and the daily rate from 5.7% to 6.9%. As with marijuana, 1979 was the peak year for annual use of alcohol. Over the next six years, between 1979 and 1985, alcohol prevalence rates fell gradually. Annual prevalence fell from 88% to 86%, monthly from 72% to 66%, and daily from 6.9% to 5.0%. All three rates remained fairly level from about 1985 to 1987, after which they showed further decline. Thirty-day prevalence, for example, fell from 66% in 1987 to 51% in 1992, down by more than a quarter from its peak level in 1978 (72%). The prevalence of daily alcohol use fell from 4.8% to 3.4% between 1987 and 1992, followed by a sharper drop to 2.5% in 1993 (based on the original form of the question)—down by almost two thirds from its peak level in 1979 (6.9%). In 1994, utilizing a slightly revised set of alcohol usage questions,[66] no further declines were seen. (If anything, use appeared to increase, though none of the changes reached statistical significance.) From 1993 through 1997, as many forms of illicit drug use rose, there was also a slight upward drift in the annual, 30-day, and daily prevalence-of-use rates for alcohol. Since 1997 there has been a steady downward drift in annual and 30-day use; after a significant decline in 30-day use in 2010, it was at 40% in 2011, the lowest level recorded during the life of the study. Compared with a high of 53% (for the revised question) registered in 1997, this constituted a drop of about one fourth. The decline did not continue into 2012, when there was a non-significant increase to 42%.

- ***Daily drinking*** among 12th graders, after reaching a recent peak of 3.9% in 1997 and 1998, declined by about a third in the following years, to 2.7% by 2010. In 2011 daily drinking decreased significantly to 2.1%, again a record low in the life of the study; but in 2012 there was a non-significant increase to 2.5%.

- A similar pattern was observed in the prevalence of ***occasions of heavy drinking*** (Table 5-4 and Figure 5-4n). When asked whether they had had five or more drinks in a row during the prior two weeks, 37% of 12th graders in 1975 said they had. This proportion rose gradually to a peak of 41% by 1979, and remained at this peak level through 1983. In both 1984 and 1985, we observed drops of two percentage points in this troublesome statistic, bringing it down to 37%, exactly where it had been in 1975. There was no further change in 1986 or 1987, but over the next six years it dropped another 10 percentage points, from 38% in 1987 to 28% in 1993—two thirds of its peak level. After 1992, it increased gradually and modestly along with most of the illicit drugs, reaching 32% by 1998; then declined to 28% by 2003 and 22% in 2011—the lowest rate attained during the 37-year life of the study. The decline did not continue in 2012, when the rate rose significantly to 24%. Obviously some important and substantial reductions in teenage binge drinking occurred in the 1980s along with some further declines after 1998. We discuss some of the likely reasons for these important changes in chapter 8.

[66]A slight revision was introduced in the question wording in three of the six forms in 1993, and in the three remaining forms beginning in 1994. It added the qualifier of "more than just a few sips" to the definition of a drink of an alcoholic beverage. Figures 5-4m and 5-5b show the extent of the correction that resulted for annual and daily use. For 12th graders, it was a relatively small correction.

- Beginning in 1991, respondents were asked to report how often they had ***been drunk*** in their lifetime, the past 12 months, and the past 30 days. Among 12th graders, 30-day prevalence of self-reported drunkenness showed declines between 1991 and 1993 (from 32% to 29%), followed by gradual increases through 1997 (34%), as would be expected given the data above (Tables 5-1 through 5-4 and Figure 5-4m). This rate stood at 25% in 2011, the lowest rate since the question was added; but it increased to 28% in 2012.

- Note that there is no evidence that the 13-year decline in ***marijuana*** use observed between 1979 and 1992 led to any accompanying increase in ***alcohol*** use, as many observers suggested would happen. In fact, through 1992 there was some parallel decline in annual, monthly, and daily alcohol use, as well as in occasions of heavy drinking among 12th graders. Earlier, when marijuana use rose in the late 1970s, alcohol use moved up along with it. As marijuana use rose again in the 1990s, alcohol use again rose with it, although certainly not as sharply. In sum, there has been little evidence from MTF over the years that supports what we have termed "the displacement hypothesis," which asserts that an increase in marijuana use will somehow lead to a decline in alcohol use, or vice versa. Instead, both substances appear to move more in harmony, perhaps both reflecting changes in a more general construct, such as the tendency to use psychoactive substances, whether licit or illicit, or the frequency with which teens "party" or not. However, with alcohol use decreasing and marijuana use increasing over the past few years, it is possible that the displacement hypothesis is gaining some support, although the increase in alcohol use in the upper grades in 2012 weakens the case. Our continued monitoring will provide the needed evidence about the displacement hypothesis in this important historical period during which marijuana laws are changing in the direction of legalized medical marijuana use and now legalized recreational use.

- A category of alcoholic beverage that emerged during the life of the study is ***flavored alcoholic beverages***, sometimes called "alcopops" or "malternatives" (because their alcohol content often derives from malt). A single tripwire question, asking about the frequency of use in the past 12 months, was introduced in 2003 to determine how widespread the use of these beverages was. (The question text was: "During the last 12 months, on how many occasions [if any] have you drunk flavored alcoholic beverages, sometimes called 'alcopops' [like Mike's Hard Lemonade, Skyy Blue, Smirnoff Ice, Zima]? Do not include regular liquor, beer, wine, or wine coolers.") In 2003 the annual prevalence was 55% among 12th graders. Because of this high level of use, we introduced more extensive measurement of the use (i.e., the standard questions about use in lifetime, past 12 months and past 30 days) of these beverages into the 2004 questionnaires. (The question text was revised: "On how many occasions, if any, have you had flavored alcoholic beverages like Mike's Hard Lemonade, Skyy Blue, Smirnoff Ice, Zima, Bacardi Silver, wine coolers, etc. to drink—more than just a few sips. Do not include regular liquor, beer, or wine.") The annual prevalence of use was about the same in 2004 (56%) and it rose slightly in 2005 (58%), after which it declined to 53% by 2009 and then to 44% by 2012 (see Table 5-5b). Thirty-day prevalence in 2012 was 22% while lifetime prevalence was 61%. Clearly this class of alcoholic beverage has made inroads into the youth market, with the proportions reporting any use in just the prior month at 8%, 16%, and 22% in grades 8, 10, and 12, respectively, in 2012, representing substantial

proportions of underage youth drinking flavored alcoholic beverages. However, their use has been declining since 2005. It should be noted that females are somewhat more likely than males to drink these beverages, though significant numbers of both genders drink them.

Use levels of the various other specific classes of alcoholic beverages—***beer***, ***wine***, ***wine coolers***, and ***liquor***, are reported in Occasional Paper 79 (see Tables 93 through 106) at http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf . Table 95 shows that there has been quite a substantial drop in the current prevalence of ***beer*** consumption among 12th graders. Thirty-day prevalence fell from 64% in 1979 to 42% by 1992, increased a bit to 47% by 1996 (when the use of most substances increased), and fell to 29% by 2011 (the lowest value ever reported). There was a reversal of the trend in 2012 with a non-significant increase to 32%. ***Occasions of heavy beer drinking*** (having five or more cans or bottles of beer in a row on at least one occasion in the prior two weeks) fell from 38% in 1983 to 25% in 1992, rose some to 29% by 1996 before falling again to 17% by 2011—again, the lowest rate seen since this variable was first measured in 1976 and less than half the peak level observed in 1983. There was a reversal on this measure in 2012, as well, to 19% (a non-significant increase).

- Trends in the consumption of ***hard liquor*** among 12th graders follow a pattern similar to those for beer, although the fluctuations are not as large. Thirty-day prevalence declined appreciably, from 48% in 1980 to 29% by 1992, before rising briefly to 37% in 1998 during the relapse phase in the illicit drug epidemic, and then falling again to 34% by 2003. The observed rate was down to 30% by 2010 and 2011 and then 31% in 2012. The proportion reporting ***occasions of heavy liquor consumption*** (five or more drinks in a row in the prior two weeks) has fluctuated less than occasions of heavy beer drinking, ranging from a low of 16% in 1992 to a high of 26% in 2002. While seniors in the 1970s and 1980s were much more likely to report occasions of heavy beer drinking than heavy liquor drinking, seniors in the class of 2012 reported similar levels of heavy liquor drinking (22%) and heavy beer drinking (19%).

- The trend results for ***wine*** are less clear because in 1988 a new question about wine coolers was introduced, which had the effect of sharply reducing self-reported wine use. (No doubt, up to that point many users of wine coolers reported such use under wine.) Reported 30-day prevalence of wine use fell modestly from 38% in 1982 to 34% in 1987. After the introduction of the wine cooler question, reported wine use fell to 23% in 1988 and then declined to 14% by 1994. It then rose slightly to 18% by 1996 (when the use of many substances was rising) before declining again to 13% in 2002. By 2011, reported wine use had fallen still further to 10%, about where it stands in 2012 (11%). Lower proportions of 12th graders engage in ***occasions of heavy wine consumption*** than heavy beer or liquor consumption. The high point was in 1982 at 15%, and the low point in 2011 at 3.5%. Similar to other measures of alcohol use, there was a slight increase in 2012 (to 3.9%—a non-significant change).

- Self-reported use of ***wine coolers*** began at quite a high level when the question was first introduced in 1988, at 37% for 30-day prevalence. However, use began to decline

immediately and fell by nearly half to 19% by 1993, rose slightly to 21% by 1995 as use of a number of drugs increased, and then declined to 10% in 2011—about a fourth of what it was in 1988. In 2012, there was a slight increase to 11%. As with wine, ***heavy wine cooler consumption*** is not as common as heavy consumption of beer or liquor. The high rate of 14% was observed in 1988, while the low was in 2011 at 4.9%, reflecting a decline of about two thirds. It stood at 5.4% in 2012.

- ***Cigarette*** use among 12th graders peaked in 1976 and 1977, as measured by lifetime, 30-day, and daily prevalence. (Annual prevalence of use is not asked.) Over the next four years, 30-day prevalence dropped substantially, from 38% in the class of 1977 to 29% in the class of 1981 (see Table 5-3 and Figure 5-4o). More importantly, ***daily cigarette use*** dropped over that same interval from 29% to 20%, and daily use of a half pack or more dropped from 19% to 14%. But by 1982 and 1983, the decline had clearly halted. The earlier decline resumed briefly in 1984; daily use fell from 21% (in 1983) to 19%, and daily use of a half pack or more dropped from 14% to 12%. Little changed in the eight years between 1984 and 1992: 30-day prevalence fell from 29% to 28%, daily use from 19% to 17%, and daily use of a half pack or more from 12% to 10%. Despite a variety of changes that occurred during this eight-year period—including a general decline in the use of most other drugs, declines in smoking rates among adults, increasingly restrictive legislation with regard to smoking debated and enacted at state and local levels, and prevention efforts made in many school systems—there was a noteworthy lack of any appreciable reduction in teen smoking rates. After 1992, both the 30-day smoking rate and the current daily smoking rate actually rose significantly among 12th graders, with monthly use increasing steadily from 28% in 1992 to 37% by 1997 (an increase of one third), and daily use increasing from 17% to 25% (an increase of about one half). Finally, by 1998, a turnaround of this upward trend began to emerge, and accelerated in 2000. Thirty-day prevalence fell significantly from 37% in 1997 to 22% by 2006, remained there in 2007, and fell again to 20% in 2008. Daily prevalence also fell very substantially from a recent peak of 25% in 1997 to 12% by 2006 and 2007, and then to 11% in 2008. We said in 2007 that, "whether the decline in 12th grade has really halted or will continue, as would be predicted from the presence of a cohort effect, should be clarified with another year's data." The data from 2008 through 2012 indicate that the decline has continued, albeit slowly, with 30-day prevalence reaching 17.1% in 2012 (down from 21.6% in 2007) and daily prevalence reaching 9.3% (compared to 12.3% in 2007). A rise in the federal taxes in 2009 on cigarettes and other tobacco products may have influenced the trends observed after that.

  The intense public debate in the late 1990s over cigarette policies likely played an important role in bringing about the very significant downturn in adolescent smoking. MTF helped to give rise to that debate as it publicly reported in the first half of the 1990s that the rate of smoking among U.S. adolescents was rising sharply—results that were widely covered in the national media. Other developments likely have contributed, including (a) increases in cigarette prices, brought about in part by the tobacco industry settlement with the states and also by state-level taxing decisions; (b) substantially increased prevention activities, including antismoking ad campaigns in a number of states; (c) the removal of certain types of advertising (including billboards) as well as the

Joe Camel campaign nationwide under the terms of the tobacco settlement; (d) the initiation of a national antismoking ad campaign by the American Legacy Foundation, which was created under the conditions of the tobacco Master Settlement Agreement of 1998; and (e) efforts by the Food and Drug Administration (FDA), in cooperation with the states, to reduce youth access to cigarettes. (The FDA effort was eventually brought to an end by a ruling of the Supreme Court, but it appears that the effort has continued at the state level, judging by the decline in reported cigarette availability by 8th and 10th graders.)

- Questions about the use of ***smokeless tobacco*** (Figure 5-4p) were first introduced in 1986, omitted in 1990 and 1991, and then reintroduced in 1992. Through 2010, the examples of smokeless tobacco provided were snuff, plug, dipping tobacco, and chewing tobacco; because of new forms of smokeless tobacco entering the market, the examples were changed in 2011 to include snuff, plug, dipping tobacco, chewing tobacco, snus, and dissolvable tobacco. Results show a high rate of use for the 12th-grade sample overall, particularly for males, who account for nearly all use. The trends for 1986 to 1989 showed a decline in use, with 30-day prevalence for all 12th graders falling steadily from 11.5% to 8.4%. When the questions were reintroduced in 1992, the usage rate (11.4%) almost matched the 1986 level. Use rose slightly to 12.2% in 1995, but then fell back by nearly half, to 6.5% by 2002. It then rose somewhat to 7.6% in 2005 before dropping back to 6.1% in 2006. Since 2006 there has been some rebound in the use of smokeless tobacco, with 30-day prevalence reaching 7.9% in 2012. In 2012, about one sixth (17%) of all 12th graders had tried smokeless tobacco in their lifetime, and 3.2% were current daily users. In sum, the use of smokeless tobacco has fallen substantially since 1995 among 12th graders, while their use of cigarettes has been falling since 1997. The decline in smokeless tobacco use appears to have ended in 2006 (with a 30-day prevalence of 6.1%), with some increase evident since then. The introduction and promotion of new smokeless products, including snus, may well be contributing to this increase.

TRENDS IN PREVALENCE OF USE, 1991–2012: EIGHTH AND TENTH GRADES WITH COMPARISON DATA FROM 12TH GRADE

To facilitate cross-grade comparisons, trend data for all three grades (8th, 10th, and 12th) are included in Tables 5-5a through 5-5d and Figures 5-4a through 5-4q. (Note that Tables 2-1 through 2-4 in chapter 2, "Key Findings: An Overview and Integration across Five Populations," augment Tables 5-5a through 5-5d with trend data on college students and young adults.) Our discussion of trends in use at 8th and 10th grades is limited to a shorter historical period than for 12th graders because data were first gathered from the younger students in 1991.

- Considered broadly, the trends for the use of ***illicit*** drugs in 8th-, 10th-, and 12th-grades have moved largely, though not completely, in parallel. From 1991 through 1996, this meant some increase in use at all grade levels for most drugs. (It is important to note, however, that 8th graders were the first to show an increase for many drugs in 1991–1992.) By 1997, the prevalence rates for most drugs had leveled off, or begun to level off, in all grades; in 1998 most rates (excluding the prescription-type drugs) showed some

decline in all grades. Just as the 8th graders were the first to show an increase in the early 1990s, they were also the first to show many of the decreases in the late 1990s. We believe that this pattern of younger teens first exhibiting many of the turnarounds in use indicates that they may be the most sensitive to new social forces. Because they are considerably less likely to have established usage patterns and attitudes, their behavior and related attitudes may simply be more malleable. They then carry those changes in their use into later grades as they age – a phenomenon termed a cohort effect; in this volume we discuss a number of such cohort effects, not only in behaviors but in attitudes as well.

- ***Marijuana*** use (Figure 5-4a) rose particularly sharply in the 1990s, starting with 8th graders, with annual prevalence tripling between 1991 and 1996, from 6.2% to 18.3%. In 1993, use rose significantly among 10th and 12th graders as well, and between 1992 and 1997, annual prevalence of use more than doubled among 10th graders, rising from 15% to 35%. It increased by more than two thirds, from 22% to 39%, among 12th graders. In 1997 the prevalence rates began to decline among 8th graders. (Figure 5-4a shows that the increase was decelerating in grades 10 and 12.) By 1998 the upper grades had started to decline as well. Eighth graders showed a fairly steady decline in marijuana use since their peak in 1996 (18% annual prevalence), dropping to 12% by 2004—a decline of one third. From 2004 to 2006, use was steady at 12%, and then declined significantly in 2007 to 10%, increasing slightly in both 2008 (to 11%) and 2009 (to 12%), then increasing significantly in 2010 (to 14%) before declining in 2011 and again in 2012 (to 11%). While both 10th and 12th graders have shown some decline since their peak annual prevalence rates in 1997 (of 35% and 39%, respectively), their progress has not been as steady or as large. Tenth grade use first declined significantly to 30% in 2002; and it declined further to 24% by 2008 but it has since increased to 28% by 2012. Use among 12th graders also declined from 2002 to 2006, but the decline appeared to stall in 2007, and has shown some increase since (to 36% in 2012). Clearly there was an end to the rapid rise in marijuana use among teenagers that began in the early 1990s, but whatever downturn has occurred since then has been fairly modest by comparison. It is important to note that these two directional changes observed so far have occurred among 8th graders first. As mentioned above, this suggests that 8th graders may be the most immediately responsive to changing influences in the larger social environment. The lag in the decline in the later grades likely reflects some cohort effects (i.e., lingering effects of changes in use that occurred when the students were in lower grades). The gradual decline in marijuana use that had been occurring for about a decade seems to have ended, and some upturns have now been observed in all three grades (although 8th grade has shown a decline in the last two years).

- ***Daily marijuana*** use also went up sharply in the 1990s in all three grades (see Figure 5-4a). In fact, in proportional terms, the increases were larger than those for annual prevalence. For the period 1992–1996, daily use among 8th graders increased, from 0.2% to 1.5%, before declining significantly to 1.1% in 1997. For the period 1992–1997, daily use among 10th graders rose more, from 0.8% to 3.7%, and among 12th graders it increased from 1.9% to 5.8%. After 1997 the daily prevalence rates remained relatively level in all grades for a while, illustrating how changes in daily use tend to lag behind

changes in annual prevalence; but for several years after the leveling, daily use declined some in all grades. The 12th graders were the last to begin the downward trend, as has often been the case. Daily marijuana use began to increase again among 8th graders after 2007, among 10th graders after 2008, and among 12th graders after 2009, with all three grades showing significant increases in 2010. This left the rates of daily prevalence in 2012 (1.1%, 3.5%, and 6.5%, respectively) well above where they were in 1992, just before the previous resurgence in use began. As noted earlier, one in every fifteen high school seniors in 2012 was a daily or near-daily marijuana user.

- Annual ***hallucinogen*** use (Figure 5-4f) rose in all three grade levels from 1991 to 1996, followed by some decline in all three grades from 1996 through 2000. In 2001 the question text was changed (which bumped up the trend lines slightly), but 10th and 12th graders continued to show further significant decreases in use between 2001 and 2003. There has been little systematic change since then. The two components of the hallucinogens class, LSD and hallucinogens other than LSD, generally followed the same pattern until a sharp decline in LSD use emerged after 1999, discussed below.

- The increase in ***LSD*** use in the early 1990s (Figure 5-4g) is of particular interest because LSD was one of the first drugs to decline in use in the long-term epidemic, almost surely due to growing concerns about its dangers in the early to mid-1970s. The subsequent increase in its use may reflect the effects of what we have labeled "generational forgetting"—that is, replacement cohorts know less than their predecessors about the potential dangers of LSD because they have had less exposure to the negative consequences of using the drug.[67] As described later, the downturn in LSD use in recent years has generally *not* been accompanied by the expected changes in perceived risk and disapproval, suggesting that the decline may be due more to a displacement by another drug, such as ecstasy, than to any increased aversion to LSD per se. In addition, the decline in reported availability of LSD since the mid-1990s very likely accounts for the more recent declines in use.

- Annual ***crack*** use was at quite low levels in 1991 (Table 5-5b and Figure 5-4h). It began to rise among 8th graders after 1991, among 10th graders after 1992, and among 12th graders after 1993. From these quite low rates, the annual prevalence-of-use rate roughly tripled among 8th graders (from 0.7% in 1991 to 2.1% in 1998) and 10th graders (from 0.9% in 1992 to 2.5% in 1998), and rose by two thirds among 12th graders (from 1.5% in 1993 to 2.7% in 1999). Crack was one of the very few drug classes still showing evidence of continued increase in 1998. After 1998, use gradually declined among 8th graders, from 2.1% annual prevalence in 1998 to 1.3% by 2004, and was still lower by 2012 (0.6%). Among 10th graders, annual prevalence of crack use fell from 2.5% in 1998 to 1.6% in 2003, when it leveled (1.7% in 2005) before again decreasing significantly (to 1.3% in 2006 and 0.8% by 2012). Twelfth graders' crack use reached a peak in 1999 and has declined since then (from 2.7% in 1999 to 1.2% by 2012).

[67]See Johnston, L. D. (1991). Toward a theory of drug epidemics. In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93–132). Hillsdale, NJ: Lawrence Erlbaum Associates. Available online at http://monitoringthefuture.org/pubs/chapters/ldj1991theory.pdf

- The use of ***other cocaine,*** almost all of which is powder cocaine, also rose some during the 1990s at all three grade levels, though it clearly did not attain the levels observed in the mid-1980s. Among 8th graders, annual prevalence of use rose from 1.0% in 1991 to 2.5% in 1996 before leveling. Use increased after 1992 in the upper grades, paused in 1998, and then increased in 1999. Between 1992 and 1999, the increases were from 1.7% to 4.4% among 10th graders and from 2.6% to 5.8% among 12th graders. Use declined from the recent peak level in 1998 in 8th grade (2.4%) down to 1.6% in 2004 before leveling and then falling further to 1.0% by 2012; in 10th grade from the recent peak level in 1999 (4.4%) down to 2.9% in 2006 before leveling (1.8% in 2012); and for 12th grade from the recent peak level in 1999 (5.8%) down to 4.5% in 2005 and 2.4% in 2012. Thus, both powder and crack cocaine use increased considerably in proportional terms during the 1990s; but because each started from a very low base, the absolute increases were relatively small, and neither class of drugs reached the levels they had attained among 12th graders in the mid-1980s. Since the late 1990s use of these two drugs has declined considerably.

- The use of ***amphetamines*** (Figure 5-4b) also increased at all three grade levels during the 1990s, reaching annual prevalence rates by 1996 of 9.1% for 8th graders (up from 6.2% in 1991), 12.4% for 10th graders (up from 8.2% in 1992), and 9.5% for 12th graders (up from 7.1% in 1992). Like several other drugs, the rise in amphetamine use appears to have begun a year earlier (in 1992) among 8th graders than among 10th and 12th graders. These trends diverged a little in 1997, as use fell significantly in 8th grade, leveled in 10th grade, and continued to increase in 12th grade. By 1998, and continuing into 1999, use among both 8th and 10th graders was declining, and use among 12th graders had leveled. Thus, we once again see a staggered inflection point in the trends, quite likely reflecting a cohort effect. In the lower two grades, use leveled in 2000. After 2002, use declined in all three grades for some time but has been followed by a recent increase in use among 12th graders. In 2011 use continued to rise among 12th graders while use continued to decrease among the 8th and 10th graders (significantly so for 10th graders); but in 2012 all three grades showed small, non-significant declines.

- Between 1991 and 1995, ***inhalant*** use (Figure 5-4c) rose by more than a third among 8th and 10th graders, with annual prevalence of use reaching 12.8% and 9.6%, respectively. (Recall that inhalant use tends to be higher in the lower grades.) Among 12th graders, use rose from 6.2% to 8.0% between 1992 and 1995. Between 1995 and 2002, however, inhalant use declined gradually at all grade levels, and the total decline was appreciable. The 2002 figures were, at the time, the lowest recorded by MTF for 8th and 10th graders. There was then a significant increase among 8th graders between 2002 and 2005 (9.5%); however, use has declined significantly since then, with the 2012 figure of 6.2% being the lowest recorded in the study. Use among 10th graders continued to decline in 2003 but showed modest increases through 2007 and a significant decline since then to 4.1% in 2012, also the lowest ever recorded. Use in 12th grade rose after 2002 but has shown some decline since 2004 (2.9% in 2012, again, the lowest ever recorded).

  As Figure 5-4c illustrates, inhalant use, unadjusted for the use of nitrite inhalants, had been on the rise among 12th graders for a long time. The same was likely true among 8th

and 10th graders, although our data on them cover only 1991 forward. The anti-inhalant campaign launched by the Partnership for a Drug-Free America in 1995 (partly in response to MTF results showing the increasing use) may have played an important role in reversing this troublesome long-term trend. (The perceived risk of inhalant use increased sharply between the 1995 and 1996 surveys, as discussed in chapter 8.) The declines in inhalant use continued into 2002 in all grades. However, in 2002, eighth graders' perceived risk of trying inhalants decreased significantly, which was followed by a significant increase in their use the next year; 10th graders' perceived risk of regular use also decreased significantly. Both grades have generally continued to show a decline or leveling in perceived risk since then, clearly illustrating that generational forgetting of the dangers of inhalant use has been occurring once again and may continue if the issue is not addressed.

- ***Tranquilizer*** use is not nearly as prevalent today as it was in 1975, but it showed a very gradual increase at all three grade levels in the early 1990s (see Table 5-5b and Figure 5-4d). From 1991 to 1996, annual prevalence increased at the 8th-grade level, from 1.8% to 3.3%, before starting a decline (reaching 2.5% in 1999). The increase at 10th and 12th grades started later and continued through 1999, before leveling: from 3.3% in 1994 to 5.4% in 1999 among 10th graders, and from 2.8% in 1992 to 5.8% in 1999 among 12th graders. This divergence over those three years between the downward trend for 8th graders and the continuing increase among 10th and 12th graders is quite unusual. However, it is consistent with the finding that 8th graders show greater and earlier declines in general. New questions that include Xanax as a specific example of a tranquilizer were introduced in 2000. Since 2001, all three grades have shown slight decreases in annual use: from 2.8% to 1.8% in 2012 among 8th graders; from 7.3% to 4.3% in 2012 among 10th graders; and from 7.7% to 5.3% in 2012 among 12th graders.

- There was a large proportional increase in ***heroin*** use between 1991 and 1996 at all three grade levels. Use temporarily peaked in 1996 among 8th graders, and a year later among 10th and 12th graders, doubling or tripling at each grade level (see Figure 5-4i and Table 5-5b). Usage rates then remained quite stable through 1999 before showing a divergence, with use declining significantly among 8th graders in 2000 while rising significantly among 12th graders. In 2001 significant declines were finally observed in the upper two grades as well. There have been only modest further declines since, but heroin use is now lower in all three grades than it was in the peak years of 1996 for 8th graders, 1997–2000 for 10th graders, and 2000 for 12th graders. In 2012 heroin use reached a recent low point in all three grades.

  As mentioned earlier, we believe that the availability of very pure heroin, which can be taken by means other than injection, contributed in an important way to the sharp rise in heroin use in the early 1990s. The importance by 1995 of this new form is documented in Tables 5-6a through 5-6c, which show for each grade the proportion of students (based on several prevalence periods) who used heroin either ***with or without a needle***, or both. For 8th graders, the tables show a rough equivalence between the two methods of administration from 1995 to 1999. Among 10th graders over the same time interval, somewhat more used heroin without than with a needle, with the difference being even

greater for 12th graders. But in 2001 all three grade levels showed significant declines in the proportion of students using heroin without a needle. The annual prevalence of heroin use without a needle has declined somewhat in all three grades since 2000; and the annual prevalence of using heroin both with and without a needle has declined some in the two lower grades since 1999.

- As noted above, ***ecstasy*** (***MDMA***) use fell in all grades from 1996 (when it was first measured) through 1998 (see Table 5-5a and Figure 5-4l). But in 1999, use increased significantly in the upper two grades—one of the more important increases to occur—in 1999. The 8th graders did not show this resurgence, however, until a year later, in 2000. A different dynamic seems to be at work for ecstasy than for most other drugs during this historical period, because it appears that the increase in use rippled *down* the age scale rather than the reverse; this may be because raves (which older teens would be more likely to attend) played an important role in its dispersion. Annual prevalence of ecstasy use rose some in all three grades in 2001, but by lesser amounts, suggesting a clear deceleration in the rise. In 2002, annual use finally reversed direction and fell in all three grades, though only the 10th-grade decline was statistically significant. In 2003 a sharper drop occurred that was significant in all three grades; in 2004 the declines in all three grades were quite modest and nonsignificant, and in 2005 only 12th graders showed any further decline, and that fell short of statistical significance. Since 2005, when use had reached a very low point in all three grades, there has been some modest rebound in the upper grades, and in 2010 a significant increase in grades 8 and 10. Clearly the very substantial decline in ecstasy use has ended, and we may be seeing a rebound in the use of this drug. In 2011 the picture was mixed, with use in 8th grade declining significantly, use in 10th grade remaining level, and use in 12th grade continuing to rise. However, in 2012 all grades showed significant declines in ecstasy use.

  We predicted the important turnaround in ecstasy use in 2002, given the sharp increase in perceived risk observed for ecstasy in 2001—an increase that continued into 2004. We believe that one reason ecstasy use did not decline in 2001, given the sharp change in perceived risk, was that it was still in the process of diffusing to a larger proportion of communities in the country. While the diffusion process continued into 2002—based on the proportions of schools having at least some lifetime use of ecstasy reported by the student sample—the changes in beliefs about harmfulness more than compensated for the diffusion. It is worth noting that ecstasy, in contrast to many of the other drugs, was not showing a pattern of change in either the increase or decline phases that typifies cohort effects. For the most part, the shifts were parallel across grades, or slightly lagged for 8th graders, which is more consistent with secular trends and possibly a downward diffusion.

- At all three grade levels, the annual prevalence of ***Rohypnol*** use remained fairly stable from 1996, when it was first measured, to 1998 (Figure 5-4l). Decline then followed in all three grades through 2000, resulting in annual prevalence rates that were quite low: 0.5% in 8th grade and 0.8% in both 10th and 12th grades. Since 2000 there has been little systematic change in Rohypnol use. (Note that in 2002, for 12th graders only, the question was relocated to a different questionnaire form, so change must be calculated

separately for the periods prior and subsequent to that change.) In 2012 the annual prevalence rates for the three grades were 0.4%, 0.5%, and 1.5%.

- In 2000, tripwire questions about ***Ketamine*** and ***GHB***, both "club drugs," were added to the questionnaires. Both showed little change in their relatively low usage levels through 2003. Since then use has declined in the lower two grades but is still at the 2003 rate in 12th grade. The annual prevalence rates for use of GHB in 2011 were 0.6%, 0.5%, and 1.4% in grades 8, 10, and 12, respectively; for Ketamine the corresponding rates were 0.8%, 1.2%, and 1.7%. Both drugs were at considerably lower rates of use than their recent peak levels among 8th and 10th graders, but their use was not down much among 12th graders. Because of the very low rates of use of these drugs by 2011, questions about their use were dropped from the questionnaires administered to 8th and 10th graders. In 2012, 12th graders had annual prevalence rates of 1.4% for GHB and 1.5% for Ketamine.

- The use of anabolic ***steroids*** among 8th and 10th graders fluctuated rather little between 1991 and 1998, but both grades showed a sharp and statistically significant rise in annual use in 1999 (Table 5-5b). As described in the later section in this chapter, "Trend Differences by Gender," this increase occurred almost entirely among boys. (Twelfth grade is the only grade level at which perceived risk for steroids was measured, and even though use by 12th graders did not jump in 1999, their perceived risk fell sharply that year and the next. It seems likely that perceived risk fell among 8th and 10th graders, as well, in which case it may well have contributed to the sudden increase in their use.) In 2000, only 10th graders showed a further increase (significant) in use, and in 2001 only 12th graders did so, possibly reflecting a cohort effect. Annual prevalence declined steadily among 8th graders since 2000, falling from 1.7% in 2000 to 0.5% in 2010 before increasing significantly to 0.7% in 2011 and 0.6% in 2012. It declined by more than half among 10th graders from 2.2% in 2002 to 0.8% in 2012. No decline occurred among 12th graders until 2005, when their annual prevalence rate fell (significantly) to 1.5%, leveled, and then dropped some to 1.2% in 2011 and 1.3% in 2012.

- ***Androstenedione*** and ***creatine***—two other substances used for enhancing athletic performance and appearance—are discussed at greater length in chapter 10 (see Tables 10-16a through 10-17c). They were first measured in 2001. By 2012 the use of androstenedione in all three grades was well below recent peak levels. The annual prevalence for using ***steroids*** and/or ***androstenedione*** was also down by half among 8th graders and by two thirds among 10th and 12th graders since 2001 when estimates were first available. In 2012 there were no significant changes in use in any of the three grades. Among 12th-grade boys, the proportion using either substance in the prior year reached impressively high levels (8.0% in 2001), after which it fell to 3.4% in 2006, about where it remained in 2010 before it decreased to 2.2% by 2012. Creatine use turned out to be even more widespread, with annual prevalence reaching 22% of 12th-grade boys in 2001; it has declined some since then and stood at 18% in 2012, leaving it still as a widely used substance for enhancing physique.

- From 1991 to 1993, the lifetime, annual, and 30-day prevalence measures for ***alcohol*** (Figure 5-4m) showed small declines in all three grades (except for 30-day use among 8th graders). Annual and 30-day rates then drifted upward between 1993 and 1996 among 8th and 10th graders, and between 1993 and 1997 among 12th graders. (This corresponds to the period in which the use of a number of illicit drugs, and even cigarettes, was rising.) Between 1996 and 2001, there was some decline in drinking among 8th graders (e.g., 30-day prevalence dropped from 26% in 1996 to 22% in 2001), but not much change in the upper grades. In 2002, alcohol use for 8th and 10th graders decreased significantly for all prevalence periods (lifetime, annual, and 30-day). Twelfth graders' use of alcohol also decreased, though the changes were not statistically significant that year. Since 2002 there has been a modest further decline in 30-day drinking in all three grades, though in a somewhat staggered pattern. All three grades showed further declines in 2011 (none statistically significant), reaching historical lows over the life of the study. In 2012 use among 8th graders continued to decline significantly, but 10th and 12th graders both showed non-significant increases.

- ***Occasions of heavy drinking*** (Figure 5-4n)—defined as having five or more drinks in a row at least once in the prior two weeks—had been rising gradually among 8th graders after 1991, among 10th graders after 1992, and among 12th graders after 1993, again reflecting a cohort effect underway. After rising three to four percentage points at each grade level, this measure began to decline in 8th grade after 1996, in 10th grade after 1997, and in 12th grade after 1998; but it changed rather little during the next several years. Among 8th graders, occasions of heavy drinking have now decreased from 13% in 1999 to 5% in 2012; among 10th graders they decreased from 24% in 2000 to 15% in 2011 before rising to 16% in 2012; and among 12th graders they decreased from 32% in 1998 to 22% in 2011 before rising to 24% in 2012. The substantial declines in 2011 were enough to reach historical lows in the life of the study for 10th and 12th graders in 2011 and for 8th graders in 2012.

- Students' reports of ***having been drunk*** in the past 30 days show a roughly similar pattern (Table 5-5c).

- Information on trends in use of the various classes of alcoholic beverages—***beer***, ***wine***, ***wine coolers***, ***flavored alcoholic beverages***, and ***liquor***—may be found in Occasional Paper 79, in Tables 93 through 109. (Note that 8th- and 10th-grade questionnaires did not contain separate questions about use of wine or liquor, and questions about wine coolers for these grades were dropped in 2003.)

- ***Cigarette*** smoking is generally not expected to move synchronously across the three grade levels, because changes have usually been the result of cohort effects rather than secular trends (see chapter 6 for a further discussion of this point). However, the prevalence of current smoking began to rise among 8th and 10th graders after 1991 and among 12th graders after 1992, and until 1996 it had been moving steadily upward in all three grades (see Figure 5-4o). In 1996, current smoking peaked in grades 8 and 10, and peaked a year later among 12th graders. The proportional increases in smoking rates were

considerable during this period—about a 50% increase in the two lower grades and a 31% increase in 12th grade.

Because of this general parallel movement, which is more characteristic of a secular trend, we are inclined to look for some contemporaneous historical correlates to explain the changes in this period. One possible explanation is that use rose because cigarette prices dropped on average due to increased price competition among brands. Another is that cigarette advertising and promotion had grown and/or become more effective at reaching youth. Still a third possibility is that the portrayal of smoking had increased appreciably in the entertainment media, particularly in movies. Some evidence points to all three of these changes in the social environment as possible influences; but whatever the specific causes, they seemed to have reached young people across the spectrum. Therefore, we infer that the changes observed in cigarette use were part of a secular trend. It is interesting that cigarettes, which normally reflect cohort differences, began to exhibit a secular trend in the same historical period that illicit drugs, which normally exhibit secular trends, began to show cohort effects.

In 1997 the 30-day smoking rate declined among 8th graders, leveled among 10th graders, and increased among 12th graders; but by 1998 there was evidence of a decline in all three grades, one that continued into 2003. In 2004 the decline continued in the lower grades, but at a much decelerated rate. As mentioned earlier, we think that the extensive adverse publicity generated by the President, Congress, and the state attorneys general in the debate over a possible legal settlement with the tobacco companies contributed importantly to this turnaround by influencing youth attitudes toward cigarette companies and their products. Substantial price increases, the removal of some forms of advertising (such as billboard advertising and the Joe Camel campaign), the implementation of vigorous antismoking advertising (particularly that launched by the American Legacy Foundation and some of the states), and strong prevention programs in some states all may have contributed. (Our own measures of attitudes toward smoking and smokers showed considerable movement in a negative direction during this period.)[68] Whatever the causes, the rates of cigarette smoking were at historically low levels for all three grades in 2012. Despite the substantial recent declines, however, a considerable proportion of students reported smoking; current (30-day) smoking rates in 2012 remained high at 5% of 8th graders, 11% of 10th graders, and 17% of 12th graders. In recent years the decline in smoking decelerated considerably in all three grades. In fact, in 2010 the two lower grades actually showed a non-significant increase in prevalence, and only the 12th grade showed any further decline (also non-significant; and we warned of a possible turnaround in adolescent smoking rates). Fortunately, further decline occurred in 2011 and 2012 in all three grades, possibly as a result of an increase in the federal tobacco tax that was enacted in 2009.

[68]Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (December 14, 2009). "Smoking continues gradual decline among U.S. teens, smokeless tobacco threatens a comeback." University of Michigan News Service: Ann Arbor, MI. Available at *http://www.monitoringthefuture.org/data/09data.html#2009data-cigs*.

While there may have been some increase in the use of ***smokeless tobacco*** in the early 1990s (Figure 5-4p), there was evidence of a fair decline in subsequent years at all three grades through 2002. The results since 2003 suggested that this decline had ended in all grades, and that a turnaround in the use of smokeless tobacco was underway, likely due to the introduction of newer products like snus. However, in 2011 all three grades showed some decline in use, again possibly as a result of the increase in the federal tobacco tax. In 2012 there were further, non-significant declines in smokeless tobacco use in all three grades.

TRENDS IN NONCONTINUATION RATES: TWELFTH GRADERS

Table 5-7a shows how the noncontinuation rates observed for the various classes of drugs have changed over time among 12th graders. "Noncontinuation" refers to not using a drug in the prior 12 months after having used it at some earlier time in one's life. In other words, the noncontinuation rate is the percent of lifetime users who did not report using the drug in the past 12 months.

- ***Marijuana*** has the lowest rate of noncontinuation of any of the illicit drugs (Table 5-7a). It had some increase in noncontinuation rates between 1979 (16%) and 1984 (27%). This increase contributed to the greater drop in annual compared to lifetime prevalence of use, because the latter is influenced only by changes in the initiation rate, whereas the former is influenced by both the initiation *and* noncontinuation rates. Between 1984 and 1987, noncontinuation rates for marijuana leveled among 12th graders, followed by another rise to 35% in 1991, and then a sharp fall to 17% by 1995 as annual and 30-day prevalence-of-use rates climbed substantially during the 1990s. By 1998 the noncontinuation rate among 12th graders had reached 24%, about where it has remained through 2008 (24%); it has declined some since then (20% in 2012) as marijuana use has been increasing.

- The noncontinuation rate for ***cocaine*** use among 12th graders decreased from 38% in 1976 to 22% in 1979, corresponding to, as well as contributing to, a period of increase in the annual prevalence of use. It then remained fairly stable through 1986, corresponding to a period of stability in prevalence of use. After 1986 the noncontinuation rate rose very substantially—from 25% in 1986 to 55% in 1991—as the annual prevalence of use fell dramatically. This pattern strongly suggests that the sharp increase in perceived risk, which began in 1986, influenced both the initiation rate *and* the noncontinuation rate. After 1991, during the relapse phase in the epidemic, the noncontinuation rate began declining fairly rapidly once again, reaching 31% by 1996. (The prevalence of cocaine use overall was increasing during that period.) After 1996, the noncontinuation rate rose again—corresponding to a period of leveling in overall use—reaching 42% by 2000. It stood at 44% in 2012. In sum, changes in the noncontinuation rate have contributed very appreciably to the overall changes, both increases and decreases, in the prevalence of cocaine use over the past three decades.

- ***Crack cocaine*** also showed a dramatic rise in noncontinuation, from 28% in 1987 to 52% in 1991, as prevalence-of-use rates declined among 12th graders. The noncontinuation

rate fell back to 30% by 1995 as usage rates rose, and then began to increase once again, reaching 43% by 1998, when overall use leveled. It stood at 43% in 2012.

- Noncontinuation of ***amphetamine*** use has also fluctuated widely over the years among 12th graders. It rose between 1982 (27%) and 1992 (49%) as use declined. (Earlier data, based on the unrevised amphetamine questions, suggest that the change probably began after 1981.) Between 1992 and 1996, when overall use was rising, noncontinuation fell from 49% to 38%, then remained fairly level, corresponding to a period of leveling in use, before declining further to 34% by 2012 as use has increased some through 2011. There was a leveling of use in 2012 (-0.3, not significant).

- Much of the decline in ***sedative*** use during the 1980s was also accounted for by increasing rates of noncontinuation for the specific substances in this class. For example, in the case of ***barbiturates***, the noncontinuation rate rose from 36% in 1979 to 52% in 1988. It then declined in the 1990s as use rose, to 37% by 1995, after which it leveled for several years, and then declined further to 30% in 2002. It stood at 35% in 2012. The figure for ***methaqualone*** was 29% in 1979, rising dramatically to 61% by 1988 and falling off thereafter. Since 1990, use rates have been very low among 12th graders, and because the questions about methaqualone are on only one form, noncontinuation rates tend to be much more variable than for other drugs; the rate stayed in the range of 40% for some years, but in recent years has been closer to 30%. Because of the very low numbers of cases upon which to base such estimates, methaqualone has been omitted from the tables and figures showing non-continuation rates.

- As overall use of ***tranquilizers*** was declining during the 1970s and into the 1980s, 12th-grade lifetime users also showed a steady, gradual increase in their noncontinuation rates between 1975 and 1982, from 38% to 50%. This rate changed little for a decade until, in the period of rising overall drug use in the 1990s, noncontinuation of tranquilizers declined from 53% in 1992 to 36% in 1996. The rate has remained fairly level since then (35% in 2007 and 37% in 2012), reflecting a period of relatively high use.

- Between 1982 and 1991, the ***LSD*** noncontinuation rate fluctuated within a rather narrow range (between 37% and 41%), without a clear trend developing. Between 1991 and 1996, though, the noncontinuation rate dropped from 41% to 30%, accounting for some of the increase in overall LSD use during that period. Since 1996 the noncontinuation rate more than doubled, climbing to 68% by 2003, as overall use declined dramatically. Since 2003 use has held fairly stable at very low levels, and the noncontinuation rate declined (among the dropping numbers of lifetime users) to 38% in 2012.

- Due to a combination of low prevalence rates, and being assessed on only two (and later three) questionnaire forms, noncontinuation rates for ***steroid*** users are quite volatile. No systematic trends are evident.

- Although ***alcohol*** has always had an extremely low rate of noncontinuation, that rate increased gradually from about 1988 to 1993, perhaps reflecting the changed norms regarding its use (see chapter 8). These norms, in turn, may have reflected both the

influence of a number of states changing the legal drinking age, and a greater emphasis being placed on the dangers of drunk driving. There has been little further change since 1993, however.

Table 5-7b provides noncontinuation rates for 12th graders who were more "experienced users", here defined as those who reported having used a drug 10 or more times during their lifetime. It shows that noncontinuation is far less likely among more experienced users than among other users of a given drug. To illustrate, in 2012 among experienced users noncontinuation rates for all drugs fell at or below 24%. Further, while the trends in noncontinuation rates among all users have been similar to trends observed in the same drugs for experienced users, the degree of fluctuation in noncontinuation has tended to be considerably smaller among more experienced users.

The number of cases in each cell in Table 5-7b is considerably smaller than in most other tables, particularly when overall usage rates are low to start with; therefore, the trend data are somewhat uneven. Here are some examples of trends we have seen for noncontinuation rates of experienced users.

- The noncontinuation rate for experienced ***marijuana*** users has been very low throughout the past 37 years, ranging from a low of 4.0% in 1975 to a high of only 12.3% in 1990.

- Noncontinuation rates for more experienced users of ***inhalants***, who reported using 10 or more times, actually dropped in the late 1970s, perhaps as a result of the advent of nitrites, which are used at older ages than most of the other inhalants. However, when the use of nitrites declined among 12th graders during the 1980s, and again in the late 1990s, the noncontinuation rates for experienced users failed to increase. The noncontinuation rate for inhalants was 24% in 2012.

- The noncontinuation rates for ***cocaine*** and ***crack*** rose in the late 1980s, even among more experienced users, peaking in 1991 before falling back as the use of these drugs became more popular. After about 1996, the noncontinuation rates rose modestly, but have changed rather little in the past couple of years.

IMPLICATIONS FOR PREVENTION

Whenever prevention programs are designed—whether for schools, families, communities, or the media—questions arise as to what *should* be prevented and what *can* be prevented. While it is axiomatic that the initiation of use should and can be prevented, there has been considerably less consensus as to whether the discontinuation of use is a realistic goal. We believe the results just presented here help to inform that debate.

The findings show that whatever social forces brought about the large declines in drug use during the 1980s and the substantial increases during the 1990s operated through effects on *both* initiation and noncontinuation rates. Put another way, the decreases and subsequent increases in annual and 30-day prevalence-of-use rates were considerably larger than could be explained by

fluctuations in initiation rates alone. These findings show that noncontinuation **can** and does change appreciably and, therefore, that any comprehensive prevention strategy should include increasing cessation as one of its objectives—particularly cessation from early stage use, as we discuss next.

The findings also show the importance of distinguishing among users at different levels of involvement. A comparison of the rates in Table 5-7a, based on all previous users, and Table 5-7b, based on only experienced users (those using a given drug 10 or more times), is highly instructive. Clearly, 12th graders in the early stages of use were appreciably more likely to discontinue their use than their counterparts who had greater involvement with the drug (even as few as 10 occasions of use). This makes early intervention not only a viable goal for prevention, but also a particularly important one.

TREND COMPARISONS AMONG SUBGROUPS

This section provides trend comparisons for key population subgroups defined on the following six dimensions: gender, college plans, region of the country, population density, socioeconomic status, and race/ethnicity. In general, we will focus on the results from 12th graders, given the shorter trend interval available for 8th and 10th graders. Earlier versions of Appendix D contained tables providing trends for these various subgroups for all three grades and on nearly all drugs; it now refers the reader to an occasional paper that contains the same tables. The tables are organized by drug and, within drug, by grade level. It also provides a matching set of figures showing, for all three grade levels, each drug's usage trends by subgroup. The occasional paper is available on the Monitoring the Future website.[69] We recommend use of the graphic versions to anyone who plans to spend much time examining subgroup differences. The table of contents in that document contains links to each of the graphs to facilitate look-up.

Trend Differences by Gender

- Trends in the proportion of males and females who used ***any illicit drug*** in the prior year have differed some. Annual prevalence rose among 12th-grade males between 1975 and 1978, from 49% to 59%, and then declined steadily to 29% by 1992 (see Figure 5-7). Use among females peaked later, increasing from 41% in 1975 to 51% in 1981 and then dropping to 25% by 1992. (If amphetamine use is not included in the statistics, use by females peaked earlier—in 1979—and then declined as well.) Both male and female rates were up considerably by 1997, to 44% and 40%, respectively. Both have declined some since then, males through 2006 before increasing, and females through 2009 before increasing. They stood at 44% and 35%, respectively, in 2012. Use by 12th-grade males has been consistently higher than for 12th-grade females, with the absolute differences larger in periods of higher use. Use in 10th grade has also been higher for males, though differences generally have been smaller than among 12th graders. The differences have been very small at 8th grade, with males being slightly higher since 2006. (See Figure 1 and Tables 1–3 in Occasional Paper 79.)

[69]Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2013). *Demographic subgroup trends for various licit and illicit drugs, 1975–2012* (Monitoring the Future Occasional Paper No. 79). Ann Arbor, MI: Institute for Social Research, 451 pp. Available: http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf.

- Prior to 2001 (when revisions were made in the questions on hallucinogens and tranquilizers) females in 8th and 10th grades had a slightly *higher* annual prevalence of use of ***any illicit drug other than marijuana***. After 2001, females in 8th grade continued to have slightly higher prevalence, but the differences were smaller and inconsistent in 10th grade. In 12th grade, the males generally have had higher rates; that difference expanded some during the 1990s, and has remained larger since then (see Figure 7 and Tables 4 through 6 in Occasional Paper 79).

- Most of the gender differences in prevalence rates mentioned in chapter 4 for individual classes of drugs have remained relatively unchanged throughout the study—that is, any trends in overall use have been fairly parallel for males and females. There are, however, some exceptions (see Occasional Paper No. 79 for the figures and tables).

- The absolute differences between genders in ***marijuana*** use narrowed somewhat among 12th graders between the late 1970s and mid-1980s—a period of substantial decline. Their use rates then declined in parallel from 1986 to 1992. At all three grade levels, both genders also showed a several-year increase in marijuana use after 1992, during which the gender difference expanded somewhat. During the more recent period of decline in use from the late 1990s through the mid-2000s, the gender differences narrowed some in all three grades, but then widened again as use rose in the past few years; males showed most of the recent increase in percentage points, although the *ratios* haven't changed a great deal. This pattern, in which a difference between subgroups tends to enlarge in periods of increasing use and to diminish during declines in use, can be seen for a number of other subgroup variables in addition to gender (e.g., see Figure 5-10b).

- This pattern was also seen for ***inhalants***, though the nature of the gender difference varies across grades. In 8th grade, females have had higher rates of use than males; the difference was largest in the peak years of use, the mid-1990s, but diminished substantially as use then declined. During the recent rise in use after 2002, the gender difference emerged again; in fact, nearly all of the increase occurred among females; and this pattern has continued in the years since. After rising for a couple of years, use rates by both genders have shown parallel declines. In 10th and 12th grades, males have tended to have higher usage rates; the differences were again greatest in the mid-1990s. Among 10th graders (but not 12th graders) there has been a reversal since 2001, as female inhalant use rose but use by males did not. Since 2009, use has fallen for both genders, and the differences have narrowed some. The gender difference among 12th graders diminished after 1995 as use declined, and there was little difference in 2011 or 2012. In sum, inhalant use was on the rise for three or four years among 8th- and 10th-grade girls, ending in about 2005. Among 12th-graders, boys have consistently had higher rates of use, though the substantial difference narrowed during the decline phase, which began after 1994.

- Among 12th graders, gender differences in ***cocaine*** use were greatest in the peak years of use (1979 through 1986), when male use was considerably higher. The differences diminished during the ensuing decline phase, although male use remained higher. After 1992, the gender difference widened some as use increased more among males; this

difference remained in recent years. No appreciable gender differences have been observed in cocaine use in 8th or 10th grade since 1991, when data first became available, except that females in 10th grade showed a steeper decline after 2007, opening a slight gap.

- The gender differences in ***crack*** use are very similar to those for cocaine use overall among 12th graders, with higher rates of use among males since 1986, when data were first available. Use grew a bit more among 12th-grade males after 1992, but declined more among males than females since the turnaround after 1998. Little gender difference has been observed among 8th and 10th graders in either levels or trends.

- A slight gender difference in ***amphetamine*** use among 12th graders emerged in 1980 and 1981 (with female use being a bit higher), based on the original version of the question; but the revised question introduced in 1982 (further clarifying that nonprescription stimulants should be omitted) showed no gender difference. This strongly suggests that over-the-counter diet pills, which are used much more by females, accounted for the higher reported use among females in those two years. Since 1982, annual prevalence rates for both genders have been similar, with females very slightly lower in recent years. In both 8th and 10th grades, females consistently reported higher amphetamine use than males, until 2011 when use among 10th-grade females decreased significantly and fell slightly below the rate for males (and remained there in 2012). Females had a sharper increase in use from 1992 to 1996, when use was rising, and a sharper decrease in use during declines.

- The use of ***crystal methamphetamine or ice*** (data available only for 12th graders) has been consistently higher among males (with the sole exception of 2006); but, after a long period of decline in use, there is now rather little difference between the genders.

- ***Methamphetamine*** use in general has generally been slightly higher for males at 12th grade, but slightly lower at 8th grade, with no consistent gender difference at 10th grade. The sharp declines in use since the use of this drug was first measured in 1999 have been observable in both genders in all three grades.

- At 12th grade, the use of ***Ritalin*** without medical direction has generally been higher among males for the years on which we have data (i.e., since 2001). A sharp decline in reported use among males from 2005 to 2007 temporarily eliminated most of that difference, which then re-emerged as use by females declined. As of 2012, use was only slightly higher among males. In 8th and 10th grade, use rates for males and females were very similar until 2009; since then, use by 10th grade females has decreased, creating a slight difference.

- Among 10th and 12th graders, ***heroin*** use (with and without a needle) has been consistently higher among males, particularly in 12th grade. The same was true among 8th graders until 1999, after which males and females have had similar rates.

- Annual use of ***narcotics other than heroin*** among 12th graders (data are not reported for 8th and 10th graders) was consistently higher among males than females prior to 1992, when use rates converged following a long period of declines that were sharper among males. After 1992, males showed a sharper increase in use, again opening a substantial gap through 2003. Since then declines among males have been greater, narrowing the gap.

- Use of the specific narcotic drugs ***Vicodin*** and ***OxyContin*** has been higher among males at 12th grade, although the differences have been narrowing in recent years. There have not been large or consistent gender difference at the lower grades, except that Vicodin use among 10th-grade males has been a little higher in recent years than among females; however, that gap disappeared by 2011.

- Between 1975 and 1977, there was a small gender difference in ***tranquilizer*** use for 12th graders (females used them more frequently than males). This difference had virtually disappeared by 1978, and there was no gender difference for some 14 years thereafter (through 1992) as use declined appreciably. However, use among males rose more after 1992, surpassing females' use; that remained true until 2010, even though use declined gradually in recent years. In 2011 the gender gap closed in both 10th and 12th grades as use by females rose while use by males declined. Among 8th graders, tranquilizer use has been consistently higher for females since the first survey in 1991; among 10th graders, it has tended to be about the same or higher for females.

- From 1975 through 2004, the use of ***sedatives*** (***barbiturates***) was consistently slightly higher among males in 12th grade (the only grade reported); however, since 2005 there has been very little difference between genders, as use among males has fallen more. As with a number of other drugs, gender differences narrowed when use declined (i.e., by the early 1990s) and enlarged when use was increasing (1992 to 2004).

- Among 12th graders, the gender differences in ***alcohol*** use (males have consistently had higher prevalence rates) narrowed some between 1975 and 1987. For example, the 30-day prevalence rates for males and females differed by 13 percentage points in 1975 (75% versus 62%, respectively), but that difference was halved (to 7 percentage points) by 1987. (In 2012 the difference was five percentage points.) In 8th grade, the genders have had very similar levels of use; prior to 2002, females had slightly lower rates, but since then have had slightly higher rates. Similarly, at 10th grade, a previous difference in which males had higher rates of use diminished considerably after 2000 through 2008; since then, however, males have had slightly higher rates.

- Although substantial gender differences in ***daily alcohol use*** and ***occasions of heavy drinking*** remain today among 12th graders, by 1993 differences had narrowed during the long period of decline (Figures 5-5b and 5-6a). For example, between 1975 and 1993 the proportion of 12th-grade males who reported having had five or more drinks in a row in the prior two weeks showed a net decrease of 14 percentage points (49% to 35%), whereas such use among females decreased by only 5 percentage points, from 26% to

21%.[70] By 1998, rates for both genders had risen some, to 39% and 24%, respectively, opening the gap a little. Since 1998 the gender differences have narrowed further. The trends among 10th graders look quite similar, though at a lower prevalence level. In the 8th grade, males also have shown a greater decline in heavy drinking in recent years, narrowing the gender differences there as well. Indeed, there was no significant gender difference in 8th grade from 2002 through 2009; since then the rate among females has actually been slightly higher than among males.

- Self-reports of ***being drunk*** may be a better indicator of heavy drinking than a fixed number of drinks. Even with this measure, among 12th graders, males have been substantially higher than females in 30-day prevalence of being drunk. This gap closed some in the early 1990s and even more from 2005 to 2008; however, a substantial gap remains. Among 10th graders, males generally have had higher rates of being drunk, but the difference has narrowed since 2000 (in 2012 it was 15% for males and 14% for females); among 8th graders the rates of being drunk have been very similar for males and females since 1991.

  Overall, then, we have been seeing a convergence in ***drinking rates*** between males and females as use among males has declined more, narrowing or eliminating previous differences. Among 12th graders in 2012 both genders showed about a three percentage point increase in drunkenness during the past thirty days (not statistically significant).

- On one of the six questionnaire forms administered to 12th graders, respondents are asked separately about their use of ***beer***, ***wine***, ***hard liquor***, and ***wine coolers***. (Tabular and graphic data are presented for these beverages in Occasional Paper 79.) The answers to these questions reveal that differences in ***beer*** consumption account for much of the large gender difference in occasions of heavy drinking: 25% of 2012 twelfth-grade males (vs. 12% of females) reported having had five or more beers in a row during the prior two weeks (although this gender difference has narrowed over the years). Males have consistently been more likely than females to report having had five or more drinks of ***hard liquor*** (24% for males vs. 20% for females in 2012, with little change over time), but there has been little or no difference in having consumed ***wine*** that heavily (3.3% for males and 4.1% for females in 2012). This pattern—a large gender difference in the heavy use of beer, a smaller difference in the heavy use of hard liquor, and a much smaller difference in the heavy use of wine—has been present throughout the study, with only modest change over time. In 1988, questions on ***wine coolers*** were added, and here the gender difference was reversed, with females reporting slightly higher rates of heavy drinking of wine coolers (7.2% for females vs. 3.0% for males in 2012). In 2003, a single question on annual use of ***flavored alcoholic beverages*** ("alcopops") was added, and then in 2004 the full set of three questions (lifetime, annual, and 30-day) was added; here too females have shown a higher rate of use (e.g., 30-day prevalence of 23% for female 12th graders versus 20% for males in 2012); but even here the gender gap narrowed recently.

[70]The same number of drinks produces a substantially greater impact on the blood alcohol level of the average female than the average male because of gender differences in the metabolism of alcohol and in body weight. Thus, gender differences in the frequency of actually getting drunk may not be as great as the heavy drinking statistics would indicate, since they are based on a fixed number of drinks.

- In the lower grades, male and female ***alcohol*** consumption rates are more equivalent, and have remained so since first measured in 1991. Unlike 12th graders, there is little or no gender difference in annual or 30-day prevalence of any use of alcohol or in the annual prevalence of ***having been drunk***. (Among 10th graders from 1991 through 2001, 30-day prevalence of alcohol use averaged about 5 percentage points higher among males; but by 2002 the rate for males had dropped to that of females and there has been no appreciable gender difference since.) These gender differences seem to emerge with age, as is the case for many illicit drugs. The pattern of emerging gender differences with age also holds true for ***binge drinking*** in the prior two weeks. The data have consistently shown only a small gender difference in 8th grade (which disappeared after 2002), a modest one in 10th grade (which narrowed considerably between 2000 and 2008 and again in 2012), and a large one in 12th grade (which narrowed considerably between 1976 and 1992 and then again between 1996 and 2008); all started out with males higher than females. The same pattern has been observed for self-reported drunkenness, which had smaller gender differences than binge drinking to start with (see Tables 87 through 89 in Occasional Paper 79). As previously stated, during the past few years the gender differences have diminished somewhat, particularly in the upper grades, as use among males has declined more than use among females.

- Overall, smoking rates have moved quite in parallel for the two genders over the life of the study, but there have been some divergences. In 1976 we observed that, among 12th graders, females had caught up to males in daily ***cigarette*** smoking, and by 1977 had slightly exceeded them (see Figure 5-5c in this volume or Figure 265 in Occasional Paper 79). Between 1977 and 1981, both genders showed a decline in the prevalence of daily smoking, but use among males dropped slightly more, resulting in females maintaining higher rates of daily smoking through 1990. However, the gender difference declined in the latter half of the 1980s, as male use began to rise gradually and female use declined a bit. The increase in daily smoking among males was greater in the 1990s—possibly due to the success of the Joe Camel ads that were aimed at boys—and female use did not begin to rise until after 1992. The net result was another crossover in prevalence of daily use in 1991, followed by a roughly parallel increase from 1992 to 1997. Both genders have declined sharply and similarly since 1997. Since 2006 among 10th graders and since about 2001 among 12th graders, a gender gap has been opening as smoking has fallen more among females than among males in the same grade.

- Extremely large gender differences in the use of ***smokeless tobacco*** have been observed consistently at all grade levels, with much higher rates among males. After 1994 there was a substantial decline in overall use of smokeless tobacco among 8th-grade males (their 30-day prevalence dropped from 12.8% in 1994 to 4.7% by 2007), a considerable drop among 10th-grade males (from 19% in 1994 to 9% in 2004), and, since 1995, a similar decline at 12th grade (from 24% in 1995 to 11% in 2006). In 2008, there was a further significant decline in smokeless tobacco use, though not in 12th grade. These declines had the effect of greatly narrowing the gender differences, because use by females changed very little, remaining at negligible levels. However, use among males in all three grades began rising after 2007, suggesting that the decline in smokeless tobacco

use may have been over; but in 2011 a decline was observed in all three grades—quite possibly as a result of the increase in the federal tobacco tax in 2009. The more recent increase in use by males again enlarged the gender differences. Because smokeless tobacco use by females is so low and fluctuates so little, the gender differences rise and fall with the changes in the use by males. The changes since 2007 certainly appear to be secular trends, in which all three grades are simultaneously responding to environmental changes, two of which could well be the introduction and promotion of new forms of smokeless tobacco and the change in the federal tobacco tax.

- Like smokeless tobacco, ***steroid*** use is much higher among males. But unlike smokeless tobacco, there have been some changes in rates of use among females, and the trends have differed somewhat for males and females. From 1991 to 1995 for 8th graders and from 1991 to 1996 for 10th graders, females showed a gradual increase in their steroid use, while use among males declined some or held steady. Then, from 1996 through 1999 for 8th graders and from 1996 to 2000 for 10th graders, males showed a much greater increase in steroid use than did females; this had the effect of widening the gender gap. Females exhibited a fairly steady increase in their use of steroids from the early 1990s through 2002 (and 2004 at 12th grade), despite their low levels relative to males. This increase halted in the lower grades in 2003 (and in 2004 at 12th grade), followed by a considerable decline in use for both genders in all grades. In 2012 the annual prevalence rates for females were 0.3%, 0.4%, and 0.7% at grades 8, 10, and 12, respectively, whereas for males they were 0.8%, 1.3%, and 1.7%, following a period of sustained decline for both genders.

  Among males, steroid use increased from 1996 to 1999 at 8th grade, from 1998 to 2000 at 10th grade, and from 1997 to 2001 at 12th grade—reflecting a cohort effect. After these periods of increasing use, a substantial decline followed in each case.

Trend Differences by College Plans

In this section we compare college-bound students (those who say they "definitely will" or "probably will" graduate from a *four-year college*) with non-college-bound students (i.e., all others). It is important to realize that the proportion of young people expecting to attend college has risen dramatically over the 37 years covered by MTF.[71] In the mid-1970s, only about half of 12th graders expected to complete college, compared to 83% of 2012 seniors. This means that the two groups compared here (using the convenient, if not entirely precise, terms college-bound and non-college-bound) are changing proportions of the total population and, therefore, do not represent exactly comparable segments of the population across time.

Rather little such upward drift in college plans was seen during the 1990s at lower grade levels, but generally 78–90% of each class expected to attend college. Whether or not these expectations are realistic, the reader is reminded that at these lower grades those aspiring to complete a four-

[71]For a description of earlier changes in the demographic makeup of the MTF samples and a discussion of their implications for substance use, see Johnston, L. D. (2001). Changing demographic patterns of adolescent smoking over the past 23 years: National trends from the Monitoring the Future study. In National Cancer Institute, *Changing adolescent smoking prevalence: Where it is and why* (Smoking and Tobacco Control Monograph No. 14, NIH Pub. No. 02-5086, pp. 9–33). Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute.

year college program constitute a much larger proportion of the whole class than those who do not (with far smaller sample sizes for the non-college-bound); thus the trend lines for the non-college-bound are much less smooth. Graphic presentation of all subgroup trends may be found in Occasional Paper 79 at http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf .

- Both college-bound and non-college-bound students have shown fairly parallel trends in overall ***illicit drug use*** over the years (see Figure 5-8 for 12th-grade data), with the non-college-bound consistently having a considerably higher rate of use, particularly in the lower grades.

- Changes in the use of the other drug classes have also been generally parallel for the two groups since 1976, with only minor exceptions (see Occasional Paper No. 79 on the MTF website for comparisons on the various drugs).

- Changes in ***marijuana*** use have been fairly parallel for the two groups at all three grade levels, maintaining large differences between them, particularly in the lower grades. The non-college-bound have consistently had higher rates of use, although these differences diminish by 12th grade. It is noteworthy that in the last four years or so marijuana use has risen among the college-bound in 10th and 12th grades, narrowing the differences between the two groups.

- ***Cocaine*** use has been considerably higher among the non-college-bound throughout the period studied, and particularly so in the two lower grades. The differences tend to enlarge in periods of increasing use and diminish in periods of decreasing use, as is true for a number of drugs. For ***crack*** cocaine, the differences have been even more pronounced. The already large differences in crack use grew considerably during the increases of the early to mid-1990s, and then diminished somewhat during the decline phase since 1998.

- As the overall prevalence of use of many drugs fell through 1992 among 12th graders, there was some convergence of usage rates between the college-bound and non-college-bound due to a greater drop in use among the non-college-bound. This has just been illustrated for cocaine and crack, and it was also true for ***tranquilizers***, ***sedatives*** (adjusted), ***methaqualone***, ***amphetamines***, ***nitrite inhalants***, ***LSD***, ***hallucinogens other than LSD***, and ***narcotics other than heroin***. But, as the use of several of these drugs increased after 1992, the differences grew larger for many of them at all grade levels (e.g., LSD, hallucinogens other than LSD, amphetamines, and tranquilizers). The increases were sharper, and in some cases started earlier, among the non-college-bound. In more recent years, use of a number of these drugs has declined, and with that decline has come a narrowing of the differences once again. This has been particularly true for LSD, for example.

- For many years, at 12th grade there was only a modest absolute difference in the low annual ***heroin*** prevalence rates observed between the college- and non-college-bound students (with the college-bound lower). In the 1990s, however, among 12th graders the non-college-bound grew to having about twice as high a prevalence of past-year heroin

use, and this ratio has remained that high or increased in the past few years (see Figure 92 in Occasional Paper 79).

At the lower grade levels there has been a larger proportional and absolute difference in heroin use between these two groups, and in both grades the non-college-bound group showed a sharper rise in heroin use in the 1990s. That increase was particularly sharp among the non-college-bound 8th graders (who now comprise only about 9% of the 8th-grade sample). The non-college-bound have generally had considerably higher rates of heroin use, including use with and without a needle (see Figures 92, 98, and 104 in Occasional Paper 79).

- ***Vicodin*** and ***OxyContin*** have both shown large differences in usage rates between the college-bound and non-college-bound, with the latter having considerably higher rates of use. The gaps narrowed as the non-college-bound showed larger decline on both drugs with the exception of 8th graders' use of OxyContin (see Figures 116 and 122 in Occasional Paper 79). These two drugs have moved pretty much in parallel since they were first measured in 2002.

- The use of ***ecstasy*** (***MDMA***) among 12th graders started out higher among the non-college-bound in 1996, the year it was first measured, but from then until 2000 the rates of use were not very different, though they were still slightly higher among the non-college-bound. Since 2000 the gap has been larger because use declined more among the college-bound whereas it increased some since 2004 among the non-college-bound. In the lower grades, the differences have been considerably larger and more consistent, again with the non-college-bound having the higher rates. Both groups showed an increase in 2000 and 2001 at all grade levels, but the increases were much sharper among the non-college-bound in the lower grades. (As Tables 32 through 34 show, these figures are based on relatively low case counts, making one-year subgroup differences in trends potentially unreliable.) After 2001, as use declined, the differences narrowed in the lower grades. Since 2005 a modest turnaround has occurred, with use rates increasing more among the non-college-bound.

- ***Ritalin*** use outside of medical supervision has been much higher among non-college-bound 8th and 10th graders, but only modestly higher among non-college-bound 12th graders. (Use was first measured in 2001.) Annual prevalence has been trending down in all grades among both groups since about 2003. Again, the small numbers of cases have led to considerable variability in the estimates for the non-college-bound.

- ***Adderall*** use outside of medical supervision has been measured only since 2009. It shows large differences in the lower grades as a function of college plans, with the non-college-bound having higher use. The differences have been small at 12th grade, however.

- ***Methamphetamine*** use also has been much higher among the non-college-bound in all grades since use was first measured in 1999, with use trends for the two groups initially tending to move in parallel. In 2012, however, use among the 8th-grade noncollege-

bound group showed a rise; but we would want to see another year's data before declaring it a reliable one.

- ***Sedative*** (***barbiturate***) use (reported only for 12th graders) and ***tranquilizer*** use have both been higher among the non-college-bound, with the differences generally expanding during periods of rising use and shrinking during periods of declining use.

- For 30-day ***alcohol*** prevalence, the non-college-bound have been consistently higher than the college-bound, though the differences have generally been much smaller at 12th grade than in the lower grades. After 1996, the gap in 12th grade widened a bit due to a greater drop in drinking among the college-bound. The proportional differential in all of the alcohol measures is greatest at 8th grade, smaller but still substantial at 10th grade, and least at 12th grade.

- Among 12th graders, the ***binge drinking*** rates of the two groups converged modestly from 1981 to about 1990 (see Table 92) as the overall prevalence rate declined, though the rate for the college-bound still remained considerably lower. Both groups showed small increases after 1993, but as use has declined some in more recent years that decline occurred more among the college-bound, which increased the difference again—at least until 2012, when the college-bound group showed a significant increase with no change occurring among the non-college-bound. In both 8th and 10th grades, there were very large and growing differences in binge drinking rates between the college-bound and the non-college-bound during much of the 1990s because the non-college-bound exhibited a larger increase in binge drinking. Both groups showed evidence of decline in recent years with a little convergence in 8th grade, but little or none in 10th (see Tables 90 and 91).

- At all three grade levels there have been very large differences in the current prevalence of ***cigarette*** smoking between the non-college-bound (who have much higher rates of use) and the college-bound. (For example, in 2012 the daily smoking rate was about six times as high among the non-college-bound 8th graders, at 8.0%, compared with the college-bound at 1.4%.) In general, the broad contours of change have been fairly similar for the two groups at the 12th-grade level, but there was some convergence that occurred roughly from 1980 through 1993, as current smoking very gradually declined among the non-college-bound, but gradually increased among the college-bound. In 1980 there was a 17-percentage-point differential in current smoking (40% vs. 22%), which declined to a 10-percentage-point differential by 1993 (37% vs. 27%). In 2012 there was a 13 percentage point difference at 12th grade (28% vs. 15%).

  Current smoking rates among 8th and 10th graders diverged during the early to mid-1990s, with both groups increasing, and the non-college-bound increasing more. Then, at all three grade levels, the college-bound were the first to show a turnaround in current smoking in the mid- to late 1990s, leading their non-college-bound peers by a year or two. Trends for the two groups have generally been parallel in recent years, though there has been a somewhat greater decline in use among the college-bound. (See Tables 111 through 119 in Occasional Paper 79 for subgroup trends in cigarette smoking.)

The use of ***smokeless tobacco*** has also been consistently much higher among the non-college-bound at all grade levels, and the proportional differences have been very large in 8th and 10th grades and in 12th grade since 2008 (see Tables 122 through 127 in Occasional Paper 79). Again, the downturn in use in the mid-1990s began first among the college-bound, followed by their peers a year later at each grade. Both groups had a considerable drop in use in all three grades from the early 1990s to the mid- to late-1990s, before a rebound in use occurred. In 2008 there was a nonsignificant increase among the non-college-bound in all three grades, which we said may be an early warning of things to come. In 2009 there were increases at both 10th and 12th grades for both groups; and in 2010 there were further increases in 8th and 10th grades. The changes in the lower grades were larger among the non-college-bound.

A large and rather consistent difference in the rates of ***steroid*** use (Tables 130 through 132 in Occasional Paper 79) has been seen for the two groups at all three grade levels, with the non-college-bound considerably more likely to use steroids. During the phase of increasing steroid use in the late 1990s, both groups showed an increase; but the increases were greatest among the non-college-bound, enlarging the differences between the groups at all three grade levels. The more recent decline in steroid use began a year or two earlier among the non-college-bound than among their college-bound peers. By 2012 the differences between the two groups had narrowed in both 8th and 12th grade, but not in 10th.

In sum, students who do not expect to complete four years of college have consistently been a high-risk group for drug involvement in terms of their use of the licit drugs (alcohol and tobacco), nearly all of the illicit drugs, and even steroids. As with other demographic variables, the between-group percentage differences generally have tended to enlarge during periods of rising use and diminish during periods of declining use.

Trend Differences by Region of the Country

Data on subgroup trends for the four regions of the country may be found in tabular and graphic forms in Occasional Paper No. 79 on the MTF website at http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf.

- In all four regions of the country, the proportions of 12th graders using ***any illicit drug*** during the prior 12 months reached their peaks in 1978 or 1979 (see Figure 5-10a and Table 3 in Occasional Paper 79). In the late 1970s and early 1980s, the Northeast region was consistently highest, the South lowest, and the Midwest and West in between. Through the 1980s and continuing through 1992, use declined overall. The South maintained its position as having the lowest rate of use among 12th graders, with the other regions having rates of use similar to one another. During the "relapse phase" in the drug epidemic, from 1992 to 1997, the annual use of any illicit drug increased in all four regions by roughly equivalent amounts, with use in the South remaining lowest, but not by a great deal. After that there was some decline in annual prevalence in all four regions, with 2012 annual prevalence rates ranging from a low of 35% in the Midwest, 38% in the South, 41% in the Northeast, and 46% in the West. The regional differences diminished during the period of declining use (and were least in 1992), but they widened after the

increase in the 1990s. They were diminishing during a period of decline, though there was less decline in the Northeast. Among 8th and 10th graders, the regional differences in annual prevalence of any illicit drug have generally been minor.

- As noted earlier, a major factor in the early rise of ***illicit drug use other than marijuana*** (Figure 5-10a) was an increase in reported ***amphetamine*** use. The rise in amphetamine use among 12th graders appeared in all four regions; however, the rise in lifetime prevalence of use from 1978 to 1981 was only 6 percentage points in the South, whereas in the other regions the percentages rose between 9 and 12 points. In essence, the South was least affected by both the rise and the fall in reported amphetamine use—a pattern later repeated with cocaine. Since 1995, there has been little systematic difference among the regions in levels of amphetamine use among 12th graders as their use decreased. In the past few years there has been some increase in use in almost all regions and grades.

- The long-term ***marijuana*** use trends for 12th graders have generally been quite parallel in all four regions since 1975, with the Northeast usually having the highest level and the South having the lowest level. Marijuana use rose substantially in all four regions after 1991 for 8th graders and after 1992 for 10th and 12th graders. Peak rates were highest in the Northeast in the upper grades. Between 1996 and 2005, all regions showed a leveling or turnaround at all grade levels. From 1999 to 2005, marijuana use was lowest in the South among 12th graders, but not among 8th or 10th graders. After the late 1990s the Northeast stood out because it did not shown as sharp a decline in marijuana use in 12th grade as did the other three regions, leaving it with a considerably higher rate of use by 2010. In 2011 the Northeast decreased but the other three regions increased; and it continued to decrease in 2012. The West showed a sharp increase among 12th graders between 2010 and 2012, bringing it to the highest prevalence rate of the four regions. The Midwest and South have tended to have lower rates of use.

- ***Cocaine*** use among 12th graders has shown very different trends in the four regions of the country, leading to the emergence of one of the largest regional differences observed for any of the drugs. (See Figure 5-10b for differences in lifetime prevalence-of-use trends.) In the mid-1970s, there was relatively little regional variation in cocaine use, but as the nation's cocaine epidemic grew, large regional differences emerged. By 1981, annual use had roughly tripled in the West and Northeast and nearly doubled in the Midwest, while it increased by only 26% in the South. This pattern of large regional differences held for about six years, until a sharper decline in the Northeast and West substantially reduced the differences. At all three grade levels, use increased modestly in all regions from the early 1990s through 1996 or 1997, followed by a leveling or turnaround in nearly all cases. For most of the years of the study, the West had the highest level of cocaine use at all three grade levels, but in recent years the differences have not been very large or even entirely consistent.

- When ***crack*** use was first measured among 12th graders in 1986, there were large regional differences, with the West and Northeast again having far higher rates than the Midwest and South. Crack use dropped appreciably in all four regions over the next several years (though rates did not peak in the Midwest until 1987 or in the South until

1989, perhaps due to continued diffusion of the drug to areas that previously did not have access). Because the declines were large and very sharp in the West and Northeast, little regional difference remained by 1991, although the West still had the highest rate of use. After 1991 or 1992, during the relapse phase of the drug epidemic, there were increases in all regions, but particularly in the West. Again, the West showed the largest increases and the highest levels of use at all three grades, while the other three regions were fairly similar in their rates of use. In general, all regions showed evidence of a leveling or decline in crack use at all three grade levels in recent years, along with a diminution of regional differences.

- The use of ***crystal methamphetamine*** (***ice***), measured in 12th grade only, has fairly consistently had the highest rate of use in the West. On average the South and the Midwest had relatively low rates of use from 1990 through 1996, but the South has ranked higher since then, while the Northeast has remained low. All regions have shown a considerable decline in use since around 2002.

- ***Methamphetamine,*** which was added in 1999 for all grades, has also generally shown high rates in the West in the upper grades, although regional differences have been almost eliminated as use has declined in all four regions to very low levels in recent years. The Northeast generally had the lowest prevalence of use for this drug in earlier years, perhaps because use tends to be higher in rural areas, as is discussed below.

- Between 1975 and 1981, sizable regional differences in ***hallucinogen*** use emerged for 12th graders, as use in the South dropped appreciably, although all regions declined in use during that period. In 1981, both the Midwest and the West had annual prevalence rates of use that were about two-and-a-half times higher than the South (10.3%, 10.4%, and 4.1%, respectively), while use in the Northeast was three times as high (12.9%). After 1981, through the remainder of the decade, hallucinogen use dropped appreciably in all regions except the South (which continued to have the lowest rate), considerably reducing these regional differences. In the early 1990s, use was still consistently lower than average in the South, but the differences among the other three regions were small. A considerable increase in use in the South between 1991 and 1995 brought its annual rate close to the level of the other regions. Since the mid-1990s there has been a decline in all regions, and the differences among the regions are now quite modest.

  Hallucinogen use by 8th and 10th graders has shown only small differences among the regions, although by 2009 or 2010 an increase in use was observed in the West in all three grades, followed by some decline in all three grades in 2011. The slightly higher levels in the West remained in 2012 for 10th and 12th graders.

- Among 12th graders, the use of ***LSD*** was consistently lowest in the South from 1975 through 1994. Between 1988 and 1993, LSD use did not vary much among the other three regions for the 12th graders, although in earlier years the trend story was quite similar to that described for hallucinogens as a group. Between 1991 and 1994, LSD use rose more in the South, eliminating a long-standing difference between it and the other regions. Between 1993 and 1996, during the relapse phase in the illicit drug epidemic,

LSD use went up quite sharply in the Northeast, once again creating regional differences. A very large decline after 1996 in the Northeast, followed by substantial declines in all other regions, greatly diminished regional differences by 2003; they have remained very small since then as use has shown some gradual increase.

Regional differences in LSD use among 8th and 10th graders have generally been quite small, although the West had the highest rates of use among 8th graders from 1991 to 1998 and among 10th graders from 1991 to 1994. After 1997 the West experienced a sharp decline in LSD use among 8th graders, which reduced regional differences again. At 10th grade the other regions rose in their use, catching up with the West and eliminating regional differences by 1995. Since then all regions have shown considerable declines in LSD use, and in recent years there have been negligible differences among them.

- Use of ***ecstasy*** (***MDMA***) fell some at all grade levels in all regions between 1996 (when it was first measured) and 1998. (The one exception was the West in 12th grade, where it remained stable.) In 1999, when ecstasy use increased significantly in grades 10 and 12, the largest increase by far in both grades occurred in the Northeast, although all regions showed some increase in one or both of those grades. Then, in 2000, use rose some in the other three regions at all grade levels, including 8th grade, but not in the Northeast; the rise was particularly sharp in the West among 12th graders. In 2001 the Midwest region showed a sharp rise in 12th-grade use, followed by an even sharper drop in 2002. The South, the only region showing further increase in 2002, had only a fairly small increase among 12th graders. All regions then showed a sharp decline in ecstasy use through 2005 at all three grade levels, Changes between 2005 and 2012 have been somewhat inconsistent, declining slightly in 8th grade, but increasing slightly in 12th. Regional differences among the Northeast, Midwest, and South have been modest in recent years. After 2005 or 2006 the West showed some increase in use at all three grade levels through 2011, leaving it highest in annual ecstasy use. In 2012, a significant decline in the West among 8th graders left it the second highest.

- Between 1979 and 1982, ***PCP*** use dropped precipitously in all regions among 12th graders. The drop was greatest in the Northeast, which in 1979 had a usage rate roughly double that of all the other regions. In general, PCP use was low and relatively stable from 1982 through 1995. Annual prevalence of PCP use increased in the Northeast beginning in 1996, and from 1996 to 1999, PCP use was again highest in the Northeast. Since then, PCP use has been very low in all regions, though usually highest in the Northeast, based on the limited number of cases available for this drug.

- Some classes of drugs have shown little systematic difference by region over the years in which their use has been measured. These include ***inhalants***, ***heroin***, ***heroin with a needle***, and ***heroin without a needle***.

- The use of ***narcotics other than heroin*** has not varied much by region among 12th graders (the only ones for whom use is reported), with the exception that the South has fairly consistently had a lower rate than the other three regions, especially prior to 1988.

- ***Vicodin*** use has tended to be highest in the West and Midwest at all three grade levels, with no clear evidence for differential trends by region. ***OxyContin*** use does not appear to differ much by region.

- From the mid-1970s through the early 1980s, twelfth graders in the Northeast and Midwest had appreciably higher 30-day prevalence of ***alcohol*** use and heavy drinking rates than did those in the South and West. From the early 1980s to the early 1990s, all four regions exhibited substantial declines in 30-day alcohol prevalence and ***occasions of heavy drinking***, with the Northeast and Midwest declining most. As a result, the regional differences for 12th graders on these measures diminished somewhat; however, the relative positions of the four regions have remained essentially unchanged. During the past several years, there was some decline in alcohol use in all regions at all grade levels, at least until 2012, when most regions leveled or showed some increase. For 12th graders, the West, in particular, showed a significant increase of 5.1 percentage points. Among 12th graders, the South and West have generally had the lowest rates (at least until the increase in the West in 2012) and the Northeast and Midwest the highest.

- At the lower grades there has been little regional difference for ***30-day prevalence of drinking*** since 1991, when data were first collected, and trends have generally been quite similar across regions.

- These trends in regional differences for 30-day prevalence of alcohol use also apply to the two measures of heavy drinking—self-reported ***occasions of drunkenness*** and ***binge drinking*** in the prior two weeks.

- Among 12th graders, the West had a considerably lower 30-day prevalence of ***cigarette*** smoking from the mid-1970s through the mid-1980s, though sharper declines in the South brought its smoking rate close to the rate in the West by 1984. It is noteworthy that from 1992 to 1994—a period of overall increase in cigarette smoking—the West was the only region that did not show an increase in daily smoking in 12th grade (although by 1995, use had begun to increase in the West as well). This lack of increase in the West may well be due to the fact that California conducted a major antismoking campaign in those years. There was also a similar lag and a lower increase in the West at 10th grade compared to other regions; the 8th graders in the West showed the least increase and also remained the lowest of the four regions. Despite regional differences being more pronounced during the 1990s due to this divergence by the West, all regions at all grade levels showed important declines in smoking rates from the mid- or late 1990s through the early 2000s, diminishing regional differences somewhat. In the interval 2003–2006 all regions showed some evidence of leveling use among 8th graders after a preceding period of decelerating decline; that led us to conclude that their decline in smoking was over. But in 2007 three regions showed a further decline, with the one-year declines in the South and Northeast being statistically significant. In the upper grades, only the South showed a continuation of decline in 2007. In 2008 all three grades showed further decline on average, suggesting that the decline has resumed, though not all regions showed declines in all three grades; in 2009 the downward trend continued in most regions in the

upper grades. In 2010 there was some modest increase observed in the smoking rates in all four regions in both 8th and 10th grades; the single exception was 8th graders in the South. But in 2011 and again in 2012 a decline was observed in most regions and grades, offering evidence that the longer-term decline in adolescent smoking is continuing.

- The use of ***smokeless tobacco*** has generally been highest in the South for 8th and 10th graders, followed closely by the Midwest. This has generally been true among 12th graders as well; however, use in the Midwest rose sharply after 1989, giving that region the highest rates until about 2000, with the South usually ranking second. During the late 1990s, use of smokeless tobacco fell in all regions in all three grades. The decline in the Midwest was particularly steep in all grades, but at 12th grade it has generally maintained the highest prevalence of smokeless tobacco use in the years since. The regional estimates are somewhat unstable for this drug, due to the limited numbers of cases.

- In general, the regions have shown fairly parallel movement in ***steroid*** use at all three grade levels. In particular, the sharp increase in steroid use that occurred at grades 8 and 10 between 1998 and 1999 was observed in all regions, suggesting that a culture-wide influence was at work—quite possibly the well-publicized use of a steroid precursor by Mark McGwire, a highly visible professional athlete who set a new home run record in 1998. (Note that the steroid trend curves for 12th grade are more uneven than for the other grades because the steroid questions are asked of a smaller sample in 12th grade.)

Trend Differences by Population Density

Occasional Paper 79 contains tabular trend data on all drugs for the three levels of community size distinguished here: (a) large MSAs, which contain most of the largest Metropolitan Statistical Areas from the most recent Census data; (b) other MSAs, which are the remaining Metropolitan Statistical Areas; and (c) non-MSAs (see appendix B for more detailed definitions). A complete set of figures, which are far easier to read than tables, may also be found in Occasional Paper No. 79 at http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf.

- Proportions of 12th graders using ***any illicit drug*** in all three levels of community size peaked in 1979, at which time there were appreciable differences in usage rates, with the large cities having the highest rate and the nonurban areas the lowest (see Figure 5-11a). Usage rates declined from 1979 to 1992, when the annual prevalence in all three areas converged at 27%, virtually eliminating the prior differences. (Most of the narrowing was due to changing overall levels of marijuana use.) After 1992 there were increases in use of any illicit drug among all three levels of community size, but the increases were smallest among the nonmetropolitan segment, leaving that segment again with somewhat lower rates than the other two strata. The increases halted after 1995 in the large MSAs and after 1997 in the other MSAs and non-MSAs. (There was also a lag in the beginning of the decline that began in the late 1970s, with the non-MSAs declining last.) By 2012 the non-MSAs continued to have the lowest rate of use (33%), with the other MSAs at 40% and the large MSAs at 43%.

  In the lower grades there has not been much difference between the three community-size strata, which have moved in parallel for the most part. The one exception was that, during

the period of ascending use in the first half of the 1990s, use rose most quickly in the other MSA stratum; but the other strata caught up by 1996 at 8th grade and by 1999 at 10th grade. No such divergence occurred in 12th grade during that period.

The overall proportion of 12th-grade students involved in the use of ***any illicit drug other than marijuana*** peaked in communities of all sizes in 1981 and then fell until 1991 or 1992 (Figure 5-11a). Since 1989 the most urban areas—the large MSAs—have generally shown slightly lower rates than the other two strata—a reversal of earlier differences. After 1991 or 1992, the rates for 12th graders in all three strata started to increase gradually, though the increase halted in 1996 for the large MSAs, after 1997 for the other MSAs, and after 1999 in the non-MSAs. The large metropolitan stratum has shown a substantial drop in this index since 2001 in both 8th and 10th grades, and the differences by 2012 among the three strata are very small. There is a larger difference among 12th graders in 2012, with the large MSAs highest at 18% annual prevalence, compared to 17% in the Other MSAs, and 15% in the non-MSAs.

During the years in which the use of various drugs generally increased, significant differences emerged across the three community types in the use of several specific classes of drugs. Figures 5-11b and 5-11c show the trends for the annual prevalence of use of ***alcohol***, ***marijuana***, and ***cocaine***. The differences among the three population density strata were greatest (with large cities at the top) in the peak years of use for each drug, but as use declined during the 1980s, the three strata tended to converge. In the recent period of rising marijuana use there has been some divergence, but all three strata have shown an increase in use—the largest being among the Non-MSAs.

- The increase in ***cocaine*** use by 12th graders between 1976 and 1979, although dramatic at all levels of population density, was clearly greatest in the large cities, leaving them with by far the highest rate of cocaine use. Between 1980 and 1984, use was fairly stable in all groups, but in 1985 it showed a rise in each. In 1986, use stabilized again in all groups, and in 1987 it began a sharp decline that lasted for several years. Just as the earlier rise had been greatest in the large cities, so was the decline (see Figure 5-11c). By 1991 there were only small differences by population density in cocaine use among 12th graders, and this remained the case during the second incline phase of the 1990s through 1998. Then use started declining in the large MSAs a year before it did in the other two strata, resulting in some differences in usage levels. After 1996 the large cities generally had the lowest annual prevalence for cocaine use at 12th grade, instead of the highest—a reversal of the differences in all of the years prior to 1989. Since 2007 the rates have been very low and declining in all strata with very small differences among them. There have been very small community-size differences in cocaine use at the 8th- and 10th-grade levels since 1991, when data for them were first available; and they all have shown a downward trend in use since the late 1990s.

- In the late 1980s, the use of ***crack*** among 12th graders declined more in the large cities (where it was at a considerably higher level) than in the smaller areas. Between 1986 (when it was first measured among 12th graders) and the low point in 1991, annual use decreased by 4.7 percentage points (from 5.9% to 1.2%) in the large cities, by 1.8

percentage points (to 1.7%) in the other cities, and by 2.3 percentage points (to 1.2%) in the non-MSAs. In other words, the previous differences virtually disappeared. The increases in use after 1991 or 1992 in all three grades once again opened gaps by community size, this time with the non-MSAs highest in use for a few years, until the rates for the three levels of community size began to converge as overall use declined after about 1998. At 8th grade the large MSAs broke out of the cluster to have the highest rate of crack use from roughly 1998 through 2002, while at 10th grade a similar thing happened between roughly 1997 and 2000. Otherwise the three strata were fairly tightly clustered in those grades.

- In the early years of MTF, ***marijuana*** use varied considerably with community size among 12th graders (larger communities had highest use); the greatest differences occurred in 1978, one of the peak years of usage (see Figure 5-11b). After that, both the absolute and proportional differences diminished as use declined quite steadily through 1992. Between 1991 or 1992, communities in all size categories showed a turnaround in marijuana use (in fact, the turnaround began a year earlier in the non-MSAs) through 1997. As use increased, the differences began to re-emerge, though this time they were mostly between the two metropolitan strata versus the nonmetropolitan stratum (which has had the lowest prevalence throughout). As use decreased in the early 2000s, the differences linked to community size also decreased some. At the lower grades the differences among strata have been small, and they have tended to trend in parallel. The other MSAs have tended to have the highest, or near the highest usage level, in most years. Thus, community size differences have varied across the grade levels, with greater differences observed at 12th grade than in the lower grades. In the recent four-year increase period, ending in 2011, greater differences emerged at 12th grade (the non MSAs have shown little increase) but not much divergence in the lower grades.

- In general, ***heroin*** use has been fairly equivalent across the three types of communities—a fact that may surprise many—and has exhibited quite parallel time trends across all three grades. Nor have there been any appreciable differences in the two subcategories of heroin use—with and without using a needle.

- In the late 1970s, the use of ***narcotics other than heroin*** without medical supervision among 12th graders was highest in the large MSAs and lowest in the non-MSAs. All groups declined in use throughout the 1980s and into the early 1990s, then increased again; however, the differences among groups were diminishing, and by 1995 the annual prevalence for all three groups converged at 5%. Since then the association between community size and prevalence rates for narcotics other than heroin has been generally inconsistent. The large MSAs showed a sharp increase in use from 1997 to 2001. After the change in the question, to include Vicodin and OxyContin in the list of examples, prevalence levels increased for all three strata, but other MSAs were highest. Then, from 2005 through 2008, the non-MSAs rose to having the highest usage level among 12th graders. There has been little difference among the strata since 2009. (This class of drugs is not reported for 8th and 10th grades.)

- ***OxyContin*** use was first included in MTF in 2002. Because of the low numbers of cases, the trend lines are uneven, but they generally show the highest levels of use in the non-MSAs and the lowest in the large MSAs.

- ***Vicodin*** use, which was also first included in 2002, has shown a less than clear association with population density.

- ***Amphetamine*** use has generally been lowest in the large MSAs and highest in the non-MSAs at all three grade levels, although in recent years the differences have nearly disappeared. The differences for ***Ritalin*** specifically have been modest and inconsistent, though at 8th grade the rates have generally been highest in the Other MSA stratum.

- ***Methamphetamine*** use has tended to be lowest in the large cities at all three grade levels, since the question was introduced in 1999, but due to a convergence in the trend lines as use has declined substantially in all three strata in all three grades, there remains little meaningful difference.

- The use of ***crystal methamphetamine*** (***ice***) was added to the questionnaires for 12th graders in 1990. While use in all community types rose for some years, it rose most in the large cities, where it peaked in 1996 at a rate well above the less urban strata. Thereafter, however, use in the large cities declined rapidly, and since 1998 there has been little difference in use of crystal methamphetamine across the three strata. Use is not reported for 8th or 10th grade.

- ***Sedative*** (***barbiturate***) use is reported only for 12th graders. The rates among the three population density strata were very close and declined very much in parallel from 1975 through 1988. Then the large MSAs declined further and achieved the lowest rate of use. All three strata had an increase in use in the 1990s and then some decline in the late-2000s, but the large MSAs have continued to have the lowest rate of sedative use.

- ***Tranquilizer*** use has moved pretty much in parallel for the three strata. Rates of use in the large MSAs have tended to be slightly lower than the rates in the other two strata, which have shown quite similar rates of use.

- Among 12th graders, there was a greater decline in 30-day ***alcohol*** prevalence in the large cities (which had the highest levels of use) from 1980 to 1983, which virtually eliminated the previous differences among the three strata (see Table 86). From 1983 to 1992 or 1993, parallel (and substantial) declines occurred in all three strata, followed by a leveling in the early 1990s and then a decline for all three strata at all three grade levels. At the lower grades the trend lines have been fairly parallel and about equivalent for all three strata.

- For occasions of ***heavy drinking***—having five or more drinks in a row at least once in the two weeks prior to the survey—the trends for the three grades are fairly similar to those for 30-day prevalence, except that the non-MSAs tended to have the highest rates of this behavior in the 1990s at all grade levels, particularly in the lower grades (see Tables 90

through 92). This high rate of use emerged at 8th grade due to a greater increase in heavy drinking in the non-MSAs than in the other strata during the 1990s. It already existed in 10th grade at the time of the first measurement in 1991. The pattern is less clear at 12th grade, but the prevalence of heavy drinking has tended to be slightly lower in large cities than in the other two strata, at least until about 2005. Since 2005 the differences among strata have been small at all three grades, in large part due to the declines in use that have continued to take place.

- In the early to mid-1990s, there were increases in ***cigarette*** smoking in all three strata for all three grade levels (see Figure 5-11d and Tables 111 through 113 in Occasional Paper 79). The increases in all three grades were particularly sharp and lasted longer in the non-MSAs, thus creating a divergence across community types, with use highest in the non-MSAs and lowest in the large cities. In 1997, use began declining in the 8th and 10th grades in the large and smaller cities, while it continued to increase in non-MSAs. This pattern continued among 8th graders in 1998 and 1999, creating quite a large difference in smoking rates by stratum. Among 10th graders a similar difference emerged, but smoking finally began to decline in 1999 in the non-MSAs as well. In 12th grade, smoking in the non-MSA stratum rose sharply after about 1993 and that stratum has had the highest rate of smoking ever since. All three strata have shown substantial declines since 1998, but the non-MSAs clearly still have the highest smoking rate in all three grades. The large MSAs generally have had the lowest rates in 8th and 10th grades, while in 12th grade there has generally been not much difference between the Large and Other MSAs. In sum, a rather strong negative relationship between community size and smoking emerged during the 1990s, with smoking rates highest among non-MSAs, and that negative relationship remains today. It is also observable in ***daily*** and ***half-pack-a-day smoking***.

- ***Smokeless tobacco*** use is strongly related to community size at all three grade levels, with by far the highest rates of use in non-MSAs and the lowest rates in the large cities. This has been a consistent finding except for a couple of years at 12th grade, where reported use spiked in large cities. The trends, however, have been quite parallel across communities of different size, with all strata showing a long-term decline in use through about 2002 and then a leveling, followed by the beginning of an increase through 2010. In 2011 and 2012, use again declined as it fell in most subgroups at each grade, quite possibly as the result of the increase in the federal tobacco tax.

- ***Steroids*** show little difference in usage rates as a function of population density or systematic variation in trends related to population density, though the large MSAs have tended to be lowest in recent years in the upper grades.

Trend Differences by Socioeconomic Status

The measure of socioeconomic status (SES) used in MTF—namely, the average educational attainment level of the respondent's parents—is described in the previous chapter and in appendix B. Five different strata are distinguished, and students are sorted into those strata each year. It should be noted that, because the average educational level of parents has risen considerably since MTF began, each of the five categories contains a slowly changing proportion

of the sample. Figures 5-12a through 5-12f show trends for six selected measures of drug use by average level of parents' education. Trend data by subgroup for all drugs may be found in tabular form and in graphic form in Occasional Paper No. 79 on the MTF website at http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf.

In general, there has been little change over time in the relationship between family SES, as measured by parents' education, and prevalence-of-use rates for most of the drugs.

- ***Marijuana*** use at 12th grade, for example, has had little association with SES since MTF began, with the single exception that the lowest of the five SES strata has generally had a somewhat lower prevalence-of-use rate than all the others. Marijuana use declined similarly across all SES levels from the late 1970s through 1992 (Figure 5-12a), and then rose comparably in all three grades after 1992 before leveling and/or declining in the late 1990s and into the 2000s. At the 8th-grade level, there tends to be an ordinal negative correlation between marijuana and parental education level—with use highest in the lowest SES stratum—and it grew much stronger after 1996, with a considerable difference in marijuana use emerging among the strata. (So, while the lowest SES stratum has generally had the lowest level of use in 12th grade, it has generally had the highest level in 8th grade.) There was a similar trend toward a stronger negative association in 10th grade, as well: the differences were not as large initially, but they have been increasing, such that the two highest SES strata have emerged with a considerably lower rate of marijuana use than the two lowest strata. Put another way, in the two lower grade levels the decline occurring from 1996 through about 2006 was steeper for students from more highly educated families. At 12th grade, however, no such divergence by SES was evident, at least until 2010 through 2012, when the prevalence of use in the lowest SES stratum rose sharply, taking it from the bottom to the top of the distribution.

- ***Cocaine*** use has shown the largest and most interesting change in its association with SES (Figure 5-12b). During the incline phase of the cocaine epidemic—from 1975 through 1981—a strong *positive* association evolved among 12th graders between cocaine use and SES, with the greatest increase in use occurring in the highest SES group and the least in the lowest SES group. From 1981 or 1982 to 1985, use in the top SES levels declined some, while use in the lowest SES group increased substantially—an increase that likely reflected the introduction of the less expensive form of cocaine, ***crack***. The net effect of these changes was the elimination of the substantial SES group differences in cocaine use after 1985. The strong positive SES–cocaine use association that had existed for roughly eight years disappeared. Use across all SES levels showed a substantial decrease between 1986 and 1991, with little differential change. Then, in the upturn between about 1991 and 1997, some reversal in the relationship emerged, with the lowest SES group tending to show the highest level of use and the highest SES group tending to show the lowest level; these differences are not large, and they have been diminishing in recent years as use has declined considerably.

  In the 8th and 10th grades since 1991, when these grades were first surveyed, trends in the use of both ***crack*** and ***other cocaine*** have been similar for most strata (though with a negative association between use and SES). Notably, use among those in the lowest SES

stratum has been considerably higher for both forms of cocaine use than use in any of the other strata. A similar difference has been evident among 12th graders for crack use only since about 1992. Put another way, crack use has been exceptionally high among those coming from the lowest socioeconomic stratum—nearly double the rates for the other strata in 2012.

- ***LSD*** use and SES were positively correlated among 12th graders until about 1999, at which time use in all strata plunged, eliminating any such differences by 2003 (see Figure 5-12c). However, among 8th graders, those in the lowest SES stratum consistently have exhibited the *highest* usage rate, with hardly any differences among the other strata; among 10th graders, the differences have been negligible.

- ***Inhalant*** use has not varied greatly by SES among 12th graders. Throughout most of the study, the association has been weakly positive, particularly during the early to mid-1990s when inhalant use was increasing; but after about 2004, the association was very slightly negative, though this association has disappeared as use has continued to fall. In both lower grades, there has been some negative association, particularly since about 1995, as the strata diverged in their use patterns with highest use in the lowest SES stratum (see Tables 20 through 22 in Occasional Paper 79). The lowest SES stratum showed a "bulge" in inhalant use in both lower grades between 2007 and 2010.

- Overall, among 12th graders, little difference has existed among the SES groups in their trends in ***amphetamine*** use (see Figure 5-12d). In earlier years (1976 through 1990), there was usually a slight curvilinear relationship, with the two highest and the lowest SES groups tending to be low in amphetamine use. From 1991 through 1995, the two or three highest SES groups had the lowest rates of amphetamine use. After 1992, increases in use occurred in all strata into the early 2000s, after which all showed some decline and rates tended to converge. In 8th and 10th grades, amphetamine use has generally been slightly negatively correlated with SES; while the increases in use through 1995 or 1996 occurred in all groups, they were sharpest in the lower two SES strata. More recently, 8th and 10th graders in all strata showed some decline in use, but the differences among them remained.

- Use of ***Ritalin*** outside of medical supervision has generally not varied much as a function of SES in the two upper grades; in 8th grade use had tended to be negatively associated with SES, though this relationship nearly disappeared by 2012 after a period of substantial decrease in use.

- Since it was first included in the study in 1999, ***methamphetamine*** use has tended to be highest in the lowest SES stratum at all three grades and lowest in the two top SES strata. In recent years, use of ***crystal methamphetamine*** (***ice***) has followed the same pattern, and the differences among strata actually have enlarged as use fell more in the upper SES strata.

- Since 1991, when the surveys of the lower grades began, ***heroin*** use, including use with and without a needle, generally has been highest in the lowest SES group for 8th and 10th

graders. Otherwise there has been little systematic difference across the various strata. A similar pattern emerged for heroin use among 12th graders—though not until after 1994—and it still exists.

- By way of contrast, the use of ***narcotics other than heroin*** among 12th graders (the only grade for which this behavior is reported) has generally been lowest in the lowest SES stratum, with relatively little difference among the other strata, since MTF began. In 2012, however, the top SES stratum showed a significant 3.2 percentage point decline, making it the lowest stratum that year.

- The use of ***OxyContin*** tended to be negatively associated with SES in all three grades when first measured in 2002, but usage rates have been converging among the five strata since then among the 12th graders. The same was largely true for ***Vicodin*** as well.

- The use of ***sedatives*** (***barbiturates***) has shown no systematic relationship to SES since the beginning of the study. (Data for 12th grade only are reported.)

- ***Tranquilizer*** use at 12th grade has shown little systematic association with SES. The various SES strata generally moved in parallel, though they have become somewhat more differentiated in recent years, after the question was revised to include Xanax in the list of examples given. In the lower grades, particularly 8th grade, the lowest SES stratum has tended to have the highest prevalence while the two top SES strata have had the lowest rates of use. The differences have widened since 2002 as the upper SES strata have shown steeper declines in use than the others. A similar divergence has occurred in 10th grade, as well.

- The picture for ***alcohol*** use among 12th graders is similar to the one described earlier for marijuana use: that is, little difference in 30-day prevalence rates across the SES strata, except that the lowest stratum has fairly consistently had a lower prevalence than all the others, and all strata have moved approximately in parallel. The story for 12th-grade ***binge drinking*** is similar (Figure 5-12e).

  At the lower grade levels, however, the story is quite different. Binge drinking has generally been inversely correlated with SES, and the association has been strongest in 8th grade, where the differences are substantial. Trends for the various strata have generally been parallel, nonetheless, with all strata showing a long-term decline in use.

- Prior to 1981, daily use of ***cigarettes*** among 12th graders was generally inversely related to SES, with each successively higher SES group smoking less (Figure 5-12f). Between 1981 and 1991, this ordinal relationship diminished substantially because (a) the two highest SES groups showed some gradual increase in use; (b) the next two strata remained unchanged; and (c) the lowest SES group showed a decline in use, which brought it from the highest smoking stratum to the lowest (probably due to its racial composition, as will be discussed in the next section). The net result of this and other trends was a near elimination of the SES differences among 12th-grade students in daily cigarette smoking. From 1992 to 1997, all strata showed an increase in ***daily smoking***.

From 1997 to 2003, there were sharp declines in smoking in the two highest SES strata—with later and slower downturns in the other strata—once again opening up some differences by SES, though not as large as the differences that existed in the 1970s and 1980s. This time the lowest SES stratum is not at the top but rather down near the bottom of the rankings—again, likely because of its racial composition.

It is possible that the introduction of the Joe Camel advertising campaign in 1988 helped account for the closing of the socioeconomic gap in the late 1980s, and that its termination in 1997 helped account for the re-emergence of that gap. We know that between 1986 and 1997, the rise in smoking was sharper among 12th-grade boys than 12th-grade girls, and the Camel brand was particularly popular among boys and those whose parents had higher than average education.[72] So, the Joe Camel ad campaign appears to have been particularly effective with boys from more educated strata, raising the smoking rate of their SES strata and nearly eliminating the relationship between SES and smoking that existed before and after the years of the campaign for that brand.

In 8th and 10th grades, 30-day smoking rates increased in all SES strata from 1991 to 1996, after which there has been a period of downturn. The lowest SES stratum was the last to show a decline, increasing the SES differences. In 8th grade, smoking has been consistently negatively correlated with SES, with quite large proportional differences among the strata and little evidence of the proportional convergence that is usually seen with a large decline in use overall. This relationship is attenuated considerably by 12th grade, very likely due to greater numbers of students dropping out of school in the lower SES strata.

Racial/Ethnic Differences in Trends

While the three major racial/ethnic groups examined here—Whites, African Americans, and Hispanics—have tended to be quite different in their level of usage for some drugs, they have exhibited similar trends in almost all cross-time changes in drug use.[73] (Cigarette use is an exception, as discussed later.) Data have been examined here for these three groups using two-year moving averages of prevalence to provide smoother and more reliable trend lines.[74] Even with the two-year averages, the trend lines tend to be a bit irregular for Hispanics, who are the most clustered by school, and, therefore, for whom we have the most variability in estimates. See

[72]Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (1999). *Cigarette brand preferences among adolescents* (Monitoring the Future Occasional Paper No. 45). Ann Arbor, MI: Institute for Social Research. Available online at http://www.monitoringthefuture.org/pubs/occpapers/occ45.pdf.

[73]We have published articles examining a wider array of ethnic groups, using groupings of respondents from adjacent five-year intervals in order to obtain more reliable estimates of trends. See Bachman, J. G., Wallace, J. M., Jr., O'Malley, P. M., Johnston, L. D., Kurth, C. L., & Neighbors, H. W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976–1989. *American Journal of Public Health, 81*, 372–377. See also Wallace, J. M., Jr., Bachman, J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Cooper, S. M. (2002). Tobacco, alcohol and illicit drug use: Racial and ethnic differences among U.S. high school seniors, 1976–2000. *Public Health Reports, 117(Supplement 1)*, S67–S75; Delva, J., Wallace, J. M., Jr., O'Malley, P. M., Bachman, J. G., Johnston, L. D., & Schulenberg, J. E. (2005). The epidemiology of alcohol, marijuana, and cocaine use among Mexican American, Puerto Rican, Cuban American, and other Latin American eighth-grade students in the United States: 1991–2002. *American Journal of Public Health, 95*, 696–702; and Bachman, J. G., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (2010). *Impacts of parental education on substance use: Differences among White, African-American, and Hispanic students in 8th, 10th, and 12th grades (1999–2008)* (Monitoring the Future Occasional Paper No. 70). Ann Arbor, MI: Institute for Social Research. Available online at http://www.monitoringthefuture.org/pubs/occpapers/occ70.pdf.

[74]A given year's value in a two-year moving average is based on the mean of the observed values for that year and the previous year.

Occasional Paper No. 79 on the MTF website for the racial/ethnic trend data on all classes of drugs, at http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf.

- Figure 5-13a, which shows the changes in annual ***marijuana*** use among 12th graders for the three groups, illustrates the great similarity in these trends—particularly during the long decline phase that began at the end of the 1970s. Generally, among 12th graders, Whites have had the highest level of use and African Americans the lowest, with Hispanics in between. Use fell more in the first decline phase (roughly 1979–1992) among African Americans than it did in the other two groups, expanding the differences among them. But then use rose more among African-American 12th graders in the relapse phase of the epidemic (roughly 1992–1997), narrowing the gap. Marijuana use among African Americans also leveled earlier (in 1997) than it did among Whites (in 1999). (Recall that we are using two-year averages, which slightly moves some of the inflection points from what we have been discussing previously.) All three groups showed a rise in marijuana use in all three grade levels in the mid-1990s, followed by a leveling and then decline in the late 1990s and early 2000s (see Tables 10 through 12 in Occasional Paper 79). Hispanic 12th graders showed a particularly sharp decline from 2000 to 2007, virtually eliminating the difference between them and African-American 12th graders, though marijuana use appeared to be rising faster among Hispanics in the past several years.

  The trends for Whites and Hispanics have generally been fairly parallel to each other, but their relative positions have been different at the different grade levels. In 8th grade, Hispanics have consistently shown the highest rate of marijuana use, while Whites and African Americans have been similar to each other at considerably lower rates. By 10th grade, Whites showed rates of use similar to Hispanics, until about 2008, when marijuana use started to rise steeply among Hispanics. African Americans have tended to have the lowest rates of the three groups in 10th grade; however, after 2008 their use also rose sharply bringing them up to Whites by 2011. By 12th grade, with few exceptions, Whites have had the highest rates, Hispanics slightly lower ones, and African Americans the lowest. By 2012, however, Hispanics have overtaken Whites at 12th grade, after several years of sharp increases; so Hispanics now have the highest rate of marijuana use in all three grades. We believe that differential dropout rates may account for much or all of these shifts in relative position across the three grade levels—Hispanics have had the highest rate of dropping out, and African Americans the next highest. During the most recent period of decline in marijuana use, Hispanics showed a sharper drop than Whites or African Americans in all three grade levels, narrowing the differences between these two groups. African Americans also showed smaller declines than the other two groups in all grades, bringing all three racial/ethnic groups closer together at all grade levels. Since the turnaround, the two minority groups have shown sharper rises in their rates of marijuana use than Whites, reducing the differences among them in 10th and 12th grades.

- Figure 5-13a shows the long-term trends for annual ***cocaine*** use among 12th graders. It clearly shows that the rise in cocaine use (in 1976–1979) occurred more sharply among White and Hispanic students than among African American students. The decline among African Americans appears to have begun earlier, but perhaps of greatest importance, all

three groups participated in the sustained decline in cocaine use after 1986. Between 1984 and 2001 Hispanics had somewhat higher cocaine use rates than Whites, but a rise in use among Whites eliminated the difference by 2002. Cocaine use by African-American 12th graders fell to very low levels by the early 1990s and stabilized there. In the lower grades, there are large differences among these three racial/ethnic groups in cocaine use, with African Americans consistently reporting very low (and unchanging) rates of use since 1992 (the first available data point), Hispanics consistently reporting relatively high rates, and Whites falling in the middle. Only Whites and Hispanics showed a rise in cocaine use in the early 1990s, and both groups have shown a substantial decrease since.

- The three racial/ethnic groups have generally shown large disparities in their use of both ***cocaine powder*** and ***crack cocaine***. At all three grades, African Americans have consistently had the lowest prevalence by far of use of cocaine powder. At 12th-grade, use of cocaine powder among Whites fell very sharply from the first measurement point in 1988 through 1992, dropping below use by Hispanics until 2002, when a sharper drop in use by Hispanic 12th graders led to another crossover. In 2006 and 2007 the two groups had similar rates of use, but by 2008 Whites had exceeded Hispanics in their use of cocaine powder. Since then the rates of use for Whites and Hispanics have been declining in parallel, and African Americans by far the lowest rate. In 8th and 10th grades, use of cocaine powder rose the most among Hispanics from 1992 through 1996/1997, whereas over the same interval, use rose moderately among Whites and not at all among African Americans. Since then, Hispanics have had considerably higher rates of use of cocaine powder than the other two groups at both grade levels. They also reported considerably higher use of crack. Indeed, at the lower two grade levels, the trends for crack and cocaine powder were very similar.

  For crack, however, Hispanics have had the highest rates of use in all three grades since the first measurements in 1987 (for 12th graders) and 1992 (for 8th and 10th graders), and African-American students have consistently had the lowest rates. African Americans were the only ones to show some increase in crack use in recent years—an increase among 12th graders that continued from 1998 through 2004 before decreasing some since then. Despite the increase, African Americans still had lower rates of crack use at all grades than Whites or Hispanics did, though the differences among these three groups have narrowed as use declined long-term among both Whites and Hispanics in all three grades. (See Figure 84 in Occasional Paper 79.)

- It is clear that ***inhalants*** have not been popular with African-American teens: at all grade levels they have shown dramatically lower rates of inhalant use than either Whites or Hispanics, and their use has fluctuated much less. At 10th and 12th grades, Whites have generally had the highest rates of inhalant use, with Hispanics not far below (although in recent years the difference lessened as use by White students declined more), and in 10th grade there was actually a crossover in 2007, leaving Hispanics with the higher rate of use. At 8th grade, usage rates for both Whites and Hispanics have generally been quite similar and have moved in parallel—at least until 2007, when use among Hispanics began to rise, just as happened in 10th grade. At the 12th-grade level, the rise in reported

inhalant use (unadjusted for the underreporting of nitrites) occurred about equally among Whites and Hispanics from 1976 through 1995, whereas African Americans showed practically no increase in their already low levels of use. African-Americans now have an annual prevalence that is approximately half of the prevalence of Whites. A similar picture emerged in 8th and 10th grades, except that the increase in the early and mid-1990s among Hispanics and Whites was even steeper than the increase in 12th grade. There were important decreases among both White and Hispanic students in all three grades over approximately 10 years (and modest decreases among African-American students), but all three groups showed some increase after 2002 at 8th grade and after 2004 at 10th and 12th grades. Use by Hispanics has decreased (non-significant) over the past two years in both 8th and 10th grades.

- ***LSD*** and ***hallucinogens*** in general also have been relatively unpopular with African Americans, who consistently have had far lower rates of use than Whites or Hispanics in all grades. Since MTF began, Whites have had fairly consistently the highest rate of hallucinogen use in 10th and 12th grades, and Hispanics have had slightly higher rates of use compared to Whites in most (but not all) years in 8th grade. African Americans have had negligible rates of use in 8th grade.

  African Americans have shown rather little change in their rates of ***LSD*** use, specifically. By way of contrast, both Whites and Hispanics showed sharp increases in LSD use among 12th graders (after 1989) and 10th graders (at least after 1992, and quite possibly beginning earlier). Among 8th graders, both groups showed an increase (after 1992), which was sharpest for Whites until their use began to decline in 1998, while use among Hispanics continued rising briefly. Both Whites and Hispanics have shown a very sharp decrease in LSD use in recent years at all three grade levels, at least until 2005, after which use leveled and among White 12th graders increased. Little change occurred in the very low rates of use among African Americans. Thus the differences among the three groups have narrowed, with Whites and Hispanics now at rates of use only slightly above those of African-American students.

- ***Ecstasy*** (***MDMA***), another drug used for its hallucinogenic effects, has also remained relatively unpopular among African-American students at all grade levels, though it has shown some fluctuations. While use rose sharply among both Whites and Hispanics in the late 1990s, the increase among African Americans was far smaller and started from a much lower level. All groups at all grade levels showed an appreciable decline in use between 2001 and 2004, with the exception that use was rising among 8th-grade African-American students, though at a quite low prevalence level. Because use in general was so low at 8th grade, the groups differed from one another rather little in 2012. All three groups showed some evidence of a rebound in use in all grades after about 2005. In 2012 all three groups showed a non-significant decline in use in all three grades with the exception of 12th-grade Hispanics, whose use leveled.

- While the rates of ***heroin*** use have tended to be relatively low in all three groups, some systematic differences can be discerned. At 8th grade, Hispanics have consistently had the highest reported levels of heroin use, followed by Whites, with African Americans

coming in lowest (and showing less fluctuation over time). At 10th grade, Whites and Hispanics have shown practically identical usage rates and trends in those rates. African Americans again have shown lower rates with limited variation over time. At 12th grade, for which there is a longer interval available for analysis, Hispanics showed the highest rate from 1977 (the first measurement point) through 1979, but after that Hispanics and Whites have had fairly similar levels and trends in use. Annual prevalence among African-American 12th graders started low (close to the rates among Whites) and remained there through the late 1990s, even as use rose among Whites and Hispanics during the late 1990s. Heroin use among African-American 12th graders rose some from 2001 to 2005, while it dropped among White and Hispanic 12th graders, which has brought the rates for the three racial/ethnic groups quite close to one another.

- Use of ***narcotics other than heroin*** among 12th graders (the only grade for which data are reported) has consistently been highest among White students, considerably lower among Hispanic students, and consistently lowest among African-American students. The differences have enlarged in recent years due to greater-than-average increases among White students since about 1993. In fact, use continued to rise among White students after 2003, while it leveled for some time among African Americans and started to decline among Hispanics. Since 2008 there has been some increase in use among the two minority groups, while among Whites use declined.
- Among 10th and 12th graders, ***OxyContin*** use has generally been highest among Whites and lowest among African Americans, although the difference between Hispanics and African Americans has been small until Hispanic use in 10th-grade rose after 2008 and approached the rate for Whites. Among 8th graders, use has consistently been lowest among African Americans, but differences between Hispanics and Whites have been inconsistent. Since 2007, use among Whites has been slightly higher but in 2011 and 2012 Hispanics were higher than Whites after their use rose for three years. Use by Hispanics also rose at 10th grade after 2008 with a slight decrease in 2012; still their prevalence is up to that of Whites.

- ***Vicodin,*** another synthetic narcotic drug, has shown a somewhat similar picture to that of OxyContin. African Americans have had relatively low rates of use in all three grades; Whites have had by far the highest rates of use in 10th and 12th grades, with Hispanics falling in between. At 10th grade a sharp increase among Hispanics since 2007 has brought them up to the level of Whites. (Use by all three groups fell after 2010.) White and Hispanic usage rates have been fairly similar at 8th grade but very disparate at 12th grade, where Vicodin use among both groups has declined in recent years.

- Whites have consistently had the highest use of ***amphetamines*** in all three grades, though at 8th grade their use generally has been only slightly above that of Hispanics. The large decline in use, which began among 12th graders in 1982 and ran through 1992, narrowed the substantial differences among the three racial/ethnic groups somewhat, although all three groups showed some decline. The decline was greatest among Whites, who started (and ended) with the highest rates, and least among African Americans, who started (and ended) with the lowest. Hispanics have been about midway between the other two groups. For 12th graders, amphetamine use increased some among Whites between 1992

and 2002, and among Hispanics between 1992 and 2000, but little among African Americans in this period. In the lower grades, the three groups generally had the same rank order in their levels of amphetamine use; African-American students showed little change in their low levels of use since 1991, even though the other two groups showed first an increase and then (after about 1996 or 1997) a decrease in use. While differences have narrowed somewhat, the recent differences among the three groups remained clear, particularly at 10th and 12th grades.

- African Americans have consistently had the lowest rates of ***Ritalin*** use in all three grades, not surprising given that Ritalin is one of the major amphetamine drugs in use in recent years. Due to a modest increase in their use combined with a decline in use by Hispanics, by 2008 African-American students reported levels of use equivalent to the other two groups in 8th grade and roughly equivalent to Hispanics in the upper grades, where Whites have generally had the highest usage rate, though it has dropped in all three grades. Due to the long-term declines in use among Whites and Hispanics in all three grades, there is at present rather little difference related to race/ethnicity.

- It is also noteworthy that, at least for the years for which data are available, African Americans at all three grade levels have reported extremely low rates of use of ***methamphetamine*** and ***crystal methamphetamine*** (***ice***), while White and Hispanic students have maintained fairly similar (and generally declining) rates at all grades for which data are available—i.e., since 2000. (Crystal methamphetamine is reported only for 12th graders.) The differences have narrowed, however, as use of both drugs has declined considerably among Whites and Hispanics. In fact, in 2010 and 2011 the rates for Whites fell below those for African Americans.

- Among 12th graders, the substantial racial/ethnic differences in the use of ***sedatives*** (***barbiturates***) and ***tranquilizers***—with Whites highest and African Americans lowest—converged somewhat during the long period of declining use from the mid-1970s through the early 1990s, until the rise in use starting in the early 1990s. In general, Whites consistently had the highest usage rates for each drug at 12th grade, and also the largest declines; African Americans had the lowest rates and, therefore, the smallest absolute declines, while Hispanics consistently remained in the middle. Then, during the increase in the use of illicit drugs in the 1990s, Whites showed the greatest increase and African Americans showed little or no increase in their use of sedatives (barbiturates) or tranquilizers—substantially enlarging the difference among the three groups. By the early 2000s in the case of tranquilizers, and the mid-2000s in the case of sedatives, the rise in the prevalence of use of these two classes of drugs appeared to have ended and use has declined among Whites and Hispanics. At the same time, African Americans have shown a leveling of sedative use and even some signs of a modest increase in tranquilizer use at all three grade levels.

- The 30-day prevalence of ***alcohol*** use has shown relatively consistent racial/ethnic differences over time at each grade level. Among 12th graders, Whites have had the highest rates, African Americans considerably lower ones, and rates for Hispanics between the two (though closer to Whites than African Americans). Their cross-time

trends have generally been parallel, although Whites showed the greatest decline in drinking between 1988 and 1993, narrowing the difference between them and Hispanics. More recently, use among Whites and Hispanics has been declining more than among African Americans, continuing to narrow the differences. At 10th grade, Whites and Hispanics have had quite similar rates and trends, nearly tracking on each other. African Americans have had rates that were substantially lower but moved mostly in parallel with the other two groups in grade 10, though there has been some convergence there as well. At 8th grade, Hispanics have consistently had somewhat higher drinking rates than Whites, while African Americans have had considerably lower and more stable rates. All three groups have been showing long term declines in use. As drinking has declined in 8th grade, the differences have narrowed; and, in fact, Whites now are down to the same level as African Americans.

- The trends for ***occasions of heavy drinking*** (having five or more drinks on at least one occasion in the prior two weeks) have been very similar to those just discussed for current drinking, though the absolute rates are lower, of course. African Americans have consistently had appreciably lower rates than the other two groups at all three grade levels, though at 8th grade the differences had been narrowing for some years as rates have declined more steeply among Whites and Hispanics. The rates of binge drinking among Hispanic and African-American 8th graders have been falling since the mid-1990s, while such drinking among Whites has been falling only since around 2000 (see Figure 5-13b and Tables 90 through 92 in Occasional Paper 79). In 2012 Hispanics had the highest rate of binge drinking in 8th grade while Whites and African Americans were considerably lower and about the same as the other. In 10th grade Whites and Hispanics had considerably *higher* rates of occasions of heavy drinking than African American students, and about the same as each other. In 12th grade the rates were much higher and the three groups were more spread out, but all three have shown a pattern of long-term decline, which is least steep for African Americans. Subgroup differences for the different classes of alcoholic beverages may be seen in Occasional Paper No. 79, available on the MTF website: http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf.

- ***Cigarette*** smoking showed quite dramatic differential trends during the 1980s. Among 12th graders, the three major racial/ethnic groups had similar daily smoking rates in the mid-1970s (see Figure 5-13b). All three groups showed declines between 1977 and 1981, with the declines somewhat stronger for African Americans and Hispanics, clearly leaving Whites with the highest smoking rates by 1981. After that, African Americans exhibited a consistent and continuing decline through 1993, while rates among Whites increased gradually and rates among Hispanics stayed fairly level. By 1991, African Americans had a rate of daily smoking that was only one fourth that of Whites. After 1992, current (30-day) smoking rates rose among all three racial/ethnic groups, though the increase was clearly the greatest among Whites. In more recent years, as smoking rates declined again, the differences between Whites and the other two groups have diminished, but are still quite substantial.

In 8th and 10th grades, all three racial/ethnic groups showed a sharp rise in daily smoking during the early 1990s, followed by some signs of leveling and then a decrease by the mid- to late 1990s. At 10th grade, the increase was sharpest among Whites (similar to 12th-grade), whose daily use of cigarettes was substantially higher than that of Hispanics, whose use in turn was substantially higher than that of African Americans. At 8th grade, the smoking rates for Whites and Hispanics have been quite close and were much higher than among African-American 8th graders, at least during the 1990s. At 8th and 10th grades, the downturn of the late 1990s began a year or two later among African Americans than it did among the other two groups. All three groups have shown appreciable reductions in smoking at all three grade levels since then, resulting in a considerable reduction of the differences among the three groups, particularly among 8th graders. In fact, because of the steep decline in smoking among Hispanics, little or no difference in current *daily* smoking rates remains between Hispanics and African-American students at any of the three grade levels, although there are still differences in their rates of *any* smoking in the prior 30 days. Daily smoking rates are considerably higher among Whites in the upper grades than in either of the minority groups.

- Whites have consistently had the highest rates of ***smokeless tobacco*** use in all three grades, with use in the upper grades being much lower among Hispanics and lower still among African-American students. In all three grades the decline in use which began in the mid-1900s and ended in the mid-2000s occurred predominately among Whites, and has thus had the effect of narrowing differences. The increase in smokeless use observed in recent years also has occurred mostly among Whites, widening the gap among these three groups. In 2012 use among Whites declined some in all three grades; and it also declined in 12th grade in the other two groups as well.

- The use of ***anabolic steroids*** generally has tended to be lowest among African Americans, particularly since the sharp increase in use in the late 1990s among Whites and Hispanics. (African Americans exhibited that increase at 10th grade only, but their use declined earlier and more sharply than among White and Hispanic 10th graders.) Whites and Hispanics have had quite parallel trends at 8th and 10th grades, with about equivalent rates of use. At 12th grade the trend lines for African Americans and Hispanics were quite irregular due to the smaller number of respondents at this grade for the question on steroid use, making trend comparisons more difficult. It appeared that the prevalence rates for African-American students have been rising since about 1999, which in combination with a recent decline in use among Whites and Hispanics eliminated the differences among them; indeed, African Americans have higher rates than the other two groups in 2011 and 2012 in the two upper grades. Declines in the lower grades among all three groups just about erased the subgroup differences there as well.

- African-American students have the lowest rates of use of virtually all licit and illicit drugs at all three grade levels being examined here; and they have consistently shown exceptionally low rates of use for certain drugs, including in particular ***inhalants***, ***hallucinogens*** taken as a class, ***LSD***, ***other hallucinogens***, ***ecstasy*** (***MDMA***), ***meth-amphetamine***, and ***crystal methamphetamine*** (***ice***). Further, for the past decade, their ***cigarette*** smoking rates and rates of ***binge drinking*** also have been exceptionally low.

- In 8th grade, Hispanic students have tended to have the highest rates of use of a number of drugs, including ***marijuana***, ***inhalants***, ***salvia***, ***crack***, ***cocaine powder***, ***heroin***, ***ecstasy*** (***MDMA***), ***methamphetamine***, ***Rohypnol***, and ***heavy drinking***. By 12th grade the differences between Hispanic and White students narrow considerably or are reversed. In 2012, however, Hispanic 12th graders still had the highest use rates for ***marijuana***, ***inhalants***, ***salvia***, ***crack***, ***cocaine powder***, ***Ritalin***, and ***Rohypnol***. As we have said earlier, we believe that Hispanics' considerably higher rate of school dropout may do much to explain why White high school students assume the highest use rates for some drugs (e.g., marijuana, tranquilizers, and alcohol) by 12th grade.

- By 12th grade, White students have tended to have the highest rates of use of ***any illicit drug***, ***marijuana***, ***any illicit drug other than marijuana***, ***hallucinogens***, ***LSD***, ***other hallucinogens***, ***ecstasy*** (***MDMA***), ***narcotics other than heroin***, ***OxyContin***, ***Vicodin***, ***amphetamines***, ***Ritalin***, ***sedatives*** (***barbiturates***), ***tranquilizers***, ***alcohol***, ***binge drinking***, ***cigarette*** smoking (by a large margin), and ***smokeless tobacco***.

TABLE 5-1
Long-Term Trends in Lifetime Prevalence of Use of Various Drugs in Grade 12

Percentage who ever used →

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Approximate weighted N =	*9,400*	*15,400*	*17,100*	*17,800*	*15,500*	*15,900*	*17,500*	*17,700*	*16,300*	*15,900*	*16,000*	*15,200*	*16,300*	*16,300*	*16,700*	*15,200*	*15,000*	*15,800*	*16,300*
Any Illicit Drug [a,b]	55.2	58.3	61.6	64.1	65.1	65.4	65.6	64.4	62.9	61.6	60.6	57.6	56.6	53.9	50.9	47.9	44.1	40.7	42.9
Any Illicit Drug other than Marijuana [a,b,c]	36.2	35.4	35.8	36.5	37.4	38.7	42.8	41.1	40.4	40.3	39.7	37.7	35.8	32.5	31.4	29.4	26.9	25.1	26.7
Marijuana/Hashish	47.3	52.8	56.4	59.2	60.4	60.3	59.5	58.7	57.0	54.9	54.2	50.9	50.2	47.2	43.7	40.7	36.7	32.6	35.3
Inhalants [d]	—	10.3	11.1	12.0	12.7	11.9	12.3	12.8	13.6	14.4	15.4	15.9	17.0	16.7	17.6	18.0	17.6	16.6	17.4
Inhalants, Adjusted [d,e]	—	—	—	—	18.2	17.3	17.2	17.7	18.2	18.0	18.1	20.1	18.6	17.5	18.6	18.5	18.0	17.0	17.7
Amyl/Butyl Nitrites [f,g]	—	—	—	—	11.1	11.1	10.1	9.8	8.4	8.1	7.9	8.6	4.7	3.2	3.3	2.1	1.6	1.5	1.4
Hallucinogens [c]	16.3	15.1	13.9	14.3	14.1	13.3	13.3	12.5	11.9	10.7	10.3	9.7	10.3	8.9	9.4	9.4	9.6	9.2	10.9
Hallucinogens, Adjusted [c,h]	—	—	—	—	17.7	15.6	15.3	14.3	13.6	12.3	12.1	11.9	10.6	9.2	9.9	9.7	10.0	9.4	11.3
LSD	11.3	11.0	9.8	9.7	9.5	9.3	9.8	9.6	8.9	8.0	7.5	7.2	8.4	7.7	8.3	8.7	8.8	8.6	10.3
Hallucinogens other than LSD [c]	14.1	12.1	11.2	11.6	10.7	9.8	9.1	8.0	7.3	6.6	6.5	5.7	5.4	4.1	4.3	4.1	3.7	3.3	3.9
PCP [f,g]	—	—	—	—	12.8	9.6	7.8	6.0	5.6	5.0	4.9	4.8	3.0	2.9	3.9	2.8	2.9	2.4	2.9
Ecstasy (MDMA) [f]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	9.0	9.7	10.8	12.9	15.4	15.7	16.5	16.0	16.2	16.1	17.3	16.9	15.2	12.1	10.3	9.4	7.8	6.1	6.1
Crack [i]	—	—	—	—	—	—	—	—	—	—	—	—	5.4	4.8	4.7	3.5	3.1	2.6	2.6
Other Cocaine [j]	—	—	—	—	—	—	—	—	—	—	—	—	14.0	12.1	8.5	8.6	7.0	5.3	5.4
Heroin [k]	2.2	1.8	1.8	1.6	1.1	1.1	1.1	1.2	1.2	1.3	1.2	1.1	1.2	1.1	1.3	1.3	0.9	1.2	1.1
With a needle [l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without a needle [l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Narcotics other than Heroin [m,n]	9.0	9.6	10.3	9.9	10.1	9.8	10.1	9.6	9.4	9.7	10.2	9.0	9.2	8.6	8.3	8.3	6.6	6.1	6.4
Amphetamines [b,m]	22.3	22.6	23.0	22.9	24.2	26.4	32.2‡	27.9	26.9	27.9	26.2	23.4	21.6	19.8	19.1	17.5	15.4	13.9	15.1
Methamphetamine [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice) [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.7	3.3	2.9	3.1
Sedatives (Barbiturates) [m,p]	16.9	16.2	15.6	13.7	11.8	11.0	11.3	10.3	9.9	9.9	9.2	8.4	7.4	6.7	6.5	6.8	6.2	5.5	6.3
Sedatives, Adjusted [m,q]	18.2	17.7	17.4	16.0	14.6	14.9	16.0	15.2	14.4	13.3	11.8	10.4	8.7	7.8	7.4	7.5	6.7	6.1	6.4
Methaqualone [m,r]	8.1	7.8	8.5	7.9	8.3	9.5	10.6	10.7	10.1	8.3	6.7	5.2	4.0	3.3	2.7	2.3	1.3	1.6	0.8
Tranquilizers [c,m]	17.0	16.8	18.0	17.0	16.3	15.2	14.7	14.0	13.3	12.4	11.9	10.9	10.9	9.4	7.6	7.2	7.2	6.0	6.4
Rohypnol [f]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [s]	90.4	91.9	92.5	93.1	93.0	93.2	92.6	92.8	92.6	92.6	92.2	91.3	92.2	92.0	90.7	89.5	88.0	87.5‡	80.0
Been Drunk [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	65.4	63.4	62.5
Cigarettes	73.6	75.4	75.7	75.3	74.0	71.0	71.0	70.1	70.6	69.7	68.8	67.6	67.2	66.4	65.7	64.4	63.1	61.8	61.9
Smokeless Tobacco [f,t]	—	—	—	—	—	—	—	—	—	—	—	31.4	32.2	30.4	29.2	—	—	32.4	31.0
Steroids [m,u]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.0	2.9	2.1	2.1	2.0

(Years cont.)

(Table continued on next page.)

TABLE 5-1 (cont.)
Long-Term Trends in Lifetime Prevalence of Use of Various Drugs in Grade 12

	Percentage who ever used																			
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Approximate weighted N =	*15,400*	*15,400*	*14,300*	*15,400*	*15,200*	*13,600*	*12,800*	*12,800*	*12,900*	*14,600*	*14,600*	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*14,400*	*14,100*	*13,700*	
Any Illicit Drug [a,b]	45.6	48.4	50.8	54.3	54.1	54.7	54.0	53.9	53.0	51.1	51.1	50.4	48.2	46.8	47.4	46.7	48.2	49.9	49.1	-0.8
Any Illicit Drug other than Marijuana [a,b,c]	27.6	28.1	28.5	30.0	29.4	29.4	29.0‡	30.7	29.5	27.7	28.7	27.4	26.9	25.5	24.9	24.0	24.7	24.9	24.1	-0.9
Marijuana/Hashish	38.2	41.7	44.9	49.6	49.1	49.7	48.8	49.0	47.8	46.1	45.7	44.8	42.3	41.8	42.6	42.0	43.8	45.5	45.2	-0.3
Inhalants [d]	17.7	17.4	16.6	16.1	15.2	15.4	14.2	13.0	11.7	11.2	10.9	11.4	11.1	10.5	9.9	9.5	9.0	8.1	7.9	-0.2
Inhalants, Adjusted [d,e]	18.3	17.8	17.5	16.9	16.5	16.0	14.6	13.8	12.4	12.2	11.4	11.9	11.5	11.0	10.1	10.2	—	—	—	—
Amyl/Butyl Nitrites [f,g]	1.7	1.5	1.8	2.0	2.7	1.7	0.8	1.9	1.5	1.6	1.3	1.1	1.2	1.2	0.6	1.1	—	—	—	—
Hallucinogens [c]	11.4	12.7	14.0	15.1	14.1	13.7	13.0‡	14.7	12.0	10.6	9.7	8.8	8.3	8.4	8.7	7.4	8.6	8.3	7.5	-0.8
Hallucinogens, Adjusted [c,h]	11.7	13.1	14.5	15.4	14.4	14.2	13.6‡	15.3	12.8	10.9	9.9	9.3	8.8	8.9	9.0	8.0	9.1	8.8	7.9	-0.9
LSD	10.5	11.7	12.6	13.6	12.6	12.2	11.1	10.9	8.4	5.9	4.6	3.5	3.3	3.4	4.0	3.1	4.0	4.0	3.8	-0.2
Hallucinogens other than LSD [c]	4.9	5.4	6.8	7.5	7.1	6.7	6.9‡	10.4	9.2	9.0	8.7	8.1	7.8	7.7	7.8	6.8	7.7	7.3	6.6	-0.8
PCP [f,g]	2.8	2.7	4.0	3.9	3.9	3.4	3.4	3.5	3.1	2.5	1.6	2.4	2.2	2.1	1.8	1.7	1.8	2.3	1.6	-0.7
Ecstasy (MDMA) [f]	—	—	6.1	6.9	5.8	8.0	11.0	11.7	10.5	8.3	7.5	5.4	6.5	6.5	6.2	6.5	7.3	8.0	7.2	-0.9
Cocaine	5.9	6.0	7.1	8.7	9.3	9.8	8.6	8.2	7.8	7.7	8.1	8.0	8.5	7.8	7.2	6.0	5.5	5.2	4.9	-0.3
Crack [i]	3.0	3.0	3.3	3.9	4.4	4.6	3.9	3.7	3.8	3.6	3.9	3.5	3.5	3.2	2.8	2.4	2.4	1.9	2.1	+0.2
Other Cocaine [j]	5.2	5.1	6.4	8.2	8.4	8.8	7.7	7.4	7.0	6.7	7.3	7.1	7.9	6.8	6.5	5.3	5.1	4.9	4.4	-0.4
Heroin [k]	1.2	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	1.5	1.5	1.5	1.4	1.5	1.3	1.2	1.6	1.4	1.1	-0.3
With a needle [l]	—	0.7	0.8	0.9	0.8	0.9	0.8	0.7	0.8	0.7	0.7	0.9	0.8	0.7	0.7	0.6	1.1	0.9	0.7	-0.2
Without a needle [l]	—	1.4	1.7	2.1	1.6	1.8	2.4	1.5	1.6	1.8	1.4	1.3	1.1	1.4	1.1	0.9	1.4	1.3	0.8	-0.5 s
Narcotics other than Heroin [m,n]	6.6	7.2	8.2	9.7	9.8	10.2	10.6	9.9‡	13.5	13.2	13.5	12.8	13.4	13.1	13.2	13.2	13.0	13.0	12.2	-0.8
Amphetamines [b,m]	15.7	15.3	15.3	16.5	16.4	16.3	15.6	16.2	16.8	14.4	15.0	13.1	12.4	11.4	10.5	9.9	11.1	12.2	12.0	-0.2
Methamphetamine [o]	—	—	—	—	—	8.2	7.9	6.9	6.7	6.2	6.2	4.5	4.4	3.0	2.8	2.4	2.3	2.1	1.7	-0.3
Crystal Methamphetamine (Ice) [o]	3.4	3.9	4.4	4.4	5.3	4.8	4.0	4.1	4.7	3.9	4.0	4.0	3.4	3.4	2.8	2.1	1.8	2.1	1.7	-0.4
Sedatives (Barbiturates) [m,p]	7.0	7.4	7.6	8.1	8.7	8.9	9.2	8.7	9.5	8.8	9.9	10.5	10.2	9.3	8.5	8.2	7.5	7.0	6.9	-0.1
Sedatives, Adjusted [m,q]	7.3	7.6	8.2	8.7	9.2	9.5	9.3	8.9	10.2	9.1	10.1	11.0	10.6	9.6	8.9	8.4	7.6	7.2	7.2	+0.1
Methaqualone [m,r]	1.4	1.2	2.0	1.7	1.6	1.8	0.8	1.1	1.5	1.0	1.3	1.3	1.2	1.0	0.8	0.7	0.4	0.6	0.8	+0.2
Tranquilizers [c,m]	6.6	7.1	7.2	7.8	8.5	9.3	8.9‡	10.3	11.4	10.2	10.6	9.9	10.3	9.5	8.9	9.3	8.5	8.7	8.5	-0.2
Rohypnol [f]	—	—	1.2	1.8	3.0	2.0	1.5	1.7	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [s]	80.4	80.7	79.2	81.7	81.4	80.0	80.3	79.7	78.4	76.6	76.8	75.1	72.7	72.2	71.9	72.3	71.0	70.0	69.4	-0.6
Been Drunk [o]	62.9	63.2	61.8	64.2	62.4	62.3	62.3	63.9	61.6	58.1	60.3	57.5	56.4	55.1	54.7	56.5	54.1	51.0	54.2	+3.2
Cigarettes	62.0	64.2	63.5	65.4	65.3	64.6	62.5	61.0	57.2	53.7	52.8	50.0	47.1	46.2	44.7	43.6	42.2	40.0	39.5	-0.5
Smokeless Tobacco [f,t]	30.7	30.9	29.8	25.3	26.2	23.4	23.1	19.7	18.3	17.0	16.7	17.5	15.2	15.1	15.6	16.3	17.6	16.9	17.4	+0.5
Steroids [m,u]	2.4	2.3	1.9	2.4	2.7	2.9	2.5	3.7	4.0	3.5	3.4	2.6	2.7	2.2	2.2	2.2	2.0	1.8	1.8	0.0

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 5-4.

TABLE 5-2
Long-Term Trends in Annual Prevalence of Use of Various Drugs in Grade 12

Percentage who used in last 12 months

(Years cont.)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Approximate weighted N =	*9,400*	*15,400*	*17,100*	*17,800*	*15,500*	*15,900*	*17,500*	*17,700*	*16,300*	*15,900*	*16,000*	*15,200*	*16,300*	*16,300*	*16,700*	*15,200*	*15,000*	*15,800*	*16,300*
Any Illicit Drug [a,b]	45.0	48.1	51.1	53.8	54.2	53.1	52.1	49.4	47.4	45.8	46.3	44.3	41.7	38.5	35.4	32.5	29.4	27.1	31.0
Any Illicit Drug other than Marijuana [a,b,c]	26.2	25.4	26.0	27.1	28.2	30.4	34.0	30.1	28.4	28.0	27.4	25.9	24.1	21.1	20.0	17.9	16.2	14.9	17.1
Marijuana/Hashish	40.0	44.5	47.6	50.2	50.8	48.8	46.1	44.3	42.3	40.0	40.6	38.8	36.3	33.1	29.6	27.0	23.9	21.9	26.0
Inhalants [d]	—	3.0	3.7	4.1	5.4	4.6	4.1	4.5	4.3	5.1	5.7	6.1	6.9	6.5	5.9	6.9	6.6	6.2	7.0
Inhalants, Adjusted [d,e]	—	—	—	—	8.9	7.9	6.1	6.6	6.2	7.2	7.5	8.9	8.1	7.1	6.9	7.5	6.9	6.4	7.4
Amyl/Butyl Nitrites [f,g]	—	—	—	—	6.5	5.7	3.7	3.6	3.6	4.0	4.0	4.7	2.6	1.7	1.7	1.4	0.9	0.5	0.9
Hallucinogens [c]	11.2	9.4	8.8	9.6	9.9	9.3	9.0	8.1	7.3	6.5	6.3	6.0	6.4	5.5	5.6	5.9	5.8	5.9	7.4
Hallucinogens, Adjusted [c,h]	—	—	—	—	11.8	10.4	10.1	9.0	8.3	7.3	7.6	7.6	6.7	5.8	6.2	6.0	6.1	6.2	7.8
LSD	7.2	6.4	5.5	6.3	6.6	6.5	6.5	6.1	5.4	4.7	4.4	4.5	5.2	4.8	4.9	5.4	5.2	5.6	6.8
Hallucinogens other than LSD [c]	9.4	7.0	6.9	7.3	6.8	6.2	5.6	4.7	4.1	3.8	3.6	3.0	3.2	2.1	2.2	2.1	2.0	1.7	2.2
PCP [f,g]	—	—	—	—	7.0	4.4	3.2	2.2	2.6	2.3	2.9	2.4	1.3	1.2	2.4	1.2	1.4	1.4	1.4
Ecstasy (MDMA) [f]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvia [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	5.6	6.0	7.2	9.0	12.0	12.3	12.4	11.5	11.4	11.6	13.1	12.7	10.3	7.9	6.5	5.3	3.5	3.1	3.3
Crack [i]	—	—	—	—	—	—	—	—	—	—	—	4.1	3.9	3.1	3.1	1.9	1.5	1.5	1.5
Other Cocaine [j]	—	—	—	—	—	—	—	—	—	—	—	—	9.8	7.4	5.2	4.6	3.2	2.6	2.9
Heroin [k]	1.0	0.8	0.8	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.4	0.6	0.5
With a needle [l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without a needle [l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Narcotics other than Heroin [m,n]	5.7	5.7	6.4	6.0	6.2	6.3	5.9	5.3	5.1	5.2	5.9	5.2	5.3	4.6	4.4	4.5	3.5	3.3	3.6
OxyContin [m,v]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vicodin [m,v]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Amphetamines [b,m]	16.2	15.8	16.3	17.1	18.3	20.8	26.0‡	20.3	17.9	17.7	15.8	13.4	12.2	10.9	10.8	9.1	8.2	7.1	8.4
Ritalin [m,o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Adderall [m,o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Provigil [m,o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methamphetamine [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice) [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.4	1.3	1.7
Sedatives (Barbiturates) [m,p]	10.7	9.6	9.3	8.1	7.5	6.8	6.6	5.5	5.2	4.9	4.6	4.2	3.6	3.2	3.3	3.4	3.4	2.8	3.4
Sedatives, Adjusted [m,q]	11.7	10.7	10.8	9.9	9.9	10.3	10.5	9.1	7.9	6.6	5.8	5.2	4.1	3.7	3.7	3.6	3.6	2.9	3.4
Methaqualone [m,r]	5.1	4.7	5.2	4.9	5.9	7.2	7.6	6.8	5.4	3.8	2.8	2.1	1.5	1.3	1.3	0.7	0.5	0.6	0.2
Tranquilizers [c,m]	10.6	10.3	10.8	9.9	9.6	8.7	8.0	7.0	6.9	6.1	6.1	5.8	5.5	4.8	3.8	3.5	3.6	2.8	3.5
OTC Cough/Cold Medicines [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rohypnol [f]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(List of drugs continued.)

(Table continued on next page.)

TABLE 5-2 (cont.)
Long-Term Trends in Annual Prevalence of Use of Various Drugs for Grade 12

Percentage who used in last 12 months

(Years cont.)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Approximate weighted N =	*9,400*	*15,400*	*17,100*	*17,800*	*15,500*	*15,900*	*17,500*	*17,700*	*16,300*	*15,900*	*16,000*	*15,200*	*16,300*	*16,300*	*16,700*	*15,200*	*15,000*	*15,800*	*16,300*
GHB [w]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ketamine [x]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [s]	84.8	85.7	87.0	87.7	88.1	87.9	87.0	86.8	87.3	86.0	85.6	84.5	85.7	85.3	82.7	80.6	77.7	76.8‡	72.7
Been Drunk [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	52.7	50.3	49.6
Cigarettes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bidis [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kreteks [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smokeless Tobacco [f,t]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids [m,u]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	1.7	1.4	1.1	1.2

(Table continued on next page.)

TABLE 5-2 (cont.)
Long-Term Trends in Annual Prevalence of Use of Various Drugs in Grade 12

Percentage who used in last 12 months

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Approximate weighted N =	*15,400*	*15,400*	*14,300*	*15,400*	*15,200*	*13,600*	*12,800*	*12,800*	*12,900*	*14,600*	*14,600*	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*14,400*	*14,100*	*13,700*	
Any Illicit Drug [a,b]	35.8	39.0	40.2	42.4	41.4	42.1	40.9	41.4	41.0	39.3	38.8	38.4	36.5	35.9	36.6	36.5	38.3	40.0	39.7	-0.3
Any Illicit Drug other than Marijuana [a,b,c]	18.0	19.4	19.8	20.7	20.2	20.7	20.4‡	21.6	20.9	19.8	20.5	19.7	19.2	18.5	18.3	17.0	17.3	17.6	17.0	-0.5
Marijuana/Hashish	30.7	34.7	35.8	38.5	37.5	37.8	36.5	37.0	36.2	34.9	34.3	33.6	31.5	31.7	32.4	32.8	34.8	36.4	36.4	0.0
Inhalants [d]	7.7	8.0	7.6	6.7	6.2	5.6	5.9	4.5	4.5	3.9	4.2	5.0	4.5	3.7	3.8	3.4	3.6	3.2	2.9	-0.3
Inhalants, Adjusted [d,e]	8.2	8.4	8.5	7.3	7.1	6.0	6.2	4.9	4.9	4.5	4.6	5.4	4.7	4.1	4.0	4.1	—	—	—	—
Amyl/Butyl Nitrites [f,g]	1.1	1.1	1.6	1.2	1.4	0.9	0.6	0.6	1.1	0.9	0.8	0.6	0.5	0.8	0.6	0.9	—	—	—	—
Hallucinogens [c]	7.6	9.3	10.1	9.8	9.0	9.4	8.1‡	9.1	6.6	5.9	6.2	5.5	4.9	5.4	5.9	4.7	5.5	5.2	4.8	-0.4
Hallucinogens, Adjusted [c,h]	7.8	9.7	10.7	10.0	9.2	9.8	8.7‡	9.7	7.2	6.5	6.4	5.9	5.3	5.8	6.1	5.2	6.0	5.8	5.0	-0.7
LSD	6.9	8.4	8.8	8.4	7.6	8.1	6.6	6.6	3.5	1.9	2.2	1.8	1.7	2.1	2.7	1.9	2.6	2.7	2.4	-0.3
Hallucinogens other than LSD [c]	3.1	3.8	4.4	4.6	4.6	4.3	4.4‡	5.9	5.4	5.4	5.6	5.0	4.6	4.8	5.0	4.2	4.8	4.3	4.0	-0.3
PCP [f,g]	1.6	1.8	2.6	2.3	2.1	1.8	2.3	1.8	1.1	1.3	0.7	1.3	0.7	0.9	1.1	1.0	1.0	1.3	0.9	-0.3
Ecstasy (MDMA) [f]	—	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	4.5	4.0	3.0	4.1	4.5	4.3	4.3	4.5	5.3	3.8	-1.6 s
Salvia [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.7	5.5	5.9	4.4	-1.5 ss
Cocaine	3.6	4.0	4.9	5.5	5.7	6.2	5.0	4.8	5.0	4.8	5.3	5.1	5.7	5.2	4.4	3.4	2.9	2.9	2.7	-0.1
Crack [i]	1.9	2.1	2.1	2.4	2.5	2.7	2.2	2.1	2.3	2.2	2.3	1.9	2.1	1.9	1.6	1.3	1.4	1.0	1.2	+0.2
Other Cocaine [j]	3.0	3.4	4.2	5.0	4.9	5.8	4.5	4.4	4.4	4.2	4.7	4.5	5.2	4.5	4.0	3.0	2.6	2.6	2.4	-0.2
Heroin [k]	0.6	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	0.8	0.9	0.8	0.8	0.9	0.7	0.7	0.9	0.8	0.6	-0.1
With a needle [l]	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.7	0.6	0.4	-0.2
Without a needle [l]	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.8	0.7	0.8	0.6	1.0	0.5	0.6	0.8	0.7	0.4	-0.3 s
Narcotics other than Heroin [m,n]	3.8	4.7	5.4	6.2	6.3	6.7	7.0	6.7‡	9.4	9.3	9.5	9.0	9.0	9.2	9.1	9.2	8.7	8.7	7.9	-0.8
OxyContin [m,v]	—	—	—	—	—	—	—	—	4.0	4.5	5.0	5.5	4.3	5.2	4.7	4.9	5.1	4.9	4.3	-0.7
Vicodin [m,v]	—	—	—	—	—	—	—	—	9.6	10.5	9.3	9.5	9.7	9.6	9.7	9.7	8.0	8.1	7.5	-0.7
Amphetamines [b,m]	9.4	9.3	9.5	10.2	10.1	10.2	10.5	10.9	11.1	9.9	10.0	8.6	8.1	7.5	6.8	6.6	7.4	8.2	7.9	-0.3
Ritalin [m,o]	—	—	—	—	—	—	—	5.1	4.0	4.0	5.1	4.4	4.4	3.8	3.4	2.1	2.7	2.6	2.6	0.0
Adderall [m,o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.4	6.5	6.5	7.6	+1.1
Provigil [m,o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.3	1.5	—	—
Methamphetamine [o]	—	—	—	—	—	4.7	4.3	3.9	3.6	3.2	3.4	2.5	2.5	1.7	1.2	1.2	1.0	1.4	1.1	-0.3
Crystal Methamphetamine (Ice) [o]	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.0	2.0	2.1	2.3	1.9	1.6	1.1	0.9	0.9	1.2	0.8	-0.3
Sedatives (Barbiturates) [m,p]	4.1	4.7	4.9	5.1	5.5	5.8	6.2	5.7	6.7	6.0	6.5	7.2	6.6	6.2	5.8	5.2	4.8	4.3	4.5	+0.2
Sedatives, Adjusted [m,q]	4.2	4.9	5.3	5.4	6.0	6.3	6.3	5.9	7.0	6.2	6.6	7.6	6.8	6.4	6.1	5.4	5.0	4.4	4.5	+0.1
Methaqualone [m,r]	0.8	0.7	1.1	1.0	1.1	1.1	0.3	0.8	0.9	0.6	0.8	0.9	0.8	0.5	0.5	0.6	0.3	0.3	0.4	+0.1
Tranquilizers [c,m]	3.7	4.4	4.6	4.7	5.5	5.8	5.7‡	6.9	7.7	6.7	7.3	6.8	6.6	6.2	6.2	6.3	5.6	5.6	5.3	-0.2
OTC Cough/Cold Medicines [o]	—	—	—	—	—	—	—	—	—	—	—	—	6.9	5.8	5.5	5.9	6.6	5.3	5.6	+0.3
Rohypnol [f]	—	—	1.1	1.2	1.4	1.0	0.8	0.9‡	1.6	1.3	1.6	1.2	1.1	1.0	1.3	1.0	1.5	1.3	1.5	+0.2

(List of drugs continued.)

(Table continued on next page.)

TABLE 5-2 (cont.)
Long-Term Trends in Annual Prevalence of Use of Various Drugs in Grade 12

Percentage who used in last 12 months

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Approximate weighted N =	*15,400*	*15,400*	*14,300*	*15,400*	*15,200*	*13,600*	*12,800*	*12,800*	*12,900*	*14,600*	*14,600*	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*14,400*	*14,100*	*13,700*	
GHB [w]	—	—	—	—	—	—	1.9	1.6	1.5	1.4	2.0	1.1	1.1	0.9	1.2	1.1	1.4	1.4	1.4	0.0
Ketamine [x]	—	—	—	—	—	—	2.5	2.5	2.6	2.1	1.9	1.6	1.4	1.3	1.5	1.7	1.6	1.7	1.5	-0.2
Alcohol [s]	73.0	73.7	72.5	74.8	74.3	73.8	73.2	73.3	71.5	70.1	70.6	68.6	66.5	66.4	65.5	66.2	65.2	63.5	63.5	0.0
Been Drunk [o]	51.7	52.5	51.9	53.2	52.0	53.2	51.8	53.2	50.4	48.0	51.8	47.7	47.9	46.1	45.6	47.0	44.0	42.2	45.0	+2.9
Cigarettes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bidis [o]	—	—	—	—	—	—	9.2	7.0	5.9	4.0	3.6	3.3	2.3	1.7	1.9	1.5	1.4	—	—	—
Kreteks [o]	—	—	—	—	—	—	—	10.1	8.4	6.7	6.5	7.1	6.2	6.8	6.8	5.5	4.6	2.9	3.0	0.0
Smokeless Tobacco [f,t]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids [m,u]	1.3	1.5	1.4	1.4	1.7	1.8	1.7	2.4	2.5	2.1	2.5	1.5	1.8	1.4	1.5	1.5	1.5	1.2	1.3	0.0

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 5-4.

TABLE 5-3
Long-Term Trends in 30-Day Prevalence of Use of Various Drugs in Grade 12

Percentage who used in last 30 days

(Years cont.)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Approximate weighted N =	*9,400*	*15,400*	*17,100*	*17,800*	*15,500*	*15,900*	*17,500*	*17,700*	*16,300*	*15,900*	*16,000*	*15,200*	*16,300*	*16,300*	*16,700*	*15,200*	*15,000*	*15,800*	*16,300*
Any Illicit Drug [a,b]	30.7	34.2	37.6	38.9	38.9	37.2	36.9	32.5	30.5	29.2	29.7	27.1	24.7	21.3	19.7	17.2	16.4	14.4	18.3
Any Illicit Drug other than Marijuana [a,b,c]	15.4	13.9	15.2	15.1	16.8	18.4	21.7	17.0	15.4	15.1	14.9	13.2	11.6	10.0	9.1	8.0	7.1	6.3	7.9
Marijuana/Hashish	27.1	32.2	35.4	37.1	36.5	33.7	31.6	28.5	27.0	25.2	25.7	23.4	21.0	18.0	16.7	14.0	13.8	11.9	15.5
Inhalants [d]	—	0.9	1.3	1.5	1.7	1.4	1.5	1.5	1.7	1.9	2.2	2.5	2.8	2.6	2.3	2.7	2.4	2.3	2.5
Inhalants, Adjusted [d,e]	—	—	—	—	3.2	2.7	2.5	2.5	2.5	2.6	3.0	3.2	3.5	3.0	2.7	2.9	2.6	2.5	2.8
Amyl/Butyl Nitrites [f,g]	—	—	—	—	2.4	1.8	1.4	1.1	1.4	1.4	1.6	1.3	1.3	0.6	0.6	0.6	0.4	0.3	0.6
Hallucinogens [c]	4.7	3.4	4.1	3.9	4.0	3.7	3.7	3.4	2.8	2.6	2.5	2.5	2.5	2.2	2.2	2.2	2.2	2.1	2.7
Hallucinogens, Adjusted [c,h]	—	—	—	—	5.3	4.4	4.5	4.1	3.5	3.2	3.8	3.5	2.8	2.3	2.9	2.3	2.4	2.3	3.3
LSD	2.3	1.9	2.1	2.1	2.4	2.3	2.5	2.4	1.9	1.5	1.6	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.4
Hallucinogens other than LSD [c]	3.7	2.3	3.0	2.7	2.4	2.3	2.1	1.7	1.5	1.6	1.3	1.3	1.1	0.7	0.8	0.8	0.7	0.5	0.8
PCP [f,g]	—	—	—	—	2.4	1.4	1.4	1.0	1.3	1.0	1.6	1.3	0.6	0.3	1.4	0.4	0.5	0.6	1.0
Ecstasy (MDMA) [f]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	1.9	2.0	2.9	3.9	5.7	5.2	5.8	5.0	4.9	5.8	6.7	6.2	4.3	3.4	2.8	1.9	1.4	1.3	1.3
Crack [i]	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.6	1.4	0.7	0.7	0.6	0.7
Other Cocaine [j]	—	—	—	—	—	—	—	—	—	—	—	—	4.1	3.2	1.9	1.7	1.2	1.0	1.2
Heroin [k]	0.4	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2
With a needle [l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without a needle [l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Narcotics other than Heroin [m,n]	2.1	2.0	2.8	2.1	2.4	2.4	2.1	1.8	1.8	1.8	2.3	2.0	1.8	1.6	1.6	1.5	1.1	1.2	1.3
Amphetamines [b,m]	8.5	7.7	8.8	8.7	9.9	12.1	15.8‡	10.7	8.9	8.3	6.8	5.5	5.2	4.6	4.2	3.7	3.2	2.8	3.7
Methamphetamine [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice) [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.6	0.5	0.6
Sedatives (Barbiturates) [m,p]	4.7	3.9	4.3	3.2	3.2	2.9	2.6	2.0	2.1	1.7	2.0	1.8	1.4	1.2	1.4	1.3	1.4	1.1	1.3
Sedatives, Adjusted [m,q]	5.4	4.5	5.1	4.2	4.4	4.8	4.6	3.4	3.0	2.3	2.4	2.2	1.7	1.4	1.6	1.4	1.5	1.2	1.3
Methaqualone [m,r]	2.1	1.6	2.3	1.9	2.3	3.3	3.1	2.4	1.8	1.1	1.0	0.8	0.6	0.5	0.6	0.2	0.2	0.4	0.1
Tranquilizers [c,m]	4.1	4.0	4.6	3.4	3.7	3.1	2.7	2.4	2.5	2.1	2.1	2.1	2.0	1.5	1.3	1.2	1.4	1.0	1.2
Rohypnol [f]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [s]	68.2	68.3	71.2	72.1	71.8	72.0	70.7	69.7	69.4	67.2	65.9	65.3	66.4	63.9	60.0	57.1	54.0	51.3‡	48.6
Been Drunk [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.6	29.9	28.9
Cigarettes	36.7	38.8	38.4	36.7	34.4	30.5	29.4	30.0	30.3	29.3	30.1	29.6	29.4	28.7	28.6	29.4	28.3	27.8	29.9
Smokeless Tobacco [f,t]	—	—	—	—	—	—	—	—	—	—	—	11.5	11.3	10.3	8.4	—	—	11.4	10.7
Steroids [m,u]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	1.0	0.8	0.6	0.7

(Table continued on next page.)

TABLE 5-3 (cont.)
Long-Term Trends in 30-Day Prevalence of Use of Various Drugs in Grade 12

Percentage who used in last 30 days

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Approximate weighted N =	*15,400*	*15,400*	*14,300*	*15,400*	*15,200*	*13,600*	*12,800*	*12,800*	*12,900*	*14,600*	*14,600*	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*14,400*	*14,100*	*13,700*	
Any Illicit Drug [a,b]	21.9	23.8	24.6	26.2	25.6	25.9	24.9	25.7	25.4	24.1	23.4	23.1	21.5	21.9	22.3	23.3	23.8	25.2	25.2	0.0
Any Illicit Drug other than Marijuana [a,b,c]	8.8	10.0	9.5	10.7	10.7	10.4	10.4‡	11.0	11.3	10.4	10.8	10.3	9.8	9.5	9.3	8.6	8.6	8.9	8.4	-0.4
Marijuana/Hashish	19.0	21.2	21.9	23.7	22.8	23.1	21.6	22.4	21.5	21.2	19.9	19.8	18.3	18.8	19.4	20.6	21.4	22.6	22.9	+0.3
Inhalants [d]	2.7	3.2	2.5	2.5	2.3	2.0	2.2	1.7	1.5	1.5	1.5	2.0	1.5	1.2	1.4	1.2	1.4	1.0	0.9	-0.2
Inhalants, Adjusted [d,e]	2.9	3.5	2.9	2.9	3.1	2.4	2.4	2.1	1.8	2.3	1.9	2.3	1.7	1.6	1.5	1.8	—	—	—	—
Amyl/Butyl Nitrites [f,g]	0.4	0.4	0.7	0.7	1.0	0.4	0.3	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.6	—	—	—	—
Hallucinogens [c]	3.1	4.4	3.5	3.9	3.8	3.5	2.6‡	3.3	2.3	1.8	1.9	1.9	1.5	1.7	2.2	1.6	1.9	1.6	1.6	0.0
Hallucinogens, Adjusted [c,h]	3.2	4.6	3.8	4.1	4.1	3.9	3.0‡	3.5	2.7	2.7	2.2	2.5	1.8	2.1	2.6	1.9	2.2	2.3	1.8	-0.5
LSD	2.6	4.0	2.5	3.1	3.2	2.7	1.6	2.3	0.7	0.6	0.7	0.7	0.6	0.6	1.1	0.5	0.8	0.8	0.8	0.0
Hallucinogens other than LSD [c]	1.2	1.3	1.6	1.7	1.6	1.6	1.7‡	1.9	2.0	1.5	1.7	1.6	1.3	1.4	1.6	1.4	1.5	1.2	1.3	+0.1
PCP [f,g]	0.7	0.6	1.3	0.7	1.0	0.8	0.9	0.5	0.4	0.6	0.4	0.7	0.4	0.5	0.6	0.5	0.8	0.8	0.5	-0.2
Ecstasy (MDMA) [f]	—	—	2.0	1.6	1.5	2.5	3.6	2.8	2.4	1.3	1.2	1.0	1.3	1.6	1.8	1.8	1.4	2.3	0.9	-1.3 sss
Cocaine	1.5	1.8	2.0	2.3	2.4	2.6	2.1	2.1	2.3	2.1	2.3	2.3	2.5	2.0	1.9	1.3	1.3	1.1	1.1	0.0
Crack [i]	0.8	1.0	1.0	0.9	1.0	1.1	1.0	1.1	1.2	0.9	1.0	1.0	0.9	0.9	0.8	0.6	0.7	0.5	0.6	+0.1
Other Cocaine [j]	1.3	1.3	1.6	2.0	2.0	2.5	1.7	1.8	1.9	1.8	2.2	2.0	2.4	1.7	1.7	1.1	1.1	1.0	1.0	0.0
Heroin [k]	0.3	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	-0.1
With a needle [l]	—	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.4	0.4	0.3	-0.2
Without a needle [l]	—	0.6	0.4	0.6	0.4	0.4	0.7	0.3	0.5	0.4	0.3	0.5	0.3	0.4	0.2	0.3	0.4	0.4	0.2	-0.2 s
Narcotics other than Heroin [m,n]	1.5	1.8	2.0	2.3	2.4	2.6	2.9	3.0‡	4.0	4.1	4.3	3.9	3.8	3.8	3.8	4.1	3.6	3.6	3.0	-0.6 s
Amphetamines [b,m]	4.0	4.0	4.1	4.8	4.6	4.5	5.0	5.6	5.5	5.0	4.6	3.9	3.7	3.7	2.9	3.0	3.3	3.7	3.3	-0.3
Methamphetamine [o]	—	—	—	—	—	1.7	1.9	1.5	1.7	1.7	1.4	0.9	0.9	0.6	0.6	0.5	0.5	0.6	0.5	0.0
Crystal Methamphetamine (Ice) [o]	0.7	1.1	1.1	0.8	1.2	0.8	1.0	1.1	1.2	0.8	0.8	0.9	0.7	0.6	0.6	0.5	0.6	0.6	0.4	-0.2
Sedatives (Barbiturates) [m,p]	1.7	2.2	2.1	2.1	2.6	2.6	3.0	2.8	3.2	2.9	2.9	3.3	3.0	2.7	2.8	2.5	2.2	1.8	2.0	+0.2
Sedatives, Adjusted [m,q]	1.8	2.3	2.3	2.1	2.8	2.8	3.1	3.0	3.4	3.0	2.9	3.5	3.1	2.8	2.9	2.6	2.2	1.9	2.1	+0.3
Methaqualone [m,r]	0.4	0.4	0.6	0.3	0.6	0.4	0.2	0.5	0.3	0.4	0.5	0.5	0.4	0.4	0.2	0.3	0.2	0.2	0.3	+0.1
Tranquilizers [c,m]	1.4	1.8	2.0	1.8	2.4	2.5	2.6‡	2.9	3.3	2.8	3.1	2.9	2.7	2.6	2.6	2.7	2.5	2.3	2.1	-0.2
Rohypnol [f]	—	—	0.5	0.3	0.3	0.3	0.4	0.3	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [s]	50.1	51.3	50.8	52.7	52.0	51.0	50.0	49.8	48.6	47.5	48.0	47.0	45.3	44.4	43.1	43.5	41.2	40.0	41.5	+1.5
Been Drunk [o]	30.8	33.2	31.3	34.2	32.9	32.9	32.3	32.7	30.3	30.9	32.5	30.2	30.0	28.7	27.6	27.4	26.8	25.0	28.1	+3.0
Cigarettes	31.2	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	24.4	25.0	23.2	21.6	21.6	20.4	20.1	19.2	18.7	17.1	-1.5
Smokeless Tobacco [f,t]	11.1	12.2	9.8	9.7	8.8	8.4	7.6	7.8	6.5	6.7	6.7	7.6	6.1	6.6	6.5	8.4	8.5	8.3	7.9	-0.4
Steroids [m,u]	0.9	0.7	0.7	1.0	1.1	0.9	0.8	1.3	1.4	1.3	1.6	0.9	1.1	1.0	1.0	1.0	1.1	0.7	0.9	+0.2

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 5-4.

TABLE 5-4
Long-Term Trends in 30-Day Prevalence of Daily Use of Various Drugs in Grade 12

Percentage who used daily in last 30 days

(Years cont.)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Approximate weighted N =	*9,400*	*15,400*	*17,100*	*17,800*	*15,500*	*15,900*	*17,500*	*17,700*	*16,300*	*15,900*	*16,000*	*15,200*	*16,300*	*16,300*	*16,700*	*15,200*	*15,000*	*15,800*	*16,300*
Marijuana/Hashish	6.0	8.2	9.1	10.7	10.3	9.1	7.0	6.3	5.5	5.0	4.9	4.0	3.3	2.7	2.9	2.2	2.0	1.9	2.4
Inhalants [d]	—	*	*	0.1	*	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.1
Inhalants, Adjusted [d,e]	—	—	—	—	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.3	0.5	0.2	0.2
Amyl/Butyl Nitrites [f,g]	—	—	—	—	*	0.1	0.1	0.0	0.2	0.1	0.3	0.5	0.3	0.1	0.3	0.1	0.2	0.1	0.1
Hallucinogens [c]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1
Hallucinogens, Adjusted [c,h]	—	—	—	—	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.2	*	0.3	0.3	0.1	0.1	0.1
LSD	*	*	*	*	*	*	0.1	*	0.1	0.1	0.1	*	0.1	*	*	0.1	0.1	0.1	0.1
Hallucinogens other than LSD [c]	—	0.1	0.1	*	*	*	0.1	*	*	0.1	*	*	*	*	*	*	*	*	*
PCP [f,g]	—	—	—	—	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.1
Ecstasy (MDMA) [f]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.4	0.4	0.3	0.2	0.3	0.1	0.1	0.1	0.1
Crack [i]	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Other Cocaine [j]	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.2	0.1	0.1	0.1	*	0.1
Heroin [k]	0.1	*	*	*	*	*	*	*	0.1	*	*	*	*	*	0.1	*	*	*	*
With a needle [l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without a needle [l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Narcotics other than Heroin [m,n]	0.1	0.1	0.2	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	*	*
Amphetamines [b,m]	0.5	0.4	0.5	0.5	0.6	0.7	1.2‡	0.7	0.8	0.6	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
Methamphetamine [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice) [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.1	0.1
Sedatives (Barbiturates) [m,p]	0.1	0.1	0.2	0.1	*	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	*	0.1	0.1	0.1	*	0.1
Sedatives, Adjusted [m,q]	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Methaqualone [m,r]	*	*	*	*	*	0.1	0.1	0.1	*	*	*	*	*	0.1	*	*	*	0.1	0.0
Tranquilizers [c,m]	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	*	0.1	*	0.1	0.1	0.1	*	*
Rohypnol [f]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [s]																			
Daily [s]	5.7	5.6	6.1	5.7	6.9	6.0	6.0	5.7	5.5	4.8	5.0	4.8	4.8	4.2	4.2	3.7	3.6	3.4‡	3.4
Been drunk daily [o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	0.8	0.9
5+ drinks in a row in last 2 weeks	36.8	37.1	39.4	40.3	41.2	41.2	41.4	40.5	40.8	38.7	36.7	36.8	37.5	34.7	33.0	32.2	29.8	27.9	27.5
Cigarettes																			
Daily	26.9	28.8	28.8	27.5	25.4	21.3	20.3	21.1	21.2	18.7	19.5	18.7	18.7	18.1	18.9	19.1	18.5	17.2	19.0
Half pack or more per day	17.9	19.2	19.4	18.8	16.5	14.3	13.5	14.2	13.8	12.3	12.5	11.4	11.4	10.6	11.2	11.3	10.7	10.0	10.9
Smokeless Tobacco [t,t]	—	—	—	—	—	—	—	—	—	—	—	4.7	5.1	4.3	3.3	—	—	4.3	3.3
Steroids [m,u]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.2	0.1	0.1	0.1

(Table continued on next page.)

TABLE 5-4 (cont.)
Long-Term Trends in 30-Day Prevalence of Daily Use of Various Drugs in Grade 12

Percentage who used daily in last 30 days

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Approximate weighted N =	*15,400*	*15,400*	*14,300*	*15,400*	*15,200*	*13,600*	*12,800*	*12,800*	*12,900*	*14,600*	*14,600*	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*14,400*	*14,100*	*13,700*	
Marijuana/Hashish	3.6	4.6	4.9	5.8	5.6	6.0	6.0	5.8	6.0	6.0	5.6	5.0	5.0	5.1	5.4	5.2	6.1	6.6	6.5	-0.1
Inhalants [d]	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	*	0.1	0.0
Inhalants, Adjusted [d,e]	—	—	0.4	0.2	0.9	0.3	0.3	0.1	0.3	0.4	0.4	0.3	—	—	—	—	—	—	—	—
Amyl/Butyl Nitrites [f,g]	0.2	0.2	0.4	0.1	0.3	0.2	*	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	—	—	—	—
Hallucinogens [c]	0.1	0.1	0.1	0.3	0.1	0.1	0.2‡	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.1	0.2	0.2	0.1	-0.1
Hallucinogens, Adjusted [c,h]	—	—	0.4	0.4	0.8	0.2	0.2‡	0.2	0.4	0.5	0.4	0.3	—	—	—	—	—	—	—	—
LSD	0.1	0.1	*	0.2	0.1	0.1	0.1	0.2	0.1	*	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0
Hallucinogens other than LSD [c]	*	0.1	0.1	0.1	0.1	*	0.1‡	0.1	*	0.1	0.1	*	0.1	0.1	0.2	*	0.1	0.1	0.1	0.0
PCP [f,g]	0.3	0.3	0.3	0.1	0.3	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.3	0.2	0.2	0.3	0.1	-0.2
Ecstasy (MDMA) [f]	—	—	0.0	0.1	0.2	0.1	*	0.2	*	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.2	0.1	-0.1
Cocaine	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.0
Crack [i]	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.0
Other Cocaine [j]	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.0
Heroin [k]	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.0
With a needle [l]	—	0.1	0.2	0.1	*	*	*	*	0.1	0.1	*	0.1	*	0.1	*	*	0.1	0.1	0.1	0.0
Without a needle [l]	—	*	0.1	0.1	0.0	0.0	*	*	0.1	0.1	*	0.1	*	*	*	0.1	0.1	0.1	0.1	0.0
Narcotics other than Heroin [m,n]	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.2‡	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.2	0.3	0.2	0.0
Amphetamines [b,m]	0.2	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.7	0.5	0.3	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.3	-0.1
Methamphetamine [o]	—	—	—	—	—	0.1	0.1	0.1	0.3	0.2	0.2	0.2	*	*	0.1	0.1	0.1	0.1	*	0.0
Crystal Methamphetamine (Ice) [o]	*	0.1	0.1	0.1	*	*	0.1	0.2	0.2	0.1	0.1	0.1	*	0.1	0.2	*	0.1	0.1	0.2	+0.1
Sedatives (Barbiturates) [m,p]	*	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0
Sedatives, Adjusted [m,q]	*	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.3	+0.1 s
Methaqualone [m,r]	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	*	*	*	0.1	0.1	*	0.3	+0.2
Tranquilizers [c,m]	0.1	*	0.2	0.1	0.1	0.1	0.1‡	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0
Rohypnol [f]	—	—	0.1	0.0	0.1	0.1	0.1	*	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [s]																				
Daily [s]	2.9	3.5	3.7	3.9	3.9	3.4	2.9	3.6	3.5	3.2	2.8	3.1	3.0	3.1	2.8	2.5	2.7	2.1	2.5	+0.4
Been drunk daily [o]	1.2	1.3	1.6	2.0	1.5	1.9	1.7	1.4	1.2	1.6	1.8	1.5	1.6	1.3	1.4	1.1	1.6	1.3	1.5	+0.2
5+ drinks in a row in last 2 weeks	28.2	29.8	30.2	31.3	31.5	30.8	30.0	29.7	28.6	27.9	29.2	27.1	25.4	25.9	24.6	25.2	23.2	21.6	23.7	+2.0 s
Cigarettes																				
Daily	19.4	21.6	22.2	24.6	22.4	23.1	20.6	19.0	16.9	15.8	15.6	13.6	12.2	12.3	11.4	11.2	10.7	10.3	9.3	-1.0
Half pack or more per day	11.2	12.4	13.0	14.3	12.6	13.2	11.3	10.3	9.1	8.4	8.0	6.9	5.9	5.7	5.4	5.0	4.7	4.3	4.0	-0.3
Smokeless Tobacco [f,t]	3.9	3.6	3.3	4.4	3.2	2.9	3.2	2.8	2.0	2.2	2.8	2.5	2.2	2.8	2.7	2.9	3.1	3.1	3.2	+0.1
Steroids [m,u]	0.4	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.4	0.2	0.4	0.2	0.2	0.2	0.4	0.2	0.3	+0.1

Source. The Monitoring the Future study, the University of Michigan.

See footnotes on the following page.

Footnotes for Tables 5-1 through 5-4

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' * ' indicates less than 0.05% but greater than 0%. ' ‡ ' indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. Daily use is defined as use on 20 or more occasions in the past 30 days except for 5+ drinks, cigarettes, and smokeless tobacco, for which actual daily use is measured.

[a]Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

[b]Beginning in 1982, the question about amphetamine use was revised to get respondents to exclude the inappropriate reporting of nonprescription amphetamines. The prevalence-of-use rate dropped slightly as a result of this methodological change. In 2009, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. In 2010 the remaining forms were changed in a like manner.

[c]In 2001 the question text was changed in half of the questionnaire forms. Other psychedelics was changed to other hallucinogens and shrooms was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. The 2001 data presented here are based on the changed forms only; *N* is one half of *N* indicated. In 2002 the remaining forms were changed to the new wording. Data based on all forms beginning in 2002. Data for any illicit drug other than marijuana and for hallucinogens are also affected by these changes and have been handled in a parallel manner.

[d]Data based on four of five forms in 1976–1988; *N* is four fifths of *N* indicated. Data based on five of six forms in 1989–1998; *N* is five sixths of *N* indicated. Beginning in 1999, data based on three of six forms; *N* is three sixths of *N* indicated.

[e]Adjusted for underreporting of amyl and butyl nitrites. See text for details. Data for the daily prevalence of use are no longer presented due to low rates of inhalant use and fairly stable rates of nitrite use.

[f]Data based on one form; *N* is one fifth of *N* indicated in 1979–1988 and one sixth of *N* indicated beginning in 1989. Data for ecstasy (MDMA) and Rohypnol based on two of six forms beginning in 2002; *N* is two sixths of *N* indicated. Data for Rohypnol for 2001 and 2002 are not comparable due to changes in the questionnaire forms. Data for Rohypnol based on one of six forms beginning in 2010; *N* is one sixth of *N* indicated.

[g]Question text changed slightly in 1987.

[h]Adjusted for underreporting of PCP. See text for details. Data for the daily prevalence of use are no longer presented due to low rates of hallucinogen use and fairly stable rates of PCP use.

[i]Data based on one of five forms in 1986; *N* is one fifth of *N* indicated. Data based on two forms in 1987–1989; *N* is two fifths of *N* indicated in 1987–1988 and two sixths of *N* indicated in 1989. Data based on six forms beginning in 1990.

[j]Data based on one form in 1987–1989; *N* is one fifth of *N* indicated in 1987–1988 and one sixth of *N* indicated in 1989. Data based on four of six forms beginning in 1990; *N* is four sixths of *N* indicated.

[k]In 1995 the heroin question was changed in half of the questionnaire forms. Separate questions were asked for use with and without injection. Data presented here represent the combined data from all forms.

[l]Data based on three of six forms; *N* is three sixths of *N* indicated.

[m]Only drug use not under a doctor's orders is included here.

(Footnotes continued on next page.)

Footnotes for Tables 5-1 through 5-4 (cont.)

[n]In 2002 the question text was changed in half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced with Vicodin, OxyContin, and Percocet. The 2002 data presented here are based on the changed forms only; *N* is one half of *N* indicated. In 2003, the remaining forms were changed to the new wording. Data based on all forms beginning in 2003.

[o]Data based on two of six forms; *N* is two sixths of *N* indicated. Bidis and kreteks based on one of six forms beginning in 2009; *N* is one sixth of *N* indicated.

[p]For 12th graders only: In 2004 the barbiturate question text was changed on half of the questionnaire forms. Barbiturates was changed to sedatives including barbiturates, and "have you taken barbiturates . . . " was changed to "have you taken sedatives . . . " In the list of examples downs, downers, goofballs, yellows, reds, blues, rainbows were changed to downs, or downers, and include Phenobarbital, Tuinal, Nembutal, and Seconal. An examination of the data did not show any effect from the wording change. In 2005 the remaining forms were changed in a like manner.

[q]Data based on five forms in 1975–1988, six forms in 1989, one form in 1990 (*N* is one sixth of *N* indicated in 1990), and six forms adjusted by one-form data beginning in 1991.

[r]Data based on five forms in 1975–1988, six forms in 1989, and one of six forms beginning in 1990; *N* is one sixth of *N* indicated beginning in 1990.

[s]Data based on five forms in 1975–1988 and on six forms in 1989–1992. In 1993, the question text was changed slightly in three of six forms to indicate that a drink meant more than a few sips. The 1993 data are based on the changed forms only; *N* is one half of *N* indicated. In 1994 the remaining forms were changed to the new wording. Data based on all forms beginning in 1994. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005.

[t]The prevalence of smokeless tobacco use was not asked of 12th graders in 1990 and 1991. Prior to 1990, the prevalence-of-use question on smokeless tobacco was located near the end of one 12th-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

[u]Data based on one of six forms in 1989–1990; *N* is one sixth of *N* indicated. Data based on two of six forms in 1991–2005; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated. In 2006, a slightly altered version of this question was added to a third form. An examination of the data did not show any effect from the wording change. In 2007 the remaining forms were changed in a like manner. In 2008, the question text was changed slightly in two of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2009 the remaining form was changed in a like manner.

[v]Data based on two of six forms in 2002–2005; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated.

[w]Data based on two of six forms in 2000; *N* is two sixths of *N* indicated. Data based on three of six forms in 2001; *N* is three sixths of *N* indicated. Data based on one form beginning in 2002; *N* is one sixth of *N* indicated.

[x]Data based on two of six forms in 2000; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2001; *N* is three sixths of *N* indicated. Data based on two of six forms beginning in 2010; *N* is two sixths of *N* indicated.

TABLE 5-5a
Trends in Lifetime Prevalence of Use of Various Drugs in Grades 8, 10, and 12

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Any Illicit Drug [a]																							
8th Grade	18.7	20.6	22.5	25.7	28.5	31.2	29.4	29.0	28.3	26.8	26.8	24.5	22.8	21.5	21.4	20.9	19.0	19.6	19.9	21.4	20.1	18.5	-1.6
10th Grade	30.6	29.8	32.8	37.4	40.9	45.4	47.3	44.9	46.2	45.6	45.6	44.6	41.4	39.8	38.2	36.1	35.6	34.1	36.0	37.0	37.7	36.8	-0.9
12th Grade	44.1	40.7	42.9	45.6	48.4	50.8	54.3	54.1	54.7	54.0	53.9	53.0	51.1	51.1	50.4	48.2	46.8	47.4	46.7	48.2	49.9	49.1	-0.8
Any Illicit Drug other than Marijuana [a,b]																							
8th Grade	14.3	15.6	16.8	17.5	18.8	19.2	17.7	16.9	16.3	15.8‡	17.0	13.7	13.6	12.2	12.1	12.2	11.1	11.2	10.4	10.6	9.8	8.7	-1.1
10th Grade	19.1	19.2	20.9	21.7	24.3	25.5	25.0	23.6	24.0	23.1‡	23.6	22.1	19.7	18.8	18.0	17.5	18.2	15.9	16.7	16.8	15.6	14.9	-0.8
12th Grade	26.9	25.1	26.7	27.6	28.1	28.5	30.0	29.4	29.4	29.0‡	30.7	29.5	27.7	28.7	27.4	26.9	25.5	24.9	24.0	24.7	24.9	24.1	-0.9
Any Illicit Drug including Inhalants [a,c]																							
8th Grade	28.5	29.6	32.3	35.1	38.1	39.4	38.1	37.8	37.2	35.1	34.5	31.6	30.3	30.2	30.0	29.2	27.7	28.3	27.9	28.6	26.4	25.1	-1.4
10th Grade	36.1	36.2	38.7	42.7	45.9	49.8	50.9	49.3	49.9	49.3	48.8	47.7	44.9	43.1	42.1	40.1	39.8	38.7	40.0	40.6	40.8	40.0	-0.9
12th Grade	47.6	44.4	46.6	49.1	51.5	53.5	56.3	56.1	56.3	57.0	56.0	54.6	52.8	53.0	53.5	51.2	49.1	49.3	48.4	49.9	51.8	50.3	-1.4
Marijuana/Hashish																							
8th Grade	10.2	11.2	12.6	16.7	19.9	23.1	22.6	22.2	22.0	20.3	20.4	19.2	17.5	16.3	16.5	15.7	14.2	14.6	15.7	17.3	16.4	15.2	-1.2
10th Grade	23.4	21.4	24.4	30.4	34.1	39.8	42.3	39.6	40.9	40.3	40.1	38.7	36.4	35.1	34.1	31.8	31.0	29.9	32.3	33.4	34.5	33.8	-0.8
12th Grade	36.7	32.6	35.3	38.2	41.7	44.9	49.6	49.1	49.7	48.8	49.0	47.8	46.1	45.7	44.8	42.3	41.8	42.6	42.0	43.8	45.5	45.2	-0.3
Inhalants [c,d]																							
8th Grade	17.6	17.4	19.4	19.9	21.6	21.2	21.0	20.5	19.7	17.9	17.1	15.2	15.8	17.3	17.1	16.1	15.6	15.7	14.9	14.5	13.1	11.8	-1.3
10th Grade	15.7	16.6	17.5	18.0	19.0	19.3	18.3	18.3	17.0	16.6	15.2	13.5	12.7	12.4	13.1	13.3	13.6	12.8	12.3	12.0	10.1	9.9	-0.2
12th Grade	17.6	16.6	17.4	17.7	17.4	16.6	16.1	15.2	15.4	14.2	13.0	11.7	11.2	10.9	11.4	11.1	10.5	9.9	9.5	9.0	8.1	7.9	-0.2
Nitrites [e]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.6	1.5	1.4	1.7	1.5	1.8	2.0	2.7	1.7	0.8	1.9	1.5	1.6	1.3	1.1	1.2	1.2	0.6	1.1	—	—	—	—
Hallucinogens [b,f]																							
8th Grade	3.2	3.8	3.9	4.3	5.2	5.9	5.4	4.9	4.8	4.6‡	5.2	4.1	4.0	3.5	3.8	3.4	3.1	3.3	3.0	3.4	3.3	2.8	-0.5
10th Grade	6.1	6.4	6.8	8.1	9.3	10.5	10.5	9.8	9.7	8.9‡	8.9	7.8	6.9	6.4	5.8	6.1	6.4	5.5	6.1	6.1	6.0	5.2	-0.8
12th Grade	9.6	9.2	10.9	11.4	12.7	14.0	15.1	14.1	13.7	13.0‡	14.7	12.0	10.6	9.7	8.8	8.3	8.4	8.7	7.4	8.6	8.3	7.5	-0.8
LSD																							
8th Grade	2.7	3.2	3.5	3.7	4.4	5.1	4.7	4.1	4.1	3.9	3.4	2.5	2.1	1.8	1.9	1.6	1.6	1.9	1.7	1.8	1.7	1.3	-0.4
10th Grade	5.6	5.8	6.2	7.2	8.4	9.4	9.5	8.5	8.5	7.6	6.3	5.0	3.5	2.8	2.5	2.7	3.0	2.6	3.0	3.0	2.8	2.6	-0.2
12th Grade	8.8	8.6	10.3	10.5	11.7	12.6	13.6	12.6	12.2	11.1	10.9	8.4	5.9	4.6	3.5	3.3	3.4	4.0	3.1	4.0	4.0	3.8	-0.2
Hallucinogens other than LSD [b]																							
8th Grade	1.4	1.7	1.7	2.2	2.5	3.0	2.6	2.5	2.4	2.3‡	3.9	3.3	3.2	3.0	3.3	2.8	2.6	2.5	2.4	2.7	2.8	2.3	-0.5
10th Grade	2.2	2.5	2.8	3.8	3.9	4.7	4.8	5.0	4.7	4.8‡	6.6	6.3	5.9	5.8	5.2	5.5	5.7	4.8	5.4	5.3	5.2	4.5	-0.7
12th Grade	3.7	3.3	3.9	4.9	5.4	6.8	7.5	7.1	6.7	6.9‡	10.4	9.2	9.0	8.7	8.1	7.8	7.7	7.8	6.8	7.7	7.3	6.6	-0.8

(Table continued on next page.)

TABLE 5-5a (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs in Grades 8, 10, and 12

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
PCP [e]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	2.9	2.4	2.9	2.8	2.7	4.0	3.9	3.9	3.4	3.4	3.5	3.1	2.5	1.6	2.4	2.2	2.1	1.8	1.7	1.8	2.3	1.6	-0.7	
Ecstasy (MDMA) [g]																								
8th Grade	—	—	—	—	—	3.4	3.2	2.7	2.7	4.3	5.2	4.3	3.2	2.8	2.8	2.5	2.3	2.4	2.2	3.3	2.6	2.0	-0.6	
10th Grade	—	—	—	—	—	5.6	5.7	5.1	6.0	7.3	8.0	6.6	5.4	4.3	4.0	4.5	5.2	4.3	5.5	6.4	6.6	5.0	-1.6	ss
12th Grade	—	—	—	—	—	6.1	6.9	5.8	8.0	11.0	11.7	10.5	8.3	7.5	5.4	6.5	6.5	6.2	6.5	7.3	8.0	7.2	-0.9	
Cocaine																								
8th Grade	2.3	2.9	2.9	3.6	4.2	4.5	4.4	4.6	4.7	4.5	4.3	3.6	3.6	3.4	3.7	3.4	3.1	3.0	2.6	2.6	2.2	1.9	-0.3	
10th Grade	4.1	3.3	3.6	4.3	5.0	6.5	7.1	7.2	7.7	6.9	5.7	6.1	5.1	5.4	5.2	4.8	5.3	4.5	4.6	3.7	3.3	3.3	0.0	
12th Grade	7.8	6.1	6.1	5.9	6.0	7.1	8.7	9.3	9.8	8.6	8.2	7.8	7.7	8.1	8.0	8.5	7.8	7.2	6.0	5.5	5.2	4.9	-0.3	
Crack																								
8th Grade	1.3	1.6	1.7	2.4	2.7	2.9	2.7	3.2	3.1	3.1	3.0	2.5	2.5	2.4	2.4	2.3	2.1	2.0	1.7	1.5	1.5	1.0	-0.4	s
10th Grade	1.7	1.5	1.8	2.1	2.8	3.3	3.6	3.9	4.0	3.7	3.1	3.6	2.7	2.6	2.5	2.2	2.3	2.0	2.1	1.8	1.6	1.4	-0.2	
12th Grade	3.1	2.6	2.6	3.0	3.0	3.3	3.9	4.4	4.6	3.9	3.7	3.8	3.6	3.9	3.5	3.5	3.2	2.8	2.4	2.4	1.9	2.1	+0.2	
Other Cocaine [h]																								
8th Grade	2.0	2.4	2.4	3.0	3.4	3.8	3.5	3.7	3.8	3.5	3.3	2.8	2.7	2.6	2.9	2.7	2.6	2.4	2.1	2.1	1.8	1.6	-0.2	
10th Grade	3.8	3.0	3.3	3.8	4.4	5.5	6.1	6.4	6.8	6.0	5.0	5.2	4.5	4.8	4.6	4.3	4.8	4.0	4.1	3.4	3.0	3.0	0.0	
12th Grade	7.0	5.3	5.4	5.2	5.1	6.4	8.2	8.4	8.8	7.7	7.4	7.0	6.7	7.3	7.1	7.9	6.8	6.5	5.3	5.1	4.9	4.4	-0.4	
Heroin [i]																								
8th Grade	1.2	1.4	1.4	2.0	2.3	2.4	2.1	2.3	2.3	1.9	1.7	1.6	1.6	1.6	1.5	1.4	1.3	1.4	1.3	1.3	1.2	0.8	-0.3	s
10th Grade	1.2	1.2	1.3	1.5	1.7	2.1	2.1	2.3	2.3	2.2	1.7	1.8	1.5	1.5	1.5	1.4	1.5	1.2	1.5	1.3	1.2	1.1	-0.1	
12th Grade	0.9	1.2	1.1	1.2	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	1.5	1.5	1.5	1.4	1.5	1.3	1.2	1.6	1.4	1.1	-0.3	
With a Needle [j]																								
8th Grade	—	—	—	—	1.5	1.6	1.3	1.4	1.6	1.1	1.2	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.6	-0.2	
10th Grade	—	—	—	—	1.0	1.1	1.1	1.2	1.3	1.0	0.8	1.0	0.9	0.8	0.8	0.9	0.9	0.7	0.9	0.8	0.8	0.7	-0.1	
12th Grade	—	—	—	—	0.7	0.8	0.9	0.8	0.9	0.8	0.7	0.8	0.7	0.7	0.9	0.8	0.7	0.7	0.6	1.1	0.9	0.7	-0.2	
Without a Needle [j]																								
8th Grade	—	—	—	—	1.5	1.6	1.4	1.5	1.4	1.3	1.1	1.0	1.1	1.0	0.9	0.9	0.7	0.9	0.8	0.7	0.7	0.5	-0.2	
10th Grade	—	—	—	—	1.1	1.7	1.7	1.7	1.6	1.7	1.3	1.3	1.0	1.1	1.1	1.0	1.1	0.8	1.0	0.9	0.8	0.8	0.0	
12th Grade	—	—	—	—	1.4	1.7	2.1	1.6	1.8	2.4	1.5	1.6	1.8	1.4	1.3	1.1	1.4	1.1	0.9	1.4	1.3	0.8	-0.5	s
Narcotics other than Heroin [k,l]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	6.6	6.1	6.4	6.6	7.2	8.2	9.7	9.8	10.2	10.6	9.9‡	13.5	13.2	13.5	12.8	13.4	13.1	13.2	13.2	13.0	13.0	12.2	-0.8	

(Table continued on next page.)

TABLE 5-5a (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs in Grades 8, 10, and 12

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Amphetamines [k,m]																								
8th Grade	10.5	10.8	11.8	12.3	13.1	13.5	12.3	11.3	10.7	9.9	10.2	8.7	8.4	7.5	7.4	7.3	6.5	6.8	6.0	5.7	5.2	4.5	-0.7	
10th Grade	13.2	13.1	14.9	15.1	17.4	17.7	17.0	16.0	15.7	15.7	16.0	14.9	13.1	11.9	11.1	11.2	11.1	9.0	10.3	10.6	9.0	8.9	-0.2	
12th Grade	15.4	13.9	15.1	15.7	15.3	15.3	16.5	16.4	16.3	15.6	16.2	16.8	14.4	15.0	13.1	12.4	11.4	10.5	9.9	11.1	12.2	12.0	-0.2	
Methamphetamine [n,o]																								
8th Grade	—	—	—	—	—	—	—	—	4.5	4.2	4.4	3.5	3.9	2.5	3.1	2.7	1.8	2.3	1.6	1.8	1.3	1.3	0.0	
10th Grade	—	—	—	—	—	—	—	—	7.3	6.9	6.4	6.1	5.2	5.3	4.1	3.2	2.8	2.4	2.8	2.5	2.1	1.8	-0.3	
12th Grade	—	—	—	—	—	—	—	—	8.2	7.9	6.9	6.7	6.2	6.2	4.5	4.4	3.0	2.8	2.4	2.3	2.1	1.7	-0.3	
Crystal Methamphetamine (Ice) [o]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	3.3	2.9	3.1	3.4	3.9	4.4	4.4	5.3	4.8	4.0	4.1	4.7	3.9	4.0	4.0	3.4	3.4	2.8	2.1	1.8	2.1	1.7	-0.4	
Sedatives (Barbiturates) [k,p]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	6.2	5.5	6.3	7.0	7.4	7.6	8.1	8.7	8.9	9.2	8.7	9.5	8.8	9.9	10.5	10.2	9.3	8.5	8.2	7.5	7.0	6.9	-0.1	
Methaqualone [e,k]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	1.3	1.6	0.8	1.4	1.2	2.0	1.7	1.6	1.8	0.8	1.1	1.5	1.0	1.3	1.3	1.2	1.0	0.8	0.7	0.4	0.6	0.8	+0.2	
Tranquilizers [b,k]																								
8th Grade	3.8	4.1	4.4	4.6	4.5	5.3	4.8	4.6	4.4	4.4‡	5.0	4.3	4.4	4.0	4.1	4.3	3.9	3.9	3.9	4.4	3.4	3.0	-0.3	
10th Grade	5.8	5.9	5.7	5.4	6.0	7.1	7.3	7.8	7.9	8.0‡	9.2	8.8	7.8	7.3	7.1	7.2	7.4	6.8	7.0	7.3	6.8	6.3	-0.5	
12th Grade	7.2	6.0	6.4	6.6	7.1	7.2	7.8	8.5	9.3	8.9‡	10.3	11.4	10.2	10.6	9.9	10.3	9.5	8.9	9.3	8.5	8.7	8.5	-0.2	
Any Prescription Drug [q]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.0	23.9	22.2	21.5	20.9	21.6	21.7	21.2	-0.6	
Rohypnol [r]																								
8th Grade	—	—	—	—	—	1.5	1.1	1.4	1.3	1.0	1.1	0.8	1.0	1.0	1.1	1.0	1.0	0.7	0.7	0.9	2.0	1.0	-1.0	s
10th Grade	—	—	—	—	—	1.5	1.7	2.0	1.8	1.3	1.5	1.3	1.0	1.2	1.0	0.8	1.3	0.9	0.7	1.4	1.2	0.8	-0.4	
12th Grade	—	—	—	—	—	1.2	1.8	3.0	2.0	1.5	1.7	—	—	—	—	—	—	—	—	—	—	—	—	
Alcohol [s]																								
Any Use																								
8th Grade	70.1	69.3‡	55.7	55.8	54.5	55.3	53.8	52.5	52.1	51.7	50.5	47.0	45.6	43.9	41.0	40.5	38.9	38.9	36.6	35.8	33.1	29.5	-3.6	sss
10th Grade	83.8	82.3‡	71.6	71.1	70.5	71.8	72.0	69.8	70.6	71.4	70.1	66.9	66.0	64.2	63.2	61.5	61.7	58.3	59.1	58.2	56.0	54.0	-2.0	
12th Grade	88.0	87.5‡	80.0	80.4	80.7	79.2	81.7	81.4	80.0	80.3	79.7	78.4	76.6	76.8	75.1	72.7	72.2	71.9	72.3	71.0	70.0	69.4	-0.6	
Been Drunk [o]																								
8th Grade	26.7	26.8	26.4	25.9	25.3	26.8	25.2	24.8	24.8	25.1	23.4	21.3	20.3	19.9	19.5	19.5	17.9	18.0	17.4	16.3	14.8	12.8	-2.1	ss
10th Grade	50.0	47.7	47.9	47.2	46.9	48.5	49.4	46.7	48.9	49.3	48.2	44.0	42.4	42.3	42.1	41.4	41.2	37.2	38.6	36.9	35.9	34.6	-1.3	
12th Grade	65.4	63.4	62.5	62.9	63.2	61.8	64.2	62.4	62.3	62.3	63.9	61.6	58.1	60.3	57.5	56.4	55.1	54.7	56.5	54.1	51.0	54.2	+3.2	

(Table continued on next page.)

TABLE 5-5a (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs in Grades 8, 10, and 12

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Flavored Alcoholic Beverages [e,n]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	37.9	35.5	35.5	34.0	32.8	29.4	30.0	27.0	23.5	-3.5	ss
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	58.6	58.8	58.1	55.7	53.5	51.4	51.3	48.4	46.7	-1.7	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	71.0	73.6	69.9	68.4	65.5	67.4	62.6	62.4	60.5	-1.9	
Cigarettes																								
Any Use																								
8th Grade	44.0	45.2	45.3	46.1	46.4	49.2	47.3	45.7	44.1	40.5	36.6	31.4	28.4	27.9	25.9	24.6	22.1	20.5	20.1	20.0	18.4	15.5	-2.8	sss
10th Grade	55.1	53.5	56.3	56.9	57.6	61.2	60.2	57.7	57.6	55.1	52.8	47.4	43.0	40.7	38.9	36.1	34.6	31.7	32.7	33.0	30.4	27.7	-2.6	ss
12th Grade	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	64.6	62.5	61.0	57.2	53.7	52.8	50.0	47.1	46.2	44.7	43.6	42.2	40.0	39.5	-0.5	
Smokeless Tobacco [t]																								
8th Grade	22.2	20.7	18.7	19.9	20.0	20.4	16.8	15.0	14.4	12.8	11.7	11.2	11.3	11.0	10.1	10.2	9.1	9.8	9.6	9.9	9.7	8.1	-1.6	
10th Grade	28.2	26.6	28.1	29.2	27.6	27.4	26.3	22.7	20.4	19.1	19.5	16.9	14.6	13.8	14.5	15.0	15.1	12.2	15.2	16.8	15.6	15.4	-0.1	
12th Grade	—	32.4	31.0	30.7	30.9	29.8	25.3	26.2	23.4	23.1	19.7	18.3	17.0	16.7	17.5	15.2	15.1	15.6	16.3	17.6	16.9	17.4	+0.5	
Steroids [k,u]																								
8th Grade	1.9	1.7	1.6	2.0	2.0	1.8	1.8	2.3	2.7	3.0	2.8	2.5	2.5	1.9	1.7	1.6	1.5	1.4	1.3	1.1	1.2	1.2	-0.1	
10th Grade	1.8	1.7	1.7	1.8	2.0	1.8	2.0	2.0	2.7	3.5	3.5	3.5	3.0	2.4	2.0	1.8	1.8	1.4	1.3	1.6	1.4	1.3	-0.1	
12th Grade	2.1	2.1	2.0	2.4	2.3	1.9	2.4	2.7	2.9	2.5	3.7	4.0	3.5	3.4	2.6	2.7	2.2	2.2	2.2	2.0	1.8	1.8	0.0	

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 5-5d.

TABLE 5-5b
Trends in Annual Prevalence of Use of Various Drugs in Grades 8, 10, and 12

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Any Illicit Drug [a]																							
8th Grade	11.3	12.9	15.1	18.5	21.4	23.6	22.1	21.0	20.5	19.5	19.5	17.7	16.1	15.2	15.5	14.8	13.2	14.1	14.5	16.0	14.7	13.4	-1.3
10th Grade	21.4	20.4	24.7	30.0	33.3	37.5	38.5	35.0	35.9	36.4	37.2	34.8	32.0	31.1	29.8	28.7	28.1	26.9	29.4	30.2	31.1	30.1	-0.9
12th Grade	29.4	27.1	31.0	35.8	39.0	40.2	42.4	41.4	42.1	40.9	41.4	41.0	39.3	38.8	38.4	36.5	35.9	36.6	36.5	38.3	40.0	39.7	-0.3
Any Illicit Drug other than Marijuana [a,b]																							
8th Grade	8.4	9.3	10.4	11.3	12.6	13.1	11.8	11.0	10.5	10.2‡	10.8	8.8	8.8	7.9	8.1	7.7	7.0	7.4	7.0	7.1	6.4	5.5	-0.9
10th Grade	12.2	12.3	13.9	15.2	17.5	18.4	18.2	16.6	16.7	16.7‡	17.9	15.7	13.8	13.5	12.9	12.7	13.1	11.3	12.2	12.1	11.2	10.8	-0.4
12th Grade	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	20.7	20.4‡	21.6	20.9	19.8	20.5	19.7	19.2	18.5	18.3	17.0	17.3	17.6	17.0	-0.5
Any Illicit Drug including Inhalants [a,c]																							
8th Grade	16.7	18.2	21.1	24.2	27.1	28.7	27.2	26.2	25.3	24.0	23.9	21.4	20.4	20.2	20.4	19.7	18.0	19.0	18.8	20.3	18.2	17.0	-1.2
10th Grade	23.9	23.5	27.4	32.5	35.6	39.6	40.3	37.1	37.7	38.0	38.7	36.1	33.5	32.9	31.7	30.7	30.2	28.8	31.2	31.8	32.5	31.5	-1.1
12th Grade	31.2	28.8	32.5	37.6	40.2	41.9	43.3	42.4	42.8	42.5	42.6	42.1	40.5	39.1	40.3	38.0	37.0	37.3	37.6	39.2	41.5	40.2	-1.3
Marijuana/Hashish																							
8th Grade	6.2	7.2	9.2	13.0	15.8	18.3	17.7	16.9	16.5	15.6	15.4	14.6	12.8	11.8	12.2	11.7	10.3	10.9	11.8	13.7	12.5	11.4	-1.1
10th Grade	16.5	15.2	19.2	25.2	28.7	33.6	34.8	31.1	32.1	32.2	32.7	30.3	28.2	27.5	26.6	25.2	24.6	23.9	26.7	27.5	28.8	28.0	-0.8
12th Grade	23.9	21.9	26.0	30.7	34.7	35.8	38.5	37.5	37.8	36.5	37.0	36.2	34.9	34.3	33.6	31.5	31.7	32.4	32.8	34.8	36.4	36.4	0.0
Synthetic Marijuana [n,o]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.4	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.8	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.3	-0.1
Inhalants [c,d]																							
8th Grade	9.0	9.5	11.0	11.7	12.8	12.2	11.8	11.1	10.3	9.4	9.1	7.7	8.7	9.6	9.5	9.1	8.3	8.9	8.1	8.1	7.0	6.2	-0.8
10th Grade	7.1	7.5	8.4	9.1	9.6	9.5	8.7	8.0	7.2	7.3	6.6	5.8	5.4	5.9	6.0	6.5	6.6	5.9	6.1	5.7	4.5	4.1	-0.4
12th Grade	6.6	6.2	7.0	7.7	8.0	7.6	6.7	6.2	5.6	5.9	4.5	4.5	3.9	4.2	5.0	4.5	3.7	3.8	3.4	3.6	3.2	2.9	-0.3
Nitrites [e]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.9	0.5	0.9	1.1	1.1	1.6	1.2	1.4	0.9	0.6	0.6	1.1	0.9	0.8	0.6	0.5	0.8	0.6	0.9	—	—	—	—
Hallucinogens [b,f]																							
8th Grade	1.9	2.5	2.6	2.7	3.6	4.1	3.7	3.4	2.9	2.8‡	3.4	2.6	2.6	2.2	2.4	2.1	1.9	2.1	1.9	2.2	2.2	1.6	-0.6 s
10th Grade	4.0	4.3	4.7	5.8	7.2	7.8	7.6	6.9	6.9	6.1‡	6.2	4.7	4.1	4.1	4.0	4.1	4.4	3.9	4.1	4.2	4.1	3.5	-0.6
12th Grade	5.8	5.9	7.4	7.6	9.3	10.1	9.8	9.0	9.4	8.1‡	9.1	6.6	5.9	6.2	5.5	4.9	5.4	5.9	4.7	5.5	5.2	4.8	-0.4
LSD																							
8th Grade	1.7	2.1	2.3	2.4	3.2	3.5	3.2	2.8	2.4	2.4	2.2	1.5	1.3	1.1	1.2	0.9	1.1	1.3	1.1	1.2	1.1	0.8	-0.3
10th Grade	3.7	4.0	4.2	5.2	6.5	6.9	6.7	5.9	6.0	5.1	4.1	2.6	1.7	1.6	1.5	1.7	1.9	1.8	1.9	1.9	1.8	1.7	-0.1
12th Grade	5.2	5.6	6.8	6.9	8.4	8.8	8.4	7.6	8.1	6.6	6.6	3.5	1.9	2.2	1.8	1.7	2.1	2.7	1.9	2.6	2.7	2.4	-0.3

(Table continued on next page.)

TABLE 5-5b (cont.)
Trends in Annual Prevalence of Use of Various Drugs in Grades 8, 10, and 12

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Hallucinogens other than LSD [b]																								
8th Grade	0.7	1.1	1.0	1.3	1.7	2.0	1.8	1.6	1.5	1.4‡	2.4	2.1	2.1	1.9	2.0	1.8	1.6	1.6	1.5	1.8	1.8	1.3	-0.5	s
10th Grade	1.3	1.4	1.9	2.4	2.8	3.3	3.3	3.4	3.2	3.1‡	4.3	4.0	3.6	3.7	3.5	3.7	3.8	3.3	3.5	3.5	3.5	3.0	-0.5	
12th Grade	2.0	1.7	2.2	3.1	3.8	4.4	4.6	4.6	4.3	4.4‡	5.9	5.4	5.4	5.6	5.0	4.6	4.8	5.0	4.2	4.8	4.3	4.0	-0.3	
PCP [e]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	1.4	1.4	1.4	1.6	1.8	2.6	2.3	2.1	1.8	2.3	1.8	1.1	1.3	0.7	1.3	0.7	0.9	1.1	1.0	1.0	1.3	0.9	-0.3	
Ecstasy (MDMA) [g]																								
8th Grade	—	—	—	—	—	2.3	2.3	1.8	1.7	3.1	3.5	2.9	2.1	1.7	1.7	1.4	1.5	1.7	1.3	2.4	1.7	1.1	-0.6	s
10th Grade	—	—	—	—	—	4.6	3.9	3.3	4.4	5.4	6.2	4.9	3.0	2.4	2.6	2.8	3.5	2.9	3.7	4.7	4.5	3.0	-1.6	sss
12th Grade	—	—	—	—	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	4.5	4.0	3.0	4.1	4.5	4.3	4.3	4.5	5.3	3.8	-1.6	s
Salvia [n,o]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.7	1.6	1.4	-0.2	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.7	3.9	2.5	-1.3	sss
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.7	5.5	5.9	4.4	-1.5	ss
Cocaine																								
8th Grade	1.1	1.5	1.7	2.1	2.6	3.0	2.8	3.1	2.7	2.6	2.5	2.3	2.2	2.0	2.2	2.0	2.0	1.8	1.6	1.6	1.4	1.2	-0.3	
10th Grade	2.2	1.9	2.1	2.8	3.5	4.2	4.7	4.7	4.9	4.4	3.6	4.0	3.3	3.7	3.5	3.2	3.4	3.0	2.7	2.2	1.9	2.0	+0.1	
12th Grade	3.5	3.1	3.3	3.6	4.0	4.9	5.5	5.7	6.2	5.0	4.8	5.0	4.8	5.3	5.1	5.7	5.2	4.4	3.4	2.9	2.9	2.7	-0.1	
Crack																								
8th Grade	0.7	0.9	1.0	1.3	1.6	1.8	1.7	2.1	1.8	1.8	1.7	1.6	1.6	1.3	1.4	1.3	1.3	1.1	1.1	1.0	0.9	0.6	-0.3	s
10th Grade	0.9	0.9	1.1	1.4	1.8	2.1	2.2	2.5	2.4	2.2	1.8	2.3	1.6	1.7	1.7	1.3	1.3	1.3	1.2	1.0	0.9	0.8	-0.2	
12th Grade	1.5	1.5	1.5	1.9	2.1	2.1	2.4	2.5	2.7	2.2	2.1	2.3	2.2	2.3	1.9	2.1	1.9	1.6	1.3	1.4	1.0	1.2	+0.2	
Other Cocaine [h]																								
8th Grade	1.0	1.2	1.3	1.7	2.1	2.5	2.2	2.4	2.3	1.9	1.9	1.8	1.6	1.6	1.7	1.6	1.5	1.4	1.3	1.3	1.1	1.0	-0.1	
10th Grade	2.1	1.7	1.8	2.4	3.0	3.5	4.1	4.0	4.4	3.8	3.0	3.4	2.8	3.3	3.0	2.9	3.1	2.6	2.3	1.9	1.7	1.8	+0.1	
12th Grade	3.2	2.6	2.9	3.0	3.4	4.2	5.0	4.9	5.8	4.5	4.4	4.4	4.2	4.7	4.5	5.2	4.5	4.0	3.0	2.6	2.6	2.4	-0.2	
Heroin [i]																								
8th Grade	0.7	0.7	0.7	1.2	1.4	1.6	1.3	1.3	1.4	1.1	1.0	0.9	0.9	1.0	0.8	0.8	0.8	0.9	0.7	0.8	0.7	0.5	-0.2	
10th Grade	0.5	0.6	0.7	0.9	1.1	1.2	1.4	1.4	1.4	1.4	0.9	1.1	0.7	0.9	0.9	0.9	0.8	0.8	0.9	0.8	0.8	0.6	-0.1	
12th Grade	0.4	0.6	0.5	0.6	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	0.8	0.9	0.8	0.8	0.9	0.7	0.7	0.9	0.8	0.6	-0.1	
With a Needle [j]																								
8th Grade	—	—	—	—	0.9	1.0	0.8	0.8	0.9	0.6	0.7	0.6	0.6	0.7	0.6	0.5	0.6	0.5	0.5	0.6	0.5	0.4	-0.1	
10th Grade	—	—	—	—	0.6	0.7	0.7	0.8	0.6	0.5	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.4	-0.1	
12th Grade	—	—	—	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.7	0.6	0.4	-0.2	
Without a Needle [j]																								
8th Grade	—	—	—	—	0.8	1.0	0.8	0.8	0.9	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.4	0.5	0.4	0.3	-0.2	s
10th Grade	—	—	—	—	0.8	0.9	1.1	1.0	1.1	1.1	0.7	0.8	0.5	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.0	
12th Grade	—	—	—	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.8	0.7	0.8	0.6	1.0	0.5	0.6	0.8	0.7	0.4	-0.3	s

(Table continued on next page.)

TABLE 5-5b (cont.)
Trends in Annual Prevalence of Use of Various Drugs
in Grades 8, 10, and 12

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Narcotics other than Heroin [k,l]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.5	3.3	3.6	3.8	4.7	5.4	6.2	6.3	6.7	7.0	6.7‡	9.4	9.3	9.5	9.0	9.0	9.2	9.1	9.2	8.7	8.7	7.9	-0.8
OxyContin [k,n,v]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	1.3	1.7	1.7	1.8	2.6	1.8	2.1	2.0	2.1	1.8	1.6	-0.3
10th Grade	—	—	—	—	—	—	—	—	—	—	—	3.0	3.6	3.5	3.2	3.8	3.9	3.6	5.1	4.6	3.9	3.0	-0.9
12th Grade	—	—	—	—	—	—	—	—	—	—	—	4.0	4.5	5.0	5.5	4.3	5.2	4.7	4.9	5.1	4.9	4.3	-0.7
Vicodin [k,n,v]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	2.5	2.8	2.5	2.6	3.0	2.7	2.9	2.5	2.7	2.1	1.3	-0.8
10th Grade	—	—	—	—	—	—	—	—	—	—	—	6.9	7.2	6.2	5.9	7.0	7.2	6.7	8.1	7.7	5.9	4.4	-1.4
12th Grade	—	—	—	—	—	—	—	—	—	—	—	9.6	10.5	9.3	9.5	9.7	9.6	9.7	9.7	8.0	8.1	7.5	-0.7
Amphetamines [k,m]																							
8th Grade	6.2	6.5	7.2	7.9	8.7	9.1	8.1	7.2	6.9	6.5	6.7	5.5	5.5	4.9	4.9	4.7	4.2	4.5	4.1	3.9	3.5	2.9	-0.6
10th Grade	8.2	8.2	9.6	10.2	11.9	12.4	12.1	10.7	10.4	11.1	11.7	10.7	9.0	8.5	7.8	7.9	8.0	6.4	7.1	7.6	6.6	6.5	-0.1
12th Grade	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1	10.2	10.5	10.9	11.1	9.9	10.0	8.6	8.1	7.5	6.8	6.6	7.4	8.2	7.9	-0.3
Ritalin [k,n,o]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	2.9	2.8	2.6	2.5	2.4	2.6	2.1	1.6	1.8	1.5	1.3	0.7	-0.6
10th Grade	—	—	—	—	—	—	—	—	—	—	4.8	4.8	4.1	3.4	3.4	3.6	2.8	2.9	3.6	2.7	2.6	1.9	-0.8
12th Grade	—	—	—	—	—	—	—	—	—	—	5.1	4.0	4.0	5.1	4.4	4.4	3.8	3.4	2.1	2.7	2.6	2.6	0.0
Adderall [k,n,o]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	2.3	1.7	1.7	0.0
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.7	5.3	4.6	4.5	-0.1
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.4	6.5	6.5	7.6	+1.1
Provigil [k,o]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.3	1.5	—	—
Methamphetamine [n,o]																							
8th Grade	—	—	—	—	—	—	—	—	3.2	2.5	2.8	2.2	2.5	1.5	1.8	1.8	1.1	1.2	1.0	1.2	0.8	1.0	+0.2
10th Grade	—	—	—	—	—	—	—	—	4.6	4.0	3.7	3.9	3.3	3.0	2.9	1.8	1.6	1.5	1.6	1.6	1.4	1.0	-0.4
12th Grade	—	—	—	—	—	—	—	—	4.7	4.3	3.9	3.6	3.2	3.4	2.5	2.5	1.7	1.2	1.2	1.0	1.4	1.1	-0.3
Crystal Methamphetamine (Ice) [o]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.0	2.0	2.1	2.3	1.9	1.6	1.1	0.9	0.9	1.2	0.8	-0.3
Bath Salts (Synthetic Stimulants) [n,o]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	—

(Table continued on next page.)

TABLE 5-5b (cont.)
Trends in Annual Prevalence of Use of Various Drugs in Grades 8, 10, and 12

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Sedatives (Barbiturates) [k,p]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	3.4	2.8	3.4	4.1	4.7	4.9	5.1	5.5	5.8	6.2	5.7	6.7	6.0	6.5	7.2	6.6	6.2	5.8	5.2	4.8	4.3	4.5	+0.2	
Methaqualone [e,k]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	0.5	0.6	0.2	0.8	0.7	1.1	1.0	1.1	1.1	0.3	0.8	0.9	0.6	0.8	0.9	0.8	0.5	0.5	0.6	0.3	0.3	0.4	+0.1	
Tranquilizers [b,k]																								
8th Grade	1.8	2.0	2.1	2.4	2.7	3.3	2.9	2.6	2.5	2.6‡	2.8	2.6	2.7	2.5	2.8	2.6	2.4	2.4	2.6	2.8	2.0	1.8	-0.2	
10th Grade	3.2	3.5	3.3	3.3	4.0	4.6	4.9	5.1	5.4	5.6‡	7.3	6.3	5.3	5.1	4.8	5.2	5.3	4.6	5.0	5.1	4.5	4.3	-0.3	
12th Grade	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5	5.8	5.7‡	6.9	7.7	6.7	7.3	6.8	6.6	6.2	6.2	6.3	5.6	5.6	5.3	-0.2	
Any Prescription Drug [q]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.1	16.8	15.8	15.4	14.4	15.0	15.2	14.8	-0.4	
OTC Cough/Cold Medicines [n,o]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.2	4.0	3.6	3.8	3.2	2.7	3.0	+0.3	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.3	5.4	5.3	6.0	5.1	5.5	4.7	-0.8	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	5.8	5.5	5.9	6.6	5.3	5.6	+0.3	
Rohypnol [r]																								
8th Grade	—	—	—	—	—	1.0	0.8	0.8	0.5	0.5	0.7	0.3	0.5	0.6	0.7	0.5	0.7	0.5	0.4	0.5	0.8	0.4	-0.4	
10th Grade	—	—	—	—	—	1.1	1.3	1.2	1.0	0.8	1.0	0.7	0.6	0.7	0.5	0.5	0.7	0.4	0.4	0.6	0.6	0.5	-0.2	
12th Grade	—	—	—	—	—	1.1	1.2	1.4	1.0	0.8	0.9‡	1.6	1.3	1.6	1.2	1.1	1.0	1.3	1.0	1.5	1.3	1.5	+0.2	
GHB [n,w]																								
8th Grade	—	—	—	—	—	—	—	—	—	1.2	1.1	0.8	0.9	0.7	0.5	0.8	0.7	1.1	0.7	0.6	0.6	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	1.1	1.0	1.4	1.4	0.8	0.8	0.7	0.6	0.5	1.0	0.6	0.5	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	1.9	1.6	1.5	1.4	2.0	1.1	1.1	0.9	1.2	1.1	1.4	1.4	1.4	0.0	
Ketamine [n,x]																								
8th Grade	—	—	—	—	—	—	—	—	—	1.6	1.3	1.3	1.1	0.9	0.6	0.9	1.0	1.2	1.0	1.0	0.8	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	2.1	2.1	2.2	1.9	1.3	1.0	1.0	0.8	1.0	1.3	1.1	1.2	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	2.5	2.5	2.6	2.1	1.9	1.6	1.4	1.3	1.5	1.7	1.6	1.7	1.5	-0.2	
Alcohol [s]																								
Any Use																								
8th Grade	54.0	53.7‡	45.4	46.8	45.3	46.5	45.5	43.7	43.5	43.1	41.9	38.7	37.2	36.7	33.9	33.6	31.8	32.1	30.3	29.3	26.9	23.6	-3.3	sss
10th Grade	72.3	70.2‡	63.4	63.9	63.5	65.0	65.2	62.7	63.7	65.3	63.5	60.0	59.3	58.2	56.7	55.8	56.3	52.5	52.8	52.1	49.8	48.5	-1.2	
12th Grade	77.7	76.8‡	72.7	73.0	73.7	72.5	74.8	74.3	73.8	73.2	73.3	71.5	70.1	70.6	68.6	66.5	66.4	65.5	66.2	65.2	63.5	63.5	0.0	
Been Drunk [o]																								
8th Grade	17.5	18.3	18.2	18.2	18.4	19.8	18.4	17.9	18.5	18.5	16.6	15.0	14.5	14.5	14.1	13.9	12.6	12.7	12.2	11.5	10.5	8.6	-1.9	ss
10th Grade	40.1	37.0	37.8	38.0	38.5	40.1	40.7	38.3	40.9	41.6	39.9	35.4	34.7	35.1	34.2	34.5	34.4	30.0	31.2	29.9	28.8	28.2	-0.6	
12th Grade	52.7	50.3	49.6	51.7	52.5	51.9	53.2	52.0	53.2	51.8	53.2	50.4	48.0	51.8	47.7	47.9	46.1	45.6	47.0	44.0	42.2	45.0	+2.9	

(Table continued on next page.)

TABLE 5-5b (cont.)
Trends in Annual Prevalence of Use of Various Drugs
in Grades 8, 10, and 12

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Flavored Alcoholic Beverages [e,n,y]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	30.4	27.9	26.8	26.0	25.0	22.2	21.9	19.2	17.0	-2.2	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	49.7	48.5	48.8	45.9	43.4	41.5	41.0	38.3	37.8	-0.4	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	55.2	55.8	58.4	54.7	53.6	51.8	53.4	47.9	47.0	44.4	-2.6	
Alcoholic Beverages containing Caffeine [n,o,z]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.8	10.9	-0.9	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22.5	19.7	-2.8	s
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.4	26.4	0.0	
Bidis [n,o]																								
8th Grade	—	—	—	—	—	—	—	—	—	3.9	2.7	2.7	2.0	1.7	1.6	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	6.4	4.9	3.1	2.8	2.1	1.6	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	9.2	7.0	5.9	4.0	3.6	3.3	2.3	1.7	1.9	1.5	1.4	—	—	—	
Kreteks [n,o]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	2.6	2.6	2.0	1.9	1.4	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	6.0	4.9	3.8	3.7	2.8	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	10.1	8.4	6.7	6.5	7.1	6.2	6.8	6.8	5.5	4.6	2.9	3.0	0.0	
Tobacco using a Hookah [e]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.1	18.5	18.3	-0.3	
Small cigars [e,n]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.1	19.5	19.9	+0.4	
Dissolvable Tobacco Products [e,n]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.6	+0.1	
Snus [e,n]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.9	7.9	0.0	
Steroids [k,u]																								
8th Grade	1.0	1.1	0.9	1.2	1.0	0.9	1.0	1.2	1.7	1.7	1.6	1.5	1.4	1.1	1.1	0.9	0.8	0.9	0.8	0.5	0.7	0.6	-0.1	
10th Grade	1.1	1.1	1.0	1.1	1.2	1.2	1.2	1.2	1.7	2.2	2.1	2.2	1.7	1.5	1.3	1.2	1.1	0.9	0.8	1.0	0.9	0.8	-0.1	
12th Grade	1.4	1.1	1.2	1.3	1.5	1.4	1.4	1.7	1.8	1.7	2.4	2.5	2.1	2.5	1.5	1.8	1.4	1.5	1.5	1.5	1.2	1.3	0.0	

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 5-5d.

TABLE 5-5c
Trends in 30-Day Prevalence of Use of Various Drugs in Grades 8, 10, and 12

	Percentage who used in last 30 days																						2011–2012 change	
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		
Any Illicit Drug [a]																								
8th Grade	5.7	6.8	8.4	10.9	12.4	14.6	12.9	12.1	12.2	11.9	11.7	10.4	9.7	8.4	8.5	8.1	7.4	7.6	8.1	9.5	8.5	7.7	-0.9	
10th Grade	11.6	11.0	14.0	18.5	20.2	23.2	23.0	21.5	22.1	22.5	22.7	20.8	19.5	18.3	17.3	16.8	16.9	15.8	17.8	18.5	19.2	18.6	-0.6	
12th Grade	16.4	14.4	18.3	21.9	23.8	24.6	26.2	25.6	25.9	24.9	25.7	25.4	24.1	23.4	23.1	21.5	21.9	22.3	23.3	23.8	25.2	25.2	0.0	
Any Illicit Drug other than Marijuana [a,b]																								
8th Grade	3.8	4.7	5.3	5.6	6.5	6.9	6.0	5.5	5.5	5.6‡	5.5	4.7	4.7	4.1	4.1	3.8	3.6	3.8	3.5	3.5	3.4	2.6	-0.8	s
10th Grade	5.5	5.7	6.5	7.1	8.9	8.9	8.8	8.6	8.6	8.5‡	8.7	8.1	6.9	6.9	6.4	6.3	6.9	5.3	5.7	5.8	5.4	5.0	-0.5	
12th Grade	7.1	6.3	7.9	8.8	10.0	9.5	10.7	10.7	10.4	10.4‡	11.0	11.3	10.4	10.8	10.3	9.8	9.5	9.3	8.6	8.6	8.9	8.4	-0.4	
Any Illicit Drug including Inhalants [a,c]																								
8th Grade	8.8	10.0	12.0	14.3	16.1	17.5	16.0	14.9	15.1	14.4	14.0	12.6	12.1	11.2	11.2	10.9	10.1	10.4	10.6	11.7	10.5	9.5	-1.0	
10th Grade	13.1	12.6	15.5	20.0	21.6	24.5	24.1	22.5	23.1	23.6	23.6	21.7	20.5	19.3	18.4	17.7	18.1	16.8	18.8	19.4	20.1	19.3	-0.8	
12th Grade	17.8	15.5	19.3	23.0	24.8	25.5	26.9	26.6	26.4	26.4	26.5	25.9	24.6	23.3	24.2	22.1	22.8	22.8	24.1	24.5	26.2	25.2	-1.0	
Marijuana/Hashish																								
8th Grade	3.2	3.7	5.1	7.8	9.1	11.3	10.2	9.7	9.7	9.1	9.2	8.3	7.5	6.4	6.6	6.5	5.7	5.8	6.5	8.0	7.2	6.5	-0.7	
10th Grade	8.7	8.1	10.9	15.8	17.2	20.4	20.5	18.7	19.4	19.7	19.8	17.8	17.0	15.9	15.2	14.2	14.2	13.8	15.9	16.7	17.6	17.0	-0.6	
12th Grade	13.8	11.9	15.5	19.0	21.2	21.9	23.7	22.8	23.1	21.6	22.4	21.5	21.2	19.9	19.8	18.3	18.8	19.4	20.6	21.4	22.6	22.9	+0.3	
Inhalants [c,d]																								
8th Grade	4.4	4.7	5.4	5.6	6.1	5.8	5.6	4.8	5.0	4.5	4.0	3.8	4.1	4.5	4.2	4.1	3.9	4.1	3.8	3.6	3.2	2.7	-0.6	s
10th Grade	2.7	2.7	3.3	3.6	3.5	3.3	3.0	2.9	2.6	2.6	2.4	2.4	2.2	2.4	2.2	2.3	2.5	2.1	2.2	2.0	1.7	1.4	-0.3	
12th Grade	2.4	2.3	2.5	2.7	3.2	2.5	2.5	2.3	2.0	2.2	1.7	1.5	1.5	1.5	2.0	1.5	1.2	1.4	1.2	1.4	1.0	0.9	-0.2	
Nitrites [e]																								
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	0.4	0.3	0.6	0.4	0.4	0.7	0.7	1.0	0.4	0.3	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.6	—	—	—	—	
Hallucinogens [b,f]																								
8th Grade	0.8	1.1	1.2	1.3	1.7	1.9	1.8	1.4	1.3	1.2‡	1.6	1.2	1.2	1.0	1.1	0.9	1.0	0.9	0.9	1.0	1.0	0.6	-0.4	s
10th Grade	1.6	1.8	1.9	2.4	3.3	2.8	3.3	3.2	2.9	2.3‡	2.1	1.6	1.5	1.6	1.5	1.5	1.7	1.3	1.4	1.6	1.4	1.2	-0.2	
12th Grade	2.2	2.1	2.7	3.1	4.4	3.5	3.9	3.8	3.5	2.6‡	3.3	2.3	1.8	1.9	1.9	1.5	1.7	2.2	1.6	1.9	1.6	1.6	0.0	
LSD																								
8th Grade	0.6	0.9	1.0	1.1	1.4	1.5	1.5	1.1	1.1	1.0	1.0	0.7	0.6	0.5	0.5	0.4	0.5	0.5	0.5	0.6	0.5	0.3	-0.2	
10th Grade	1.5	1.6	1.6	2.0	3.0	2.4	2.8	2.7	2.3	1.6	1.5	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.5	0.7	0.7	0.5	-0.1	
12th Grade	1.9	2.0	2.4	2.6	4.0	2.5	3.1	3.2	2.7	1.6	2.3	0.7	0.6	0.7	0.7	0.6	0.6	1.1	0.5	0.8	0.8	0.8	0.0	
Hallucinogens other than LSD [b]																								
8th Grade	0.3	0.4	0.5	0.7	0.8	0.9	0.7	0.7	0.6	0.6‡	1.1	1.0	1.0	0.8	0.9	0.7	0.7	0.7	0.7	0.8	0.7	0.5	-0.3	ss
10th Grade	0.4	0.5	0.7	1.0	1.0	1.0	1.2	1.4	1.2	1.2‡	1.4	1.4	1.2	1.4	1.3	1.3	1.4	1.0	1.1	1.2	1.1	0.9	-0.2	
12th Grade	0.7	0.5	0.8	1.2	1.3	1.6	1.7	1.6	1.6	1.7‡	1.9	2.0	1.5	1.7	1.6	1.3	1.4	1.6	1.4	1.5	1.2	1.3	+0.1	

(Table continued on next page.)

TABLE 5-5c (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs in Grades 8, 10, and 12

	Percentage who used in last 30 days																						2011–2012 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
PCP [e]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.5	0.6	1.0	0.7	0.6	1.3	0.7	1.0	0.8	0.9	0.5	0.4	0.6	0.4	0.7	0.4	0.5	0.6	0.5	0.8	0.8	0.5	-0.2
Ecstasy (MDMA) [g]																							
8th Grade	—	—	—	—	—	1.0	1.0	0.9	0.8	1.4	1.8	1.4	0.7	0.8	0.6	0.7	0.6	0.8	0.6	1.1	0.6	0.5	-0.1
10th Grade	—	—	—	—	—	1.8	1.3	1.3	1.8	2.6	2.6	1.8	1.1	0.8	1.0	1.2	1.2	1.1	1.3	1.9	1.6	1.0	-0.5 s
12th Grade	—	—	—	—	—	2.0	1.6	1.5	2.5	3.6	2.8	2.4	1.3	1.2	1.0	1.3	1.6	1.8	1.8	1.4	2.3	0.9	-1.3 sss
Cocaine																							
8th Grade	0.5	0.7	0.7	1.0	1.2	1.3	1.1	1.4	1.3	1.2	1.2	1.1	0.9	0.9	1.0	1.0	0.9	0.8	0.8	0.6	0.8	0.5	-0.3 s
10th Grade	0.7	0.7	0.9	1.2	1.7	1.7	2.0	2.1	1.8	1.8	1.3	1.6	1.3	1.7	1.5	1.5	1.3	1.2	0.9	0.9	0.7	0.8	+0.1
12th Grade	1.4	1.3	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.1	2.1	2.3	2.1	2.3	2.3	2.5	2.0	1.9	1.3	1.3	1.1	1.1	0.0
Crack																							
8th Grade	0.3	0.5	0.4	0.7	0.7	0.8	0.7	0.9	0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.5	0.3	-0.2 s
10th Grade	0.3	0.4	0.5	0.6	0.9	0.8	0.9	1.1	0.8	0.9	0.7	1.0	0.7	0.8	0.7	0.7	0.5	0.5	0.4	0.5	0.4	0.4	0.0
12th Grade	0.7	0.6	0.7	0.8	1.0	1.0	0.9	1.0	1.1	1.0	1.1	1.2	0.9	1.0	1.0	0.9	0.9	0.8	0.6	0.7	0.5	0.6	+0.1
Other Cocaine [h]																							
8th Grade	0.5	0.5	0.6	0.9	1.0	1.0	0.8	1.0	1.1	0.9	0.9	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.5	0.6	0.3	-0.3 s
10th Grade	0.6	0.6	0.7	1.0	1.4	1.3	1.6	1.8	1.6	1.6	1.2	1.3	1.1	1.5	1.3	1.3	1.1	1.0	0.8	0.7	0.6	0.7	+0.1
12th Grade	1.2	1.0	1.2	1.3	1.3	1.6	2.0	2.0	2.5	1.7	1.8	1.9	1.8	2.2	2.0	2.4	1.7	1.7	1.1	1.1	1.0	1.0	0.0
Heroin [i]																							
8th Grade	0.3	0.4	0.4	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.3	0.4	0.4	0.4	0.4	0.4	0.2	-0.1
10th Grade	0.2	0.2	0.3	0.4	0.6	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.0
12th Grade	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	-0.1
With a Needle [j]																							
8th Grade	—	—	—	—	0.4	0.5	0.4	0.5	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	-0.1
10th Grade	—	—	—	—	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.0
12th Grade	—	—	—	—	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.4	0.4	0.3	-0.2
Without a Needle [j]																							
8th Grade	—	—	—	—	0.3	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	-0.1
10th Grade	—	—	—	—	0.3	0.3	0.4	0.5	0.5	0.4	0.2	0.4	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.0
12th Grade	—	—	—	—	0.6	0.4	0.6	0.4	0.4	0.7	0.3	0.5	0.4	0.3	0.5	0.3	0.4	0.2	0.3	0.4	0.4	0.2	-0.2 s
Narcotics other than Heroin [k,l]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.1	1.2	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.9	3.0‡	4.0	4.1	4.3	3.9	3.8	3.8	3.8	4.1	3.6	3.6	3.0	-0.6 s
Amphetamines [k,m]																							
8th Grade	2.6	3.3	3.6	3.6	4.2	4.6	3.8	3.3	3.4	3.4	3.2	2.8	2.7	2.3	2.3	2.1	2.0	2.2	1.9	1.8	1.8	1.3	-0.5 s
10th Grade	3.3	3.6	4.3	4.5	5.3	5.5	5.1	5.1	5.0	5.4	5.6	5.2	4.3	4.0	3.7	3.5	4.0	2.8	3.3	3.3	3.1	2.8	-0.3
12th Grade	3.2	2.8	3.7	4.0	4.0	4.1	4.8	4.6	4.5	5.0	5.6	5.5	5.0	4.6	3.9	3.7	3.7	2.9	3.0	3.3	3.7	3.3	-0.3

(Table continued on next page.)

TABLE 5-5c (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs in Grades 8, 10, and 12

	Percentage who used in last 30 days																						2011–2012 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Methamphetamine [n,o]																							
8th Grade	—	—	—	—	—	—	—	—	1.1	0.8	1.3	1.1	1.2	0.6	0.7	0.6	0.6	0.7	0.5	0.7	0.4	0.5	+0.1
10th Grade	—	—	—	—	—	—	—	—	1.8	2.0	1.5	1.8	1.4	1.3	1.1	0.7	0.4	0.7	0.6	0.7	0.5	0.6	+0.1
12th Grade	—	—	—	—	—	—	—	—	1.7	1.9	1.5	1.7	1.7	1.4	0.9	0.9	0.6	0.6	0.5	0.5	0.6	0.5	0.0
Crystal Methamphetamine (Ice) [o]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.6	0.5	0.6	0.7	1.1	1.1	0.8	1.2	0.8	1.0	1.1	1.2	0.8	0.8	0.9	0.7	0.6	0.6	0.5	0.6	0.6	0.4	-0.2
Sedatives (Barbiturates) [k,p]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.1	1.3	1.7	2.2	2.1	2.1	2.6	2.6	3.0	2.8	3.2	2.9‡	2.9	3.3	3.0	2.7	2.8	2.5	2.2	1.8	2.0	+0.2
Methaqualone [e,k]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.2	0.4	0.1	0.4	0.4	0.6	0.3	0.6	0.4	0.2	0.5	0.3	0.4	0.5	0.5	0.4	0.4	0.2	0.3	0.2	0.2	0.3	+0.1
Tranquilizers [b,k]																							
8th Grade	0.8	0.8	0.9	1.1	1.2	1.5	1.2	1.2	1.1	1.4‡	1.2	1.2	1.4	1.2	1.3	1.3	1.1	1.2	1.2	1.2	1.0	0.8	-0.2
10th Grade	1.2	1.5	1.1	1.5	1.7	1.7	2.2	2.2	2.2	2.5‡	2.9	2.9	2.4	2.3	2.3	2.4	2.6	1.9	2.0	2.2	1.9	1.7	-0.2
12th Grade	1.4	1.0	1.2	1.4	1.8	2.0	1.8	2.4	2.5	2.6‡	2.9	3.3	2.8	3.1	2.9	2.7	2.6	2.6	2.7	2.5	2.3	2.1	-0.2
Any Prescription Drug [q]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.6	8.1	7.8	7.2	7.3	6.9	7.2	7.0	-0.2
Rohypnol [r]																							
8th Grade	—	—	—	—	—	0.5	0.3	0.4	0.3	0.3	0.4	0.2	0.1	0.2	0.2	0.4	0.3	0.1	0.2	0.2	0.6	0.1	-0.4 s
10th Grade	—	—	—	—	—	0.5	0.5	0.4	0.5	0.4	0.2	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.0
12th Grade	—	—	—	—	—	0.5	0.3	0.3	0.3	0.4	0.3	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [s]																							
Any Use																							
8th Grade	25.1	26.1‡	24.3	25.5	24.6	26.2	24.5	23.0	24.0	22.4	21.5	19.6	19.7	18.6	17.1	17.2	15.9	15.9	14.9	13.8	12.7	11.0	-1.7 s
10th Grade	42.8	39.9‡	38.2	39.2	38.8	40.4	40.1	38.8	40.0	41.0	39.0	35.4	35.4	35.2	33.2	33.8	33.4	28.8	30.4	28.9	27.2	27.6	+0.4
12th Grade	54.0	51.3‡	48.6	50.1	51.3	50.8	52.7	52.0	51.0	50.0	49.8	48.6	47.5	48.0	47.0	45.3	44.4	43.1	43.5	41.2	40.0	41.5	+1.5
Been Drunk [o]																							
8th Grade	7.6	7.5	7.8	8.7	8.3	9.6	8.2	8.4	9.4	8.3	7.7	6.7	6.7	6.2	6.0	6.2	5.5	5.4	5.4	5.0	4.4	3.6	-0.8
10th Grade	20.5	18.1	19.8	20.3	20.8	21.3	22.4	21.1	22.5	23.5	21.9	18.3	18.2	18.5	17.6	18.8	18.1	14.4	15.5	14.7	13.7	14.5	+0.8
12th Grade	31.6	29.9	28.9	30.8	33.2	31.3	34.2	32.9	32.9	32.3	32.7	30.3	30.9	32.5	30.2	30.0	28.7	27.6	27.4	26.8	25.0	28.1	+3.0
Flavored Alcoholic Beverages [e,n]																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	14.6	12.9	13.1	12.2	10.2	9.5	9.4	8.6	7.6	-1.0
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	25.1	23.1	24.7	21.8	20.2	19.0	19.4	15.8	16.3	+0.5
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	31.1	30.5	29.3	29.1	27.4	27.4	24.1	23.1	21.8	-1.3

(Table continued on next page.)

TABLE 5-5c (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs in Grades 8, 10, and 12

	Percentage who used in last 30 days																						2011–2012 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Cigarettes																							
Any Use																							
8th Grade	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	17.5	14.6	12.2	10.7	10.2	9.2	9.3	8.7	7.1	6.8	6.5	7.1	6.1	4.9	-1.2 s
10th Grade	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	25.7	23.9	21.3	17.7	16.7	16.0	14.9	14.5	14.0	12.3	13.1	13.6	11.8	10.8	-1.0
12th Grade	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	24.4	25.0	23.2	21.6	21.6	20.4	20.1	19.2	18.7	17.1	-1.5
Smokeless Tobacco [t]																							
8th Grade	6.9	7.0	6.6	7.7	7.1	7.1	5.5	4.8	4.5	4.2	4.0	3.3	4.1	4.1	3.3	3.7	3.2	3.5	3.7	4.1	3.5	2.8	-0.7
10th Grade	10.0	9.6	10.4	10.5	9.7	8.6	8.9	7.5	6.5	6.1	6.9	6.1	5.3	4.9	5.6	5.7	6.1	5.0	6.5	7.5	6.6	6.4	-0.2
12th Grade	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	8.4	7.6	7.8	6.5	6.7	6.7	7.6	6.1	6.6	6.5	8.4	8.5	8.3	7.9	-0.4
Steroids [k,u]																							
8th Grade	0.4	0.5	0.5	0.5	0.6	0.4	0.5	0.5	0.7	0.8	0.7	0.8	0.7	0.5	0.5	0.5	0.4	0.5	0.4	0.3	0.4	0.3	-0.1
10th Grade	0.6	0.6	0.5	0.6	0.6	0.5	0.7	0.6	0.9	1.0	0.9	1.0	0.8	0.8	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4	-0.1
12th Grade	0.8	0.6	0.7	0.9	0.7	0.7	1.0	1.1	0.9	0.8	1.3	1.4	1.3	1.6	0.9	1.1	1.0	1.0	1.0	1.1	0.7	0.9	+0.2

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 5-5d.

TABLE 5-5d
Trends in 30-Day Prevalence of Daily Use of Various Drugs in Grades 8, 10, and 12

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Marijuana/Hashish Daily [aa]																								
8th Grade	0.2	0.2	0.4	0.7	0.8	1.5	1.1	1.1	1.4	1.3	1.3	1.2	1.0	0.8	1.0	1.0	0.8	0.9	1.0	1.2	1.3	1.1	-0.2	
10th Grade	0.8	0.8	1.0	2.2	2.8	3.5	3.7	3.6	3.8	3.8	4.5	3.9	3.6	3.2	3.1	2.8	2.8	2.7	2.8	3.3	3.6	3.5	0.0	
12th Grade	2.0	1.9	2.4	3.6	4.6	4.9	5.8	5.6	6.0	6.0	5.8	6.0	6.0	5.6	5.0	5.0	5.1	5.4	5.2	6.1	6.6	6.5	-0.1	
Alcohol [s,aa]																								
Any Daily Use																								
8th Grade	0.5	0.6‡	1.0	1.0	0.7	1.0	0.8	0.9	1.0	0.8	0.9	0.7	0.8	0.6	0.5	0.5	0.6	0.7	0.5	0.5	0.4	0.3	0.0	
10th Grade	1.3	1.2‡	1.8	1.7	1.7	1.6	1.7	1.9	1.9	1.8	1.9	1.8	1.5	1.3	1.3	1.4	1.4	1.0	1.1	1.1	0.8	1.0	+0.2	
12th Grade	3.6	3.4‡	3.4	2.9	3.5	3.7	3.9	3.9	3.4	2.9	3.6	3.5	3.2	2.8	3.1	3.0	3.1	2.8	2.5	2.7	2.1	2.5	+0.4	
Been Drunk Daily [o,aa]																								
8th Grade	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	
10th Grade	0.2	0.3	0.4	0.4	0.6	0.4	0.6	0.6	0.7	0.5	0.6	0.5	0.5	0.4	0.4	0.5	0.5	0.3	0.4	0.3	0.2	0.4	+0.1	
12th Grade	0.9	0.8	0.9	1.2	1.3	1.6	2.0	1.5	1.9	1.7	1.4	1.2	1.6	1.8	1.5	1.6	1.3	1.4	1.1	1.6	1.3	1.5	+0.2	
5+ Drinks in a Row in Last 2 Weeks																								
8th Grade	10.9	11.3	11.3	12.1	12.3	13.3	12.3	11.5	13.1	11.7	11.0	10.3	9.8	9.4	8.4	8.7	8.3	8.1	7.8	7.2	6.4	5.1	-1.3	ss
10th Grade	21.0	19.1	21.0	21.9	22.0	22.8	23.1	22.4	23.5	24.1	22.8	20.3	20.0	19.9	19.0	19.9	19.6	16.0	17.5	16.3	14.7	15.6	+0.8	
12th Grade	29.8	27.9	27.5	28.2	29.8	30.2	31.3	31.5	30.8	30.0	29.7	28.6	27.9	29.2	27.1	25.4	25.9	24.6	25.2	23.2	21.6	23.7	+2.0	s
Cigarettes																								
Any Daily Use																								
8th Grade	7.2	7.0	8.3	8.8	9.3	10.4	9.0	8.8	8.1	7.4	5.5	5.1	4.5	4.4	4.0	4.0	3.0	3.1	2.7	2.9	2.4	1.9	-0.5	
10th Grade	12.6	12.3	14.2	14.6	16.3	18.3	18.0	15.8	15.9	14.0	12.2	10.1	8.9	8.3	7.5	7.6	7.2	5.9	6.3	6.6	5.5	5.0	-0.5	
12th Grade	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	23.1	20.6	19.0	16.9	15.8	15.6	13.6	12.2	12.3	11.4	11.2	10.7	10.3	9.3	-1.0	
1/2 Pack+/Day																								
8th Grade	3.1	2.9	3.5	3.6	3.4	4.3	3.5	3.6	3.3	2.8	2.3	2.1	1.8	1.7	1.7	1.5	1.1	1.2	1.0	0.9	0.7	0.6	-0.1	
10th Grade	6.5	6.0	7.0	7.6	8.3	9.4	8.6	7.9	7.6	6.2	5.5	4.4	4.1	3.3	3.1	3.3	2.7	2.0	2.4	2.4	1.9	1.5	-0.3	
12th Grade	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	13.2	11.3	10.3	9.1	8.4	8.0	6.9	5.9	5.7	5.4	5.0	4.7	4.3	4.0	-0.3	
Smokeless Tobacco Daily [t]																								
8th Grade	1.6	1.8	1.5	1.9	1.2	1.5	1.0	1.0	0.9	0.9	1.2	0.8	0.8	1.0	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.5	-0.3	
10th Grade	3.3	3.0	3.3	3.0	2.7	2.2	2.2	2.2	1.5	1.9	2.2	1.7	1.8	1.6	1.9	1.7	1.6	1.4	1.9	2.5	1.7	2.0	+0.3	
12th Grade	—	4.3	3.3	3.9	3.6	3.3	4.4	3.2	2.9	3.2	2.8	2.0	2.2	2.8	2.5	2.2	2.8	2.7	2.9	3.1	3.1	3.2	+0.1	

Source. The Monitoring the Future study, the University of Michigan.

See footnotes on the following page.

Footnotes for Tables 5-5a through 5-5d

Approximate Weighted Ns	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
8th Graders	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200
10th Graders	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000
12th Graders	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800

Approximate Weighted Ns	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
8th Graders	15,100	16,500	17,000	16,800	16,500	16,100	15,700	15,000	15,300	16,000	15,100
10th Graders	14,300	15,800	16,400	16,200	16,200	16,100	15,100	15,900	15,200	14,900	15,000
12th Graders	12,900	14,600	14,600	14,700	14,200	14,500	14,000	13,700	14,400	14,100	13,700

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' ‡ ' indicates some change in the question. See relevant footnote for that drug. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]For 12th graders only: Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of narcotics other than heroin and sedatives (barbiturates) has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b]In 2001 the question text was changed on half of the questionnaire forms for each age group. Other psychedelics was changed to other hallucinogens and shrooms was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. For 8th, 10th, and 12th graders: The 2001 data presented here are based on the changed forms only; *N* is one half of *N* indicated. In 2002 the remaining forms were changed to the new wording. The data are based on all forms beginning in 2002. Data for any illicit drug other than marijuana and data for hallucinogens are also affected by these changes and have been handled in a parallel manner.

[c]For 12th graders only: Data based on five of six forms in 1991–1998; *N* is five sixths of *N* indicated. Data based on three of six forms beginning in 1999; *N* is three sixths of *N* indicated.

[d]Inhalants are unadjusted for underreporting of amyl and butyl nitrites.

[e]For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated. In 2011 for flavored alcoholic beverages Skyy Blue and Zima were dropped from the list of examples. An examination of the data did not show any effect from the wording change.

[f]Hallucinogens are unadjusted for underreporting of PCP.

[g]For 8th and 10th graders only: Data based on one of two forms in 1996; *N* is one half of *N* indicated. Data based on one third of *N* indicated in 1997–2001 due to changes in the questionnaire forms. Data based on two of four forms beginning in 2002; *N* is one half of *N* indicated. For 12th graders only: Data based on one of six forms in 1996–2001; *N* is one sixth of *N* indicated. Data based on two of six forms beginning in 2002; *N* is two sixths of *N* indicated.

[h]For 12th graders only: Data based on four of six forms; *N* is four sixths of *N* indicated.

[i]In 1995 the heroin question was changed in one of two forms for 8th and 10th graders and in three of six forms for 12th graders. Separate questions were asked for use with and without injection. In 1996, the heroin question was changed in the remaining 8th- and 10th-grade forms. Data presented here represent the combined data from all forms.

[j]For 8th and 10th graders only: Data based on one of two forms in 1995; *N* is one half of *N* indicated. Data based on all forms beginning in 1996. For 12th graders only: Data based on three of six forms; *N* is three sixths of *N* indicated.

[k]Only drug use not under a doctor's orders is included here.

[l]In 2002 the question text was changed in half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced with Vicodin, OxyContin, and Percocet. The 2002 data presented here are based on the changed forms only; *N* is one half of *N* indicated. In 2003, the remaining forms were changed to the new wording. The data are based on all forms beginning in 2003.

(Footnote continued on next page.)

Footnotes for Tables 5-5a through 5-5d (cont.)

[m]For 8th, 10th, and 12th graders: In 2009, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. In 2010 the remaining forms were changed in a like manner. In 2011 the question text was changed slightly in one form; bennies, Benzedrine and Methadrine were dropped from the list of examples. An examination of the data did not show any effect from the wording change.

[n]For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated. In 2011for flavored alcoholic beverages: Skyy Blue and Zima were dropped from the list of examples. An examination of the data did not show any effect from the wording change.

[o]For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated. Bidis and kreteks based on one of six forms beginning in 2009; *N* is one sixth *N* indicated.

[p]For 12th graders only: In 2004 the barbiturate question text was changed on half of the questionnaire forms. Barbiturates was changed to sedatives including barbiturates, and "have you taken barbiturates . . . " was changed to "have you taken sedatives . . . " In the list of examples downs, downers, goofballs, yellow, reds, blues, rainbows were changed to downs, or downers, and include Phenobarbital, Tuinal, Nembutal, and Seconal. An examination of the data did not show any effect from the wording change. In 2005 the remaining forms were changed in a like manner.

[q]The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers "…without a doctor telling you to use them."

[r]For 8th and 10th graders only: Data based on one of two forms in 1996; *N* is one half of *N* indicated. Data based on three of four forms in 1997–1998; *N* is two thirds of *N* indicated. Data based on two of four forms in 1999–2001; *N* is one third of *N* indicated. Data based on one of four forms beginning in 2002; *N* is one sixth of *N* indicated. For 12th graders only: Data based on one of six forms in 1996–2001; *N* is one sixth of *N* indicated. Data based on two of six forms in 2002–2009; *N* is two sixths of *N* indicated. Data for 2001 and 2002 are not comparable due to changes in the questionnaire forms. Data based on one of six forms beginning in 2010; *N* is one sixth of *N* indicated.

[s]For 8th, 10th, and 12th graders: In 1993, the question text was changed slightly in half of the forms to indicate that a drink meant more than just a few sips. The 1993 data are based on the changed forms only; *N* is one half of *N* indicated for these groups. In 1994 the remaining forms were changed to the new wording. The data are based on all forms beginning in 1994. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005.

[t]For 8th and 10th graders only: Data based on one of two forms for 1991–1996 and on two of four forms beginning in 1997; *N* is one half of *N* indicated. For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated. For all grades in 2011: snus and dissolvable tobacco were added to the list of examples. An examination of the data did not show any effect from the wording change.

[u]For 8th and 10th graders only: In 2006, the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2007 the remaining forms were changed in a like manner. In 2008 the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2009 the remaining forms were changed in a like manner. For 12th graders only: Data based on two of six forms in 1991–2005; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated. In 2006 a slightly altered version of the question was added to a third form. An examination of the data did not show any effect from the wording change. In 2007 the remaining forms were changed in a like manner. In 2008 the question text was changed slightly in two of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2009 the remaining form was changed in a like manner.

[v]For 12th graders only: Data based on two of six forms in 2002–2005; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated.

[w]For 12th graders only: Data based on two of six forms in 2000; *N* is two sixths of *N* indicated. Data based on three of six forms in 2001; *N* is three sixths of *N* indicated. Data based on one of six forms beginning in 2002; *N* is one sixth of *N* indicated.

[x]For 12th graders only: Data based on two of six forms in 2000; *N* is two sixths of *N* indicated. Data based on three of six forms in 2001–2009; *N* is three sixths of *N* indicated. Data based on two of six forms beginning in 2010; *N* is two sixths of *N* indicated.

[y]The 2003 flavored alcoholic beverage data were created by adjusting the 2004 data to reflect the change in the 2003 and 2004 alcopops data.

[z]For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated. For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated. For all grades: In 2011 the question text was "…had an alcoholic beverage containing caffeine (like Four Loko or Joose)." In 2012 the question text was changed to "…had an alcoholic beverage mixed with an energy drink (like Red Bull)." An examination of the data did not show any effect from the wording changes.

[aa]Daily use is defined as use on 20 or more occasions in the past 30 days except for cigarettes and smokeless tobacco, for which actual daily use is measured, and for 5+ drinks, for which the prevalence of having five or more drinks in a row in the last two weeks is measured.

TABLE 5-6a
Trends in Lifetime Prevalence of Use of Heroin *with* and *without* a Needle in Grades 8, 10, and 12

	Percentage who used in lifetime																		2011–2012 change
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
8th Graders																			
Used heroin:																			
Only *with* a needle	0.7	0.8	0.7	0.8	0.9	0.6	0.6	0.6	0.5	0.6	0.6	0.5	0.6	0.4	0.5	0.5	0.5	0.4	-0.1
Only *without* a needle	0.7	0.9	0.8	0.9	0.7	0.8	0.6	0.6	0.7	0.5	0.4	0.5	0.4	0.5	0.4	0.4	0.4	0.2	-0.1
Both ways	0.8	0.7	0.6	0.6	0.7	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.5	0.4	0.4	0.3	0.2	-0.1
Used heroin at all	2.3	2.4	2.1	2.3	2.3	1.9	1.7	1.6	1.6	1.6	1.5	1.4	1.3	1.4	1.3	1.3	1.2	0.8	-0.3 s
Approximate weighted N =	*8,800*	*17,800*	*18,600*	*18,100*	*16,700*	*16,700*	*16,200*	*15,100*	*16,500*	*17,000*	*16,800*	*16,500*	*16,100*	*15,700*	*15,000*	*15,300*	*16,000*	*15,100*	
10th Graders																			
Used heroin:																			
Only *with* a needle	0.6	0.5	0.4	0.6	0.7	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.3	0.5	0.4	0.4	0.3	-0.1
Only *without* a needle	0.7	1.1	1.0	1.2	1.1	1.2	0.8	0.9	0.6	0.7	0.7	0.6	0.7	0.5	0.6	0.5	0.4	0.4	0.0
Both ways	0.4	0.6	0.6	0.6	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.5	0.4	0.3	0.4	0.4	0.3	0.4	0.0
Used heroin at all	1.7	2.1	2.1	2.3	2.3	2.2	1.7	1.8	1.5	1.5	1.5	1.4	1.5	1.2	1.5	1.3	1.2	1.1	-0.1
Approximate weighted N =	*8,500*	*15,600*	*15,500*	*15,000*	*13,600*	*14,300*	*14,000*	*14,300*	*15,800*	*16,400*	*16,200*	*16,200*	*16,100*	*15,100*	*15,900*	*15,200*	*14,900*	*15,000*	
12th Graders																			
Used heroin:																			
Only *with* a needle	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.1	0.2	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.4	+0.1
Only *without* a needle	0.9	1.1	1.3	1.2	1.2	1.8	1.2	1.0	1.0	0.9	0.7	0.7	0.9	0.6	0.6	0.6	0.6	0.4	-0.2
Both ways	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.6	0.6	0.3	-0.2
Used heroin at all	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	1.5	1.5	1.5	1.4	1.5	1.3	1.2	1.6	1.4	1.1	-0.3
Approximate weighted N =	*7,700*	*7,200*	*7,700*	*7,600*	*6,800*	*6,400*	*6,400*	*6,500*	*7,300*	*7,300*	*7,400*	*7,100*	*7,300*	*7,000*	*6,900*	*7,200*	*7,100*	*6,900*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. Any apparent inconsistency between the total who used heroin at all and the sum of those who used with a needle, those who used without a needle, and those who used both ways is due to rounding. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. For 8th and 10th graders only: Data based on one of two forms in 1995 and on all forms after 1995. For 12th graders only: Data based on three of six forms except for used heroin at all, which is based on all six forms. The six-form *N* is approximately 13,700.

TABLE 5-6b
Trends in Annual Prevalence of Use of Heroin *with* and *without* a Needle in Grades 8, 10, and 12

	Percentage who used in last 12 months																		2011–2012 change
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
8th Graders																			
Used heroin:																			
Only *with* a needle	0.5	0.6	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.4	0.3	0.2	0.4	0.3	0.4	0.3	0.3	0.3	0.0
Only *without* a needle	0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.1	-0.1
Both ways	0.4	0.4	0.3	0.4	0.4	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.1	-0.1
Used heroin at all	1.4	1.6	1.3	1.3	1.4	1.1	1.0	0.9	0.9	1.0	0.8	0.8	0.8	0.9	0.7	0.8	0.7	0.5	-0.2
Approximate weighted N =	*8,800*	*17,800*	*18,600*	*18,100*	*16,700*	*16,700*	*16,200*	*15,100*	*16,500*	*17,000*	*16,800*	*16,500*	*16,100*	*15,700*	*15,000*	*15,300*	*16,000*	*15,100*	
10th Graders																			
Used heroin:																			
Only *with* a needle	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.2	-0.1
Only *without* a needle	0.5	0.6	0.7	0.6	0.8	0.8	0.5	0.5	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.0
Both ways	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.0
Used heroin at all	1.1	1.2	1.4	1.4	1.4	1.4	0.9	1.1	0.7	0.9	0.9	0.9	0.8	0.8	0.9	0.8	0.8	0.6	-0.1
Approximate weighted N =	*8,500*	*15,600*	*15,500*	*15,000*	*13,600*	*14,300*	*14,000*	*14,300*	*15,800*	*16,400*	*16,200*	*16,200*	*16,100*	*15,100*	*15,900*	*15,200*	*14,900*	*15,000*	
12th Graders																			
Used heroin:																			
Only *with* a needle	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	+0.1
Only *without* a needle	0.6	0.6	0.7	0.6	0.8	1.1	0.6	0.6	0.4	0.5	0.4	0.3	0.6	0.3	0.4	0.3	0.3	0.2	0.0
Both ways	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	-0.1
Used heroin at all	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	0.8	0.9	0.8	0.8	0.9	0.7	0.7	0.9	0.8	0.6	-0.1
Approximate weighted N =	*7,700*	*7,200*	*7,700*	*7,600*	*6,800*	*6,400*	*6,400*	*6,500*	*7,300*	*7,300*	*7,400*	*7,100*	*7,300*	*7,000*	*6,900*	*7,200*	*7,100*	*6,900*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. Any apparent inconsistency between the total who used heroin at all and the sum of those who used with a needle, those who used without a needle, and those who used both ways is due to rounding. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. For 8th and 10th graders only: Data based on one of two forms in 1995 and on all forms after 1995. For 12th graders only: Data based on three of six forms except for used heroin at all, which is based on all six forms. The six-form *N* is approximately 13,700.

TABLE 5-6c
Trends in 30-Day Prevalence of Use of Heroin *with* and *without* a Needle in Grades 8, 10, and 12

	Percentage who used in last 30 days																		2011–2012 change
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
8th Graders																			
Used heroin:																			
Only *with* a needle	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0
Only *without* a needle	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.1
Both ways	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.0
Used heroin at all	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.3	0.4	0.4	0.4	0.4	0.4	0.2	-0.1
Approximate weighted N =	*8,800*	*17,800*	*18,600*	*18,100*	*16,700*	*16,700*	*16,200*	*15,100*	*16,500*	*17,000*	*16,800*	*16,500*	*16,100*	*15,700*	*15,000*	*15,300*	*16,000*	*15,100*	
10th Graders																			
Used heroin:																			
Only *with* a needle	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.0
Only *without* a needle	0.2	0.2	0.3	0.3	0.4	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	-0.1
Both ways	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Used heroin at all	0.6	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.0
Approximate weighted N =	*8,500*	*15,600*	*15,500*	*15,000*	*13,600*	*14,300*	*14,000*	*14,300*	*15,800*	*16,400*	*16,200*	*16,200*	*16,100*	*15,100*	*15,900*	*15,200*	*14,900*	*15,000*	
12th Graders																			
Used heroin:																			
Only *with* a needle	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.0
Only *without* a needle	0.3	0.1	0.3	0.3	0.3	0.5	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	-0.1
Both ways	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.0
Used heroin at all	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	-0.1
Approximate weighted N =	*7,700*	*7,200*	*7,700*	*7,600*	*6,800*	*6,400*	*6,400*	*6,500*	*7,300*	*7,300*	*7,400*	*7,100*	*7,300*	*7,000*	*6,900*	*7,200*	*7,100*	*6,900*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' * ' indicates less than 0.05% but greater than 0%. Any apparent inconsistency between the total who used heroin at all and the sum of those who used with a needle, those who used without a needle, and those who used both ways is due to rounding. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. For 8th and 10th graders only: Data based on one of two forms in 1995 and on all forms after 1995. For 12th graders only: Data based on three of six forms except for used heroin at all, which is based on all six forms. The six-form *N* is approximately 13,700.

TABLE 5-7a
Trends in Noncontinuation Rates among 12th Graders
Who Ever Used Drug in Lifetime

Percentage who did not use in last 12 months

(Years cont.)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Marijuana/Hashish	15.4	15.7	15.6	15.2	15.9	19.1	22.5	24.5	25.8	27.1	25.1	23.8	27.7	29.9	32.3	33.7	34.9	32.8	26.3
Inhalants	—	70.9	66.7	65.8	57.5	61.3	66.7	64.8	68.4	64.6	63.0	61.6	59.4	61.1	66.5	61.7	62.5	62.7	59.8
Inhalants, Adjusted	—	—	—	—	50.8	55.7	65.5	63.3	64.4	58.4	59.8	55.7	56.5	59.4	62.9	59.5	61.7	62.4	58.2
Amyl/Butyl Nitrites	—	—	—	—	41.4	48.6	63.4	63.3	57.1	50.6	49.4	45.3	44.7	46.9	48.5	33.3	†	†	†
Hallucinogens [a]	31.3	37.7	36.7	32.9	29.8	30.1	32.3	35.2	38.7	39.3	38.8	38.1	37.9	38.2	40.4	37.2	39.6	35.9	32.1
Hallucinogens, Adjusted [a]	—	—	—	—	31.2	32.5	35.7	38.0	36.7	40.6	36.9	36.1	36.8	37.0	37.4	38.1	39.0	34.0	31.0
LSD	36.3	41.8	43.9	35.1	30.5	30.1	33.7	36.5	39.3	41.3	41.3	37.5	38.1	37.7	41.0	37.9	40.9	34.9	34.0
Hallucinogens other than LSD [a]	33.3	42.1	38.4	37.1	36.4	36.7	38.5	41.3	43.8	42.4	44.6	47.4	40.7	48.8	48.8	48.8	45.9	48.5	43.6
PCP	—	—	—	—	45.3	54.2	59.0	63.3	53.6	54.0	40.8	50.0	56.7	58.6	38.5	57.1	51.7	41.7	51.7
Ecstasy (MDMA)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	37.8	38.1	33.3	30.2	22.1	21.7	24.8	28.1	29.6	28.0	24.3	24.9	32.2	34.7	36.9	43.6	55.1	49.2	45.9
Crack	—	—	—	—	—	—	—	—	—	—	—	—	27.8	35.4	34.0	45.7	51.6	42.3	42.3
Other Cocaine	—	—	—	—	—	—	—	—	—	—	—	—	30.0	38.8	38.8	46.5	54.3	50.9	46.3
Heroin [b]	54.5	55.6	55.6	50.0	54.5	54.5	54.5	50.0	50.0	61.5	50.0	54.5	58.3	54.5	53.8	61.5	55.6	50.0	54.5
With a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Narcotics other than Heroin [c,d]	36.7	40.6	37.9	39.4	38.6	35.7	41.6	44.8	45.7	46.4	42.2	42.2	42.4	46.5	47.0	45.8	47.0	45.9	43.8
Amphetamines [c,e]	27.4	30.1	29.1	25.3	24.4	21.2	19.3	27.2	33.5	36.6	39.7	42.7	43.5	44.9	43.5	48.0	46.8	48.9	44.4
Methamphetamine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	51.9	57.6	55.2	45.2
Sedatives (Barbiturates) [c]	36.7	40.7	40.4	40.9	36.4	38.2	41.6	46.6	47.5	50.5	50.0	50.0	51.4	52.2	49.2	50.0	45.2	49.1	46.0
Sedatives, Adjusted	35.7	39.5	37.9	38.1	32.2	30.9	34.4	40.1	45.1	50.4	50.8	50.0	52.9	52.6	50.0	—	—	—	—
Methaqualone [c]	37.0	39.7	38.8	38.0	28.9	24.2	28.3	36.4	46.5	54.2	58.2	59.6	62.5	60.6	51.9	69.6	†	†	†
Tranquilizers [c,f]	37.6	38.7	40.0	41.8	41.1	42.8	45.6	50.0	48.1	50.8	48.7	46.8	49.5	48.9	50.0	51.4	50.0	53.3	45.3
Rohypnol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [g]	6.2	6.7	5.9	5.8	5.3	5.7	6.0	6.5	5.7	7.1	7.2	7.4	7.0	7.3	8.8	9.9	11.7	12.2‡	9.1
Been Drunk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.4	20.7	20.6
Cigarettes [h]	16.0	16.7	16.2	17.9	19.6	21.4	20.8	19.1	18.6	18.5	15.9	17.0	17.1	18.2	18.5	18.2	17.4	18.6	16.9
Smokeless Tobacco [h]	—	—	—	—	—	—	—	—	—	—	—	21.8	18.4	25.7	26.2	—	—	29.6	25.5
Steroids [i]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.7	41.4	33.3	47.6	40.0

(Table continued on next page.)

TABLE 5-7a (cont.)
Trends in Noncontinuation Rates among 12th Graders
Who Ever Used Drug in Lifetime

Percentage who did not use in last 12 months

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Marijuana/Hashish	19.6	16.8	20.3	22.4	23.6	23.9	25.2	24.5	24.3	24.3	24.9	25.0	25.6	24.1	24.0	21.9	20.5	20.1	19.5
Inhalants	56.5	54.0	54.2	58.4	59.2	63.6	58.5	65.4	61.5	65.2	61.5	55.6	59.4	65.1	62.0	63.8	59.7	60.8	63.6
Inhalants, Adjusted	55.2	52.8	51.4	56.8	57.0	62.5	57.5	64.5	60.5	63.1	59.6	54.6	58.7	63.2	60.7	60.1	—	—	—
Amyl/Butyl Nitrites	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	—	—	—
Hallucinogens [a]	33.3	26.8	27.9	35.1	36.2	31.4	37.7‡	34.4	45.0	44.3	36.1	38.2	41.3	35.4	32.3	36.7	35.9	38.0	36.5
Hallucinogens, Adjusted [a]	33.3	26.0	26.2	35.1	36.1	31.0	36.0‡	32.8	43.8	40.4	35.4	35.8	39.8	34.9	31.6	35.6	34.5	34.3	35.7
LSD	34.3	28.2	30.2	38.2	39.7	33.6	40.5	39.4	58.3	67.8	52.2	48.8	49.0	38.6	31.4	40.9	35.6	33.0	37.5
Hallucinogens other than LSD [a]	36.7	29.6	35.3	38.7	35.2	35.8	36.2‡	37.1	41.3	40.0	35.6	38.6	41.4	37.5	35.3	37.7	38.1	41.4	38.7
PCP	42.9	33.3	35.0	41.0	46.2	47.1	32.4	48.6	64.5	48.0	†	†	†	†	†	†	†	†	†
Ecstasy (MDMA)	—	—	24.6	42.0	37.9	30.0	25.5	21.4	29.5	45.8	46.7	44.0	36.8	30.2	30.3	34.8	38.8	33.7	47.5
Cocaine	39.0	33.3	31.0	36.8	38.7	36.7	41.9	41.5	35.9	37.7	34.6	36.8	32.6	33.0	39.6	44.2	46.2	44.7	43.9
Crack	36.7	30.0	36.4	38.5	43.2	41.3	43.6	43.2	39.5	38.9	41.0	43.9	41.7	40.1	43.2	45.4	42.1	45.4	42.5
Other Cocaine	42.3	33.3	34.4	39.0	41.7	34.1	41.6	40.5	37.1	37.3	35.6	36.6	34.6	34.3	38.0	44.1	49.0	46.0	46.2
Heroin [b]	50.0	31.3	44.4	42.9	50.0	45.0	37.5	50.0	41.2	46.7	40.0	43.9	45.6	39.9	43.1	39.8	45.1	46.4	41.3
With a needle	—	28.6	37.5	44.4	50.0	55.6	†	†	†	42.9	42.9	46.7	37.7	48.6	†	†	40.0	33.6	†
Without a needle	—	28.6	41.2	42.9	50.0	44.4	33.3	46.7	50.0	55.6	50.0	39.9	48.1	30.7	53.6	30.9	40.0	46.4	50.0
Narcotics other than Heroin [c,d]	42.4	34.7	34.2	36.1	35.7	34.3	34.0	32.3‡	30.7	29.5	29.6	29.4	32.5	30.1	30.8	30.2	33.2	33.0	35.4
Amphetamines [c,e]	40.1	39.2	37.9	38.2	38.4	37.4	32.7	32.7	33.9	31.3	33.3	34.5	35.1	34.7	35.8	32.9	33.7	33.2	34.3
Methamphetamine	—	—	—	—	—	42.7	45.6	43.5	46.3	48.4	45.2	43.3	43.5	44.3	55.6	50.0	53.7	34.1	37.9
Crystal Methamphetamine (Ice)	47.1	38.5	36.4	47.7	43.4	60.4	45.0	39.0	36.2	48.7	47.5	41.9	46.0	52.0	62.6	54.0	50.9	45.1	49.1
Sedatives (Barbiturates) [c]	41.4	36.5	35.5	37.0	36.8	34.8	32.6	34.5	29.5	31.8	34.3	31.8	35.7	33.3	31.5	36.2	35.5	38.4	34.8
Sedatives, Adjusted	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methaqualone [c]	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Tranquilizers [c,f]	43.9	38.0	36.1	39.7	35.3	37.6	36.0‡	29.3	32.5	34.3	31.1	31.5	35.5	35.2	30.4	32.5	34.5	35.5	37.1
Rohypnol	—	—	†	†	53.3	†	†	†	—	—	—	—	—	—	—	—	—	—	—
Alcohol [g]	9.2	8.7	8.5	8.4	8.7	7.8	8.8	8.0	8.8	8.5	8.1	8.7	8.5	8.0	9.0	8.5	8.2	9.3	8.5
Been Drunk	17.8	16.9	16.0	17.1	16.7	14.6	16.9	16.7	18.2	17.4	14.1	17.0	15.1	16.3	16.7	16.7	18.6	17.4	17.0
Cigarettes [h]	15.9	14.6	13.5	13.1	14.3	16.1	16.3	17.5	17.3	17.2	15.9	16.7	18.9	17.9	17.9	17.8	18.3	20.0	20.4
Smokeless Tobacco [h]	33.1	26.5	27.3	26.2	17.9	20.7	15.1	18.9	20.4	16.2	15.3	15.4	25.1	17.4	16.0	15.6	14.8	18.2	17.6
Steroids [i]	45.8	34.8	26.3	41.7	37.0	37.9	32.0	35.1	37.5	40.0	26.5	44.2	35.6	35.5	31.5	32.3	27.1	32.5	30.2

(Table continued on next page.)

TABLE 5-7a (cont.)
Trends in Noncontinuation Rates among 12th Graders
Who Ever Used Drug in Lifetime

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available. ' † ' indicates that the cell entry was omitted because it was based on fewer than 50 twelfth graders who ever used drug in lifetime. All other cells are based on more than 50 cases. ' ‡ ' indicates some change in the question. See relevant footnote for that drug.

[a]In 2001 the question text was changed in half of the questionnaire forms. Other psychedelics was changed to other hallucinogens and shrooms was added to the list of examples. The 2001 data are based on the changed forms only. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for hallucinogens are also affected by these changes and have been handled in a parallel manner.

[b]In 1995, the heroin question was changed in three of six forms. Separate questions were asked for use with and without injection. Data presented here represent the combined data from all forms.

[c]Only drug use not under a doctor's orders is included here.

[d]In 2002 the question text was changed in half of the questionnaire forms. In the list of examples of narcotics other than heroin, Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet. The 2002 data are based on the changed forms only. In 2003, the remaining forms were changed to the new wording. Beginning in 2003, the data are based on all forms.

[e]In 2009, the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording change. The remaining forms where changed in 2010. In 2011 the introduction to the question was changed slightly in one of six forms. An examination of the data did not show any effect from the wording change.

[f]In 2001, for the tranquilizer list of examples, Miltown was replaced with Xanax in half of the questionnaire forms. The 2001 data are based on the changed forms only. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms.

[g]In 1993, the question text was changed slightly in half of the questionnaire forms to indicate that a drink meant more than a few sips. The 1993 data are based on the changed forms only. In 1994 the remaining forms were changed to the new wording. Beginning in 1994, the data are based on all forms. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005.

[h]Percentage of regular users (ever) who did not use at all in the last 30 days.

[i]In 2006, the question text was changed slightly in one of the questionnaire forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2007. In 2008 the question text was changed slightly. An examination of the data did not show any effect from the wording change. In 2009 the remaining forms were changed.

TABLE 5-7b
Trends in Noncontinuation Rates among 12th Graders
Who Used Drug 10 or More Times in Lifetime

Percentage who did not use in last 12 months

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Marijuana/Hashish	4.0	4.0	4.1	3.7	4.6	5.4	7.2	7.6	8.3	8.8	7.8	7.9	9.2	9.9	10.6	12.3	10.5	10.9	7.8
Inhalants [a]	—	48.9	42.6	34.6	23.8	25.2	23.8	27.2	23.1	23.4	25.8	15.3	21.1	21.5	25.9	24.0	23.7	28.6	21.8
Amyl/Butyl Nitrites	—	—	—	—	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Hallucinogens [b]	10.8	16.1	15.2	10.8	8.1	8.4	7.7	7.5	13.0	14.1	12.2	11.1	11.9	16.6	21.8	16.5	17.4	11.5	12.1
LSD [c]	15.2	17.3	18.0	12.2	7.4	6.4	7.1	7.5	15.3	12.1	12.6	12.2	11.5	16.0	21.2	16.0	18.5	11.4	11.9
Hallucinogens other than LSD [b]	—	16.6	14.4	13.3	11.5	13.1	7.7	8.2	8.5	14.5	13.7	16.0	15.8	20.1	19.5	22.6	29.3	19.6	16.2
PCP	—	—	—	—	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Ecstasy (MDMA) [d]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	7.7	8.2	6.2	3.8	3.1	3.1	3.1	2.9	6.2	3.1	2.5	3.5	7.6	11.4	11.3	19.6	25.3	20.2	14.1
Crack [e]	—	—	—	—	—	—	—	—	—	—	—	—	13.4	2.1	5.2	26.2	31.1	15.3	16.4
Other Cocaine	—	—	—	—	—	—	—	—	—	—	—	—	10.2	6.1	16.2	18.5	24.3	23.2	14.7
Heroin [f]	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
With a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Narcotics other than Heroin [g,h]	9.6	11.6	9.7	9.9	8.7	10.8	10.1	13.5	16.4	15.4	12.2	13.8	15.6	19.3	15.2	15.9	16.1	16.8	16.7
Amphetamines [g]	8.0	9.8	7.6	7.4	6.1	4.1	4.4	8.4	10.7	12.7	17.5	17.6	17.5	16.0	17.4	18.1	17.2	19.8	13.5
Methamphetamine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice) [i]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†	†	†	†
Sedatives (Barbiturates) [g]	13.4	16.5	12.9	13.5	11.2	11.7	8.9	12.6	17.7	22.8	20.6	19.7	20.7	23.4	18.0	19.8	19.7	23.4	11.0
Sedatives, Adjusted	13.6	16.2	12.4	12.8	8.6	10.5	7.6	8.6	16.4	20.8	23.6	19.7	23.1	25.2	17.3	—	—	—	—
Methaqualone [g]	13.5	15.9	11.9	13.1	6.1	6.0	4.9	8.0	16.3	23.3	26.7	24.9	32.2	29.8	18.6	—	—	—	—
Tranquilizers [g,j]	12.0	13.0	11.1	14.4	14.1	14.3	16.3	16.0	14.8	18.8	19.2	15.0	17.1	15.8	11.7	19.3	13.1	21.0	6.7
Rohypnol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [k]	0.6	0.8	0.6	0.9	0.7	0.8	1.0	0.9	0.9	1.1	1.2	1.0	1.1	1.2	1.5	1.9	1.9	2.3‡	2.5
Been Drunk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.3	4.1	4.6
Steroids [l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†	†	†	†	†

(Years cont.)

(Table continued on next page.)

TABLE 5-7b (cont.)
Trends in Noncontinuation Rates among 12th Graders
Who Used Drug 10 or More Times in Lifetime

Percentage who did not use in last 12 months

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Marijuana/Hashish	5.0	4.7	6.6	7.7	8.2	8.5	9.0	8.7	9.4	8.4	8.9	8.8	9.2	8.8	7.2	7.7	7.7	6.4	6.6
Inhalants [a]	26.4	21.6	24.8	25.2	28.0	27.8	23.0	30.8	25.7	23.8	30.1	12.2	26.3	24.8	19.3	20.7	26.4	23.2	24.4
Amyl/Butyl Nitrites	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	—	—	—
Hallucinogens [b]	14.3	10.6	9.0	12.2	16.4	12.8	12.9‡	12.3	20.0	21.5	12.1	14.3	19.1	13.3	7.3	13.1	12.7	5.4	8.8
LSD [c]	15.3	11.5	10.5	16.8	20.3	14.3	15.7	14.6	28.6	47.8	23.0	16.3	23.4	14.9	5.9	15.8	11.6	4.8	5.5
Hallucinogens other than LSD [b]	16.0	10.1	15.5	15.9	17.5	13.4	6.2‡	10.8	11.0	18.4	9.7	13.1	17.7	15.3	7.7	15.7	12.9	7.6	8.7
PCP	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	—	—	—
Ecstasy (MDMA) [d]	—	—	†	†	†	†	†	2.5	8.3	33.2	17.7	12.2	†	18.9	6.8	7.7	18.2	15.5	15.4
Cocaine	22.9	9.6	8.8	12.0	12.4	12.3	18.1	15.6	11.3	11.8	13.2	10.5	11.9	15.0	14.7	16.3	20.1	21.9	14.9
Crack [e]	16.8	6.3	8.3	17.4	19.5	16.0	13.5	7.1	10.9	12.1	13.7	7.5	18.5	18.4	17.9	14.6	21.9	19.9	15.2
Other Cocaine	24.1	15.5	13.9	14.6	17.1	13.1	22.5	14.9	11.7	11.0	15.6	12.4	14.5	11.8	17.5	18.4	19.5	24.8	14.8
Heroin [f]	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	13.5	21.4	14.5	25.5
With a needle	—	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Without a needle	—	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Narcotics other than Heroin [g,h]	16.8	12.6	11.5	10.1	12.4	12.2	10.8	9.7‡	8.3	9.2	8.2	8.4	12.2	9.0	9.0	11.1	12.4	9.2	14.2
Amphetamines [g]	13.8	11.9	10.2	10.8	15.0	12.7	11.2	7.7	10.0	8.9	12.9	13.0	11.3	13.8	17.7	13.3	11.2	17.2	16.3
Methamphetamine	—	—	—	—	—	12.4	22.8	19.2	23.9	29.1	13.5	21.5	16.9	†	†	†	†	†	†
Crystal Methamphetamine (Ice) [i]	†	†	†	†	†	†	†	†	11.2	†	23.1	†	†	†	†	†	†	†	†
Sedatives (Barbiturates) [g]	14.9	10.9	8.3	11.1	12.5	10.7	7.0	5.6	5.7	6.9	8.5	10.4	11.4	11.9	10.0	11.6	10.3	16.8	10.4
Sedatives, Adjusted	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methaqualone [g]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers [g,j]	13.8	6.2	6.9	13.9	13.6	9.9	5.3‡	8.1	5.8	11.2	7.9	9.8	12.3	10.7	8.7	8.8	10.6	14.4	12.9
Rohypnol	—	—	†	†	†	†	†	†	†	—	—	—	—	—	—	—	—	—	—
Alcohol [k]	2.1	2.0	1.6	1.9	1.9	1.7	1.7	1.3	1.9	1.5	1.3	1.6	1.4	1.2	1.5	1.6	1.6	1.8	1.4
Been Drunk	3.3	2.8	2.1	3.6	2.8	1.8	2.6	2.3	2.0	2.9	2.1	2.9	3.1	2.2	2.6	2.9	3.0	2.4	2.0
Steroids [l]	†	†	†	†	†	†	†	†	†	†	†	†	11.9	†	†	†	0.0	†	†

(Table continued on next page.)

TABLE 5-7b (cont.)
Trends in Noncontinuation Rates among 12th Graders
Who Used Drug 10 or More Times in Lifetime

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available. ' † ' indicates that the cell entry was omitted because it was based on fewer than 50 twelfth graders who used 10 or more times. All other cells are based on more than 50 cases. ' ‡ ' indicates some change in the question. See relevant footnote for that drug.

[a]Inhalants are unadjusted for underreporting of amyl and butyl nitrites.

[b]In 2001 the question text was changed in half of the questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. The 2001 data are based on the changed forms only. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for hallucinogens are also affected by these changes and have been handled in a parallel manner. Hallucinogens are unadjusted for underreporting of PCP.

[c]Based on 55 cases in 2009.

[d]Based on 54 cases in 2005, 55 cases in 2009, 56 cases in 2010, and 57 cases in 2012.

[e]Based on 85 cases in 1987, 54 cases in 1988, and 56 cases in 1989. Crack was included in all six questionnaire forms beginning in 1990.

[f]In 1995, the heroin question was changed in three of six forms. Separate questions were asked for use with and without injection. Data presented here represent the combined data from all forms. Based on 54 cases in 2009.

[g]Only drug use not under a doctor's orders is included here.

[h]In 2002 the question text was changed in half of the questionnaire forms. In the list of examples of narcotics other than heroin, Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet. The 2002 data are based on the changed forms only. In 2003, the remaining forms were changed to the new wording. Beginning in 2003, the data are based on all forms.

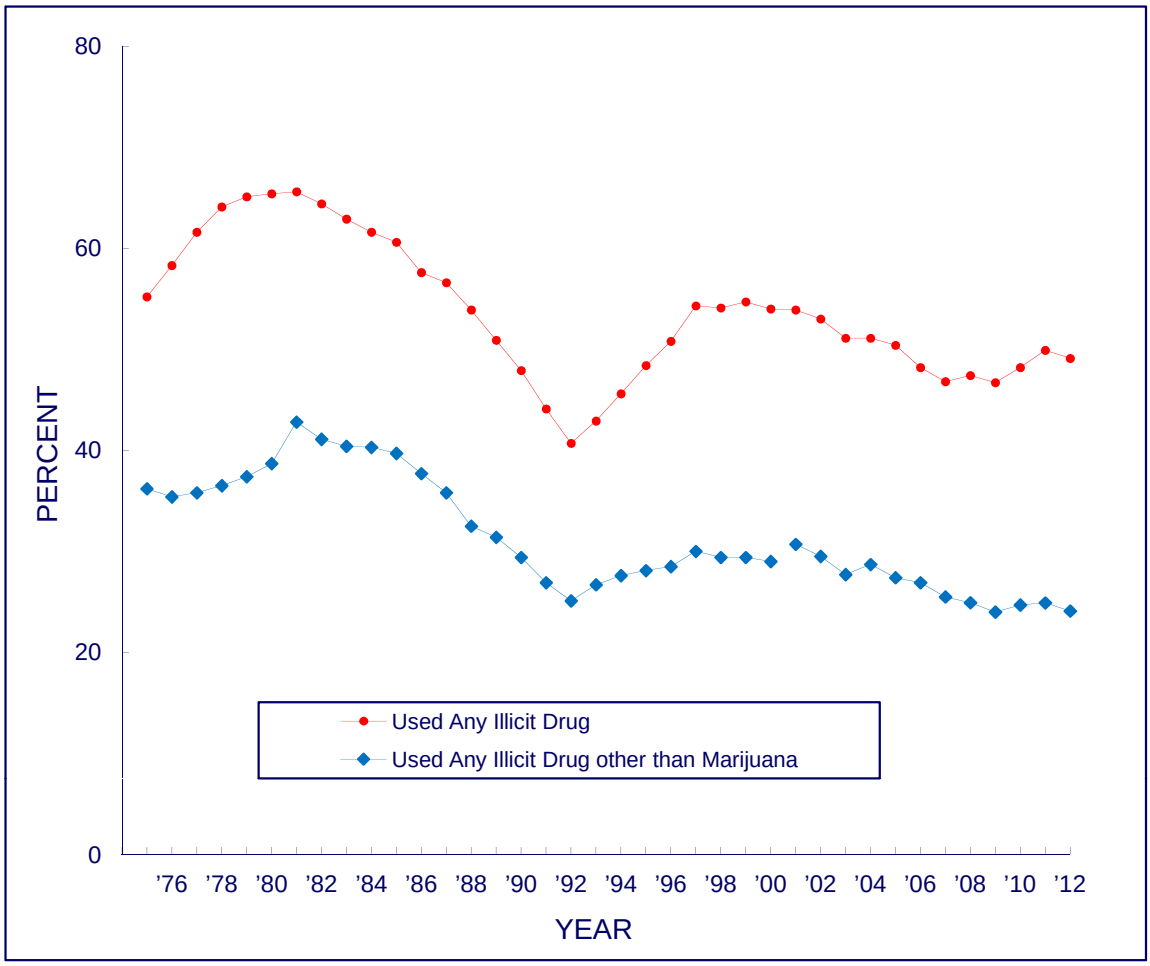
[i]Based on 55 cases in 2002 and 56 cases in 2004.

[j]In 2001, for the tranquilizer list of examples, Miltown was replaced with Xanax in half of the questionnaire forms. The 2001 data are based on the changed forms only. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms.

[k]In 1993, the question text was changed slightly in half of the questionnaire forms to indicate that a drink meant more than a few sips. The 1993 data are based on the changed forms only. In 1994 the remaining forms were changed to the new wording. Beginning in 1994, the data are based on all forms. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005.

[l]In 2006, the question text was changed slightly in one of the questionnaire forms. An examination of the data did not show any effect from the wording change. Based on 62 cases in 2006. The remaining forms were changed in 2007. In 2008 the question text was changed slightly. An examination of the data did not show any effect from the wording change. In 2009 the remaining forms were changed in a like manner. Based on 51 cases in 2010.

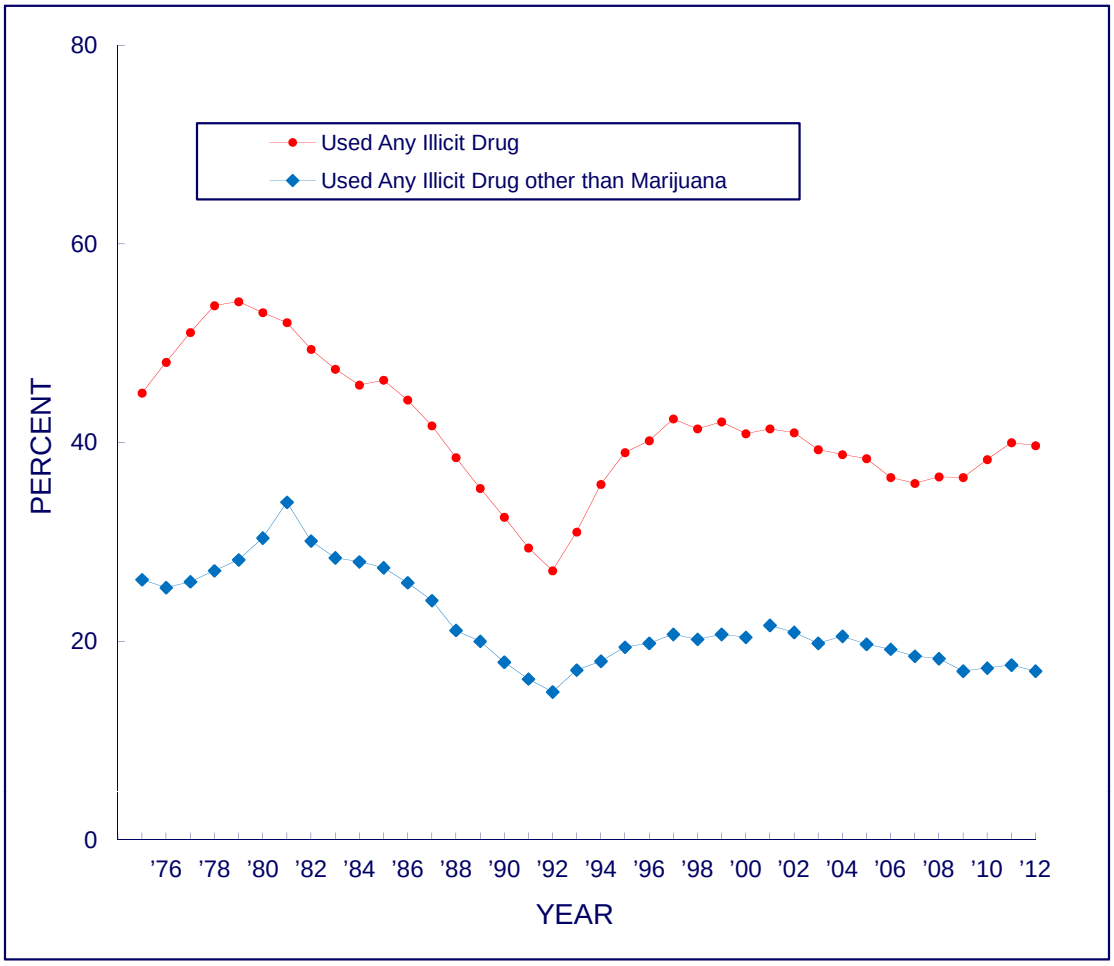
FIGURE 5-1
An Illicit Drug Use Index
Trends in Lifetime Prevalence in Grade 12



Source. The Monitoring the Future study, the University of Michigan.

Notes. Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of other narcotics, stimulants, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers which are not under a doctor's orders. Beginning in 1982, the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change. Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. From 2001 on, data points are based on revised questions.

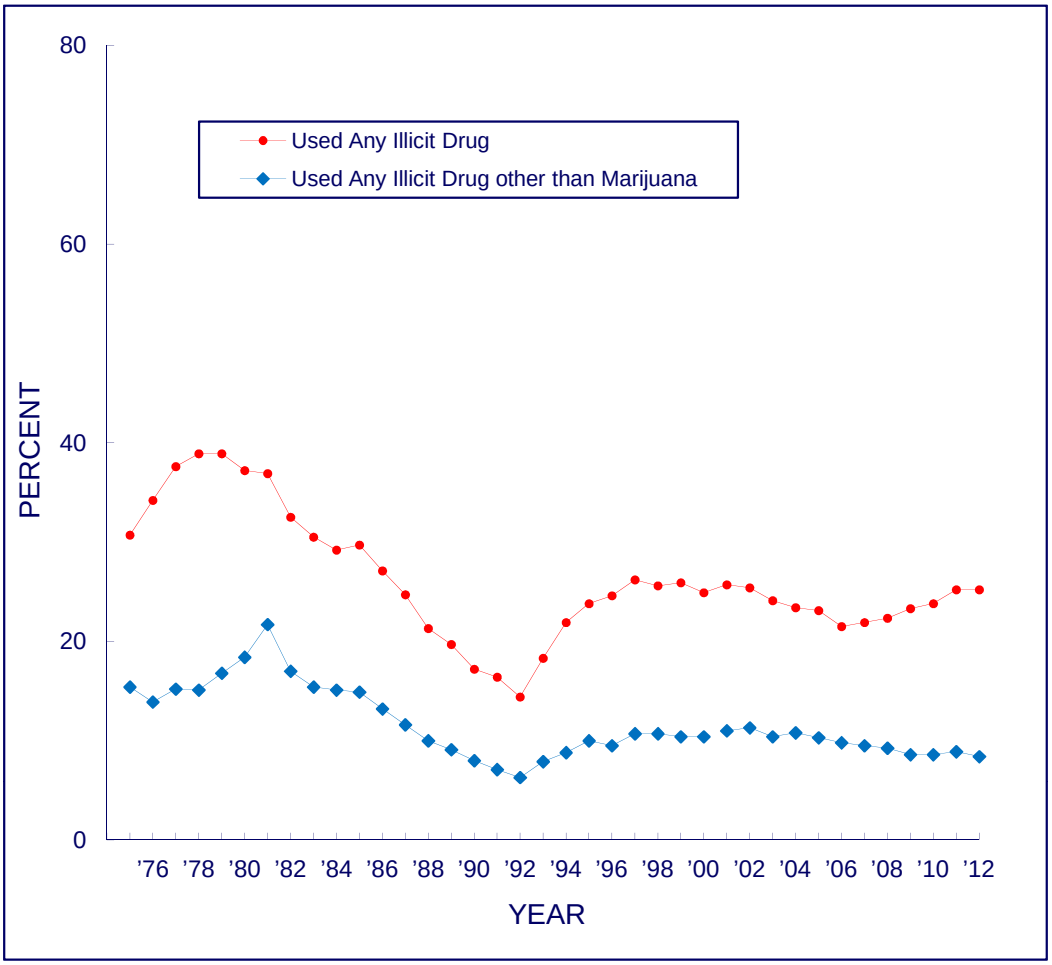
FIGURE 5-2
An Illicit Drug Use Index
Trends in Annual Prevalence in Grade 12



Source. The Monitoring the Future study, the University of Michigan.

Notes. Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of other narcotics, stimulants, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers which are not under a doctor's orders. Beginning in 1982, the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.
Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. From 2001 on, data points are based on revised questions.

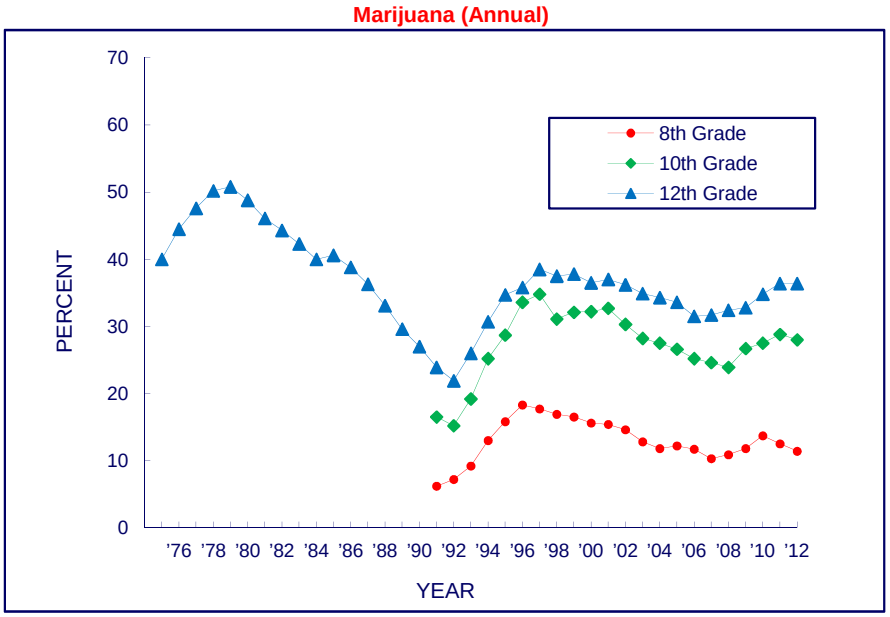
FIGURE 5-3
An Illicit Drug Use Index
Trends in 30-Day Prevalence in Grade 12

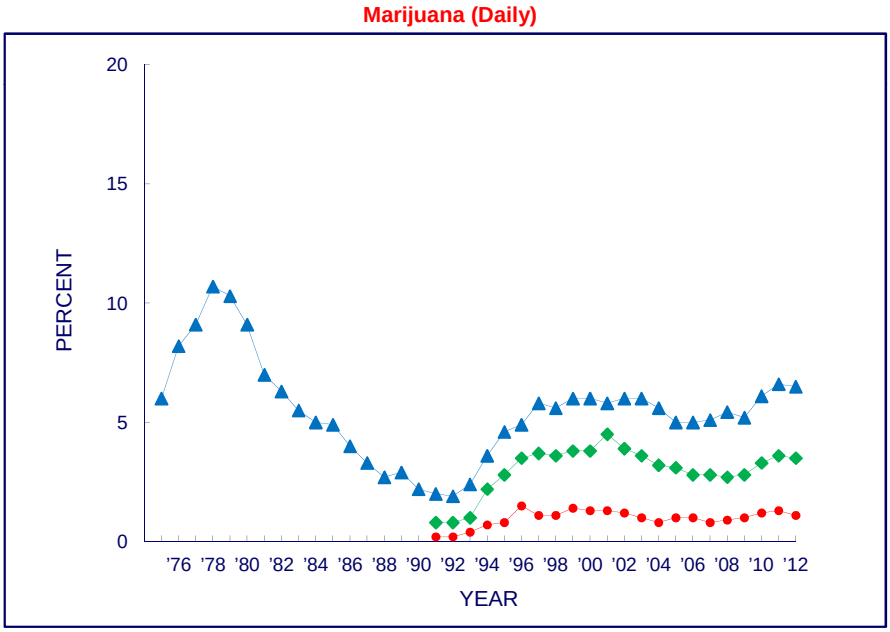


Source. The Monitoring the Future study, the University of Michigan.

Notes. Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of other narcotics, stimulants, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers which are not under a doctor's orders. Beginning in 1982, the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change. Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. From 2001 on, data points are based on revised questions.

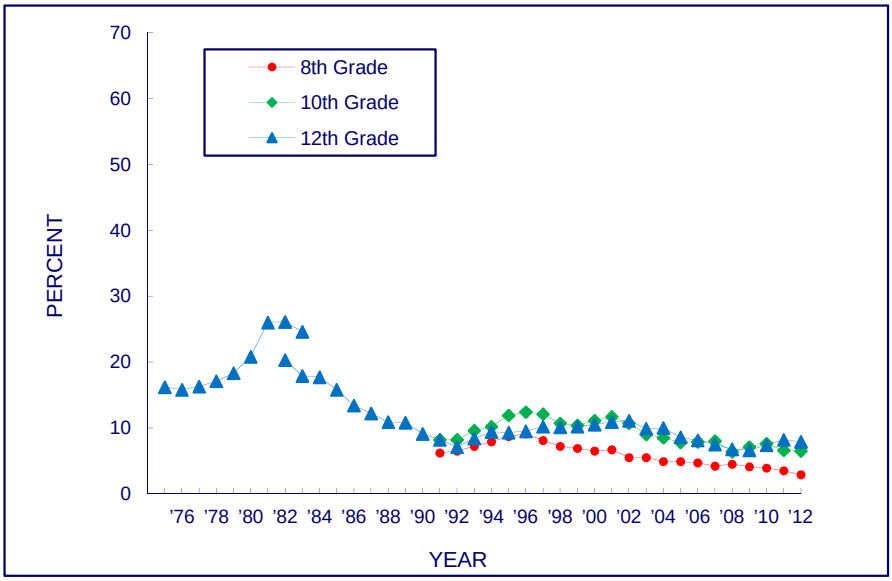
FIGURE 5-4a
MARIJUANA
Trends in Annual Prevalence and 30-Day Prevalence of Daily Use in Grades 8, 10, and 12





Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-4b
AMPHETAMINES [a]
Trends in Annual Prevalence in Grades 8, 10, and 12

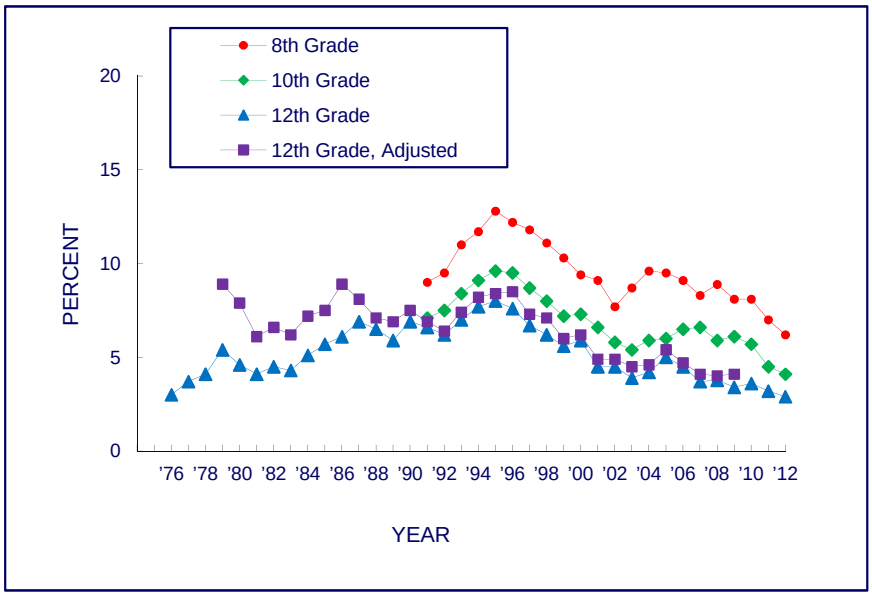


Source. The Monitoring the Future study, the University of Michigan.

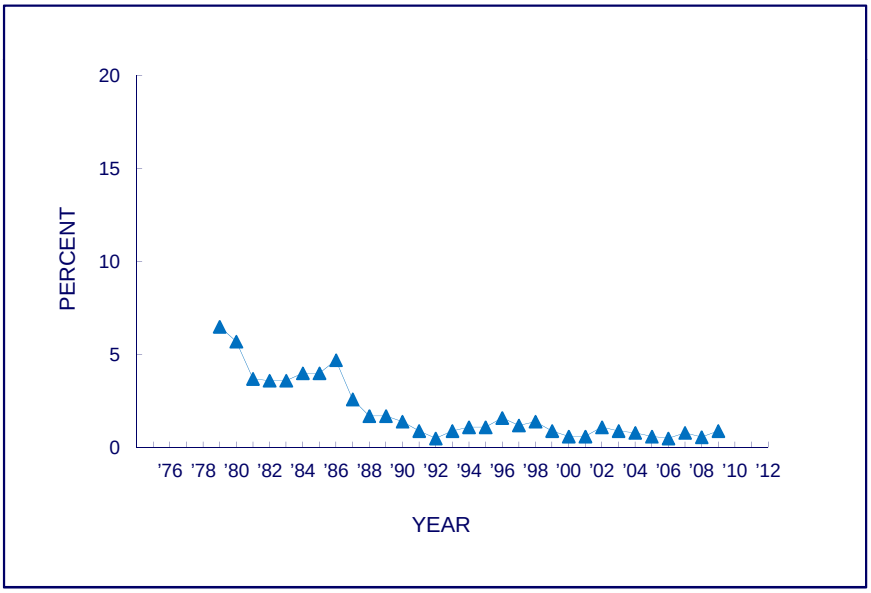
[a]Beginning in 1982, the lines connect percentages that result if nonprescription stimulants are excluded.

FIGURE 5-4c
INHALANTS AND AMYL/BUTYL NITRITES
Trends in Annual Prevalence in Grades 8, 10, and 12

Inhalants [a]



Amyl & Butyl Nitrites [b]



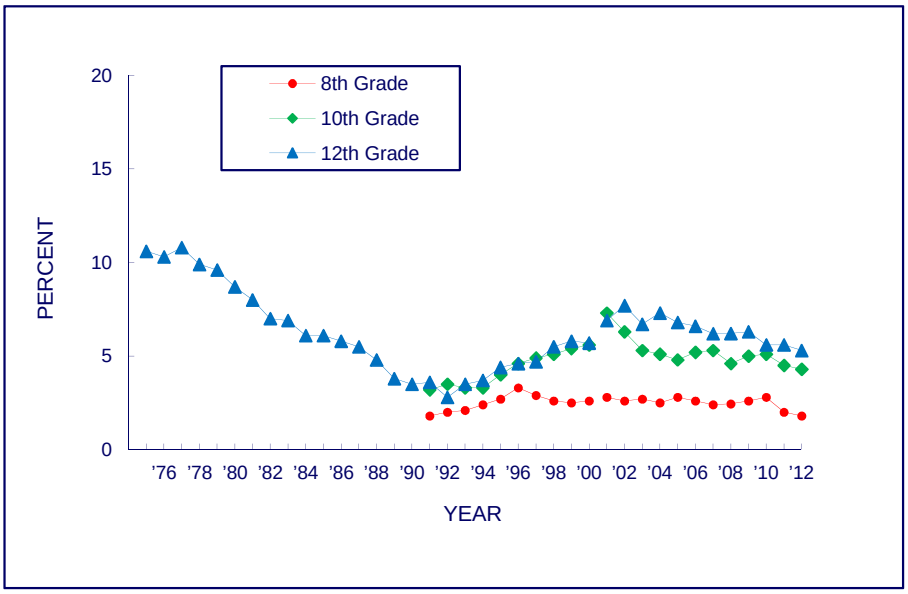
Source. The Monitoring the Future study, the University of Michigan.

[a]Adjusted for underreporting of amyl and butyl nitrites.

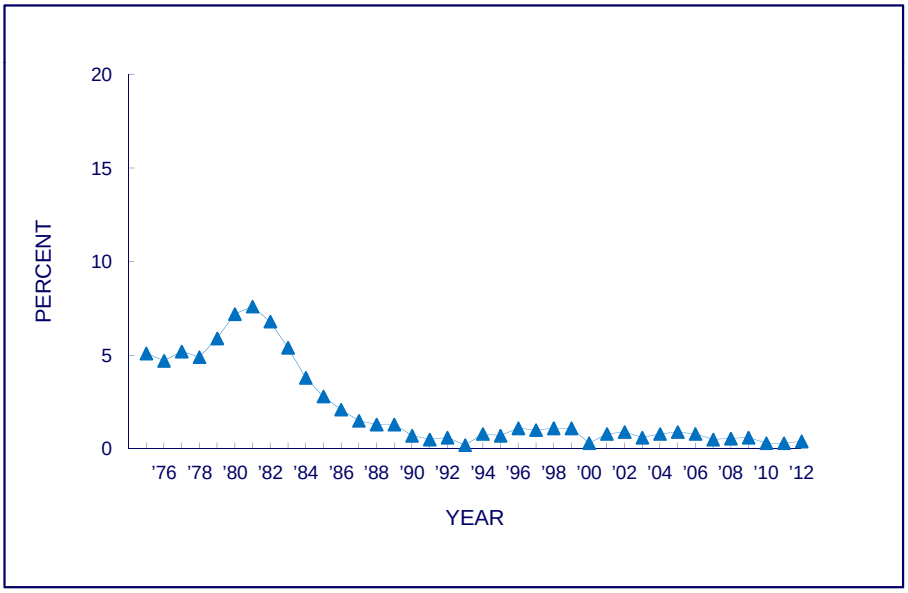
[b]Eighth and 10th graders are not asked about nitrite use. Beginning in 2010, questions on nitrite use were omitted from the 12th-grade questionnaires.

FIGURE 5-4d
TRANQUILIZERS AND METHAQUALONE
Trends in Annual Prevalence in Grades 8, 10, and 12

Tranquilizers [a]



Methaqualone

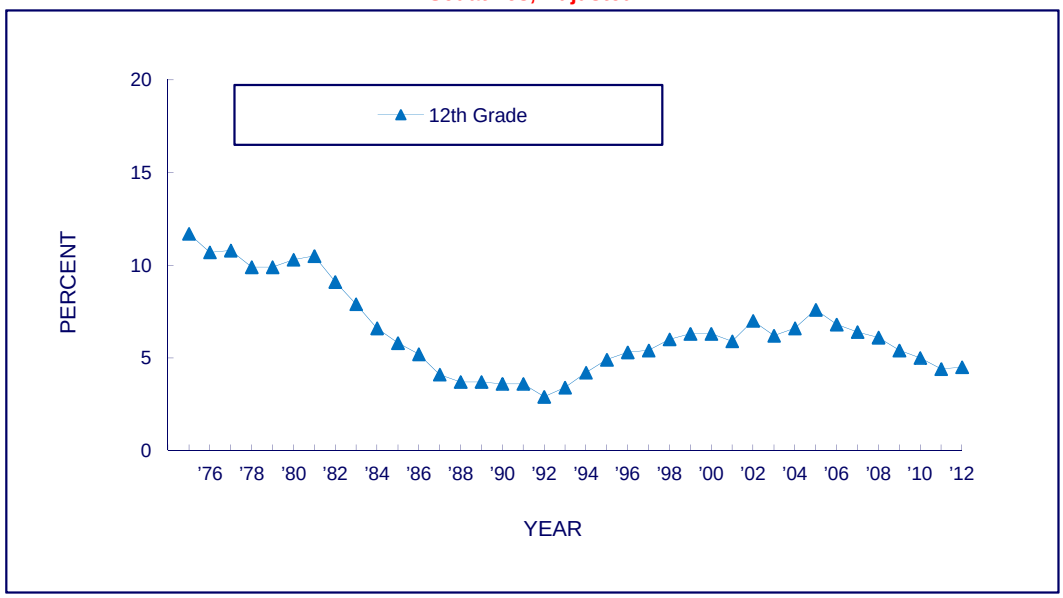


Source. The Monitoring the Future study, the University of Michigan.

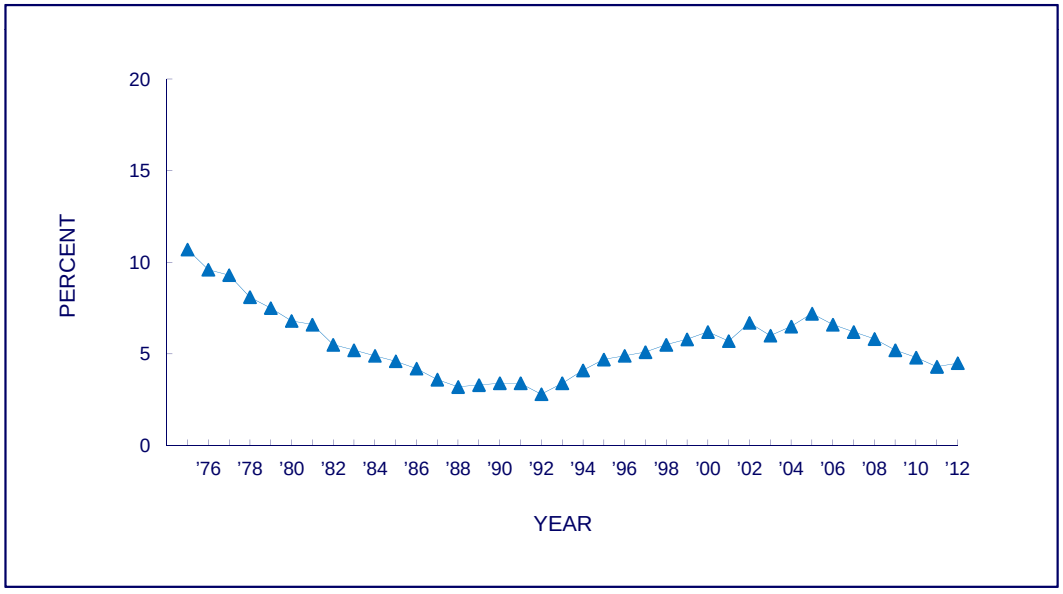
[a]Beginning in 2001, a revised set of questions on tranquilizer use was introduced in which Xanax replaced Miltown in the list of examples. From 2001 on data points are based on the revised question.

FIGURE 5-4e
ADJUSTED SEDATIVES AND SEDATIVES (BARBITURATES)
Trends in Annual Prevalence in Grade 12

Sedatives, Adjusted [a]



Sedatives (Barbiturates) [b]



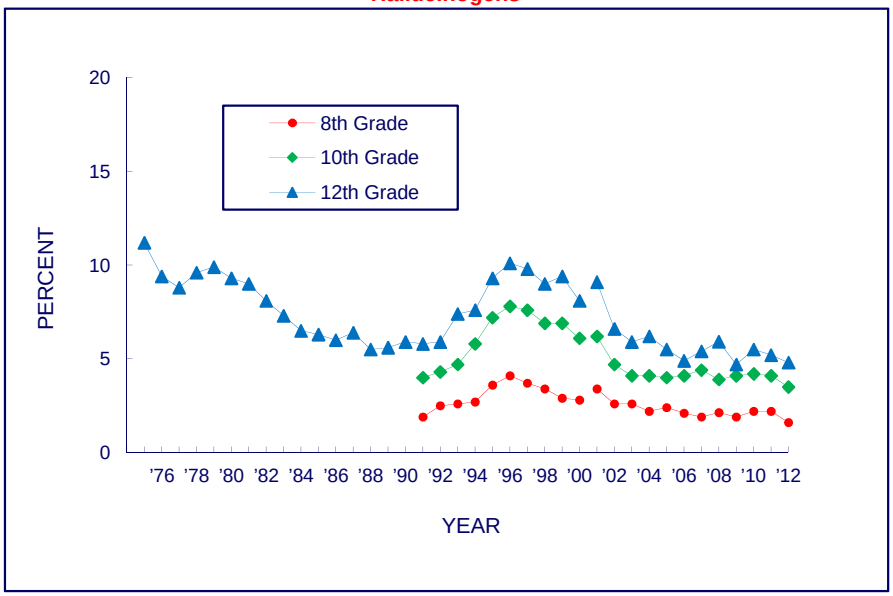
Source. The Monitoring the Future study, the University of Michigan.

[a]Adjusted for underreporting of methaqualone.

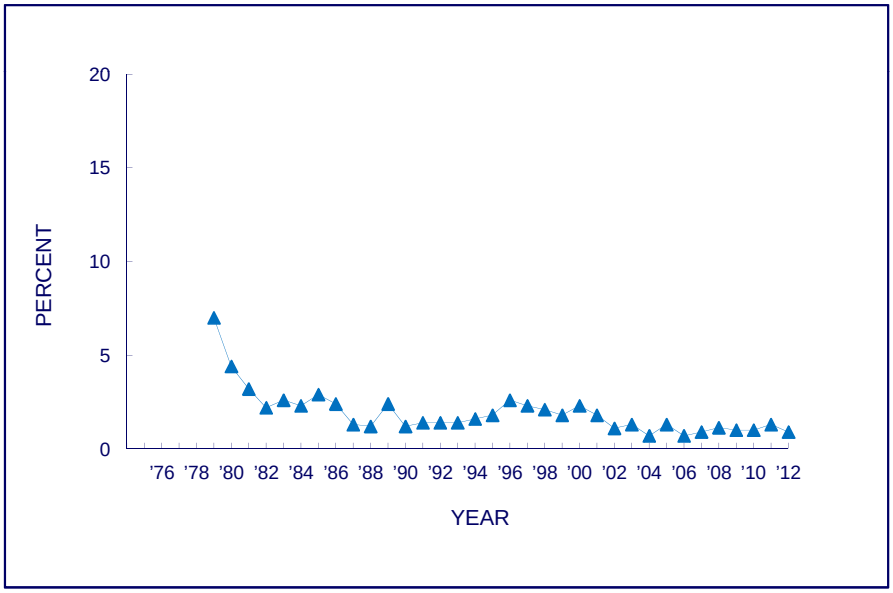
[b]In 2004 the question text was changed. Goofballs, yellows, reds, blues, and rainbows were deleted from the list of examples. Phenobarbital, Tuinal, and Seconal were added. An examination of the data did not show any effect from the wording change.

FIGURE 5-4f
HALLUCINOGENS AND PCP
Trends in Annual Prevalence in Grades 8, 10, and 12

Hallucinogens [a]



PCP [b]



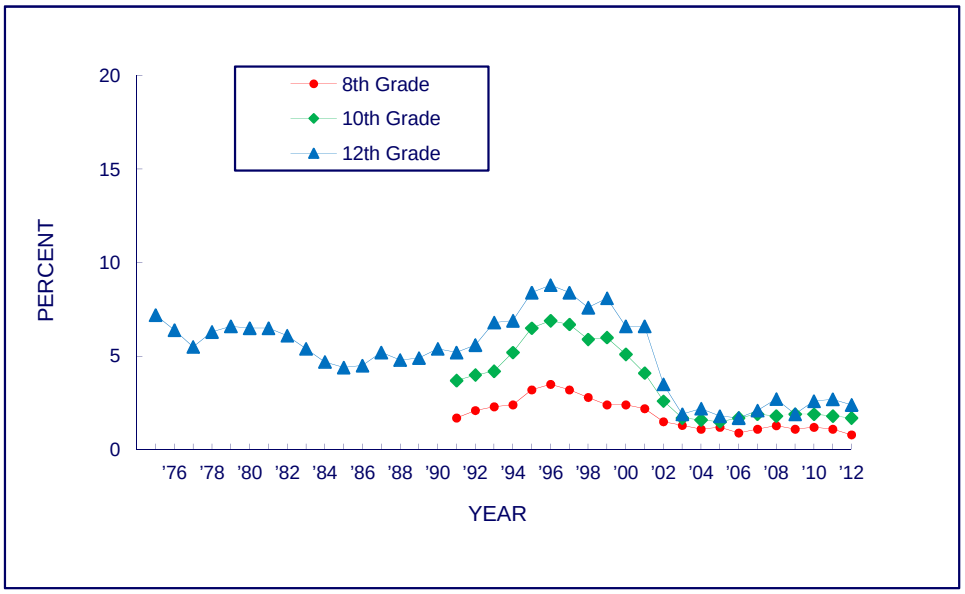
Source. The Monitoring the Future study, the University of Michigan.

[a]In 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens and shrooms was added to the list of examples. Data for hallucinogens were affected by these changes. From 2001 on, data points are based on the revised question.

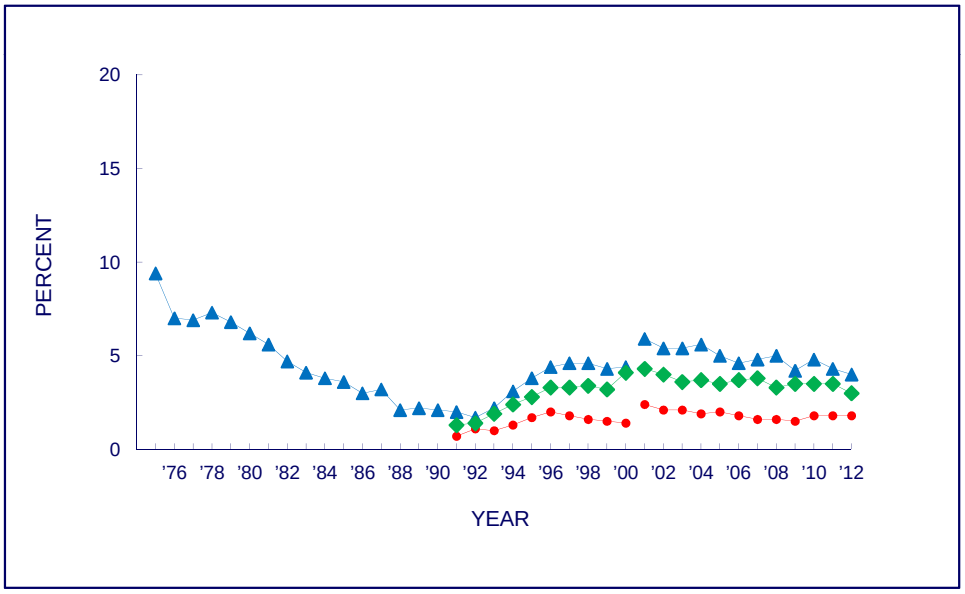
[b]Eighth and 10th graders are not asked about PCP use.

FIGURE 5-4g
LSD AND HALLUCINOGENS OTHER THAN LSD
Trends in Annual Prevalence in Grades 8, 10, and 12

LSD



Hallucinogens other than LSD [a]

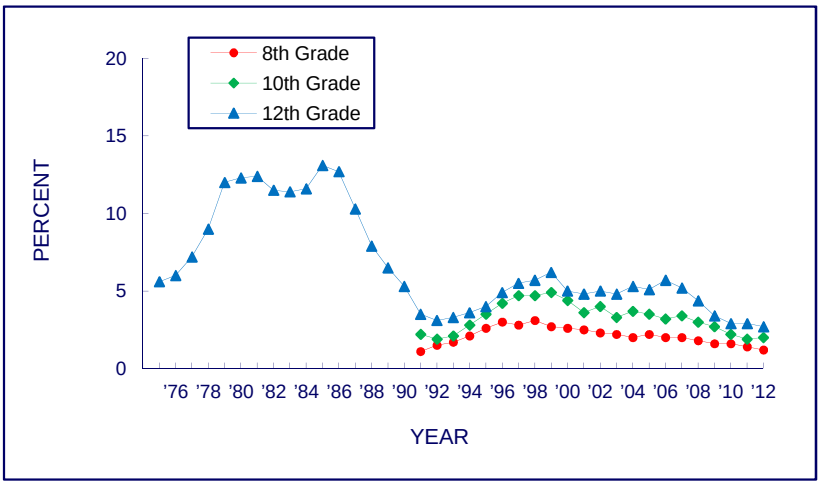


Source. The Monitoring the Future study, the University of Michigan.

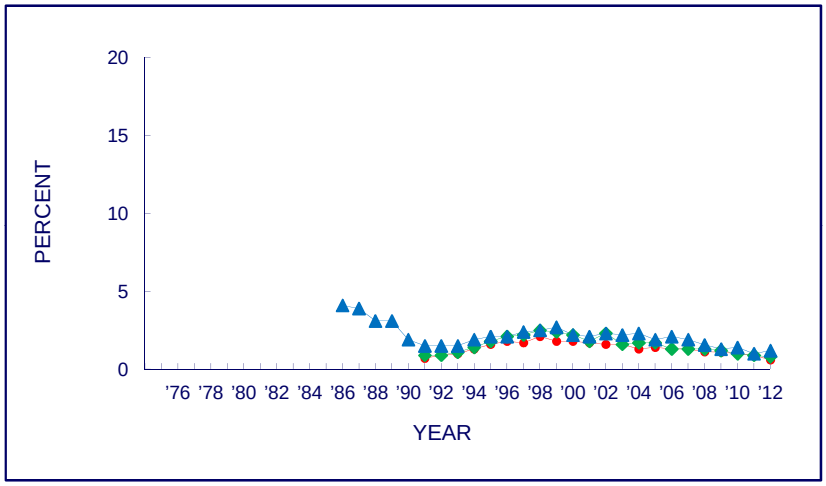
[a]In 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens and shrooms was added to the list of examples. From 2001 on data points are based on the revised question.

FIGURE 5-4h
COCAINE, CRACK, AND OTHER COCAINE
Trends in Annual Prevalence in Grades 8, 10, and 12

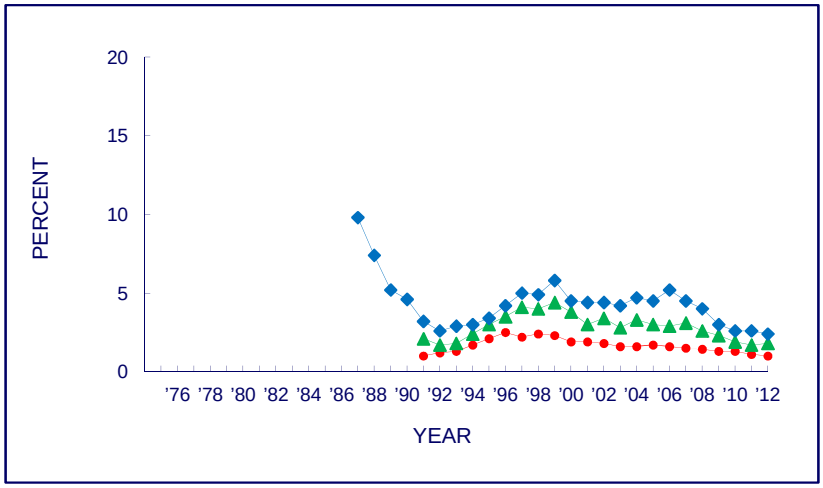
Cocaine



Crack



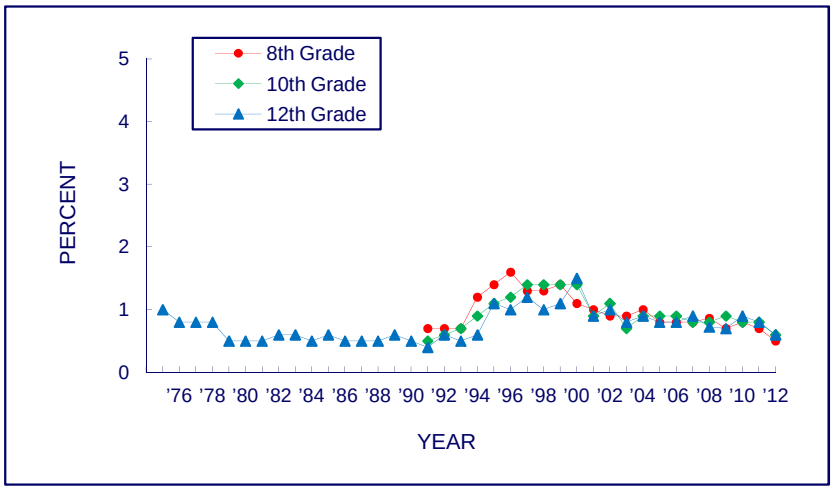
Other Cocaine



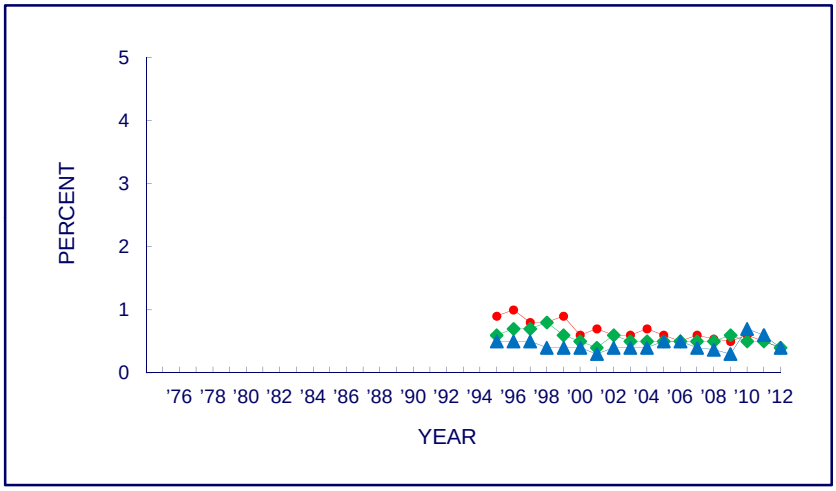
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-4i
HEROIN
Trends in Annual Prevalence in Grades 8, 10, and 12

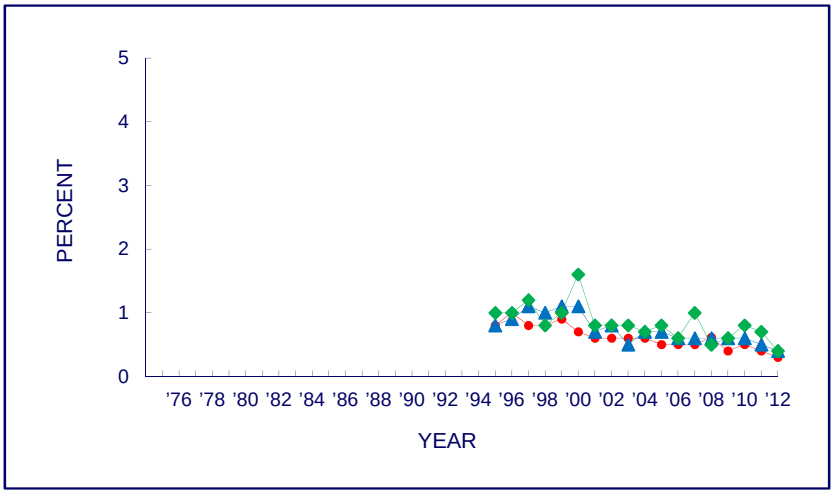
Heroin



Heroin with a Needle



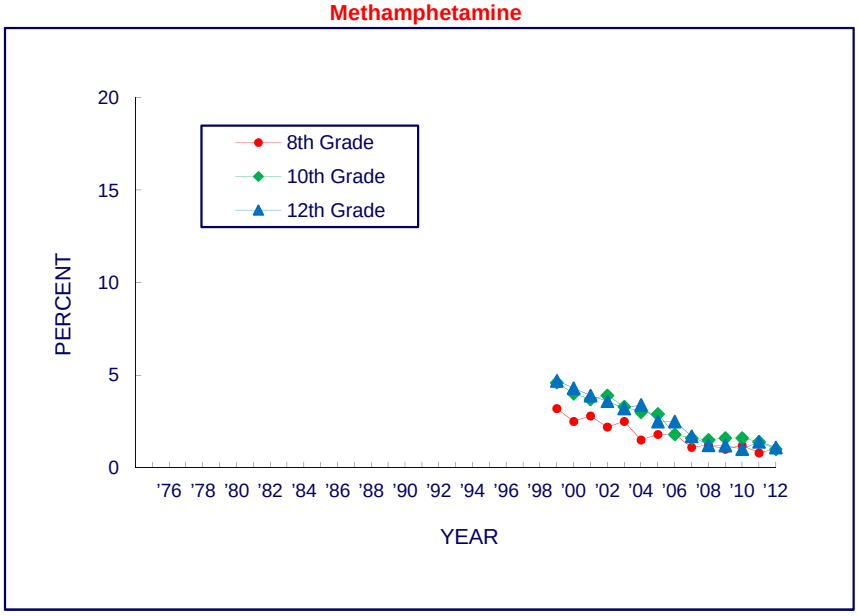
Heroin without a Needle



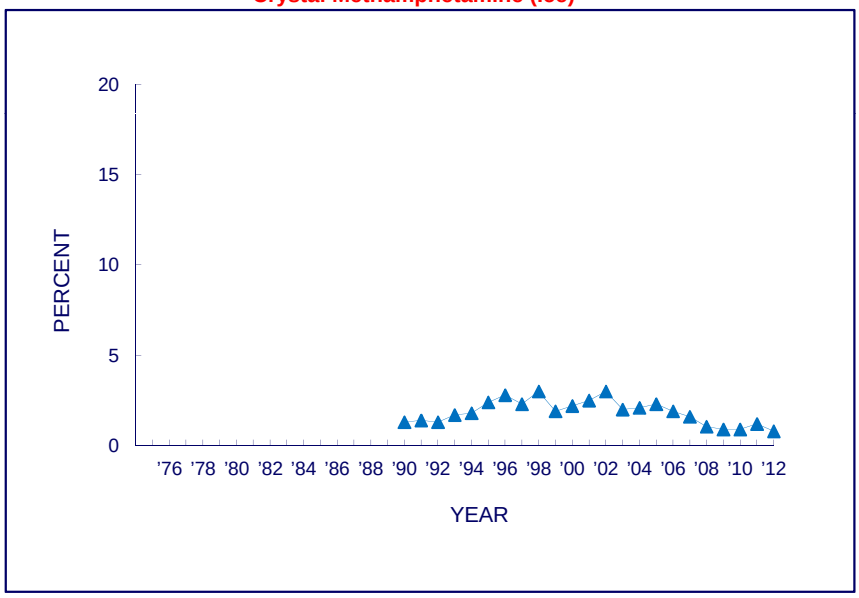
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-4j
METHAMPHETAMINE AND CRYSTAL METHAMPHETAMINE (ICE)
Trends in Annual Prevalence in Grades 8, 10, and 12

Methamphetamine



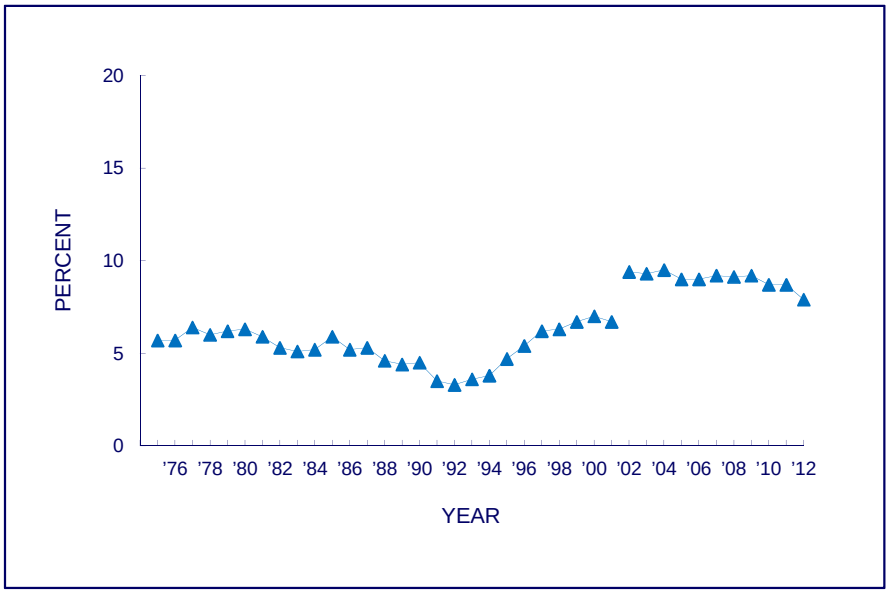
Crystal Methamphetamine (Ice) [a]



Source. The Monitoring the Future study, the University of Michigan.

[a]Eighth and 10th graders are not asked about crystal methamphetamine use.

FIGURE 5-4k
NARCOTICS OTHER THAN HEROIN [a]
Trends in Annual Prevalence in Grade 12

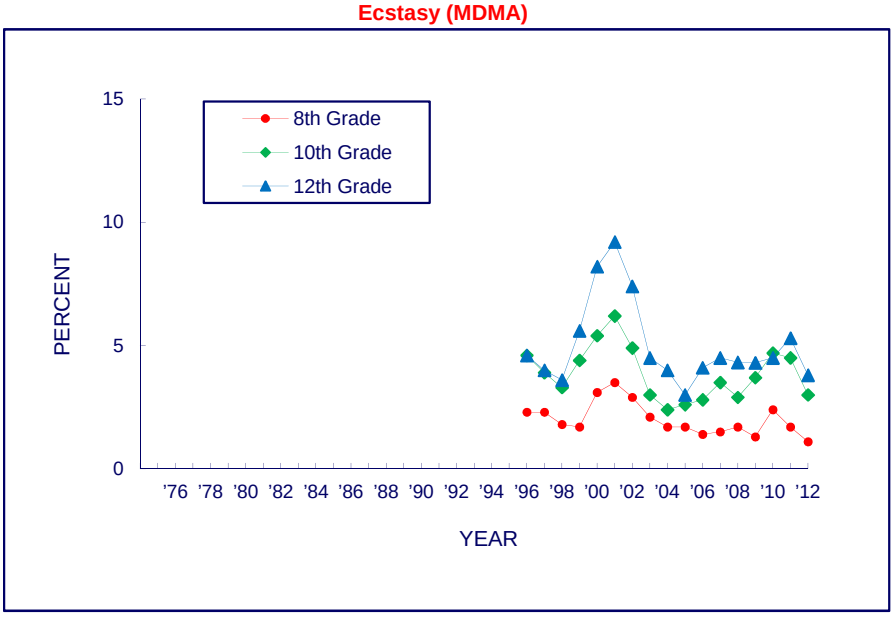


Source. The Monitoring the Future study, the University of Michigan.

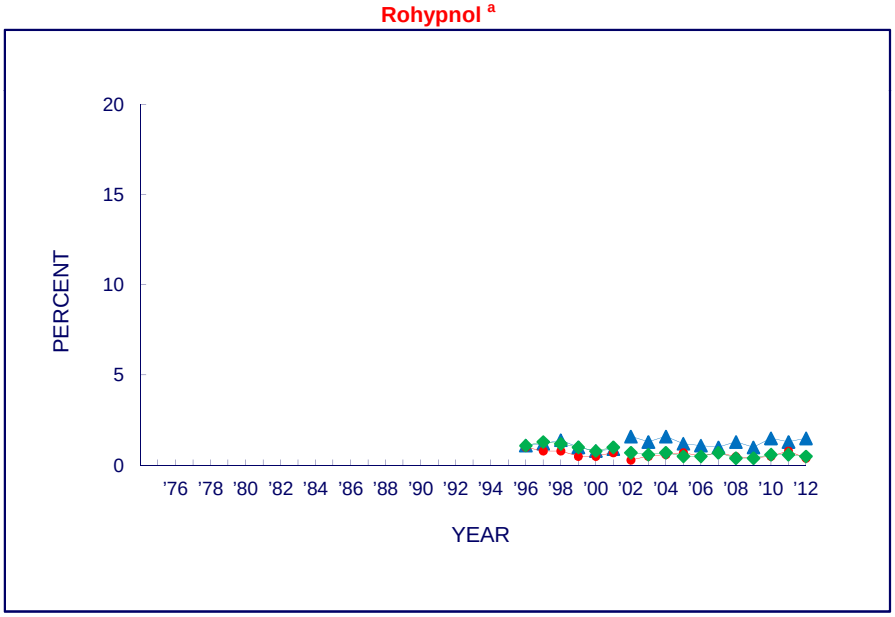
[a]Eighth and 10th graders are not asked about use of narcotics other than heroin. In 2002, a revised set of questions on other narcotic use was introduced. Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet in the list of examples. From 2002 on, data points are based on the revised question.

FIGURE 5-4l
ECSTASY (MDMA) AND ROHYPNOL
Trends in Annual Prevalence in Grades 8, 10, and 12

Ecstasy (MDMA)



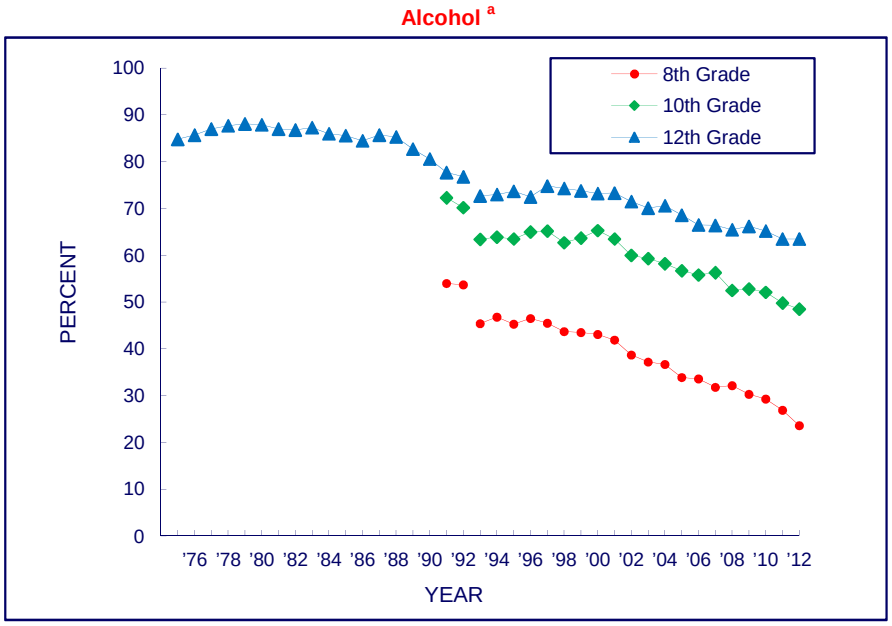
Rohypnol [a]

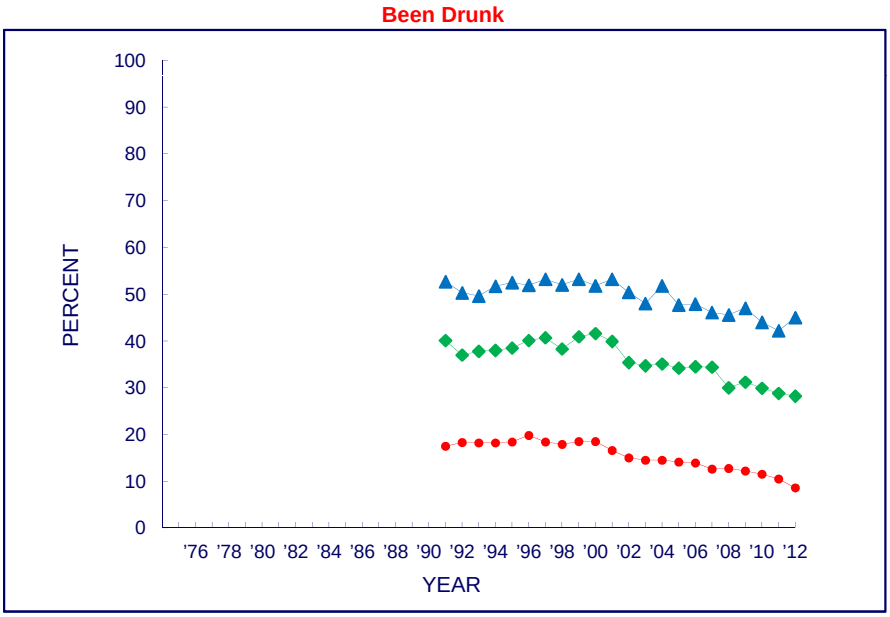


Source. The Monitoring the Future study, the University of Michigan.

[a]For 12th graders only, Rohypnol data for 2001 are not comparable with data for 2002 due to changes in the questionnaire forms.

FIGURE 5-4m
ALCOHOL AND BEEN DRUNK
Trends in Annual Prevalence in Grades 8, 10, and 12

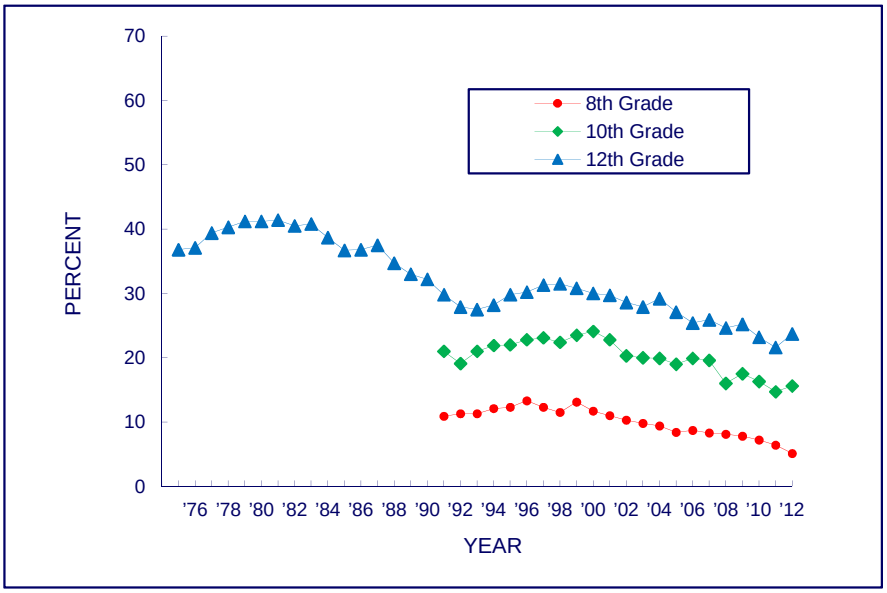




Source. The Monitoring the Future study, the University of Michigan.

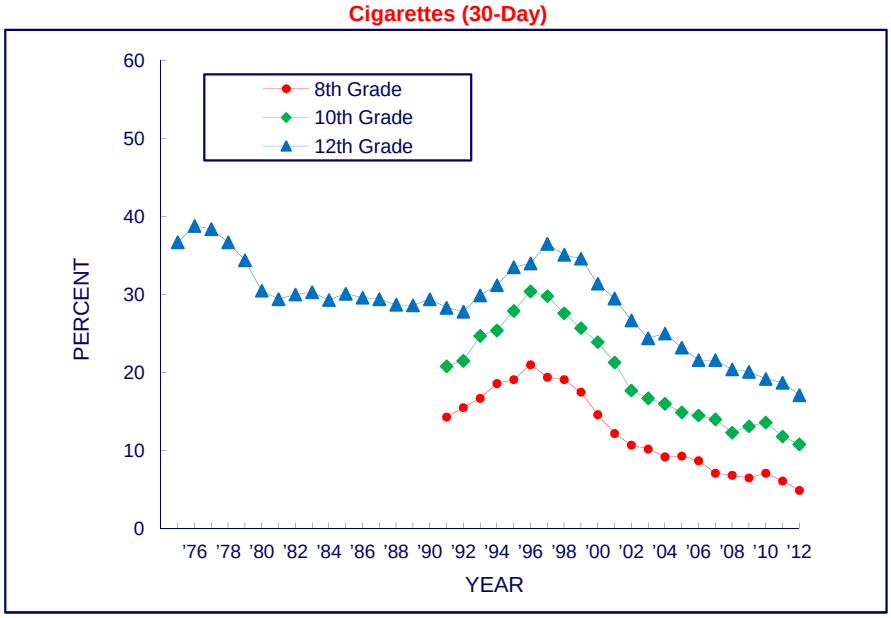
[a]In 1993, a revised set of questions on alcohol use was introduced indicating that a drink meant more than a few sips. From 1993 on, data points are based on the revised question.

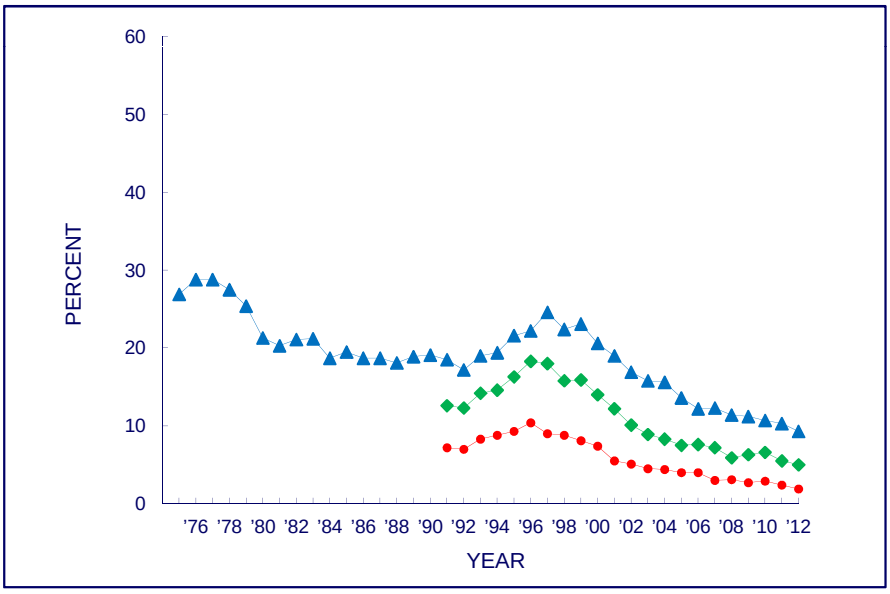
FIGURE 5-4n
FIVE OR MORE DRINKS IN A ROW
Trends in 2-Week Prevalence
in Grades 8, 10, and 12



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-4o
CIGARETTES
Trends in 30-Day Prevalence and 30-Day Prevalence of Daily Use in Grades 8, 10, and 12

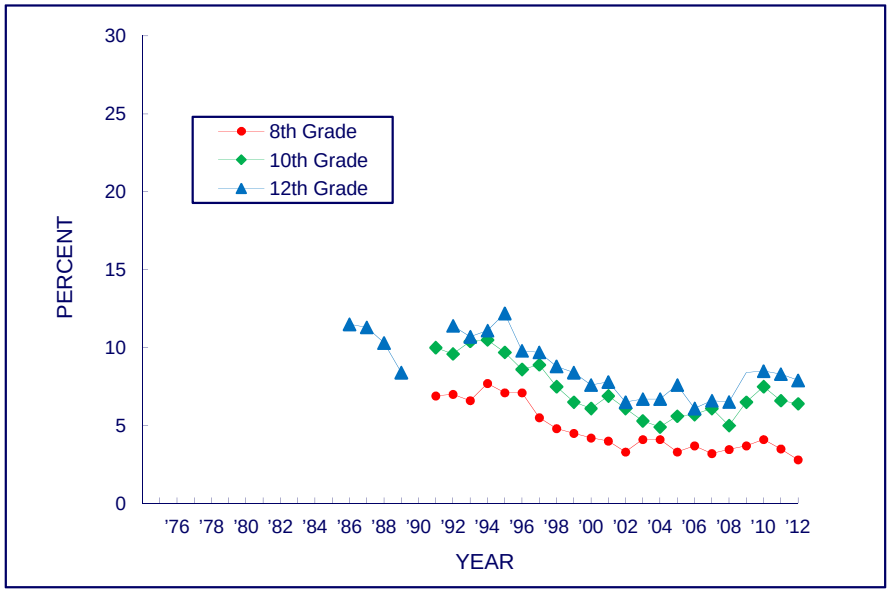




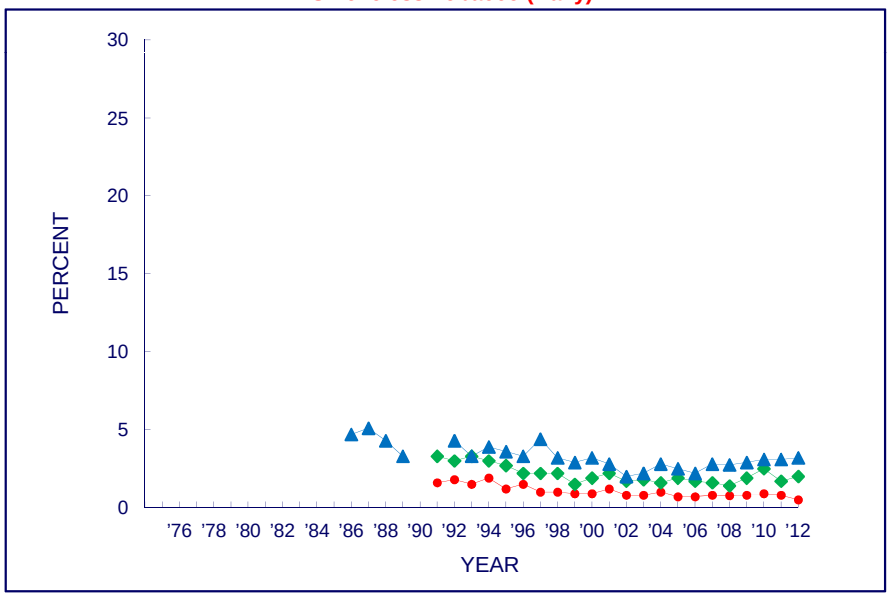
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-4p
SMOKELESS TOBACCO
Trends in 30-Day Prevalence and 30-Day Prevalence of Daily Use in Grades 8, 10, and 12

Smokeless Tobacco (30-Day)



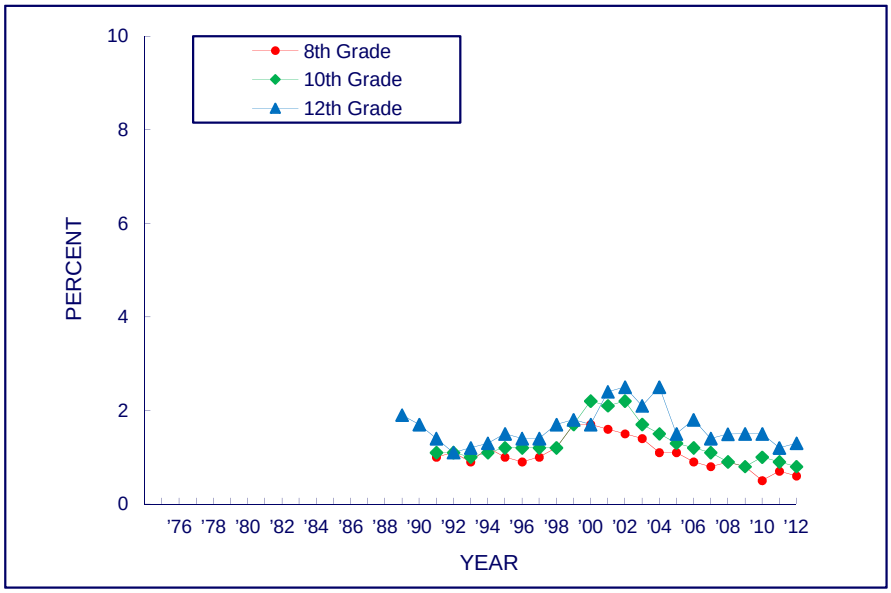
Smokeless Tobacco (Daily) [a]



Source. The Monitoring the Future study, the University of Michigan.

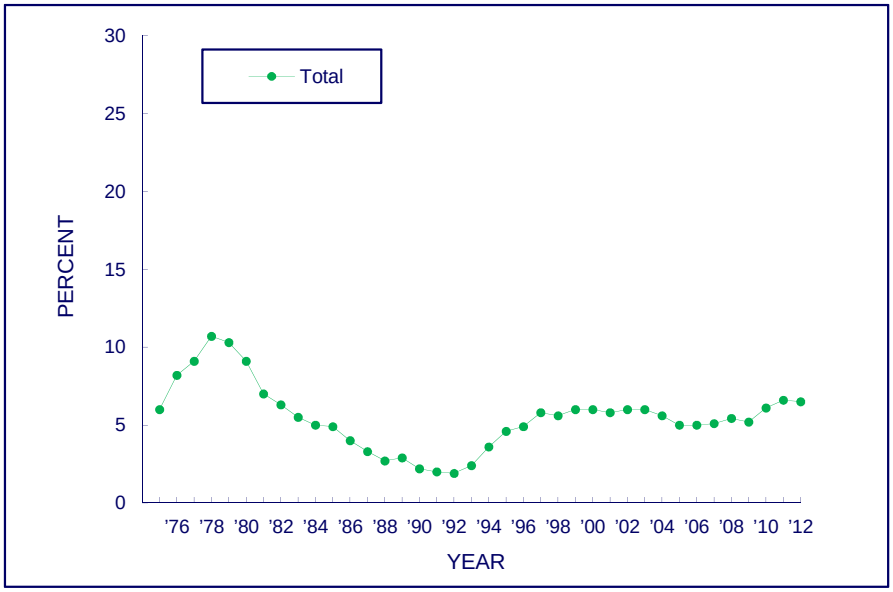
[a]Twelfth graders: Smokeless tobacco data not available in 1990 or 1991.

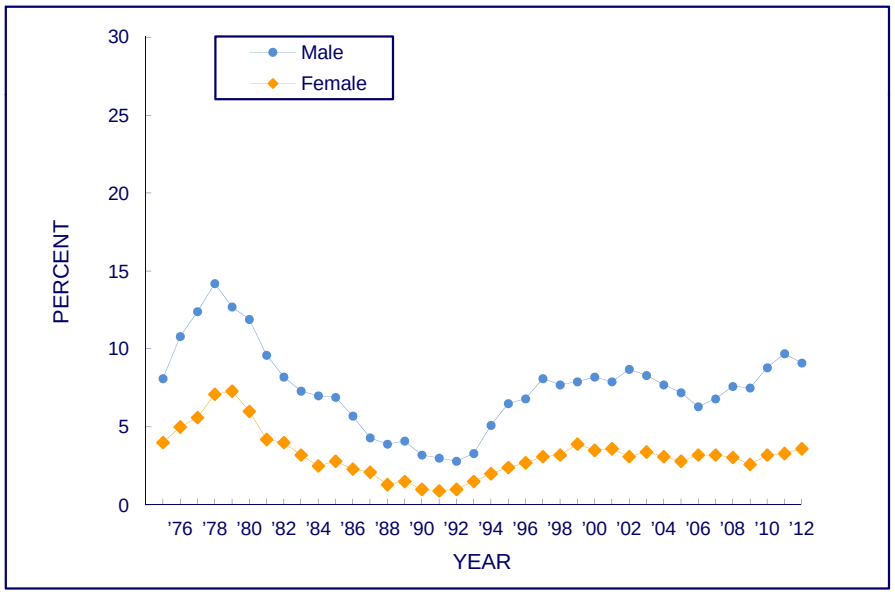
FIGURE 5-4q
STEROIDS
Trends in Annual Prevalence in Grades 8, 10, and 12



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-5a
MARIJUANA
Trends in 30-Day Prevalence of Daily Use in Grade 12
by Total and by Gender

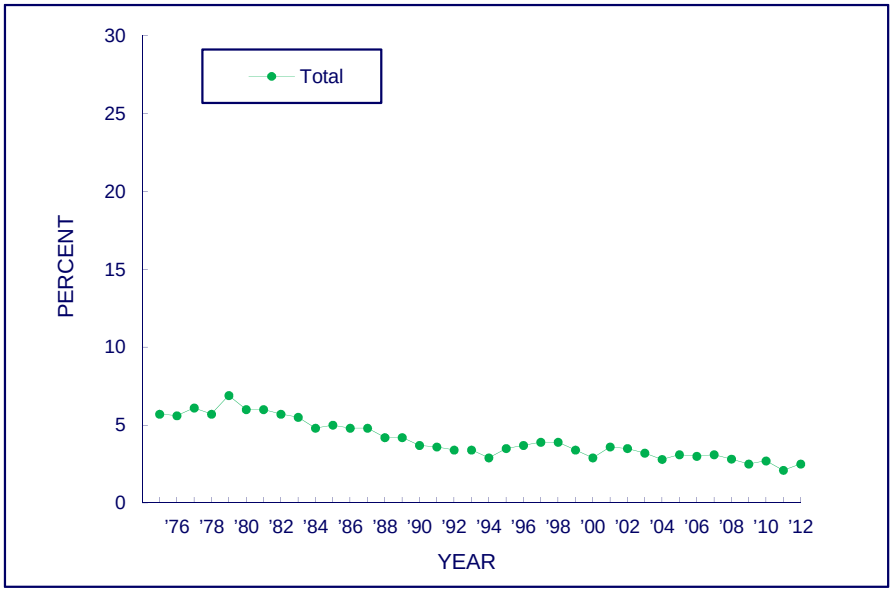


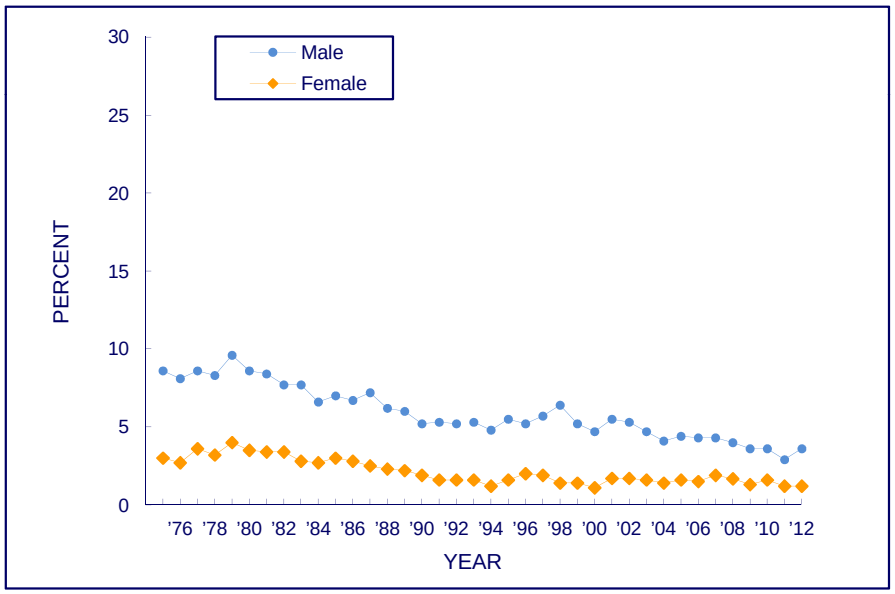


Source. The Monitoring the Future study, the University of Michigan.

Note. Daily use for marijuana is defined as use on 20 or more occasions in the last 30 days.

FIGURE 5-5b
ALCOHOL [a]
Trends in 30-Day Prevalence of Daily Use in Grade 12
by Total and by Gender



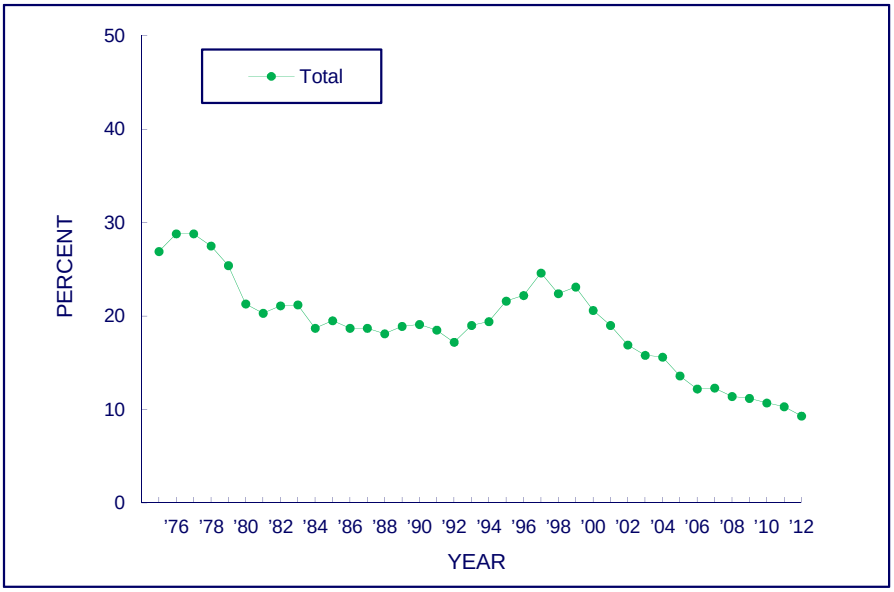


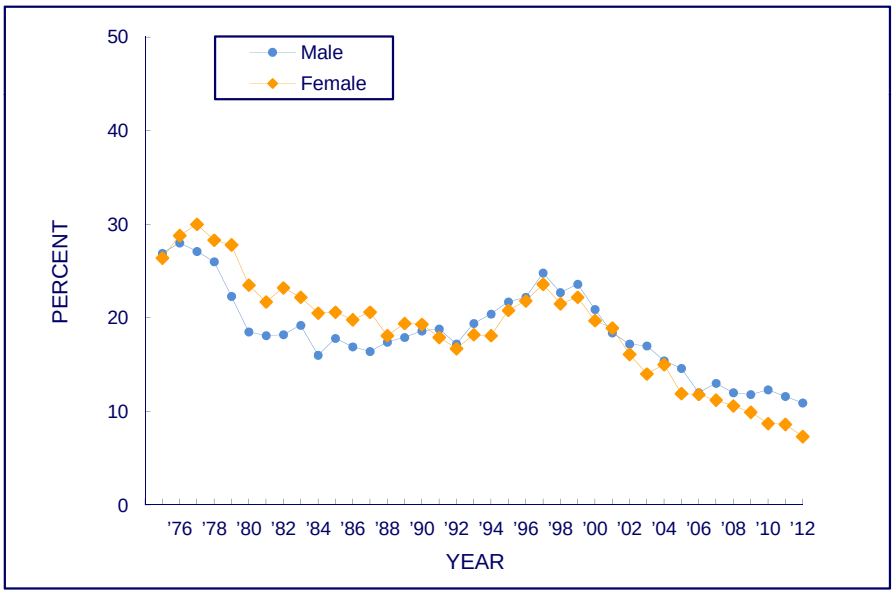
Source. The Monitoring the Future study, the University of Michigan.

Note. Daily use for alcohol is defined as use on 20 or more occasions in the last 30 days.

[a]In 1993, a revised set of questions on alcohol use was introduced indicating that a drink meant more than a few sips. From 1993 on, data points are based on the revised question.

FIGURE 5-5c
CIGARETTES
Trends in 30-Day Prevalence of Daily Use in Grade 12
by Total and by Gender

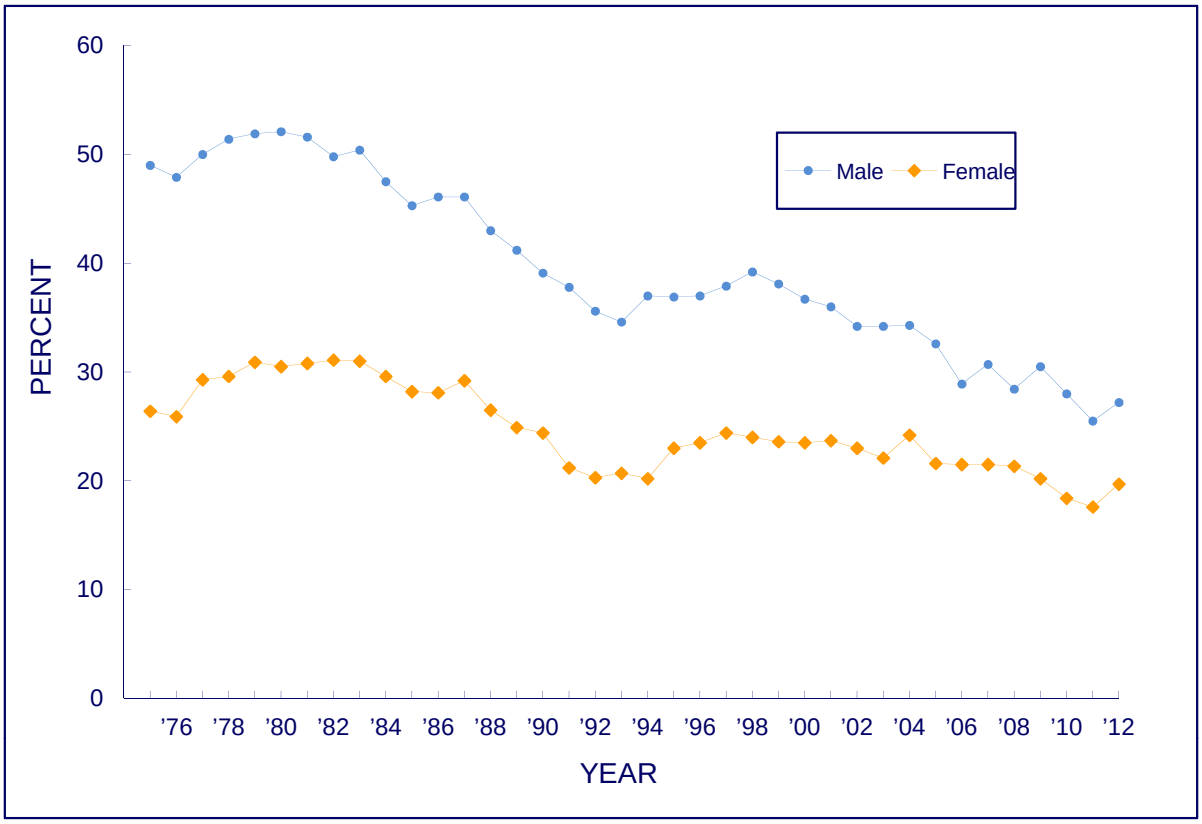




Source. The Monitoring the Future study, the University of Michigan.

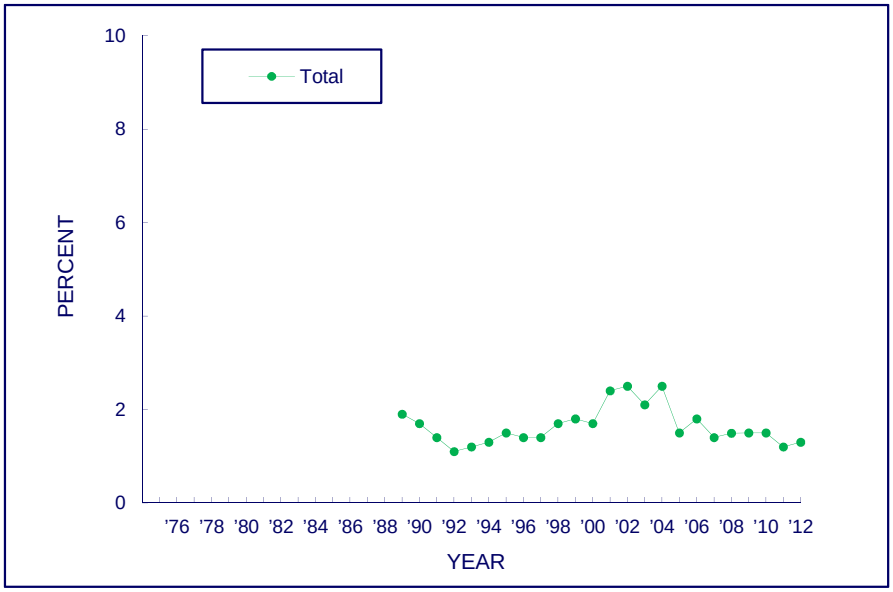
Note. Daily use for cigarettes is defined as smoking one or more cigarettes per day in the last 30 days.

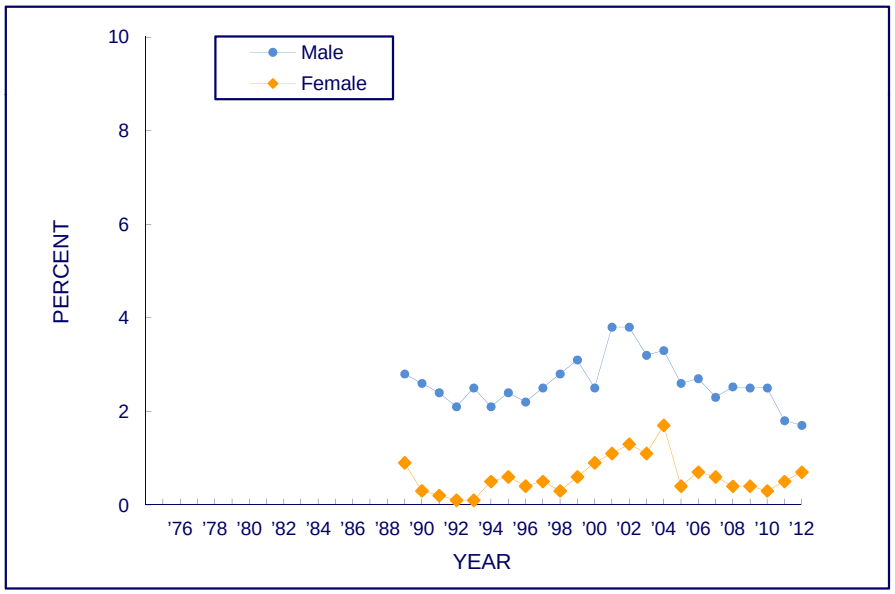
FIGURE 5-6a
ALCOHOL
Trends in 2-Week Prevalence of Heavy Drinking in Grade 12 by Gender



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-6b
STEROIDS
Trends in Annual Prevalence in Grade 12
by Total and by Gender



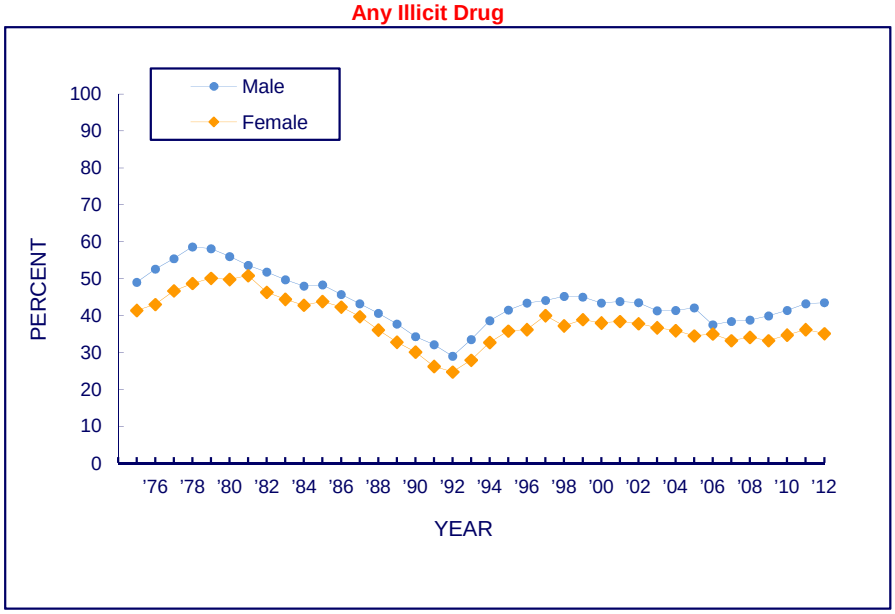


Source. The Monitoring the Future study, the University of Michigan.

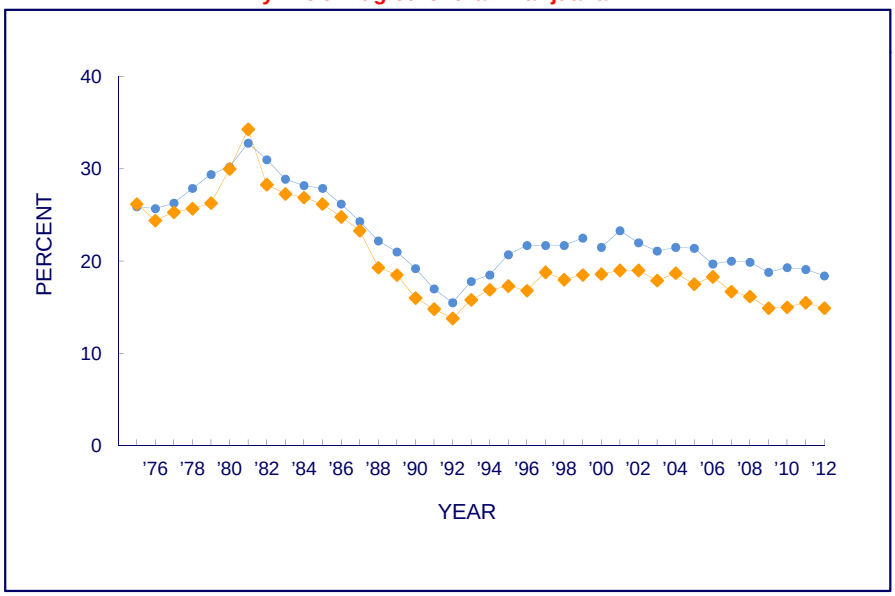
Note. Daily use for marijuana is defined as use on 20 or more occasions in the last 30 days.

FIGURE 5-7
AN ILLICIT DRUG USE INDEX
Trends in Annual Prevalence in Grade 12
by Gender

Any Illicit Drug



Any Illicit Drug other than Marijuana [a]

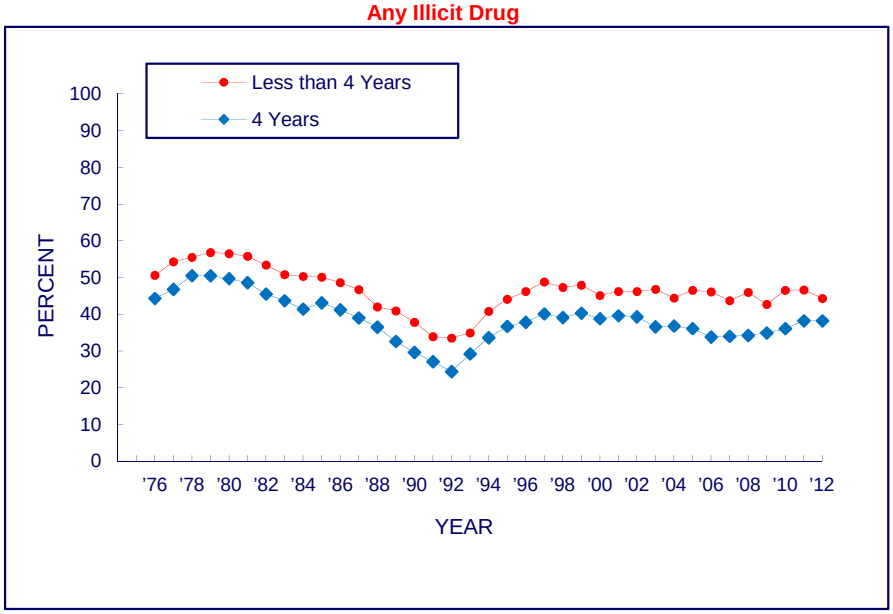


Source. The Monitoring the Future study, the University of Michigan.

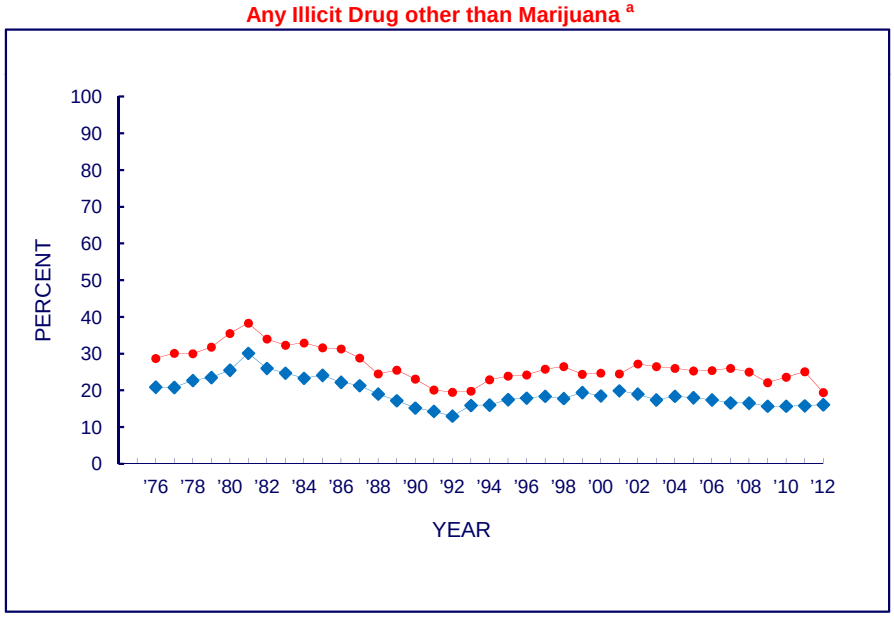
[a]Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. From 2001 on, data points are based on the revised questions.

FIGURE 5-8
AN ILLICIT DRUG USE INDEX
Trends in Annual Prevalence in Grade 12 by College Plans

Any Illicit Drug



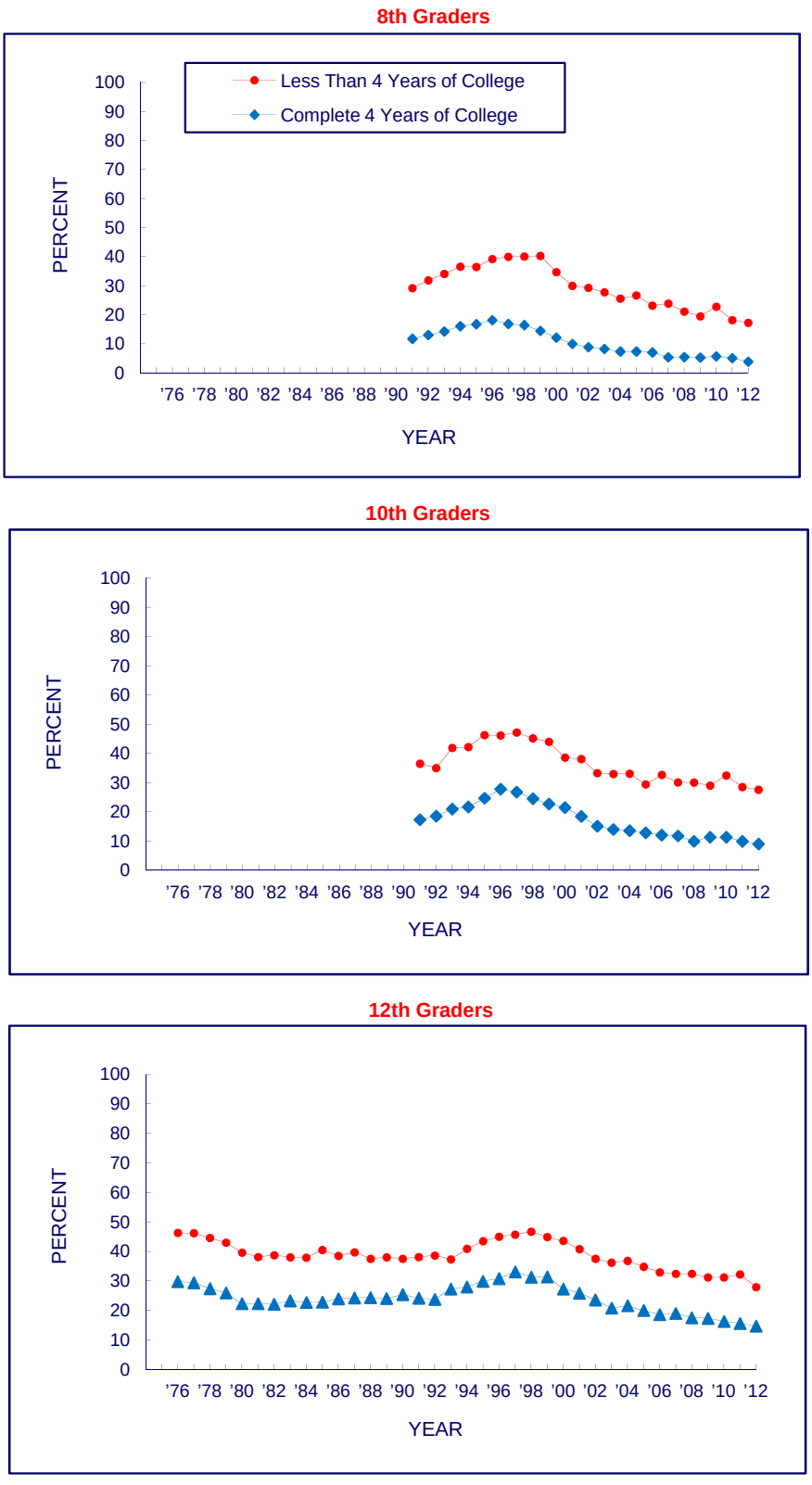
Any Illicit Drug other than Marijuana [a]



Source. The Monitoring the Future study, the University of Michigan.

[a]Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. From 2001 on, data points are based on the revised questions.

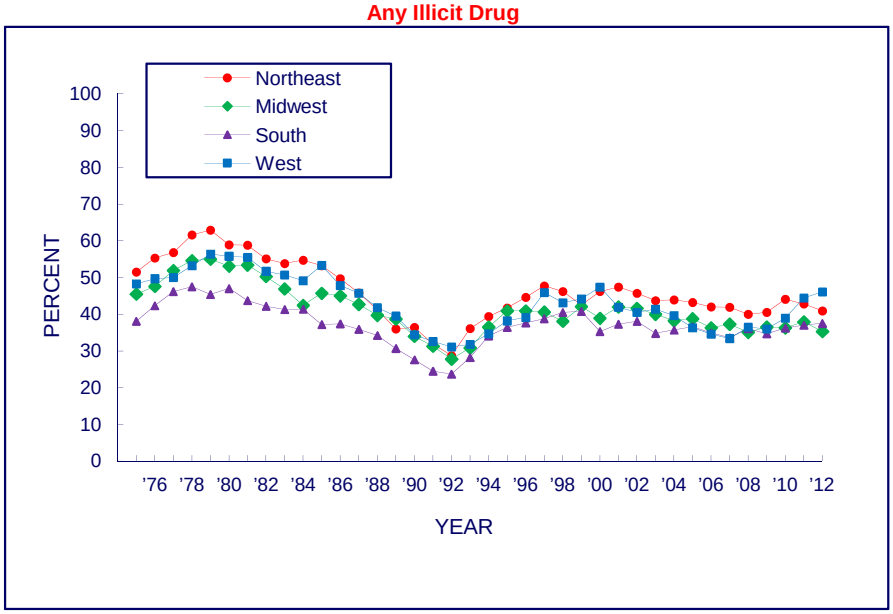
FIGURE 5-9
CIGARETTES
Trends in 30-Day Prevalence in Grades 8, 10, and 12 by College Plans



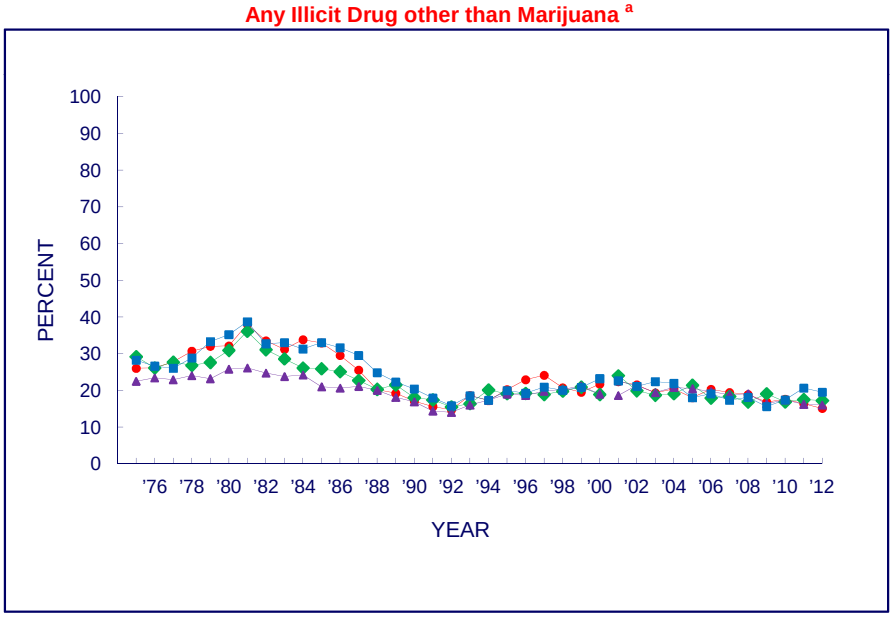
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-10a
AN ILLICIT DRUG USE INDEX
Trends in Annual Prevalence in Grade 12
by Region of the Country

Any Illicit Drug



Any Illicit Drug other than Marijuana [a]



Source. The Monitoring the Future study, the University of Michigan.

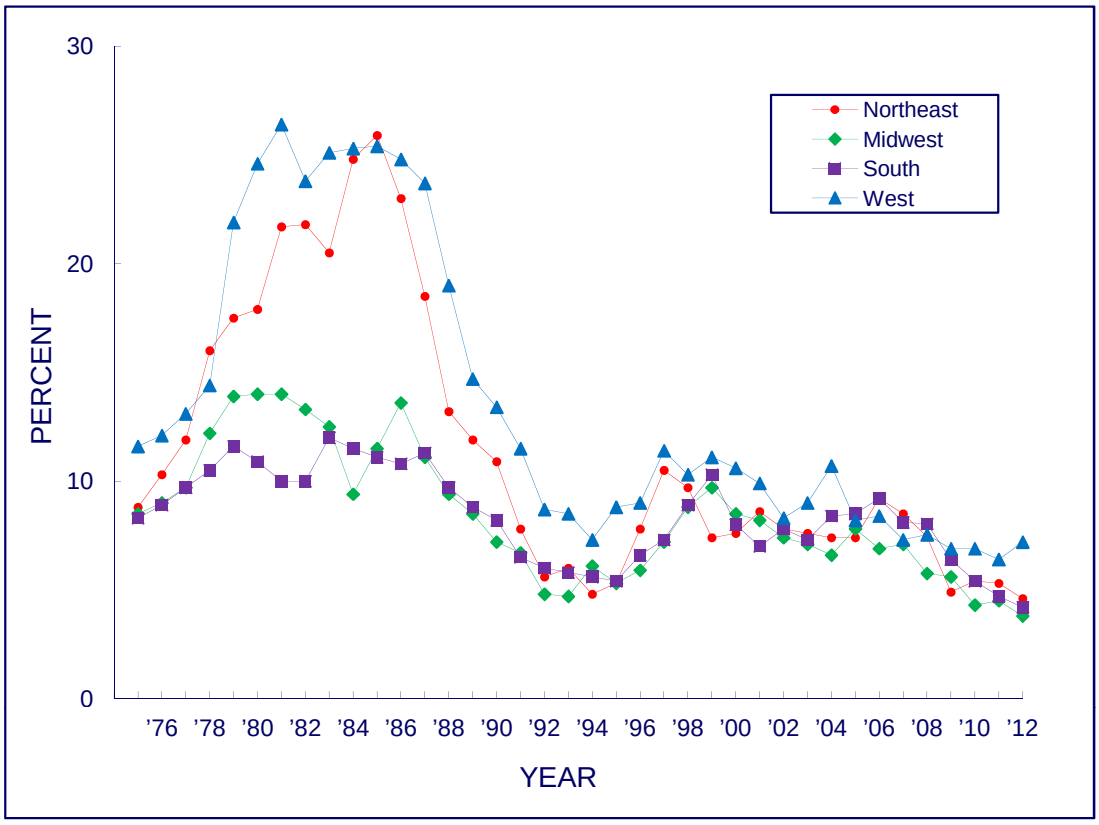
[a]Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. From 2001 on, data points are based on the revised questions.

FIGURE 5-10b

COCAINE

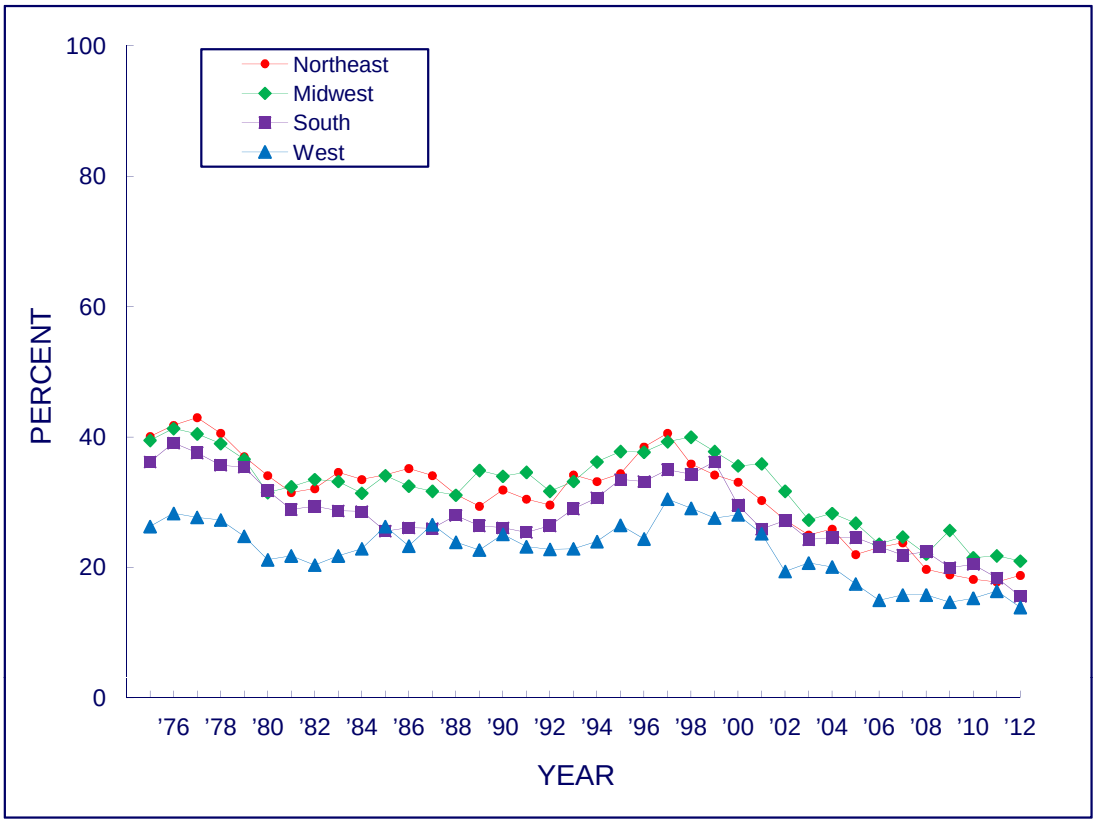
Trends in Lifetime Prevalence in Grade 12

by Region of the Country



Source. The Monitoring the Future study, the University of Michigan.

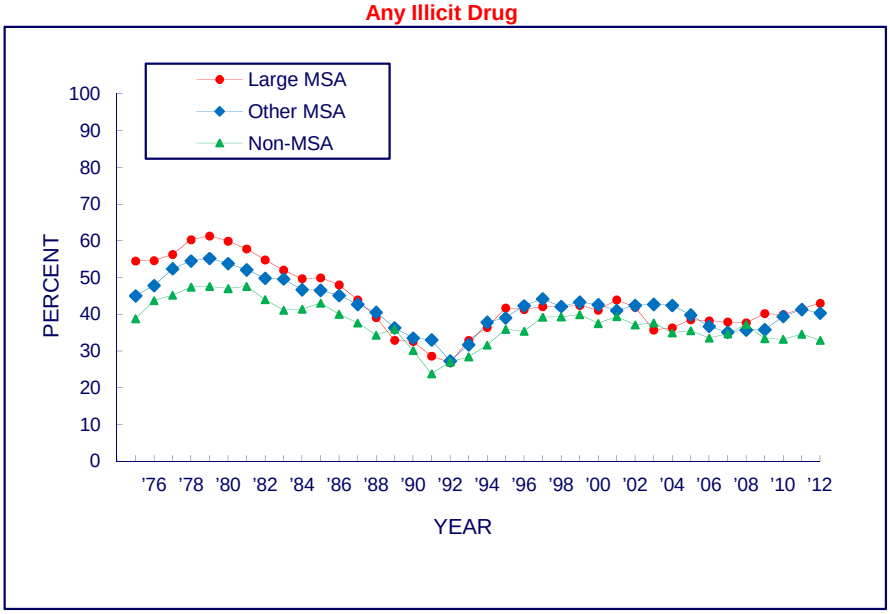
FIGURE 5-10c
CIGARETTES
Trends in 30-Day Prevalence in Grade 12
by Region of the Country



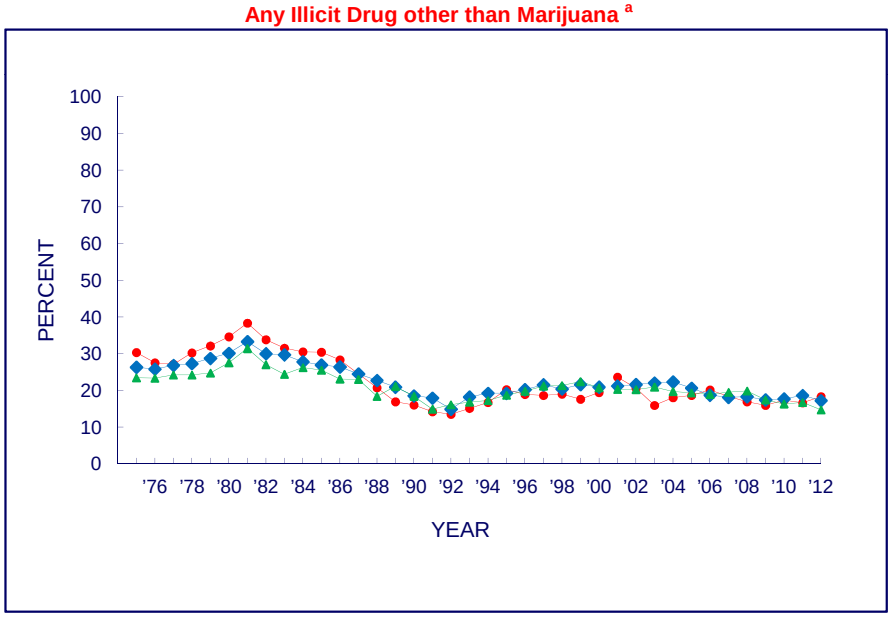
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-11a
AN ILLICIT DRUG USE INDEX
Trends in Annual Prevalence in Grade 12
by Population Density

Any Illicit Drug



Any Illicit Drug other than Marijuana [a]

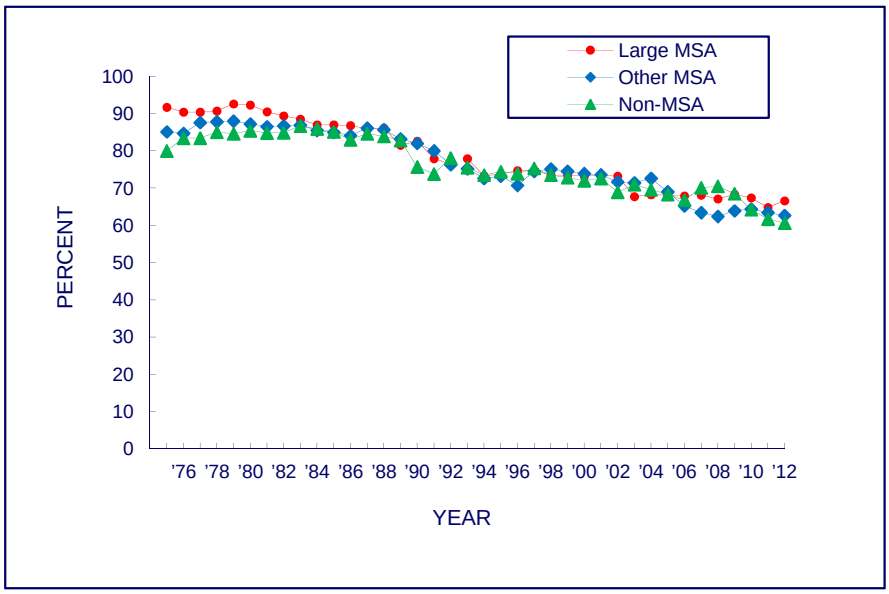


Source. The Monitoring the Future study, the University of Michigan.

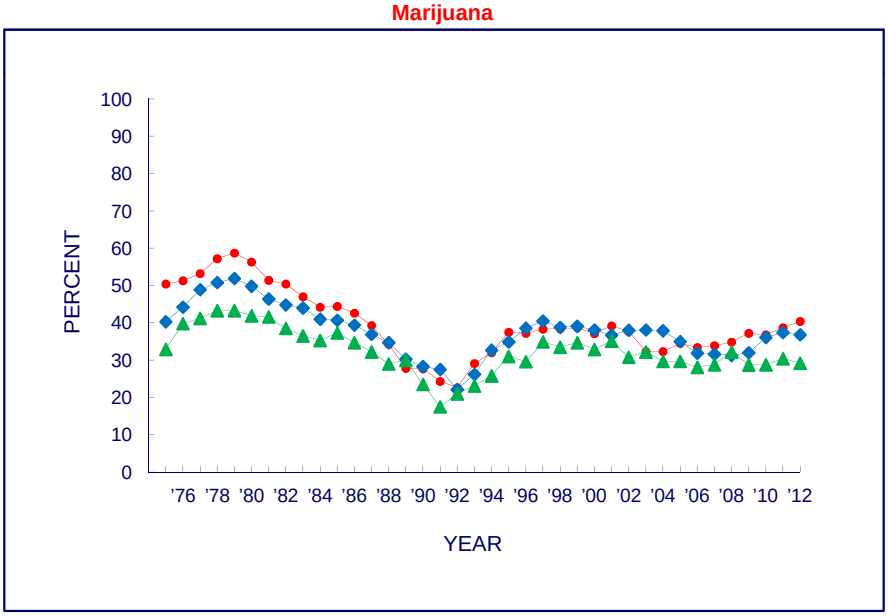
[a]Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. From 2001 on, data points are based on the revised questions.

FIGURE 5-11b
ALCOHOL AND MARIJUANA
Trends in Annual Prevalence in Grade 12
by Population Density

Alcohol [a]



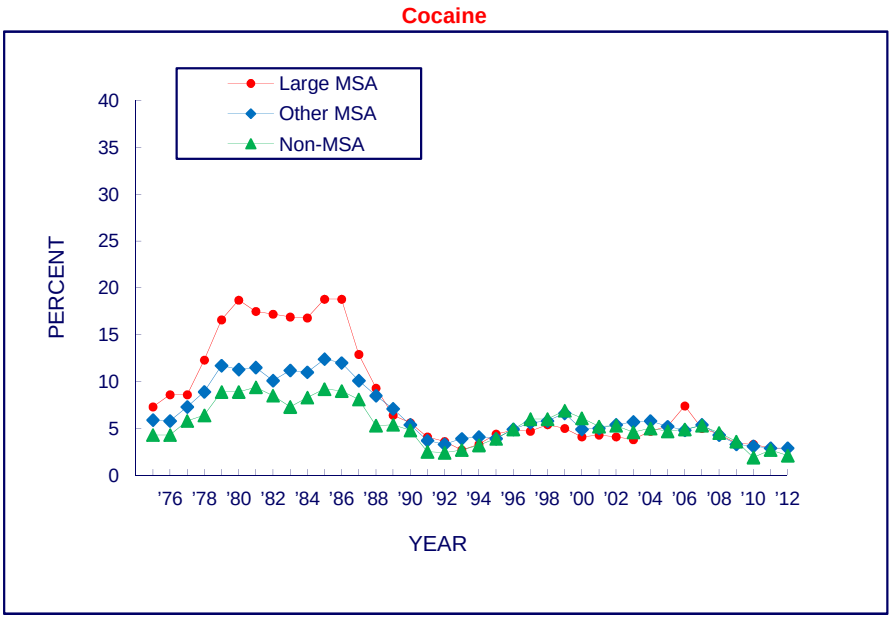
Marijuana

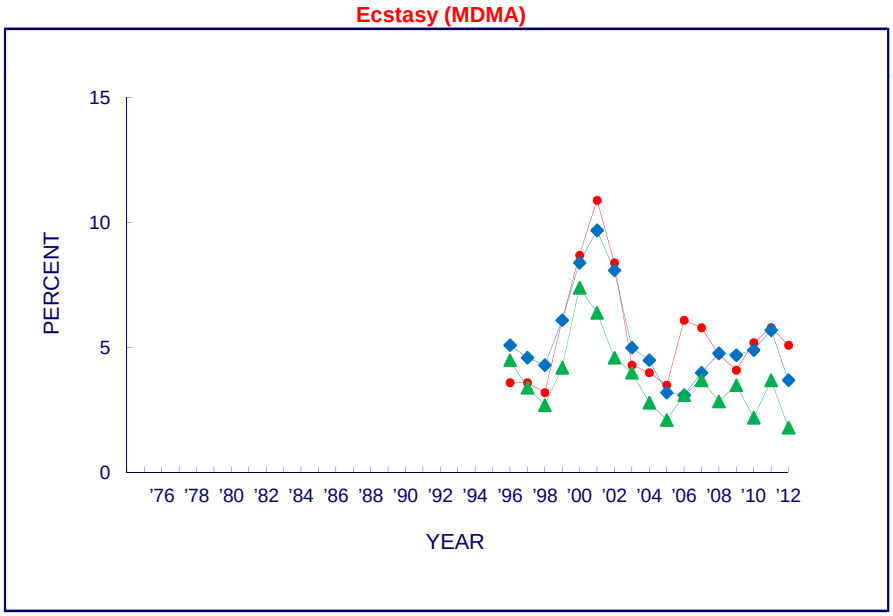


Source. The Monitoring the Future study, the University of Michigan.

[a]In 1993, a revised set of questions on alcohol use was introduced indicating that a drink meant more than a few sips. From 1993 on, data points are based on the revised question.

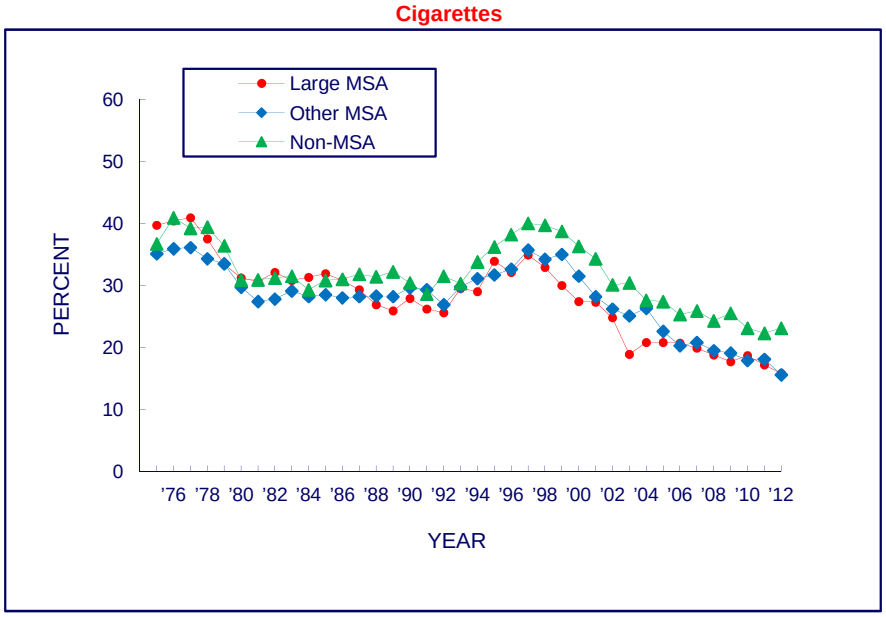
FIGURE 5-11c
COCAINE AND ECSTASY (MDMA)
Trends in Annual Prevalence in Grade 12
by Population Density

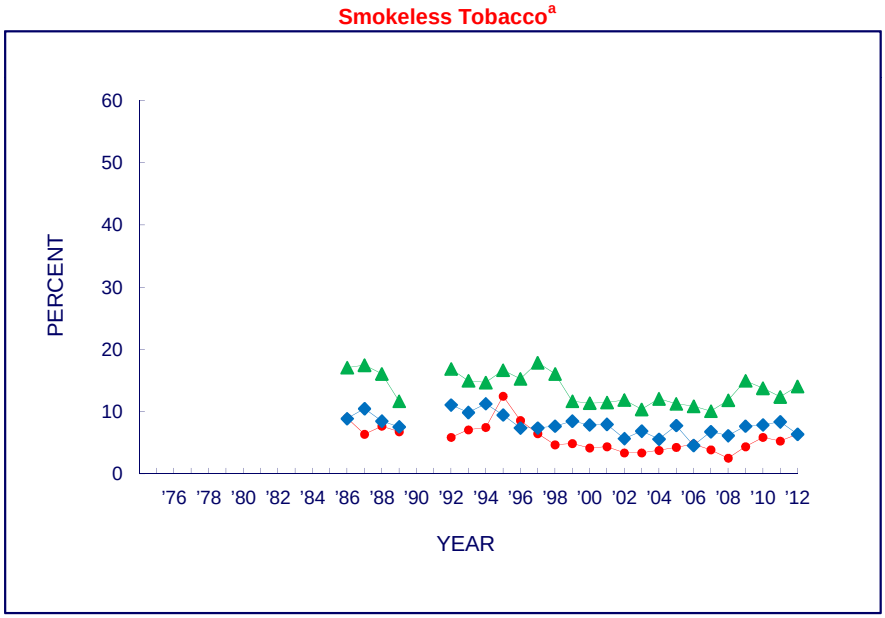




Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-11d
CIGARETTES AND SMOKELESS TOBACCO
Trends in 30-Day Prevalence in Grade 12
by Population Density

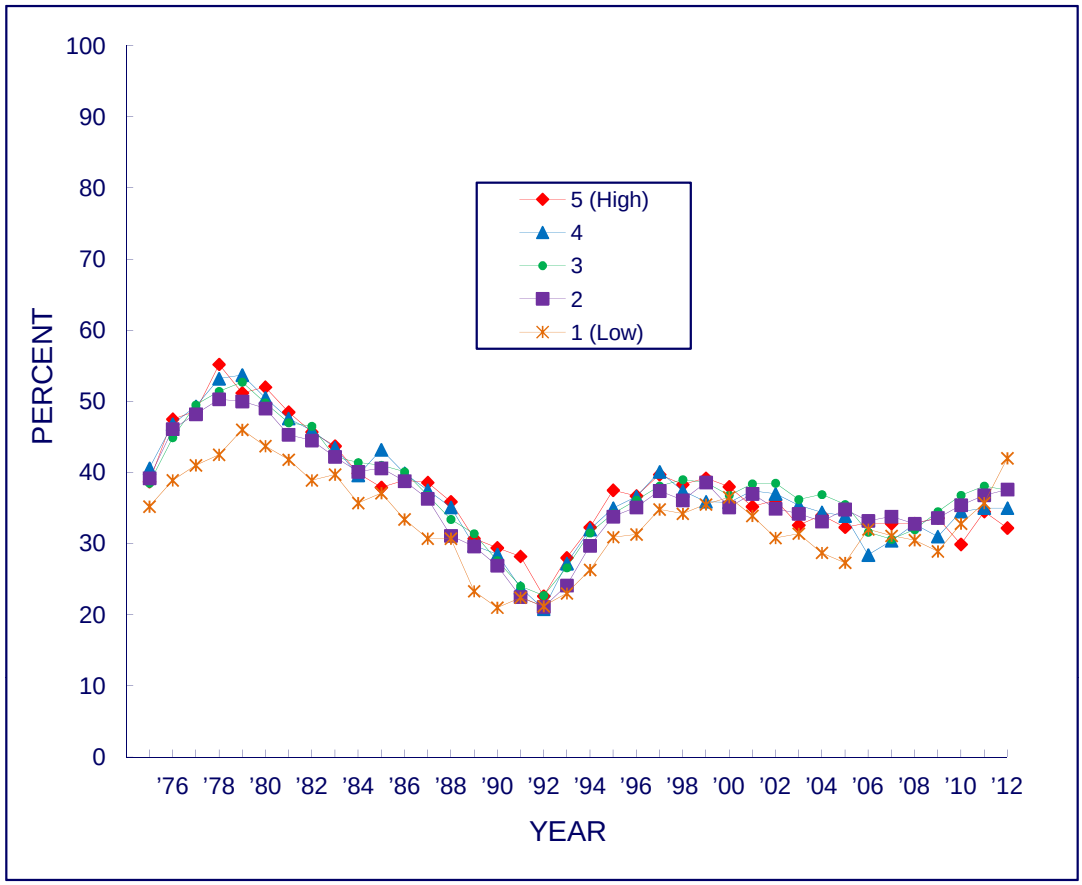




Source. The Monitoring the Future study, the University of Michigan.

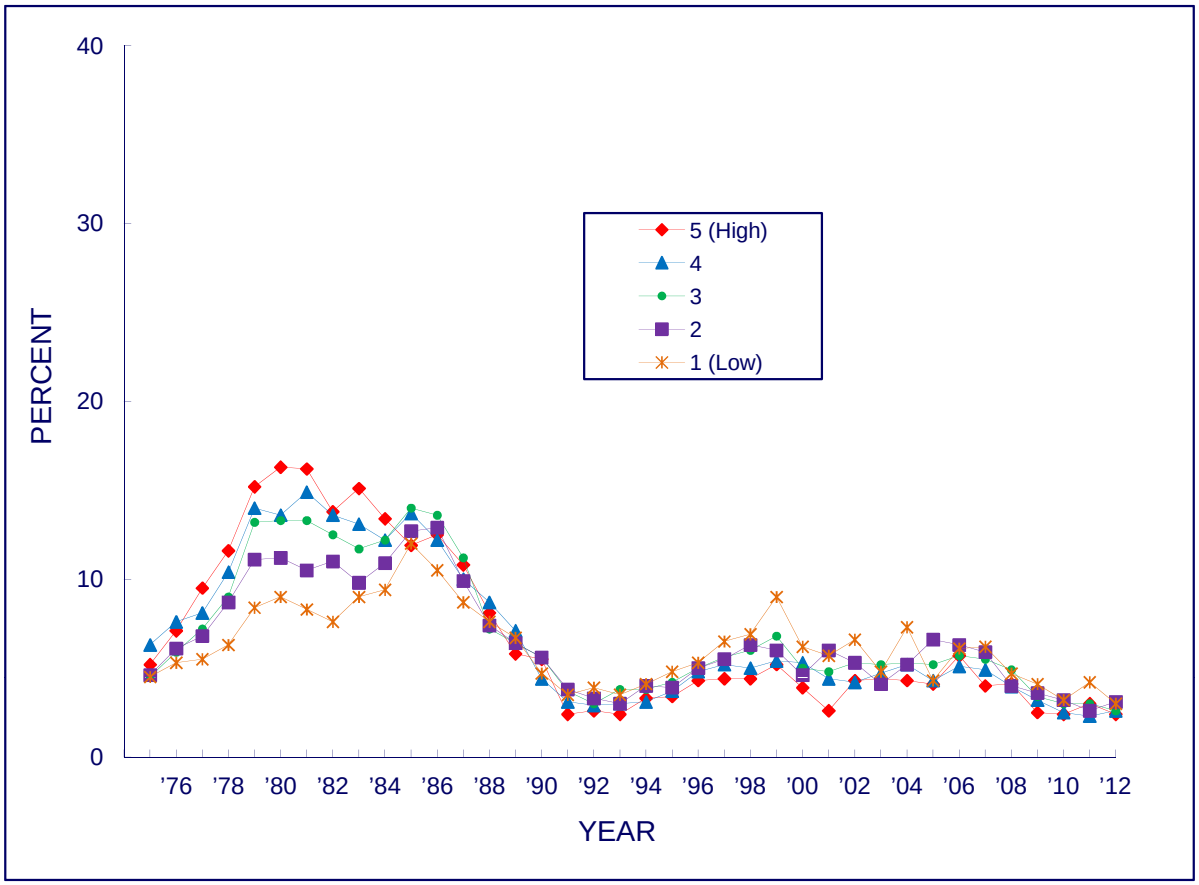
[a]The question on smokeless tobacco was not asked in 1990 or 1991.

FIGURE 5-12a
MARIJUANA
Trends in Annual Prevalence in Grade 12
by Average Education of Parents



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-12b
COCAINE
Trends in Annual Prevalence in Grade 12
by Average Education of Parents



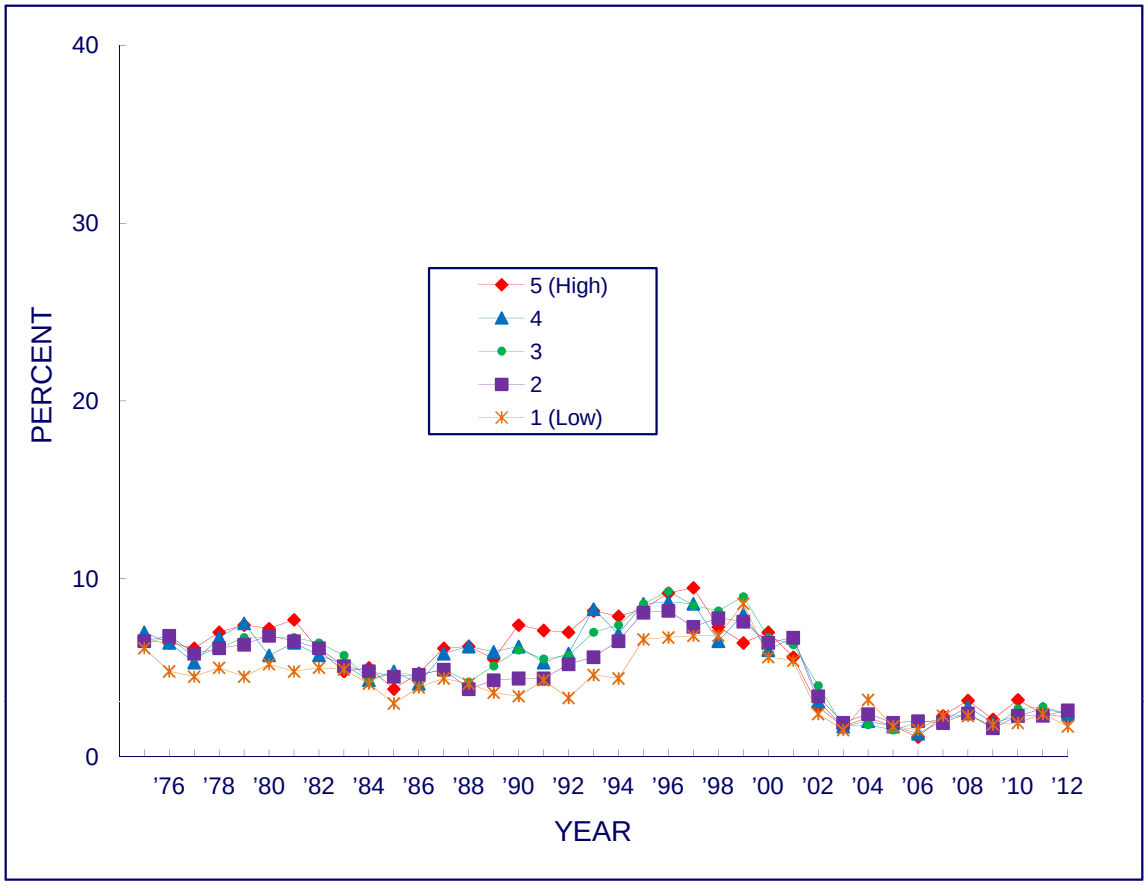
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-12c

LSD

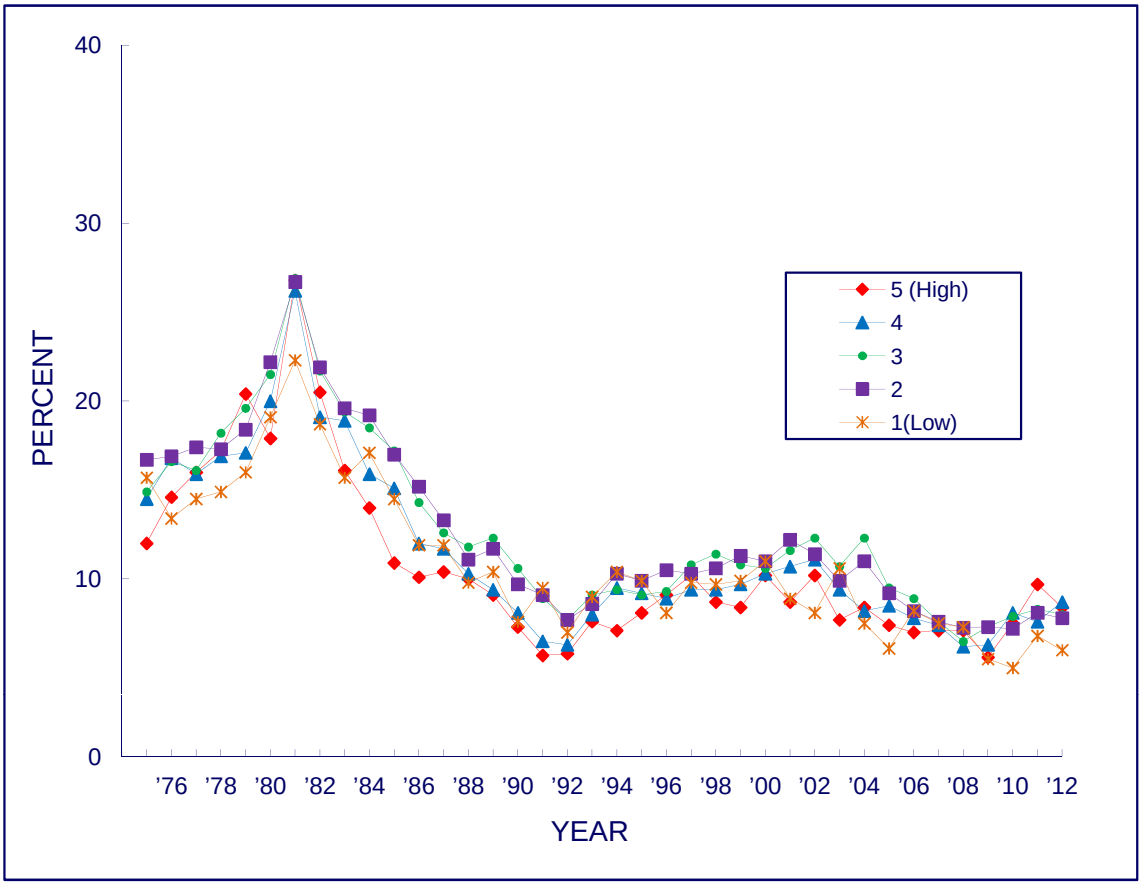
Trends in Annual Prevalence in Grade 12

by Average Education of Parents



Source. The Monitoring the Future study, the University of Michigan.

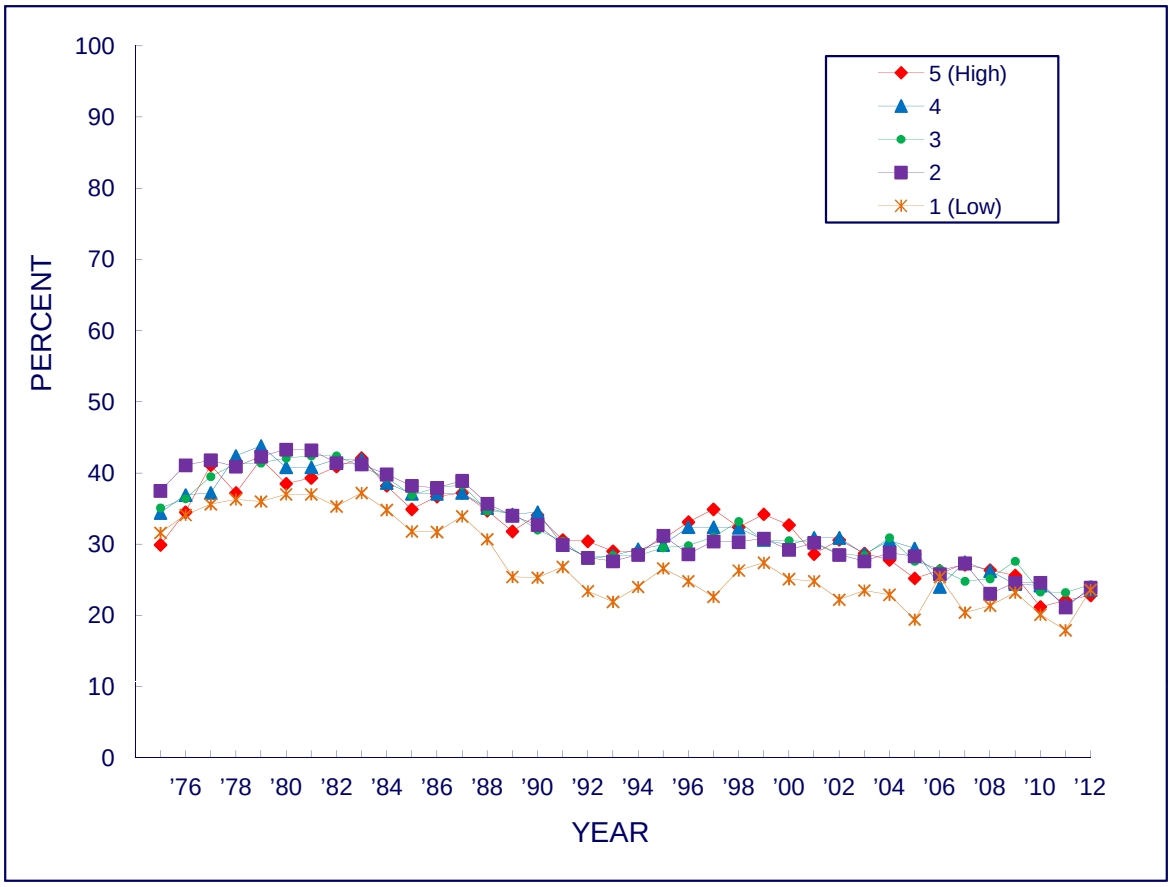
FIGURE 5-12d
AMPHETAMINES
Trends in Annual Prevalence in Grade 12
by Average Education of Parents



Source. The Monitoring the Future study, the University of Michigan.

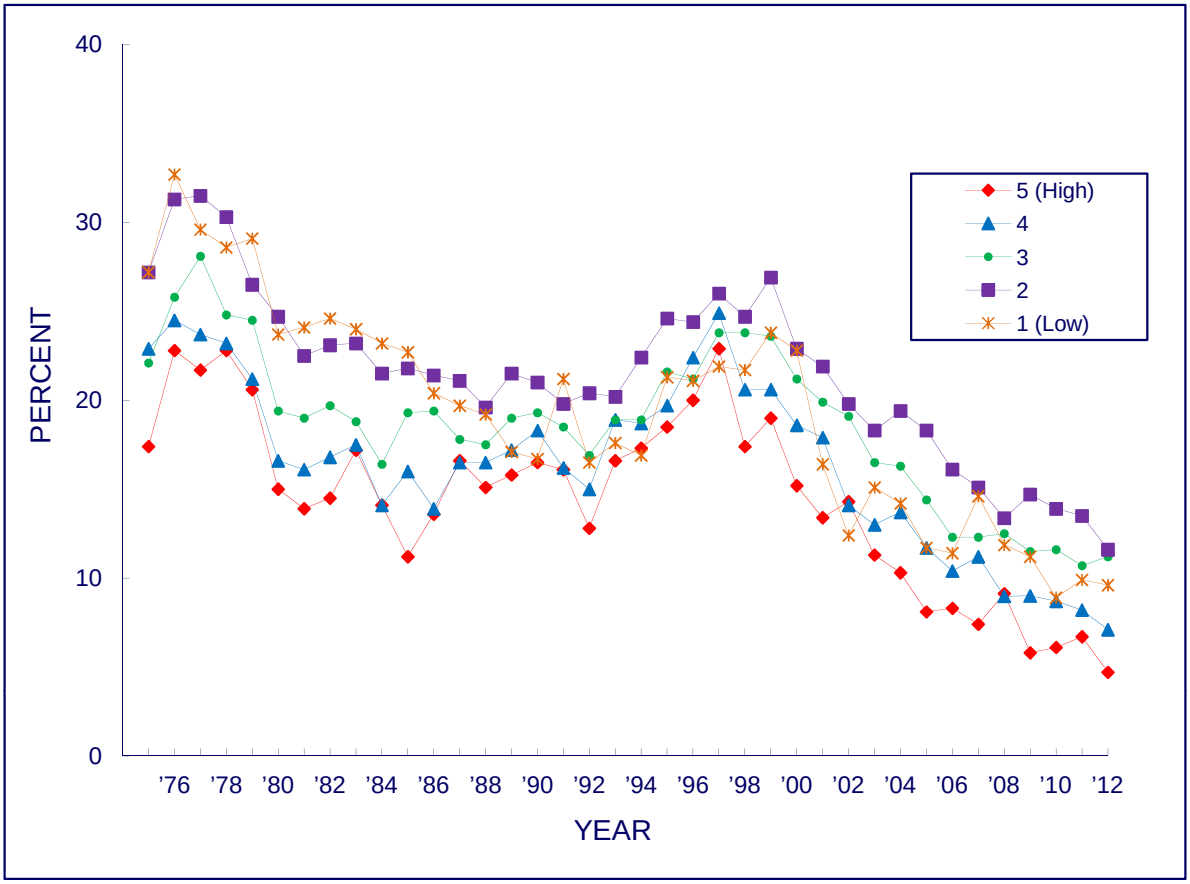
Note. Beginning in 1982, the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

FIGURE 5-12e
ALCOHOL
Trends in 2-Week Prevalence of
5 or More Drinks in a Row in Grade 12
by Average Education of Parents



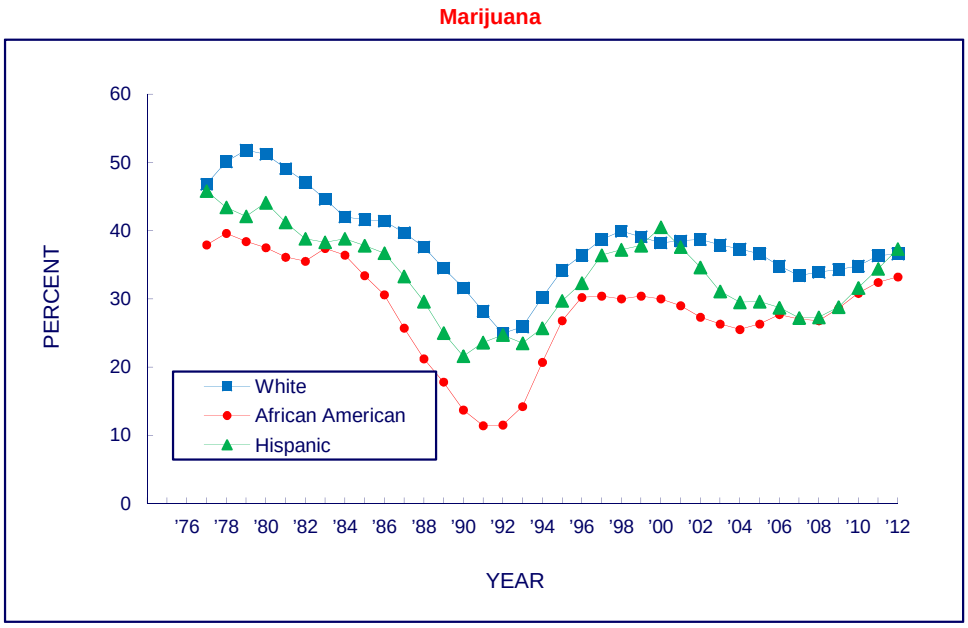
Source. The Monitoring the Future study, the University of Michigan.

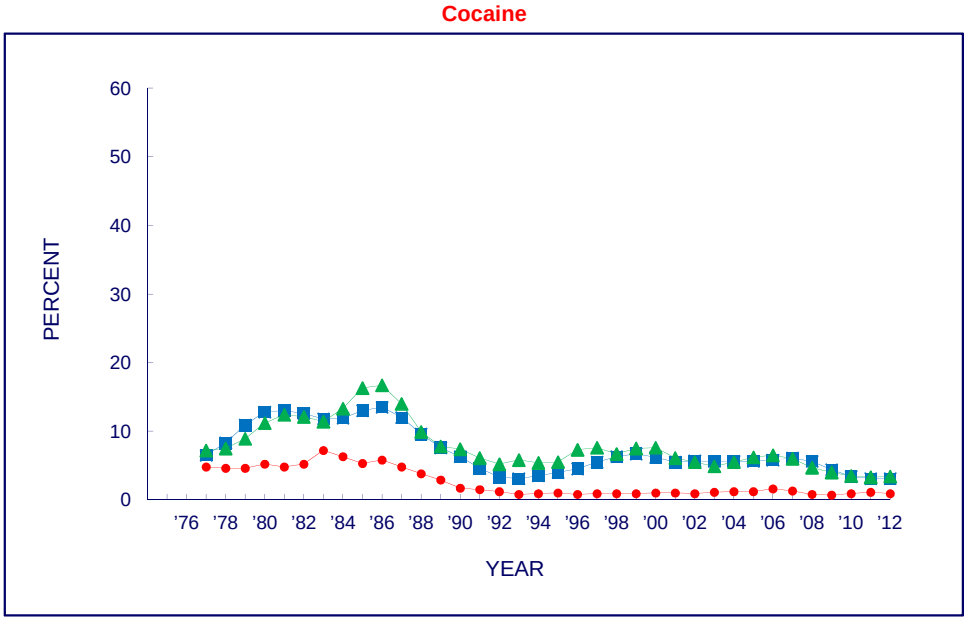
FIGURE 5-12f
CIGARETTES
Trends in Daily Prevalence in Grade 12
by Average Education of Parents



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 5-13a
MARIJUANA AND COCAINE
Trends in Annual Prevalence in Grade 12
by Race/Ethnicity
(Two-year moving average [a])



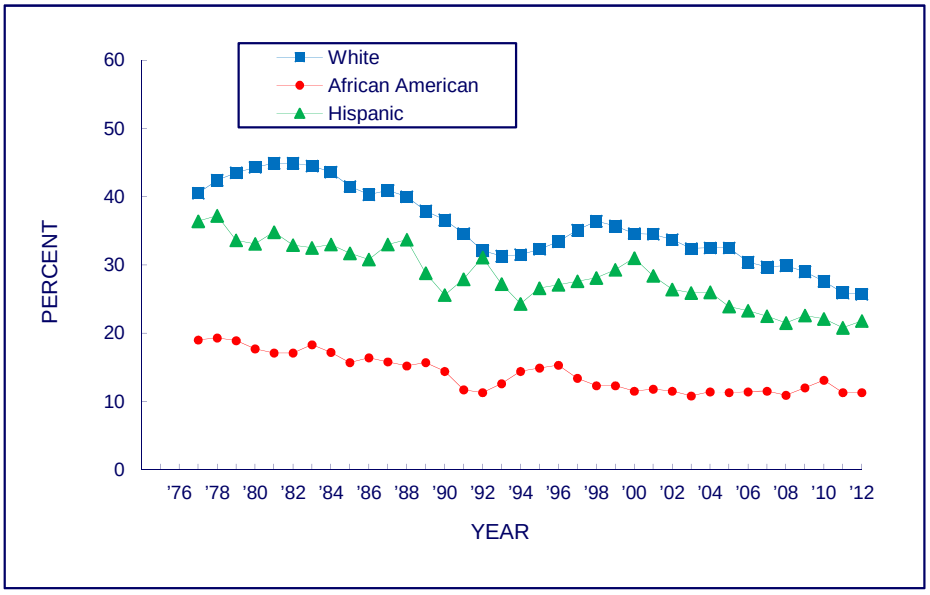


Source. The Monitoring the Future study, the University of Michigan.

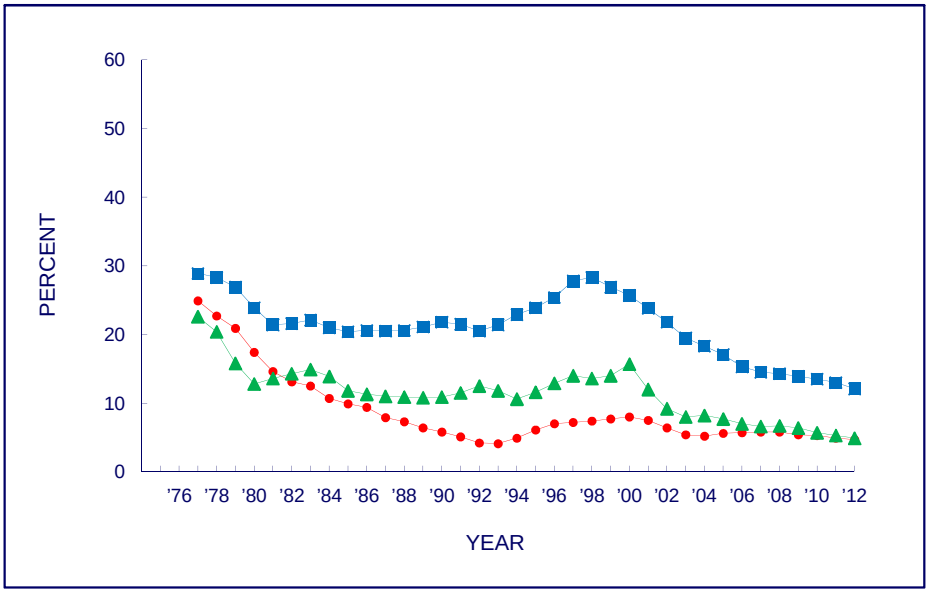
[a]Each point plotted here is the mean of the specified year and the previous year.

FIGURE 5-13b
ALCOHOL AND CIGARETTES
Trends in Prevalence in Grade 12
by Race/Ethnicity
(Two-year moving average [a])

Five or More Drinks in a Row in Last Two Weeks



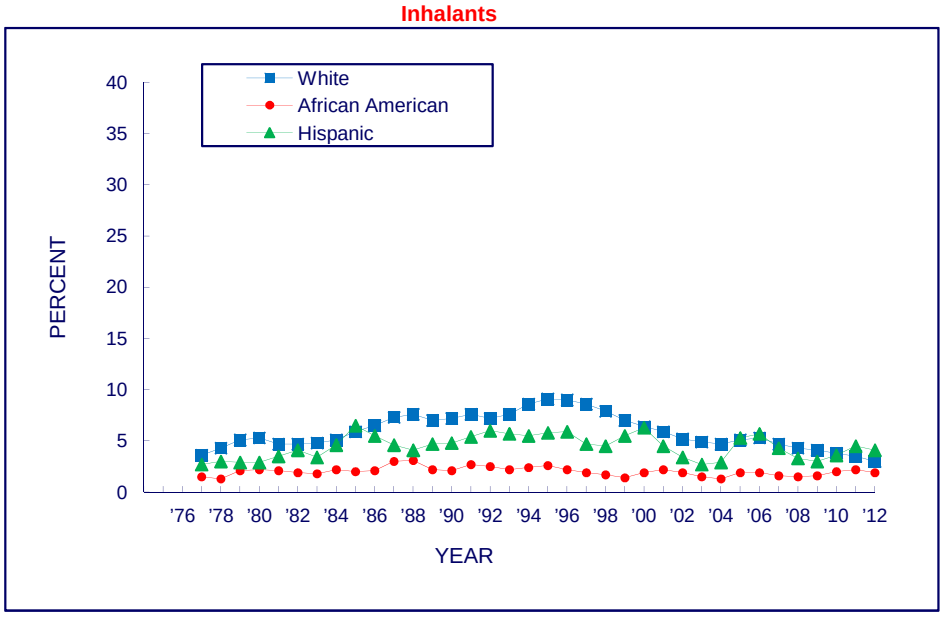
Cigarettes (Daily)

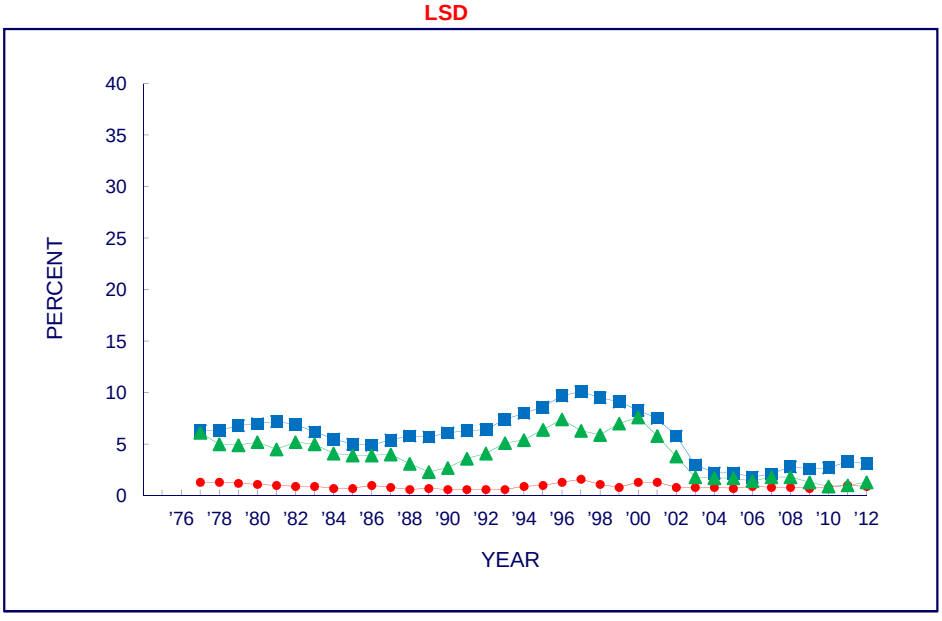


Source. The Monitoring the Future study, the University of Michigan.

[a]Each point plotted here is the mean of the specified year and the previous year.

FIGURE 5-13c
INHALANTS AND LSD
Trends in Annual Prevalence in Grade 12
by Race/Ethnicity
(Two-year moving average [a])





Source. The Monitoring the Future study, the University of Michigan.

[a]Each point plotted here is the mean of the specified year and the previous year.

Chapter 6

INITIATION RATES AND TRENDS IN INITIATION RATES IN LOWER GRADES

Knowing when young people begin to use various drugs helps us better understand the etiology of substance use and provides a guide to the timing and nature of various interventions, which are likely most effective when administered prior to the grades of peak initiation. We know that grades of peak initiation vary according to drug and tend to progress from drugs perceived as the least risky, deviant, or illegal toward those perceived as more so.

One way to estimate when use of a particular drug is initiated is to ask respondents to self-report when they first used a drug. In the MTF study we ask about initiation in terms of grade levels rather than age, because we believe that adolescents' memories are more likely to be organized in those terms. It can also be argued that social experiences and risk-taking opportunities are organized more by grade than age. Given that each grade level is composed of students who are about the same age, grade can be readily translated into modal ages.

MTF has been collecting grade of initiation data for 12th graders since 1975. The results reported in this series of monographs provide a retrospective view of trends in lifetime prevalence of use at earlier grade levels. Because the retrospective trends span a much longer time period than the study itself, we continue to include here the series of figures based on 12th graders' responses, even though we now measure drug usage rates directly from 8th and 10th graders. We have also included retrospective figures for 8th graders' reported grade of first use.

One would not necessarily expect a particular year's 8th, 10th, and 12th graders to give the same retrospective prevalence rate for a drug, even for a given grade level, because the three groups differ in a number of important ways:

- The lower grades include eventual school dropouts, whereas the 12th-grade survey conducted late in the school year includes almost none. The lower grades also have lower absentee rates. For any given year, both of these factors should cause the prevalence-of-use rates derived contemporaneously from a particular class cohort of 8th graders to be higher (for any specified grade level up through 8th grade) than the retrospectively reported prevalence rates derived from that same class cohort of young people who are still in school in 10th or 12th grades.

- Because each class cohort experienced 8th grade in a different year, any broad historical or secular trend in the use of a drug could contribute substantially to differences in respondents' reports of their experiences when they were in 8th grade.

- Because 8th, 10th, and 12th graders are in three different class cohorts, any lasting differences among cohorts could contribute to a difference at any grade level, including 8th grade.

Two types of method artifacts could also explain observed differences:

- Memory errors are more likely to occur for older respondents (who are, of course, further removed from the initiation experience). They may forget that an event ever occurred (although this may be unlikely for use of drugs), or they may not accurately remember *when* an event occurred. For example, events may be remembered as having occurred more recently than they actually did—a kind of forward telescoping of the recalled timing of events.[75]

- The definition of the eligible event may change as a respondent gets older. Thus, an older student may be less likely to include an occasion of taking a sip from someone's beer as an alcohol use event, or an older student may be more likely to appropriately exclude an over-the-counter stimulant when asked about amphetamine use. While we attempt to ask the questions as clearly as possible, some of these drug definitions are fairly subtle and likely to be more difficult for younger respondents. Indeed, we have omitted from this report 8th and 10th graders' data on their use of sedatives (barbiturates) and narcotics other than heroin precisely because we judged them to contain erroneous information.[76]

INCIDENCE OF USE BY GRADE LEVEL

Tables 6-1 through 6-3 provide retrospective initiation rates for various types of drug use as reported by students surveyed in 8th, 10th, and 12th grades. Obviously, the older students have a longer age span over which they can report initiation. Table 6-4 shows the retrospective initiation rates from all three sets of respondents to allow comparison by grade levels.

The questions from which the data are derived have a common stem: "When (if ever) did you FIRST do each of the following things? Don't count anything you took because a doctor told you to." Various drug-using behaviors are asked about, for example, "smoke your first cigarette," "smoke cigarettes on a daily basis," "try an alcoholic beverage—more than just a few sips," etc. The answer alternatives differentiate the grade levels at which first use occurred.

- Respondents from the three grades all retrospectively reported very low usage rates up through the end of 6th grade for ***hallucinogens*** (in general), ***LSD specifically***,

[75]See Bachman, J. G., & O'Malley, P. M. (1981). When four months equal a year: Inconsistencies in students' reports of drug use. *Public Opinion Quarterly, 45,* 536–548; Jabine, T. B., Straf, M. L., Tanur, J. M., & Tourangeau, R. (Eds.). (1984). *Cognitive aspects of survey methodology: Building a bridge between disciplines*. Washington DC: National Academy Press.

[76]We have found that young adult follow-up surveys of 12th graders yield higher recanting rates for the psychotherapeutic drugs, in contrast to the illegal drugs. We interpret this discrepancy as reflecting, in part, a better understanding of the distinctions between prescription and nonprescription drugs in young adulthood. See Johnston, L. D., & O'Malley, P. M. (1997). The recanting of earlier reported drug use by young adults. In L. Harrison & A. Hughes (Eds.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (pp. 59–80) (NIDA Research Monograph No. 167). Rockville, MD: National Institute on Drug Abuse.

hallucinogens other than LSD, ***cocaine*** in general, ***crack cocaine***, ***cocaine powder***, ***heroin***, ***amphetamines***, ***tranquilizers***, and ***steroids*** (all less than 1%). Less than 1% of 12th graders reported using ***sedatives*** (***barbiturates***) and ***narcotics other than heroin*** by the end of 6th grade. (Data are not reported for these drugs for 8th and 10th graders.)

- Among 8th-grade respondents in 2012, 5.1% said they had tried ***marijuana*** by the end of 6th grade. In 2012, the older respondents gave lower retrospective estimates of their marijuana use by 6th grade: 3.7% among 10th graders and 1.6% among 12th graders.

- ***Alcohol*** and ***cigarettes*** are the drugs most likely to be initiated at an early age (i.e., by end of 6th grade; see Table 6-4). Among 8th graders, ***inhalant*** use comes next, and then ***marijuana*** use. Among 10th and 12th graders, marijuana is more likely than inhalants to have been tried at this early age. For all three groups, marijuana is more likely than inhalants to have been tried by the end of 8th grade.

- ***Cigarette*** smoking tends to be initiated particularly early. Based on data from the 2012 eighth graders (Table 6-1), their peak years for initiation of cigarette smoking were in the 6th (3.6%) and 7th (4.4%) grades—or modal ages 11 through 13—but a considerable number initiated smoking even earlier. Indeed, in 2012 5.0% of 8th-grade respondents reported having had their first cigarette by the end of 5th grade.

  Note that 8th graders' 2012 reports of smoking initiation by the end of 6th grade are considerably higher (8.6%) than 12th graders' reports of initiation by end of 6th grade (5.3%). Several factors noted earlier in this chapter could have contributed to this difference; however, it seems likely that most of the difference occurs because the 8th-grade samples include nearly all those who will eventually drop out (and thus would not be included in the 12th-grade sample), and because educational attainment is highly correlated with cigarette smoking.[77]

- ***Smokeless tobacco*** use also tends to be initiated early, as Tables 6-1 through 6-3 illustrate, with grades 7 through 11 tending to show the highest rates of initiation. Of the 8th-grade respondents in 2012, 3.7% reported trying smokeless tobacco by 6th grade, and another 4.4% by 8th grade. These rates are based on boys and girls combined—rates are substantially higher among boys.

- ***Inhalant*** use tends to occur early among 8th graders; inhalants have the third highest initiation by 6th grade after alcohol and cigarettes, and by 9th grade most initiation appears to have occurred.

  Of the illicit drugs, only inhalants show very large differences in the incidence rates reported by the three grade levels. Among 2012 respondents, only 0.9% of 12th graders, compared to 6.6% of 8th graders, reported using inhalants by the end of 6th grade. Although any of the explanations offered earlier might help to explain these differences,

[77]Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008). *The education–drug use connection: How successes and failures in school relate to adolescent smoking, drug use, and delinquency.* New York: Lawrence Erlbaum Associates/Taylor & Francis Group.

we believe that early inhalant use may be particularly associated with dropping out. Another possible contributor to the differences in rates is that the question differs by grade. For 8th and 10th graders the question asks about when they first "sniff glue, gases or sprays to get high" while for 12th graders when did they first "try inhalants." In addition, use of non-nitrite inhalants such as glues, aerosols, and butane had been increasing for some time (up to 1995, and again in 2003 and 2004), and these types of inhalants tend to be used at younger ages. (See also Chapter 4 for a discussion of differential reporting of lifetime prevalence of inhalant by grade.)

- Like cigarette use, ***alcohol*** use shows a pattern of early initiation. Alcohol use by the end of 6th grade was reported by 13.8% of 8th-grade respondents in 2012, but by only 4.7% of 12th-grade respondents (see Table 6-4). Several factors may contribute to this difference. One is that eventual dropouts are much more likely than average to drink at an early age (see Footnote 77). Another is related to the issue of what is meant by "first use." The questions for all grades refer specifically to the first use of "an alcoholic beverage—more than just a few sips," but we believe that the older students (12th graders) are more likely to report only use that is *not* adult-approved, and not count having a small amount (more than a few sips, less than a glass) with parents or for religious or celebratory purposes. Note that data from the three groups of respondents tend to converge as we ask about lifetime alcohol use by the time they reach higher grade levels.

  For these reasons, we rely more on 12th-grade data for purposes of examining changes in initiation of alcohol use across age, and these data suggest that the peak years of alcohol initiation are 7th through 11th grades. While the first occasion of ***drunkenness*** is also most likely to occur in grades 7 through 11, in 2012 3.3% of 8th graders reported first having been drunk by the end of 6th grade.

- The ***illicit drugs other than marijuana*** generally do not reach peak initiation rates until the high school years (grades 9 through 11 for most drugs, consistent with the progression model noted earlier).

Of all 12th graders who reported prior use of a drug, the proportion reporting their initial use of that drug *by the end of grade 9* is presented here. This listing is generally a good indicator of the order of grade-level of initiation, though heroin in particular does not fit the pattern[78]:

heroin (64%)
inhalants (63%)
cigarettes (60%)
crack (57%)
alcohol (52%)
smokeless tobacco (48%)
marijuana (45%)

[78]Note that such an ordering can be influenced by secular trends in use. Also, confidence intervals can be relatively large because the data are based on only one, two, or three questionnaire forms (depending on drug) and on only those who had used each drug by end of 12th grade.

steroids (44%)
sedatives (barbiturates) (43%)
been drunk (42%)
cigarettes (daily) (42%)
cocaine powder (36%)
LSD (34%)
amphetamines (33%)
narcotics other than heroin (31%)
hallucinogens (31%)
cocaine (31%)
tranquilizers (29%)
hallucinogens other than LSD (29%)

TRENDS IN LIFETIME PREVALENCE AT EARLIER GRADE LEVELS

Using the retrospective data provided by members of each 12th-grade class concerning their grade of first use, it has been possible to reconstruct lifetime prevalence-of-use trend curves for lower grade levels over many earlier years as the 12th graders passed through those grades. Obviously, data from school dropouts are not included. Figures 6-1 through 6-25 present the reconstructed lifetime prevalence curves for most drugs. Starting with Figure 6-4, retrospective prevalence curves are also presented for 8th graders, who have been included in the annual surveys since 1991. These curves should include data from nearly all eventual dropouts.

When comparing the retrospective prevalence curves for 12th- versus 8th-grade respondents, the reader should keep in mind that the curves are often plotted on different scales to improve the clarity of each figure.

Although average age of initiation is one way to discuss this type of data, we think it could be misleading. For example, the average age of initiation could be lower in more recent classes because fewer students are initiating use at *later* ages (perhaps due to a recent downward secular trend) rather than because more students are starting at younger ages. Yet many readers may interpret a decline in average age of initiation as reflecting a downward shift in the propensity to use at younger ages, independent of any secular trends, and therein lies the potential confusion. Thus we have chosen to report in terms of trends in lifetime prevalence attained by each class of students as they reach different grade levels.

- Based on retrospective data provided by successive 12th-grade classes, Figure 6-1 shows trends at each grade level for lifetime use of ***any illicit drug***. All classes had a continuous increase in illicit drug involvement at all grade levels through the 1970s, a decrease in the 1980s, an increase in the 1990s, and a gradual decrease since then—at least until the classes of 2010 and 2011, which showed an increase while they were in grades 10 through 12. Fortunately, the increases in use below 7th grade were quite small. Based on the retrospective data from the 12th graders, we estimate what percentage of students had initiated the use of ***some illicit drug*** by the 10th grade. Trends in these estimates show an increase in the 1970s, a decrease over the next decade, an increase until 1999, a decline to

2009, and again an increase in recent years with a leveling in 2012. Specifically, our estimates show that 37% of 12th graders in 1975 had begun use of some illicit drugs by the 10th grade (in 1973); this number rose substantially to 52% of 12th graders in 1982 (who were in 10th grade in 1980), declined to 28% in 1993 (for 10th grade in 1991), increased through 1999, and then gradually declined to 2009 (for 10th grade in 2007). We have now documented another increase in use among 10th graders from 2007 and 2009, followed by a leveling in 2010, based on the last four years of reports by 12th graders.

- Most increases in ***any illicit drug*** use are due to increasing proportions using marijuana. This can be seen in Figure 6-2, which shows trends for each grade level in the proportion having used ***any illicit drug other than marijuana*** in their lifetime (note the change in scale). Compared with Figure 6-4 for marijuana use, these trend lines are relatively flat. The biggest cause of increases in these curves from 1978 to 1981 was the rise in reports of ***amphetamine*** use. As noted earlier, we suspect that at least some of that rise was an artifact of the improper inclusion by some respondents of nonprescription stimulants ("***look-alikes***" and "***sound-alikes***"). As shown in Figure 6-3, we see even greater stability in the proportion using illicit drugs when both marijuana and amphetamines are excluded from the calculations.

- As the top panel of Figure 6-4 shows, throughout the 1970s lifetime prevalence of ***marijuana*** use as reported by 12th-grade respondents rose steadily at all grade levels down through the 7th and 8th grades. Beginning in 1980, lifetime prevalence of marijuana use began to decline in grades 9 through 12. Declines in grades 7 and 8 began a year later, in 1981.

  There was also some small increase in marijuana use during the 1970s at the elementary school level (below 7th grade). Based on the retrospective data from 12th graders, we know that by 6th grade or lower their use rose gradually from 0.6% for the class of 1975 (who were 6th graders in 1968–1969) to a peak of 4.3% for the class of 1984 (who were 6th graders in 1977–1978). Use began dropping thereafter, and for the 12th-grade class of 1999 (who were 6th graders in 1992–1993) it was down to 1.1%. (The most up-to-date data from the 2012 eighth graders, which are slightly incomparable due to the inclusion of eventual dropouts among 8th graders, yield a prevalence estimate of 5.1% for these students when they were 6th graders in 2010.) The retrospective data from 8th graders (see bottom panel of Figure 6-4) clearly indicate that marijuana use among 6th graders increased a little after 1991, but then leveled by the mid-1990s before showing a decline in use from 2003 to 2006. Use then rose for awhile in grades 6, 7, and 8 since 2007 before leveling and/or declining in the most recent years charted from the 8th graders' answers.

  Both the top and bottom panels of Figure 6-4 show the accelerating increase in lifetime prevalence of marijuana use that began after 1991 in grades 6 through 11 (after 1992 in grade 12). The upturn in the index of any illicit drug use during the early 1990s (Figure 6-1) was due to the sharp increase in marijuana use (Figure 6-4), although the proportions using any illicit drug other than marijuana (Figure 6-2) rose modestly in the same period. The data from 8th graders suggest that the increase in marijuana use leveled off a little

earlier in the lower grades (by 1995 in grade 6 and by 1996 in grade 7) in what appears to have been a cohort effect (i.e., where specific cohorts had lower use rates in 8th grade, and these lower rates stayed with them as they progressed through high school).

- Questions about grade of first use for ***inhalants*** (unadjusted for nitrites) were introduced in 1978. The retrospective trend curves for 12th graders (top panel of Figure 6-5) show that use of inhalants generally increased throughout the 1980s, even though the use of many other drugs was decreasing. Initiation of use rose almost continually in the upper grade levels, peaking with the classes of 1989 and 1990. Lifetime prevalence showed some decline in the early 1990s, but then a resurgence into the mid-1990s in a number of lower grades. The 8th-grade class of 1996 marked the beginning point for a substantial decline in use that radiated up the grade levels consistent with a cohort effect. The Partnership for a Drug Free America introduced its anti-inhalant campaign in 1995. For more recent graduating classes, lifetime prevalence leveled as they passed through the earlier grades, and then showed some further decline.

- Retrospective data for 12th graders are available for ***nitrite*** inhalant use from 1980 to 2009 (Figure 6-6). These data do not show any of the long-term increase during the 1980s observed for the overall inhalant category; instead they show a substantial decline during the 1980s. We know that many nitrite users failed to include their nitrite use when responding to general questions about inhalant use. However, because nitrite use has dropped to a very low level, respondents' omission of nitrites has had much less effect on the adjusted inhalants statistics (not shown here) in more recent years. (Because of the very low levels of nitrite use for over a decade, the questions on their use were dropped in 2010 to make room for other questions.) The offsetting trends during the 1980s, with nitrite inhalants declining while most other forms of inhalant use were increasing, had the effect of making the inhalant index adjusted for nitrites look flat.

- Lifetime prevalence of ***hallucinogen*** use (unadjusted for underreporting of PCP) began declining among students at most grade levels in the mid-1970s (see Figure 6-7), and this gradual decline continued through most of the 1980s. The years since then have shown some fluctuations, with recent classes generally showing some decline in initiation rates, particularly during their later years in high school. The retrospective data collected from 8th graders showed some decline in lifetime prevalence after 1996. The apparent upturn in the Class of 2001 is an artifact from a change in question wording; when the term "shrooms" (a commonly used term for hallucinogenic mushrooms) was added to the list of examples in the question about use of "other hallucinogens," the absolute level of reported hallucinogen use increased somewhat, but thereafter the trend lines continued to show declines, at least until they leveled with the Class of 2009.

- Trend curves for ***LSD*** (Figure 6-8) are similar in shape (though at lower rates, of course) to the ones just discussed for the entire class of hallucinogens. The declines observed for the different grades appear to have begun in the lower grades at an earlier time, suggesting a cohort effect. The very sharp decline in LSD use after 2001 in both the 12th- and 8th-grade figures is noteworthy.

- Unlike LSD, lifetime prevalence rates for ***hallucinogens other than LSD*** (Figure 6-9) declined rather sharply from the mid-1970s through the late 1980s—particularly in the upper grades—before leveling. After 1991, use increased through about 1996; thereafter, use tended to decline somewhat unevenly. As mentioned above, the inclusion of "shrooms" in the example list beginning in 2001 resulted in higher prevalence rates, but the overall declines mostly continued. There was some bounce-back in use in 2009 and 2010 for both 8th and 12th graders, but 2011 and 2012 showed further decline especially for 12th graders.

- Retrospective questions about grade of first use for ***PCP*** were added in 1980; no questions about this drug were asked of 8th graders. However, some interesting results have emerged (see Figure 6-10). A sharp downturn in lifetime use of PCP began around 1979, with use declining substantially in all grade levels. Through 1993 or 1994, the overall lifetime prevalence rates remained very low. The early- to mid-1990s saw a brief period of modest increase in PCP use, followed by another leveling and then further decline. (Due to the very low prevalence of use for some years now, the question about first use of PCP was dropped in 2010 to make room for other questions.)

- Trends in lifetime prevalence of ***cocaine*** use at various grade levels, as estimated from the retrospective grade of initiation data, are displayed in Figure 6-11. For the 12th-grade classes, over half of cocaine initiation takes place in grades 10 through 12 rather than in earlier grades, in contrast to the pattern for marijuana in most years. Further, most of the increase in cocaine use between 1976 and 1980 occurred in grades 11 and 12, not in lower grades. After 1980, lifetime prevalence of cocaine use generally remained level through 1986, after which it showed a significant decline among 11th and 12th graders, with less of a decline in the lower grades. Lifetime prevalence rates leveled briefly after 1992 in the upper grades, but began to rise in grades 6, 7, and 8 after 1990 (see lower panel, Figure 6-11). In the upper grades, lifetime prevalence of use began to rise after 1994 or 1995, but subsequently declined—at least until the class of 2003—before leveling. In recent years, there has been some further decline in lifetime use—particularly in the upper grades. As seems to be true for a number of drugs, the increase that occurred in the early- and mid-1990s suggests a cohort effect for cocaine use, following a long period of what could best be described as secular trends. Fluctuations in the use of this drug have been greatest in the upper grades.

- Questions on grade of initial use for ***crack*** were first asked of the class of 1987. The retrospective data show the lifetime prevalence of crack falling after 1986 at all grade levels in which there was any appreciable use, stabilizing, then rising some in the early- to mid-1990s followed by a long, gradual decline through 2011 (see Figure 6-12). The Class of 2012 showed a slight uptick in crack use, but that could be due to the rate in the Class of 2011 being under-estimated. Rates reported by 8th graders showed a sharper rise in the 7th and 8th grades in the 1990s, beginning after 1992, before leveling in the late 1990s (see lower panel, Figure 6-12). Since then there has been a substantial decrease in crack initiation in 7th and 8th grades and a more modest decline among the elementary school students. Again, the pattern of change seems to be a cohort effect, with changes first occurring at earlier ages and then echoing in subsequent years up the age spectrum.

- The lifetime prevalence of ***powdered cocaine*** use fell more sharply than crack in the late 1980s (see Figure 6-13), again with the decline occurring mostly in grades 11 and 12. Cocaine powder also showed a sharper increase in use than crack during the 1990s among 12th graders, before leveling after 1998 and then declining in more recent years. Eighth-grade use also rose sharply in the 1990s, and has shown some considerable decline in more recent classes.

- Though somewhat difficult to discern in Figure 6-14, the ***heroin*** lifetime prevalence figures for grades 9 through 12 began declining in the mid-1970s, leveled by 1979, and showed no clear evidence of reversal until the 1990s. After about 1991, lifetime prevalence of use increased at all grade levels above 6th grade. Beginning in 1996 or 1997, however, use leveled or declined in all grades for which data are available. Seventh and 8th graders were the first to show that more recent decline. According to the data from 12th graders, the classes of 2010 and 2011 showed some increase starting when they were in 10th grade—in other words in 2007 and 2008—which is consistent with the increase in past year heroin use observed among 12th graders in 2010 (although lifetime use leveled in the class of 2011). However, no grade showed any increase in lifetime prevalence in 2012; in fact, both 8th and 12th graders showed a decline in 2012.

- The lifetime prevalence of use of ***narcotics other than heroin*** remained relatively flat at all grade levels from the mid-1970s through 1990, with the class of 1991 showing the first evidence of a decline when they reached the upper grades (see Figure 6-15). Rates then leveled briefly before showing some increase in the mid-1990s, particularly in the upper grades. The class of 1998 was the first to show a leveling for this class of drugs, as well as several others, as they passed through the various grade levels. Little further change was observed in the initiation of narcotics other than heroin until the class of 2002 showed a slight upturn. (Note that the dashed lines beginning in 2002 are based on data from a modified question that continued to ask about the use of "any narcotics other than heroin," but with the additional examples of Vicodin and OxyContin included in the question. This wording change had the effect of shifting self-reported use up some in the upper grades.) Since the class of 2003, initiation rates have remained quite stable, with little indication that this troublesome form of drug use is receding, at least until the class of 2012. This class has shown lowered lifetime prevalence from grade 8 on.

- The lifetime prevalence statistics for ***amphetamines*** showed a sharp rise in the late 1970s in virtually all cohorts and grade levels (see Figure 6-16). As stated earlier, we believe that most of this upturn was artifactual, caused by the inappropriate inclusion of nonprescription stimulants by 12th-grade respondents. The data from revised questions with improved wording showed the class of 1983 as the first to give an indication of a reversal of this trend. Data from the classes of 1982–1992, based on the revised question, suggest that lifetime prevalence of amphetamine use leveled around 1982 and thereafter fell appreciably in grades 9 through 12. The classes of 1993 and 1994 showed a slight upturn in use in the upper grades as amphetamine use, along with use of several other illicit drugs, increased. Since then amphetamine initiation rates have fluctuated, declining for several years, but showing signs of increase in two recent graduating classes before leveling in the Class of 2012. The surveys of 8th and 10th graders also show that some

upturn occurred after 1992. The lower panel of Figure 6-16 shows an increase in grade 7, as well, which began after 1991 and lasted through 1995 (and 1996 for grade 8). Once again, the pattern of change in the 1990s is consistent with a cohort-related change. Eighth graders have shown a gradual decline in initiation for some years, reflected primarily in their 7th- and 8th-grade retrospective lifetime prevalence rates; they have not shown any increase in recent years, unlike the 12th-grade classes.

- The trend stories for the two subclasses of sedatives—methaqualone versus most other sedatives (including barbiturates)—have been quite different from each other (see Figures 6-17 and 6-18). Lifetime prevalence of most ***sedative*** (***barbiturate***) use fell sharply for the upper grade levels for all classes from 1974 or 1975 until the late 1970s; the lower grade levels showed some increase in the late 1970s (perhaps reflecting the advent of some look-alike, barbiturate-type drugs); in the mid-1980s, most grade levels resumed the rather steep decline in sedative (barbiturate) initiation. In the late 1980s rates leveled, followed by an upturn by the mid-1990s at all grade levels. This upturn seems to have leveled off with the class of 2005 as they passed through the different grades. (A slightly revised question wording was introduced in 2004, making a 2003-to-2004 comparison difficult.) Since the class of 2005, some decline has been observed in the upper three grades as subsequent cohorts have passed through them. Despite the long-term increase in sedative initiation rates from the early 1990s through the early 2000s, the rates attained were not as high as they were in the mid-1970s (Figure 6-17). This was true for amphetamines, also.

- During the mid-1970s, ***methaqualone*** use started to fall off at about the same time as sedative use generally in nearly all grades, but dropped rather little and then flattened (see Figure 6-18 and note the enlarged scale). Between 1978 and 1981, there was a moderate resurgence in methaqualone use at all grade levels; but after 1982 there emerged a sharp decline at all grades to near zero by the early 1990s. Only a very slight increase in initiation occurred in the mid-1990s, when the use of most other drugs was rising, and use has fallen back some since then to very low levels. The pattern of change suggests that cohort effects were occurring with this drug, as with many of the others.

- Lifetime prevalence of ***tranquilizer*** use (Figure 6-19) also began to decline at all grade levels in the mid-1970s. Overall, it would appear that the tranquilizer trend lines have been following a course similar to those of sedatives (barbiturates). So far, the curves are different only in that tranquilizer use continued a steady decline among 11th and 12th graders after 1977 (at least through the class of 1990), while the decline in sedative (barbiturate) use was interrupted in the early 1980s. After 1992, lifetime prevalence of tranquilizer use rose slightly in grades 8 and above; then the classes of 2000 and 2001 reported slightly decreased initiation rates, and those rates have been fairly level since then. In 2001, when Xanax was added to the list of examples in the question text, reported use of tranquilizers increased in all grades. Since the class of 2001, tranquilizer use (based on the modified question) has shown some slight decline in most grades. Retrospective data reported by 8th graders show a modest decline in most grades since the mid-1990s.

- The trend lines for lifetime prevalence of ***alcohol*** use (Figure 6-20) were mostly flat in the upper grades from the early 1970s to the mid-1980s, though there was some gradual increase during that period in grades 8 through 10. After around 1986 the lifetime prevalence rates all began what would turn out to be a long-term decline, interrupted briefly by a leveling during the 1990s. Because the results from the classes of 1993 through 2012 are based on the revised question about alcohol use—which qualifies the question with the phrase "more than just a few sips"—these data are not strictly comparable to earlier trend data. These more recent classes of 12th graders continued to show a very gradual decline in initiation rates through 2012. The lower panel of Figure 6-20, based on data from 8th-grade respondents, also shows a gradual, steady decline in lifetime prevalence of use from the late 1980s through 2012 for most grades. The proportional declines in alcohol initiation, especially among 7th and 8th graders, have been substantial (lower panel of Figure 6-20).

  In 1986, we began asking 12th graders about the first time they drank "enough to feel drunk or very high." Figure 6-21 shows patterns for having ***been drunk*** that are fairly similar to those for lifetime prevalence of alcohol use. The classes of 1990 through 1993 showed modest declines in this behavior at all grade levels above 6th grade for a few years, before leveling. Further gradual decline across grades 9 through 12 was seen beginning with the class of 2002 and ending with the Class of 2011. In 2012, lifetime prevalence of self-reported drunkenness rose among 12th graders. Responses from 8th graders reveal a fairly steady decline in lifetime incidence of drunkenness in the lower grades throughout most of the 1990s and into the 2000s, consistent with their gradually increasing rate of abstention mentioned previously.

- In 1986 we began asking 12th graders: "When did you smoke your first cigarette?" Figure 6-22 shows that, for the class of 1986, the rate of ***cigarette smoking*** initiation was quite high (20%) by grade 6.[79] In subsequent classes, this measure fell gradually but substantially; only 5% of the class of 2012 reported having initiated cigarette smoking by the end of 6th grade—more than a two-thirds drop from the 1980 rate noted above.

  Substantial additional initiation occurs in grades 7 and 8, as can be seen in the upper panel of Figure 6-22. Over 40% of the class of 1986 had smoked a cigarette by the end of 8th grade, compared to 15% of the class of 2012. Initiation rates declined very gradually in the classes of 1986 through 1992 from grade 6 onward. The classes of 1994 through 1999 showed some increase in initiation rates when these students were in grades 10 through 12, but only the classes of 1997 through 1999 showed an increase in the lower grades. This altered pattern is suggestive of a change in the underlying phenomenon, from the traditional cohort effect for cigarettes to some secular trending, as well. Data gathered from 8th-grade respondents also show some increase in lifetime prevalence from when they were first surveyed in 1991 through 1996; again, this increase was not

[79]Because of the predominance of cohort effects in the trends in cigarette use, we discuss the findings here mostly in terms of graduating classes instead of calendar years.

observable when they were at lower grade levels—in fact, the lower grades showed some fall-off in initiation rates in the late 1980s and early 1990s.

The important decline in teen smoking that began in the mid-1990s can be seen in the lower panel of Figure 6-22, based on responses from 8th-grade students. This figure also shows evidence of a secular trend, in that the sharp decline since 1996 at 8th grade is not much reflected in the retrospective data for earlier grades until the 8th-grade class of 2002. After a sharp drop, the rate of decline in smoking initiation by 8th grade decelerated across about five classes until both the 8th- and 12th-grade classes of 2011 showed a sharper decline, likely due at least in part to an increase in federal tobacco taxes the prior year. In 2012 the decline among 12th graders halted, but it continued among 8th graders.

- Figure 6-23 presents the lifetime prevalence of cigarette smoking "on a daily basis," a measure included since the beginning of MTF in 1975. It shows that lifetime initiation rates for ***daily smoking*** began to peak at the lower grade levels in the early to mid-1970s. This peaking did not become apparent among 12th graders until some years later. In essence, these changes largely represent cohort effects. Differences between cohorts in smoking at early ages tend to endure in later life, most likely due to the addictive properties of smoking. The decline seen in the early 1970s among younger teens may well have reflected the effects of the Federal Communications Commission's fairness doctrine, which had the effect of greatly diminishing cigarette advertising on television for some time, followed by the Congressional ban on all cigarette advertising on television and radio starting in January, 1971.

  The classes of 1982 and 1983 showed some leveling of the previous decline in daily smoking, but the classes of 1984 through 1986 resumed the decline for the earlier grade levels. The data from the classes of 1987 and 1988 showed another pause in the decline. As we have said, from the class of 1975 through the class of 1992, the predominant pattern of change observed was that of a cohort effect.[80] Each peak or valley in the prevalence-of-use rate at a lower grade was echoed at higher grades as the class cohorts passed through them. After 1992, however, a somewhat different pattern emerged—one more akin to a secular trend—in which all of these age groups moved in parallel during the same historical period. Figure 6-23 shows that all grade levels above 6th grade displayed a sharp increase in initiation rates from 1991 or 1992 through 1995 or 1996. The lower grades seem to be exhibiting the resumption of a cohort-effect pattern starting with the 8th-grade class of 1997. It should be noted that the presence of a secular trend effect does not necessarily negate the presence of a cohort effect; the two can co-occur. The class of 1998 was the first to show a leveling, when they were in the lower grades, and then a decline by the time they reached the upper grades. In the past few years, a downward secular trend has been observed in all grades, though a decelerating one, with 8th graders in 2007 showing a sharper decline. The 2008 and 2009 data showed some

[80]This interpretation has been documented through multivariate analyses designed to separate and quantify secular trends, age effects, and cohort effects. See O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1988). Period, age, and cohort effects on substance use among young Americans: A decade of change, 1976–1986. *American Journal of Public Health, 78,* 1315–1321.

further drop among 8th graders, though the decline decelerated again and leveled with the 8th-grade class of 2010.

- Questions about ***smokeless tobacco*** initiation (Figure 6-24) were first asked of 12th graders in the class of 1986. These prevalence questions were dropped from the 1990 and 1991 surveys of 12th graders, but reinstated in 1992. The 1986–1989 survey questions were located near the end of one questionnaire form; the questions since 1992 have been relocated so they appear early in the form. As a result, estimates based on two versions are not strictly comparable, and it may be misleading, therefore, to connect the two trend lines. Both sets of trend lines, however, clearly demonstrate that smokeless tobacco use, like cigarette use, shows strong evidence of enduring cohort effects.

  Smokeless tobacco use appears to have increased prior to the class of 1986, but the trend reversed in the 12th-grade classes following 1987 (see Figure 6-24). The decline seemed to continue in the classes of 1992 through 2004. The lower panel in Figure 6-24 shows a general pattern of continuing decline for 8th graders at the lower grade levels in more recent years; a pause in the decline from 1993 to 1996 echoes a similar pause for 12th graders in those years, suggestive of an upward secular trend parallel to the one for cigarettes. For 12th-graders in 2001 through 2004, a sharp decline in smokeless tobacco initiation is observed in all grades as these students progressed through them; that decline continued, albeit less sharply, until the class of 2007, which showed a leveling, followed by a turnaround in subsequent 12th-grade classes. The turnaround is not visible in the lower grades below 8th grade, however, in either the lower or upper panels.

- Because data on grade of first use for ***steroids*** were not gathered until 1990, the trend information is somewhat more limited (Figure 6-25). However, the data do show some of the pattern characteristics of cohort change predominating over secular trends. Initiation of use declined some between the classes of 1989 and 1991, followed by a leveling.[81] Only a small amount of variation in initiation occurred at 8th and 10th grades. The data from both 8th- and 12th-grade students, however, show an increase in use in the late 1990s—an increase that looks more like a secular trend than a cohort effect. This would be consistent with our interpretation that knowledge of androstenedione use by the famous baseball player Mark McGwire became widespread in 1998 and served to stimulate steroid use among 8th and 10th graders. Data from 8th graders generally show declines in use, at least in grades 7 and 8, since the 8th-grade class of 2000 passed through these grades. Twelfth-grade classes since the class of 2002 likewise showed a general pattern of decline in initiation at 12th grade following a prior period of increase, at least until the class of 2012, which showed a leveling. (That leveling was not reflected in grades 10 and 11 as the Class of 2012 passed through them.) The data from 8th graders show a rather steady decline in initiation by 7th and 8th graders from around 2000 through 2011.

[81]Note that the scale in Figure 6-25 has been enlarged considerably because the rates are so low. This has the effect of making small variations look larger.

TABLE 6-1
Incidence of Use of Various Drugs by Grade for 8th Graders, 2012

(Entries are percentages.)

Grade in which drug was first used:	Marijuana	Inhalants	Hallucinogens	LSD	Hallucinogens other than LSD	Cocaine	Crack	Cocaine Powder	Heroin	Amphetamines	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)[a]	Smokeless Tobacco	Steroids
4th (or below)	0.9	2.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.1	3.6	0.6	2.6	0.2	1.2	0.2
5th	1.1	1.5	0.2	0.0	0.2	0.1	0.0	0.1	0.0	0.2	0.2	3.7	0.6	2.4	0.2	0.8	0.1
6th	3.1	2.8	0.5	0.1	0.4	0.4	0.2	0.3	0.2	0.7	0.6	6.4	2.0	3.6	0.5	1.6	0.2
7th	4.8	3.2	1.0	0.5	0.8	0.6	0.3	0.5	0.2	1.5	0.8	8.8	4.4	4.4	1.0	2.6	0.3
8th	5.3	2.0	1.0	0.6	0.8	0.7	0.4	0.6	0.3	1.7	1.3	6.8	5.0	2.6	0.8	1.8	0.5
Never used	84.8	88.2	97.2	98.7	97.7	98.1	99.0	98.4	99.2	95.5	97.0	70.5	87.2	84.5	97.3	91.9	98.8

Source. The Monitoring the Future study, the University of Michigan.

Notes. All drugs were asked about in all four forms except for the following: hallucinogens, LSD, hallucinogens other than LSD, heroin, amphetamines, tranquilizers, and smokeless tobacco, which were asked about in only two forms. The approximate *N* for all forms was 15,100.

[a]Data based on the percentage of regular smokers (ever).

TABLE 6-2
Incidence of Use of Various Drugs by Grade for 10th Graders, 2012

(Entries are percentages.)

Grade in which drug was first used:	Marijuana	Inhalants	Hallucinogens	LSD	Hallucinogens other than LSD	Cocaine	Crack	Cocaine Powder	Heroin	Amphetamines	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily) [a]	Smokeless Tobacco	Steroids
4th (or below)	0.7	1.1	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.1	2.7	0.4	2.5	0.1	0.8	0.1
5th	0.9	0.7	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.2	0.0	1.8	0.4	1.7	0.1	0.8	0.0
6th	2.1	1.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	4.4	1.5	2.6	0.4	1.1	0.1
7th	3.9	1.8	0.4	0.1	0.3	0.3	0.2	0.2	0.2	0.8	0.8	7.6	3.3	4.5	0.7	1.9	0.1
8th	7.3	2.0	0.7	0.4	0.7	0.6	0.2	0.6	0.3	1.4	1.1	13.2	7.2	5.7	1.1	3.1	0.2
9th	12.3	2.0	2.0	1.1	1.7	1.0	0.4	0.9	0.3	3.7	2.3	17.5	13.9	7.4	2.1	4.9	0.4
10th	6.6	0.9	1.6	0.7	1.5	1.0	0.3	1.0	0.1	2.3	1.7	6.7	8.0	3.3	1.6	2.9	0.5
Never used	66.2	90.1	94.8	97.4	95.5	96.7	98.6	97.0	98.9	91.1	93.7	46.0	65.4	72.3	93.8	84.6	98.7

Source. The Monitoring the Future study, the University of Michigan.

Notes. All drugs were asked about in all four forms except for the following: hallucinogens, LSD, hallucinogens other than LSD, heroin, amphetamines, tranquilizers, and smokeless tobacco, which were asked about in only two forms. The approximate *N* for all forms was 15,000.

[a]Data based on the percentage of regular smokers (ever).

TABLE 6-3
Incidence of Use of Various Drugs by Grade for 12th Graders, 2012

(Entries are percentages.)

Grade in which drug was first used:	Any Illicit Drug	Any Illicit Drug other than Marijuana	Marijuana	Inhalants[a]	Hallucinogens[a]	LSD	Hallucinogens other than LSD	Cocaine	Crack	Other Forms of Cocaine	Heroin	Narcotics other than Heroin	Amphetamines[b]	Sedatives (Barbiturates)	Methaqualone	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)[c]	Smokeless Tobacco	Steroids
6th (or below)	2.1	1.4	1.6	0.9	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.5	0.6	0.7	0.1	0.3	4.7	1.3	5.3	0.4	1.4	0.1
7th–8th[d]	9.1	2.4	8.4	2.3	0.8	0.4	0.7	0.5	0.5	0.4	0.3	1.0	1.5	0.8	0.3	0.8	15.8	9.0	9.6	1.7	3.2	0.3
9th	11.5	5.0	10.4	1.8	1.2	0.6	1.0	0.7	0.4	0.9	0.2	2.3	1.9	1.5	0.0	1.4	15.9	12.2	8.7	2.7	3.7	0.4
10th	11.5	5.6	10.7	0.8	1.7	0.9	1.5	0.7	0.2	0.5	0.1	3.2	2.6	1.4	0.1	2.4	13.5	12.1	6.6	2.6	3.9	0.2
11th	8.5	5.2	8.2	1.5	1.8	0.8	1.7	1.2	0.3	1.1	0.2	2.7	3.2	1.3	0.1	1.9	12.4	11.9	5.8	2.3	2.7	0.4
12th	6.4	4.3	5.9	0.6	1.7	0.9	1.6	1.4	0.4	1.3	0.1	2.5	2.3	1.2	0.1	1.7	7.2	7.7	3.7	1.7	2.4	0.4
Never used	50.9	75.9	54.8	92.1	92.5	96.2	93.4	95.1	97.9	95.6	98.9	87.8	88.0	93.1	99.2	91.5	30.6	45.8	60.5	88.6	82.6	98.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. Percentages are based on two of the six forms (*N* = approximately 4,600) except for cocaine, crack, and cigarettes, for which percentages are based on three of the six forms (*N* = approximately 6,900); and inhalants, other forms of cocaine, methaqualone, and steroids, for which percentages are based on one of the six forms (*N* = approximately 2,300).

[a]Unadjusted for known underreporting of certain drugs. See text for details.

[b]Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

[c]Data based on the percentage of regular smokers (ever).

[d]For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

TABLE 6-4
Incidence of Use of Various Drugs: A Comparison of Responses from 8th, 10th, and 12th Graders, 2012

Grade level of respondents:	Marijuana	Inhalants[a]	Hallucinogens[a]	LSD	Hallucinogens other than LSD	Cocaine	Crack	Other Cocaine	Heroin	Amphetamines[b]	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)[c]	Smokeless Tobacco	Steroids
Percentage who used by end of 6th grade																	
8th	5.1	6.6	0.8	0.3	0.7	0.6	0.4	0.5	0.3	1.3	0.9	13.8	3.3	8.6	0.9	3.7	0.4
10th	3.7	3.0	0.4	0.3	0.3	0.4	0.3	0.3	0.2	0.7	0.3	8.9	2.3	6.8	0.7	2.7	0.1
12th	1.6	0.9	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.6	0.3	4.7	1.3	5.3	0.4	1.4	0.1
Percentage who used by end of 8th grade																	
8th	15.2	11.8	2.8	1.3	2.3	1.9	1.0	1.6	0.8	4.5	3.0	29.5	12.8	15.5	2.7	8.1	1.2
10th	14.9	6.9	1.6	0.8	1.3	1.3	0.7	1.1	0.6	2.9	2.2	29.7	12.8	17.0	2.5	7.7	0.4
12th	10.0	3.2	1.1	0.6	0.9	0.9	0.7	0.7	0.5	2.1	1.1	20.4	10.2	14.9	2.1	4.5	0.4
Percentage who used by end of 10th grade																	
10th	33.8	9.9	5.2	2.6	4.5	3.3	1.4	3.0	1.1	8.9	6.3	54.0	34.6	27.7	6.2	15.4	1.3
12th	31.1	5.8	4.0	2.1	3.3	2.3	1.4	2.1	0.8	6.5	4.8	49.7	34.6	30.1	7.4	12.2	1.0

Source. The Monitoring the Future study, the University of Michigan.

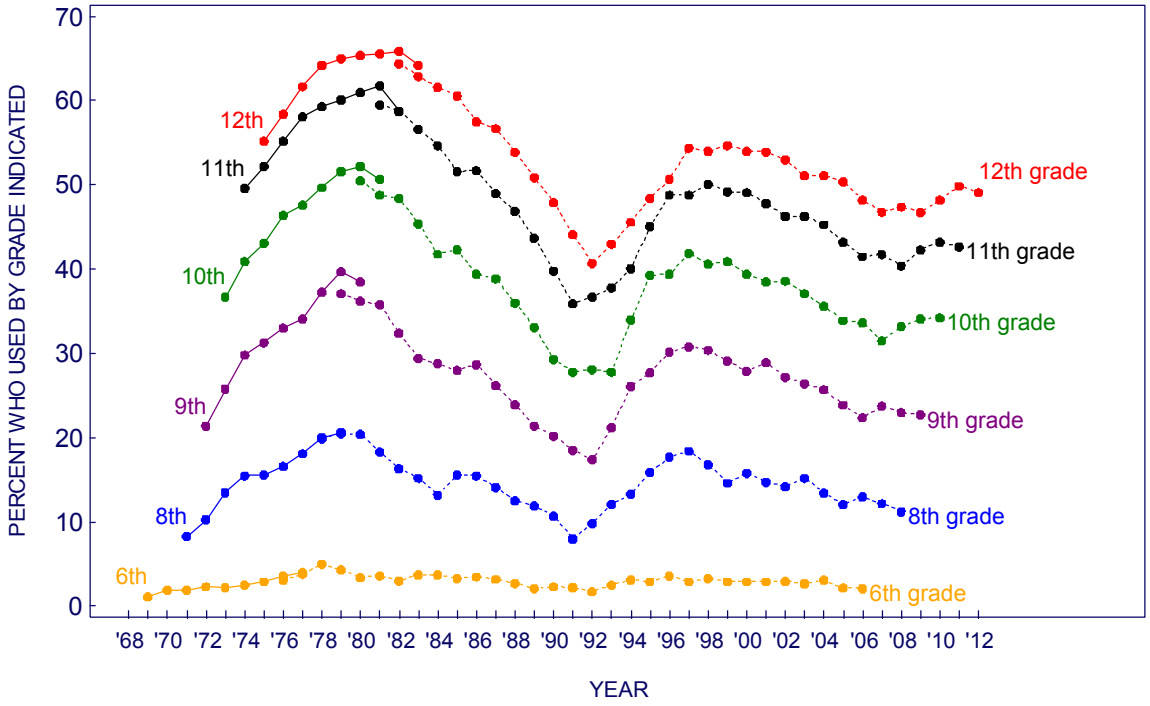
Notes. For 8th and 10th graders, all drugs were asked about in all four forms except for the following: hallucinogens, LSD, hallucinogens other than LSD, heroin, amphetamines, tranquilizers, and smokeless tobacco, which were asked about in only two forms. The approximate *N* for all forms was 15,100 for 8th graders and 15,000 for 10th graders. For 12th graders, percentages are based on two of six forms (*N* = approximately 4,600) except for cocaine, crack, and cigarettes, for which percentages are based on three of six forms (*N* = approximately 6,900); and inhalants, other forms of cocaine, and steroids, for which percentages are based on one of six forms (*N* = approximately 2,300).

[a]Unadjusted for underreporting of certain drugs. See text for details.

[b]Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

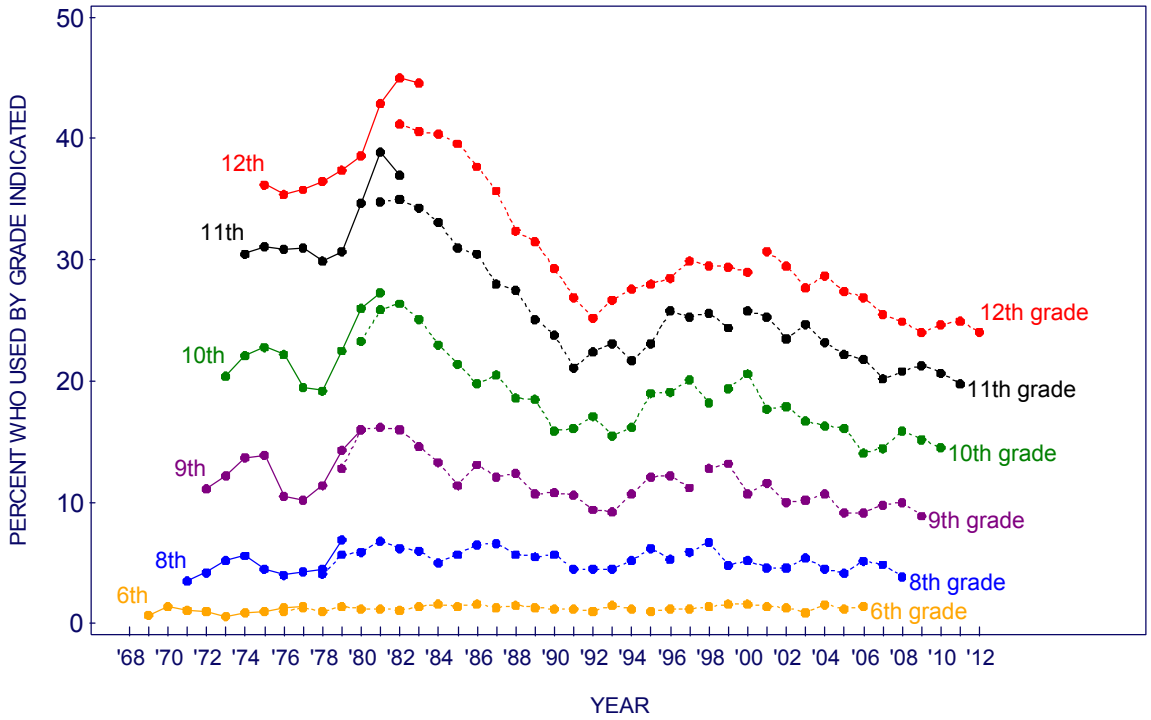
[c]Data based on the percentage of regular smokers (ever).

FIGURE 6-1
Any Illicit Drug
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th Graders



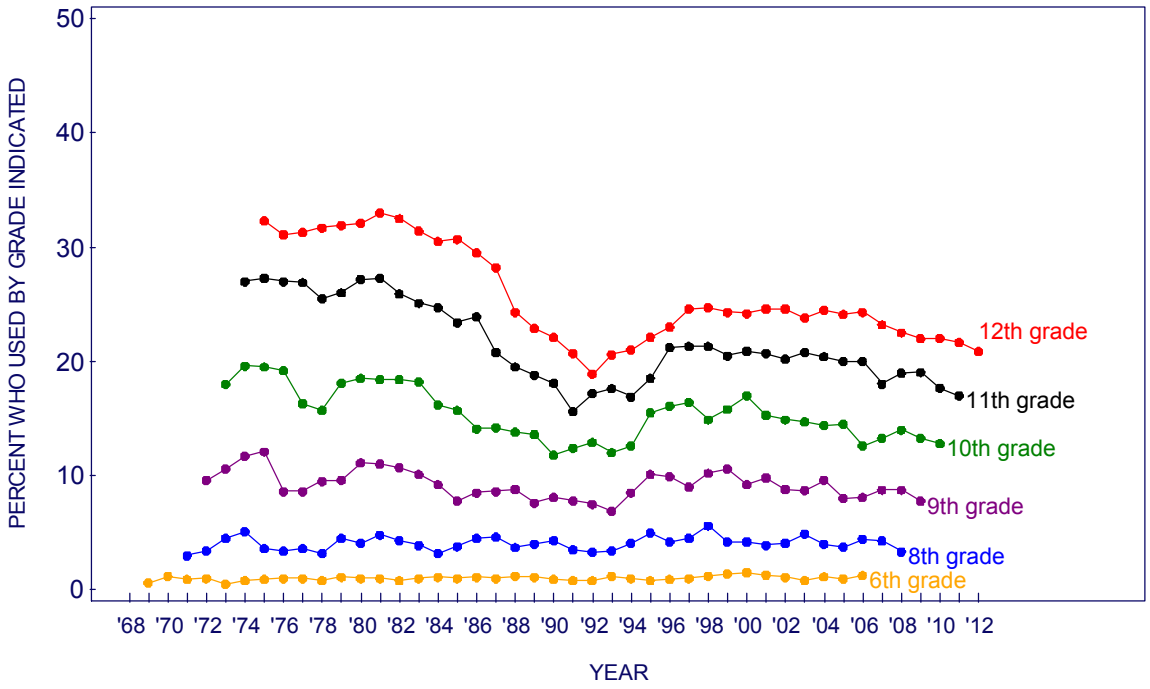
Source. The Monitoring the Future study, the University of Michigan.
Note. The dashed lines connect percentages that result if nonprescription stimulants are excluded.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-2
Any Illicit Drug other than Marijuana
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th Graders



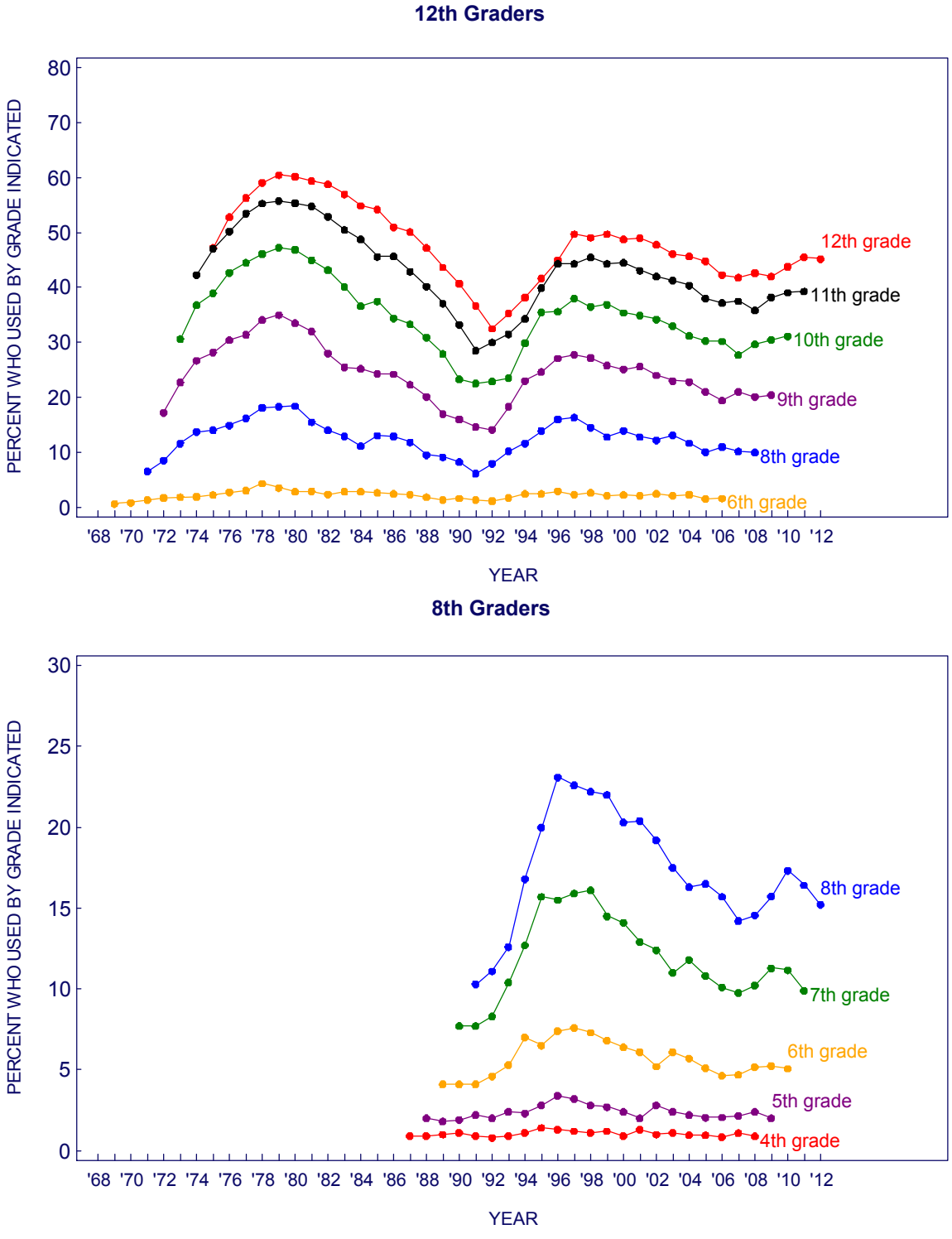
Source. The Monitoring the Future study, the University of Michigan.
Notes. The dashed lines connect percentages that result if nonprescription stimulants are excluded.
Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. Beginning in 2001, the dashed lines also connect percentages that are based on data from the revised questions.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-3
Any Illicit Drug other than Marijuana or Amphetamines
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th Graders



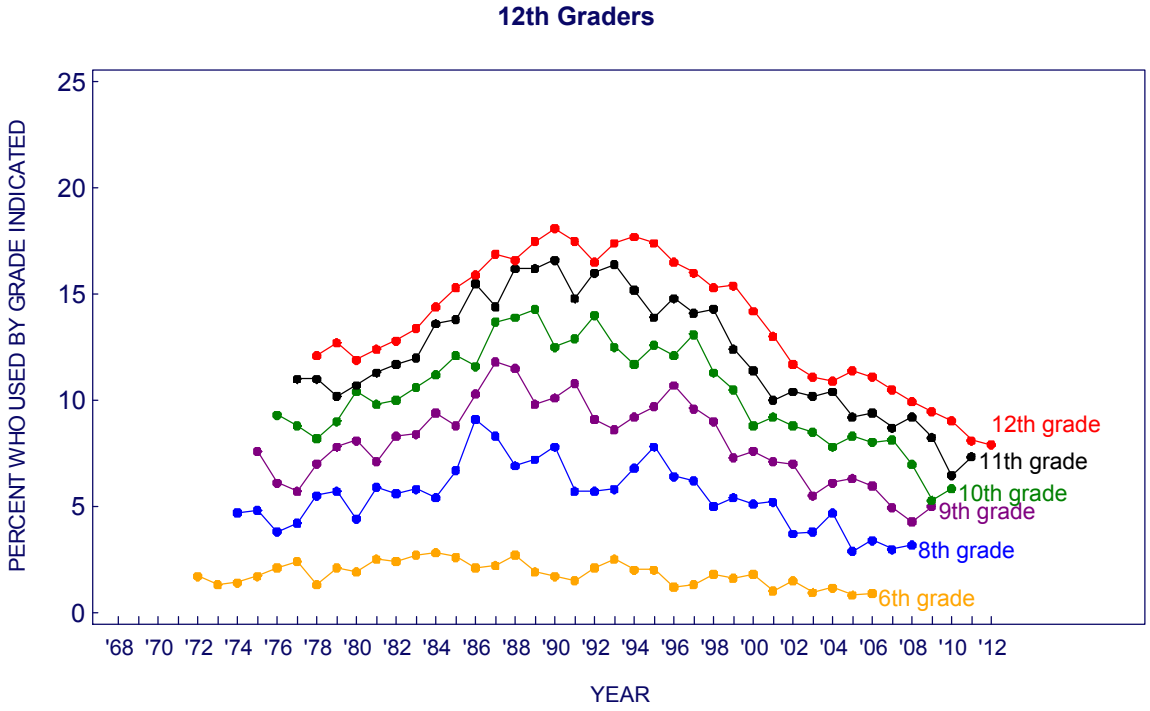
Source. The Monitoring the Future study, the University of Michigan.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

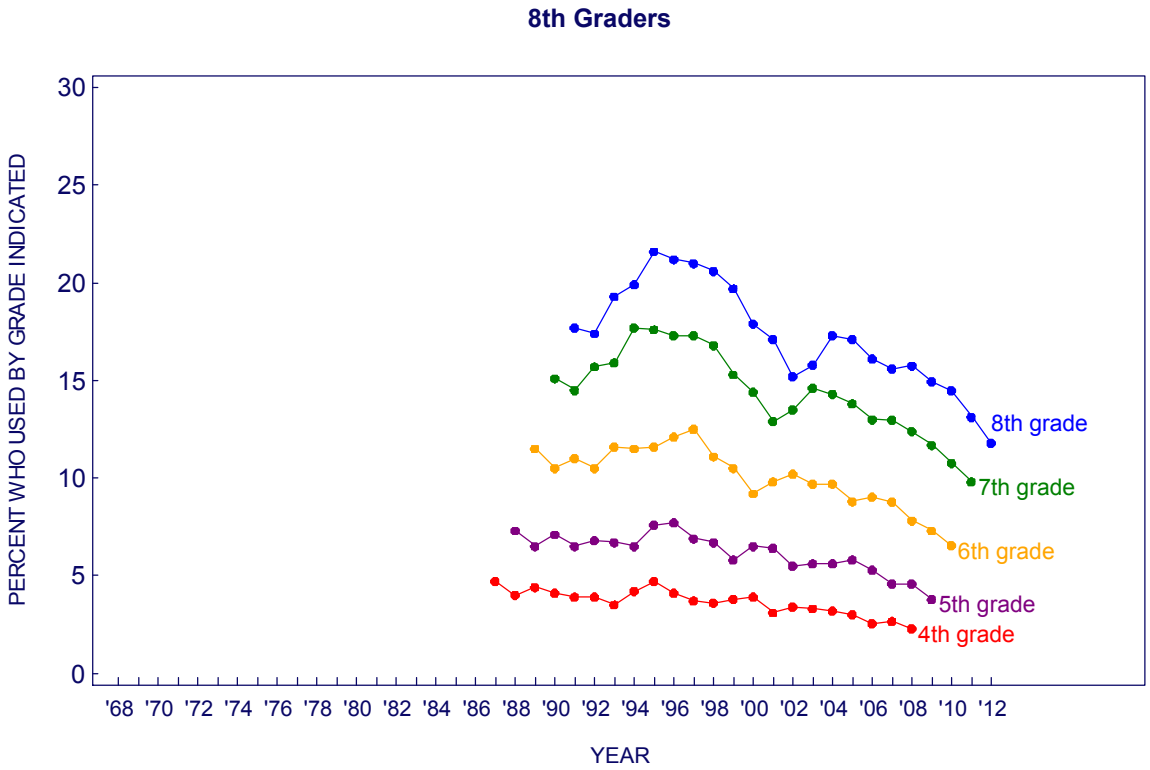
FIGURE 6-4
Marijuana
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders



Source. The Monitoring the Future study, the University of Michigan.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

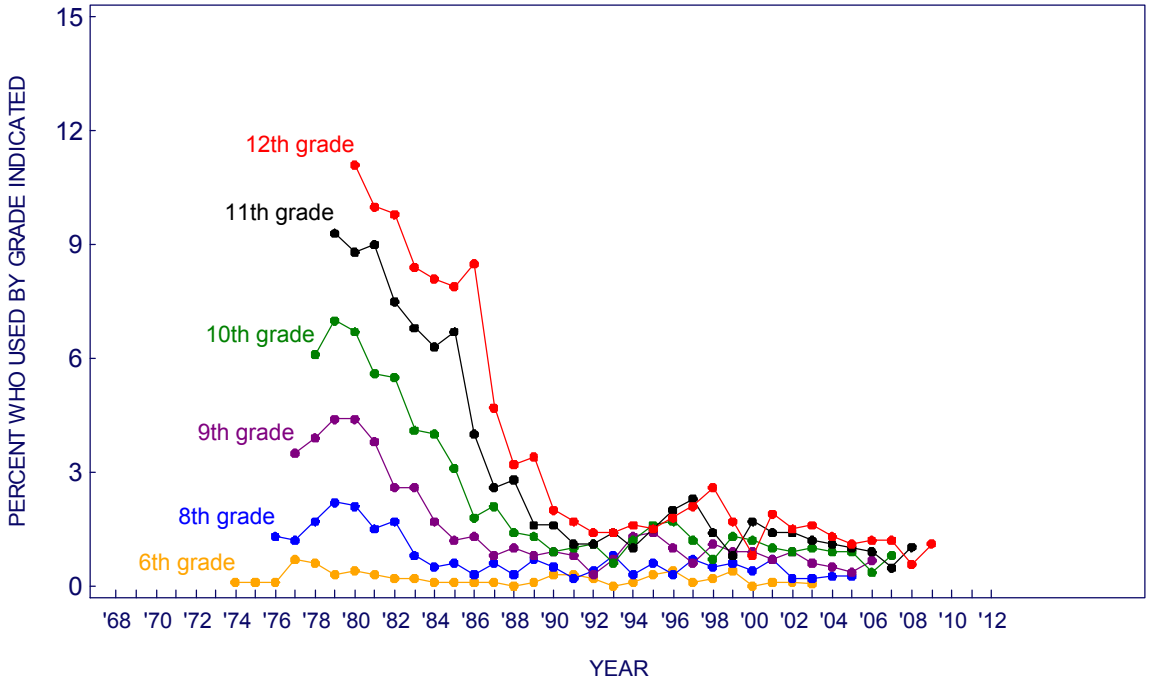
FIGURE 6-5
Inhalants
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders





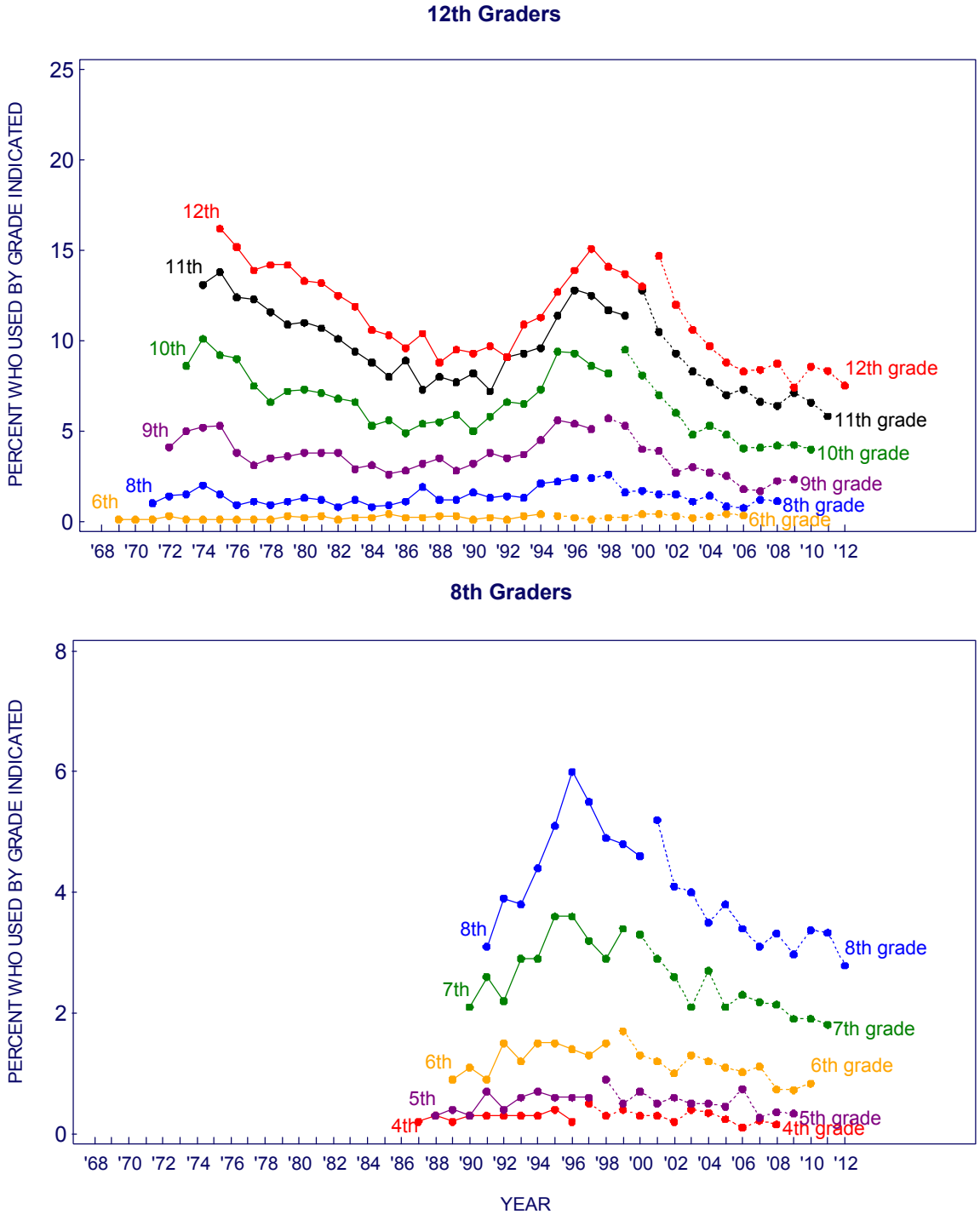
Source. The Monitoring the Future study, the University of Michigan.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-6
Nitrites
Trends in Lifetime Prevalence at Earlier Grade Levels* based on Retrospective Reports from 12th Graders



Source. The Monitoring the Future study, the University of Michigan.
Notes. Question discontinued in 2010.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-7
Hallucinogens
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders



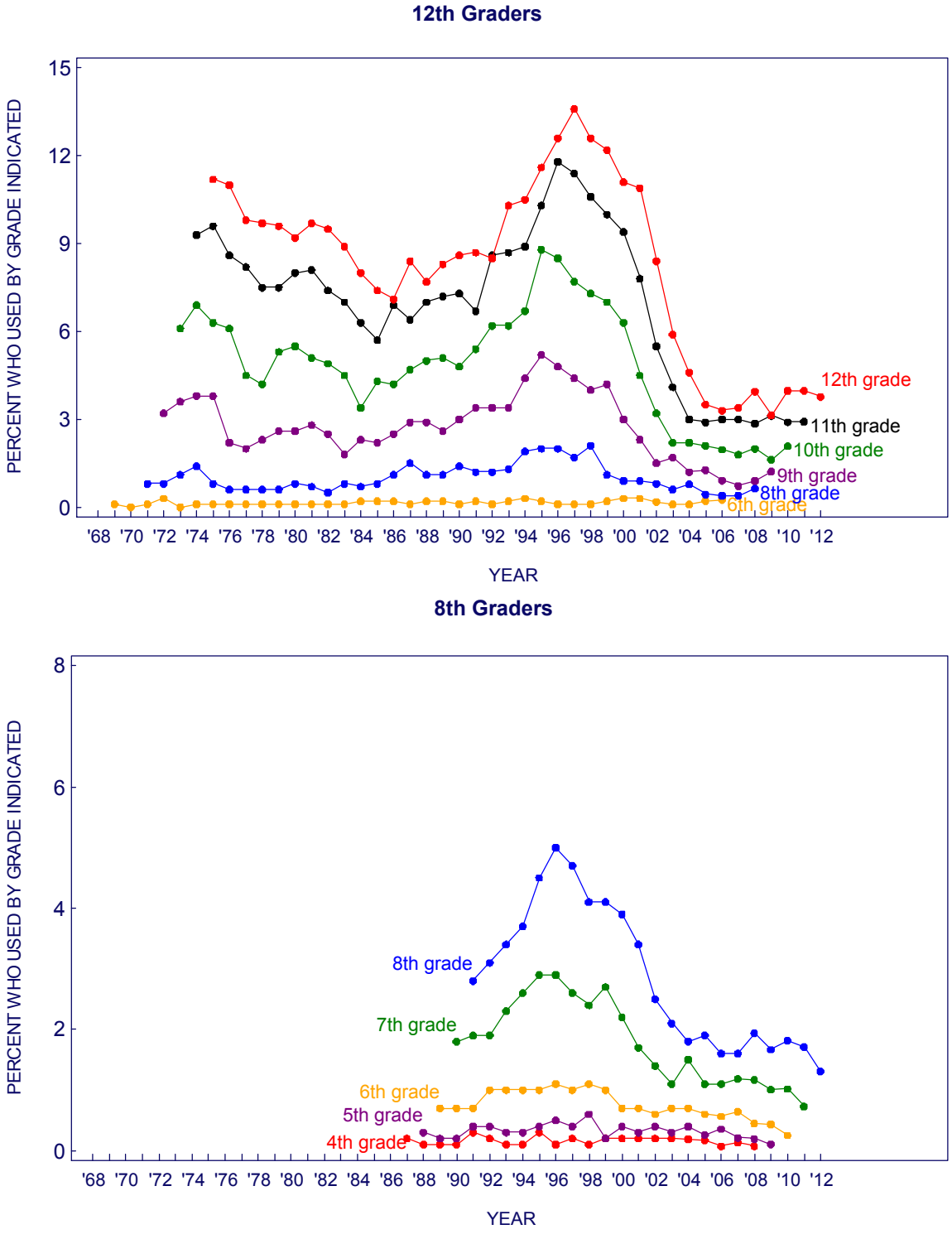
Source. The Monitoring the Future study, the University of Michigan.

Notes. Hallucinogens unadjusted for any underreporting of PCP are graphed here.

Beginning in 2001, revised sets of questions on other hallucinogen use were introduced. Data for hallucinogens are affected by these changes. The dashed lines connect percentages that are based on data from the revised questions.

*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

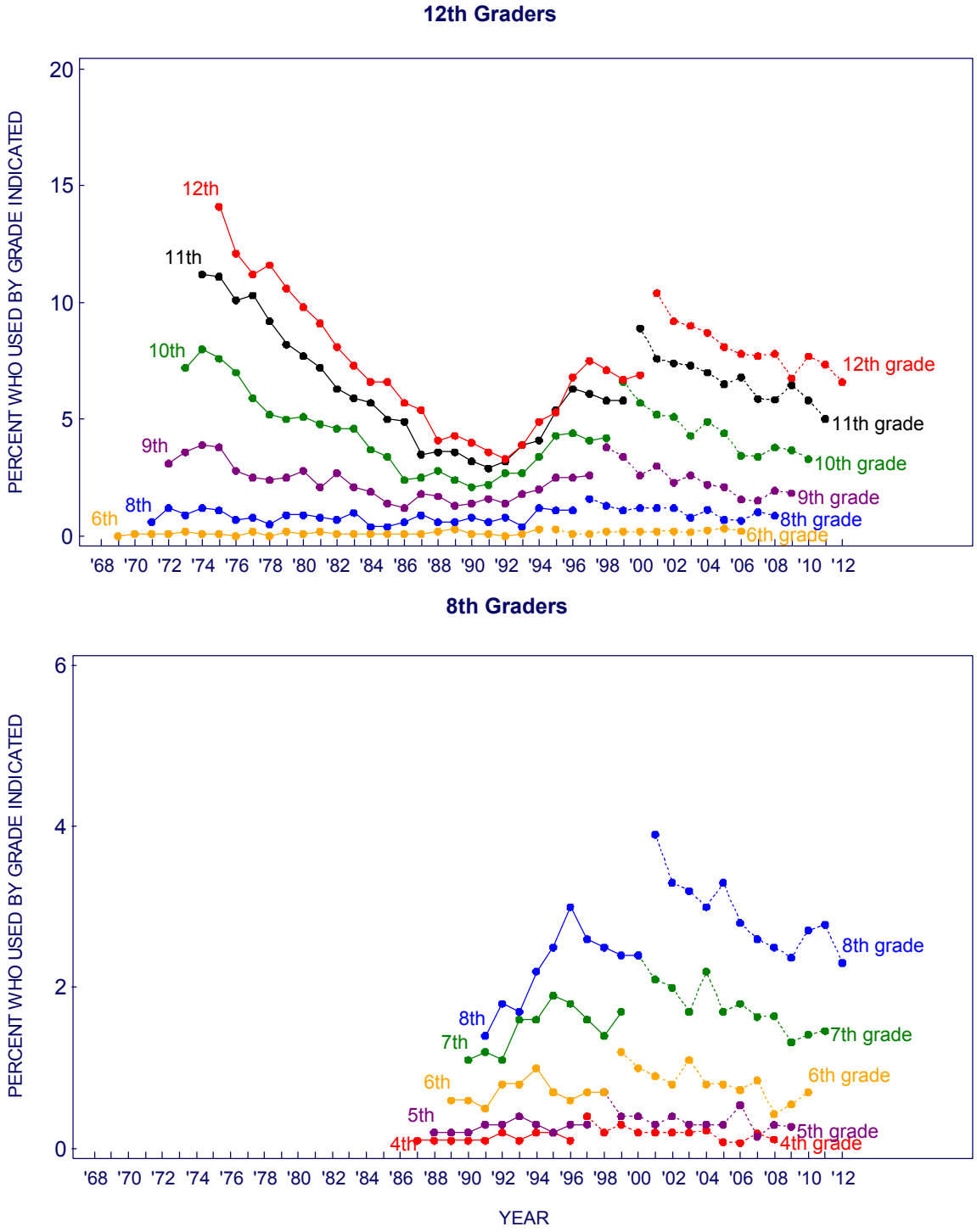
FIGURE 6-8
LSD
Trends in Lifetime Prevalence at Earlier Grade Levels* based on Retrospective Reports from 12th and 8th Graders



Source. The Monitoring the Future study, the University of Michigan.

*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-9
Hallucinogens other than LSD
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders

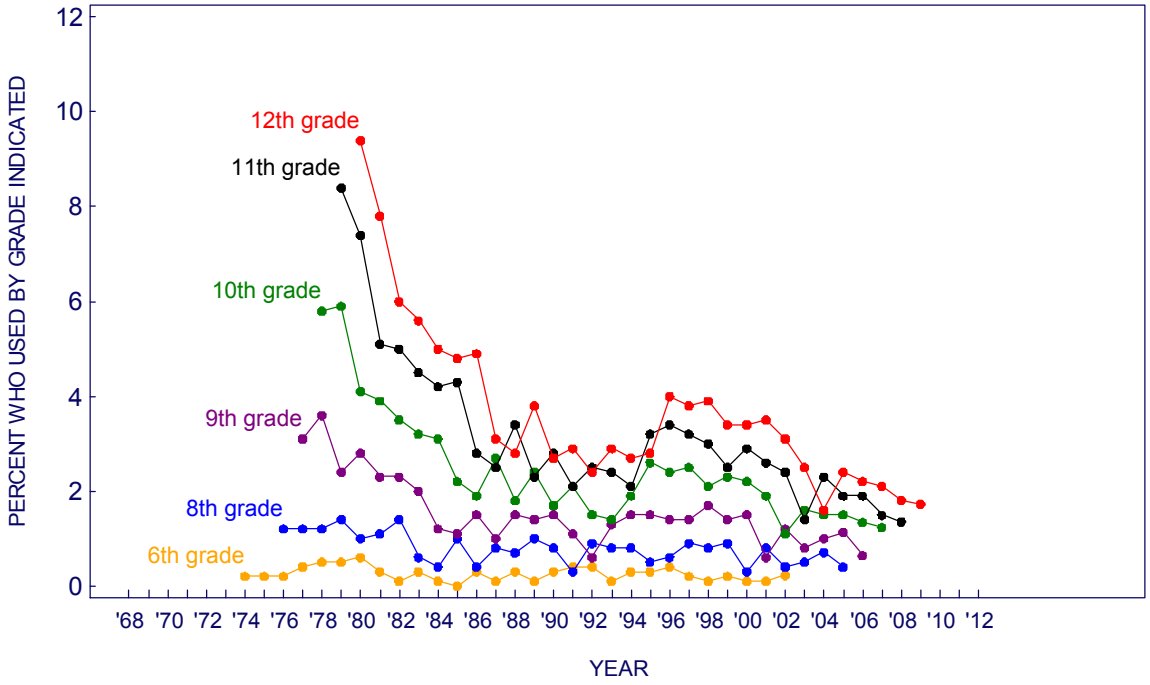


Source. The Monitoring the Future study, the University of Michigan.

Notes. Beginning in 2001, revised sets of questions on hallucinogens other than LSD were introduced, in which other psychedelics was changed to other hallucinogens and shrooms was added to the list of examples. The dashed lines connect percentages based on data from the revised questions.

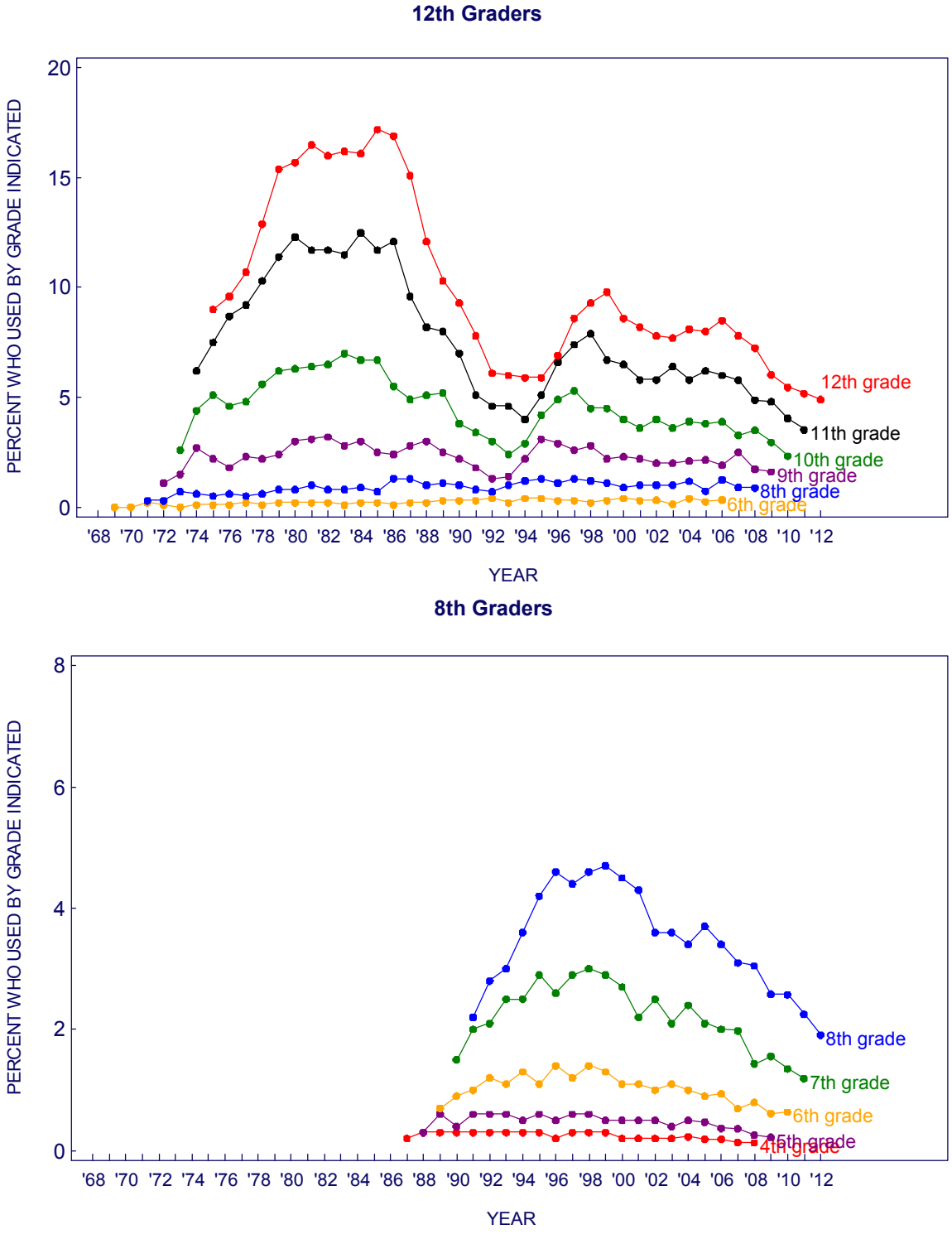
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-10
PCP
Trends in Lifetime Prevalence at Earlier Grade Levels* based on Retrospective Reports from 12th Graders



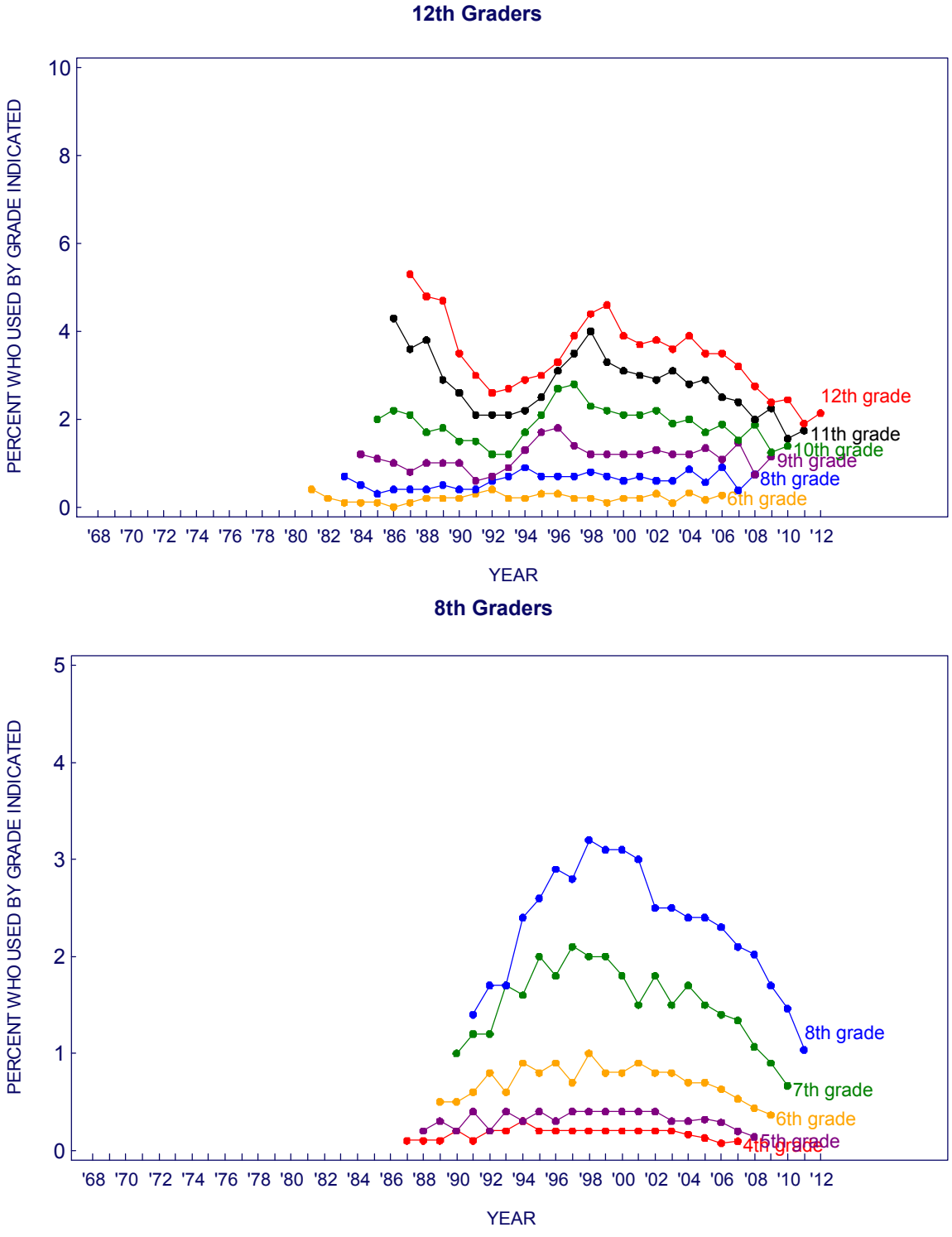
Source. The Monitoring the Future study, the University of Michigan.
Notes. Question discontinued in 2010.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-11
Cocaine
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders



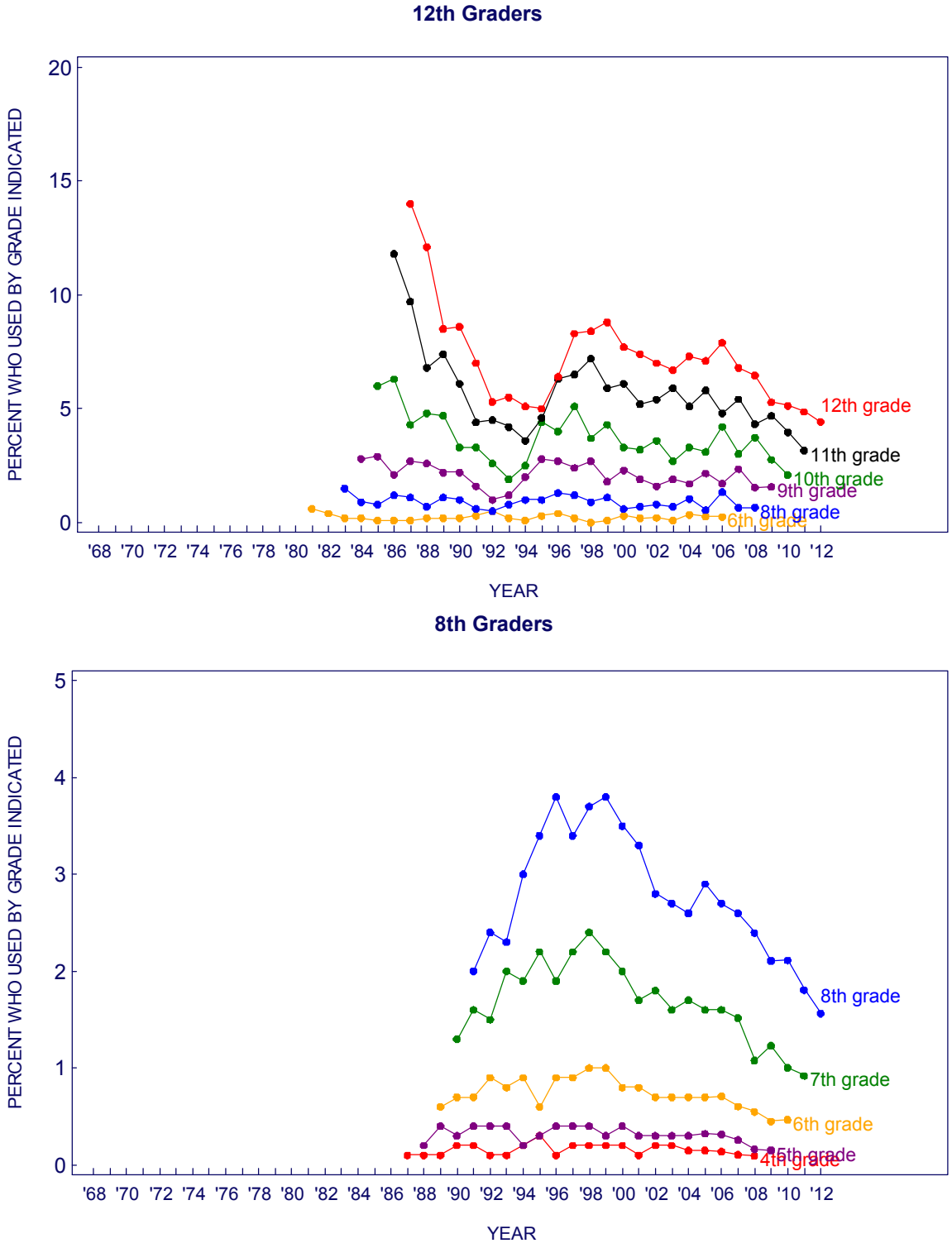
Source. The Monitoring the Future study, the University of Michigan.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-12
Crack Cocaine
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders



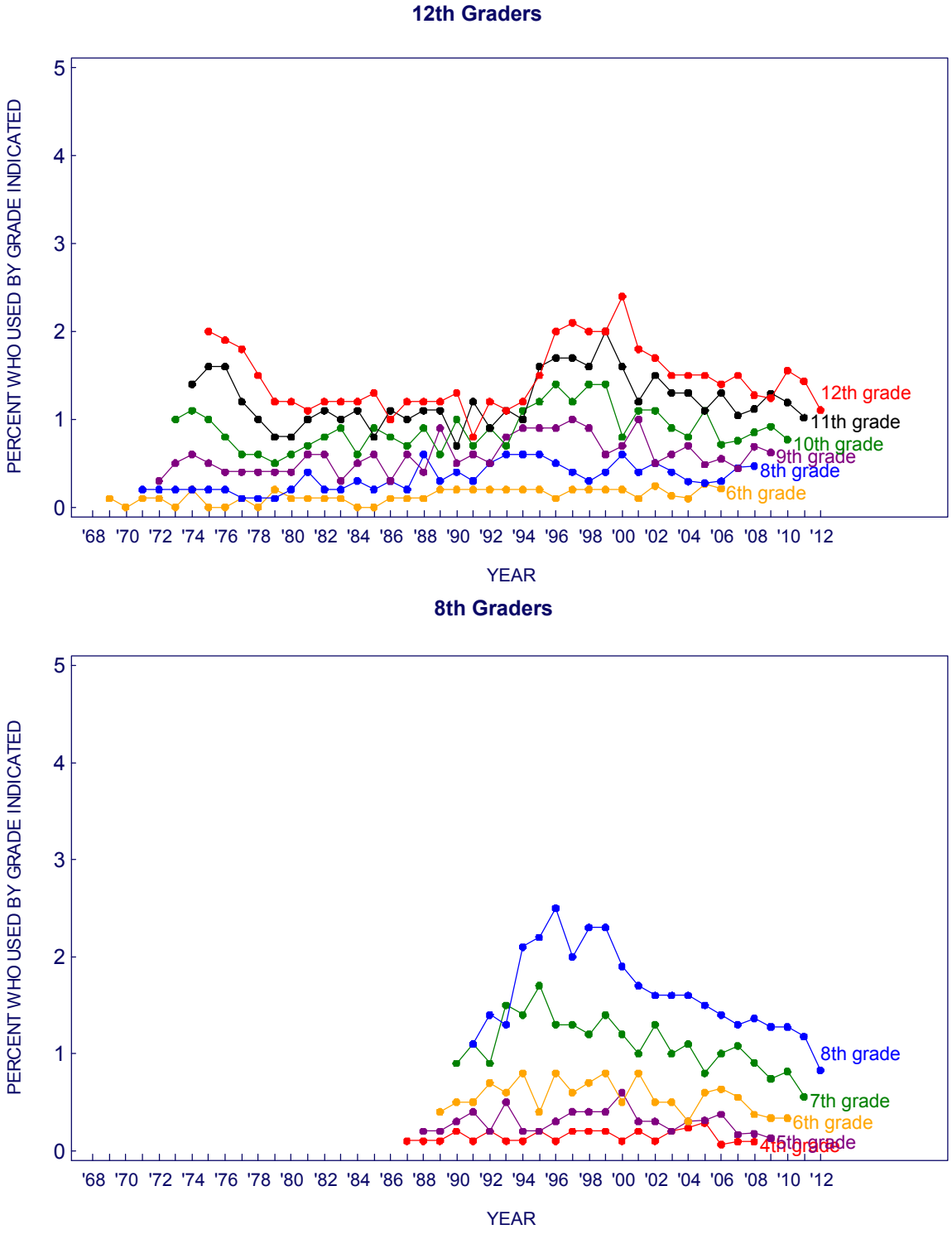
Source. The Monitoring the Future study, the University of Michigan.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-13
Other Forms of Cocaine
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders



Source. The Monitoring the Future study, the University of Michigan.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

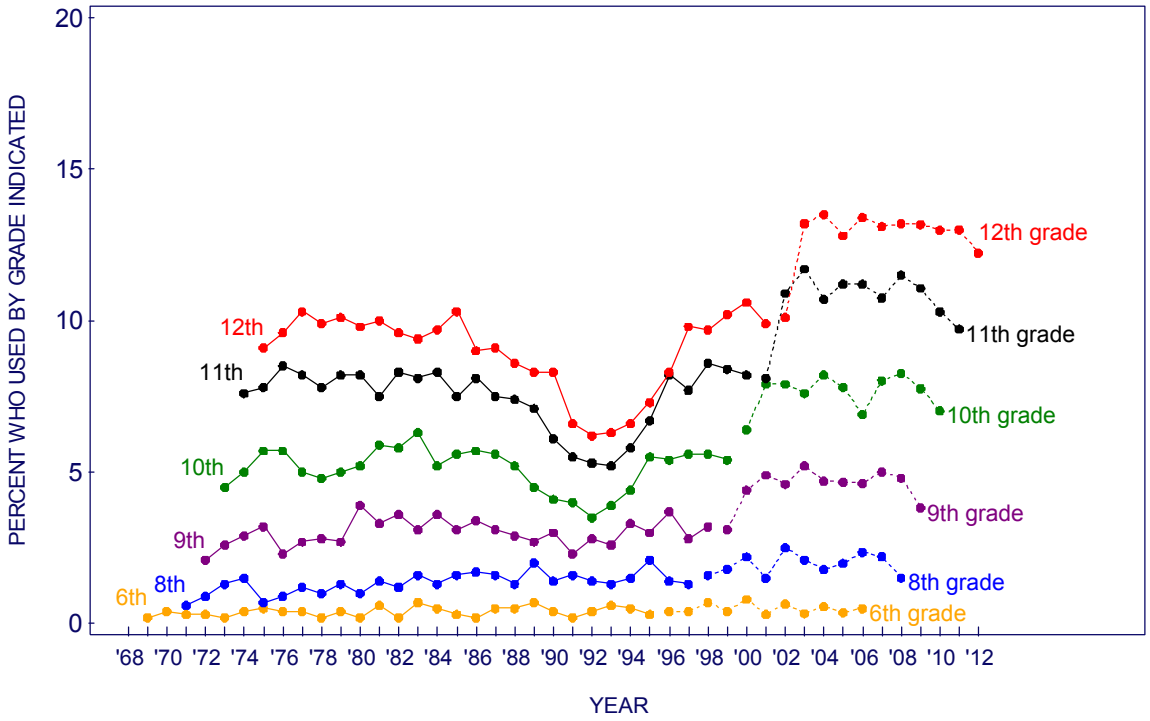
FIGURE 6-14
Heroin
Trends in Lifetime Prevalence at Earlier Grade Levels* based on Retrospective Reports from 12th and 8th Graders



Source. The Monitoring the Future study, the University of Michigan.

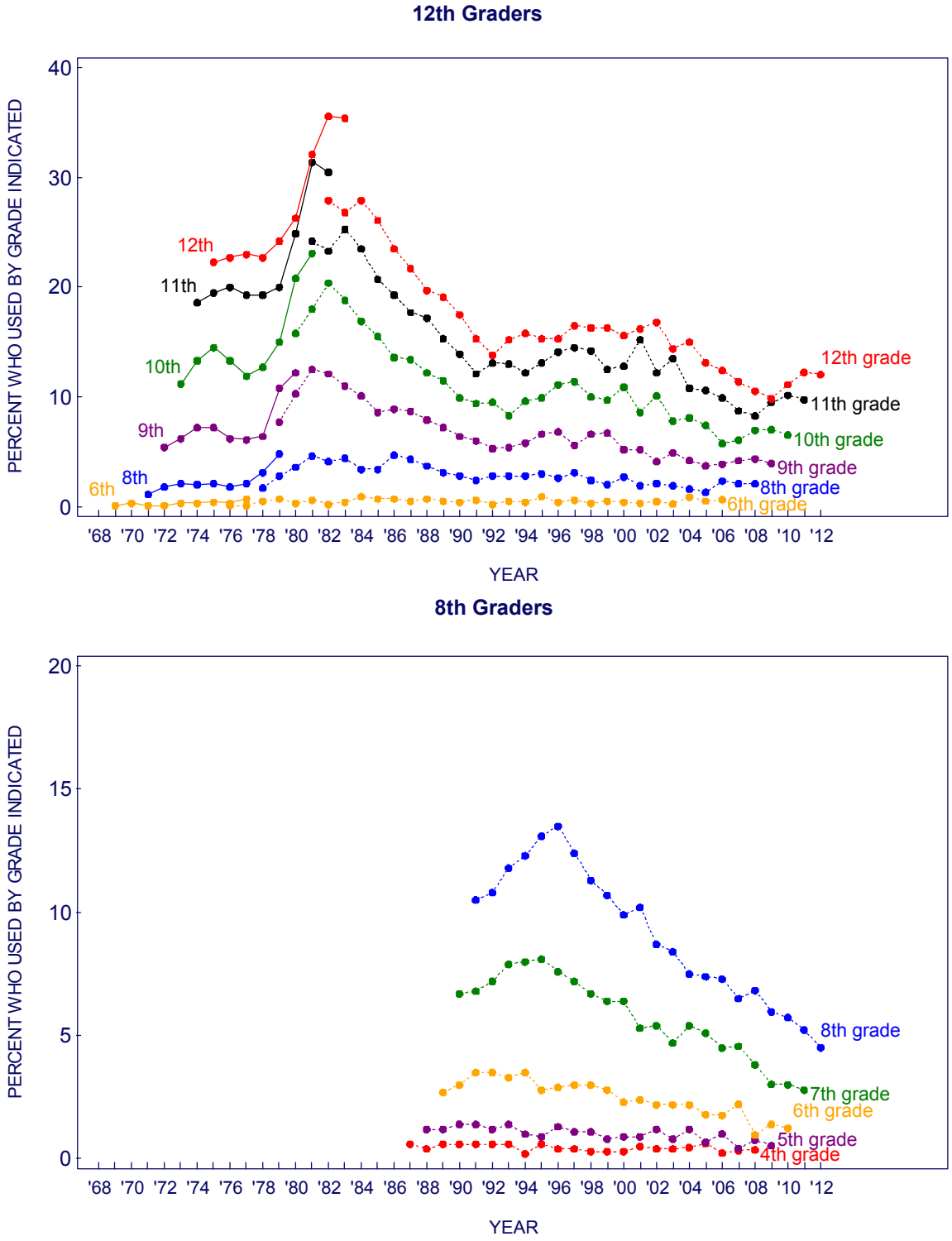
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-15
Narcotics other than Heroin
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th Graders



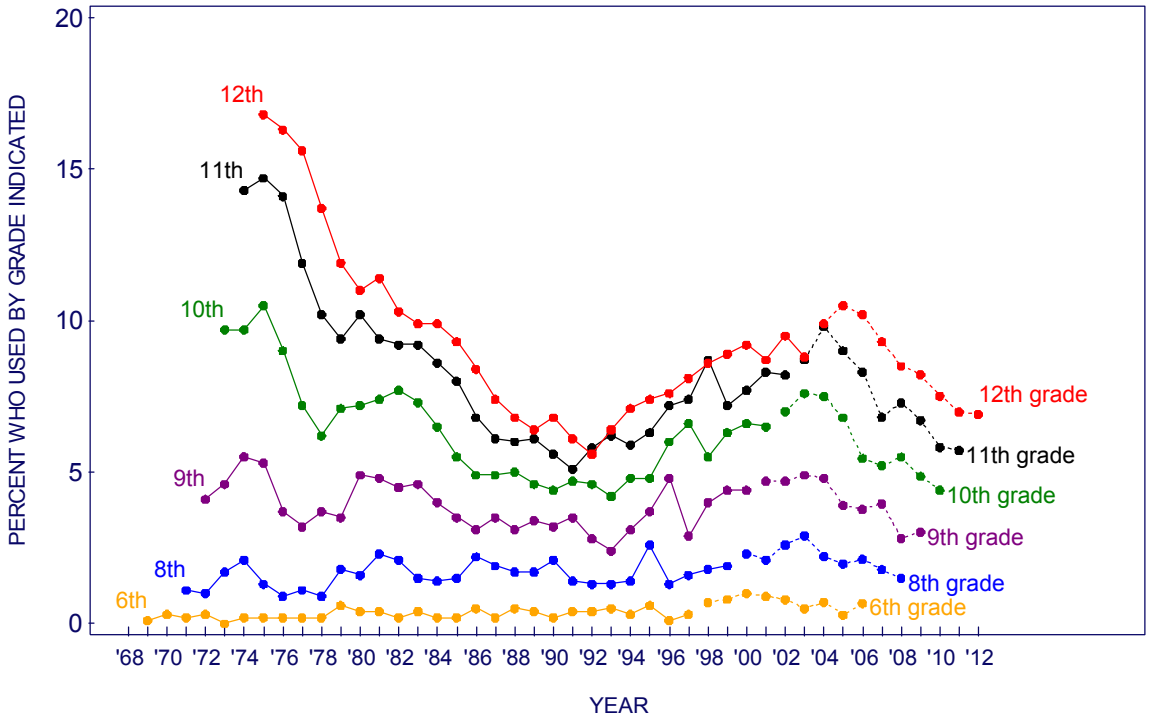
Source. The Monitoring the Future study, the University of Michigan.
Note. Beginning in 2002, a revised set of questions on narcotics other than heroin was introduced. The dashed lines connect percentages that are based on data from the revised questions.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-16
Amphetamines
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders



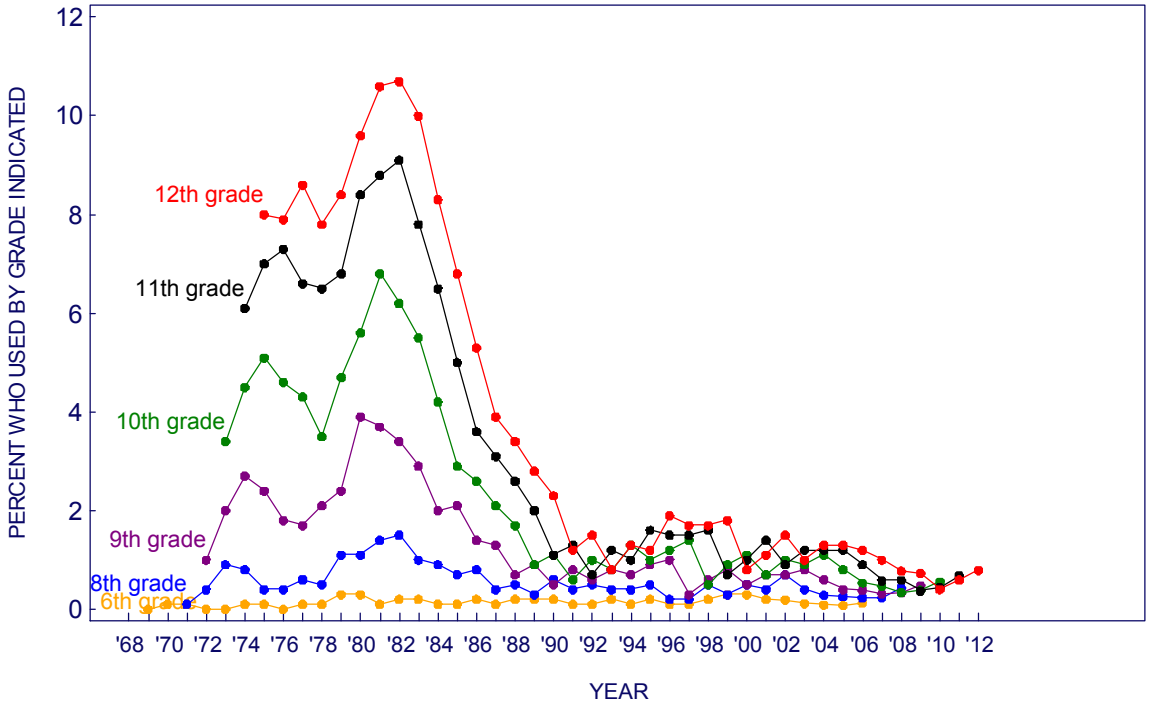
Source. The Monitoring the Future study, the University of Michigan.
Note. The dashed lines connect percentages that result if nonprescription stimulants are excluded.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-17
Sedatives (Barbiturates)
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th Graders



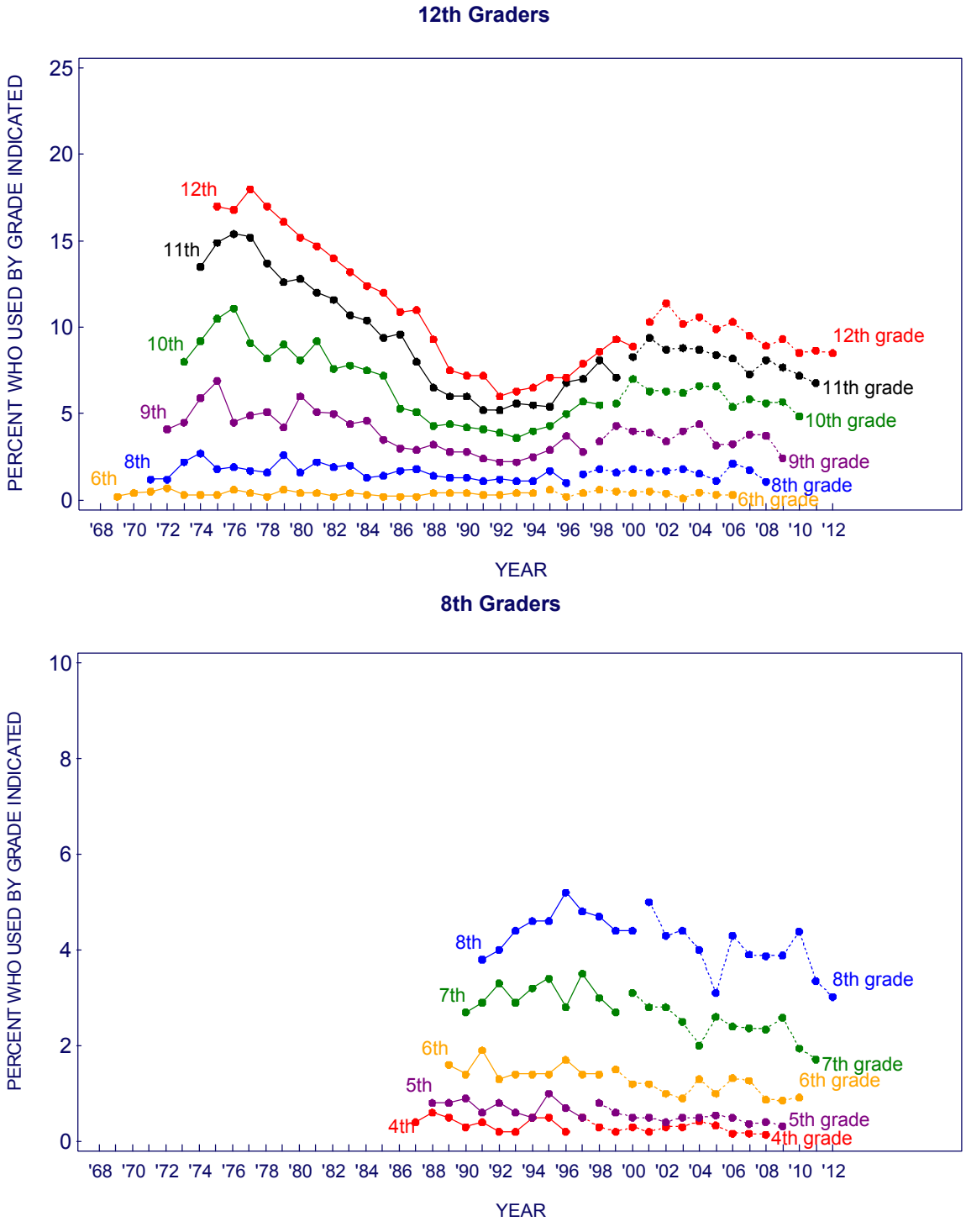
Source. The Monitoring the Future study, the University of Michigan.
Note. Beginning in 2004, a revised set of questions on sedatives (barbiturates) was introduced. The dashed lines connect percentages that are based on data from the revised questions.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-18
Methaqualone
Trends in Lifetime Prevalence at Earlier Grade Levels* based on Retrospective Reports from 12th Graders



Source. The Monitoring the Future study, the University of Michigan.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

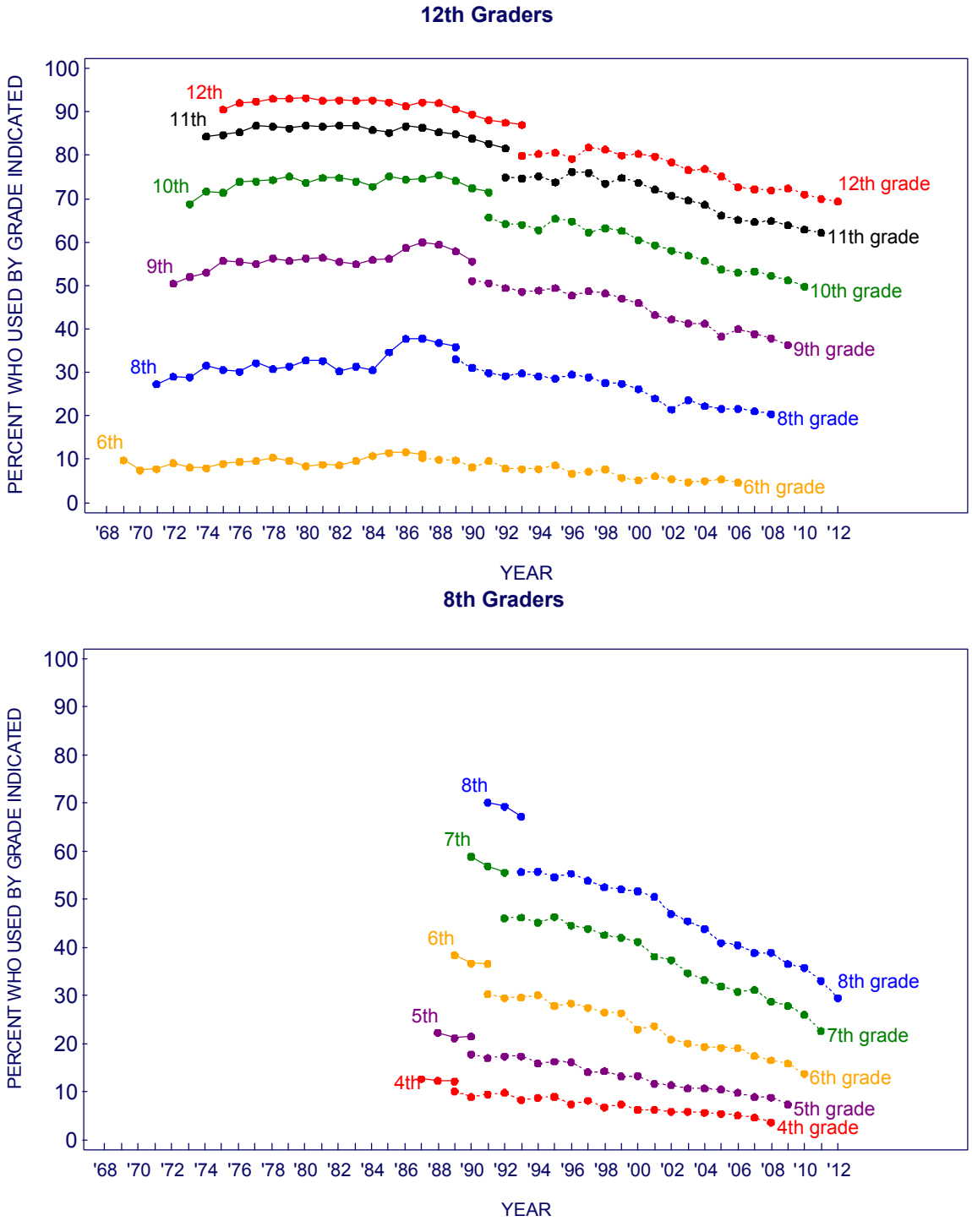
FIGURE 6-19
Tranquilizers
Trends in Lifetime Prevalence at Earlier Grade Levels* based on Retrospective Reports from 12th and 8th Graders



Source. The Monitoring the Future study, the University of Michigan.
Note. Beginning in 2001, a revised set of questions on tranquilizer use was introduced, in which Xanax replaced Miltown in the list of examples. The dashed lines connect percentages that are based on data from the revised questions.

*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

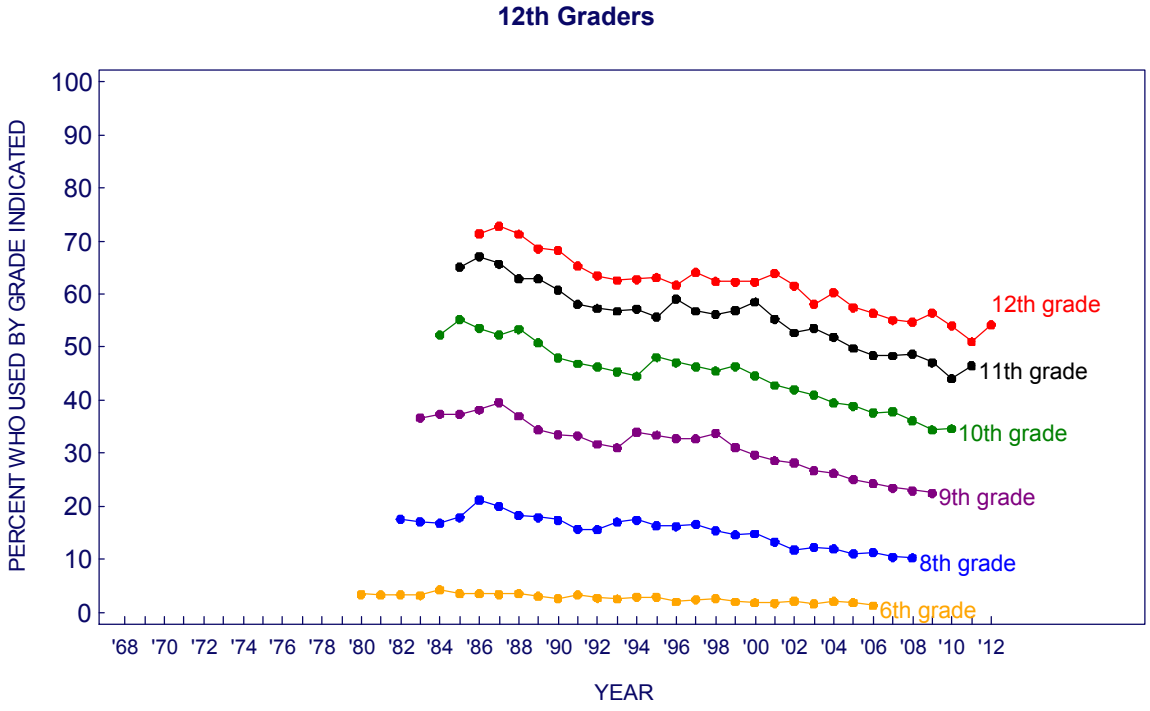
FIGURE 6-20
Alcohol
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders

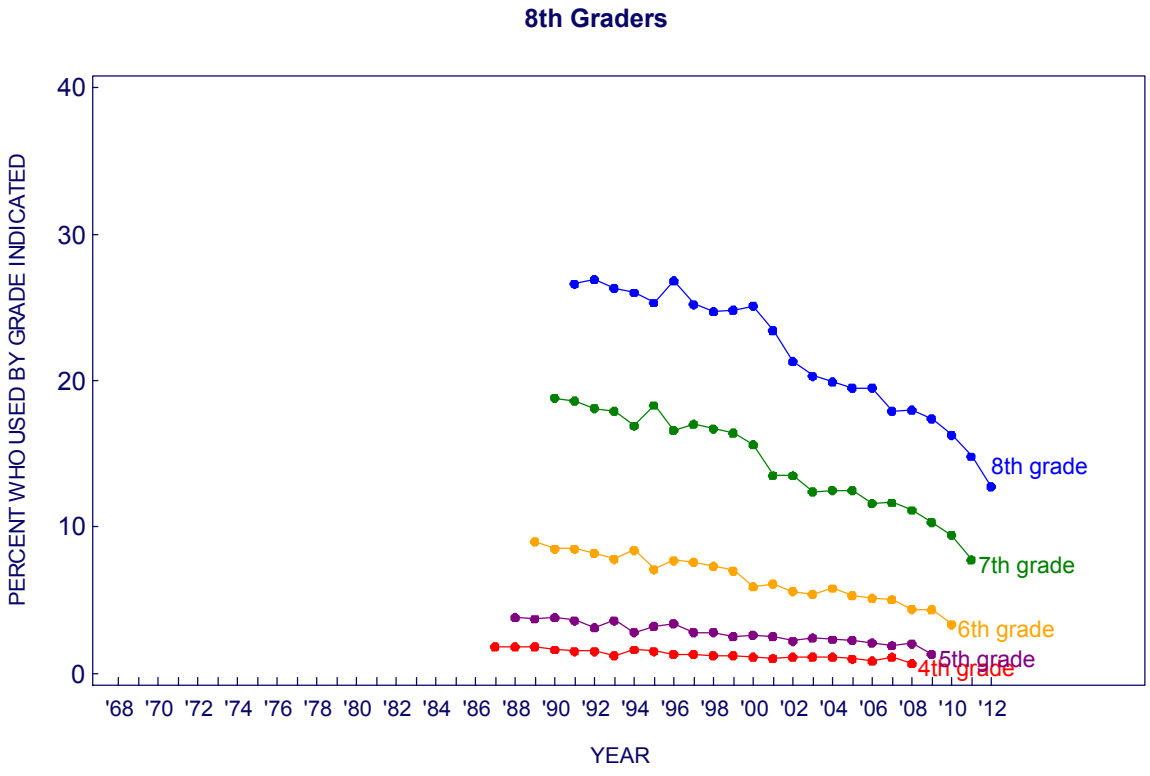


Source. The Monitoring the Future study, the University of Michigan.
Note. Beginning in 1993, a revised set of questions on alcohol use was introduced, in which respondents were told that an occasion of use meant more than just a few sips. The dashed lines connect percentages that are based on data from the revised questions. See text for details.

*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

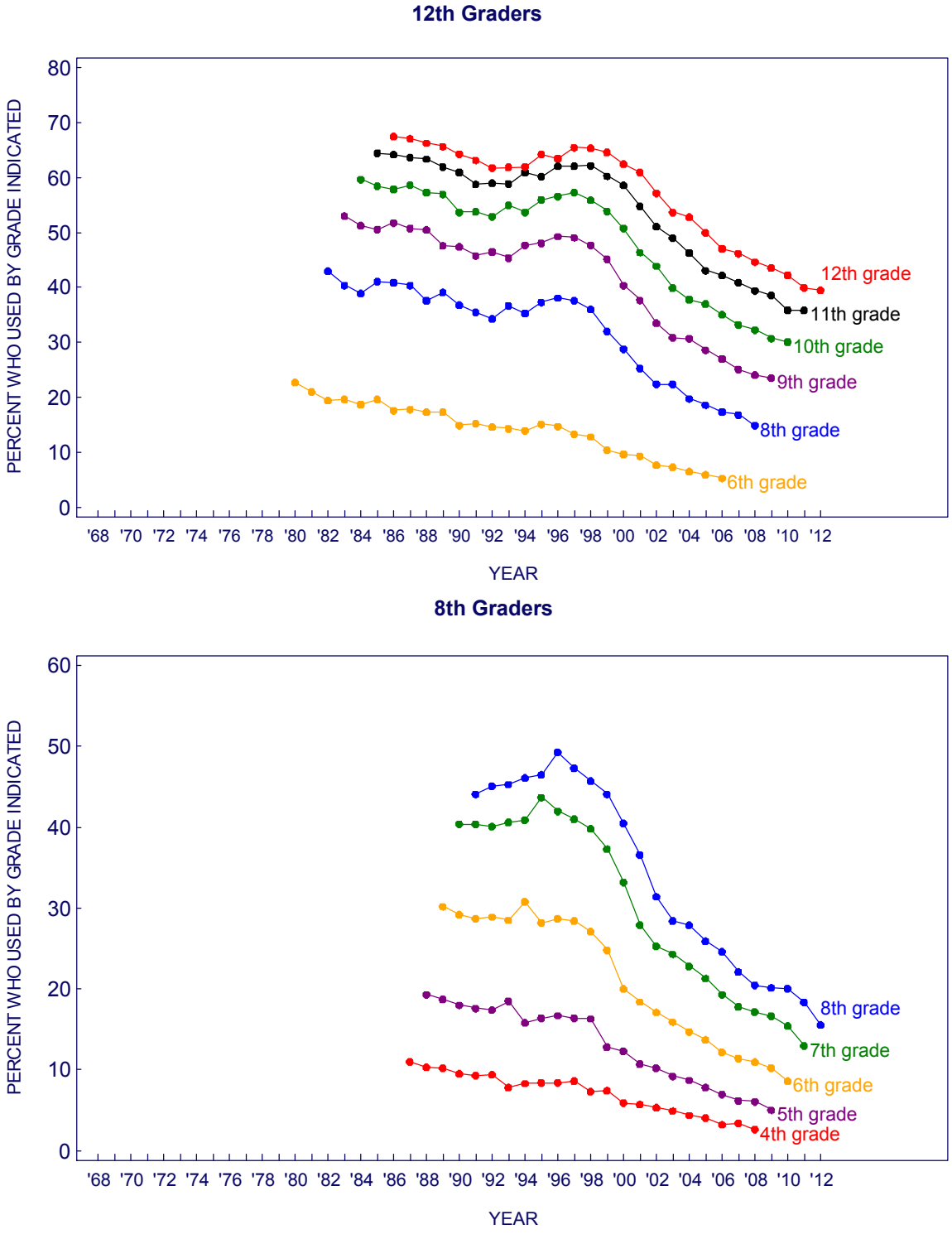
FIGURE 6-21
Been Drunk
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders





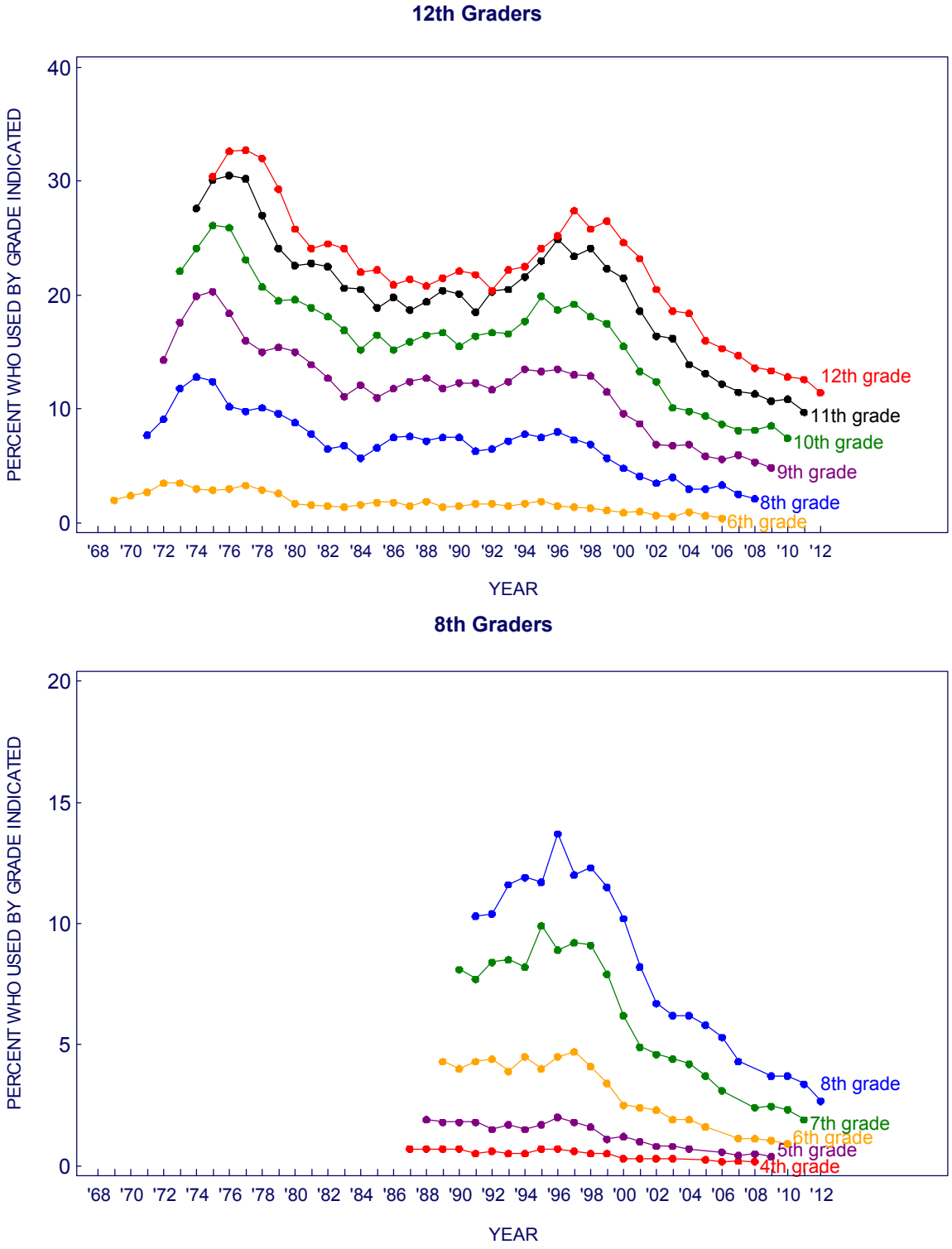
Source. The Monitoring the Future study, the University of Michigan.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-22
Cigarettes
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders



Source. The Monitoring the Future study, the University of Michigan.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

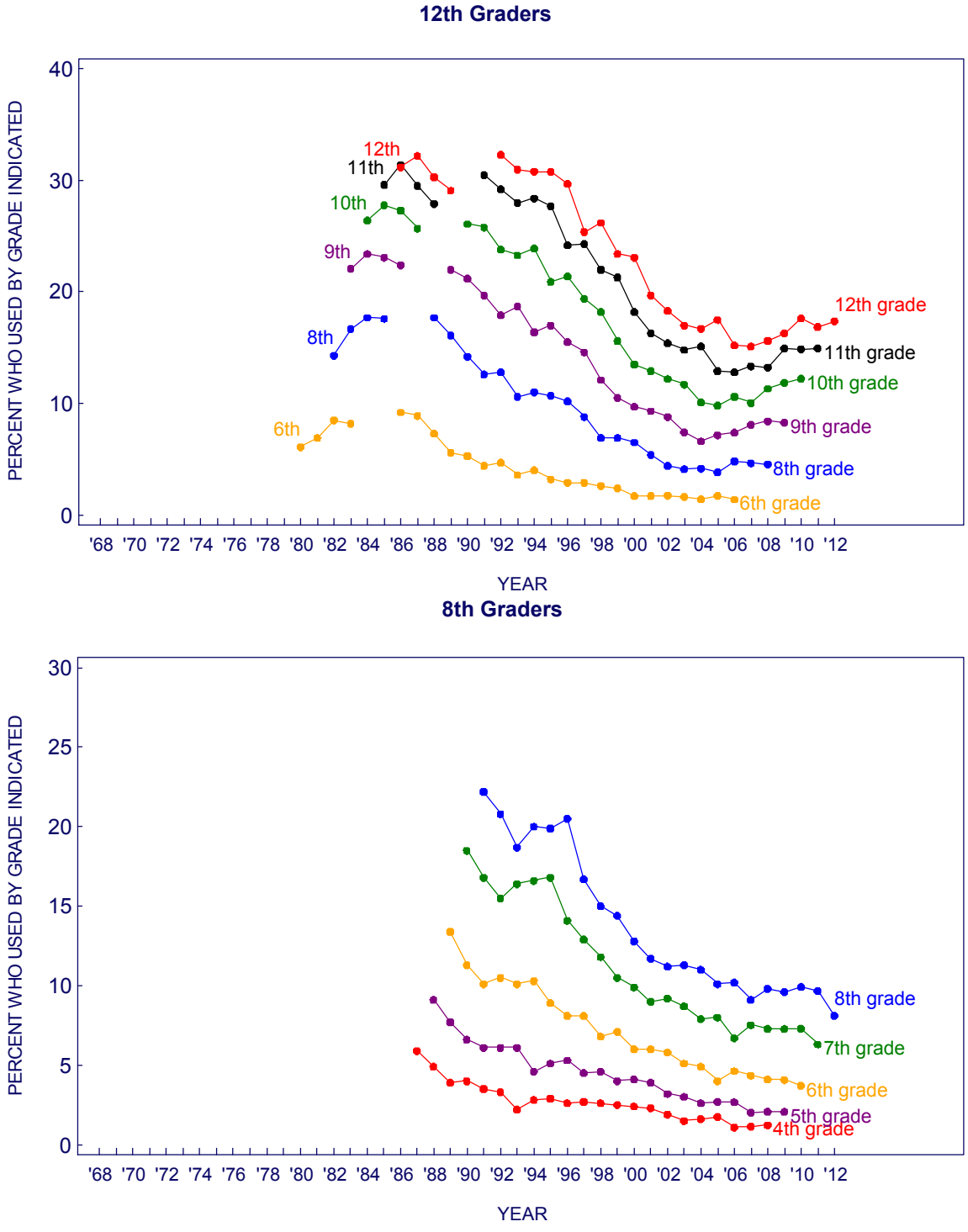
FIGURE 6-23
Cigarette Smoking on a Daily Basis
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders



Source. The Monitoring the Future study, the University of Michigan.

*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-24
Smokeless Tobacco
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders

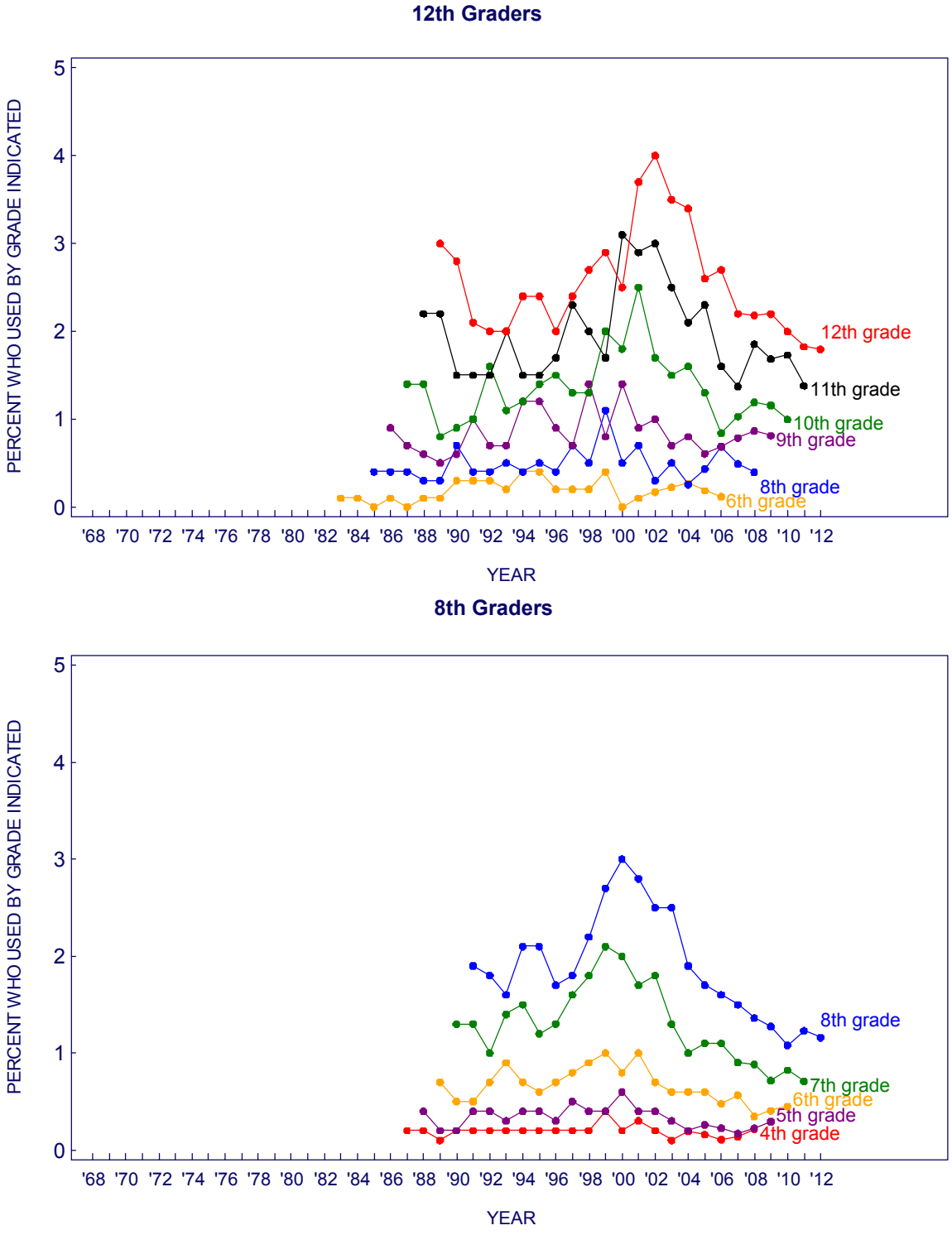


Source. The Monitoring the Future study, the University of Michigan.

Note. Prevalence of smokeless tobacco was not asked of 12th graders in 1990 and 1991. Prior to 1990, the prevalence question on smokeless tobacco was located near the end of one 12th-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuity between the corresponding lines for each grade.

*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

FIGURE 6-25
Steroids
Trends in Lifetime Prevalence at Earlier Grade Levels*
based on Retrospective Reports from 12th and 8th Graders



Source. The Monitoring the Future study, the University of Michigan.
*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

Chapter 7

DEGREE AND DURATION OF DRUG HIGHS

Among the reasons given by adolescents for using different drugs,[82] achieving an altered state of consciousness or "getting high" is a central objective for many of them. MTF assesses the degree or duration of highs experienced by 12th graders, both as trends at the population level and in terms of variation from drug to drug. Measuring these subjective experiences and monitoring changes in them over time, as MTF has done for many years, can be helpful from epidemiological and policy points of view. Although these data do not address the many qualitative differences in the experience of being high, they provide a useful description of two important dimensions: degree and duration. Twelfth-grade respondents are asked in one of the six questionnaire forms to indicate—for each of eight different classes of drugs that they might report having used in the prior 12 months—how high they usually get and how long they usually stay high. (These questions are not asked of 8th and 10th graders.) The term "high" is not defined for the respondent, but we assume that people interpret it as the degree to which normal cognitive functioning and affective states are altered by taking the drug.

DEGREE AND DURATION OF HIGHS AMONG TWELFTH GRADERS IN 2012

Figure 7-1 shows the proportion of 2012 twelfth graders who said that they *usually* get "very," "moderately," "a little," or "not at all" high when they use a given type of drug. The percentages are based on all respondents who reported use of the given drug class in the previous 12 months, and each bar cumulates to 100%. The order of the drugs from left to right is based on the percentage of users of each drug who reported that they usually get "very" high. The reader is advised to note the sample sizes provided in the tables in this chapter, as these statistics are based on self-reported use in only one of six questionnaire forms. When percentages are based on such limited sample sizes, the fluctuation from year to year due to random sample differences is much larger than occurs in most other MTF measures.

- ***Hallucinogens*** and ***heroin*** usually produce the most intense highs. Beginning in 1982, this question was omitted for heroin because of the small number of cases available each year. An averaging across earlier years indicated that it would rank close to LSD, with a substantial majority of past-year users saying they usually get very high when they use it.

- ***Marijuana*** and ***cocaine*** are next in intensity of highs produced. About three quarters of marijuana users and cocaine users said they usually get moderately or very high.

[82]Terry-McElrath, Y. M., O'Malley, P. M., & Johnston, L. D. (2009). Reasons for drug use among American youth by consumption level, gender, and race/ethnicity: 1976-2005. *Journal of Drug Issues, 39*(3), 677-714, www.ncbi.nlm.nih.gov/pubmed/20628558. Patrick, M. E., Schulenberg, J. E., O'Malley, P. M., Johnston, L. D., & Bachman, J. G. (2011). Adolescents' reported reasons for alcohol and marijuana use as predictors of substance use and problems in adulthood. *Journal of Studies on Alcohol and Drugs, 72*(1), 106-116, www.ncbi.nlm.nih.gov/pmc/articles/PMC3001673/.

- A lower proportion of the users of three classes of psychotherapeutic drugs—***narcotics other than heroin***, ***tranquilizers***, and ***amphetamines***—reported that they use them to get high; still, substantial proportions of users (53% for narcotics other than heroin, 58% for tranquilizers, and 43% for amphetamines) said they usually get moderately or very high after taking these drugs.

- Relatively few of the large proportion of 12th graders using ***alcohol*** said that they usually get very high when drinking (10%), although over two fifths (43%) said they usually get at least moderately high. For a given individual, we would expect more variability in the degree of intoxication achieved with alcohol from occasion to occasion than with most other drugs. Therefore, many drinkers probably get very high at least sometimes, even if that is not "usually" the case, which is what the question asks. Certainly the prevalence of occasions of heavy drinking (having five or more drinks in a row) and self-reported drunkenness would suggest that to be the case.

Figure 7-2 presents data on the *duration* of highs usually experienced, as reported by past-year users of each drug class. The drugs are arranged in the same order as in Figure 7-1 (intensity of highs) to permit an examination of the amount of correspondence between the degree and duration of highs.

- As shown in Figure 7-2, drugs that result in the most intense highs generally result in the longest highs as well. For example, ***LSD*** and ***hallucinogens other than LSD*** hold the top two positions on both dimensions.

- The correspondence between degree and duration of highs is not perfect. For example, the highs obtained with ***marijuana*** tend to be relatively intense in degree but not long in duration compared to a number of other drugs. About half of marijuana users (50%) said they usually stay high one to two hours. Still, more than one third of users (36%) reported usually staying high three to six hours, and another 7% usually stay high for seven hours or more.

- Generally ***cocaine*** users have reported staying high for shorter periods, despite having more intense highs relative to users of many other drugs. In 2012, however, while 53% report staying high one to two hours, 22% say they usually stay high three to six hours, and 14% stay high seven hours or more. (These results are based on just 57 cases, so they must be interpreted with caution. Table 7-4 contains comparable data since 1975.)

- As shown in Figure 7-2, significant proportions of users of three psychotherapeutic drugs (***tranquilizers***, ***amphetamines***, and ***narcotics other than heroin***) and of ***alcohol*** say that they usually do not get high when using them.

In sum, drugs vary considerably in both degree and duration of highs obtained. Sizeable proportions of users of all these drugs responded that they usually get high for at least three hours per occasion. For a number of drugs—particularly ***LSD*** and ***hallucinogens other than LSD***—appreciable proportions usually stay high for seven hours or more.

TRENDS IN DEGREE AND DURATION OF DRUG HIGHS

Since 1975, when the MTF study began, many important shifts have occurred in the degree and duration of highs usually experienced by young people. Recall that only 12th-grade students who reported using the drug in question during the prior 12 months answered these questions.

Results for each of the eight different classes of drugs for which degree and duration of highs were asked are provided in Tables 7-1 through 7-8. Each of these tables presents trends in two ways. First, the results are shown as a percentage of *past-year users* of each drug, in order to indicate any changes in the experiences among recent users and to provide some indication of changes in the quantity of the active ingredient consumed by users. Results are also displayed as a percentage of *all* respondents answering that questionnaire form, thereby indicating experiences of drug-induced highs as proportions of the entire population under study.

- Between 1978 and 1983—a period of considerable decline in ***marijuana*** use—there was a modest downward trend in the *degree* of highs usually attained by marijuana users (see Table 7-1). Later, from about 1988 through 1996, a fairly steady increase was observed. The latter half of this interval overlapped the period of steadily increasing prevalence of marijuana use. (See Figure 7-3 for a charting of the cross-time trends in degree and duration of highs reported by past-year users.) From 1997 to 2007, there was little change in the degree of highs and only a very gradual decline in use. Overall, the proportion of marijuana users usually getting "moderately" or "very" high has increased from around 65% in the early 1980s to around 75% in the early 2000s, about where it remained through 2012.

  Some interesting changes also took place in the average *duration* of marijuana highs between 1978 and 1983. Most marijuana users said they usually stay high either one to two hours *or* three to six hours. Between 1975 and 1983 there was a steady decline in the proportion of users saying they stay high three or more hours (from 52% in 1975 to 35% in 1983). Until 1979, the downward shift could have been due almost entirely to the increasing number of 12th graders using marijuana; users in later classes, who might *not* have been users if they had been in earlier classes, probably tended to be relatively light users. We deduce this from the fact that the percentage of *all* 12th graders reporting three- to six-hour highs remained relatively unchanged from 1975 to 1979, while the percentage of *all* 12th graders reporting only one- to two-hour highs increased steadily—from 16% in 1975 to 25% in 1979.

  After 1979, the prevalence of marijuana use began to decline substantially, but the shift toward shorter average highs still continued through 1983. Thus, we must attribute this shift to another factor, most likely a general shift toward less frequent (or less intense) use, even within the segment most prone toward marijuana use. The drop in the prevalence of *daily* marijuana use after 1979—disproportionately large relative to the drop in overall prevalence—is consistent with this interpretation. Also consistent is the drop in the average number of joints smoked per day during the prior month (among those reporting any use in the prior 12 months). In 1976, 65% of past-year marijuana users indicated they averaged *less* than one joint per day in the prior 30 days; by 1988

this proportion had risen to 83%. In sum, not only were fewer high school students using marijuana, but also those who were seemed to be using less frequently and in smaller amounts per occasion.

The lower intensity of marijuana highs through the 1980s is of particular interest in light of evidence from other sources that the THC content of marijuana had increased substantially since the late 1970s. The evidence here suggests that users titrated their intake—smoking less marijuana as measured by volume—to achieve a certain (probably declining) level of high.

After 1988 the proportion of users saying they smoked less than one joint per day held fairly steady through 1992, after which there was a substantial increase in annual prevalence, accompanied by a decline in the proportion of marijuana users saying that they used less than one joint per day. Also, increased proportions of users reported getting "very high" and staying high longer. So, during this relapse phase in the larger epidemic (in the early- to mid-1990s), marijuana users were consuming *more* of the drug on average. Judging by the proportions saying that they get very high, there has been only a slight increase since the mid-1990s.

- No clearly discernible long-term pattern has emerged in the intensity of highs being reported by ***LSD*** users—substantial proportions of users in every class reported intense highs—but the average duration of highs has declined considerably since the late 1990s (see Table 7-2). After 2001, the prevalence of LSD use declined sharply, as is reflected in the proportion of all respondents saying that they got high at all on LSD. For ***hallucinogens other than LSD***, the duration of highs has not varied systematically—the modal response has remained at three to six hours high with few exceptions, whereas the degree of highs increased some after the early 1990s (see Table 7-3).

- The degree of highs obtained from ***cocaine*** use showed some decline between 1975 and 1981 as prevalence increased, and has remained fairly stable since (see Table 7-4). At the onset phase of the cocaine epidemic (1976–1979), the average duration of highs also shortened as the proportion of past-year users reporting highs of two hours or less rose from 30% to 49%, perhaps indicating that many of the additional users were less committed. The proportion reporting these short highs continued to rise through 1989 to 64%, revealing that during the early part of the decline phase of the epidemic (1986–1992), the average duration of cocaine highs continued to decrease, just as it had during the rise of the epidemic. This may reflect that, as concerns about the dangers of cocaine use grew, even those who decided to use cocaine became more moderate in their use for fear of it leading to addiction. The modal duration of the highs experienced with cocaine were highest in the 1970s (1975–1978) when the modal duration was three to six hours. The mode dropped to one to two hours by 1979 and has remained there since.

- For ***narcotics other than heroin***, over a seventeen year period (from 1975 through 1992) a substantial decline occurred in both the intensity and duration of highs (see Table 7-5). In 1975, 39% of past-year users said they usually got "very high" compared to only 12% in 1992. The proportion usually staying high for seven or more hours dropped from 28%

in 1975 to 11% in 1992. This shift was due, in part, to a substantial increase in the proportion of users who said they do not take these drugs "to get high" (4% in 1975, increasing to 28% by 1992, before falling back to 12% in 2012). Because the actual prevalence of narcotic use dropped only modestly over that interval, these findings suggest that an increasing use for self-medication may have masked a larger decrease in recreational use than is apparent from the prevalence data. During the 1990s, the percent of users of narcotics other than heroin who said that they "usually don't get high" declined some (from 39% in 1990 to 23% in 2000), while somewhat more said that they get high for three to six hours (29% in 1990, 43% in 2000). Since 1992, the proportion saying they got "very high" has increased some (from 12% in 1992 to 16% by 2012), while the proportion saying they do not take narcotics to get high has declined from 28% in 1992 to 12% by 2012.

- Between 1975 and 1981, as ***amphetamine*** use increased among 12th graders, the average degree of high decreased (see Table 7-6), much as occurred later with cocaine. The proportion of recent users who said they usually got "very high" or "moderately high" fell from 60% in 1975 to 37% in 1981. Consistent with this change, the proportion of users saying they simply "don't take them to get high" increased from 9.3% in 1975 to 20.2% by 1981 (and remained roughly at that level through 1990). The average reported *duration* of amphetamine highs also declined sharply during this period: 41% of 1975 users said they usually stayed high seven or more hours compared to only 17% of 1981 users.[83] As use rose some in the 1990s, the numbers on degree and duration of highs fluctuated but did not show any consistent trends. The proportion indicating that they "don't take them to get high" has also been erratic, averaging about 18% of amphetamine users in recent years. By 2011 this proportion had increased to 26%, about where it remained in 2012 (25%), while the proportion of users saying that they usually don't get high when using amphetamines remained around 30%.

  An examination of data on self-reported reasons for use shows shifts in the purposes for amphetamine use. Between the mid-1970s and mid-1980s, there was a decline in the frequency with which recent users mentioned social/recreational reasons for use and an increase in mentions of use for instrumental purposes ("to stay awake," "to get more energy," "to get through the day").[84] The late 1980s saw some decline in the instrumental purposes and a leveling in the mentions of social/recreational reasons. In the 1990s, as use rose a bit, there was only a very slight upturn in mentions of social/recreational reasons for use, followed by a leveling by the late 1990s.

[83]In 1982, the questionnaire form containing the questions on degree and duration of highs clarified the amphetamine usage questions in order to eliminate the inappropriate inclusion of nonprescription amphetamines. One might have expected this change to have increased the degree and duration of highs being reported, given that real amphetamines would be expected to have greater psychological impact on average; but the trends still continued downward that year.

[84]Johnston, L. D., & O'Malley, P. M. (1986). Why do the nation's students use drugs and alcohol? Self-reported reasons from nine national surveys. *Journal of Drug Issues*, *16*, 29–66. Terry-McElrath, Y. M., O'Malley, P. M., & Johnston, L. D. (2009). Reasons for drug use among American youth by consumption level, gender, and race/ethnicity: 1976-2005. Journal of Drug Issues, *39*(3), 677-714. www.ncbi.nlm.nih.gov/pmc/articles/PMC2902005/?tool=pubmed

With respect to social/recreational shifts, the percentage of all recent users reporting they used amphetamines "to feel good or get high" declined from 58% in 1979 to 45% in 1984, rose to 52% in 2005, and is now down to 29% in 2012. Similarly, "to have a good time with my friends" declined from 38% to 30% between 1979 and 1984 and increased again to 38% in 2005; it is now down to 17% in 2012. (The low numbers of users in these years make estimates quite unstable.) Reports of instrumental amphetamine use increased between 1976 and 1984: "to lose weight" increased by 15 percentage points (to 41%); "to get more energy" increased by 14 percentage points (to 69%); "to stay awake" increased by 10 percentage points (to 62%); and "to get through the day" increased by 10 percentage points (to 32%). Beginning in about 1988 and continuing through the 2000s, these instrumental objectives have been mentioned somewhat less often by users. In 2012, "to lose weight" was mentioned by only 25% of recent users, "to get more energy" by 46%, "to stay awake" by 44%, and "to get through the day" by 19%.

- The degree and duration of highs achieved by ***tranquilizer*** users decreased in the 1980s (see Table 7-7). An average of about 20% of 12th-grade users in 1976–1980 said they did *not* take them to get high, compared with roughly 35% of 1986–1990 users. However, as use rose between 1992 and 2002, the proportion of users saying they do not use tranquilizers to get high declined from 31% to 17% indicating that recreational use played an important role in the increased proportions using to get high. Since then, use has been in gradual decline and the proportion of users saying that they do not use tranquilizers to get high has hovered around 14%.

- Data are not collected for highs experienced in the use of ***inhalants*** (including amyl and butyl nitrites), ***PCP***, ***ecstasy***, or ***heroin***.

- The intensity and duration of highs associated with ***alcohol*** use have generally been stable throughout the MTF study (see Table 7-8), with the following exceptions: (a) the proportion of *all* 12th graders who reported getting "very high" rose a little in the 1990s (from 5.6% in 1993 to 9.0% in 1998) as current prevalence rose some, leveled until 2004, and declined some since then (6.3% in 2012); and (b) the proportion of *all* 12th graders saying they usually stay high on alcohol for seven hours or more was fairly stable at between 2% and 4% from 1975 through 1994, then increased slightly and has generally been between 4% and 5% since then (3.5% in 2012).

TABLE 7-1
MARIJUANA
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you use marijuana or hashish how high do you usually get? [a]	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
% of Recent Users																		
Not at all high	6.9	5.7	7.5	6.3	6.0	6.3	4.9	4.6	6.6	6.8	7.2	5.1	6.8	6.6	7.6	5.8	7.2	7.8
A little high	22.1	20.9	22.5	20.3	22.5	23.5	29.0	26.3	29.4	29.0	27.2	27.6	29.5	30.2	22.8	23.2	21.6	25.9
Moderately high	45.5	47.7	43.5	46.8	47.5	47.7	45.7	45.6	41.9	36.9	41.8	43.8	40.9	40.3	44.1	40.8	42.8	39.3
Very high	25.5	25.7	26.5	26.6	24.0	22.6	20.4	23.5	22.0	27.4	23.8	23.5	22.9	22.9	25.5	30.3	28.4	27.0
Approximate weighted N =	*1,142*	*1,266*	*1,448*	*1,873*	*1,606*	*1,495*	*1,607*	*1,588*	*1,366*	*1,264*	*1,298*	*1,177*	*1,174*	*1,142*	*782*	*694*	*591*	*605*
% of All Respondents																		
No use in last 12 months	60.0	55.5	52.4	49.8	49.4	52.4	53.2	54.7	58.2	59.9	59.0	61.2	63.5	64.9	71.6	72.7	76.2	76.8
Not at all high	2.8	2.5	3.6	3.2	3.0	3.0	2.3	2.1	2.8	2.7	2.9	2.0	2.5	2.3	2.2	1.6	1.7	1.8
A little high	8.8	9.3	10.7	10.2	11.4	11.2	13.6	11.9	12.3	11.6	11.2	10.7	10.7	10.6	6.5	6.3	5.1	6.0
Moderately high	18.2	21.2	20.7	23.5	24.0	22.7	21.4	20.6	17.5	14.8	17.2	17.0	14.9	14.1	12.5	11.1	10.2	9.1
Very high	10.2	11.4	12.6	13.4	12.2	10.8	9.6	10.6	9.2	11.0	9.8	9.1	8.4	8.1	7.2	8.3	6.7	6.3
Approximate weighted N =	*2,855*	*2,845*	*3,042*	*3,731*	*3,175*	*3,143*	*3,437*	*3,506*	*3,268*	*3,154*	*3,163*	*3,033*	*3,219*	*3,250*	*2,755*	*2,542*	*2,487*	*2,614*
When you use marijuana or hashish how long do you usually stay high? [a]																		
% of Recent Users																		
Usually don't get high	8.5	8.0	9.5	8.0	8.4	8.5	7.6	7.0	9.9	9.6	9.3	8.2	11.1	9.6	10.8	7.8	8.5	9.5
One to two hours	39.7	43.2	42.6	47.4	48.7	51.7	52.5	53.8	55.6	51.7	52.4	55.0	52.9	56.0	51.9	53.3	49.5	47.2
Three to six hours	45.4	43.7	42.7	39.0	37.4	35.0	35.7	34.2	30.4	33.1	34.0	32.9	32.2	30.2	33.3	33.1	34.4	37.7
Seven to 24 hours	5.9	4.9	4.7	5.1	5.0	4.1	4.0	4.5	3.5	5.0	3.9	3.3	3.7	3.8	3.3	5.4	6.9	4.9
More than 24 hours	0.5	0.2	0.6	0.5	0.5	0.7	0.2	0.5	0.6	0.7	0.4	0.6	0.1	0.4	0.8	0.4	0.8	0.8
Approximate weighted N =	*1,141*	*1,261*	*1,449*	*1,873*	*1,619*	*1,500*	*1,607*	*1,593*	*1,357*	*1,268*	*1,295*	*1,176*	*1,172*	*1,147*	*787*	*694*	*589*	*602*
% of All Respondents																		
No use in last 12 months	60.0	55.5	52.4	49.8	49.2	52.3	53.2	54.6	58.4	59.9	59.0	61.2	63.6	64.8	71.5	72.7	76.3	76.9
Usually don't get high	3.4	3.6	4.5	4.0	4.3	4.0	3.6	3.2	4.1	3.8	3.8	3.2	4.0	3.4	3.1	2.1	2.0	2.2
One to two hours	15.9	19.2	20.3	23.8	24.7	24.6	24.5	24.4	23.1	20.7	21.5	21.3	19.3	19.7	14.8	14.6	11.7	10.9
Three to six hours	18.2	19.4	20.3	19.6	19.0	16.7	16.7	15.5	12.7	13.3	13.9	12.8	11.7	10.7	9.5	9.0	8.1	8.7
Seven to 24 hours	2.4	2.2	2.2	2.6	2.5	2.0	1.9	2.0	1.4	2.0	1.6	1.3	1.3	1.3	0.9	1.5	1.6	1.1
More than 24 hours	0.2	0.1	0.3	0.3	0.2	0.3	0.1	0.2	0.3	0.3	0.2	0.2	0.0	0.1	0.2	0.1	0.2	0.2
Approximate weighted N =	*2,853*	*2,834*	*3,044*	*3,731*	*3,188*	*3,149*	*3,437*	*3,511*	*3,259*	*3,158*	*3,160*	*3,032*	*3,218*	*3,255*	*2,760*	*2,542*	*2,485*	*2,611*

(Years cont.)

(Table continued on next page.)

TABLE 7-1 (cont.)
MARIJUANA
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you use marijuana or hashish how high do you usually get? [a]	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
% of Recent Users																				
Not at all high	9.0	7.0	8.1	5.7	5.4	6.1	6.8	6.3	5.4	5.4	5.1	5.4	6.4	5.2	5.7	4.6	5.2	4.4	5.0	4.9
A little high	19.4	21.7	22.3	17.9	18.6	22.0	19.8	22.6	18.7	23.2	17.7	19.2	21.1	18.8	21.8	20.9	18.5	22.1	18.8	22.3
Moderately high	45.9	40.6	40.8	47.5	45.1	43.6	43.7	39.6	42.8	41.7	44.6	42.6	42.7	44.3	42.8	44.7	45.6	43.9	43.4	41.3
Very high	25.8	30.7	28.8	28.9	30.9	28.4	29.8	31.4	33.1	29.7	32.7	32.8	29.9	31.8	29.7	29.8	30.7	29.6	32.9	31.5
Approximate weighted N =	*669*	*779*	*916*	*788*	*998*	*944*	*812*	*809*	*776*	*713*	*809*	*851*	*811*	*772*	*737*	*740*	*724*	*812*	*860*	*817*
% of All Respondents																				
No use in last 12 months	74.8	69.6	64.1	66.5	61.2	62.6	63.6	61.8	63.0	66.3	66.6	65.2	66.7	66.9	69.3	67.7	67.9	65.6	63.0	63.7
Not at all high	2.3	2.1	2.9	1.9	2.1	2.3	2.5	2.4	2.0	1.8	1.7	1.9	2.1	1.7	1.8	1.5	1.7	1.5	1.8	1.8
A little high	4.9	6.6	8.0	6.0	7.2	8.2	7.2	8.6	6.9	7.8	5.9	6.7	7.0	6.2	6.7	6.8	5.9	7.6	7.0	8.1
Moderately high	11.6	12.4	14.7	15.9	17.5	16.3	15.9	15.1	15.8	14.1	14.9	14.8	14.2	14.7	13.1	14.4	14.7	15.1	16.1	15.0
Very high	6.5	9.3	10.4	9.7	12.0	10.6	10.8	12.0	12.2	10.0	10.9	11.4	9.9	10.5	9.1	9.6	9.9	10.2	12.2	11.4
Approximate weighted N =	*2,655*	*2,558*	*2,549*	*2,355*	*2,570*	*2,526*	*2,231*	*2,121*	*2,098*	*2,114*	*2,423*	*2,447*	*2,440*	*2,333*	*2,403*	*2,291*	*2,253*	*2,362*	*2,322*	*2,254*
When you use marijuana or hashish how long do you usually stay high? [a]																				
% of Recent Users																				
Usually don't get high	10.9	9.5	8.7	6.4	6.1	7.4	7.6	8.7	5.8	6.9	6.3	6.1	7.6	6.3	7.3	6.7	6.6	5.5	5.9	7.1
One to two hours	48.6	47.4	46.0	46.9	49.6	51.4	51.8	52.0	48.3	55.5	51.2	52.5	52.6	49.2	50.5	48.3	52.4	50.9	49.5	49.7
Three to six hours	36.8	36.1	37.6	39.3	37.1	35.7	33.5	34.9	38.2	32.4	37.2	35.3	34.7	37.3	37.3	38.2	35.6	38.2	36.8	35.9
Seven to 24 hours	3.2	5.5	6.7	6.2	6.0	5.1	5.9	3.6	6.0	5.1	4.8	4.3	3.7	6.2	4.3	5.7	4.1	4.4	5.6	6.1
More than 24 hours	0.4	1.4	1.0	1.2	1.1	0.4	1.2	0.9	1.6	0.1	0.6	1.9	1.3	1.0	0.7	1.1	1.4	1.1	2.2	1.2
Approximate weighted N =	*666*	*774*	*911*	*789*	*996*	*945*	*814*	*807*	*781*	*713*	*812*	*848*	*814*	*772*	*732*	*750*	*721*	*813*	*859*	*807*
% of All Respondents																				
No use in last 12 months	74.9	69.7	64.2	66.5	61.2	62.6	63.6	61.9	62.9	66.3	66.5	65.3	66.7	66.9	69.5	67.4	68.0	65.6	63.0	64.0
Usually don't get high	2.7	2.9	3.1	2.1	2.4	2.8	2.8	3.3	2.2	2.3	2.1	2.1	2.5	2.1	2.2	2.2	2.1	1.9	2.2	2.6
One to two hours	12.2	14.4	16.5	15.7	19.3	19.2	18.9	19.8	17.9	18.7	17.1	18.2	17.5	16.3	15.4	15.8	16.8	17.5	18.3	17.9
Three to six hours	9.2	11.0	13.5	13.2	14.4	13.4	12.2	13.3	14.2	10.9	12.5	12.2	11.6	12.4	11.4	12.5	11.4	13.1	13.6	12.9
Seven to 24 hours	0.8	1.7	2.4	2.1	2.3	1.9	2.1	1.4	2.2	1.7	1.6	1.5	1.2	2.1	1.3	1.9	1.3	1.5	2.1	2.1
More than 24 hours	0.1	0.4	0.4	0.4	0.4	0.2	0.4	0.3	0.6	0.1	0.2	0.6	0.4	0.3	0.2	0.4	0.4	0.4	0.8	0.4
Approximate weighted N =	*2,652*	*2,553*	*2,544*	*2,356*	*2,568*	*2,527*	*2,233*	*2,119*	*2,103*	*2,114*	*2,426*	*2,444*	*2,442*	*2,334*	*2,398*	*2,302*	*2,249*	*2,364*	*2,321*	*2,243*

Source. The Monitoring the Future study, the University of Michigan.

[a]These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

TABLE 7-2
LSD
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take LSD how high do you usually get? [a]	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
% of Recent Users																		
Not at all high	0.2	1.7	1.6	0.5	2.8	2.0	1.6	2.7	0.0	2.5	1.2	3.3	2.5	1.3	4.9	0.6	4.0	1.7
A little high	4.8	1.9	7.4	4.9	8.4	5.0	9.6	4.1	4.2	5.6	3.7	4.1	4.3	4.1	6.6	2.0	6.9	2.9
Moderately high	16.2	22.4	19.3	24.7	14.9	23.4	23.3	26.4	26.9	24.8	16.2	23.3	21.9	20.4	17.4	33.8	23.0	32.4
Very high	78.8	73.9	71.7	69.9	73.9	69.5	65.5	66.8	68.9	67.1	78.9	69.3	71.4	74.2	71.1	63.6	66.2	63.1
Approximate weighted N =	*213*	*193*	*183*	*223*	*228*	*228*	*236*	*249*	*200*	*168*	*151*	*168*	*192*	*175*	*133*	*138*	*140*	*146*
% of All Respondents																		
No use in last 12 months	92.5	93.6	94.4	93.7	92.9	92.8	93.2	92.9	93.9	94.7	95.3	94.5	94.0	94.6	95.2	94.5	94.4	94.4
Not at all high	0.0	0.1	0.1	0.0	0.2	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.0	0.2	0.1
A little high	0.4	0.1	0.4	0.3	0.6	0.4	0.6	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.1	0.4	0.2
Moderately high	1.2	1.4	1.1	1.6	1.1	1.7	1.6	1.9	1.6	1.3	0.8	1.3	1.3	1.1	0.8	1.9	1.3	1.8
Very high	5.9	4.7	4.0	4.4	5.2	5.0	4.4	4.7	4.2	3.5	3.7	3.8	4.3	4.0	3.4	3.5	3.7	3.5
Approximate weighted N =	*2,840*	*3,016*	*3,268*	*3,540*	*3,228*	*3,182*	*3,488*	*3,506*	*3,277*	*3,166*	*3,179*	*3,060*	*3,214*	*3,271*	*2,763*	*2,527*	*2,494*	*2,619*
When you take LSD how long do you usually stay high? [a]																		
% of Recent Users																		
Usually don't get high	1.6	2.3	2.5	0.5	3.4	2.3	1.6	1.5	0.0	3.2	1.2	3.3	2.5	1.0	6.1	0.6	3.5	1.7
One to two hours	1.3	1.7	3.8	3.9	4.0	2.5	5.4	3.6	2.6	2.5	3.3	2.0	4.9	2.0	4.1	6.7	4.5	5.5
Three to six hours	22.7	30.7	30.5	31.9	33.1	34.6	35.5	30.7	43.6	29.4	32.4	32.8	27.6	28.2	19.2	24.4	16.0	21.4
Seven to 24 hours	69.8	59.9	59.8	58.5	52.1	55.4	54.6	62.5	49.3	60.9	60.3	59.8	59.4	64.3	65.9	63.1	73.8	66.3
More than 24 hours	4.6	5.5	3.4	5.3	7.4	5.2	2.9	1.7	4.6	4.0	2.8	2.2	5.6	4.5	4.7	5.2	2.2	5.0
Approximate weighted N =	*215*	*193*	*182*	*224*	*228*	*226*	*236*	*252*	*199*	*168*	*153*	*168*	*191*	*178*	*133*	*137*	*141*	*147*
% of All Respondents																		
No use in last 12 months	92.5	93.6	94.4	93.7	92.9	92.9	93.2	92.8	93.9	94.7	95.2	94.5	94.1	94.6	95.2	94.6	94.4	94.4
Usually don't get high	0.1	0.1	0.1	0.0	0.2	0.2	0.1	0.1	0.0	0.2	0.1	0.2	0.1	0.1	0.3	0.0	0.2	0.1
One to two hours	0.1	0.1	0.2	0.3	0.3	0.2	0.4	0.3	0.2	0.1	0.2	0.1	0.3	0.1	0.2	0.4	0.3	0.3
Three to six hours	1.7	2.0	1.7	2.0	2.3	2.5	2.4	2.2	2.6	1.6	1.6	1.8	1.6	1.5	0.9	1.3	0.9	1.2
Seven to 24 hours	5.2	3.8	3.3	3.7	3.7	3.9	3.7	4.5	3.0	3.2	2.9	3.3	3.5	3.5	3.2	3.4	4.2	3.7
More than 24 hours	0.3	0.4	0.2	0.3	0.5	0.4	0.2	0.1	0.3	0.2	0.1	0.1	0.3	0.2	0.2	0.3	0.1	0.3
Approximate weighted N =	*2,867*	*3,016*	*3,250*	*3,556*	*3,227*	*3,180*	*3,487*	*3,509*	*3,276*	*3,166*	*3,181*	*3,060*	*3,214*	*3,274*	*2,763*	*2,526*	*2,495*	*2,619*

(Years cont.)

(Table continued on next page.)

TABLE 7-2 (cont.)
LSD
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take LSD how high do you usually get? [a]	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
% of Recent Users																				
Not at all high	1.8	1.1	3.0	4.0	2.3	4.3	0.0	4.8	3.3	4.7	1.9	10.3	5.5	6.2	4.3	10.7	10.7	2.4	2.8	6.8
A little high	10.8	6.3	7.4	5.2	9.2	5.5	4.6	6.7	8.2	7.0	12.7	10.5	6.7	3.1	3.7	11.3	6.0	7.2	1.0	9.6
Moderately high	30.1	29.3	21.7	20.6	21.1	31.2	19.1	22.3	28.9	22.4	16.3	18.0	13.9	27.2	27.9	18.7	15.6	24.0	20.8	14.7
Very high	57.4	63.2	67.9	70.2	67.4	59.0	76.3	66.1	59.6	66.0	69.2	61.3	74.0	63.5	64.1	59.4	67.8	66.5	75.4	68.9
Approximate weighted N =	*209*	*175*	*205*	*184*	*250*	*188*	*176*	*145*	*144*	*79*	*42*	*77*	*52*	*46*	*63*	*67*	*56*	*67*	*71*	*64*
% of All Respondents																				
No use in last 12 months	92.1	93.1	91.9	92.2	90.2	92.6	92.1	93.2	93.1	96.3	98.3	96.8	97.8	98.0	97.4	97.0	97.5	97.1	96.9	97.2
Not at all high	0.1	0.1	0.2	0.3	0.2	0.3	0.0	0.3	0.2	0.2	0.0	0.3	0.1	0.1	0.1	0.3	0.3	0.1	0.1	0.2
A little high	0.8	0.4	0.6	0.4	0.9	0.4	0.4	0.5	0.6	0.3	0.2	0.3	0.1	0.1	0.1	0.3	0.2	0.2	0.0	0.3
Moderately high	2.4	2.0	1.8	1.6	2.1	2.3	1.5	1.5	2.0	0.8	0.3	0.6	0.3	0.5	0.7	0.6	0.4	0.7	0.6	0.4
Very high	4.5	4.3	5.5	5.5	6.6	4.4	6.0	4.5	4.1	2.5	1.2	2.0	1.6	1.3	1.7	1.8	1.7	1.9	2.3	2.0
Approximate weighted N =	*2,655*	*2,547*	*2,517*	*2,347*	*2,543*	*2,525*	*2,226*	*2,128*	*2,089*	*2,126*	*2,412*	*2,425*	*2,402*	*2,321*	*2,377*	*2,270*	*2,234*	*2,341*	*2,298*	*2,233*
When you take LSD how long do you usually stay high? [a]																				
% of Recent Users																				
Usually don't get high	3.4	0.5	3.8	2.2	2.4	3.2	0.6	3.4	3.0	1.4	2.0	7.5	2.9	1.3	2.3	8.9	11.4	2.3	2.9	8.7
One to two hours	3.8	5.7	2.5	5.0	3.9	2.6	1.9	3.7	4.0	8.2	9.3	11.3	0.9	3.4	6.6	10.4	4.6	6.3	3.0	2.5
Three to six hours	27.7	20.1	21.1	19.6	25.4	29.7	21.9	31.7	32.7	40.6	31.9	31.6	23.4	27.8	43.1	14.6	34.1	23.1	29.8	40.5
Seven to 24 hours	62.3	70.6	67.0	70.0	62.3	61.4	71.0	55.6	55.9	43.3	52.4	37.4	63.3	49.3	43.2	57.4	46.1	59.0	49.3	43.6
More than 24 hours	2.9	3.0	5.7	3.3	6.0	3.2	4.6	5.6	4.4	6.5	4.4	12.2	9.5	18.2	4.9	8.7	3.9	9.3	15.1	4.6
Approximate weighted N =	*205*	*176*	*203*	*186*	*252*	*186*	*173*	*143*	*145*	*79*	*40*	*77*	*49*	*45*	*62*	*65*	*55*	*70*	*70*	*62*
% of All Respondents																				
No use in last 12 months	92.3	93.1	91.9	92.1	90.1	92.6	92.2	93.3	93.1	96.3	98.3	96.8	98.0	98.1	97.4	97.1	97.5	97.0	97.0	97.2
Usually don't get high	0.3	0.0	0.3	0.2	0.2	0.2	0.0	0.2	0.2	0.1	0.0	0.2	0.1	0.0	0.1	0.3	0.3	0.1	0.1	0.2
One to two hours	0.3	0.4	0.2	0.4	0.4	0.2	0.1	0.3	0.3	0.3	0.2	0.4	0.0	0.1	0.2	0.3	0.1	0.2	0.1	0.1
Three to six hours	2.1	1.4	1.7	1.6	2.5	2.2	1.7	2.1	2.3	1.5	0.5	1.0	0.5	0.5	1.1	0.4	0.9	0.7	0.9	1.1
Seven to 24 hours	4.8	4.9	5.4	5.6	6.2	4.5	5.5	3.7	3.9	1.6	0.9	1.2	1.3	1.0	1.1	1.7	1.2	1.8	1.5	1.2
More than 24 hours	0.2	0.2	0.5	0.3	0.6	0.2	0.4	0.4	0.3	0.2	0.1	0.4	0.2	0.4	0.1	0.3	0.1	0.3	0.5	0.1
Approximate weighted N =	*2,651*	*2,548*	*2,515*	*2,349*	*2,545*	*2,524*	*2,223*	*2,126*	*2,090*	*2,126*	*2,411*	*2,425*	*2,399*	*2,320*	*2,376*	*2,268*	*2,234*	*2,343*	*2,297*	*2,231*

Source. The Monitoring the Future study, the University of Michigan.

[a]These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

TABLE 7-3
HALLUCINOGENS OTHER THAN LSD
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take hallucinogens other than LSD how high do you usually get? [a]	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
% of Recent Users																		
Not at all high	2.4	1.2	1.2	1.2	2.1	0.9	2.3	2.5	4.0	4.9	3.2	3.4	5.6	3.1	1.0	2.5	5.0	1.0
A little high	7.9	9.6	8.4	8.3	9.6	10.4	12.9	10.3	8.2	10.8	9.5	13.6	13.6	8.8	8.2	5.8	9.9	18.2
Moderately high	35.5	39.6	40.8	36.3	37.7	38.9	37.9	35.9	36.6	38.0	36.1	36.8	32.1	28.7	33.4	41.2	41.0	32.0
Very high	54.1	49.7	49.6	54.3	50.6	49.9	46.9	51.3	51.2	46.3	51.3	46.3	48.6	59.5	57.4	50.5	44.1	48.8
Approximate weighted N =	*322*	*237*	*246*	*326*	*253*	*255*	*246*	*201*	*170*	*153*	*134*	*114*	*115*	*85*	*53*	*58*	*39*	*47*
% of All Respondents																		
No use in last 12 months	90.4	93.0	93.0	92.7	91.9	91.8	92.8	94.2	94.7	95.1	95.7	96.2	96.4	97.4	98.1	97.7	98.4	98.2
Not at all high	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.0
A little high	0.8	0.7	0.6	0.6	0.8	0.9	0.9	0.6	0.4	0.5	0.4	0.5	0.5	0.2	0.2	0.1	0.2	0.3
Moderately high	3.4	2.8	2.9	2.6	3.0	3.2	2.7	2.1	1.9	1.9	1.5	1.4	1.2	0.8	0.6	1.0	0.6	0.6
Very high	5.2	3.5	3.5	4.0	4.1	4.1	3.4	3.0	2.7	2.3	2.2	1.8	1.8	1.6	1.1	1.2	0.7	0.9
Approximate weighted N =	*3,354*	*3,386*	*3,514*	*4,466*	*3,127*	*3,098*	*3,407*	*3,466*	*3,235*	*3,129*	*3,142*	*3,004*	*3,182*	*3,220*	*2,734*	*2,498*	*2,472*	*2,591*
When you take hallucinogens other than LSD how long do you usually stay high? [a]																		
% of Recent Users																		
Usually don't get high	2.0	1.2	1.1	1.3	2.5	1.3	2.8	3.6	4.8	4.0	0.9	5.2	7.2	3.9	4.2	2.5	7.6	6.1
One to two hours	8.5	9.4	7.0	8.4	8.3	7.8	8.3	6.6	7.9	8.9	12.9	9.1	9.8	7.8	16.5	13.8	12.3	15.3
Three to six hours	41.3	46.1	45.5	47.7	48.2	49.1	47.1	52.6	54.1	48.7	46.7	43.3	46.0	46.2	35.3	46.8	25.9	38.9
Seven to 24 hours	45.6	39.9	44.1	41.1	37.2	39.6	38.7	34.4	30.5	36.0	37.1	40.6	35.8	40.5	42.1	25.8	52.4	33.3
More than 24 hours	2.7	3.4	2.3	1.5	3.8	2.2	3.1	2.8	2.7	2.5	2.5	1.9	1.3	1.6	1.9	11.2	1.8	6.4
Approximate weighted N =	*322*	*238*	*243*	*326*	*249*	*254*	*246*	*203*	*171*	*153*	*132*	*115*	*116*	*84*	*55*	*60*	*40*	*48*
% of All Respondents																		
No use in last 12 months	90.4	93.0	93.0	92.7	92.0	91.8	92.8	94.1	94.7	95.1	95.8	96.2	96.4	97.4	98.0	97.6	98.4	98.1
Usually don't get high	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.0	0.2	0.3	0.1	0.1	0.1	0.1	0.1
One to two hours	0.8	0.7	0.5	0.6	0.7	0.6	0.6	0.4	0.4	0.4	0.5	0.3	0.4	0.2	0.3	0.3	0.2	0.3
Three to six hours	4.0	3.2	3.2	3.5	3.8	4.0	3.4	3.1	2.9	2.4	2.0	1.7	1.7	1.2	0.7	1.1	0.4	0.7
Seven to 24 hours	4.4	2.8	3.1	3.0	3.0	3.2	2.8	2.0	1.6	1.8	1.6	1.6	1.3	1.1	0.8	0.6	0.8	0.6
More than 24 hours	0.3	0.2	0.2	0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.0	0.1
Approximate weighted N =	*3,354*	*3,400*	*3,471*	*4,466*	*3,123*	*3,096*	*3,407*	*3,467*	*3,236*	*3,129*	*3,140*	*3,005*	*3,183*	*3,219*	*2,736*	*2,499*	*2,473*	*2,592*

(Years cont.)

(Table continued on next page.)

TABLE 7-3 (cont.)
HALLUCINOGENS OTHER THAN LSD
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take hallucinogens other than LSD how high do you usually get? [a]	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
% of Recent Users																				
Not at all high	7.6	8.8	3.1	4.0	3.1	1.9	2.8	1.7	5.1	0.6	0.9	5.0	5.2	4.1	2.2	2.0	3.6	5.1	4.3	4.4
A little high	10.8	12.6	4.4	7.9	10.7	5.3	7.2	4.5	5.6	5.4	2.8	10.0	7.9	5.3	10.9	10.6	1.9	10.0	7.5	2.1
Moderately high	37.4	25.5	24.5	26.9	20.4	38.0	16.1	26.4	31.3	39.5	25.2	31.7	16.6	22.5	28.9	35.8	34.0	26.8	27.9	24.6
Very high	44.2	53.1	68.1	61.2	65.9	54.8	73.8	67.5	58.1	54.6	71.0	53.3	70.3	68.2	58.0	51.7	60.5	58.0	60.2	69.0
Approximate weighted N =	*62*	*67*	*86*	*103*	*120*	*110*	*98*	*97*	*126*	*108*	*129*	*151*	*132*	*101*	*121*	*106*	*102*	*110*	*109*	*107*
% of All Respondents																				
No use in last 12 months	97.6	97.3	96.6	95.6	95.2	95.6	95.6	95.3	93.9	94.9	94.6	93.7	94.4	95.6	94.9	95.3	95.4	95.2	95.2	95.1
Not at all high	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.0	0.1	0.3	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2
A little high	0.3	0.3	0.1	0.4	0.5	0.2	0.3	0.2	0.3	0.3	0.2	0.6	0.4	0.2	0.6	0.5	0.1	0.5	0.4	0.1
Moderately high	0.9	0.7	0.8	1.2	1.0	1.7	0.7	1.2	1.9	2.0	1.4	2.0	0.9	1.0	1.5	1.7	1.6	1.3	1.4	1.2
Very high	1.0	1.4	2.3	2.7	3.2	2.4	3.3	3.2	3.6	2.8	3.9	3.4	3.9	3.0	3.0	2.4	2.8	2.8	2.9	3.4
Approximate weighted N =	*2,629*	*2,523*	*2,515*	*2,319*	*2,500*	*2,486*	*2,213*	*2,079*	*2,058*	*2,116*	*2,385*	*2,394*	*2,374*	*2,291*	*2,354*	*2,242*	*2,210*	*2,303*	*2,259*	*2,180*
When you take hallucinogens other than LSD how long do you usually stay high? [a]																				
% of Recent Users																				
Usually don't get high	3.6	7.2	3.1	2.4	4.3	2.1	2.8	2.1	3.8	2.0	2.1	2.3	5.3	3.6	3.0	5.6	5.4	7.3	8.2	5.6
One to two hours	6.9	11.5	6.2	8.8	5.3	2.6	7.1	10.0	8.0	7.9	3.8	14.4	3.3	6.9	8.4	16.4	21.0	11.9	5.9	7.5
Three to six hours	51.9	41.5	35.0	55.6	57.9	56.0	44.9	52.0	49.5	57.2	49.9	54.0	52.7	49.4	53.1	45.5	34.7	46.6	44.0	44.1
Seven to 24 hours	37.7	39.8	50.2	29.5	30.6	37.3	42.2	32.7	35.5	32.9	42.0	28.4	37.2	36.9	35.4	27.4	34.5	28.2	31.8	40.2
More than 24 hours	0.0	0.0	5.5	3.6	2.0	1.9	3.1	3.2	3.1	0.0	2.1	1.0	1.6	3.3	0.0	5.1	4.4	5.8	10.1	2.7
Approximate weighted N =	*59*	*68*	*86*	*101*	*118*	*110*	*98*	*97*	*125*	*108*	*131*	*149*	*131*	*101*	*122*	*104*	*103*	*111*	*109*	*105*
% of All Respondents																				
No use in last 12 months	97.8	97.3	96.6	95.6	95.3	95.6	95.6	95.3	93.9	94.9	94.5	93.8	94.5	95.6	94.8	95.4	95.3	95.2	95.2	95.2
Usually don't get high	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.2	0.2	0.3	0.3	0.4	0.4	0.3
One to two hours	0.2	0.3	0.2	0.4	0.2	0.1	0.3	0.5	0.5	0.4	0.2	0.9	0.2	0.3	0.4	0.8	1.0	0.6	0.3	0.4
Three to six hours	1.2	1.1	1.2	2.4	2.7	2.5	2.0	2.4	3.0	2.9	2.7	3.4	2.9	2.2	2.8	2.1	1.6	2.2	2.1	2.1
Seven to 24 hours	0.8	1.1	1.7	1.3	1.4	1.7	1.9	1.5	2.2	1.7	2.3	1.8	2.1	1.6	1.8	1.3	1.6	1.4	1.5	1.9
More than 24 hours	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.2	0.0	0.2	0.2	0.3	0.5	0.1
Approximate weighted N =	*2,626*	*2,524*	*2,515*	*2,317*	*2,498*	*2,486*	*2,213*	*2,079*	*2,057*	*2,117*	*2,387*	*2,392*	*2,373*	*2,291*	*2,355*	*2,240*	*2,212*	*2,304*	*2,259*	*2,178*

Source. The Monitoring the Future study, the University of Michigan.

[a]These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

TABLE 7-4
COCAINE
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take cocaine how high do you usually get? [a]	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
% of Recent Users																		
I don't take it to get high	1.1	0.8	0.3	0.0	2.1	1.9	0.6	2.1	1.9	2.8	3.1	4.1	3.6	4.9	4.6	3.9	2.7	3.1
Not at all high	3.5	2.9	4.5	5.5	3.6	3.6	7.4	6.4	10.1	6.0	6.8	4.6	5.9	5.7	7.9	10.2	11.3	6.4
A little high	18.8	11.8	17.9	17.6	19.6	22.9	22.1	22.7	25.7	23.5	24.5	24.6	18.8	19.1	12.1	18.1	13.2	22.1
Moderately high	40.1	45.1	45.9	38.2	50.6	43.7	42.4	44.5	37.0	39.3	43.1	43.4	44.0	43.3	39.7	36.1	45.1	31.8
Very high	36.6	39.5	31.4	38.6	24.2	27.9	27.5	24.3	25.3	28.4	22.5	23.5	27.7	27.0	35.7	31.8	27.8	36.5
Approximate weighted N =	*124*	*166*	*223*	*335*	*394*	*360*	*434*	*421*	*343*	*362*	*409*	*407*	*329*	*264*	*156*	*109*	*71*	*66*
% of All Respondents																		
No use in last 12 months	94.4	94.0	92.8	91.0	87.5	88.4	87.2	87.9	89.4	88.4	87.0	86.4	89.5	91.7	94.2	95.6	97.1	97.4
I don't take it to get high	0.1	0.0	0.0	0.0	0.3	0.2	0.1	0.3	0.2	0.3	0.4	0.6	0.4	0.4	0.3	0.2	0.1	0.1
Not at all high	0.2	0.2	0.3	0.5	0.5	0.4	0.9	0.8	1.1	0.7	0.9	0.6	0.6	0.5	0.5	0.5	0.3	0.2
A little high	1.1	0.7	1.3	1.6	2.5	2.7	2.8	2.7	2.7	2.7	3.2	3.3	2.0	1.6	0.7	0.8	0.4	0.6
Moderately high	2.2	2.7	3.3	3.4	6.3	5.1	5.4	5.4	3.9	4.6	5.6	5.9	4.6	3.6	2.3	1.6	1.3	0.8
Very high	2.0	2.4	2.3	3.5	3.0	3.2	3.5	2.9	2.7	3.3	2.9	3.2	2.9	2.2	2.1	1.4	0.8	0.9
Approximate weighted N =	*2,214*	*2,767*	*3,097*	*3,722*	*3,142*	*3,105*	*3,400*	*3,473*	*3,235*	*3,114*	*3,142*	*2,992*	*3,130*	*3,179*	*2,685*	*2,480*	*2,420*	*2,560*
When you take cocaine how long do you usually stay high? [a]																		
% of Recent Users																		
Usually don't get high	3.4	2.8	3.6	5.8	5.8	7.2	8.2	8.2	14.5	9.7	9.2	8.7	9.8	12.8	11.3	11.6	21.5	6.6
One to two hours	31.0	27.6	31.9	33.2	43.3	38.2	45.9	43.2	41.3	43.7	48.6	55.2	44.7	49.3	52.6	52.0	34.0	41.8
Three to six hours	47.5	46.8	49.4	39.6	36.5	36.0	33.8	34.5	34.1	33.6	31.8	27.7	29.2	25.6	20.9	25.9	32.3	25.0
Seven to 24 hours	14.4	19.6	13.1	20.9	14.1	17.3	9.8	13.3	8.7	11.8	8.5	7.1	13.0	10.1	9.8	8.1	10.4	20.2
More than 24 hours	3.7	3.1	1.9	0.5	0.3	1.3	2.3	0.8	1.4	1.1	1.9	1.3	3.3	2.3	5.3	2.5	1.7	6.5
Approximate weighted N =	*125*	*165*	*220*	*331*	*392*	*357*	*432*	*419*	*344*	*360*	*403*	*408*	*329*	*262*	*151*	*108*	*72*	*64*
% of All Respondents																		
No use in last 12 months	94.4	94.0	92.8	91.0	87.5	88.5	87.3	87.9	89.4	88.4	87.1	86.4	89.5	91.7	94.4	95.6	97.0	97.5
Usually don't get high	0.2	0.2	0.3	0.5	0.7	0.8	1.0	1.0	1.5	1.1	1.2	1.2	1.0	1.1	0.6	0.5	0.6	0.2
One to two hours	1.7	1.7	2.3	3.0	5.4	4.4	5.8	5.2	4.4	5.1	6.2	7.5	4.7	4.1	3.0	2.3	1.0	1.0
Three to six hours	2.7	2.8	3.6	3.6	4.6	4.2	4.3	4.2	3.6	3.9	4.1	3.8	3.1	2.1	1.2	1.1	1.0	0.6
Seven to 24 hours	0.8	1.2	0.9	1.9	1.8	2.0	1.2	1.6	0.9	1.4	1.1	1.0	1.4	0.8	0.6	0.4	0.3	0.5
More than 24 hours	0.2	0.2	0.1	0.0	0.0	0.1	0.3	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.3	0.1	0.0	0.2
Approximate weighted N =	*2,232*	*2,750*	*3,056*	*3,678*	*3,140*	*3,102*	*3,398*	*3,471*	*3,235*	*3,112*	*3,137*	*2,993*	*3,130*	*3,178*	*2,680*	*2,479*	*2,420*	*2,559*

(Years cont.)

(Table continued on next page.)

TABLE 7-4 (cont.)
COCAINE
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take cocaine how high do you usually get? [a]	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
% of Recent Users																				
I don't take it to get high	7.7	2.6	4.6	9.5	4.6	7.6	5.1	5.1	11.7	4.6	2.4	5.1	3.6	3.3	0.0	7.5	6.6	8.3	12.2	3.3
Not at all high	12.1	10.5	8.9	5.1	5.1	10.8	7.1	8.6	8.9	8.9	12.8	12.2	12.7	4.0	6.3	11.1	8.5	7.6	5.2	6.9
A little high	19.7	16.3	12.9	13.2	15.4	16.6	12.0	29.1	14.4	14.3	12.6	17.9	14.8	17.4	15.5	14.9	22.4	24.9	18.9	12.7
Moderately high	33.6	33.0	27.8	46.7	30.6	35.2	45.9	29.0	32.2	42.9	41.8	35.8	33.6	40.3	40.5	32.9	26.9	20.8	33.2	46.9
Very high	27.0	37.5	45.8	25.4	44.3	29.8	29.9	28.2	32.7	29.3	30.5	29.0	35.3	35.0	37.6	33.7	35.5	38.3	30.5	30.2
Approximate weighted N =	*89*	*79*	*85*	*76*	*127*	*119*	*126*	*99*	*99*	*90*	*97*	*124*	*119*	*118*	*113*	*107*	*66*	*65*	*67*	*55*
% of All Respondents																				
No use in last 12 months	96.5	96.8	96.5	96.6	94.8	95.1	94.2	95.1	95.1	95.6	95.8	94.6	94.9	94.8	95.1	95.1	97.0	97.1	97.0	97.4
I don't take it to get high	0.3	0.1	0.2	0.3	0.2	0.4	0.3	0.3	0.6	0.2	0.1	0.3	0.2	0.2	0.0	0.4	0.2	0.2	0.4	0.1
Not at all high	0.4	0.3	0.3	0.2	0.3	0.5	0.4	0.4	0.4	0.4	0.5	0.7	0.7	0.2	0.3	0.5	0.3	0.2	0.2	0.2
A little high	0.7	0.5	0.4	0.4	0.8	0.8	0.7	1.4	0.7	0.6	0.5	1.0	0.8	0.9	0.8	0.7	0.7	0.7	0.6	0.3
Moderately high	1.2	1.1	1.0	1.6	1.6	1.7	2.7	1.4	1.6	1.9	1.8	1.9	1.7	2.1	2.0	1.6	0.8	0.6	1.0	1.2
Very high	0.9	1.2	1.6	0.9	2.3	1.5	1.7	1.4	1.6	1.3	1.3	1.6	1.8	1.8	1.8	1.6	1.1	1.1	0.9	0.8
Approximate weighted N =	*2,550*	*2,473*	*2,463*	*2,261*	*2,452*	*2,424*	*2,169*	*2,024*	*2,020*	*2,053*	*2,308*	*2,318*	*2,319*	*2,269*	*2,311*	*2,208*	*2,165*	*2,225*	*2,217*	*2,136*
When you take cocaine how long do you usually stay high? [a]																				
% of Recent Users																				
Usually don't get high	16.9	10.4	13.0	6.3	10.5	14.1	9.8	15.0	12.1	7.3	14.1	16.0	15.8	13.1	8.7	15.1	17.0	18.0	15.4	10.9
One to two hours	42.7	52.8	41.4	51.8	51.3	44.4	39.7	39.8	40.9	48.9	39.6	50.1	46.7	54.9	51.6	52.6	61.9	41.8	44.3	53.3
Three to six hours	24.2	20.1	18.7	22.9	24.9	29.6	36.1	28.5	25.0	29.1	32.1	22.3	22.2	22.1	26.1	20.6	15.2	16.5	24.8	22.4
Seven to 24 hours	12.9	12.8	21.1	11.5	13.2	6.7	12.9	11.4	18.2	10.8	11.0	8.8	13.0	9.1	10.7	8.5	4.5	19.2	12.3	12.2
More than 24 hours	3.3	3.9	5.7	7.5	0.0	5.2	1.5	5.3	3.9	3.9	3.3	2.9	2.4	0.8	2.9	3.3	1.4	4.4	3.3	1.3
Approximate weighted N =	*92*	*74*	*83*	*69*	*128*	*115*	*126*	*98*	*99*	*86*	*93*	*124*	*116*	*114*	*111*	*100*	*67*	*63*	*66*	*57*
% of All Respondents																				
No use in last 12 months	96.4	97.0	96.6	96.9	94.8	95.2	94.2	95.2	95.1	95.8	96.0	94.7	95.0	95.0	95.2	95.5	96.9	97.2	97.0	97.3
Usually don't get high	0.6	0.3	0.4	0.2	0.5	0.7	0.6	0.7	0.6	0.3	0.6	0.9	0.8	0.7	0.4	0.7	0.5	0.5	0.5	0.3
One to two hours	1.5	1.6	1.4	1.6	2.7	2.1	2.3	1.9	2.0	2.1	1.6	2.7	2.3	2.8	2.5	2.4	1.9	1.2	1.3	1.4
Three to six hours	0.9	0.6	0.6	0.7	1.3	1.4	2.1	1.4	1.2	1.2	1.3	1.2	1.1	1.1	1.3	0.9	0.5	0.5	0.7	0.6
Seven to 24 hours	0.5	0.4	0.7	0.4	0.7	0.3	0.7	0.6	0.9	0.5	0.4	0.5	0.7	0.5	0.5	0.4	0.1	0.5	0.4	0.3
More than 24 hours	0.1	0.1	0.2	0.2	0.0	0.2	0.1	0.3	0.2	0.2	0.1	0.2	0.1	0.0	0.1	0.2	0.0	0.1	0.1	0.0
Approximate weighted N =	*2,553*	*2,468*	*2,461*	*2,254*	*2,453*	*2,421*	*2,168*	*2,022*	*2,020*	*2,048*	*2,305*	*2,317*	*2,315*	*2,266*	*2,310*	*2,200*	*2,166*	*2,224*	*2,216*	*2,138*

Source. The Monitoring the Future study, the University of Michigan.

[a] These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

TABLE 7-5
NARCOTICS OTHER THAN HEROIN
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take narcotics other than heroin how high do you usually get? [a]	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
% of Recent Users																		
I don't take them to get high	4.1	7.6	7.8	10.4	10.0	8.6	14.5	17.8	21.9	22.5	21.3	19.6	28.8	24.5	29.6	36.6	20.5	27.7
Not at all high	3.6	6.1	2.8	5.9	8.1	10.5	11.6	3.8	9.9	7.5	12.1	12.1	19.1	7.9	12.2	10.1	9.9	26.7
A little high	8.8	18.3	25.9	17.5	24.3	21.6	30.0	26.6	17.9	29.4	28.5	25.2	18.7	19.3	15.1	18.5	20.6	19.2
Moderately high	45.0	40.4	37.5	41.4	40.1	41.2	29.4	34.0	34.3	28.1	27.7	24.3	15.5	31.8	27.5	19.5	36.9	14.2
Very high	38.5	27.5	26.0	24.8	17.5	18.2	14.5	17.7	16.0	12.5	10.4	18.8	17.8	16.6	15.6	15.3	12.1	12.1
Approximate weighted N =	*78*	*130*	*124*	*179*	*156*	*165*	*182*	*116*	*94*	*125*	*126*	*104*	*112*	*84*	*66*	*71*	*46*	*74*
% of All Respondents																		
No use in last 12 months	94.3	94.3	93.6	94.0	94.9	94.5	94.4	96.5	97.0	95.9	95.9	96.4	96.4	97.3	97.5	97.1	98.1	97.1
I don't take them to get high	0.2	0.4	0.5	0.6	0.5	0.5	0.8	0.6	0.7	0.9	0.9	0.7	1.0	0.7	0.7	1.1	0.4	0.8
Not at all high	0.2	0.3	0.2	0.4	0.4	0.6	0.6	0.1	0.3	0.3	0.5	0.4	0.7	0.2	0.3	0.3	0.2	0.8
A little high	0.5	1.0	1.7	1.1	1.2	1.2	1.7	0.9	0.5	1.2	1.2	0.9	0.7	0.5	0.4	0.5	0.4	0.6
Moderately high	2.6	2.3	2.4	2.5	2.1	2.3	1.6	1.2	1.0	1.2	1.1	0.9	0.6	0.8	0.7	0.6	0.7	0.4
Very high	2.2	1.6	1.7	1.5	0.9	1.0	0.8	0.6	0.5	0.5	0.4	0.7	0.6	0.4	0.4	0.4	0.2	0.4
Approximate weighted N =	*1,368*	*2,281*	*1,938*	*2,983*	*3,045*	*2,983*	*3,277*	*3,353*	*3,115*	*3,048*	*3,065*	*2,911*	*3,091*	*3,144*	*2,655*	*2,465*	*2,410*	*2,538*
When you take narcotics other than heroin how long do you usually stay high? [a]																		
% of Recent Users																		
Usually don't get high	6.8	15.4	7.4	24.6	17.8	15.7	24.2	17.0	23.9	23.2	25.1	24.7	41.4	23.7	38.8	38.5	31.3	36.8
One to two hours	8.8	16.7	32.5	19.3	24.6	29.5	30.4	36.4	26.7	29.3	30.9	30.9	25.9	26.6	18.2	24.0	23.0	26.7
Three to six hours	56.5	44.1	46.2	50.2	44.3	42.1	33.2	34.0	38.6	38.1	29.9	35.3	24.9	41.4	22.6	29.1	38.2	26.0
Seven to 24 hours	24.5	20.5	11.1	15.9	12.1	12.4	9.8	12.0	8.4	8.8	13.3	9.2	5.8	7.5	15.6	5.7	7.5	5.6
More than 24 hours	3.4	3.2	2.8	0.0	1.2	0.2	2.3	0.6	2.4	0.6	0.8	0.0	2.0	0.8	4.8	2.7	0.0	5.0
Approximate weighted N =	*78*	*130*	*124*	*173*	*151*	*164*	*180*	*116*	*94*	*121*	*128*	*102*	*112*	*79*	*65*	*69*	*49*	*76*
% of All Respondents																		
No use in last 12 months	94.3	94.3	93.6	94.0	95.0	94.5	94.5	96.5	97.0	96.0	95.8	96.5	96.4	97.5	97.5	97.2	98.0	97.0
Usually don't get high	0.4	0.9	0.5	0.9	0.9	0.9	1.3	0.6	0.7	0.9	1.0	0.9	1.5	0.6	1.0	1.1	0.6	1.1
One to two hours	0.5	1.0	2.1	1.2	1.2	1.6	1.7	1.3	0.8	1.2	1.3	1.1	0.9	0.7	0.4	0.7	0.5	0.8
Three to six hours	3.2	2.5	3.0	3.0	2.2	2.3	1.8	1.2	1.2	1.5	1.2	1.2	0.9	1.0	0.6	0.8	0.8	0.8
Seven to 24 hours	1.4	1.2	0.7	1.0	0.6	0.7	0.5	0.4	0.3	0.3	0.6	0.3	0.2	0.2	0.4	0.2	0.2	0.2
More than 24 hours	0.2	0.2	0.2	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Approximate weighted N =	*1,368*	*2,281*	*1,938*	*2,883*	*3,040*	*2,982*	*3,275*	*3,353*	*3,116*	*3,043*	*3,067*	*2,908*	*3,092*	*3,139*	*2,654*	*2,463*	*2,413*	*2,540*

(Years cont.)

(Table continued on next page.)

TABLE 7-5 (cont.)
NARCOTICS OTHER THAN HEROIN
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take narcotics other than heroin how high do you usually get? [a]	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
% of Recent Users																				
I don't take them to get high	25.1	22.7	13.7	23.4	12.8	12.6	14.2	19.6	18.6	15.4	19.4	7.4	15.1	10.7	15.0	15.6	17.6	13.3	11.2	12.0
Not at all high	18.0	10.8	13.0	12.3	5.0	9.8	10.6	9.0	0.0	11.6	4.6	8.9	8.5	7.2	7.7	9.6	6.0	9.9	8.9	12.3
A little high	12.8	22.8	13.9	20.0	27.4	27.5	14.7	20.8	27.8	23.0	21.2	23.9	28.4	25.9	26.3	24.1	23.7	21.9	25.1	23.2
Moderately high	27.9	29.0	34.0	23.4	43.0	26.0	38.3	30.2	31.6	35.3	40.3	42.3	34.7	37.0	39.5	37.5	39.1	38.6	37.5	36.7
Very high	16.3	14.8	25.5	20.9	11.8	24.1	22.3	20.4	21.9	14.8	14.5	17.5	13.3	19.2	11.6	13.1	13.7	16.2	17.4	15.9
Approximate weighted N =	*56*	*58*	*51*	*82*	*96*	*113*	*89*	*102*	*82*	*133*	*158*	*182*	*168*	*144*	*186*	*174*	*152*	*147*	*143*	*140*
% of All Respondents																				
No use in last 12 months	97.8	97.7	97.9	96.4	96.0	95.3	95.9	94.9	95.9	93.5	93.1	92.2	92.7	93.6	91.9	92.0	93.0	93.3	93.5	93.5
I don't take them to get high	0.6	0.5	0.3	0.8	0.5	0.6	0.6	1.0	0.8	1.0	1.3	0.6	1.1	0.7	1.2	1.3	1.2	0.9	0.7	0.8
Not at all high	0.4	0.3	0.3	0.4	0.2	0.5	0.4	0.5	0.0	0.8	0.3	0.7	0.6	0.5	0.6	0.8	0.4	0.7	0.6	0.8
A little high	0.3	0.5	0.3	0.7	1.1	1.3	0.6	1.1	1.1	1.5	1.5	1.9	2.1	1.7	2.1	1.9	1.7	1.5	1.6	1.5
Moderately high	0.6	0.7	0.7	0.9	1.7	1.2	1.6	1.5	1.3	2.3	2.8	3.3	2.5	2.4	3.2	3.0	2.8	2.6	2.4	2.4
Very high	0.4	0.3	0.5	0.8	0.5	1.1	0.9	1.0	0.9	1.0	1.0	1.4	1.0	1.2	0.9	1.1	1.0	1.1	1.1	1.0
Approximate weighted N =	*2,553*	*2,492*	*2,442*	*2,261*	*2,407*	*2,409*	*2,167*	*2,001*	*1,996*	*2,035*	*2,299*	*2,334*	*2,305*	*2,258*	*2,304*	*2,177*	*2,162*	*2,202*	*2,203*	*2,141*
When you take narcotics other than heroin how long do you usually stay high? [a]																				
% of Recent Users																				
Usually don't get high	36.3	31.7	22.4	27.8	20.6	18.8	21.5	23.1	15.2	22.8	17.6	15.1	17.4	12.5	17.8	19.3	18.4	19.7	17.6	20.6
One to two hours	18.1	31.6	23.8	22.7	35.7	26.1	30.1	25.9	36.7	29.7	34.4	35.4	35.3	36.8	33.1	32.1	37.7	24.0	27.3	29.8
Three to six hours	29.9	35.2	36.2	32.5	36.1	37.8	29.2	42.9	40.2	33.0	36.8	42.0	33.3	40.1	42.1	37.3	36.1	40.6	48.4	42.1
Seven to 24 hours	13.0	0.7	15.4	14.2	7.6	14.4	17.4	3.9	7.8	14.5	10.0	6.7	11.5	9.3	6.4	9.0	6.4	14.7	6.7	7.5
More than 24 hours	2.7	0.9	2.3	2.7	0.0	2.9	1.7	4.2	0.0	0.0	1.2	0.8	2.6	1.3	0.7	2.4	1.6	1.1	0.0	0.0
Approximate weighted N =	*57*	*60*	*49*	*82*	*96*	*111*	*89*	*97*	*84*	*136*	*156*	*182*	*166*	*144*	*185*	*174*	*153*	*150*	*145*	*139*
% of All Respondents																				
No use in last 12 months	97.8	97.6	98.0	96.4	96.0	95.4	95.9	95.1	95.8	93.3	93.2	92.2	92.8	93.6	92.0	92.0	92.9	93.2	93.4	93.5
Usually don't get high	0.8	0.8	0.5	1.0	0.8	0.9	0.9	1.1	0.6	1.5	1.2	1.2	1.3	0.8	1.4	1.5	1.3	1.3	1.2	1.3
One to two hours	0.4	0.8	0.5	0.8	1.4	1.2	1.2	1.3	1.5	2.0	2.3	2.8	2.5	2.4	2.7	2.6	2.7	1.6	1.8	1.9
Three to six hours	0.7	0.8	0.7	1.2	1.4	1.7	1.2	2.1	1.7	2.2	2.5	3.3	2.4	2.6	3.4	3.0	2.6	2.8	3.2	2.7
Seven to 24 hours	0.3	0.0	0.3	0.5	0.3	0.7	0.7	0.2	0.3	1.0	0.7	0.5	0.8	0.6	0.5	0.7	0.5	1.0	0.4	0.5
More than 24 hours	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.0	0.0
Approximate weighted N =	*2,554*	*2,493*	*2,441*	*2,261*	*2,407*	*2,406*	*2,167*	*1,996*	*1,998*	*2,037*	*2,297*	*2,334*	*2,303*	*2,258*	*2,302*	*2,177*	*2,164*	*2,205*	*2,205*	*2,140*

Source. The Monitoring the Future study, the University of Michigan.

[a]These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

TABLE 7-6
AMPHETAMINES
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take amphetamines how high do you usually get? [a]	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
% of Recent Users																		
I don't take them to get high	9.3	10.7	15.1	14.7	16.8	17.1	20.2	21.0	24.2	22.8	20.4	18.7	20.7	23.9	19.3	15.8	24.7	15.8
Not at all high	4.6	5.0	7.5	6.2	7.7	8.9	11.5	9.1	11.9	9.3	12.8	10.8	12.2	14.2	14.0	18.8	10.8	19.2
A little high	26.4	26.1	24.0	25.9	26.5	34.0	31.4	36.8	33.0	34.8	36.7	42.6	40.0	29.1	30.8	30.0	35.5	28.6
Moderately high	44.6	43.8	39.2	40.2	36.4	30.8	30.6	28.5	27.0	29.5	24.9	23.3	20.6	24.8	24.4	24.9	16.8	23.0
Very high	15.1	14.4	14.1	13.0	12.6	9.3	6.3	4.6	3.9	3.5	5.2	4.6	6.6	8.0	11.5	10.5	12.1	13.4
Approximate weighted N =	*410*	*406*	*449*	*542*	*507*	*575*	*788*	*622*	*463*	*418*	*380*	*305*	*265*	*196*	*153*	*131*	*107*	*105*
% of All Respondents																		
No use in last 12 months	83.8	84.2	83.7	82.9	83.6	81.2	76.5	82.0	85.6	86.7	87.9	89.8	91.7	93.9	94.4	94.8	95.7	96.0
I don't take them to get high	1.5	1.7	2.5	2.5	2.8	3.2	4.8	3.8	3.5	3.0	2.5	1.9	1.7	1.5	1.1	0.8	1.1	0.6
Not at all high	0.7	0.8	1.2	1.1	1.3	1.7	2.7	1.6	1.7	1.2	1.6	1.1	1.0	0.9	0.8	1.0	0.5	0.8
A little high	4.3	4.1	3.9	4.4	4.3	6.4	7.4	6.6	4.8	4.6	4.5	4.3	3.3	1.8	1.7	1.6	1.5	1.1
Moderately high	7.2	6.9	6.4	6.9	6.0	5.8	7.2	5.1	3.9	3.9	3.0	2.4	1.7	1.5	1.4	1.3	0.7	0.9
Very high	2.4	2.3	2.3	2.2	2.1	1.7	1.5	0.8	0.6	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.5	0.5
Approximate weighted N =	*2,531*	*2,570*	*2,755*	*3,170*	*3,098*	*3,055*	*3,354*	*3,455*	*3,211*	*3,129*	*3,131*	*2,994*	*3,170*	*3,217*	*2,741*	*2,513*	*2,473*	*2,609*
When you take amphetamines how long do you usually stay high? [a]																		
% of Recent Users																		
Usually don't get high	10.7	11.2	11.9	14.5	15.4	17.9	24.4	17.5	22.7	25.3	26.1	21.3	24.4	29.3	25.3	30.0	38.8	31.3
One to two hours	11.4	12.1	15.3	17.0	18.7	19.9	20.3	25.2	23.2	27.0	31.4	36.8	37.4	30.4	36.9	33.2	23.4	32.2
Three to six hours	37.0	48.4	38.4	39.5	40.1	43.4	38.2	45.5	42.6	35.7	31.2	31.0	23.3	26.0	26.5	22.5	19.0	11.0
Seven to 24 hours	37.0	26.1	31.6	27.1	23.8	17.7	16.3	11.0	9.7	11.9	10.8	10.1	12.9	13.1	7.2	12.9	12.8	18.1
More than 24 hours	3.8	2.1	2.9	1.9	2.0	1.1	0.8	0.8	1.8	0.2	0.6	0.8	2.0	1.1	4.2	1.4	6.0	7.5
Approximate weighted N =	*412*	*413*	*446*	*546*	*521*	*583*	*810*	*627*	*478*	*424*	*392*	*309*	*267*	*202*	*154*	*131*	*109*	*102*
% of All Respondents																		
No use in last 12 months	83.8	84.2	83.7	82.9	83.3	81.0	76.0	81.9	85.2	86.5	87.5	89.7	91.6	93.7	94.4	94.8	95.6	96.1
Usually don't get high	1.7	1.8	1.9	2.5	2.6	3.4	5.8	3.2	3.4	3.4	3.3	2.2	2.0	1.8	1.4	1.6	1.7	1.2
One to two hours	1.8	1.9	2.5	2.9	3.1	3.8	4.9	4.6	3.4	3.7	3.9	3.8	3.1	1.9	2.1	1.7	1.0	1.3
Three to six hours	6.0	7.6	6.3	6.7	6.7	8.3	9.2	8.2	6.3	4.8	3.9	3.2	2.0	1.6	1.5	1.2	0.8	0.4
Seven to 24 hours	6.0	4.1	5.1	4.6	4.0	3.4	3.9	2.0	1.4	1.6	1.3	1.0	1.1	0.8	0.4	0.7	0.6	0.7
More than 24 hours	0.6	0.3	0.5	0.3	0.3	0.2	0.2	0.2	0.3	0.0	0.1	0.1	0.2	0.1	0.2	0.1	0.3	0.3
Approximate weighted N =	*2,543*	*2,614*	*2,736*	*3,193*	*3,111*	*3,063*	*3,375*	*3,460*	*3,227*	*3,135*	*3,142*	*2,998*	*3,172*	*3,223*	*2,742*	*2,513*	*2,475*	*2,607*

(Years cont.)

(Table continued on next page.)

TABLE 7-6 (cont.)
AMPHETAMINES
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take amphetamines how high do you usually get? [a]	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
% of Recent Users																				
I don't take them to get high	18.6	19.9	16.1	30.6	18.1	18.9	19.6	17.3	22.4	27.4	20.3	18.8	18.5	12.7	18.5	18.8	17.2	18.5	25.9	24.6
Not at all high	20.5	12.0	17.0	9.3	16.0	12.4	12.9	11.4	11.8	15.3	13.7	14.2	11.4	11.4	17.0	14.5	21.2	14.9	10.2	13.9
A little high	30.6	29.1	27.5	25.4	27.3	27.3	26.9	23.5	15.9	23.9	22.6	29.4	23.7	22.7	18.9	22.0	14.7	23.6	27.6	19.0
Moderately high	19.9	26.8	28.1	18.3	23.2	25.1	25.9	28.2	27.4	18.6	29.9	24.6	31.5	35.3	33.4	30.7	28.3	24.0	25.3	31.3
Very high	10.3	12.2	11.3	16.4	15.3	16.3	14.6	19.6	22.5	14.8	13.5	13.1	14.9	17.9	12.2	14.0	18.6	18.9	11.0	11.3
Approximate weighted N =	*127*	*144*	*145*	*138*	*183*	*198*	*141*	*126*	*145*	*146*	*177*	*206*	*135*	*147*	*149*	*124*	*122*	*121*	*170*	*121*
% of All Respondents																				
No use in last 12 months	95.2	94.3	94.2	94.0	92.6	92.0	93.7	93.9	92.9	93.0	92.6	91.4	94.3	93.6	93.7	94.5	94.5	94.8	92.6	94.5
I don't take them to get high	0.9	1.1	0.9	1.8	1.3	1.5	1.2	1.1	1.6	1.9	1.5	1.6	1.1	0.8	1.2	1.0	1.0	1.0	1.9	1.4
Not at all high	1.0	0.7	1.0	0.6	1.2	1.0	0.8	0.7	0.8	1.1	1.0	1.2	0.7	0.7	1.1	0.8	1.2	0.8	0.8	0.8
A little high	1.5	1.7	1.6	1.5	2.0	2.2	1.7	1.4	1.1	1.7	1.7	2.5	1.3	1.4	1.2	1.2	0.8	1.2	2.0	1.1
Moderately high	1.0	1.5	1.6	1.1	1.7	2.0	1.6	1.7	1.9	1.3	2.2	2.1	1.8	2.2	2.1	1.7	1.6	1.3	1.9	1.7
Very high	0.5	0.7	0.6	1.0	1.1	1.3	0.9	1.2	1.6	1.0	1.0	1.1	0.8	1.1	0.8	0.8	1.0	1.0	0.8	0.6
Approximate weighted N =	*2,634*	*2,538*	*2,514*	*2,300*	*2,490*	*2,482*	*2,233*	*2,058*	*2,053*	*2,101*	*2,383*	*2,404*	*2,381*	*2,313*	*2,374*	*2,253*	*2,227*	*2,316*	*2,293*	*2,199*

When you take amphetamines how long do you usually stay high? [a]	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
% of Recent Users																				
Usually don't get high	33.7	34.6	27.9	32.7	29.0	23.1	21.7	24.1	30.1	36.4	27.2	29.5	28.1	20.6	28.0	26.6	30.1	27.4	19.6	30.4
One to two hours	31.5	28.7	23.8	25.1	26.7	26.5	29.0	26.9	27.8	18.2	25.0	21.8	17.3	14.3	21.6	20.7	12.7	14.8	17.6	15.5
Three to six hours	25.0	20.7	29.7	27.2	29.8	28.0	37.5	34.2	23.9	22.3	24.5	27.0	24.6	30.9	24.7	33.7	32.5	26.0	34.1	35.1
Seven to 24 hours	6.9	10.7	13.6	11.6	12.6	16.9	8.6	14.2	17.0	18.1	18.4	21.0	20.1	30.4	18.4	16.3	23.1	24.6	23.9	15.2
More than 24 hours	3.0	5.3	4.9	3.4	1.9	5.5	3.2	0.6	1.1	5.0	5.0	0.8	9.9	3.8	7.4	2.7	1.7	7.3	4.9	3.7
Approximate weighted N =	*125*	*146*	*147*	*136*	*178*	*195*	*134*	*123*	*143*	*143*	*172*	*206*	*133*	*147*	*148*	*121*	*119*	*117*	*165*	*119*
% of All Respondents																				
No use in last 12 months	95.3	94.3	94.2	94.1	92.8	92.1	94.0	94.0	93.0	93.2	92.8	91.4	94.4	93.7	93.8	94.6	94.7	94.9	92.8	94.6
Usually don't get high	1.6	2.0	1.6	1.9	2.1	1.8	1.3	1.4	2.1	2.5	2.0	2.5	1.6	1.3	1.8	1.4	1.6	1.4	1.4	1.6
One to two hours	1.5	1.6	1.4	1.5	1.9	2.1	1.7	1.6	1.9	1.2	1.8	1.9	1.0	0.9	1.4	1.1	0.7	0.7	1.3	0.8
Three to six hours	1.2	1.2	1.7	1.6	2.1	2.2	2.3	2.0	1.7	1.5	1.8	2.3	1.4	2.0	1.5	1.8	1.7	1.3	2.5	1.9
Seven to 24 hours	0.3	0.6	0.8	0.7	0.9	1.3	0.5	0.9	1.2	1.2	1.3	1.8	1.1	1.9	1.2	0.9	1.2	1.2	1.7	0.8
More than 24 hours	0.1	0.3	0.3	0.2	0.1	0.4	0.2	0.0	0.1	0.3	0.4	0.1	0.6	0.2	0.5	0.2	0.1	0.4	0.4	0.2
Approximate weighted N =	*2,633*	*2,539*	*2,516*	*2,298*	*2,485*	*2,479*	*2,226*	*2,055*	*2,051*	*2,098*	*2,378*	*2,404*	*2,379*	*2,313*	*2,373*	*2,251*	*2,223*	*2,312*	*2,288*	*2,197*

Source. The Monitoring the Future study, the University of Michigan.

[a]These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

TABLE 7-7
TRANQUILIZERS
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take tranquilizers how high do you usually get? [a]	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
% of Recent Users																		
I don't take them to get high	17.9	18.5	23.6	23.0	16.8	14.7	19.1	25.3	20.2	24.3	21.7	30.7	30.4	42.7	34.8	34.5	48.3	31.0
Not at all high	11.1	16.2	12.4	14.0	15.0	17.6	17.0	17.3	17.1	16.7	17.6	24.0	20.8	12.9	22.6	11.5	13.9	18.6
A little high	30.1	24.1	29.5	27.0	27.0	27.5	28.7	30.0	27.7	29.9	37.5	19.2	18.4	22.4	16.6	26.1	19.7	16.1
Moderately high	28.9	31.4	25.8	29.1	30.5	29.8	22.9	18.5	26.0	21.4	19.8	17.3	18.2	14.1	21.5	18.2	17.3	21.2
Very high	11.9	9.8	8.7	6.8	10.8	10.5	12.4	8.8	9.0	7.7	3.4	8.9	12.2	7.9	4.5	9.8	0.8	13.2
Approximate weighted N =	*159*	*213*	*243*	*267*	*218*	*205*	*223*	*154*	*128*	*115*	*144*	*122*	*125*	*99*	*68*	*75*	*51*	*57*
% of All Respondents																		
No use in last 12 months	89.4	89.7	89.2	90.1	92.9	93.2	93.3	95.5	96.0	96.3	95.4	95.9	96.0	96.9	97.5	97.0	97.9	97.8
I don't take them to get high	1.9	1.9	2.5	2.3	1.2	1.0	1.3	1.1	0.8	0.9	1.0	1.3	1.2	1.3	0.9	1.0	1.0	0.7
Not at all high	1.2	1.7	1.3	1.4	1.1	1.2	1.1	0.8	0.7	0.6	0.8	1.0	0.8	0.4	0.6	0.3	0.3	0.4
A little high	3.2	2.5	3.2	2.7	1.9	1.9	1.9	1.4	1.1	1.1	1.7	0.8	0.7	0.7	0.4	0.8	0.4	0.4
Moderately high	3.1	3.2	2.8	2.9	2.2	2.0	1.5	0.8	1.0	0.8	0.9	0.7	0.7	0.4	0.5	0.6	0.4	0.5
Very high	1.3	1.0	0.9	0.7	0.8	0.7	0.8	0.4	0.4	0.3	0.2	0.4	0.5	0.2	0.1	0.3	0.0	0.3
Approximate weighted N =	*1,500*	*2,068*	*2,250*	*2,697*	*3,073*	*3,040*	*3,330*	*3,420*	*3,186*	*3,074*	*3,119*	*2,963*	*3,141*	*3,199*	*2,710*	*2,509*	*2,448*	*2,571*
When you take tranquilizers how long do you usually stay high? [a]																		
% of Recent Users																		
Usually don't get high	29.9	33.0	31.6	32.7	27.8	27.9	31.1	31.9	38.8	36.9	36.8	46.0	50.4	48.3	45.3	35.8	47.2	48.7
One to two hours	17.6	24.1	22.5	26.0	21.3	25.4	27.2	25.0	21.6	25.7	24.7	25.3	20.0	19.3	19.9	20.7	20.5	19.1
Three to six hours	42.9	35.6	38.8	32.3	40.2	32.4	32.1	33.3	32.5	27.8	33.5	22.4	21.8	23.7	28.5	31.1	25.0	18.9
Seven to 24 hours	9.5	6.5	6.1	8.7	9.4	14.2	9.5	9.8	6.3	9.5	3.5	4.4	7.3	8.0	3.0	9.7	5.6	12.2
More than 24 hours	0.0	0.7	1.0	0.4	1.3	0.0	0.0	0.0	0.8	0.0	1.6	1.9	0.4	0.8	3.3	2.8	1.6	1.2
Approximate weighted N =	*158*	*214*	*242*	*269*	*221*	*200*	*221*	*151*	*132*	*114*	*134*	*121*	*129*	*95*	*65*	*67*	*48*	*55*
% of All Respondents																		
No use in last 12 months	89.4	89.7	89.2	90.1	92.8	93.4	93.4	95.6	95.9	96.3	95.7	95.9	95.9	97.0	97.6	97.3	98.0	97.9
Usually don't get high	3.2	3.4	3.4	3.2	2.0	1.8	2.1	1.4	1.6	1.4	1.6	1.9	2.1	1.4	1.1	1.0	0.9	1.0
One to two hours	1.9	2.5	2.4	2.6	1.5	1.7	1.8	1.1	0.9	1.0	1.1	1.0	0.8	0.6	0.5	0.6	0.4	0.4
Three to six hours	4.5	3.7	4.2	3.2	2.9	2.1	2.1	1.5	1.3	1.0	1.4	0.9	0.9	0.7	0.7	0.8	0.5	0.4
Seven to 24 hours	1.0	0.7	0.7	0.9	0.7	0.9	0.6	0.4	0.3	0.4	0.1	0.2	0.3	0.2	0.1	0.3	0.1	0.3
More than 24 hours	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0
Approximate weighted N =	*1,491*	*2,078*	*2,241*	*2,717*	*3,075*	*3,034*	*3,328*	*3,417*	*3,190*	*3,072*	*3,110*	*2,962*	*3,144*	*3,196*	*2,707*	*2,501*	*2,446*	*2,570*

(Years cont.)

(Table continued on next page.)

TABLE 7-7 (cont.)
TRANQUILIZERS
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you take tranquilizers how high do you usually get? [a]	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
% of Recent Users																				
I don't take them to get high	29.0	30.5	26.6	18.3	19.3	19.6	11.3	9.4	20.1	16.6	16.1	14.3	13.4	10.3	11.7	14.1	11.0	15.2	14.0	13.5
Not at all high	29.5	19.2	18.6	9.4	13.4	8.0	7.9	10.9	11.8	10.4	7.5	13.4	10.3	3.2	7.8	10.4	6.7	8.4	13.6	10.8
A little high	19.0	22.0	18.9	34.0	25.2	24.9	22.1	35.2	21.4	17.2	23.2	24.1	18.0	31.5	22.3	18.5	19.9	15.0	21.8	18.0
Moderately high	14.6	24.4	24.0	28.1	23.9	37.9	39.7	33.7	29.4	34.2	32.0	32.3	36.7	39.0	41.5	34.4	34.7	31.5	22.7	32.6
Very high	7.8	4.0	11.8	10.2	18.2	9.5	19.1	10.9	17.3	21.6	21.2	16.0	21.6	16.0	16.7	22.6	27.7	29.9	27.9	25.2
Approximate weighted N =	*68*	*58*	*67*	*54*	*83*	*80*	*77*	*69*	*95*	*98*	*110*	*126*	*111*	*96*	*119*	*115*	*93*	*103*	*97*	*93*
% of All Respondents																				
No use in last 12 months	97.4	97.7	97.3	97.6	96.6	96.8	96.5	96.6	95.3	95.3	95.4	94.7	95.3	95.8	94.9	94.8	95.8	95.4	95.7	95.7
I don't take them to get high	0.8	0.7	0.7	0.4	0.6	0.6	0.4	0.3	0.9	0.8	0.8	0.8	0.6	0.4	0.6	0.7	0.5	0.7	0.6	0.6
Not at all high	0.8	0.4	0.5	0.2	0.5	0.3	0.3	0.4	0.6	0.5	0.4	0.7	0.5	0.1	0.4	0.5	0.3	0.4	0.6	0.5
A little high	0.5	0.5	0.5	0.8	0.9	0.8	0.8	1.2	1.0	0.8	1.1	1.3	0.9	1.3	1.1	1.0	0.8	0.7	0.9	0.8
Moderately high	0.4	0.6	0.6	0.7	0.8	1.2	1.4	1.1	1.4	1.6	1.5	1.7	1.7	1.6	2.1	1.8	1.5	1.4	1.0	1.4
Very high	0.2	0.1	0.3	0.2	0.6	0.3	0.7	0.4	0.8	1.0	1.0	0.9	1.0	0.7	0.9	1.2	1.2	1.4	1.2	1.1
Approximate weighted N =	*2,598*	*2,523*	*2,500*	*2,292*	*2,469*	*2,468*	*2,205*	*2,046*	*2,033*	*2,088*	*2,356*	*2,363*	*2,353*	*2,292*	*2,334*	*2,217*	*2,208*	*2,255*	*2,258*	*2,176*
When you take tranquilizers how long do you usually stay high? [a]																				
% of Recent Users																				
Usually don't get high	50.2	43.6	34.0	30.6	22.1	25.1	11.5	13.4	25.2	23.8	22.6	20.9	21.8	7.2	19.0	17.1	16.7	14.8	23.4	19.5
One to two hours	19.1	18.7	25.4	22.6	35.2	31.4	36.4	34.3	19.0	27.6	27.8	27.8	25.0	28.8	27.0	24.4	20.6	24.1	19.2	13.1
Three to six hours	19.1	31.3	28.5	32.7	35.7	36.0	41.9	45.8	38.6	35.1	38.1	38.5	40.3	55.2	41.7	40.3	47.4	42.9	40.1	46.4
Seven to 24 hours	11.6	3.0	8.9	11.5	6.1	4.7	9.0	4.6	11.0	12.6	11.5	10.8	11.8	7.4	10.4	18.3	15.2	15.8	12.2	18.3
More than 24 hours	0.0	3.5	3.2	2.6	1.0	2.9	1.3	1.9	6.3	1.0	0.0	2.0	1.1	1.4	1.8	0.0	0.0	2.3	5.1	2.7
Approximate weighted N =	*72*	*51*	*62*	*54*	*79*	*81*	*74*	*70*	*95*	*98*	*106*	*128*	*111*	*97*	*118*	*112*	*95*	*99*	*97*	*92*
% of All Respondents																				
No use in last 12 months	97.2	98.0	97.5	97.7	96.8	96.7	96.6	96.6	95.3	95.3	95.5	94.6	95.3	95.8	94.9	94.9	95.7	95.6	95.7	95.8
Usually don't get high	1.4	0.9	0.8	0.7	0.7	0.8	0.4	0.5	1.2	1.1	1.0	1.1	1.0	0.3	1.0	0.9	0.7	0.7	1.0	0.8
One to two hours	0.5	0.4	0.6	0.5	1.1	1.0	1.2	1.2	0.9	1.3	1.3	1.5	1.2	1.2	1.4	1.2	0.9	1.1	0.8	0.6
Three to six hours	0.5	0.6	0.7	0.8	1.1	1.2	1.4	1.6	1.8	1.7	1.7	2.1	1.9	2.3	2.1	2.0	2.0	1.9	1.7	2.0
Seven to 24 hours	0.3	0.1	0.2	0.3	0.2	0.2	0.3	0.2	0.5	0.6	0.5	0.6	0.6	0.3	0.5	0.9	0.7	0.7	0.5	0.8
More than 24 hours	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.3	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1
Approximate weighted N =	*2,602*	*2,516*	*2,495*	*2,291*	*2,465*	*2,468*	*2,202*	*2,047*	*2,032*	*2,088*	*2,352*	*2,365*	*2,353*	*2,293*	*2,333*	*2,214*	*2,209*	*2,252*	*2,258*	*2,174*

Source. The Monitoring the Future study, the University of Michigan.

[a]These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

TABLE 7-8
ALCOHOL
Trends in Degree and Duration of Feeling High in Grade 12

(Entries are percentages.)

When you drink alcoholic beverages how high do you usually get? [a]	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
% of Recent Users																		
Not at all high	23.6	21.6	20.6	19.1	19.6	20.7	18.9	18.9	18.8	19.0	19.7	18.5	18.8	20.0	22.1	23.0	20.6	24.2
A little high	33.8	32.3	32.8	33.9	33.6	32.6	33.8	32.6	35.8	34.0	34.8	34.7	34.4	34.2	34.4	32.3	36.8	32.5
Moderately high	35.9	38.0	39.6	39.9	38.7	39.7	41.4	40.9	38.8	39.2	38.5	39.8	38.8	38.2	35.9	36.2	34.0	35.6
Very high	6.6	8.1	7.0	7.1	8.1	7.0	5.8	7.5	6.7	7.8	7.1	7.1	8.0	7.6	7.6	8.5	8.6	7.7
Approximate weighted N =	*2,419*	*2,368*	*2,578*	*3,124*	*2,764*	*2,709*	*2,912*	*2,958*	*2,808*	*2,601*	*2,618*	*2,531*	*2,718*	*2,755*	*2,211*	*1,965*	*1,898*	*1,965*
% of All Respondents																		
No use in last 12 months	15.2	14.3	13.0	12.3	12.5	13.2	14.7	14.1	14.1	17.1	16.1	16.0	14.6	14.8	18.8	21.2	22.7	23.6
Not at all high	20.0	18.5	17.9	16.8	17.2	18.0	16.2	16.2	16.2	15.8	16.5	15.5	16.0	17.0	18.0	18.1	15.9	18.5
A little high	28.7	27.7	28.5	29.7	29.4	28.3	28.9	28.0	30.7	28.2	29.2	29.1	29.4	29.2	28.0	25.5	28.5	24.8
Moderately high	30.4	32.6	34.5	35.0	33.8	34.4	35.3	35.2	33.3	32.5	32.3	33.4	33.1	32.6	29.2	28.5	26.3	27.2
Very high	5.6	6.9	6.1	6.2	7.1	6.1	5.0	6.5	5.7	6.5	5.9	6.0	6.8	6.5	6.1	6.7	6.7	5.9
Approximate weighted N =	*2,853*	*2,763*	*2,963*	*3,562*	*3,159*	*3,122*	*3,413*	*3,443*	*3,268*	*3,137*	*3,120*	*3,011*	*3,183*	*3,232*	*2,721*	*2,493*	*2,454*	*2,572*
When you drink alcoholic beverages how long do you usually stay high? [a]																		
% of Recent Users																		
Usually don't get high	25.7	24.6	22.6	21.3	21.7	22.7	20.9	20.5	21.4	20.3	21.5	20.9	20.8	22.9	24.2	24.7	23.0	27.0
One to two hours	40.5	38.5	38.8	39.8	41.9	39.5	40.3	41.3	40.8	42.2	41.5	40.6	43.8	42.0	41.3	39.4	40.1	37.3
Three to six hours	30.1	33.8	34.8	35.7	32.7	33.8	35.6	34.4	33.7	33.1	33.5	34.9	31.5	32.1	31.6	31.7	31.7	30.7
Seven to 24 hours	3.4	3.0	3.5	3.1	3.4	3.8	3.1	3.4	3.9	4.0	3.1	3.2	3.7	2.9	2.8	4.0	4.6	4.7
More than 24 hours	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.4	0.3	0.3	0.4	0.4	0.2	0.1	0.2	0.3	0.6	0.3
Approximate weighted N =	*2,403*	*2,358*	*2,547*	*3,098*	*2,746*	*2,697*	*2,892*	*2,947*	*2,792*	*2,588*	*2,608*	*2,509*	*2,711*	*2,748*	*2,202*	*1,949*	*1,884*	*1,951*
% of All Respondents																		
No use in last 12 months	15.2	14.3	13.0	12.3	12.6	13.3	14.8	14.1	14.1	17.1	16.1	16.1	14.7	14.8	18.8	21.3	22.8	23.7
Usually don't get high	21.8	21.1	19.7	18.7	19.0	19.7	17.8	17.6	18.3	16.9	18.0	17.5	17.8	19.5	19.6	19.4	17.8	20.6
One to two hours	34.3	33.0	33.8	34.9	36.6	34.2	34.3	35.5	35.0	35.0	34.8	34.1	37.4	35.8	33.5	31.0	31.0	28.5
Three to six hours	25.5	29.0	30.3	31.3	28.6	29.3	30.4	29.6	28.9	27.4	28.1	29.3	26.9	27.3	25.6	24.9	24.4	23.4
Seven to 24 hours	2.9	2.6	3.0	2.7	3.0	3.3	2.7	2.9	3.3	3.4	2.6	2.7	3.2	2.5	2.2	3.2	3.5	3.6
More than 24 hours	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.3	0.2	0.2	0.3	0.4	0.2	0.1	0.2	0.2	0.5	0.2
Approximate weighted N =	*2,834*	*2,751*	*2,928*	*3,532*	*3,142*	*3,109*	*3,393*	*3,431*	*3,252*	*3,124*	*3,110*	*2,990*	*3,177*	*3,226*	*2,712*	*2,477*	*2,441*	*2,558*

(Years cont.)

(Table continued on next page.)

TABLE 7-8 (cont.)
ALCOHOL
Trends in Degree and Duration of Feeling High in Grade 12

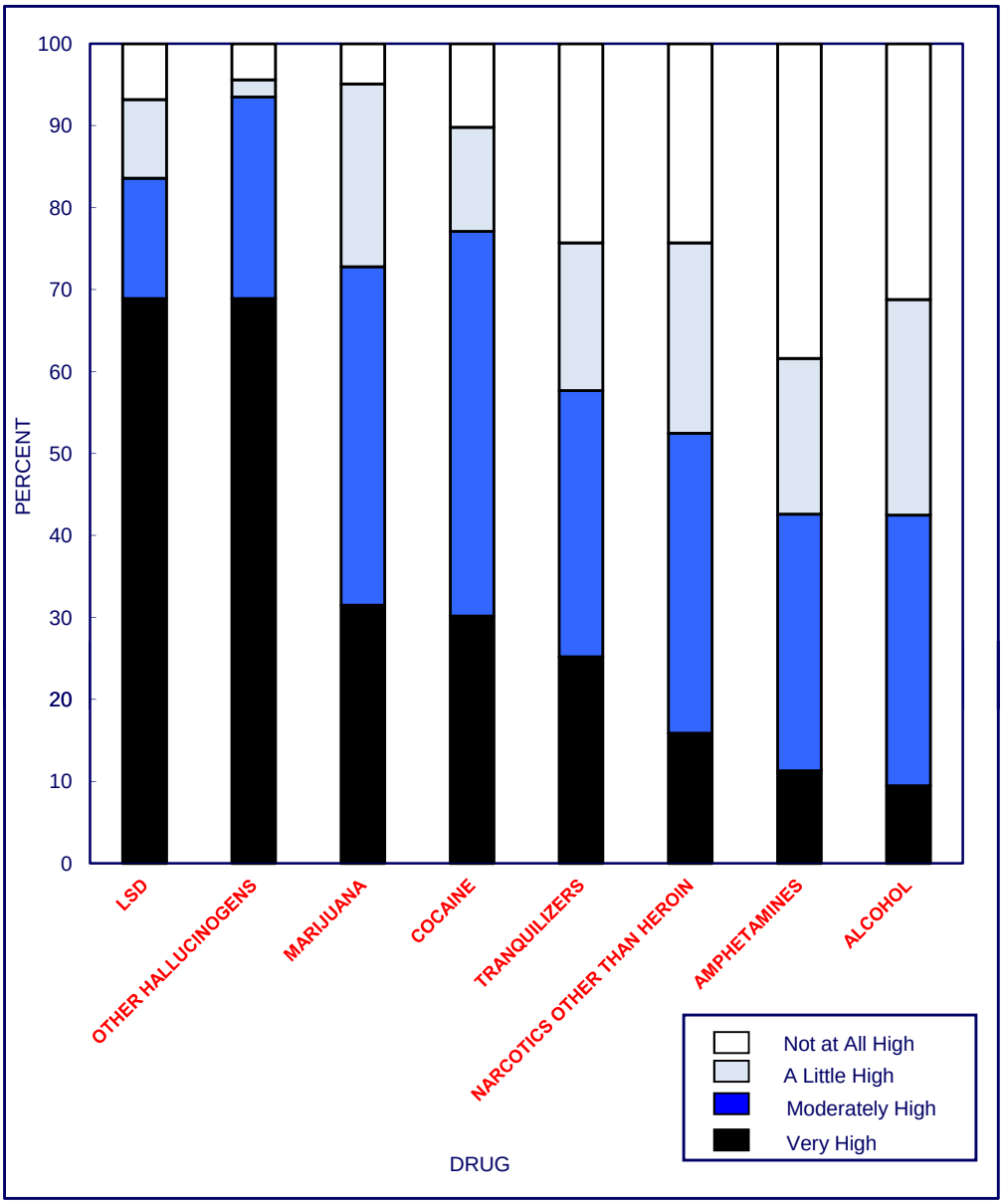
(Entries are percentages.)

When you drink alcoholic beverages how high do you usually get? [a]	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
% of Recent Users																				
Not at all high	23.8	19.7	20.7	23.2	22.0	20.6	21.1	22.4	20.5	23.2	21.0	23.5	23.6	25.0	28.0	29.7	26.0	31.4	30.0	31.2
A little high	32.2	32.7	32.6	29.9	28.9	29.8	27.3	26.1	26.7	30.1	28.6	25.8	25.3	27.6	26.9	27.7	30.3	26.0	26.8	26.3
Moderately high	36.5	38.3	36.5	35.5	37.5	37.5	41.7	38.8	40.9	35.1	37.6	37.6	38.7	35.2	33.9	32.8	33.6	32.1	34.3	33.1
Very high	7.5	9.2	10.1	11.4	11.6	12.1	10.0	12.7	11.8	11.7	12.9	13.1	12.4	12.2	11.2	9.8	10.0	10.4	9.0	9.5
Approximate weighted N =	*1,960*	*1,866*	*1,867*	*1,664*	*1,915*	*1,874*	*1,619*	*1,567*	*1,591*	*1,530*	*1,691*	*1,785*	*1,712*	*1,629*	*1,676*	*1,608*	*1,565*	*1,617*	*1,546*	*1,502*
% of All Respondents																				
No use in last 12 months	25.4	26.4	25.7	28.2	24.7	25.6	27.0	26.2	24.2	28.7	30.1	26.5	29.9	30.0	30.1	30.4	30.5	31.9	33.7	33.1
Not at all high	17.8	14.5	15.4	16.6	16.6	15.3	15.4	16.6	15.6	16.5	14.7	17.3	16.5	17.5	19.6	20.7	18.1	21.4	19.9	20.9
A little high	24.0	24.1	24.2	21.5	21.8	22.2	19.9	19.3	20.2	21.4	20.0	18.9	17.8	19.3	18.8	19.3	21.1	17.7	17.7	17.6
Moderately high	27.2	28.2	27.1	25.5	28.2	27.9	30.5	28.6	31.0	25.1	26.3	27.7	27.1	24.6	23.7	22.8	23.4	21.9	22.7	22.2
Very high	5.6	6.8	7.5	8.2	8.7	9.0	7.3	9.4	9.0	8.3	9.0	9.7	8.7	8.6	7.8	6.8	7.0	7.1	6.0	6.3
Approximate weighted N =	*2,627*	*2,533*	*2,514*	*2,318*	*2,542*	*2,517*	*2,217*	*2,123*	*2,099*	*2,145*	*2,418*	*2,427*	*2,441*	*2,328*	*2,399*	*2,311*	*2,252*	*2,373*	*2,331*	*2,244*
When you drink alcoholic beverages how long do you usually stay high? [a]																				
% of Recent Users																				
Usually don't get high	26.1	22.5	23.2	25.3	23.5	22.6	22.5	24.6	21.5	24.9	22.3	24.6	25.2	27.0	30.2	32.3	28.0	31.2	32.0	31.7
One to two hours	38.8	40.5	36.7	33.1	33.6	36.8	32.3	32.2	33.7	33.7	32.7	31.5	31.0	32.1	28.9	27.4	33.4	28.4	28.5	31.3
Three to six hours	30.4	32.2	34.2	35.7	36.9	34.5	39.6	37.0	38.5	35.7	39.1	36.5	37.4	34.7	34.3	33.9	32.9	33.6	33.7	31.9
Seven to 24 hours	4.3	4.2	5.4	5.3	5.2	5.7	5.1	5.4	5.6	5.1	5.4	6.7	5.5	5.7	5.8	6.0	4.9	5.8	5.0	4.5
More than 24 hours	0.3	0.6	0.6	0.5	0.9	0.5	0.5	0.9	0.7	0.6	0.6	0.6	0.9	0.5	0.8	0.4	0.8	1.0	0.9	0.7
Approximate weighted N =	*1,950*	*1,857*	*1,849*	*1,657*	*1,897*	*1,853*	*1,614*	*1,552*	*1,586*	*1,523*	*1,681*	*1,775*	*1,698*	*1,625*	*1,664*	*1,601*	*1,561*	*1,606*	*1,535*	*1,498*
% of All Respondents																				
No use in last 12 months	25.5	26.4	25.9	28.3	24.8	25.8	27.0	26.4	24.3	28.8	30.2	26.6	30.1	30.1	30.3	30.5	30.6	32.0	33.8	33.1
Usually don't get high	19.5	16.5	17.2	18.2	17.6	16.8	16.4	18.1	16.3	17.7	15.5	18.1	17.7	18.8	21.0	22.5	19.4	21.2	21.4	21.2
One to two hours	28.9	29.8	27.2	23.7	25.3	27.3	23.6	23.7	25.5	24.0	22.8	23.2	21.7	22.5	20.2	19.0	23.2	19.3	18.8	20.9
Three to six hours	22.7	23.7	25.3	25.6	27.7	25.6	28.9	27.2	29.2	25.5	27.3	26.8	26.2	24.2	23.9	23.6	22.9	22.8	22.3	21.3
Seven to 24 hours	3.2	3.1	4.0	3.8	3.9	4.2	3.7	3.9	4.2	3.6	3.8	4.9	3.8	4.0	4.1	4.2	3.4	3.9	3.3	3.0
More than 24 hours	0.2	0.4	0.4	0.4	0.7	0.4	0.4	0.7	0.5	0.4	0.4	0.5	0.6	0.4	0.6	0.3	0.5	0.7	0.6	0.5
Approximate weighted N =	*2,616*	*2,525*	*2,496*	*2,311*	*2,524*	*2,497*	*2,211*	*2,108*	*2,095*	*2,138*	*2,408*	*2,418*	*2,427*	*2,324*	*2,387*	*2,304*	*2,248*	*2,362*	*2,320*	*2,241*

Source. The Monitoring the Future study, the University of Michigan.

[a]These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

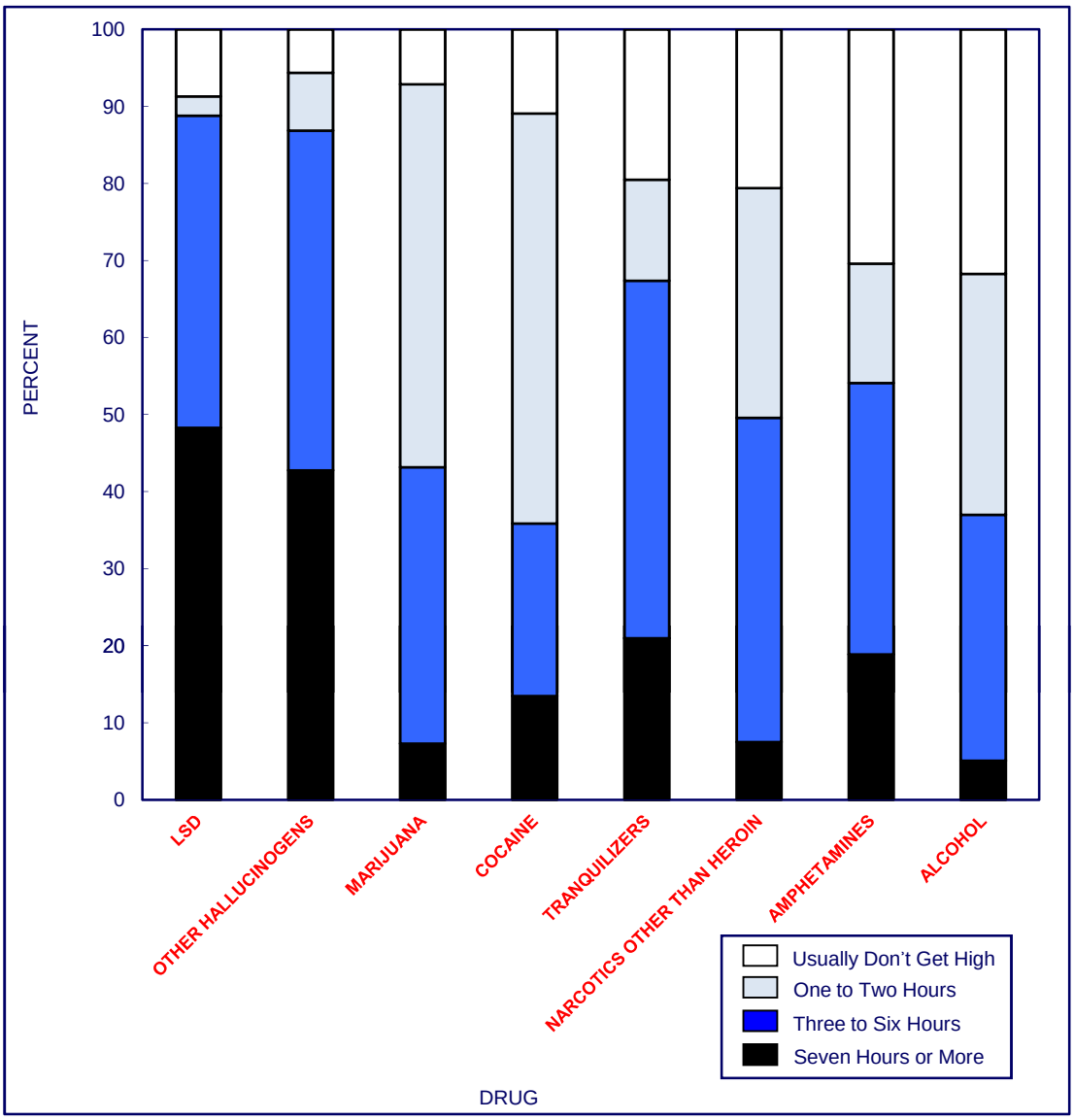
FIGURE 7-1
Degree of Drug Highs Attained by Recent Users for Various Drugs in Grade 12 2012



Source. The Monitoring the Future study, the University of Michigan.

Note. Data are based on answers from respondents reporting any use of the drug in the prior 12 months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

FIGURE 7-2
Duration of Drug Highs Attained by Recent Users for Various Drugs in Grade 12
2012

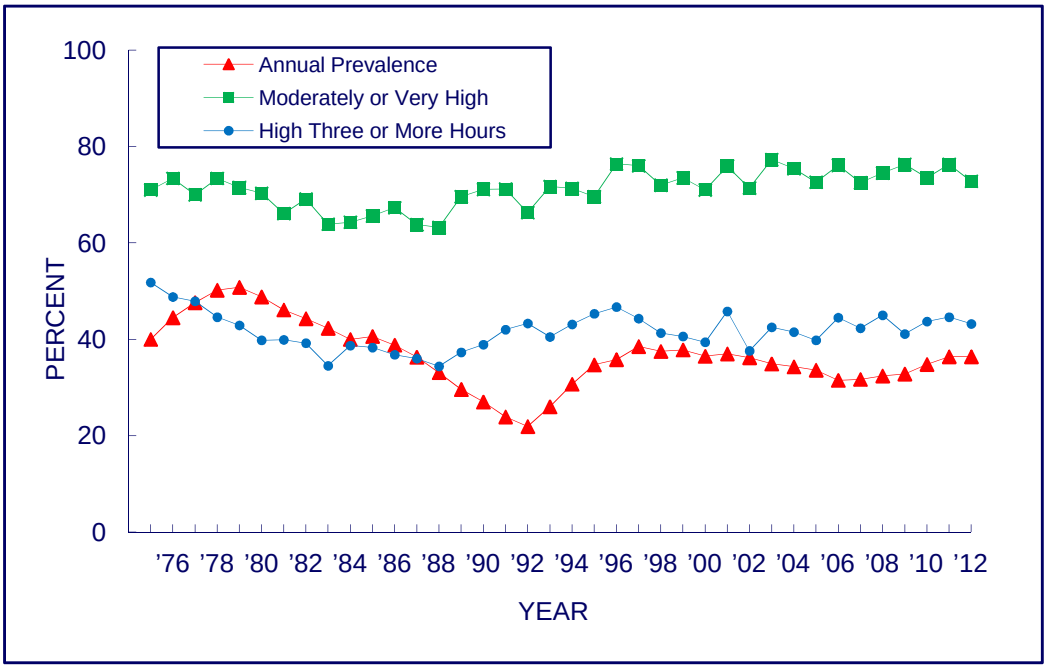


Source. The Monitoring the Future study, the University of Michigan.

Note. Data are based on answers from respondents reporting any use of the drug in the prior 12 months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

FIGURE 7-3

Marijuana: Trends in Annual Prevalence, Percent of Recent Users Getting Moderately or Very High, and Percent of Recent Users Staying High 3 or More Hours in Grade 12



Source. The Monitoring the Future study, the University of Michigan.

Note. Recent users is defined as respondents reporting any use of marijuana in the prior 12 months.

Chapter 8

ATTITUDES AND BELIEFS ABOUT DRUG USE

Guided by its theoretical conceptual framework, MTF measures key factors that have proved to be central to the explanation of differences and changes in drug use. These factors include in particular perceived risk of harm and personal disapproval. Indeed, one of MTF's most important theoretical and empirical contributions to the general understanding of young people's drug use has been to demonstrate that changes in beliefs and attitudes about drugs have been important determinants of trends, both upwards and downward, in the use of many drugs.

The cross-time results for three of these important sets of attitude and belief measures are provided in this chapter: (a) 8th-, 10th-, and 12th-grade students' beliefs about how *harmful* the various kinds of drug use are for the user, (b) the degree to which students personally *disapprove* of various kinds of drug use, and (c) 12th graders' attitudes about various forms of *legal prohibitions* to using drugs. In the next chapter we present results on the closely related topics of parents' and friends' attitudes about drugs, as students perceive them, as well as on various other aspects of the social context.

The data presented in this chapter show inverse relationships at the aggregate level, between the level of reported use of a drug, and the levels of perceived risk and disapproval of using that drug. For example, of the illicit drugs, marijuana has the highest level of use and one of the lowest levels of perceived risk and disapproval. These relationships suggest that individuals who believe that the use of a particular drug involves risk of harm, and/or who disapprove of its use, are less likely to use that drug; indeed, strong correlations also exist at the individual level between use of a drug and attitudes and beliefs about that drug.[85] Students who use a given drug are less likely to disapprove of its use and to see its use as dangerous.

Many attitudes and beliefs about specific drugs have changed dramatically during the life of the study, as have actual drug-using behaviors. Beginning in 1979, scientists, policymakers, and the media gave considerable attention to young people's increasing level of regular marijuana use as reported by this study, and to the potential hazards associated with such use. As discussed later in this chapter, 12th graders' attitudes and beliefs about the regular use of marijuana shifted in a more conservative direction after 1979—a shift that coincided with a reversal in the previous rapid rise of daily use and that very likely reflected the impact of the increased public attention. Between 1986 and 1987, a similar and even more dramatic shift occurred for cocaine use and continued for some years. During much of the 1990s, however, there was an important turnaround or "relapse" in these attitudes, accompanied by an increased use of numerous illicit drugs, in particular marijuana. In the early 2000s, increased recognition of the hazards of ecstasy use appeared to contribute to a sharp downturn in use of that particular drug, as we had predicted.

[85]Johnston, L. D. (2003). Alcohol and illicit drugs: The role of risk perceptions. In D. Romer (Ed.), *Reducing adolescent risk: Toward an integrated approach* (pp. 56–74). Thousand Oaks, CA: Sage. Available at http://www.monitoringthefuture.org/pubs/chapters/ldj2003.pdf

PERCEIVED HARMFULNESS OF DRUG USE

Beliefs about Harmfulness among Twelfth Graders

For many drugs, the level of risk attributed to use varies considerably with the level of use being considered. Expecting this to be the case, we structured the questions about illicit drugs to differentiate among "using once or twice," "using occasionally," and "using regularly." (Questions about the harmfulness of alcohol and tobacco use also specify different levels of use appropriate to those substances.) The respondent is asked, "How much do you think people risk harming themselves (physically or in other ways), if they . . . ?" The sentence is completed with a number of phrases indicating increasing drug use, such as the series ". . . try marijuana once or twice," ". . . smoke marijuana occasionally," and ". . . smoke marijuana regularly."

Risk from Regular use

- A substantial majority of 12th graders perceive that *regular use* of ***any illicit drug*** entails a great risk of harm for the user. As Table 8-3 shows, 89% of 12th graders perceive a great risk of harm from regular use of ***heroin***, and 83–84% from regular use of ***crack*** (84%), ***cocaine*** (83%), and ***cocaine powder*** (83%). Two thirds (67%) of 12th graders attribute great risk to regular use of ***LSD***, and three fifths (60%) do so for regular use of ***amphetamines***. About half of all 12th graders think that regular use of ***sedatives*** (***barbiturates***) (54%) or ***marijuana*** (44%) involves a great risk of harm to the user.

- About three quarters of 12th graders (78%) judge smoking one or more packs of ***cigarettes*** per day as entailing a great risk of harm for the user.

- Regular use of ***alcohol*** is more explicitly defined in several questions providing specificity on the amount of use. About one quarter of 12th graders (24%) associate great risk of harm with having one or two drinks nearly every day, nearly one half (49%) think there is great risk involved in having five or more drinks once or twice each weekend, and almost two thirds (64%) think the user takes a great risk in consuming four or five drinks nearly every day. Still, it is noteworthy that over a third (36%) do *not* view even heavy daily drinking as entailing great risk.

Risk from Experimental use

- Far fewer respondents believe that a person runs a great risk of harm by trying a drug once or twice, which we refer to here as *experimental use*. Still, substantial proportions of 12th graders view even experimenting with most of the illicit drugs as risky. The percentages associating great risk with experimental use rank as follows:

crystal methamphetamine (ice)	68%
anabolic steroids	59%
Heroin	59%
Cocaine	52%
PCP	52%
Crack	52%

ecstasy (MDMA)	49%
cocaine powder	48%
narcotics other than heroin	38%
Amphetamines	34%
LSD	33%
sedatives (barbiturates)	28%
Adderall	27%

Note that four of the five drugs perceived as having the lowest risk here are prescription drugs, which we believe helps to explain the relatively high levels of use of these drugs in the last decade. (Perceived risk of another prescription drug category, tranquilizers, is not asked.)

- In contrast, only 15% of 12th graders see experimenting with ***marijuana*** as entailing great risk. About one fifth (21%) see great risk in occasional use.

- Just 9% of 12th graders believe there is much risk involved in trying one or two drinks of an ***alcoholic beverage***.

Eighth and Tenth Graders' Beliefs about Harmfulness

An abbreviated set of the same questions on perceived harmfulness has been asked of 8th and 10th graders since they were first included in MTF in 1991. Perceived harmfulness of ***inhalant*** use is not asked of 12th graders, but is included in the 8th- and 10th-grade questionnaires. Questions about other drugs have been added to and retained in the 8th- and 10th-grade questionnaires as their inclusion has been indicated: ***LSD*** (since 1993), ***heroin without a needle*** (since 1995), ***smoking one to five cigarettes per day*** (added in 1999), and ***ecstasy*** (since 2001). A question about perceived risk of anabolic ***steroid*** use was dropped in 1995 because at that time steroid use was rather stable, and it was judged desirable to replace the question with one about another drug. In 2012 questions on the perceived risk were included for a number of drugs that have been added to the survey in recent years: ***Salvia***, ***synthetic marijuana***, ***bath salts***, ***Adderall***, ***OxyContin***, ***Vicodin***, ***cough/cold medicines*** used to get high, ***dissolvable tobacco***, and ***snus***. In general, the findings for 8th and 10th graders are similar to those for 12th graders, but some interesting differences are noted below.

- The most important difference is observed for ***regular cigarette smoking***. Unfortunately, perceived risk is lowest at the ages when initiation is most likely to occur. While about three quarters of 12th graders (78%) see great risk in smoking a pack a day or more, fewer 10th graders (72%) and even fewer 8th graders (63%) see this level of risk. The fact that eventual dropouts are included in the lower grades accounts for some of that difference, but given their limited numbers it is unlikely that dropouts account for all of it.

- Relatively few students see great risk in ***smoking one to five cigarettes per day***: 40% of 8th graders and 49% of 10th graders. (Twelfth graders are not asked this question.) These low proportions seeing great risk indicate that many students are not taking into

account that a relatively light smoker runs a substantial risk of becoming a heavy, dependent user.

- Regular use of ***smokeless tobacco*** is viewed as entailing great risk by 38% of 8th graders, 43% of 10th graders, and 44% of 12th graders, meaning that over half do not see great risk of harm. Again, because this behavior is often initiated at early ages, these figures are disturbingly low.

- In contrast, the younger students, particularly 8th graders, are somewhat *more* likely than 12th graders to see ***marijuana*** use as dangerous. For example, in 2012, 8th graders (42%) were considerably more likely than 12th graders (21%) to see occasional marijuana use as entailing great risk of harm. (Tenth graders fall in between, at 27%.)

- Eighth and 10th graders are slightly more likely than 12th graders to see weekend ***binge drinking*** as dangerous: 58% for 8th graders, 53% for 10th graders, and 49% for 12th graders. The younger students are also somewhat more likely than 12th graders to see ***daily drinking*** (one or two drinks nearly every day) and experimentation as risky.

- The pattern for ***ecstasy*** (***MDMA***) use is similar to that for cigarettes, with younger students seeing less risk in its use than older students: 24% of 8th graders, 36% of 10th graders, and 49% of 12th graders see great risk in trying ecstasy.

- Experimentation with ***inhalants*** is seen as dangerous by relatively low proportions of 8th and 10th graders (34% and 42%, respectively); these younger students are the ones most likely to be using inhalants. (The question about risk of inhalant use is not asked of 12th graders.)

TRENDS IN PERCEIVED HARMFULNESS OF DRUG USE

Trends in Perceived Harmfulness among Twelfth Graders

Several very important trends in student beliefs about the dangers associated with using various drugs have occurred over the life of the study (see Table 8-3 and the upper panels of Figures 8-1 through 8-12).

- Some of the most important trends have involved ***marijuana*** use (see Figure 8-1a). From the beginning of the study in 1975 through 1978, the degree of harmfulness perceived to be associated with all levels of marijuana use declined as use increased sharply (see Figure 8-4). In 1979, for the first time, the proportion of 12th graders seeing risk to the user increased. This increase in perceived risk *preceded* an appreciable downturn in use (which began a year later in 1980) and continued fairly steadily through 1991, as use fell dramatically. However, in 1992 perceived risk began to drop again, which presaged a sharp increase in use beginning in 1993. As Figures 8-1a and 8-4 illustrate, perceived risk continued to drop and use continued to rise until 1997. This clear and consistent concordance in trends supports our contention that

changes in beliefs about the harmfulness of marijuana use played a critical role in causing both the downturn and the subsequent upturn in use. In both cases, the reversal in perceived risk preceded the reversal in actual use by a year. This pattern became evident again in 2003, as perceived risk for marijuana increased until 2006 while use declined, and between 2006 and 2012, when perceived risk of regular use declined while use rose. (The decline in risk continued into 2012, although use did not increase further.)

- In the earlier years of MTF, the largest increase (in absolute terms) in perceived risk occurred for ***regular marijuana use***. The proportion of 12th graders who viewed regular marijuana use as involving a great risk doubled in just seven years, from 35% to 70% between 1978 and 1985. Subsequently, the proportion increased more slowly, reaching 79% by 1991. That dramatic change occurred during a period when a substantial amount of scientific and media attention was devoted to the potential dangers of heavy marijuana use. Young people also had ample opportunity for vicarious learning about the effects of heavy use through observation, because such use was widespread among their peers. (In 1978, one in nine 12th graders was an active daily marijuana user.) Concerns about the harmfulness of occasional and experimental use also increased, and those increases were even larger in proportional terms, though not in absolute terms. For example, the proportion of 12th graders seeing great risk in ***trying marijuana*** rose from 8% in 1978 to 27% in 1991, and for ***occasional marijuana use*** perceived risk rose from 12% to 41% over the same interval.

  There are several possible and interconnected explanations for the turnaround and decline in perceived risk of marijuana use during the early 1990s. First, some of the forces that gave rise to the earlier increases in perceived risk became less influential: (a) because of lower use rates overall, fewer students had opportunities for vicarious learning by observing firsthand the effects of heavy marijuana use among their peers; (b) media coverage of the harmful effects of drug use, as well as of incidents resulting from drug use (particularly marijuana), decreased substantially in the early 1990s (as has been documented by media surveys of national news programs); (c) media coverage of the antidrug advertising campaign of the Partnership for a Drug-Free America also declined appreciably (as documented by both the Partnership and our own data from 12th graders on their levels of recalled exposure to such ads[86]); and (d) congressional funding for drug abuse prevention programs and curricula in the schools was cut appreciably in the early 1990s. In addition, forces encouraging use became more visible; in particular, a number of rap, grunge, and rock groups started to sing the praises of using marijuana (and sometimes other drugs), perhaps influencing young people to think that using drugs might not be so dangerous after all. Finally, the drug experiences of many parents may have inhibited them from discussing drugs with their

[86]Terry-McElrath, Y. M., Emery, S., Szczypka, G., & Johnston, L. D. (2011). Potential exposure to anti-drug advertising and drug-related attitudes, beliefs, and behaviors among United States youth, 1995-2006. Addictive Behaviors, 36, 116-124. dx.doi.org/10.1016/j.addbeh.2010.09.005.

children, and may have caused them uncertainty in knowing how to handle the apparent hypocrisy of telling their children not to do what they themselves had done as teens. We believe that all of these factors may have contributed to the resurgence of marijuana use in the 1990s.

By the mid-1990s, many of these sources of influence had reversed direction, laying the groundwork for an end to the rise in marijuana use (and illicit drug use more generally). First, because there was considerably more use among young people and among many of their public role-model groups, the opportunity for vicarious learning by observing the consequences of use began to increase. And as MTF and other studies began to call the public's attention to the resurgence of the drug epidemic among youth, news stories on the subject increased substantially. Other institutions also changed their ways. The recording industry appeared to be producing fewer pro-drug lyrics and messages, in large part because of growing concern about overdose deaths among their artists. (A similar dynamic seems to have occurred in the fashion industry with the resulting demise of "heroin chic.") Various government initiatives to prevent drug use by young people were launched, including the Department of Health and Human Services (DHHS) Secretary's Marijuana Use Prevention Initiative. This initiative was launched at the 1994 annual national press conference reporting the MTF results. Federal funding for drug prevention in schools also increased appreciably.

In addition, parents were repeatedly exhorted to talk to their children about drugs, and it appears from other surveys that more of them did so. In the late 1990s, a federally sponsored media campaign involving paid advertising was initiated. MTF data indicate that the campaign reached increasing numbers of young people over a period of several years.[87]

- Trends among 12th graders in their perceived risk of ***regular marijuana use*** and 30-day prevalence of marijuana use are combined in Figure 8-4 to illustrate more clearly their degree of covariance over time, which we interpret as reflecting a causal connection.[88] The trend line for the perceived availability of marijuana is included in Figure 8-4 to show its relative stability (particularly from 1975 to 1992) and, thus, its inability to explain the substantial fluctuations in usage levels over that time period.

[87]For example, see Johnston, L. D. (2002, June 19). Written and oral testimony presented at hearings on the National Youth Anti-Drug Media Campaign, held by the Treasury and General Government Subcommittee on Appropriations of the U.S. Senate Appropriations Committee. Published in *The Congressional Record.*

[88]We have addressed elsewhere an alternate hypothesis—that a general shift toward a more conservative lifestyle might have accounted for the shifts in both attitudes and behaviors. The empirical evidence tended to contradict that hypothesis. See Bachman, J. G., Johnston, L. D., O'Malley, P. M., & Humphrey, R. H. (1988). Explaining the recent decline in marijuana use: Differentiating the effects of perceived risks, disapproval, and general lifestyle factors. *Journal of Health and Social Behavior, 29*, 92–112. Johnston also showed that an increasing proportion of the quitters of and abstainers from marijuana use reported concern over the physical and psychological consequences of use as reasons for their non-use. See Johnston, L. D. (1982). A review and analysis of recent changes in marijuana use by American young people. In *Marijuana: The national impact on education* (pp. 8–13). New York: American Council on Marijuana. The role of perceived risk in the period of more recent increase in marijuana use in the 1990s is addressed in Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (1998). Explaining the recent increases in students' marijuana use: The impacts of perceived risks and disapproval from 1976 through 1996. *American Journal of Public Health, 88*, 887–892.

We have hypothesized that perceived risk operates not only directly on the individual's use, but also indirectly through its impact on personal disapproval. In turn, personal disapproval operates directly on use and, in the collective, indirectly by influencing peer norms. (See chapter 9 for evidence on how closely perceptions of friends' disapproval track personal disapproval at the aggregate level.) Presumably there is some lag in these indirect effects: while 12th graders' perceived risk began to fall in 1992, their personal disapproval did not begin to decline for experimental marijuana use until 1993, when it dropped sharply and use began to rise sharply. These shifts continued through 1997.

From 1997 through 2002, there was some decline in perceived risk of regular use of marijuana, but no further increase in use; in fact, actual use declined slightly (by about two percentage points in 2002 for all three measures—monthly, annual, and lifetime). This pattern was, of course, not consistent with the earlier findings of risk and use moving in opposite directions. The decline in use of marijuana without a corresponding (or leading) increase in perceived risk associated specifically with that drug may reflect some general decrease in young people's motivation to use drugs (conceivably associated with the shock of the 9-11 events in late 2001), or possibly a change in some other predisposing factor, such as the decline in cigarette smoking (which is strongly correlated with marijuana use). However, perceived risk increased from 2003 to 2006 among 12th graders, and use declined in that interval, consistent with the more general pattern of use declining with increases in perceived risk. Between 2006 and 2012, perceived risk of regular use declined, while use (30-day prevalence) rose steadily, at least through 2011. The fact that the decline in risk continued into 2012 (down 14 percentage points between 2006 and 2012) suggests that there will be a continuing increase in use in 2013.

- Like marijuana, ***cocaine*** has shown a pattern of closely corresponding trends between perceived risk and actual use among 12th graders (see Figure 8-5). First, the percentage who perceived great risk in ***trying cocaine*** once or twice dropped steadily from 43% to 31% between 1975 and 1980, corresponding to a period of rapidly increasing annual prevalence of use. However, rather than reversing sharply, as did perceived risk for marijuana use, perceived risk for experimental cocaine use moved rather little from 1980 to 1986, corresponding to a fairly stable period in actual use. Then, from 1986 to 1987, perceived risk for experimenting with cocaine jumped abruptly from 34% to 48% in a single year, and in that year the first significant decline in use took place. From 1987 to 1990, perceived risk continued to rise as use fell. Perceived risk peaked around 1990 or 1991 and then decreased slightly (as use rose modestly) until 1995, when a significant decline in perceived risk of trying cocaine occurred. Perceived risk was stable between 1995 and 1998, and then declined slightly until 2000. Both perceived risk and annual use were relatively stable from 2000 through 2005, increased in 2006, perceived risk then increased slightly more through 2011 before dropping in 2012. Use declined gradually from 2006 through 2010 and then leveled in 2011 and 2012.

- Trends in attitudes toward ***crack*** and ***cocaine powder*** use have been similar to those toward cocaine use. Crack use showed some decline in perceived risk of experimental use through 1999, to 48%. Since then, perceived risk of trying crack increased slightly, to 51% in 2002; then in 2003, it fell back to 47%. It showed little change between 2004 and 2007, remaining at 47 or 48%. Since 2007, it has increased slightly each year, reaching 52% in 2012. Perceived risk of trying cocaine powder has been level at 48% for the last three years.

  Changes in beliefs about cocaine appear to have had an important impact on behavior. As Figure 8-2a illustrates, perceived risk for ***regular cocaine use*** began to rise in the 1980s, increasing gradually from 69% in 1980 to 82% in 1986; however, that fairly substantial change did not translate into a change in actual behavior, and we believe the explanation is that very few 12th graders were regular users or ever expected to be. Thus, as we had predicted earlier, it was not until 12th graders' attitudes about behaviors they saw as relevant to themselves began to change (i.e., attitudes about experimental and occasional cocaine use) that the behaviors also began to shift.[89,90] Figure 8-5 shows trends in perceived risk, perceived availability, and actual use simultaneously—again, to illustrate that shifts in perceived risk could explain the downturn in use during the last half of the 1980s, while shifts in availability could not. We attribute changes in actual cocaine use between 1986 and 1991 to changes in risk associated with experimental and occasional use. We believe the changes in these attitudes resulted from three factors: (a) the greatly increased media coverage of cocaine use and its dangers that occurred in that interval (particularly in 1986); (b) an increasing number of antidrug, and specifically, anti-cocaine media campaigns; and (c) the widely publicized 1986 deaths, attributed to cocaine use, of sports stars Len Bias and Don Rogers. The deaths of the sports stars, we believe, helped to bring home the notions, first, that no one—regardless of age or physical condition—is invulnerable to being killed by cocaine, and second, that one does not have to be an addict or regular user to suffer such adverse consequences. In the media coverage that occurred during that period, the addictive potential of cocaine was heavily emphasized.

  An increase in perceived risk of cocaine use ended in 1991, similar to the trend for marijuana. Perceived risk began to fall in 1992, and a year later actual use began rising among 12th graders (see Figure 8-5). The significant reversal of trends in beliefs set the stage for a resurgence in use, particularly when combined with the fact that the proportions of students using two of the so-called "gateway drugs"—cigarettes and marijuana—had also been rising. From 1992 to 1999, the proportion of 12th graders

[89]See also Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (1990). Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use. *Journal of Health and Social Behavior*, *31*, 173–184. For a discussion of perceived risk in the larger set of factors influencing trends, and for a consideration of the forces likely to influence perceived risk, see Johnston, L. D. (1991). Toward a theory of drug epidemics. In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93–131). Hillsdale, NJ: Lawrence Erlbaum. Available online at http://monitoringthefuture.org/pubs/chapters/ldj1991theory.pdf.

[90]Our belief in the importance of perceived risk of experimental and occasional cocaine use led us to include in 1986 for the first time the question about the dangers of occasional cocaine use. The very next year proved to have a sharp rise on this measure.

using cocaine in the prior 12 months rose steadily from 3.1% to 6.2% before decreasing significantly to 5.0% in 2000, with little change for some years after that. The decline in 12th graders' cocaine use in 2000 was not accompanied by any increase in perceived risk or disapproval. Thus, there must be other reasons for the decline. One possibility is that the decline reflects a more general antidrug attitude among 12th graders. Another possibility is that some other drug may have been substituting for cocaine to some extent—quite possibly ***ecstasy*** (***MDMA***), which was rising in popularity that year.

Both crack and cocaine powder had been showing a similar rise in use during much of the 1990s, as well as a subsequent decline in 2000. As we shall see later, similar downturns in perceived risk occurred in 8th and 10th grades through 1998, except that they started a year earlier among 8th graders and resulted in larger changes in 8th and 10th grades than in 12th grade.

- For most of the ***illicit drugs other than marijuana*** and ***cocaine***, the period from 1975 to 1979 (the first years of the study) revealed a modest but consistent trend in the direction of fewer 12th graders associating much risk with experimental or occasional use of such drugs (see Table 8-3 and Figures 8-7a, 8-8a, and 8-9a). This trend continued for ***amphetamines*** and ***sedatives*** (***barbiturates***) until about 1984.

  In the early 1980s, there was little change in perceived risk, although perceived risk of harm from experimental or occasional use of all the illicit drugs other than marijuana dropped slightly in 1985 and 1986. However, the perceived risk of experimental or occasional use of all drugs except PCP increased in 1987, reached a peak in 1990 or 1991, and then declined noticeably until about 1996 as the use of most drugs rose.

- ***Heroin*** has consistently been seen as one of the most dangerous drugs—in particular regular heroin use, which no doubt accounts at least in part for the low prevalence rates observed throughout the life of the study. But there has been some variation in levels of perceived risk related to experimental or occasional use (Figure 8-9a). Perceived risk of experimental use declined gradually between 1975 and 1986 (perhaps as the result of generational forgetting of the dangers of heroin), even though use dropped and then stabilized in that interval. There was then an upward shift in perceived risk in 1987 (the same year in which there was a dramatic rise in perceived risk for cocaine) to a new level, where it held for four years. In 1992 risk dropped to a lower plateau again, a year or two before use started to rise. As perceived risk fell in the early 1990s, heroin use by 12th graders rose, with annual prevalence of use nearly tripling from 0.4% in 1991 to 1.1% by 1995. (Use also rose in the lower grades.) From 1995 through 1998 there was some increase in perceived risk (an increase that was also observed in the lower grades; see Tables 8-1 and 8-2 and Figure 8-9a). Usage rates then generally stabilized. Perhaps not entirely coincidentally, the Partnership for a Drug-Free America launched a media campaign aimed at deglamorizing heroin in 1996. While the target audience was young adults, many secondary school students undoubtedly saw the ads as well. Annual use of heroin by 12th graders decreased from

1.5% in 2000 to 0.8% by 2003 subsequent to the upturn in perceived risk between 1995 and 1998. Use has not changed much since 2003, nor has perceived risk.

- To summarize, between 1975 and 1978 (or 1979) there was a distinct decline among 12th graders in perceived harmfulness associated with use of all the illicit drugs. After 1978, concerns about regular ***marijuana*** use increased dramatically, and concerns about the use of marijuana at less frequent levels increased considerably. After 1986, there was a sharp increase in the perceived risk associated with ***cocaine*** use—particularly at the experimental and occasional use levels—and some increase in perceived risk of use of virtually all the ***other illicit drugs*** (see Figures 8-7a, 8-8a, and 8-9a). Between 1991 and 1995, the trends reversed, with fewer 12th graders seeing use of these drugs as being dangerous. By 1996 and 1997 among 12th graders, the decline in perceived risk of ***marijuana*** use had sharply decelerated (see Figure 8-1a), the decline in perceived risk of ***cocaine*** use had leveled (see Figure 8-2a), the decline in the perceived risk of ***LSD*** use had decelerated (see Figure 8-8a), and the perceived risk of using ***heroin*** was actually rising (see Figure 8-9a). Only for ***sedative*** (***barbiturate***) use (asked only of 12th graders, see Figure 8-7a) was there any appreciable further decline in perceived risk. In 2001, the only significant increase in perceived risk of illicit drug use was for ***ecstasy*** (***MDMA***), which rose sharply from 38% in 2000 to 46% in 2001. In 2002 and 2003, perceived risk of ***ecstasy*** use again rose significantly (to 52% in 2002 and to 56% in 2003) as use fell steeply. Perceived risk of trying ***LSD*** also rose significantly in 2002, while perceived risk of regular ***marijuana*** use decreased significantly. In the years since 2002, changes in perceived risk for most drugs have been more modest.

- The sharp decline in 12th graders' perceived risk of ***LSD*** use between 1991 and 1997 was particularly noteworthy, confirming our concerns about generational forgetting—that attitudes and beliefs of the newer generation of young people were not influenced by the direct and vicarious learning experiences that helped to make their predecessors more cautious about using LSD (see Figure 8-8a). In the late 1960s and early 1970s, young people became aware of the risks of bad trips, uncontrollable flashbacks, dangerous behaviors under the influence, etc. Those in their teens since then seem to know much less about those risks.

- Despite the fact that perceived risk of LSD use declined some prior to 2001 (while disapproval was fairly steady), use had been falling. Obviously, this decline in use cannot be explained by a change in attitudes, and thus raises the question of whether there was any substitution by another drug. As it happens, another drug popular in the club scene and also used for its hallucinogenic properties, ***ecstasy*** (***MDMA***), had been in ascent and may have had some substitution effect. From 1998 to 2001, ecstasy use more than doubled as LSD use was in decline. However, after 2001 both drugs declined, suggesting that there may no longer have been a displacement effect. Indeed, after 2001 there was a sharp decline in availability of LSD, which may have played a key role in its further sharp drop in use. In 2002, twelfth graders' perceived risk (and disapproval) of ***LSD*** use increased significantly as use continued to decrease significantly. Perceived risk generally declined, though not steadily, from 2003 (36%)

through 2012 (33%); annual use was steady, between 1.7% and 2.7%, and was at 2.4% in 2012. The historically low levels of perceived risk for LSD reached in recent years suggest that young people today are not well prepared to resist a resurgence in the popularity and availability of that drug, should that occur.

- Perceived risk for ***ecstasy*** use was asked only of 12th graders from 1997 to 2000 (see Figure 8-6); in 2001 it was added to the 8th- and 10th-grade questionnaires as well. Between 1997 and 2000, the percentage of 12th graders seeing a great risk in trying ecstasy increased slightly from 34% to 38%, but in 2001 there was a sharp increase of eight percentage points, up to 46%. (Use began a dramatic fall starting in 2002.) Between 2002 and 2005 perceived risk continued to increase, while use decreased. Since 2005, perceived risk has decreased some from 60% in 2005 to 49% in 2012, while use (reported for past 12 months) increased some from 3.0% in 2005 to 5.3% in 2011 before a significant decline in use in 2012 to 3.8%.

  As documented in the next chapter, there was a dramatic rise in the availability of ecstasy to American teens up to 2001, which may well help to explain its spread (see Figure 8-6). Another belief, the perceived benefits of using a drug, is like perceived risk almost surely a determinant of use. It seems very likely that there was a change in the perceived benefits of ecstasy use; but unfortunately for these purposes, we do not measure this belief. The significant increases in perceived risk (for all three grades) in 2000 through 2003 were encouraging. We stated in the 2001 report in this series that we believed the use of this drug would not decline until more young people came to see its use as dangerous. In 2002, use of ecstasy decreased some for all three grades, and in 2003 use decreased significantly for all three grades, presumably driven by the increased perceptions of risk.

  We believe that the unusually rapid changes in perceptions of risk about ecstasy reflect the effects of three efforts: much media coverage of adverse events associated with ecstasy use; the substantial efforts of the National Institute on Drug Abuse to gather and disseminate information about the adverse consequences associated with ecstasy use; and efforts by the Partnership for a Drug-Free America and the Office of National Drug Control Policy to discourage ecstasy use through an ad campaign, begun in 2002, that addressed the hazards of use. Despite the dramatic increase in perceived risk up through 2005, the gradual erosion in the level of perceived risk since 2005—an eleven-percentage-point drop—raises the question of whether a process of generational forgetting of the hazards of ecstasy use may now be occurring.

- The proportion of students associating great risk with experimental use of ***crystal methamphetamine*** (***ice***) fell from 62% in 1991 to 53% in 1998, as annual use increased from 1.4% to 3.0%, showing the familiar pattern of use increasing when perceived risk declines. After 1998 perceived risk was fairly steady or rising slightly (it was at 55% in 2005), while annual use has fluctuated between 2% and 3%. The rise in perceived risk for crystal methamphetamine since about 2004 has continued into 2012, reaching 68% of 12th graders seeing great risk in even trying it compared to 52% in 2004. Annual prevalence of use of this drug dropped sharply after 2005 and

stands at 0.8% in 2012, again showing a lag between a change in perceived risk and a corresponding change in use.

- The perceived risk of trying ***PCP***, which was very high relative to other drugs in 1988, fell by 14 percentage points from its peak level of 59% in 1988 to 45% in 1999; after that it sustained little change until showing small increases in recent years before dropping (nonsignificantly) to 52% in 2012. Again, we suspect that teens in the last two decades are simply less familiar with the drug and its considerable dangers compared to previous cohorts. Actual use, however, has remained quite low since about 2003.

- Between 1989 (when questions about steroid use were introduced) and 1992, perceived risk of taking ***steroids*** increased slightly while annual use declined a bit. A noteworthy and constructive change occurred in 1992, when perceived risk of taking steroids rose by five percentage points (from 66% to 71%) among 12th graders. (Similar changes occurred for 8th and 10th graders.) This change suggested that the widely publicized experience of professional football player Lyle Alzado, who was dying of a brain tumor that he believed resulted from his steroid use, had an important effect on young people's beliefs regarding the harmfulness of this drug. The effect of this unfortunate role model was similar to the effect of Len Bias' death on beliefs about the dangers of cocaine use, except that in Lyle Alzado's case he *intentionally* set about making his experience an object lesson for young people.[91] Unfortunately, the increases in perceived risk did not continue, and perceived risk slipped a bit between 1992 and 1994, before increasing some through 1998.

  In 1999, 12th graders reported an unusually sharp drop of six percentage points in perceived risk of ***steroid*** use, which coincided with a slight rise in use among 12th graders, but a sharp rise in use among 8th and 10th graders. (Since 1995 perceived risk has been measured only among 12th graders, so their answers serve as the best estimate we have of how this belief was changing among secondary schools students more generally. For this reason, we comment in this section on 8th and 10th graders as well as 12th graders.) We believe it likely that a highly visible baseball player (Mark McGwire), whose use of a steroid precursor was widely reported in 1998, served unwittingly as a role model that year, this time associating the use of steroids with athletic success and physical prowess. In 2000 there was a continued sharp decline in perceived risk of steroid use among 12th graders. Since then perceived risk has not changed a great deal, standing at 59% in 2012.

  A cohort effect is suggested by a pattern of declining steroid use across the grades since 1999; 8th graders were first to show a downturn beginning in about 2001, followed by 10th graders in 2003, and then by 12th graders in about 2005. Those

[91]The July 8, 1991, issue of *Sports Illustrated* magazine had an article by Lyle Alzado entitled "I Lied." For a discussion of the importance of vicarious learning from unfortunate role models, see Johnston, L. D. (1991). Toward a theory of drug epidemics. In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93–131). Hillsdale, NJ: Lawrence Erlbaum. Available at http://monitoringthefuture.org/pubs/chapters/ldj1991theory.pdf.

staggered decreases followed somewhat staggered increases in the prior years, though both 8th and 10th graders began to increase in the same year (1999). In 2004 perceived risk began to rise in 12th grade (again, the only grade on which it is measured), and use continued to decline in all grades. Some will ask why use has not increased in the past few years as stories of widespread steroid use in professional baseball have hit the headlines. The answer may lie in the amount of *negative* publicity and *negative* outcomes that have emerged for some of these players. Mark McGwire eventually admitted in 2010 that he had used steroids and that he regretted their use. Baseball player Roger Clemens has denied using steroids, but in 2010 he was indicted by a grand jury for lying to Congress about his use of steroids. He was tried on six felony counts and, following a long and damaging trial process, was found not guilty. In addition, most anabolic steroids have been scheduled by the DEA since 1990, with updates in 2004, making their use and possession illegal.

- After showing little systematic change in the latter half of the 1970s, the perceived risks associated with ***alcohol*** use at various levels rose during the 1980s (though not as dramatically as the perceived risks associated with marijuana and cocaine use; see Figure 8-10a). The proportion perceiving great risk of harm in having ***one or two drinks nearly every day*** rose from 20% in 1980 to 33% in 1991 before falling all the way back to 20% by 2003. The latter decline was due perhaps in part to publicity about the value of moderate alcohol consumption in protecting against heart disease. Perceived risk then increased from 20% in 2003 to 25% in 2006, before it leveled. The proportion of 12th graders perceiving great risk in having ***four or five drinks nearly every day*** rose from 65% in 1981 to 71% in 1990, but subsequently declined to 58% by 2003, then increased to 63% by 2006, about where it stands in 2012 (64%).

- The corresponding figure on perceived risk of ***occasions of heavy drinking*** (having five or more drinks once or twice a weekend) rose substantially, from 35% in 1979 to 49% in 1992 (a period in which the consequences of drunk driving were covered extensively in the media), and then it, too, decreased—to 43% by 1997—but was back up to 49% by 2012. The increases in perceived risk tended to be followed by some declines in the actual behaviors, while the decreases in perceived risk tended to be followed by some increases in those behaviors—once again suggesting the importance of these beliefs in influencing use, even the use of licit drugs. (Actual prevalence of occasional binge drinking declined appreciably between 1981 and 1993, from 41% to 28%, rose slightly to 32% by 1998, and declined to 22% by 2011—a new low—before rising significantly to 24% in 2012.) The increase in perceived risk during the 1980s may have been due in large part to the many efforts aimed at discouraging drunk driving—a point discussed in more detail elsewhere.[92]

- Despite all that is known today about the health consequences of ***cigarette smoking***, more than one fifth (22%) of 12th-grade students still do not believe that there is a great risk in smoking a pack or more of cigarettes per day (see Figure 8-11a). Over a

[92]O'Malley, P. M., & Johnston, L. D. (1999). Drinking and driving among American high school seniors: 1984–1997. *American Journal of Public Health, 89*, 678–684.

longer period, the number of 12th graders who thought ***smoking a pack or more a day*** involved great risk to the user increased, from 51% in 1975 to 64% in 1980. This shift corresponded with, and to some degree preceded, the downturn in current smoking found in this age group (compare Figures 5-4o and 8-11a). Between 1980 and 1984, both perceived risk and use leveled. Then, from 1984 to 1993 perceived risk inched up from 64% to 70% while use remained quite stable. Perceived risk then declined a bit in 1994 and 1995 (as it did in the lower grades) and use rose through 1997. Between 1995 and 1998, perceived risk rose about five percentage points, presaging a decline in smoking that began in 1998. Overall, in the 13-year interval between 1984 and 1997, the percentage of 12th graders perceiving great risk in regular smoking rose only about five percentage points, while use *rose*, not fell, by seven percentage points. Clearly, influences other than perceived risk were at work during this period. Between 1997 and 2006, perceived risk rose by another nine percentage points from 69% to 78%, while use fell by 15 percentage points (from 37% in 1997 to 22% in 2006). Thus, changes in perceived risk may well have contributed to the decline in use during this period. Perceived risk among 12th graders has held steady since 2006, and again stands at 78% in 2012. In contrast, the 30-day prevalence of use has continued to decline, and is at 17% in 2012—the lowest rate in the life of the study.

- First measured in 1986, perceived risk in regular use of ***smokeless tobacco*** (see Figure 8-12a) increased from 26% that year to 39% in 1993. From 1993 to 1995 such concern decreased a bit, declining to 33% in 1995, but then rose again to reach 45% by 2001**,** with not much change thereafter (44% in 2012). As perceived risk rose, regular use (30-day prevalence) of smokeless tobacco declined appreciably from 12% in 1995 to 7% in 2002. Use of smokeless tobacco has increased since 2004, when 30-day prevalence was 6.7%, reaching 8.3% in 2011 before declining slightly to 7.9% by 2012.

Trends in Perceived Harmfulness among Eighth and Tenth Graders

Because 8th and 10th graders are asked a shorter list of questions, the data regarding perceived risk of specific drugs are more limited compared to what is available for 12th graders.

- From the early 1990s until 1997, 8th and 10th graders showed troublesome declines in perceived risk for ***marijuana*** use, as did 12th graders (see Tables 8-1 and 8-2 and the lower panel in Figure 8-1a). Perceived risk of trying marijuana decreased sharply among 8th graders from 40% in 1991 to 25% in 1997. For 10th graders, this rate dropped from 32% in 1992 to 19% in 1997. Following some deceleration, the declines in perceived risk for marijuana use stalled among 10th and 12th graders from 1997 through 2001 (see Figure 8-1a). Among 8th graders there was actually a reversal, with perceived risk standing at 28% by 2001 and increasing significantly to 32% in 2004. Some falloff began to show in 2007, with a significant decline to 26% in 2012. (Perceived risk began to rise later among 12th graders, suggesting a cohort effect.) The increased perception of risk among 8th graders was accompanied by declining use through 2007, but the decline halted and use increased through 2010, before dropping slightly in 2011 and 2012. Among 10th graders use gradually declined after 2002, coinciding with an increase in perceived risk; but use showed a sharp increase after

2008 which halted in 2012 accompanied by a decrease in perceived risk. In 1991, the three grades did not differ much in the extent of perceived risk of regular use of marijuana: 84%, 82% and 79% of 8th, 10th, and 12th graders, respectively, seeing great risk. Since then, larger gaps have emerged; the respective values in 2012 are 67%, 51%, and 44%, reflecting considerable declines in all three grades, but in particular among the older students.

- For ***crack*** and ***cocaine powder***, perceived risk dropped considerably between 1991 and 1995 among both 8th and 10th graders. (For crack the declines were 12 and 10 percentage points for the two grades, respectively, and for cocaine powder, 11 and 6 percentage points.) There was some further erosion in these beliefs in the following years, though little further change after 1999 in the case of powder cocaine and after 2000 in the case of crack, at least until 2010 (see Tables 8-1 and 8-2). Use of both drugs rose from a low point in 1991 or 1992 to a recent high point in 1998 or 1999—the same interval during which perceived risk fell. Since 2000 there has been little change in perceived risk for crack for both 8th and 10th graders, but for powder cocaine there was a bit of a rise for two or three years, followed by some falloff. In 2010, for reasons that we cannot identify, perceived risk for trying powder cocaine and crack rose by significant amounts. Since then, perceived risk for both forms of cocaine has declined among 8th graders, and has stayed level among 10th graders. Tenth graders have tended to have the highest level of perceived risk for crack (Figure 8-3a, lower panel).

- Perceived risk for ***LSD*** use has generally been declining among 8th and 10th graders since it was first measured in 1993. For example, among 8th graders, the proportion seeing great risk in trying LSD fell by more than half from 42% in 1993 to 20% in 2012. Use, which had been increasing fairly steadily in all grades through 1996, has shown some appreciable decline in all grades since then (for example, from 3.5% annual prevalence in 1996 to 0.8% in 2012 among 8th graders and from 6.9% to 1.7% among 10th graders). Annual prevalence remains at quite low levels. As we pointed out earlier, the recent drop in LSD use cannot be explained by parallel changes in perceived risk, because perceived risk was itself falling, not rising. As discussed in the next chapter, there has been a decline in the reported availability of LSD since the mid-1990s. Despite the lower levels of use at present, we note that perceived risk for LSD use generally has been dropping in recent years in the lower grades, particularly among 8th graders, likely as the result of generational forgetting. This leaves them potentially vulnerable to a resurgence in LSD use, should the drug become widely available again.

- Questions about the dangers of ***inhalant*** use have been asked only of 8th and 10th graders, where use has tended to be most concentrated. Perceived risk was relatively stable between 1991 and 1995, showed a clear jump in 1996, and then held steady through 2000 (see Tables 8-1 and 8-2). Partly in response to MTF findings of growing inhalant use among teenagers, the Partnership for a Drug-Free America launched a media campaign in 1995 to increase adolescents' awareness of the dangers associated with inhalant use. The data here are consistent with the notion that their efforts were

successful, because the increase in perceived risk occurred during the years of this intervention, and because most of the other drugs had not yet begun to show an increase in perceived risk at that point. In 2001, perceived risk of inhalant use again jumped significantly in both grades, and use declined some. Since 2001, perceived risk (of both experimental and occasional use) has fallen fairly steadily in both grades. During this period of declining perceived risk, there were some small changes in use, but by 2009 use was very close to 2002 levels. After a decrease in use for both grades in 2011 and 2012, use is now below the 2002 levels. The declines in perceived risk imply that generational forgetting of the dangers of inhalant use may have been taking place, which suggests that it may be time for another advertising and public information campaign on the subject (among other potential interventions).

- The perceived risk associated with having five or more drinks of ***alcohol*** once or twice each weekend slipped during much of the 1990s. It dropped from 59% in 1991 to 52% in 1996 for 8th graders, and from 56% in 1992 to 51% in 1996 for 10th graders. During the same interval, self-reported ***occasions of heavy drinking*** rose gradually. Since 1999, perceived risk has increased in 8th grade and use has declined. A similar pattern occurred for 10th graders from 1999 to 2008. Between 2008 and 2012, however, perceived risk actually declined, from 57% to 53%, while use did not change (16%).

- Compared to regular use of most illicit drugs, relatively few 12th graders recognize the risk associated with pack-a-day ***cigarette smoking***, and even fewer 8th and 10th graders do so (see Figure 8-11a). From 1993 to 1995, perceived risk of smoking decreased slightly at all grade levels, while smoking rates rose in all grades. After 1995, perceived risk rose in all three grade levels, including significant increases for 8th and 10th graders in 2000. Smoking rates began to drop in 1997 for grades 8 and 10, and a year later among 12th graders; thus, an increase in perceived risk presaged, and very likely helped to drive, this important decline.

  A number of incidents in this historical period may well have contributed to the decline in teen smoking. A series of public debates brought considerable adverse publicity to the product and the industry, and eventually led to the widely publicized tobacco settlement between the states' attorneys general and the tobacco companies. Additional deterrents included increased cigarette prices, substantial tobacco prevention efforts in several large states, antismoking ad campaigns (the largest of which was funded by the American Legacy Foundation—an entity created and funded under the tobacco settlement), the withdrawal of advertising from billboards, and the elimination of the Joe Camel ads (that we believe may have been particularly successful with adolescent boys from the upper end of the socioeconomic spectrum).

  Between 2000 and 2003 cigarette smoking continued a fairly steep decline; it then generally declined at a more modest pace through 2011, followed by a significant decrease among 8th graders in 2012. Each grade showed at least one year of increase, but smoking levels in 2012 remained distinctly lower than in 2000. Perceived risk of cigarette smoking showed a slight, inconsistent increase over that interval. By 2012,

perceived risk was only about four to six percentage points higher than it had been in 2000, in all three grades. Cigarette smoking on the other hand was down by about 66%, 55%, and 46% in grades 8, 10, and 12, respectively.

- Twelfth graders showed a considerable increase in the level of risk perceived to be associated with regular ***smokeless tobacco*** use between the first year of measurement in 1986 and 1993, and the lower grades showed a parallel change during this period in the years for which data are available (1991–1993). All three grades showed some decline from 1993 to 1995 and then increased between 1995 and 2000 (see Figure 8-12a). This parallel movement across the three grades, by the way, is more consistent with a secular trending than a cohort effect. During this period of substantial increase in perceived risk between 1995 and 2000, a considerable decline in the use of smokeless tobacco took place. As with cigarettes, perceived risk became fairly level between 2000 and 2002 as the decline in use in 10th grade halted. Use continued to drop in 8th and 12th grades. It thus appears that one important reason for the appreciable declines in smokeless tobacco use during the latter half of the 1990s was the fact that an increasing proportion of young people were persuaded of the dangers of using it. In 2003, perceived risk increased for all three grades (not significantly), and in 2004 the increase continued in 8th and 12th grades. Use leveled in 2003 and 2004 in grades 8 and 12 while it continued to decline gradually among 10th graders. The decline in use of smokeless tobacco ended in 2002 in grade 8, in 2004 in grade 10, and in 2005 in grade 12, indicative of a cohort effect. Then for a few years there was some decline in perceived risk in the upper grades, while use rose some in all three grades. Perceived risk rose among 12th graders in 2012, while it decreased significantly among 8th and 10th graders. Use in all three grades declined some in 2011 and 2012. It seems quite possible that the advertising campaigns for various smokeless tobacco products have affected perceived risk among students.

PERSONAL DISAPPROVAL OF DRUG USE

Since the beginning of the MTF study, we have included a set of questions to measure the moral sentiment respondents attach to various types of drug use. The phrasing, "Do you disapprove of people (who are 18 or older) doing each of the following?" is used. The answer alternatives are "don't disapprove," "disapprove," and "strongly disapprove." For 8th and 10th grades, a fourth response, "can't say, drug unfamiliar," is included, and the parenthetical phrase "who are 18 or older" is omitted from the question stem. Responses of "disapprove" or "strongly disapprove" are combined and reported here as "disapproval." For 8th and 10th graders, "can't say, drug unfamiliar" is included in calculating the percentages. Each question specifies a level of drug involvement, such as "trying marijuana," "using marijuana occasionally," or "using marijuana regularly," just as in the questions about perceived risk.

Extent of Disapproval among Twelfth Graders

- The vast majority of 12th graders do not condone *regular use* of ***any of the illicit drugs*** (see Table 8-6). Among today's 12th graders, 78% disapprove (including strongly disapprove) of ***regular marijuana use*** and between 94% and 97% disapprove

of regular use of each of the other illicit drugs. (Regular ***steroid*** use meets with a 90% disapproval rate.)

- For each of the drugs included in this set of questions, fewer respondents indicate disapproval of experimental or occasional use than of regular use. However, the differences are not great for the use of ***illicit drugs other than marijuana***, because nearly all 12th graders disapprove of even experimenting with them. For example, the proportions disapproving of *experimental* use are 96% for ***heroin***; 93% for ***crack***; 91% for ***cocaine;*** 89% for ***cocaine powder***; 88% for ***sedatives*** (***barbiturates***); and 87% for ***LSD*** and ***ecstasy*** (***MDMA***). The extent of disapproval of illicit drug use by peers is no doubt underestimated by adolescents and, as we have written elsewhere, the extent of disapproval that actually does exist could be widely publicized and provide the basis for some potentially powerful prevention messages in the form of normative education.[93]

- For ***marijuana***, the rate of disapproval varies substantially for different usage levels, although not as much as it has in the past. Disapproval for this drug is really quite high. About half of all seniors (49%) disapprove of even trying marijuana once or twice, about three of five (59%) disapprove of its occasional use, and about four of five (78%) disapprove of regular use. Looked at another way, only about one in four or five 12th graders (22%) say they don't disapprove of regular marijuana use.

- Smoking a pack (or more) of ***cigarettes*** per day now meets with disapproval by five out of six (84%) 12th-grade students.

- Taking ***one or two drinks nearly every day*** meets with the disapproval of 71% of 12th graders. Curiously, about the same percentage of 12th graders (70%) disapprove of ***weekend binge drinking*** (five or more drinks once or twice each weekend), despite the fact that twice as many of them see a greater risk in weekend binge drinking (49%) than in having one or two drinks nearly every day (24%).

  One likely explanation for these anomalous findings may be that a greater proportion of this age group are themselves (and have friends who are) weekend binge drinkers rather than moderate daily drinkers. Therefore, some of their disapproval attitudes may be consistent with their own behavior, even though such attitudes are somewhat inconsistent with their beliefs about possible consequences. Perhaps the ubiquitous advertising of alcohol use in partying situations has also managed to increase social acceptability. In any case, this divergence between the perceived risk associated with the two behaviors and the corresponding levels of disapproval helps to illustrate the point that, while perceived risk may influence disapproval (as we have consistently hypothesized), other factors also play a role.

[93]Johnston, L. D. (1991). Contributions of drug epidemiology to the field of drug abuse prevention. In C. Leukefeld & W. Bukoski (Eds.), *Drug abuse prevention research: Methodological issues* (pp. 57–80) (NIDA Research Monograph No. 107). Washington, DC: National Institute on Drug Abuse.

Extent of Disapproval among Eighth and Tenth Graders

- Attitudes about ***inhalant*** use have been asked only of 8th- and 10th-grade students, and in 2012 the great majority (83% and 86%, respectively) said they disapprove of even trying inhalants.

- Currently, the rates of disapproval for trying ***crack*** and ***cocaine powder*** once or twice are similar for all three grades, with between 89% and 93% disapproving (see Tables 8-4 through 8-6).

- ***Marijuana*** use shows the greatest grade-related difference in disapproval rates—the lower the grade level, the higher the rate of disapproval. Specifically, in 2012, 49% of 12th graders said they disapprove of trying marijuana compared to 56% of 10th graders and 75% of 8th graders (see Tables 8-4 through 8-6). There is now considerable evidence that these attitudes do shift with age—that there is an age effect common to all cohorts. For example, the 8th graders of 1991 for the most part constituted the 10th graders of 1993 and the 12th graders of 1995, and their disapproval of trying marijuana fell from 85% among 8th graders in 1991, to 70% by 10th grade (in 1993), and to 57% by 12th grade (in 1995). This age-related drop far exceeds the secular trend at any given grade level, and would be even more pronounced were it not for the loss of dropouts between 8th and 12th grades. (It is also possible that, in addition to any age effects, there are lasting differences between class cohorts—i.e., cohort effects.)

  Another possible explanation for this decrease in disapproval with age is that secondary school students' attitudes about use are age-graded—that is, they may disapprove more of an 8th grader using marijuana, less so for a 10th grader, and still less for a 12th grader. The question stem used at the lower grades does not specify the age of the person about whom they are answering, and the respondents may simply assume that the question is about people their age. The question asked of 12th graders over the years specifies people "who are 18 or older," and that lower limit corresponds closely to their current age.

- Disapproval of ***alcohol*** use is also higher at the lower grade levels than among 12th graders. For example, in 2012, 70% of 12th graders said they disapprove of ***weekend binge drinking*** versus 78% of 10th graders and 86% of 8th graders.

- The same is true for ***cigarette*** use: 84% of 12th graders, 86% of 10th graders, and 89% of 8th graders said they disapprove of someone smoking one or more packs per day. Oddly enough, the 8th graders, who are least likely to see regular smoking as dangerous, are the most likely to disapprove of it. This disparity may help to explain why so many do begin to smoke. In the absence of an underlying belief that smoking really represents a hazard to them, many may not be deterred by the predominant peer norms alone.

TRENDS IN DISAPPROVAL OF DRUG USE

As illustrated below, while the perceived risk associated with a drug often reverses course a year *prior* to a change in the actual use of that drug, disapproval tends to move in a way more synchronous with use. In other words, disapproval tends to rise in the same year that use falls, and tends to fall in the same year that use rises. We have hypothesized that this is due in part to both disapproval *and* use being influenced by perceived risk, for which the inflection point often occurs a year earlier. Table 8-6 provides the long-term trends in disapproval for 12th grade. See also the "b" versions of Figures 8-1 through 8-3 and Figures 8-7 through 8-12 (e.g., Figure 8-1b).

Trends in Disapproval among Twelfth Graders

- Between 1975 and 1977, a substantial decrease occurred in disapproval of ***marijuana*** use at any level of frequency (see Figure 8-1b and Table 8-6). Compared with the class of 1975, the proportion of 12th graders in the class of 1977 who disapproved of *experimenting* was 14 percentage-points lower, the proportion who disapproved of *occasional* use was 11 percentage points-lower, and the proportion who disapproved of *regular* use was 6 percentage points-lower. These were undoubtedly continuations of longer term trends that began in the late 1960s, as the norms of American young people against illicit drug use seriously eroded. Between 1977 and 1990, however, there was a substantial reversal of that trend as disapproval of experimental marijuana use rose by 34 percentage points, disapproval of occasional use by 36 percentage points, and disapproval of regular use by 26 percentage points. There were no further significant changes in 1991 or 1992, although disapproval of experimental use continued to rise gradually.

  Beginning in 1993 (a year *after* perceived risk began to decline), a sharp drop in disapproval of marijuana use among 12th graders began. Between 1992 and 1997, disapproval dropped 19 percentage points for experimental use, 17 percentage points for occasional use, and 11 percentage points for regular use. These changes accompanied a significant increase in self-reported use of marijuana. By the mid-1990s, the decline in disapproval of marijuana use began to decelerate, and disapproval was steady from about 1997 to 2001. From 2001 to 2007, disapproval increased somewhat, but has been dropping for all levels of use since 2007, as use has increased. Between 2007 and 2012, disapproval rates dropped by 10%, 11%, and 6% for experimental, occasional, and regular use. Disapproval rates in 2012 are well below those observed in the early 1990s, with current disapproval at 49%, 59%, and 78% for experimental, occasional, and regular use.

  The proportion of 12th graders who disapproved of trying ***amphetamines*** remained extremely stable from 1975 to 1980 at 75% (see Figure 8-7b and Table 8-6). This proportion dropped some (to 71%) in 1981, the peak year for amphetamine use, and then increased gradually over a decade until it reached 87% in 1991, where it remained for one year. After 1992, a reversal began: disapproval dropped by seven percentage points by 1996 to 80%. Self-reported use increased over the same period. Disapproval then rose to 86% by 2003, as use declined, and remained about the same in 2010 (88%). The examples of specific amphetamines given in the question about

disapproval (and use and perceived risk, as well) were changed in 2011, which makes comparison with earlier years more difficult.

- During the late 1970s, personal disapproval of experimenting with ***sedatives*** (***barbiturates***) increased (from 78% in 1975 to 84% in 1979) and then remained relatively stable through 1984, before it began to increase again (see Figure 8-7b). By 1990, disapproval had reached 91%. As disapproval rose from 1975 to 1992, use declined substantially. As with many drugs, between 1993 and 1996, disapproval dropped (to 85%) as use rose; but, as with amphetamines, disapproval began to rise again in 1997, then leveled beginning in 1998 at about 86% with little change through 2001, followed by a gradual increase until 2009 when disapproval leveled.

- Concurrent with the years of increase in ***cocaine*** use, disapproval of experimental use of cocaine declined somewhat, from a high of 82% in 1976 to a low of 75% in 1979 (see Figure 8-2b). It then leveled for four years, before edging upward to 80% by 1986. There was a sharp rise in disapproval between 1986 and 1987, the same interval in which perceived risk rose dramatically. This rise continued through 1991, reaching 94% of 12th graders disapproving of trying cocaine. Between 1992 and 1997, disapproval slowly declined (to 88% in 1997) as use steadily increased before leveling. Disapproval of trying ***cocaine powder*** and ***crack cocaine*** (see Figure 8-3b) peaked in 1992, after which there was a modest falloff. However, there was rather little change in 12th graders' disapproval of crack or powder cocaine between 1996 and 2006. Since then there has been some increase in disapproval.

- We believe that the parallel or slightly lagged trends between perceived risk and disapproval—particularly for marijuana and cocaine use—are no accident. We have hypothesized for a long time that perceived risk is an important influence on a person's level of disapproval of a drug-using behavior, although there are surely other influences as well. As levels of personal disapproval change, these individually held attitudes are communicated among friends and acquaintances, and thus perceived norms change as well (as is illustrated in the next chapter). It is noteworthy that, as perceived risk for use of most of the illicit drugs began to reverse in 1991 or 1992, personal disapproval of use of virtually all of them appeared to level. In 1993, personal disapproval among 12th graders began to drop for use of nearly all of the illicit drugs (see Table 8-6), and it continued to fall for use of many of these substances through 1997. Since 2001, disapproval for a number of drugs has been increasing some. This time lag is consistent with the notion that perceived risk influences disapproval, which, in turn, changes peer norms and use.

- Disapproval of trying ***ecstasy*** (***MDMA***) has been asked of 12th graders since 1997 and of 8th and 10th graders since 2001 (see Tables 8-4 through 8-6). Disapproval among 12th graders declined slightly, from 82% in 1999 to 80% in 2001, during a period when use was increasing and perceived risk was just beginning to increase. But in 2002, disapproval increased significantly to 84%, at the same time that use decreased and perceived risk continued its increase. Thus, increases in perceived risk may have contributed to the subsequent increase in personal disapproval, albeit with a fair

amount of lag. Disapproval, which continued to increase through 2006, reached 89%, about where it remained through 2009. Between 2009 and 2011 there was a slight decline in disapproval, accompanied by some increase in use. In 2012 disapproval of trying ecstasy increased significantly while annual use declined significantly.

- Despite the large changes that were taking place in adult use of cigarettes, and presumably in adult attitudes about smoking, young people's disapproval of ***regular cigarette smoking*** (a pack or more per day) changed surprisingly little throughout much of the life of this study. Disapproval increased from 66% to 71% between 1976 and 1980, slightly ahead of the downturn in use between 1977 and 1982. Disapproval fluctuated slightly throughout the 1980s and 1990s, with some increase between 1982 (69%) and 1986 (75%), and then some gradual decline through 1997 (to 67%, almost exactly where it started 21 years earlier). Use increased from 1992 through 1997 as disapproval was declining. Disapproval has increased since 1997, rising to 84% by 2012, the highest percentage recorded in the life of the study; use has declined steadily in the same interval and has continued to decline through 2012. The earlier lack of appreciable change in students' disapproval of smoking is surprising because many antismoking laws and policies had been enacted during the 1980s and 1990s. Very likely, the tobacco industry's promotion and advertising efforts helped to account for this lack of change in disapproval, as did the widespread portrayal of smoking by characters—often the lead characters—in movies and on television. But by the mid- to late 1990s the tobacco industry and its product received so much adverse publicity, and some of the advertising efforts were curtailed as well, that disapproval finally rose substantially.

- There have been some important changes in levels of disapproval related to ***alcohol*** use. Figure 8-10b tracks disapproval rates for several different patterns of use. It shows that 12th graders' disapproval of most forms of alcohol use rose throughout the 1980s and into the early 1990s. Then, between 1992/1993 and 1998/1999, there was considerable falloff in the proportion disapproving of many of these behaviors. This was also the period of relapse in the epidemic of illicit drug use. Since the late 1990s, their level of disapproval of the various drinking behaviors has increased some. For example, weekend binge drinking was disapproved by 63% of 12th graders in 1999, but by 70% by 2012.

- With regard to abstention, the proportion of 12th graders who disapproved of even ***trying one or two drinks of alcohol*** doubled, from a low point of 16% in 1980 to 33% by 1992. It fell back to 25% by 1998, increased modestly thereafter, to 29% in 2011 before decreasing significantly to 25% in 2012. It seems likely that the increased minimum drinking age in many states between 1981 and 1987 contributed to these changes in attitude about abstention, because all recent senior classes grew up under the higher minimum drinking age.[94] If so, this illustrates the considerable capacity of

[94]O'Malley, P. M., & Wagenaar, A. C. (1991). Effects of minimum drinking age laws on alcohol use, related behaviors, and traffic crash involvement among American youth: 1976–1987. *Journal of Studies on Alcohol, 52,* 478–491.

laws to influence informal norms. It also seems likely that the activities of Mothers Against Drunk Driving (MADD), which peaked in 1984, and of the designated driver effort, which occurred mostly from 1989 to 1992, helped to influence these attitudes.[95]

- Disapproval of ***weekend heavy drinking*** rose gradually but quite substantially, from a low of 56% in 1981 to a high of 71% by 1992. Over that same 11-year interval, the self-reported rate of occasions of heavy drinking declined substantially from a high of 41% in 1981 to a low of 28% in 1992. While the ad campaigns mentioned earlier dealt specifically with drinking and driving, we believe that the negative connotations may well have generalized to heavy drinking under any circumstance.

  After 1992, disapproval of weekend heavy drinking fell briefly, from 71% in 1992 to 65% by 1994. From 1994 through 2005, it remained fairly stable at 63–67%, rising slightly to 68–70% since then. So attitudes about the acceptability of this important behavior have become considerably more conservative since 1980 and use has declined to historically low levels. Recent analyses of MTF data showed that cohorts who experienced higher disapproval of weekend heavy drinking had lower levels of binge drinking themselves.

Trends in Disapproval among Eighth and Tenth Graders

Tables 8-4 and 8-5 provide trends since 1991 in disapproval for 8th and 10th graders. The lower panels in many of the figures in this chapter, showing trends in disapproval, provide the same information graphically with regard to using each of the individual drugs one or two times (when data for the lower grade levels are available).

- In 1992, 10th and 12th graders showed little change in disapproval of the use of illicit drugs, but 8th graders showed some erosion in their attitudes with respect to using ***marijuana***, ***cocaine powder***, and ***crack***. In 1993, rates of disapproval for using these drugs continued to decline among 8th graders and began to decline among 10th and 12th graders, as well (see Tables 8-4 through 8-6 and Figures 8-1b and 8-3b). Between 1993 and 1996, disapproval of both ***marijuana*** use and ***LSD*** use declined in all three grades.

- The declines in personal disapproval were particularly sharp for ***marijuana*** at all three grade levels; marijuana was also the drug that showed the greatest increase in use during that period. Between 1991 and 1997, the proportion of 8th graders who disapproved of trying marijuana fell substantially, from 85% to 68%. Personal disapproval fell among 10th graders from 75% to 54%, and among 12th graders from 69% to 51% over the same interval. Finally, in 1998 there were some early signs of a reversal in this trend at all grade levels, although none of the increases reached statistical significance. In 1999 we saw a significant increase in disapproval of experimental use for 8th graders, a leveling of disapproval rates for 10th graders, and some further decline in this measure for 12th graders, suggesting a cohort effect at

[95]O'Malley, P. M., & Johnston, L. D. (1999). Drinking and driving among U.S. high school seniors, 1984–1997. *American Journal of Public Health, 89*, 678–684.

work. The 8th graders' level of disapproval slowly diverged (upward) from the other two grades after 1995, which is consistent with the gradual drop in use at 8th grade. After about 2001, disapproval of marijuana use had been rising quite steadily in all three grades until 2005, when it leveled among 8th graders (as did use). All three grades increased in disapproval in 2006 and 2007, though use showed rather little further decline. Disapproval of experimental use then declined in all grades between 2007 and 2010, as annual use showed slight increases. The three grades diverged somewhat in 2011, with disapproval increasing some among 8th graders, and decreasing slightly among 10th and 12th graders. Between 2010 and 2012 disapproval increased among 8th graders (while annual use declined), whereas it decreased among 10th and 12th graders (while annual use rose by a very small margin).

- Disapproval of LSD use was quite high among 12th graders through most of the 1980s, but began to decline after 1991 along with perceived risk. All three grades exhibited a decline in disapproval through 1996, with disapproval of experimentation dropping 11 percentage points between 1991 and 1996 among 12th graders. After 1996 a slight increase in disapproval emerged among 12th graders, accompanied by a leveling among 10th graders and some further decline among 8th graders. Since 2001, disapproval of LSD use has diverged among the three grades, declining considerably among 8th graders, declining less among 10th graders, and increasing significantly among 12th graders. Note, however, that the percentages of 8th and 10th graders who respond with "can't say, drug unfamiliar" increased through 2008 (a finding consistent with the notion that generational forgetting has been occurring); thus the base for disapproval has shrunk, suggesting that the real decline of disapproval among the younger students is less than it appears here. In 2012 disapproval of LSD use dropped significantly in 8th grade.

- As noted earlier, the use of LSD decreased in recent years in all three grades despite the fact that there has been little or no increase in either perceived risk or disapproval at any grade (except for an increase in disapproval among 12th graders, which continued into 2004 and a slight increase for 8th graders in 2011 followed by a significant decrease in 2012). The "disconnect" between these attitudes and beliefs and actual use suggests that other important factors were at work. Two possibilities are (1) a displacement of use by the rise in ecstasy use, at least in the early years of the downturn; and (2) a large drop in the reported availability of LSD since the mid-1990s, but particularly since 2001. We think it likely that both of these dynamics were at work. As noted earlier, we believe that the low levels of perceived risk and disapproval among 8th graders with regard to LSD leaves them potentially vulnerable to another epidemic of LSD use.

- As noted above, disapproval of ***ecstasy*** increased in 2002 in 12th grade, and this increase was also seen in 8th and 10th grades. These increases likely help explain the decreases in use that occurred among all three grade levels. In 2003, risk increased significantly for all grades, disapproval increased for all grades (significantly so for 8th and 10th graders), and use decreased significantly for all grades. In 2004, as use continued a gradual downward drift, disapproval continued to increase significantly in

the upper grades but dropped some among 8th graders. Between 2005 and 2009, disapproval was unchanged among 12th graders, then decreased some in 2010 and again in 2011 before increasing significantly in 2012; however, disapproval decreased some among both 8th and 10th graders until 2011 when there was a slight rise in disapproval. In 2012 there was a significant decrease in disapproval among the 8th graders. This unusual pattern of divergence is similar to that observed for perceived risk for ecstasy. We believe that generational forgetting of the risks of this drug may account for the decline among the younger adolescents in both perceived risk and disapproval.

- Disapproval of ***crack*** and ***cocaine powder*** fell some from 1991 through 1996 among 8th graders, from 1991 through 1998 among 10th graders, and from 1992 through 1998 among 12th graders. These attitudes have not changed a great deal since then, though there has been a very gradual rise in disapproval. The softening in attitudes about using crack and cocaine powder in the early 1990s eventually translated into changes in usage levels. For example, crack use rose from 1991 through 1998 in 8th grade, from 1992 through 1998 in 10th grade, and from 1993 through 1999 in 12th grade. Since those peaks in use, there has been some falloff at all grades in the use of both crack (including a significant drop in crack use among 12th graders in 2011 and among 8th graders in 2012) and powder cocaine. The recent general decline in use of cocaine powder since 1999 occurred without any significant covariation with perceived risk or disapproval. However, the decline in crack use did co-vary with modest increases in perceived risk and disapproval. The lack of covariation with perceived risk until recently suggests the possibility that there was some substitution by another drug occurring. Ecstasy would seem a possible candidate; however, its use does not co-vary with use of either crack or powder cocaine. One variable that does co-vary strongly is perceived availability of crack or cocaine powder, but that may be due to the fact that as use declines, a given drug becomes less available because there are fewer user peers who might be sources of the drug.

- Regarding the use of ***inhalants,*** there was a small decrease in the disapproval rates among 8th graders from 1991 to 1995, but none among 10th graders. Perceived risk for inhalants jumped up between 1995 and 1996 for both grades. Disapproval inched up from 1995 through 1997, but in 1999 disapproval of trying inhalants jumped significantly in both grades, with little change since for 10th graders. For 8th graders, there was some increase in disapproval between 1998 and 2002, with disapproval of trying inhalants once or twice reaching 86%; by 2012, this was down slightly, to 83%.

- Disapproval of weekend ***binge drinking*** declined among 8th graders between 1991 and 1996 and among 10th and 12th graders between 1992 and 1997, before leveling (see Figure 8-10b). Disapproval began to rise slowly among 8th graders after 1999 and among 10th and 12th graders after 2001. In general, self-reported binge drinking rates have moved in a manner complementary to disapproval over time.

- Disapproval of ***smoking one or more packs of cigarettes per day*** also declined significantly, from 1991 to 1996 among 8th and 10th graders and from 1992 to 1996

among 12th graders (see Figure 8-11b), corresponding to periods of sharp increase in cigarette and illicit drug use. After 1996, however, disapproval turned upward in both lower grades, including a significant increase in 2002 among 10th graders; the same happened since 1997 in grade 12. Disapproval continued to rise in 2005 at the upper grades, but leveled among 8th graders, as did their rate of smoking. In 2007, both 8th and 10th graders showed further increase in disapproval of smoking, but disapproval leveled off among 12th graders. No important changes in disapproval were seen in 2008 and 2009, and in 2010 it slipped slightly (not significantly) in the upper grades. In 2011 disapproval increased for all three grades, significantly for 10th graders, and it showed some continued increase for all three grades in 2012. During this long period of increasing disapproval, and even longer period of increase in perceived risk, actual smoking rates fell appreciably. These changes in attitudes may well have been brought about by the extremely adverse publicity suffered by the tobacco industry during these years. Also, the Joe Camel advertising campaign ended, billboard advertising of cigarettes was removed, and a number of states, as well as the American Legacy Foundation, initiated antismoking campaigns aimed at youth.

ATTITUDES REGARDING THE LEGALITY OF DRUG USE

At the beginning of the study in 1975, legal restraints on drug use appeared likely to be in a state of flux for some time. Therefore, we decided to measure attitudes about legal sanctions. As it turns out, some dramatic changes in these attitudes have occurred, and they are still occurring. Table 8-7 presents a set of questions on this subject, along with the answers provided by each 12th-grade class. The set lists a sampling of illicit and licit drugs and asks respondents whether the use of each should be prohibited by law. A distinction was made between *use in public* and *use in private*—a distinction that has proven quite important. (These questions have not been asked of 8th- and 10th-grade respondents.) The answer alternatives are "no," "yes," and "not sure."

Attitudes about Legality of Drug Use among Twelfth Graders

- The great majority of 12th graders agree that people should be prohibited by law from using ***illicit drugs other than marijuana*** in public. (The questions specified people age 18 or older; presumably proportions would be even higher for those under 18.) For example, in 2012 the percentages agreeing to prohibition are 70% for ***amphetamines*** or ***sedatives***, 73% for ***LSD***, and 81% for ***heroin***. Even use in private is opposed by the majority, though by smaller proportions; for example, 49% believe that the use in private of ***amphetamines*** or ***sedatives*** should be illegal, 56% hold this belief about ***LSD*** use, and 69% believe it about ***heroin*** use.

- Despite the fact that many 12th graders in 2012 reported ever having used marijuana themselves (45%), and many do not judge it to be as dangerous as other drugs, nearly two thirds (64%) favor legally prohibiting ***marijuana*** use in public places. Only one third (33%) favor prohibiting marijuana use in private, however.

- In 2012, 43% of 12th graders believe that ***cigarette smoking*** in "certain specified public places" should be prohibited by law. Were the question more specific as to the types of public places in which smoking might be prohibited (e.g., restaurants or hospitals), quite different results might have emerged.

- About half (49%) of 12th graders in 2012 think that ***getting drunk*** in public should be prohibited.

- For ***all drugs*** included in the question, fewer 12th graders believe that use in private settings should be illegal, as compared with use in public settings. This is particularly true for ***getting drunk*** in private (which only 22% think should be illegal) and for using ***marijuana*** in private (which only 33% think should be illegal).

Trends in Attitudes about Legality of Drug Use among Twelfth Graders

- From 1975 through 1978, there were modest declines (shifts of five to seven percentage points, depending on the substance) in the proportions of 12th graders who favored legal prohibition of private use of any of the five illicit drugs (see Table 8-7). But by 1990 (12 years later), all of these proportions had increased substantially, with shifts of 8 to 31 percentage points. The proportion who thought ***marijuana*** use in private should be prohibited by law more than doubled, from 25% in 1978 to 56% in 1990—a dramatic shift.

- Then, between 1990 and 1997, positions on prohibition of all illicit drug use softened once again, particularly in the case of marijuana use in private. After 1997 these attitudes were fairly stable, or continued to soften slightly. For example, in 2012, 70% thought taking ***amphetamines*** or ***sedatives*** (***barbiturates***) in public should be prohibited, down from 77% in 1997.

- One important change in these attitudes that occurred after 2006 is increased tolerance for the use of ***marijuana*** in private, as the proportion favoring prohibition declined from 42% in 2006 to 33% in 2012. Tolerance for public use of marijuana increased after 2008, when 70% thought such use should be prohibited, dropping to 64% by 2012.

- The proportions favoring prohibitions on the use in private of some other drugs have also declined since about 2007, including LSD (from 64% to 56% in 2012), amphetamines or sedatives (barbiturates) (from 54% to 49%), and heroin (from 73% to 69%).

- There was surprisingly little change in the proportion of 12th graders who said ***smoking cigarettes*** "in certain specified public places" should be prohibited by law up through 2009. In 1977, 42% held this view, versus 45% in 2009, 32 years later. The lowest level was 39% (in 1984), and the highest was 48% (in 1988). On the other hand, given recent widespread prohibitions of smoking in many public buildings, it is possible that the assumed definition of "certain specified public places" has narrowed

in the minds of many 12th graders. In any case, in 2010 there was a significant four percentage-point decline in this measure followed by some increase in 2011, to 43%, where it remained in 2012.

- Attitudes about the legality of ***drunkenness*** in public or private places have been relatively stable over the years of this study. An overall linear trend line shows a very slight downward trend (i.e., more tolerant) for attitudes toward getting drunk in public, and a slight upward trend (i.e., less tolerant) for getting drunk in private. (Attitudes still favor much less tolerance for getting drunk in public.) The stability of attitudes about the preferred legality for this culturally ingrained drug-using behavior contrasts sharply with the lability of attitudes regarding the legality of using illicit drugs.

THE LEGAL STATUS OF MARIJUANA

Another set of questions asks with more specificity what legal sanctions, if any, 12th graders think should be attached to the *use* and *sale* of marijuana. (These questions have not been asked of 8th- and 10th-grade respondents.) Respondents are also asked how they would be likely to react to the legalized use and sale of the drug. The answers to such a hypothetical question must be interpreted with considerable caution, of course.

Attitudes and Predicted Responses to Legalization of Marijuana

- Table 8-8 lists the proportions of 12th graders in 2012 who favor making marijuana use entirely legal (39%), a minor violation like a parking ticket but not a crime (27%), or a crime (22%). The remaining 12% said they "don't know." It is noteworthy just how variable attitudes about this contentious issue are.

- Asked whether they thought it should be legal to sell marijuana *if* it were legal to use it, about three in five (58%) said "yes." However, about 80% of those answering "yes" (47% of all respondents) would permit sale *only* to adults. A small minority (10%) favored the sale to anyone, regardless of age, while 31% said that sale should not be legal even if use were made legal, and 12% said they "don't know."

- Most 12th graders felt that they would be little affected personally by the legalization of either the sale or the use of marijuana. Over half (56%) of the respondents said that they would not use the drug even if it were legal to buy and use, while others indicated they would use it about as often as they do now (17%) or less often (1.6%). Only 8% said they would use it more often than they do at present, while 11% thought they would try it. Another 7% said they did not know how their behavior would be affected if marijuana were legalized. Still, this amounts to 19% of all seniors, or about one in five, who thought that they would try marijuana, or that their use would increase, if marijuana were legalized.

A study of the effects of decriminalization by several states during the late 1970s found no evidence of any impact on the use of marijuana among young people, nor on attitudes and beliefs concerning its use.[96] However, it should be noted that *decriminalization* falls well short of the full *legalization* posited in the questions here. Moreover, the situation today is very different from the one in the late 1970s, with much more peer disapproval and more rigorous enforcement of drug laws presently. More recent studies suggest that there might be an impact of decriminalization, because "youths living in decriminalized states are significantly more likely to report currently using marijuana."[97] As more states adopt decriminalization or full legalization, (as occurred in late 2012 in Colorado and the state of Washington), it seems quite possible that attitudes about and use of marijuana will change. Declines in perceived risk and disapproval of marijuana would seem the most likely attitudinal changes, and such changes may well lead to increased use among youth.

Trends in Attitudes and Predicted Responses to Legalization of Marijuana

- In the 12-year interval between 1978 and 1990, American 12th graders became much more supportive of legal prohibitions of the use of ***all the illegal drugs*** shown in Table 8-7, whether used in private or in public.

- Between 1976 and 1979, 12th graders' preferences for decriminalization or legalization of ***marijuana*** remained fairly constant (see Table 8-8). But between 1979 and 1990, the proportion favoring outright legalization dropped by half (from 32% in 1979 to 16% in 1990), and there was a corresponding doubling in the proportion saying marijuana use should be a crime (from 24% to 53%). Also reflecting this increased conservatism about marijuana use, somewhat fewer said they would support legalized *sale* even if *use* were made legal (down from 65% in 1979 to 48% in 1990).

- After 1990 these policy attitudes reversed direction. The proportion favoring marijuana use being a crime dropped from 53% in 1990 to 34% by 1996, while the proportion saying marijuana should be entirely legal increased from 16% in 1990 to 31% in 1996 (see Table 8-8). In the following ten years these two measures leveled, but since then there has been further change in the direction of more tolerant attitudes. The proportion favoring marijuana use being a crime dropped from 32% in 2006 to 22% in 2012, while the proportion saying marijuana should be entirely legal increased from 27% in 2006 to 39% in 2012. These recent trends toward a more tolerant view of marijuana may be due in part to the passage of medical marijuana laws in several states. The presence of ballot initiatives to legalize marijuana in various states has likely also contributed to an increased tolerance for marijuana.

[96]See Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1981). *Marijuana decriminalization: The impact on youth, 1975–1980* (Monitoring the Future Occasional Paper No. 13). Ann Arbor, MI: Institute for Social Research.

[97]Chaloupka, F. J., Pacula, R. L., Farrelly, M. C., Johnston, L. D., O'Malley, P. M., & Bray, J. W. (February 1999). *Do higher cigarette prices encourage youth to use marijuana?* (NBER Working Paper No. 6939). Cambridge, MA: National Bureau of Economic Research.

- The predictions about personal marijuana use, if sale and use were legalized, have been fairly similar for all graduating classes. The slight shifts observed have been attributable mostly to the changing proportions of 12th graders who have actually used marijuana.

- One thing that has become clear over the past 3+ decades is that young people's policy preferences regarding the legal status of marijuana (and other drugs) track rather closely the extent to which they themselves are using those drugs and the extent to which they personally disapprove of the use of them.

TABLE 8-1
Trends in Harmfulness of Drugs as Perceived by 8th Graders

How much do you think people risk harming themselves (physically or in other ways), if they . . .	Percentage saying great risk [a]																						2011–2012 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Try marijuana once or twice [b]	40.4	39.1	36.2	31.6	28.9	27.9	25.3	28.1	28.0	29.0	27.7	28.2	30.2	31.9	31.4	32.2	32.8	31.1	29.5	29.5	28.2	26.0	-2.2 s
Smoke marijuana occasionally [b]	57.9	56.3	53.8	48.6	45.9	44.3	43.1	45.0	45.7	47.4	46.3	46.0	48.6	50.5	48.9	48.9	50.2	48.1	44.8	44.1	43.4	41.7	-1.7
Smoke marijuana regularly [b]	83.8	82.0	79.6	74.3	73.0	70.9	72.7	73.0	73.3	74.8	72.2	71.7	74.2	76.2	73.9	73.2	74.3	72.0	69.8	68.0	68.3	66.9	-1.5
Try synthetic marijuana once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.4	—
Take synthetic marijuana occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.8	—
Try inhalants once or twice [d]	35.9	37.0	36.5	37.9	36.4	40.8	40.1	38.9	40.8	41.2	45.6	42.8	40.3	38.7	37.5	35.8	35.9	33.9	34.1	35.5	34.7	34.2	-0.6
Take inhalants regularly [d]	65.6	64.4	64.6	65.5	64.8	68.2	68.7	67.2	68.8	69.9	71.6	69.9	67.4	66.4	64.1	62.1	61.9	59.2	58.1	60.6	59.0	59.0	0.0
Take LSD once or twice [e]	—	—	42.1	38.3	36.7	36.5	37.0	34.9	34.1	34.0	31.6	29.6	27.9	26.8	25.8	23.8	22.8	21.9	21.4	23.6	21.7	19.9	-1.9
Take LSD regularly [e]	—	—	68.3	65.8	64.4	63.6	64.1	59.6	58.8	57.5	52.9	49.3	48.2	45.2	44.0	40.0	38.5	36.9	37.0	38.6	37.8	35.0	-2.8
Try ecstasy (MDMA) once or twice [c]	—	—	—	—	—	—	—	—	—	—	35.8	38.9	41.9	42.5	40.0	32.8	30.4	28.6	26.0	27.0	25.4	23.6	-1.8
Take ecstasy (MDMA) occasionally [c]	—	—	—	—	—	—	—	—	—	—	55.5	61.8	65.8	65.1	60.8	52.0	48.6	46.8	43.9	45.0	43.7	41.0	-2.7
Try salvia once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.5	—
Take salvia occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	16.1	—
Try crack once or twice [d]	62.8	61.2	57.2	54.4	50.8	51.0	49.9	49.3	48.7	48.5	48.6	47.4	48.7	49.0	49.6	47.6	47.3	47.1	46.6	49.6	48.1	47.0	-1.2
Take crack occasionally [d]	82.2	79.6	76.8	74.4	72.1	71.6	71.2	70.6	70.6	70.1	70.0	69.7	70.3	70.4	69.4	68.7	68.3	67.9	66.6	68.4	67.7	67.8	+0.1
Try cocaine powder once or twice [d]	55.5	54.1	50.7	48.4	44.9	45.2	45.0	44.0	43.3	43.3	43.9	43.2	43.7	44.4	44.2	43.5	43.5	42.7	42.3	45.7	43.3	42.8	-0.5
Take cocaine powder occasionally [d]	77.0	74.3	71.8	69.1	66.4	65.7	65.8	65.2	65.4	65.5	65.8	64.9	65.8	66.0	65.3	64.0	64.2	62.7	62.3	64.2	63.5	63.3	-0.2
Try heroin once or twice without using a needle [e]	—	—	—	—	60.1	61.3	63.0	62.8	63.0	62.0	61.1	62.6	62.7	61.6	61.4	60.4	60.3	60.8	60.0	62.3	61.7	59.1	-2.6
Take heroin occasionally without using a needle [e]	—	—	—	—	76.8	76.6	79.2	79.0	78.9	78.6	78.5	78.5	77.8	77.5	76.8	75.3	76.4	75.5	74.0	76.7	75.9	75.1	-0.8
Try OxyContin once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.9	—
Take OxyContin occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.3	—
Try Vicodin once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.5	—
Take Vicodin occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.4	—
Try Adderall once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.6	—
Take Adderall occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.9	—
Try bath salts (synthetic stimulants) once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.9	—
Take bath salts (synthetic stimulants) occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	38.8	—
Try cough/cold medicine once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.2	—
Take cough/cold medicine occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	38.8	—
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) [b]	11.0	12.1	12.4	11.6	11.6	11.8	10.4	12.1	11.6	11.9	12.2	12.5	12.6	13.7	13.9	14.2	14.9	13.5	14.4	14.9	14.5	13.9	-0.7
Take one or two drinks nearly every day [b]	31.8	32.4	32.6	29.9	30.5	28.6	29.1	30.3	29.7	30.4	30.0	29.6	29.9	31.0	31.4	31.3	32.6	31.5	31.5	32.3	31.8	31.4	-0.4
Have five or more drinks once or twice each weekend [b]	59.1	58.0	57.7	54.7	54.1	51.8	55.6	56.0	55.3	55.9	56.1	56.4	56.5	56.9	57.2	56.4	57.9	57.0	55.8	57.2	58.4	58.2	-0.3
Smoke one to five cigarettes per day [c]	—	—	—	—	—	—	—	—	26.9	28.9	30.5	32.8	33.4	37.0	37.5	37.0	38.6	38.6	38.6	38.2	37.4	40.4	+3.0
Smoke one or more packs of cigarettes per day [f]	51.6	50.8	52.7	50.8	49.8	50.4	52.6	54.3	54.8	58.8	57.1	57.5	57.7	62.4	61.5	59.4	61.1	59.8	59.1	60.9	62.5	62.6	+0.1
Use smokeless tobacco regularly	35.1	35.1	36.9	35.5	33.5	34.0	35.2	36.5	37.1	39.0	38.2	39.4	39.7	41.3	40.8	39.5	41.8	41.0	40.8	41.8	40.8	37.8	-2.9 s
Take dissolvable tobacco regularly [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34.8	—
Take snus regularly [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42.2	—
Take steroids [g]	64.2	69.5	70.2	67.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Approximate weighted N =	*17,400*	*18,700*	*18,400*	*17,400*	*17,500*	*17,900*	*18,800*	*18,100*	*16,700*	*16,700*	*16,200*	*15,100*	*16,500*	*17,000*	*16,800*	*16,500*	*16,100*	*15,700*	*15,000*	*15,300*	*16,000*	*15,100*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

[b] Beginning in 2012 data based on two thirds of *N* indicated.

[c] Data based on one third of *N* indicated.

[d] Beginning in 1997, data based on two thirds of *N* indicated due to changes in questionnaire forms.

[e] Data based on one of two forms in 1993–1996; *N* is one half of *N* indicated. Beginning in 1997, data based on one third of *N* indicated due to changes in questionnaire forms.

[f] Beginning in 1999, data based on two thirds of *N* indicated due to changes in questionnaire forms.

[g] Data based on two forms in 1991 and 1992. Data based on one of two forms in 1993 and 1994; *N* is one half of *N* indicated.

TABLE 8-2
Trends in Harmfulness of Drugs as Perceived by 10th Graders

How much do you think people risk harming themselves (physically or in other ways), if they . . .	Percentage saying great risk [a]																						2011–2012 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Try marijuana once or twice [b]	30.0	31.9	29.7	24.4	21.5	20.0	18.8	19.6	19.2	18.5	17.9	19.9	21.1	22.0	22.3	22.2	22.2	23.1	20.5	19.9	19.3	17.2	-2.1 s
Smoke marijuana occasionally [b]	48.6	48.9	46.1	38.9	35.4	32.8	31.9	32.5	33.5	32.4	31.2	32.0	34.9	36.2	36.6	35.6	36.0	37.0	32.9	30.9	30.1	26.8	-3.3 ss
Smoke marijuana regularly [b]	82.1	81.1	78.5	71.3	67.9	65.9	65.9	65.8	65.9	64.7	62.8	60.8	63.9	65.6	65.5	64.9	64.5	64.8	59.5	57.2	55.2	50.9	-4.2 ss
Try synthetic marijuana once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.6	—
Take synthetic marijuana occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34.9	—
Try inhalants once or twice [d]	37.8	38.7	40.9	42.7	41.6	47.2	47.5	45.8	48.2	46.6	49.9	48.7	47.7	46.7	45.7	43.9	43.0	41.2	42.0	42.5	42.4	42.4	0.0
Take inhalants regularly [d]	69.8	67.9	69.6	71.5	71.8	75.8	74.5	73.3	76.3	75.0	76.4	73.4	72.2	73.0	71.2	70.2	68.6	66.8	66.8	67.1	66.2	66.1	-0.1
Take LSD once or twice [e]	—	—	48.7	46.5	44.7	45.1	44.5	43.5	45.0	43.0	41.3	40.1	40.8	40.6	40.3	38.8	35.4	34.6	34.9	33.9	34.2	34.7	+0.5
Take LSD regularly [e]	—	—	78.9	75.9	75.5	75.3	73.8	72.3	73.9	72.0	68.8	64.9	63.0	63.1	60.8	60.7	56.8	55.7	56.7	56.1	54.9	56.4	+1.6
Try ecstasy (MDMA) once or twice [c]	—	—	—	—	—	—	—	—	—	—	39.4	43.5	49.7	52.0	51.4	48.4	45.3	43.2	38.9	36.3	37.2	36.2	-0.9
Take ecstasy (MDMA) occasionally [c]	—	—	—	—	—	—	—	—	—	—	64.8	67.3	71.7	74.6	72.8	71.3	68.2	66.4	62.1	59.2	60.8	59.8	-1.0
Try salvia once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.2	—
Take salvia occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.3	—
Try crack once or twice [d]	70.4	69.6	66.6	64.7	60.9	60.9	59.2	58.0	57.8	56.1	57.1	57.4	57.6	56.7	57.0	56.6	56.4	56.5	57.7	58.1	59.5	59.0	-0.5
Take crack occasionally [d]	87.4	86.4	84.4	83.1	81.2	80.3	78.7	77.5	79.1	76.9	77.3	75.7	76.4	76.7	76.9	76.2	76.0	76.5	75.9	76.2	76.5	76.7	+0.2
Try cocaine powder once or twice [d]	59.1	59.2	57.5	56.4	53.5	53.6	52.2	50.9	51.6	48.8	50.6	51.3	51.8	50.7	51.3	50.2	49.5	49.8	50.8	52.9	53.0	53.4	+0.5
Take cocaine powder occasionally [d]	82.2	80.1	79.1	77.8	75.6	75.0	73.9	71.8	73.6	70.9	72.3	71.0	71.4	72.2	72.4	71.3	70.9	71.1	71.0	72.2	72.0	72.6	+0.6
Try heroin once or twice without using a needle [e]	—	—	—	—	70.7	72.1	73.1	71.7	73.7	71.7	72.0	72.2	70.6	72.0	72.4	70.0	70.5	70.8	72.2	73.0	72.9	72.6	-0.4
Take heroin occasionally without using a needle [e]	—	—	—	—	85.1	85.8	86.5	84.9	86.5	85.2	85.4	83.4	83.5	85.4	85.2	83.6	84.2	83.1	83.3	84.8	83.4	84.4	+1.0
Try OxyContin once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30.9	—
Take OxyContin occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	48.3	—
Try Vicodin once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.2	—
Take Vicodin occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.3	—
Try Adderall once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.7	—
Take Adderall occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34.3	—
Try bath salts (synthetic stimulants) once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.3	—
Take bath salts (synthetic stimulants) occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44.9	—
Try cough/cold medicine once or twice [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.6	—
Take cough/cold medicine occasionally [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.4	—
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) [b]	9.0	10.1	10.9	9.4	9.3	8.9	9.0	10.1	10.5	9.6	9.8	11.5	11.5	10.8	11.5	11.1	11.6	12.6	11.9	11.9	12.3	11.3	-1.0
Take one or two drinks nearly every day [b]	36.1	36.8	35.9	32.5	31.7	31.2	31.8	31.9	32.9	32.3	31.5	31.0	30.9	31.3	32.6	31.7	33.3	35.0	33.8	33.1	32.9	31.8	-1.1
Have five or more drinks once or twice each weekend [b]	54.7	55.9	54.9	52.9	52.0	50.9	51.8	52.5	51.9	51.0	50.7	51.7	51.6	51.7	53.3	52.4	54.1	56.6	54.2	54.6	55.5	52.8	-2.7 s
Smoke one to five cigarettes per day [c]	—	—	—	—	—	—	—	—	28.4	30.2	32.4	35.1	38.1	39.7	41.0	41.3	41.7	43.5	42.8	41.4	44.8	49.1	+4.3 s
Smoke one or more packs of cigarettes per day [f]	60.3	59.3	60.7	59.0	57.0	57.9	59.9	61.9	62.7	65.9	64.7	64.3	65.7	68.4	68.1	67.7	68.2	69.1	67.3	67.2	69.8	71.6	+1.7
Use smokeless tobacco regularly	40.3	39.6	44.2	42.2	38.2	41.0	42.2	42.8	44.2	46.7	46.2	46.9	48.0	47.8	46.1	45.9	46.7	48.0	44.7	43.7	45.7	42.9	-2.8 ss
Take dissolvable tobacco regularly [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.3	—
Take snus regularly [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.0	—
Take steroids [g]	67.1	72.7	73.4	72.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Approximate weighted N =	*14,700*	*14,800*	*15,300*	*15,900*	*17,000*	*15,700*	*15,600*	*15,000*	*13,600*	*14,300*	*14,000*	*14,300*	*15,800*	*16,400*	*16,200*	*16,200*	*16,100*	*15,100*	*15,900*	*15,200*	*14,900*	*15,000*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

[b] Beginning in 2012 data based on two thirds of *N* indicated.

[c] Data based on one third of *N* indicated.

[d] Beginning in 1997, data based on two thirds of *N* indicated due to changes in questionnaire forms.

[e] Data based on one of two forms in 1993–1996; *N* is one half of *N* indicated. Beginning in 1997, data based on one third of *N* indicated due to changes in questionnaire forms.

[f] Beginning in 1999, data based on two thirds of *N* indicated due to changes in questionnaire forms.

[g] Data based on two forms in 1991 and 1992. Data based on one of two forms in 1993 and 1994; *N* is one half of *N* indicated.

TABLE 8-3
Trends in Harmfulness of Drugs as Perceived by 12th Graders

How much do you think people risk harming themselves (physically or in other ways), if they . . .	Percentage saying great risk [a] 1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Try marijuana once or twice	15.1	11.4	9.5	8.1	9.4	10.0	13.0	11.5	12.7	14.7	14.8	15.1	18.4	19.0	23.6	23.1	27.1	24.5	21.9
Smoke marijuana occasionally	18.1	15.0	13.4	12.4	13.5	14.7	19.1	18.3	20.6	22.6	24.5	25.0	30.4	31.7	36.5	36.9	40.6	39.6	35.6
Smoke marijuana regularly	43.3	38.6	36.4	34.9	42.0	50.4	57.6	60.4	62.8	66.9	70.4	71.3	73.5	77.0	77.5	77.8	78.6	76.5	72.5
Try synthetic marijuana once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take synthetic marijuana occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try LSD once or twice	49.4	45.7	43.2	42.7	41.6	43.9	45.5	44.9	44.7	45.4	43.5	42.0	44.9	45.7	46.0	44.7	46.6	42.3	39.5
Take LSD regularly	81.4	80.8	79.1	81.1	82.4	83.0	83.5	83.5	83.2	83.8	82.9	82.6	83.8	84.2	84.3	84.5	84.3	81.8	79.4
Try PCP once or twice	—	—	—	—	—	—	—	—	—	—	—	—	55.6	58.8	56.6	55.2	51.7	54.8	50.8
Try ecstasy (MDMA) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try salvia once or twice [b]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take salvia occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try cocaine once or twice	42.6	39.1	35.6	33.2	31.5	31.3	32.1	32.8	33.0	35.7	34.0	33.5	47.9	51.2	54.9	59.4	59.4	56.8	57.6
Take cocaine occasionally	—	—	—	—	—	—	—	—	—	—	—	54.2	66.8	69.2	71.8	73.9	75.5	75.1	73.3
Take cocaine regularly	73.1	72.3	68.2	68.2	69.5	69.2	71.2	73.0	74.3	78.8	79.0	82.2	88.5	89.2	90.2	91.1	90.4	90.2	90.1
Try crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	57.0	62.1	62.9	64.3	60.6	62.4	57.6
Take crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	70.4	73.2	75.3	80.4	76.5	76.3	73.9
Take crack regularly	—	—	—	—	—	—	—	—	—	—	—	—	84.6	84.8	85.6	91.6	90.1	89.3	87.5
Try cocaine powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	45.3	51.7	53.8	53.9	53.6	57.1	53.2
Take cocaine powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	56.8	61.9	65.8	71.1	69.8	70.8	68.6
Take cocaine powder regularly	—	—	—	—	—	—	—	—	—	—	—	—	81.4	82.9	83.9	90.2	88.9	88.4	87.0
Try heroin once or twice	60.1	58.9	55.8	52.9	50.4	52.1	52.9	51.1	50.8	49.8	47.3	45.8	53.6	54.0	53.8	55.4	55.2	50.9	50.7
Take heroin occasionally	75.6	75.6	71.9	71.4	70.9	70.9	72.2	69.8	71.8	70.7	69.8	68.2	74.6	73.8	75.5	76.6	74.9	74.2	72.0
Take heroin regularly	87.2	88.6	86.1	86.6	87.5	86.2	87.5	86.0	86.1	87.2	86.0	87.1	88.7	88.8	89.5	90.2	89.6	89.2	88.3
Try heroin once or twice without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take heroin occasionally without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try any narcotic other than heroin (codeine, Vicodin, OxyContin, Percocet, etc.) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take any narcotic other than heroin occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take any narcotic other than heroin regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try amphetamines once or twice [c]	35.4	33.4	30.8	29.9	29.7	29.7	26.4	25.3	24.7	25.4	25.2	25.1	29.1	29.6	32.8	32.2	36.3	32.6	31.3
Take amphetamines regularly [c]	69.0	67.3	66.6	67.1	69.9	69.1	66.1	64.7	64.8	67.1	67.2	67.3	69.4	69.8	71.2	71.2	74.1	72.4	69.9
Try Adderall once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try Adderall occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try crystal methamphetamine (ice) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	61.6	61.9	57.5
Try bath salts (synthetic stimulants) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take bath salts (synthetic stimulants) occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try sedatives (barbiturates) once or twice [d]	34.8	32.5	31.2	31.3	30.7	30.9	28.4	27.5	27.0	27.4	26.1	25.4	30.9	29.7	32.2	32.4	35.1	32.2	29.2
Take sedatives (barbiturates) regularly [d]	69.1	67.7	68.6	68.4	71.6	72.2	69.9	67.6	67.7	68.5	68.3	67.2	69.4	69.6	70.5	70.2	70.5	70.2	66.1
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	5.3	4.8	4.1	3.4	4.1	3.8	4.6	3.5	4.2	4.6	5.0	4.6	6.2	6.0	6.0	8.3	9.1	8.6	8.2
Take one or two drinks nearly every day	21.5	21.2	18.5	19.6	22.6	20.3	21.6	21.6	21.6	23.0	24.4	25.1	26.2	27.3	28.5	31.3	32.7	30.6	28.2
Take four or five drinks nearly every day	63.5	61.0	62.9	63.1	66.2	65.7	64.5	65.5	66.8	68.4	69.8	66.5	69.7	68.5	69.8	70.9	69.5	70.5	67.8
Have five or more drinks once or twice each weekend	37.8	37.0	34.7	34.5	34.9	35.9	36.3	36.0	38.6	41.7	43.0	39.1	41.9	42.6	44.0	47.1	48.6	49.0	48.3
Smoke one or more packs of cigarettes per day	51.3	56.4	58.4	59.0	63.0	63.7	63.3	60.5	61.2	63.8	66.5	66.0	68.6	68.0	67.2	68.2	69.4	69.2	69.5
Use smokeless tobacco regularly	—	—	—	—	—	—	—	—	—	—	—	25.8	30.0	33.2	32.9	34.2	37.4	35.5	38.9
Take steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	63.8	69.9	65.6	70.7	69.1
Approximate weighted N =	*2,804*	*2,918*	*3,052*	*3,770*	*3,250*	*3,234*	*3,604*	*3,557*	*3,305*	*3,262*	*3,250*	*3,020*	*3,315*	*3,276*	*2,796*	*2,553*	*2,549*	*2,684*	*2,759*

(Years cont.)

(Table continued on next page.)

TABLE 8-3 (cont.)
Trends in Harmfulness of Drugs as Perceived by 12th Graders

How much do you think people risk harming themselves (physically or in other ways), if they . . .	Percentage saying great risk [a]																			2011–2012 change
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Try marijuana once or twice	19.5	16.3	15.6	14.9	16.7	15.7	13.7	15.3	16.1	16.1	15.9	16.1	17.8	18.6	17.4	18.5	17.1	15.6	14.8	-0.8
Smoke marijuana occasionally	30.1	25.6	25.9	24.7	24.4	23.9	23.4	23.5	23.2	26.6	25.4	25.8	25.9	27.1	25.8	27.4	24.5	22.7	20.6	-2.1
Smoke marijuana regularly	65.0	60.8	59.9	58.1	58.5	57.4	58.3	57.4	53.0	54.9	54.6	58.0	57.9	54.8	51.7	52.4	46.8	45.7	44.1	-1.6
Try synthetic marijuana once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.5	—
Take synthetic marijuana occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.7	—
Try LSD once or twice	38.8	36.4	36.2	34.7	37.4	34.9	34.3	33.2	36.7	36.2	36.2	36.5	36.1	37.0	33.9	37.1	35.6	34.7	33.1	-1.6
Take LSD regularly	79.1	78.1	77.8	76.6	76.5	76.1	75.9	74.1	73.9	72.3	70.2	69.9	69.3	67.3	63.6	67.8	65.3	65.5	66.8	+1.3
Try PCP once or twice	51.5	49.1	51.0	48.8	46.8	44.8	45.0	46.2	48.3	45.2	47.1	46.6	47.0	48.0	47.4	49.7	52.4	53.9	51.6	-2.3
Try ecstasy (MDMA) once or twice	—	—	—	33.8	34.5	35.0	37.9	45.7	52.2	56.3	57.7	60.1	59.3	58.1	57.0	53.3	50.6	49.0	49.4	+0.4
Try salvia once or twice [b]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.8	36.7‡	13.8	—
Take salvia occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.1	—
Try cocaine once or twice	57.2	53.7	54.2	53.6	54.6	52.1	51.1	50.7	51.2	51.0	50.7	50.5	52.5	51.3	50.3	53.1	52.8	54.0	51.6	-2.4
Take cocaine occasionally	73.7	70.8	72.1	72.4	70.1	70.1	69.5	69.9	68.3	69.1	67.2	66.7	69.8	68.8	67.1	71.4	67.8	69.7	69.0	-0.7
Take cocaine regularly	89.3	87.9	88.3	87.1	86.3	85.8	86.2	84.1	84.5	83.0	82.2	82.8	84.6	83.3	80.7	84.4	81.7	83.8	82.6	-1.2
Try crack once or twice	58.4	54.6	56.0	54.0	52.2	48.2	48.4	49.4	50.8	47.3	47.8	48.4	47.8	47.3	47.5	48.4	50.2	51.7	52.0	+0.4
Take crack occasionally	73.8	72.8	71.4	70.3	68.7	67.3	65.8	65.4	65.6	64.0	64.5	63.8	64.8	63.6	65.2	64.7	64.3	66.2	66.5	+0.2
Take crack regularly	89.6	88.6	88.0	86.2	85.3	85.4	85.3	85.8	84.1	83.2	83.5	83.3	82.8	82.6	83.4	84.0	83.8	83.9	84.0	0.0
Try cocaine powder once or twice	55.4	52.0	53.2	51.4	48.5	46.1	47.0	49.0	49.5	46.2	45.4	46.2	45.8	45.1	45.1	46.5	48.2	48.0	48.1	0.0
Take cocaine powder occasionally	70.6	69.1	68.8	67.7	65.4	64.2	64.7	63.2	64.4	61.4	61.6	60.8	61.9	59.9	61.6	62.6	62.6	64.2	62.6	-1.6
Take cocaine powder regularly	88.6	87.8	86.8	86.0	84.1	84.6	85.5	84.4	84.2	82.3	81.7	82.7	82.1	81.5	82.5	83.4	81.8	83.3	83.3	0.0
Try heroin once or twice	52.8	50.9	52.5	56.7	57.8	56.0	54.2	55.6	56.0	58.0	56.6	55.2	59.1	58.4	55.5	59.3	58.3	59.1	59.4	+0.3
Take heroin occasionally	72.1	71.0	74.8	76.3	76.9	77.3	74.6	75.9	76.6	78.5	75.7	76.0	79.1	76.2	75.3	79.7	74.8	77.2	78.0	+0.8
Take heroin regularly	88.0	87.2	89.5	88.9	89.1	89.9	89.2	88.3	88.5	89.3	86.8	87.5	89.7	87.8	86.4	89.9	85.5	87.9	88.6	+0.7
Try heroin once or twice without using a needle	—	55.6	58.6	60.5	59.6	58.5	61.6	60.7	60.6	58.9	61.2	60.5	62.6	60.2	60.8	61.5	63.8	61.1	63.3	+2.2
Take heroin occasionally without using a needle	—	71.2	71.0	74.3	73.4	73.6	74.7	74.4	74.7	73.0	76.1	73.3	76.2	73.9	73.2	74.8	76.2	74.7	76.1	+1.4
Try any narcotic other than heroin (codeine, Vicodin, OxyContin, Percocet, etc.) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.4	39.9	38.4	-1.6
Take any narcotic other than heroin occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54.3	54.8	53.8	-1.0
Take any narcotic other than heroin regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	74.9	75.5	73.9	-1.6
Try amphetamines once or twice [c]	31.4	28.8	30.8	31.0	35.3	32.2	32.6	34.7	34.4	36.8	35.7	37.7	39.5	41.3	39.2	41.9	40.6‡	34.8	34.3	-0.5
Take amphetamines regularly [c]	67.0	65.9	66.8	66.0	67.7	66.4	66.3	67.1	64.8	65.6	63.9	67.1	68.1	68.1	65.4	69.0	63.6‡	58.7	60.0	+1.4
Try Adderall once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.3	31.2	27.2	-4.0 s
Try Adderall occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.6	40.8	35.3	-5.5 ss
Try crystal methamphetamine (ice) once or twice	58.3	54.4	55.3	54.4	52.7	51.2	51.3	52.7	53.8	51.2	52.4	54.6	59.1	60.2	62.2	63.4	64.9	66.5	67.8	+1.4
Try bath salts (synthetic stimulants) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.2	—
Take bath salts (synthetic stimulants) occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	45.0	—
Try sedatives (barbiturates) once or twice [d]	29.9	26.3	29.1	26.9	29.0	26.1	25.0	25.7	26.2	27.9‡	24.9	24.7	28.0	27.9	25.9	29.6	28.0	27.8	27.8	0.0
Take sedatives (barbiturates) regularly [d]	63.3	61.6	60.4	56.8	56.3	54.1	52.3	50.3	49.3	49.6‡	54.0	54.1	56.8	55.1	50.2	54.7	52.1	52.4	53.9	+1.5
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	7.6	5.9	7.3	6.7	8.0	8.3	6.4	8.7	7.6	8.4	8.6	8.5	9.3	10.5	10.0	9.4	10.8	9.4	8.7	-0.6
Take one or two drinks nearly every day	27.0	24.8	25.1	24.8	24.3	21.8	21.7	23.4	21.0	20.1	23.0	23.7	25.3	25.1	24.2	23.7	25.4	24.6	23.7	-0.9
Take four or five drinks nearly every day	66.2	62.8	65.6	63.0	62.1	61.1	59.9	60.7	58.8	57.8	59.2	61.8	63.4	61.8	60.8	62.4	61.1	62.3	63.6	+1.4
Have five or more drinks once or twice each weekend	46.5	45.2	49.5	43.0	42.8	43.1	42.7	43.6	42.2	43.5	43.6	45.0	47.6	45.8	46.3	48.0	46.3	47.6	48.8	+1.2
Smoke one or more packs of cigarettes per day	67.6	65.6	68.2	68.7	70.8	70.8	73.1	73.3	74.2	72.1	74.0	76.5	77.6	77.3	74.0	74.9	75.0	77.7	78.2	+0.5
Use smokeless tobacco regularly	36.6	33.2	37.4	38.6	40.9	41.1	42.2	45.4	42.6	43.3	45.0	43.6	45.9	44.0	42.9	40.8	41.2	42.6	44.3	+1.7
Take steroids	66.1	66.4	67.6	67.2	68.1	62.1	57.9	58.9	57.1	55.0	55.7	56.8	60.2	57.4	60.8	60.2	59.2	61.1	58.6	-2.5
Approximate weighted N =	*2,591*	*2,603*	*2,449*	*2,579*	*2,564*	*2,306*	*2,130*	*2,173*	*2,198*	*2,466*	*2,491*	*2,512*	*2,407*	*2,450*	*2,389*	*2,290*	*2,440*	*2,408*	*2,331*	

(Table continued on next page.)

TABLE 8-3 (cont.)
Trends in Harmfulness of Drugs as Perceived by 12th Graders

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

' — ' indicates data not available. ' ‡ ' indicates some change in the question. See relevant footnote for that drug.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

[b]In 2011 the question on perceived risk of using salvia once or twice appeared at the end of a form. In 2012 the question was moved to an earlier section of the same form. A question on perceived risk of using salvia occasionally was also added following the question on perceived risk of trying salvia once or twice. These changes likely explain the discontinuity in the 2012 results.

[c]In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

[d]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

TABLE 8-4
Trends in Disapproval of Drug Use in Grade 8

Do you disapprove of people who . . .	Percentage who disapprove or strongly disapprove [a]																						2011–2012 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Try marijuana once or twice [b]	84.6	82.1	79.2	72.9	70.7	67.5	67.6	69.0	70.7	72.5	72.4	73.3	73.8	75.9	75.3	76.0	78.7	76.6	75.3	73.5	74.4	75.1	+0.7
Smoke marijuana occasionally [b]	89.5	88.1	85.7	80.9	79.7	76.5	78.1	78.4	79.3	80.6	80.6	80.9	81.5	83.1	82.4	82.2	84.5	82.6	81.9	79.9	81.1	81.6	+0.5
Smoke marijuana regularly [b]	92.1	90.8	88.9	85.3	85.1	82.8	84.6	84.5	84.5	85.3	84.5	85.3	85.7	86.8	86.3	86.1	87.7	86.8	85.9	84.3	85.7	85.6	-0.1
Try inhalants once or twice [c]	84.9	84.0	82.5	81.6	81.8	82.9	84.1	83.0	85.2	85.4	86.6	86.1	85.1	85.1	84.6	83.4	84.1	82.3	83.1	83.1	82.9	83.1	+0.3
Take inhalants regularly [c]	90.6	90.0	88.9	88.1	88.8	89.3	90.3	89.5	90.3	90.2	90.5	90.4	89.8	90.1	89.8	89.0	89.5	88.5	88.4	88.9	88.5	88.6	+0.1
Take LSD once or twice [d]	—	—	77.1	75.2	71.6	70.9	72.1	69.1	69.4	66.7	64.6	62.6	61.0	58.1	58.5	53.9	53.5	52.6	53.2	53.7	55.4	51.8	-3.6 s
Take LSD regularly [d]	—	—	79.8	78.4	75.8	75.3	76.3	72.5	72.5	69.3	67.0	65.5	63.5	60.5	60.7	55.8	55.6	54.7	55.7	55.8	57.6	54.1	-3.5 s
Try ecstasy (MDMA) once or twice [e]	—	—	—	—	—	—	—	—	—	—	69.0	74.3	77.7	76.3	75.0	66.7	65.7	63.5	62.3	62.4	64.2	60.2	-4.1 s
Take ecstasy (MDMA) occasionally [e]	—	—	—	—	—	—	—	—	—	—	73.6	78.6	81.3	79.4	77.9	69.8	68.3	66.5	65.7	65.9	67.5	63.2	-4.3 ss
Try crack once or twice [c]	91.7	90.7	89.1	86.9	85.9	85.0	85.7	85.4	86.0	85.4	86.0	86.2	86.4	87.4	87.6	87.2	88.6	87.2	88.4	89.1	88.5	89.0	+0.5
Take crack occasionally [c]	93.3	92.5	91.7	89.9	89.8	89.3	90.3	89.5	89.9	88.8	89.8	89.6	89.8	90.3	90.5	90.0	91.2	90.3	91.0	91.5	91.0	91.2	+0.1
Try cocaine powder once or twice [c]	91.2	89.6	88.5	86.1	85.3	83.9	85.1	84.5	85.2	84.8	85.6	85.8	85.6	86.8	87.0	86.5	88.2	86.8	88.1	88.4	88.3	88.6	+0.2
Take cocaine powder occasionally [c]	93.1	92.4	91.6	89.7	89.7	88.7	90.1	89.3	89.9	88.8	89.6	89.9	89.8	90.3	90.7	90.2	91.0	90.1	90.7	91.4	91.3	91.5	+0.3
Try heroin once or twice without using a needle [d]	—	—	—	—	85.8	85.0	87.7	87.3	88.0	87.2	87.2	87.8	86.9	86.6	86.9	87.2	88.4	86.9	88.6	89.5	87.5	86.8	-0.7
Take heroin occasionally without using a needle [d]	—	—	—	—	88.5	87.7	90.1	89.7	90.2	88.9	88.9	89.6	89.0	88.6	88.5	88.5	89.7	88.2	90.1	90.6	89.0	87.7	-1.2
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) [b]	51.7	52.2	50.9	47.8	48.0	45.5	45.7	47.5	48.3	48.7	49.8	51.1	49.7	51.1	51.2	51.3	54.0	52.5	52.7	54.2	54.0	54.1	+0.1
Take one or two drinks nearly every day [b]	82.2	81.0	79.6	76.7	75.9	74.1	76.6	76.9	77.0	77.8	77.4	78.3	77.1	78.6	78.7	78.7	80.4	79.2	78.5	79.5	80.7	81.3	+0.5
Have five or more drinks once or twice each weekend [b]	85.2	83.9	83.3	80.7	80.7	79.1	81.3	81.0	80.3	81.2	81.6	81.9	81.9	82.3	82.9	82.0	83.8	83.2	83.2	83.6	84.8	86.0	+1.3
Smoke one to five cigarettes per day [e]	—	—	—	—	—	—	—	—	75.1	79.1	80.4	81.1	81.4	83.1	82.9	83.5	85.3	85.0	83.6	84.7	86.8	—	—
Smoke one or more packs of cigarettes per day [f]	82.8	82.3	80.6	78.4	78.6	77.3	80.3	80.0	81.4	81.9	83.5	84.6	84.6	85.7	85.3	85.6	87.0	86.7	87.1	87.0	88.0	88.8	+0.8
Use smokeless tobacco regularly [b]	79.1	77.2	77.1	75.1	74.0	74.1	76.5	76.3	78.0	79.2	79.4	80.6	80.7	81.0	82.0	81.0	82.3	82.1	81.5	81.2	82.6	82.7	+0.1
Take steroids [g]	89.8	90.3	89.9	87.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Approximate weighted N =	*17,400*	*18,500*	*18,400*	*17,400*	*17,600*	*18,000*	*18,800*	*18,100*	*16,700*	*16,700*	*16,200*	*15,100*	*16,500*	*17,000*	*16,800*	*16,500*	*16,100*	*15,700*	*15,000*	*15,300*	*16,000*	*15,100*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] Answer alternatives were: (1) Don't disapprove, (2) Disapprove, (3) Strongly disapprove, and (4) Can't say, drug unfamiliar. Percentages are shown for categories (2) and (3) combined.

[b] Beginning in 2012, data based on two thirds of *N* indicated.

[c] Beginning in 1997, data based on two thirds of *N* indicated due to changes in questionnaire forms.

[e] Data based on one of two forms in 1993–1996; *N* is one half of *N* indicated. Beginning in 1997, data based on one third of *N* indicated due to changes in questionnaire forms.

[e] Data based on one third of *N* indicated.

[f] Beginning in 1999, data based on two thirds of *N* indicated due to changes in questionnaire forms.

[g] Data based on two forms in 1991 and 1992. Data based on one of two forms in 1993 and 1994; *N* is one half of *N* indicated.

TABLE 8-5
Trends in Disapproval of Drug Use in Grade 10

Do you disapprove of people who . . .	Percentage who disapprove or strongly disapprove [a]																						2011–2012 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Try marijuana once or twice [b]	74.6	74.8	70.3	62.4	59.8	55.5	54.1	56.0	56.2	54.9	54.8	57.8	58.1	60.4	61.3	62.5	63.9	64.5	60.1	59.2	58.5	56.2	-2.3
Smoke marijuana occasionally [b]	83.7	83.6	79.4	72.3	70.0	66.9	66.2	67.3	68.2	67.2	66.2	68.3	68.4	70.8	71.9	72.6	73.3	73.6	69.2	68.0	67.9	65.7	-2.2
Smoke marijuana regularly [b]	90.4	90.0	87.4	82.2	81.1	79.7	79.7	80.1	79.8	79.1	78.0	78.6	78.8	81.3	82.0	82.5	82.4	83.0	79.9	78.7	78.8	77.3	-1.5
Try inhalants once or twice [c]	85.2	85.6	84.8	84.9	84.5	86.0	86.9	85.6	88.4	87.5	87.8	88.6	87.7	88.5	88.1	88.1	87.6	87.1	87.0	86.5	86.9	85.7	-1.1
Take inhalants regularly [c]	91.0	91.5	90.9	91.0	90.9	91.7	91.7	91.1	92.4	91.8	91.3	91.8	91.0	92.3	91.9	92.2	91.8	91.6	91.1	90.8	90.9	90.0	-0.9
Take LSD once or twice [d]	—	—	82.1	79.3	77.9	76.8	76.6	76.7	77.8	77.0	75.4	74.6	74.4	72.4	71.8	71.2	67.7	66.3	67.8	68.2	68.5	68.3	-0.2
Take LSD regularly [d]	—	—	86.8	85.6	84.8	84.5	83.4	82.9	84.3	82.1	80.8	79.4	77.6	75.9	75.0	74.9	71.5	69.8	72.2	72.9	72.5	73.0	+0.4
Try ecstasy (MDMA) once or twice [e]	—	—	—	—	—	—	—	—	—	—	72.6	77.4	81.0	83.7	83.1	81.6	80.0	78.1	76.5	75.5	76.1	75.3	-0.8
Take ecstasy (MDMA) occasionally [e]	—	—	—	—	—	—	—	—	—	—	81.0	84.6	86.3	88.0	87.4	86.0	84.3	83.0	81.3	81.3	82.2	81.2	-1.0
Try crack once or twice [c]	92.5	92.5	91.4	89.9	88.7	88.2	87.4	87.1	87.8	87.1	86.9	88.0	87.6	88.6	88.8	89.5	89.5	90.8	90.4	90.3	90.9	91.0	+0.1
Take crack occasionally [c]	94.3	94.4	93.6	92.5	91.7	91.9	91.0	90.6	91.5	90.9	90.6	91.0	91.0	91.8	91.8	92.0	92.7	92.9	92.8	92.4	93.0	93.0	+0.1
Try cocaine powder once or twice [c]	90.8	91.1	90.0	88.1	86.8	86.1	85.1	84.9	86.0	84.8	85.3	86.4	85.9	86.8	86.9	87.3	87.7	88.6	88.4	89.0	89.4	89.3	0.0
Take cocaine powder occasionally [c]	94.0	94.0	93.2	92.1	91.4	91.1	90.4	89.7	90.7	89.9	90.2	89.9	90.4	91.2	91.2	91.4	92.0	92.1	92.1	92.2	92.5	92.4	-0.1
Try heroin once or twice without using a needle [d]	—	—	—	—	89.7	89.5	89.1	88.6	90.1	90.1	89.1	89.2	89.3	90.1	90.3	91.1	90.7	91.4	91.6	91.4	91.6	91.9	+0.4
Take heroin occasionally without using a needle [d]	—	—	—	—	91.6	91.7	91.4	90.5	91.8	92.3	90.8	90.7	90.6	91.8	92.0	92.5	92.5	92.5	93.0	92.4	92.4	92.9	+0.5
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) [b]	37.6	39.9	38.5	36.5	36.1	34.2	33.7	34.7	35.1	33.4	34.7	37.7	36.8	37.6	38.5	37.8	39.5	41.8	39.7	40.3	41.5	39.6	-1.9
Take one or two drinks nearly every day [b]	81.7	81.7	78.6	75.2	75.4	73.8	75.4	74.6	75.4	73.8	73.8	74.9	74.2	75.1	76.9	76.4	77.1	79.1	77.6	77.6	80.0	78.0	-2.0
Have five or more drinks once or twice each weekend [b]	76.7	77.6	74.7	72.3	72.2	70.7	70.2	70.5	69.9	68.2	69.2	71.5	71.6	71.8	73.7	72.9	74.1	77.2	75.1	75.9	77.3	77.5	+0.2
Smoke one to five cigarettes per day [e]	—	—	—	—	—	—	—	—	67.8	69.1	71.2	74.3	76.2	77.5	79.3	80.2	79.7	82.5	80.0	80.6	82.1	—	—
Smoke one or more packs of cigarettes per day [f]	79.4	77.8	76.5	73.9	73.2	71.6	73.8	75.3	76.1	76.7	78.2	80.6	81.4	82.7	84.3	83.2	84.7	85.2	84.5	83.9	85.8	86.0	+0.3
Use smokeless tobacco regularly [b]	75.4	74.6	73.8	71.2	71.0	71.0	72.3	73.2	75.1	75.8	76.1	78.7	79.4	80.2	80.5	80.5	80.9	81.8	79.5	78.5	79.5	79.5	+0.1
Take steroids [g]	90.0	91.0	91.2	90.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Approximate weighted N =	*14,800*	*14,800*	*15,300*	*15,900*	*17,000*	*15,700*	*15,600*	*15,000*	*13,600*	*14,300*	*14,000*	*14,300*	*15,800*	*16,400*	*16,200*	*16,200*	*16,100*	*15,100*	*15,900*	*15,200*	*14,900*	*15,000*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] Answer alternatives were: (1) Don't disapprove, (2) Disapprove, (3) Strongly disapprove, and (4) Can't say, drug unfamiliar. Percentages are shown for categories (2) and (3) combined.

[b] Beginning in 2012, data based on two thirds of *N* indicated.

[c] Beginning in 1997, data based on two thirds of *N* indicated due to changes in questionnaire forms.

[d] Data based on one of two forms in 1993–1996; *N* is one half of *N* indicated. Beginning in 1997, data based on one third of *N* indicated due to changes in questionnaire forms.

[e] Data based on one third of *N* indicated.

[f] Beginning in 1999, data based on two thirds of *N* indicated due to changes in questionnaire forms.

[g] Data based on two forms in 1991 and 1992. Data based on one of two forms in 1993 and 1994; *N* is one half of *N* indicated.

TABLE 8-6
Trends in Disapproval of Drug Use in Grade 12

Percentage who disapprove or strongly disapprove [b]

Do you disapprove of people (who are 18 or older) doing each of the following? [a]	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Trying marijuana once or twice	47.0	38.4	33.4	33.4	34.2	39.0	40.0	45.5	46.3	49.3	51.4	54.6	56.6	60.8	64.6	67.8	68.7	69.9	63.3
Smoking marijuana occasionally	54.8	47.8	44.3	43.5	45.3	49.7	52.6	59.1	60.7	63.5	65.8	69.0	71.6	74.0	77.2	80.5	79.4	79.7	75.5
Smoking marijuana regularly	71.9	69.5	65.5	67.5	69.2	74.6	77.4	80.6	82.5	84.7	85.5	86.6	89.2	89.3	89.8	91.0	89.3	90.1	87.6
Trying LSD once or twice	82.8	84.6	83.9	85.4	86.6	87.3	86.4	88.8	89.1	88.9	89.5	89.2	91.6	89.8	89.7	89.8	90.1	88.1	85.9
Taking LSD regularly	94.1	95.3	95.8	96.4	96.9	96.7	96.8	96.7	97.0	96.8	97.0	96.6	97.8	96.4	96.4	96.3	96.4	95.5	95.8
Trying ecstasy (MDMA) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trying cocaine once or twice	81.3	82.4	79.1	77.0	74.7	76.3	74.6	76.6	77.0	79.7	79.3	80.2	87.3	89.1	90.5	91.5	93.6	93.0	92.7
Taking cocaine regularly	93.3	93.9	92.1	91.9	90.8	91.1	90.7	91.5	93.2	94.5	93.8	94.3	96.7	96.2	96.4	96.7	97.3	96.9	97.5
Trying crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	92.3	92.1	93.1	89.9
Taking crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.3	94.2	95.0	92.8
Taking crack regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.9	95.0	95.5	93.4
Trying cocaine powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	87.9	88.0	89.4	86.6
Taking cocaine powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	92.1	93.0	93.4	91.2
Taking cocaine powder regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	93.7	94.4	94.3	93.0
Trying heroin once or twice	91.5	92.6	92.5	92.0	93.4	93.5	93.5	94.6	94.3	94.0	94.0	93.3	96.2	95.0	95.4	95.1	96.0	94.9	94.4
Taking heroin occasionally	94.8	96.0	96.0	96.4	96.8	96.7	97.2	96.9	96.9	97.1	96.8	96.6	97.9	96.9	97.2	96.7	97.3	96.8	97.0
Taking heroin regularly	96.7	97.5	97.2	97.8	97.9	97.6	97.8	97.5	97.7	98.0	97.6	97.6	98.1	97.2	97.4	97.5	97.8	97.2	97.5
Trying heroin once or twice without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Taking heroin occasionally without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trying amphetamines once or twice [c]	74.8	75.1	74.2	74.8	75.1	75.4	71.1	72.6	72.3	72.8	74.9	76.5	80.7	82.5	83.3	85.3	86.5	86.9	84.2
Taking amphetamines regularly [c]	92.1	92.8	92.5	93.5	94.4	93.0	91.7	92.0	92.6	93.6	93.3	93.5	95.4	94.2	94.2	95.5	96.0	95.6	96.0
Trying sedatives (barbiturates) once or twice [d]	77.7	81.3	81.1	82.4	84.0	83.9	82.4	84.4	83.1	84.1	84.9	86.8	89.6	89.4	89.3	90.5	90.6	90.3	89.7
Taking sedatives (barbiturates) regularly [d]	93.3	93.6	93.0	94.3	95.2	95.4	94.2	94.4	95.1	95.1	95.5	94.9	96.4	95.3	95.3	96.4	97.1	96.5	97.0
Trying one or two drinks of an alcoholic beverage (beer, wine, liquor)	21.6	18.2	15.6	15.6	15.8	16.0	17.2	18.2	18.4	17.4	20.3	20.9	21.4	22.6	27.3	29.4	29.8	33.0	30.1
Taking one or two drinks nearly every day	67.6	68.9	66.8	67.7	68.3	69.0	69.1	69.9	68.9	72.9	70.9	72.8	74.2	75.0	76.5	77.9	76.5	75.9	77.8
Taking four or five drinks nearly every day	88.7	90.7	88.4	90.2	91.7	90.8	91.8	90.9	90.0	91.0	92.0	91.4	92.2	92.8	91.6	91.9	90.6	90.8	90.6
Having five or more drinks once or twice each weekend	60.3	58.6	57.4	56.2	56.7	55.6	55.5	58.8	56.6	59.6	60.4	62.4	62.0	65.3	66.5	68.9	67.4	70.7	70.1
Smoking one or more packs of cigarettes per day	67.5	65.9	66.4	67.0	70.3	70.8	69.9	69.4	70.8	73.0	72.3	75.4	74.3	73.1	72.4	72.8	71.4	73.5	70.6
Taking steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	90.8	90.5	92.1	92.1
Approximate weighted N =	*2,677*	*2,957*	*3,085*	*3,686*	*3,221*	*3,261*	*3,610*	*3,651*	*3,341*	*3,254*	*3,265*	*3,113*	*3,302*	*3,311*	*2,799*	*2,566*	*2,547*	*2,645*	*2,723*

(Years cont.)

(Table continued on next page.)

TABLE 8-6 (cont.)
Trends in Disapproval of Drug Use in Grade 12

Do you disapprove of people (who are 18 or older) doing each of the following? [a]	Percentage who disapprove or strongly disapprove [b] 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Trying marijuana once or twice	57.6	56.7	52.5	51.0	51.6	48.8	52.5	49.1	51.6	53.4	52.7	55.0	55.6	58.6	55.5	54.8	51.6	51.3	48.8	-2.5
Smoking marijuana occasionally	68.9	66.7	62.9	63.2	64.4	62.5	65.8	63.2	63.4	64.2	65.4	67.8	69.3	70.2	67.3	65.6	62.0	60.9	59.1	-1.9
Smoking marijuana regularly	82.3	81.9	80.0	78.8	81.2	78.6	79.7	79.3	78.3	78.7	80.7	82.0	82.2	83.3	79.6	80.3	77.7	77.5	77.8	+0.3
Trying LSD once or twice	82.5	81.1	79.6	80.5	82.1	83.0	82.4	81.8	84.6	85.5	87.9	87.9	88.0	87.8	85.5	88.2	86.5	86.3	87.2	+0.9
Taking LSD regularly	94.3	92.5	93.2	92.9	93.5	94.3	94.2	94.0	94.0	94.4	94.6	95.6	95.9	94.9	93.5	95.3	94.3	94.9	95.2	+0.3
Trying ecstasy (MDMA) once or twice	—	—	—	82.2	82.5	82.1	81.0	79.5	83.6	84.7	87.7	88.4	89.0	87.8	88.2	88.2	86.3	83.9	87.1	+3.2 s
Trying cocaine once or twice	91.6	90.3	90.0	88.0	89.5	89.1	88.2	88.1	89.0	89.3	88.6	88.9	89.1	89.6	89.2	90.8	90.5	91.1	91.0	-0.2
Taking cocaine regularly	96.6	96.1	95.6	96.0	95.6	94.9	95.5	94.9	95.0	95.8	95.4	96.0	96.1	96.2	94.8	96.5	96.0	96.0	96.8	+0.9
Trying crack once or twice	89.5	91.4	87.4	87.0	86.7	87.6	87.5	87.0	87.8	86.6	86.9	86.7	88.8	88.8	89.6	90.9	89.8	91.4	92.8	+1.5
Taking crack occasionally	92.8	94.0	91.2	91.3	90.9	92.3	91.9	91.6	91.5	90.8	92.1	91.9	92.9	92.4	93.3	94.0	92.6	93.9	95.0	+1.0
Taking crack regularly	93.1	94.1	93.0	92.3	91.9	93.2	92.8	92.2	92.4	91.2	93.1	92.1	93.8	93.6	93.5	94.3	93.1	94.4	95.4	+0.9
Trying cocaine powder once or twice	87.1	88.3	83.1	83.0	83.1	84.3	84.1	83.3	83.8	83.6	82.2	83.2	84.1	83.5	85.7	87.3	87.0	88.1	88.7	+0.6
Taking cocaine powder occasionally	91.0	92.7	89.7	89.3	88.7	90.0	90.3	89.8	90.2	88.9	90.0	89.4	90.4	90.6	91.7	92.3	91.0	92.2	93.0	+0.8
Taking cocaine powder regularly	92.5	93.8	92.9	91.5	91.1	92.3	92.6	92.5	92.2	90.7	92.6	92.0	93.2	92.6	92.8	93.9	92.6	93.8	95.0	+1.3
Trying heroin once or twice	93.2	92.8	92.1	92.3	93.7	93.5	93.0	93.1	94.1	94.1	94.2	94.3	93.8	94.8	93.3	94.7	93.9	94.3	95.8	+1.4
Taking heroin occasionally	96.2	95.7	95.0	95.4	96.1	95.7	96.0	95.4	95.6	95.9	96.4	96.3	96.2	96.8	95.3	96.9	96.2	96.3	97.0	+0.6
Taking heroin regularly	97.1	96.4	96.3	96.4	96.6	96.4	96.6	96.2	96.2	97.1	97.1	96.7	96.9	97.1	95.9	97.4	96.4	96.7	97.4	+0.7
Trying heroin once or twice without using a needle	—	92.9	90.8	92.3	93.0	92.6	94.0	91.7	93.1	92.2	93.1	93.2	93.7	93.6	94.2	94.7	93.2	92.6	95.2	+2.5 ss
Taking heroin occasionally without using a needle	—	94.7	93.2	94.4	94.3	93.8	95.2	93.5	94.4	93.5	94.4	95.0	94.5	94.9	95.3	95.5	94.5	94.1	95.9	+1.8 s
Trying amphetamines once or twice [c]	81.3	82.2	79.9	81.3	82.5	81.9	82.1	82.3	83.8	85.8	84.1	86.1	86.3	87.3	87.2	88.2	88.1‡	84.1	83.9	-0.2
Taking amphetamines regularly [c]	94.1	94.3	93.5	94.3	94.0	93.7	94.1	93.4	93.5	94.0	93.9	94.8	95.3	95.4	94.2	95.6	94.9‡	92.9	93.9	+1.1
Trying sedatives (barbiturates) once or twice [d]	87.5	87.3	84.9	86.4	86.0	86.6	85.9	85.9	86.6	87.8‡	83.7	85.4	85.3	86.5	86.1	87.7	87.6	87.3	88.2	+0.9
Taking sedatives (barbiturates) regularly [d]	96.1	95.2	94.8	95.3	94.6	94.7	95.2	94.5	94.7	94.4‡	94.2	95.2	95.1	94.6	94.3	95.8	94.7	95.1	96.1	+1.0
Trying one or two drinks of an alcoholic beverage (beer, wine, liquor)	28.4	27.3	26.5	26.1	24.5	24.6	25.2	26.6	26.3	27.2	26.0	26.4	29.0	31.0	29.8	30.6	30.7	28.7	25.4	-3.3 s
Taking one or two drinks nearly every day	73.1	73.3	70.8	70.0	69.4	67.2	70.0	69.2	69.1	68.9	69.5	70.8	72.8	73.3	74.5	70.5	71.5	72.8	70.8	-2.0
Taking four or five drinks nearly every day	89.8	88.8	89.4	88.6	86.7	86.9	88.4	86.4	87.5	86.3	87.8	89.4	90.6	90.5	89.8	89.7	88.8	90.8	90.1	-0.7
Having five or more drinks once or twice each weekend	65.1	66.7	64.7	65.0	63.8	62.7	65.2	62.9	64.7	64.2	65.7	66.5	68.5	68.8	68.9	67.6	68.8	70.0	70.1	+0.2
Smoking one or more packs of cigarettes per day	69.8	68.2	67.2	67.1	68.8	69.5	70.1	71.6	73.6	74.8	76.2	79.8	81.5	80.7	80.5	81.8	81.0	83.0	83.7	+0.8
Taking steroids	91.9	91.0	91.7	91.4	90.8	88.9	88.8	86.4	86.8	86.0	87.9	88.8	89.4	89.2	90.9	90.3	89.8	89.7	90.4	+0.7
Approximate weighted N =	*2,588*	*2,603*	*2,399*	*2,601*	*2,545*	*2,310*	*2,150*	*2,144*	*2,160*	*2,442*	*2,455*	*2,460*	*2,377*	*2,450*	*2,314*	*2,233*	*2,449*	*2,384*	*2,301*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' —' indicates data not available. ' ‡ ' indicates some change in the question. See relevant footnote for that drug.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] The 1975 question asked about people who are 20 or older.

[b] Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

[c] In 2011 the list of examples was changed from upper, pep pill, bennie, speed to upper, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

[d] In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

TABLE 8-7
Trends in 12th Graders' Attitudes Regarding Legality of Drug Use

Do you think that people (who are 18 or older)[b] should be prohibited by law from doing each of the following?	Percentage saying "yes"[a]																		
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Smoking marijuana in private	32.8	27.5	26.8	25.4	28.0	28.9	35.4	36.6	37.8	41.6	44.7	43.8	47.6	51.8	51.5	56.0	51.6	52.4	48.0
Smoking marijuana in public places	63.1	59.1	58.7	59.5	61.8	66.1	67.4	72.8	73.6	75.2	78.2	78.9	79.7	81.3	80.0	81.9	79.8	78.3	77.3
Taking LSD in private	67.2	65.1	63.3	62.7	62.4	65.8	62.6	67.1	66.7	67.9	70.6	69.0	70.8	71.5	71.6	72.9	68.1	67.2	63.5
Taking LSD in public places	85.8	81.9	79.3	80.7	81.5	82.8	80.7	82.1	82.8	82.4	84.8	84.9	85.2	86.0	84.4	84.9	83.9	82.2	82.1
Taking heroin in private	76.3	72.4	69.2	68.8	68.5	70.3	68.8	69.3	69.7	69.8	73.3	71.7	75.0	74.2	74.4	76.4	72.8	71.4	70.7
Taking heroin in public places	90.1	84.8	81.0	82.5	84.0	83.8	82.4	82.5	83.7	83.4	85.8	85.0	86.2	86.6	85.2	86.7	85.4	83.3	84.5
Taking amphetamines or sedatives in private[c]	57.2	53.5	52.8	52.2	53.4	54.1	52.0	53.5	52.8	54.4	56.3	56.8	59.1	60.2	61.1	64.5	59.7	60.5	57.4
Taking amphetamines or sedatives in public places[c]	79.6	76.1	73.7	75.8	77.3	76.1	74.2	75.5	76.7	76.8	78.3	79.1	79.8	80.2	79.2	81.6	79.7	78.5	78.0
Getting drunk in private	14.1	15.6	18.6	17.4	16.8	16.7	19.6	19.4	19.9	19.7	19.8	18.5	18.6	19.2	20.2	23.0	22.0	24.4	22.1
Getting drunk in public places	55.7	50.7	49.0	50.3	50.4	48.3	49.1	50.7	52.2	51.1	53.1	52.2	53.2	53.8	52.6	54.6	54.3	54.1	53.6
Smoking cigarettes in certain specified public places	—	—	42.0	42.2	43.1	42.8	43.0	42.0	40.5	39.2	42.8	45.1	44.4	48.4	44.5	47.3	44.9	47.6	45.9
Approximate weighted N =	*2,620*	*2,959*	*3,113*	*3,783*	*3,288*	*3,224*	*3,611*	*3,627*	*3,315*	*3,236*	*3,254*	*3,074*	*3,332*	*3,288*	*2,813*	*2,571*	*2,512*	*2,671*	*2,759*

(Years cont.)

(Table continued on next page.)

TABLE 8-7 (cont.)
Trends in 12th Graders' Attitudes Regarding Legality of Drug Use

Do you think that people (who are 18 or older)[b] should be prohibited by law from doing each of the following?	Percentage saying "yes"[a]																			2011–2012 change
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Smoking marijuana in private	42.9	44.0	40.4	38.8	39.8	39.3	38.8	39.1	38.4	40.3	41.4	40.7	42.3	38.7	39.3	36.7	32.8	34.2	33.0	-1.3
Smoking marijuana in public places	72.5	72.9	70.0	69.4	72.2	71.5	72.1	68.3	67.6	68.6	69.2	69.6	68.5	69.4	70.2	67.1	62.4	63.8	64.4	+0.6
Taking LSD in private	63.2	64.3	62.0	61.2	64.7	62.6	62.9	63.1	64.2	64.2	64.4	63.7	62.3	63.6	60.9	60.2	56.2	57.0	56.4	-0.6
Taking LSD in public places	80.5	81.5	79.2	80.3	82.7	80.4	80.4	78.8	79.9	79.1	77.0	77.4	75.0	76.9	74.2	74.8	72.3	73.3	72.8	-0.5
Taking heroin in private	70.1	72.2	70.8	70.6	73.9	72.9	71.1	70.6	73.6	73.1	72.0	71.3	71.6	72.5	72.0	71.3	70.1	68.8	68.9	+0.1
Taking heroin in public places	82.9	84.8	82.3	84.3	86.4	84.2	83.9	81.7	83.7	83.2	80.9	82.0	80.1	81.7	80.6	80.5	80.0	79.1	80.6	+1.5
Taking amphetamines or sedatives in private[c]	55.7	57.5	54.6	54.6	58.5	55.1	56.0	55.9	56.0	55.8‡	52.2	53.6	51.5	54.3	53.0	51.1	50.8	50.2	48.7	-1.5
Taking amphetamines or sedatives in public places[c]	76.4	77.6	74.3	76.5	77.4	76.1	75.4	74.5	73.6	74.4‡	69.9	72.0	69.5	72.8	71.6	71.1	70.7	68.5	69.8	+1.3
Getting drunk in private	21.0	21.6	21.4	20.5	20.2	20.5	21.5	22.6	21.0	21.4	22.0	22.5	23.4	21.3	23.2	22.1	20.3	21.4	21.6	+0.1
Getting drunk in public places	54.3	54.5	52.8	51.7	51.2	52.8	51.9	50.6	48.6	50.1	47.7	48.2	47.3	47.8	49.6	49.7	47.3	49.3	48.8	-0.5
Smoking cigarettes in certain specified public places	47.3	45.1	43.4	41.3	41.1	43.2	45.1	44.2	43.8	45.5	44.3	46.8	47.0	46.4	45.1	45.4	41.3	42.6	43.0	+0.5
Approximate weighted N =	*2,603*	*2,578*	*2,422*	*2,587*	*2,563*	*2,283*	*2,146*	*2,161*	*2,162*	*2,450*	*2,450*	*2,461*	*2,381*	*2,459*	*2,356*	*2,306*	*2,410*	*2,339*	*2,304*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' ‡ ' indicates some change in the question. See relevant footnote.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]Answer alternatives were: (1) No, (2) Not sure, and (3) Yes.

[b]The 1975 question asked about people who are 20 or older.

[c]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers.

These changes likely explain the discontinuity in the 2004 results.

TABLE 8-8
Trends in 12th Graders' Attitudes Regarding Marijuana Laws

(Entries are percentages.)

There has been a great deal of public debate about whether marijuana use should be legal. Which of the following policies would you favor?	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Using marijuana should be entirely legal	27.3	32.6	33.6	32.9	32.1	26.3	23.1	20.0	18.9	18.6	16.6	14.9	15.4	15.1	16.6	15.9	18.0	18.7	22.8
It should be a minor violation like a parking ticket, but not a crime	25.3	29.0	31.4	30.2	30.1	30.9	29.3	28.2	26.3	23.6	25.7	25.9	24.6	21.9	18.9	17.4	19.2	18.0	18.7
It should be a crime	30.5	25.4	21.7	22.2	24.0	26.4	32.1	34.7	36.7	40.6	40.8	42.5	45.3	49.2	50.0	53.2	48.6	47.6	43.4
Don't know	16.8	13.0	13.4	14.6	13.8	16.4	15.4	17.1	18.1	17.2	16.9	16.7	14.8	13.9	14.6	13.6	14.3	15.7	15.1
If it were legal for people to USE marijuana, should it also be legal to SELL marijuana?																			
No	27.8	23.0	22.5	21.8	22.9	25.0	27.7	29.3	27.4	30.9	32.6	33.0	36.0	36.8	38.8	40.1	36.8	37.8	36.7
Yes, but only to adults	37.1	49.8	52.1	53.6	53.2	51.8	48.6	46.2	47.6	45.8	43.2	42.2	41.2	39.9	37.9	38.8	41.4	39.5	40.7
Yes, to anyone	16.2	13.3	12.7	12.0	11.3	9.6	10.5	10.7	10.5	10.6	11.2	10.4	9.2	10.5	9.2	9.6	9.4	9.6	10.1
Don't know	18.9	13.9	12.7	12.6	12.6	13.6	13.2	13.8	14.6	12.8	13.1	14.4	13.6	12.8	14.1	11.6	12.5	13.1	12.5
If marijuana were legal to use and legally available, which of the following would you be most likely to do?																			
Not use it, even if it were legal and available	53.2	50.4	50.6	46.4	50.2	53.3	55.2	60.0	60.1	62.0	63.0	62.4	64.9	69.0	70.1	72.9	70.7	72.5	69.0
Try it	8.2	8.1	7.0	7.1	6.1	6.8	6.0	6.3	7.2	6.6	7.5	7.6	7.3	7.1	6.7	7.0	6.3	7.4	7.3
Use it about as often as I do now	22.7	24.7	26.8	30.9	29.1	27.3	24.8	21.7	19.8	19.1	17.7	16.8	16.2	13.1	13.0	10.1	11.7	10.2	11.9
Use it more often than I do now	6.0	7.1	7.4	6.3	6.0	4.2	4.7	3.8	4.9	4.7	3.7	5.0	4.1	4.3	2.4	2.7	3.3	3.2	3.5
Use it less often than I do now	1.3	1.5	1.5	2.7	2.5	2.6	2.5	2.2	1.5	1.6	1.6	2.0	1.3	1.5	2.1	1.1	1.6	1.0	1.4
Don't know	8.5	8.1	6.6	6.7	6.1	5.9	6.9	6.0	6.4	6.0	6.5	6.1	6.3	5.0	5.7	6.1	6.4	5.7	7.0
Approximate weighted N =	*2,600*	*2,970*	*3,110*	*3,710*	*3,280*	*3,210*	*3,600*	*3,620*	*3,300*	*3,220*	*3,230*	*3,080*	*3,330*	*3,277*	*2,812*	*2,570*	*2,515*	*2,672*	*2,768*

(Years cont.)

(Table continued on next page.)

TABLE 8-8 (cont.)
Trends in 12th Graders' Attitudes Regarding Marijuana Laws

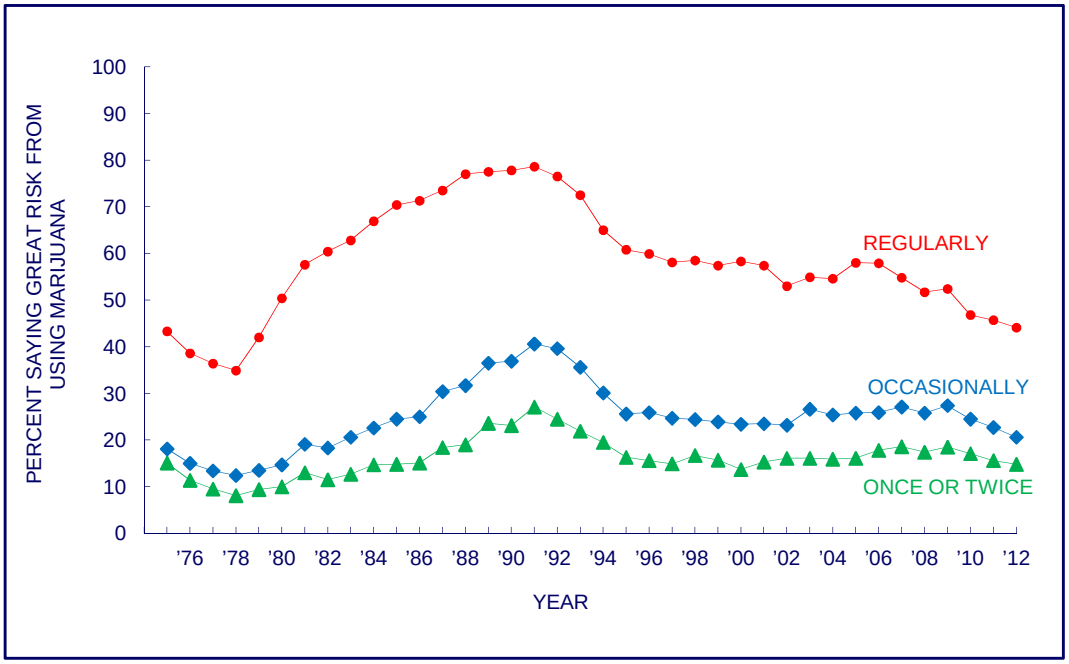
(Entries are percentages.)

There has been a great deal of public debate about whether marijuana use should be legal. Which of the following policies would you favor?	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Using marijuana should be entirely legal	26.8	30.4	31.2	30.8	27.9	27.3	31.2	29.2	30.8	29.5	30.5	27.6	27.1	29.3	29.4	31.8	36.2	39.2	39.3
It should be a minor violation like a parking ticket, but not a crime	19.0	18.0	21.0	20.7	24.3	23.7	23.4	24.5	24.2	25.8	26.5	27.7	27.6	27.8	30.0	28.9	28.6	26.9	26.8
It should be a crime	39.4	37.3	33.8	34.0	32.6	32.5	30.2	31.1	29.1	29.8	28.5	29.7	31.7	30.2	27.5	26.0	21.8	21.3	21.7
Don't know	14.8	14.4	13.9	14.5	15.2	16.5	15.2	15.3	15.9	14.9	14.5	15.1	13.6	12.8	13.1	13.3	13.4	12.6	12.2
If it were legal for people to USE marijuana, should it also be legal to SELL marijuana?																			
No	33.1	32.3	29.4	29.1	30.2	30.2	27.4	30.0	29.1	30.5	28.4	32.3	32.9	29.9	30.5	28.7	28.1	28.1	30.9
Yes, but only to adults	41.7	43.4	46.7	44.8	42.4	42.9	45.5	43.6	43.6	43.2	45.2	43.0	42.5	45.9	45.9	47.9	48.9	51.0	47.2
Yes, to anyone	11.6	11.7	11.1	12.5	11.9	12.1	13.4	12.0	13.6	11.6	12.2	11.2	10.8	11.0	10.3	10.5	9.9	10.5	10.3
Don't know	13.7	12.6	12.8	13.7	15.5	14.7	13.6	14.3	13.7	14.7	14.3	13.5	13.9	13.2	13.3	12.9	13.1	10.3	11.6
If marijuana were legal to use and legally available, which of the following would you be most likely to do?																			
Not use it, even if it were legal and available	64.6	60.2	59.9	56.4	58.3	59.0	60.3	58.1	58.6	57.9	56.4	60.1	62.5	61.5	60.5	59.9	55.4	54.9	55.8
Try it	7.6	8.8	8.8	9.1	8.1	9.3	7.3	9.3	8.4	10.6	10.6	8.9	9.7	8.8	8.9	9.8	10.7	9.6	10.6
Use it about as often as I do now	14.3	17.1	17.3	18.4	17.9	15.2	18.5	16.8	17.2	15.6	17.4	15.2	13.8	15.1	14.8	14.7	16.1	17.6	16.8
Use it more often than I do now	4.7	4.9	4.8	6.1	5.9	6.5	5.4	6.3	7.1	7.1	6.0	6.1	5.6	5.5	5.5	5.7	7.3	7.3	8.3
Use it less often than I do now	1.5	1.6	1.6	2.0	2.0	1.9	1.6	2.2	1.7	1.6	1.6	1.8	1.1	1.5	1.4	1.1	1.8	1.7	1.6
Don't know	7.3	7.4	7.7	7.9	7.8	8.1	7.0	7.3	7.0	7.2	8.0	8.0	7.3	7.6	9.0	8.8	8.8	8.9	7.1
Approximate weighted N =	*2,597*	*2,574*	*2,426*	*2,585*	*2,566*	*2,285*	*2,143*	*2,160*	*2,150*	*2,444*	*2,461*	*2,466*	2,383	*2,450*	*2,366*	*2,311*	*2,425*	*2,349*	*2,303*

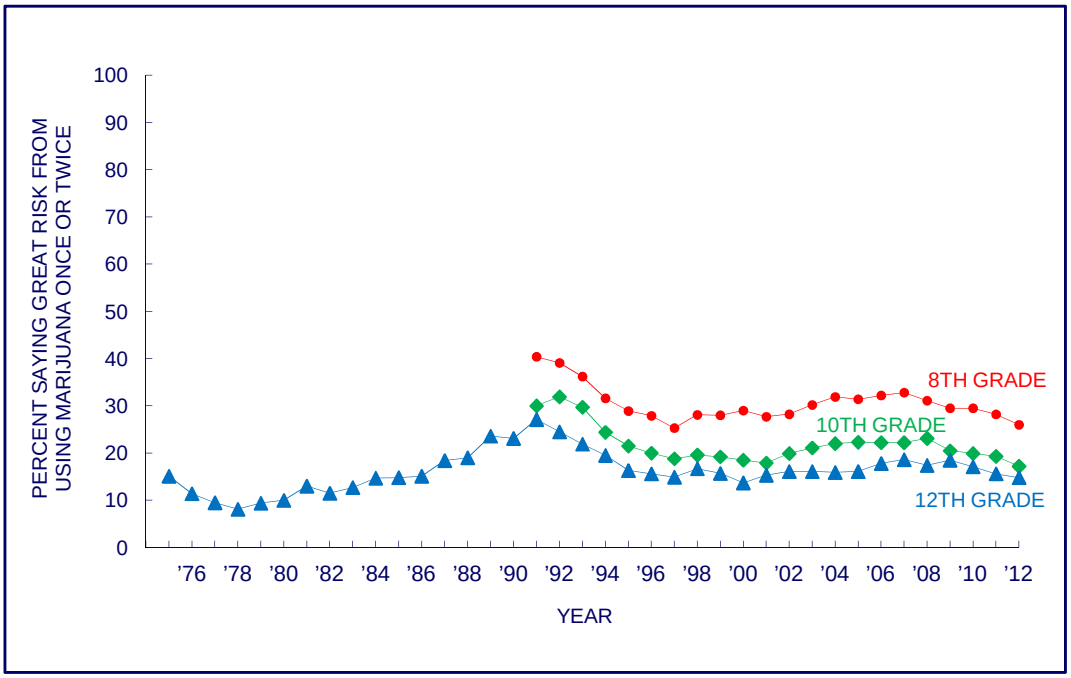
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-1a
MARIJUANA
Trends in Perceived Harmfulness in Grades 8, 10, and 12

12th Graders



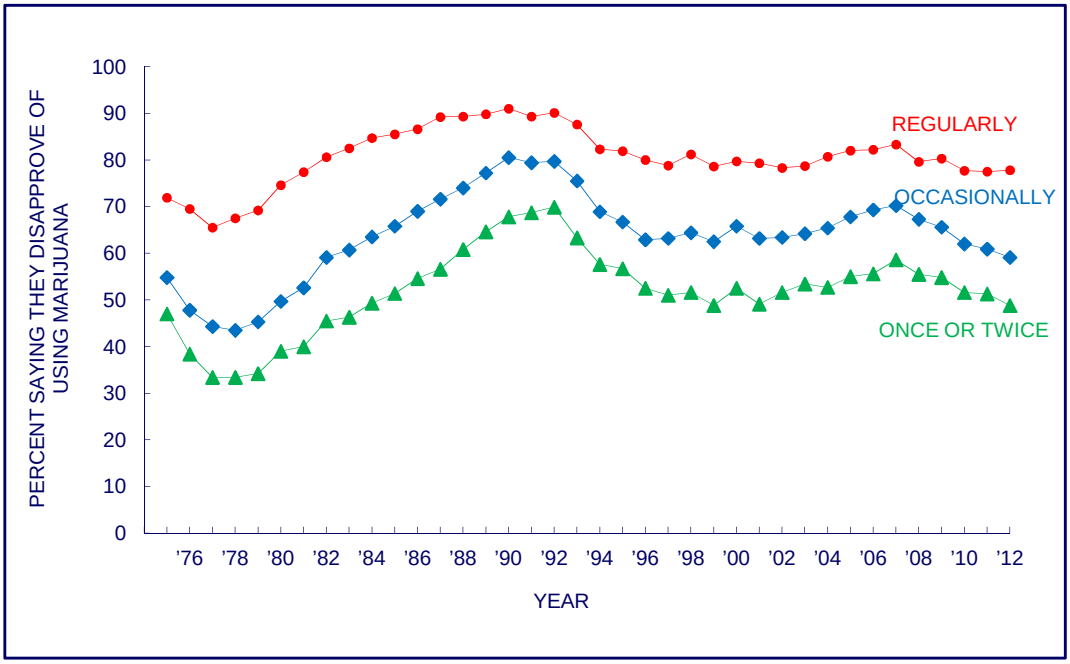
8th, 10th, and 12th Graders



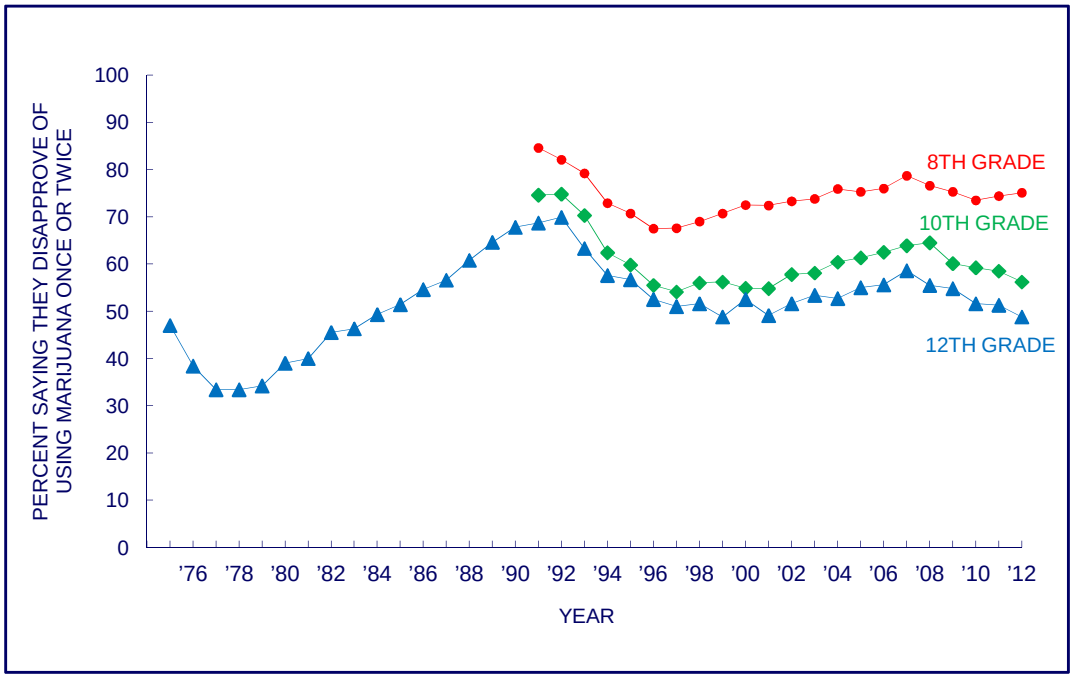
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-1b
MARIJUANA
Trends in Disapproval in Grades 8, 10, and 12

12th Graders



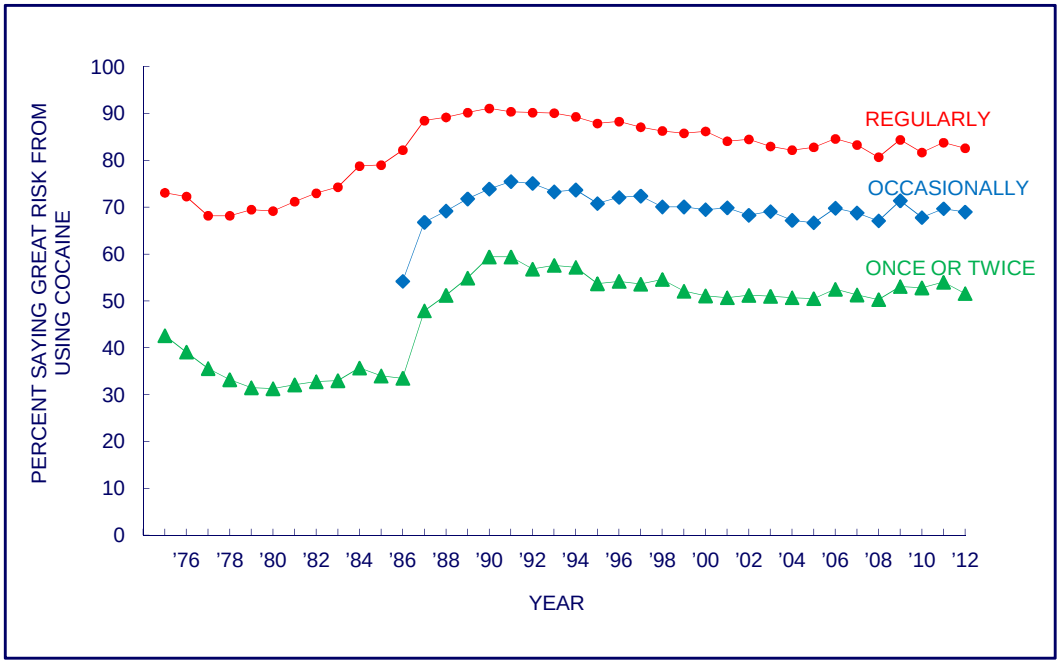
8th, 10th, and 12th Graders



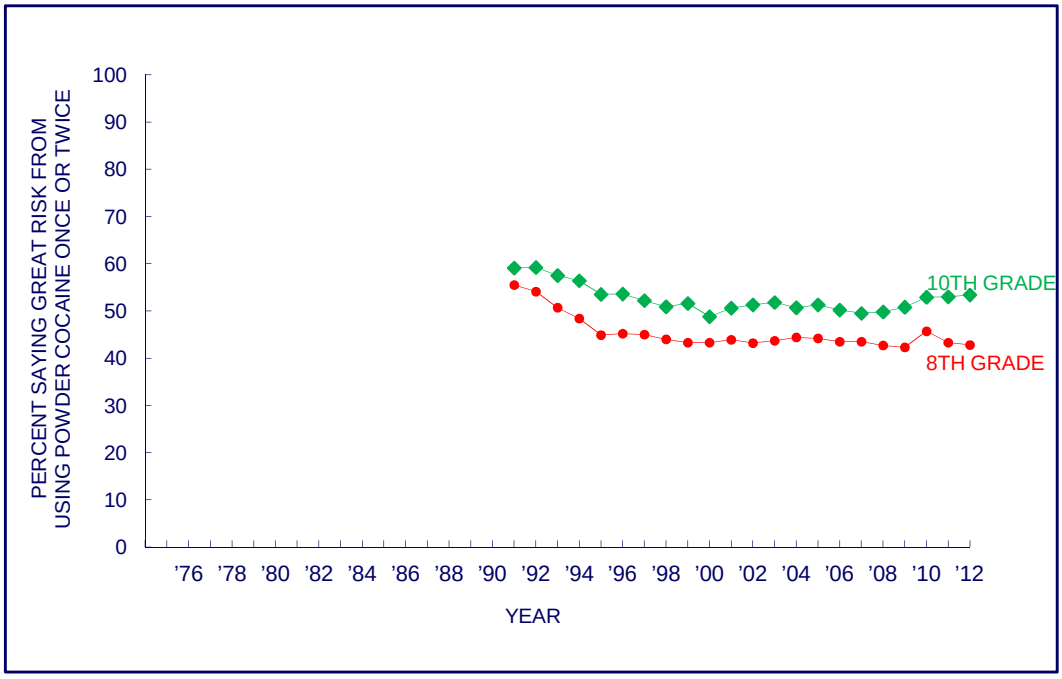
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-2a
COCAINE
Trends in Perceived Harmfulness in Grades 8, 10, and 12

12th Graders



8th and 10th Graders

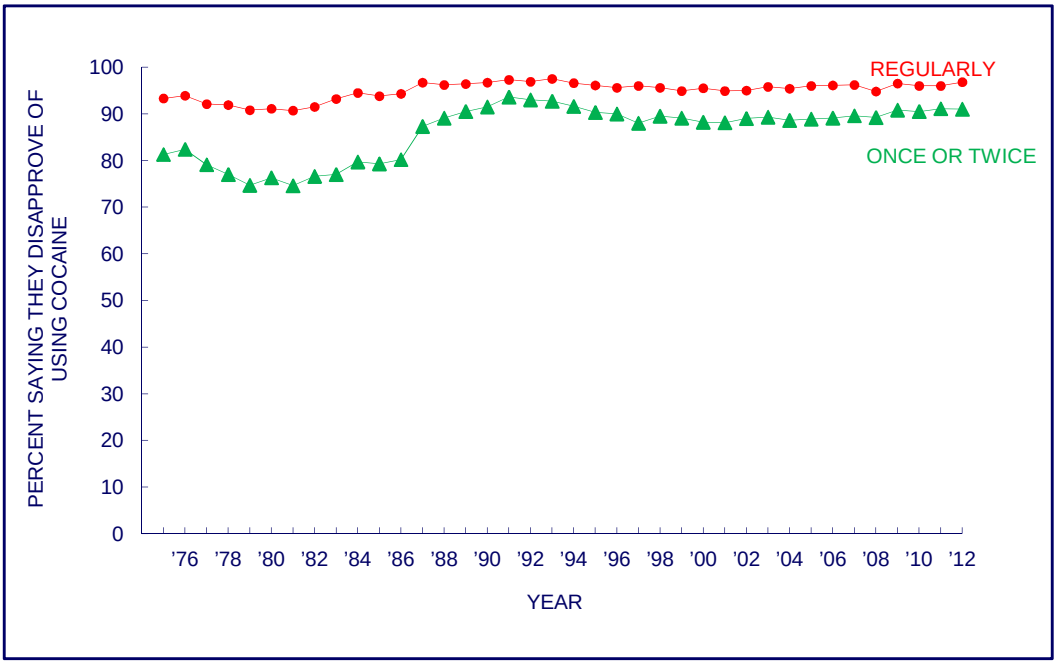


Source. The Monitoring the Future study, the University of Michigan.

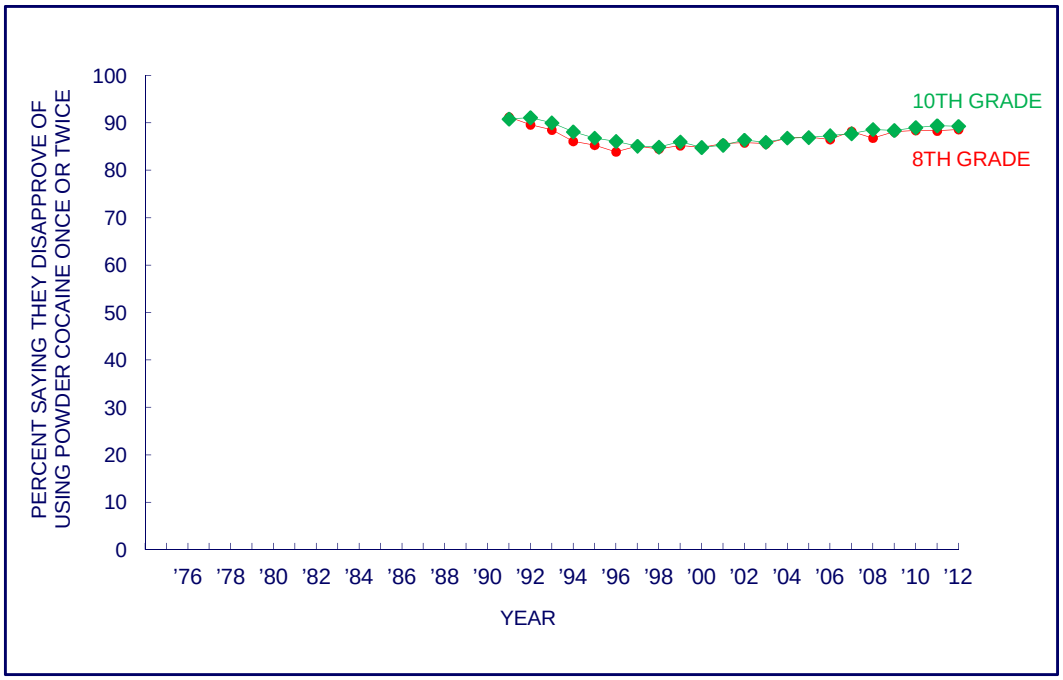
Note. Data presented above for 12th graders pertains to cocaine in general, while the data for 8th and 10th graders pertains specifically to cocaine in powder form.

FIGURE 8-2b
COCAINE
Trends in Disapproval in Grades 8, 10, and 12

12th Graders



8th and 10th Graders

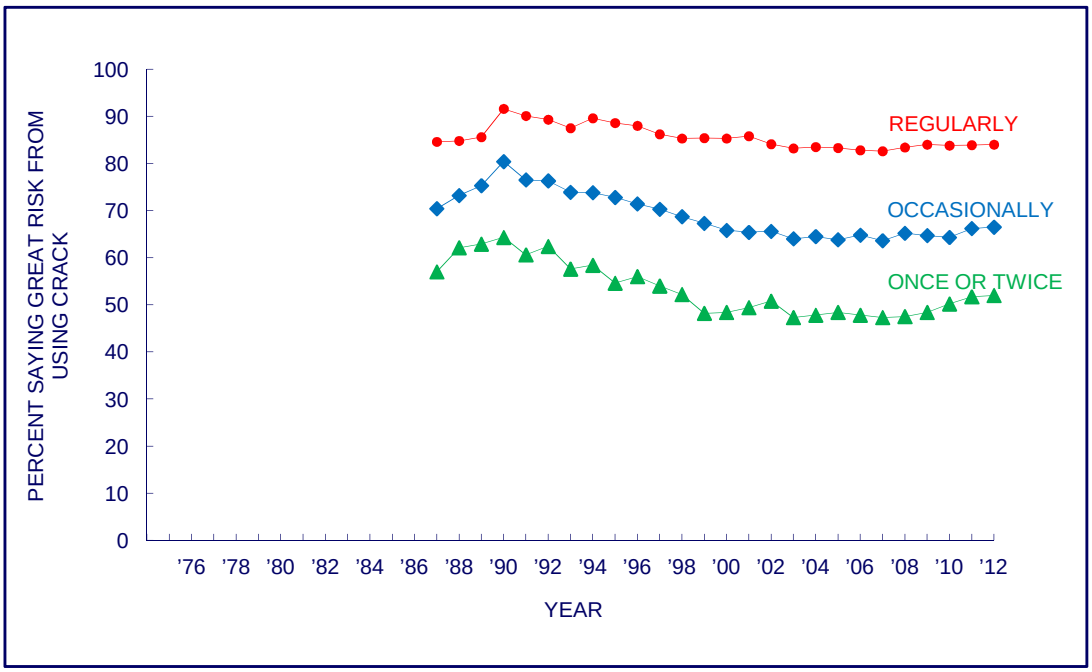


Source. The Monitoring the Future study, the University of Michigan.

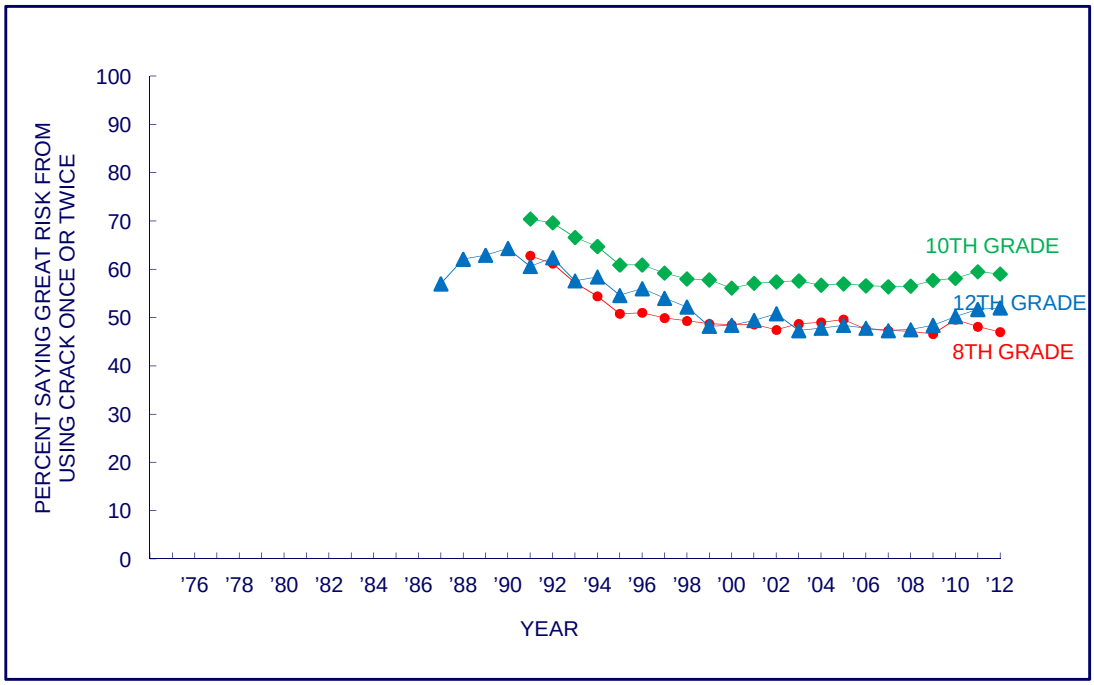
Note. Data presented above for 12th graders pertains to cocaine in general, while the data for 8th and 10th graders pertains specifically to cocaine in powder form.

FIGURE 8-3a
CRACK
Trends in Perceived Harmfulness in Grades 8, 10, and 12

12th Graders



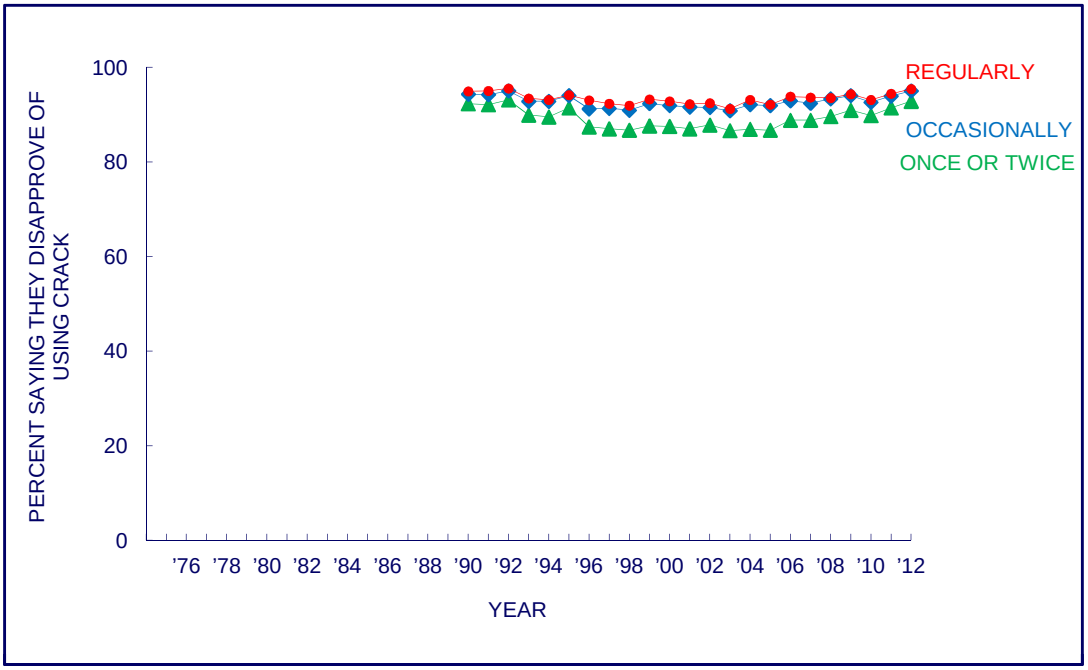
8th, 10th, and 12th Graders



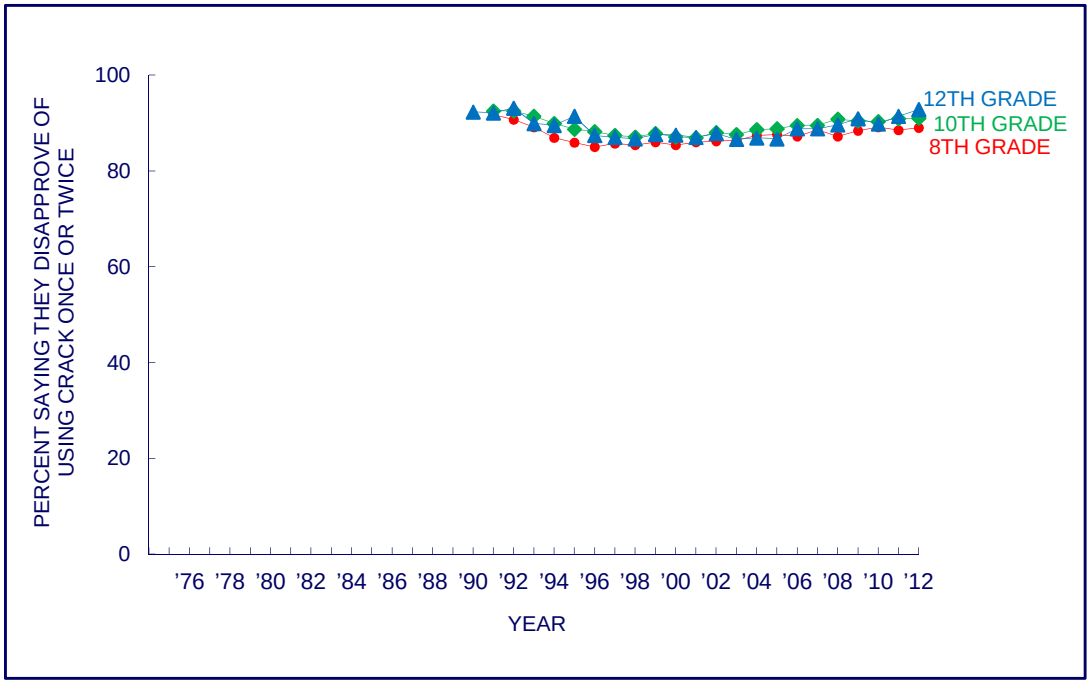
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-3b
CRACK
Trends in Disapproval in Grades 8, 10, and 12

12th Graders

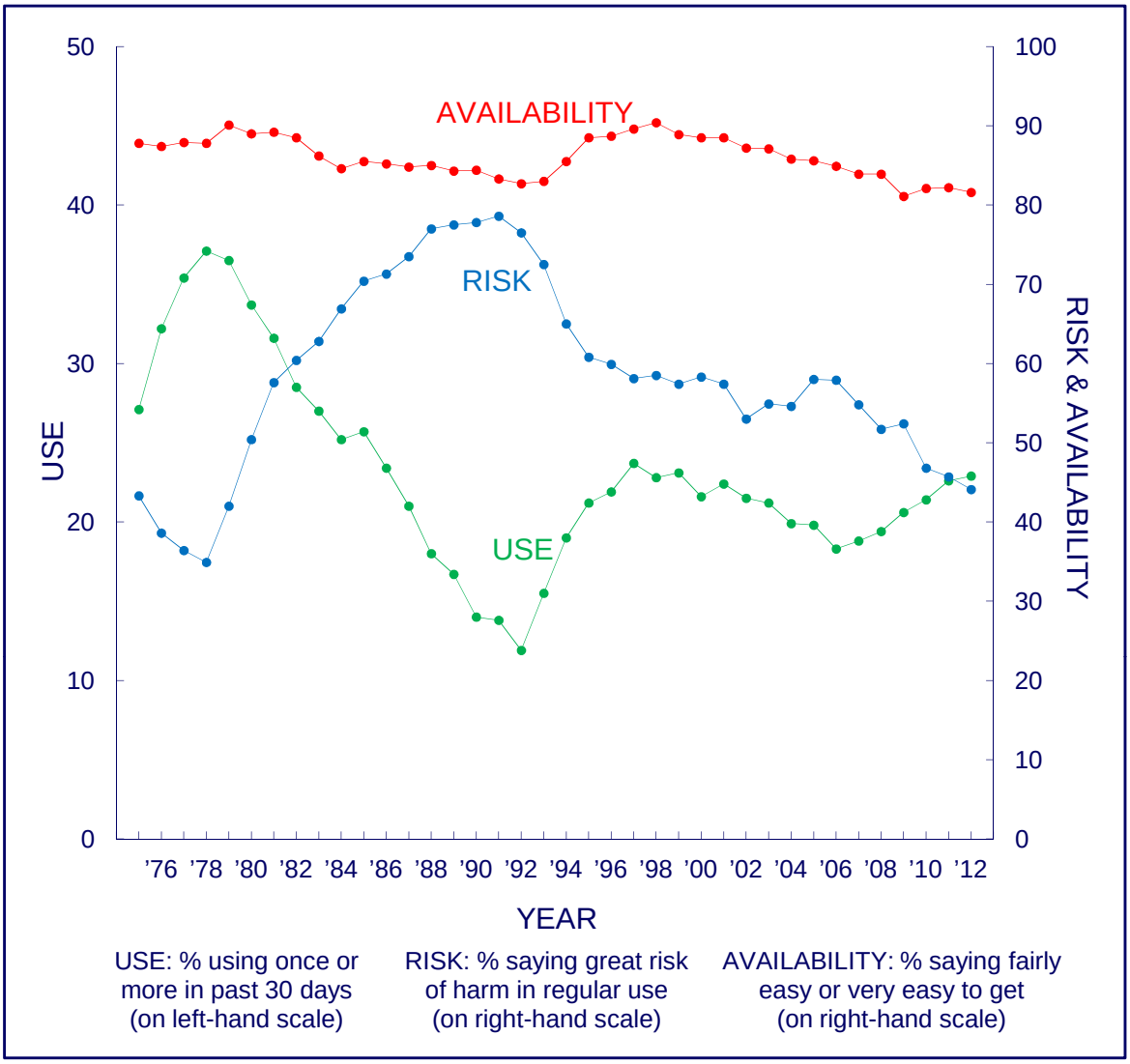


8th, 10th, and 12th Graders



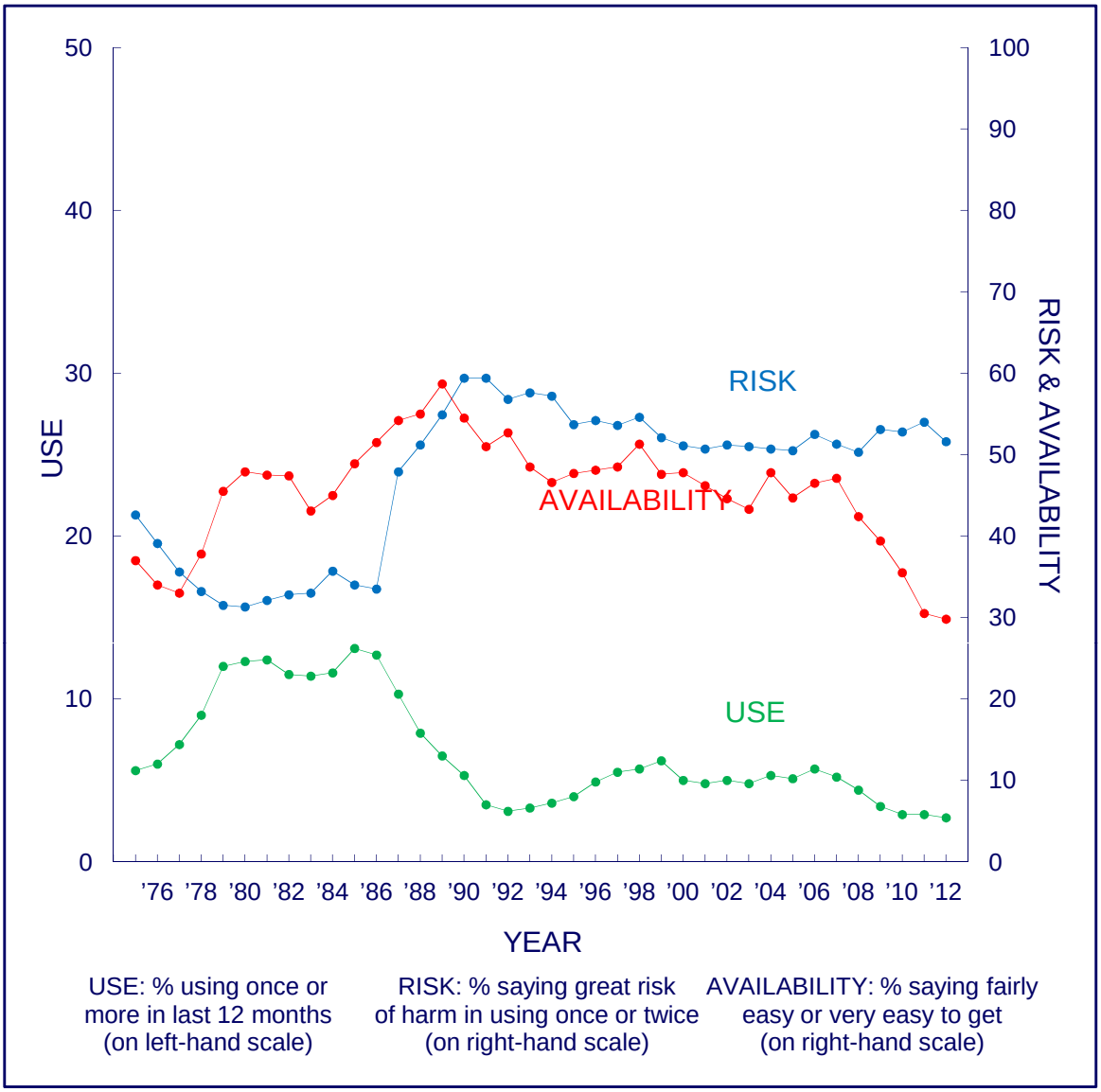
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-4
MARIJUANA
Trends in Perceived Availability, Perceived Risk of Regular Use, and Prevalence of Use in Past 30 Days in Grade 12



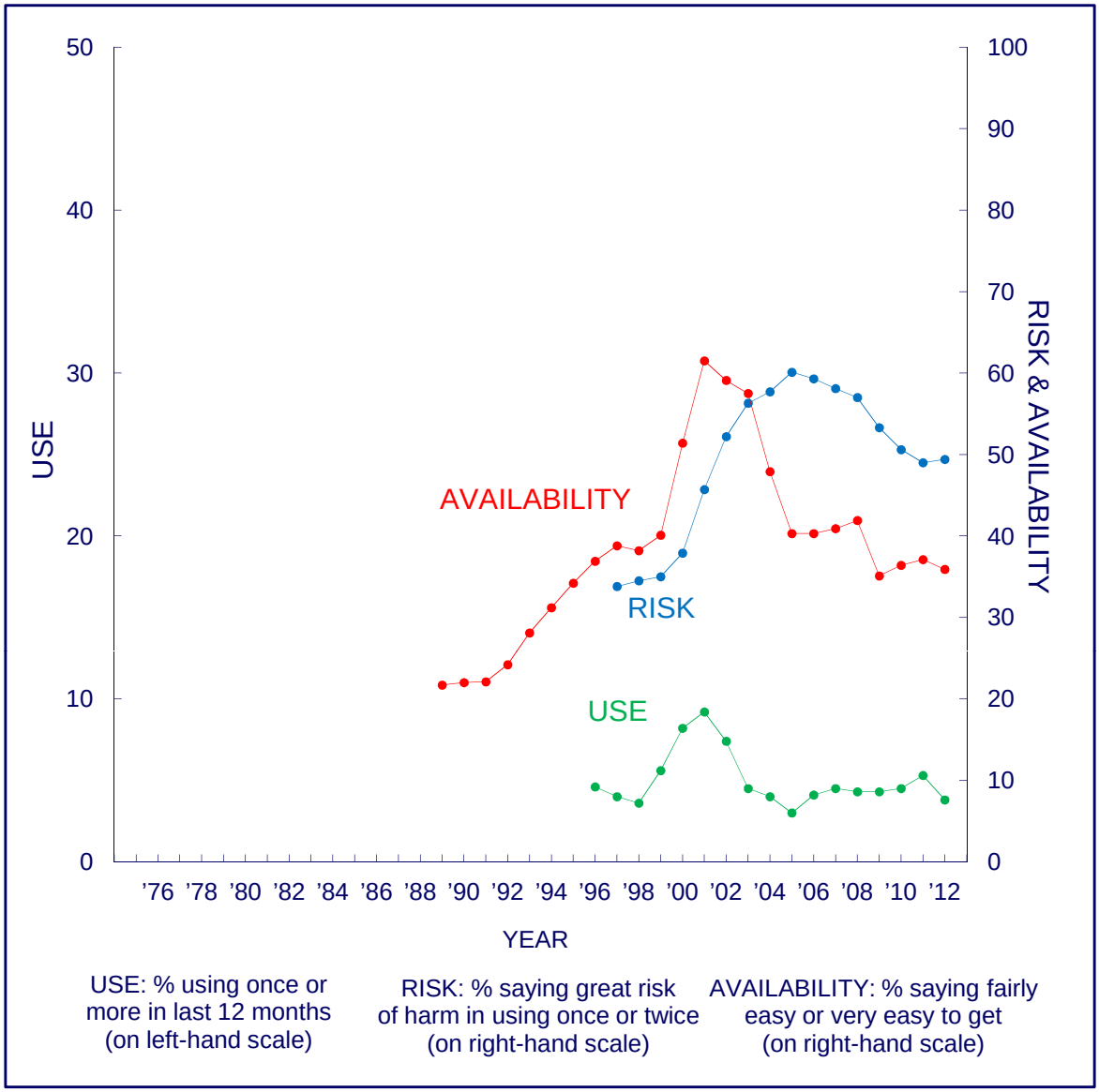
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-5
COCAINE
Trends in Perceived Availability, Perceived Risk of Trying, and Prevalence of Use in Last 12 Months in Grade 12



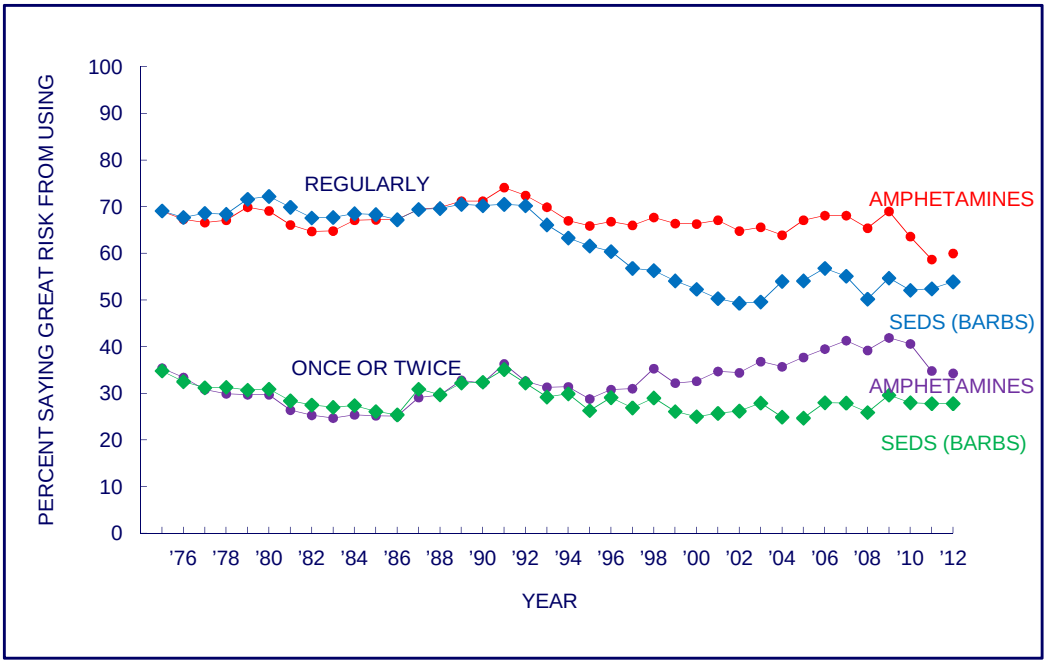
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-6
ECSTASY (MDMA)
Trends in Perceived Availability, Perceived Risk of Trying, and Prevalence of Use in Last 12 Months in Grade 12



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-7a
AMPHETAMINES [a] AND SEDATIVES (BARBITURATES) [b]
Trends in Perceived
Harmfulness in Grade 12



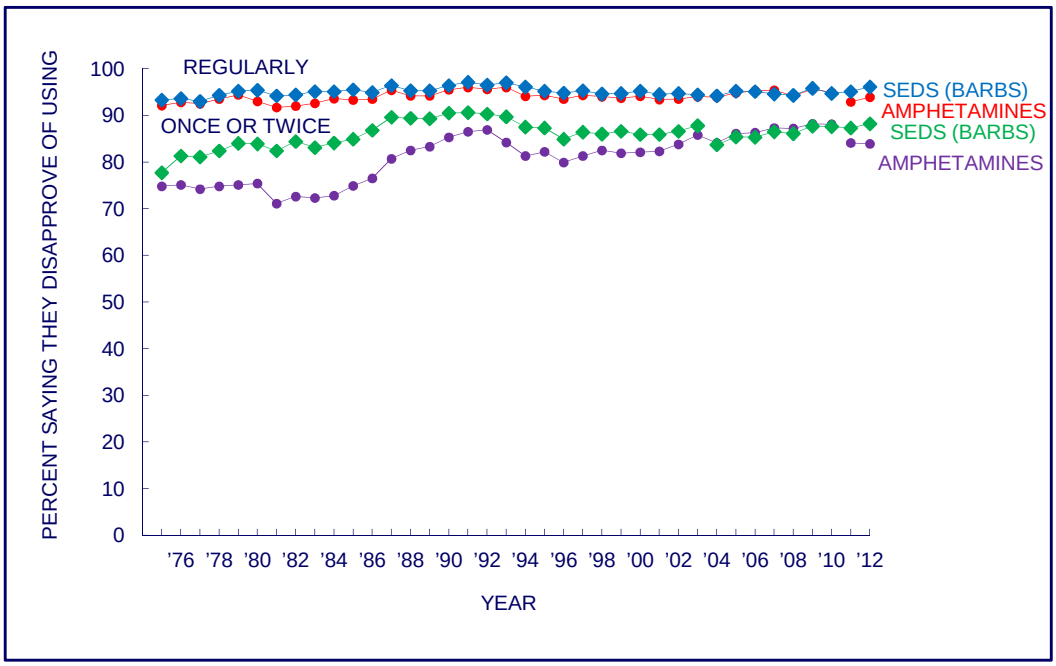
Source. The Monitoring the Future study, the University of Michigan.

Note. Data not available for 8th and 10th graders.

[a]In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

[b]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

FIGURE 8-7b
AMPHETAMINES [a] AND SEDATIVES (BARBITURATES) [b]
Trends in Disapproval
in Grade 12



Source. The Monitoring the Future study, the University of Michigan.

Note. Data not available for 8th and 10th graders.

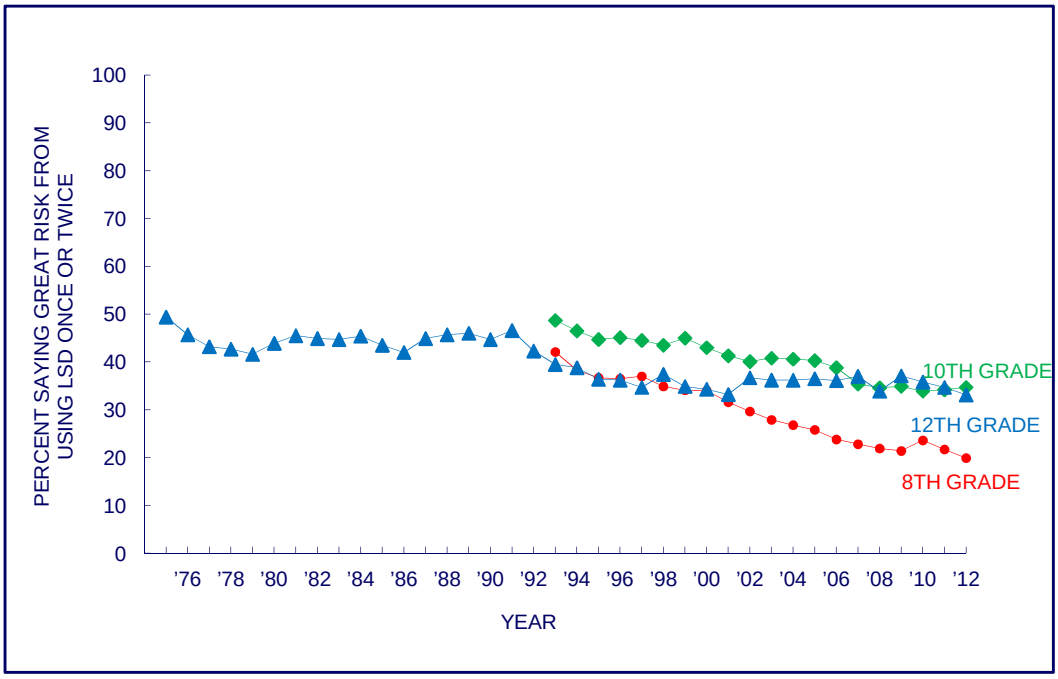
[a]In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

[b]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

FIGURE 8-8a
LSD
Trends in Perceived Harmfulness in Grades 8, 10, and 12

12th Graders

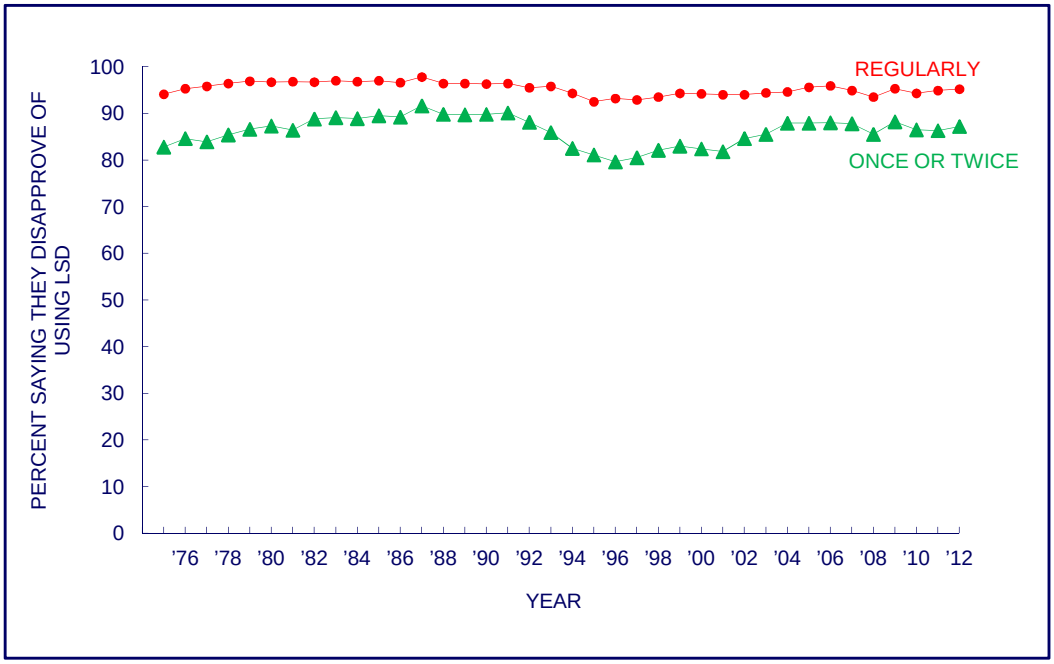
8th, 10th, and 12th Graders



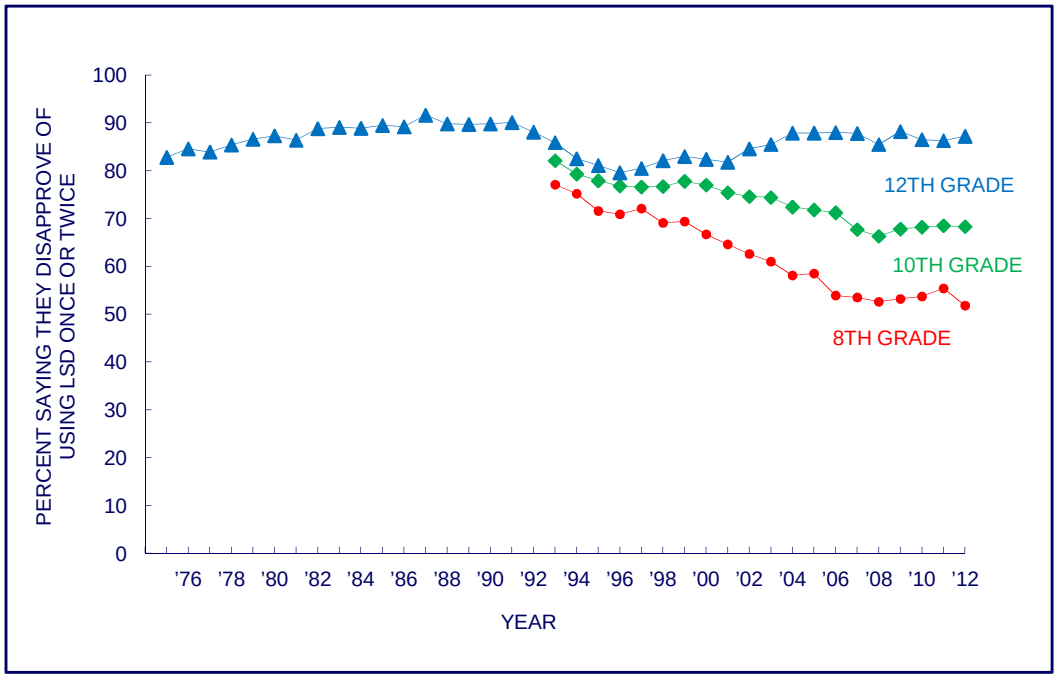
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-8b
LSD
Trends in Disapproval in Grades 8, 10, and 12

12th Graders

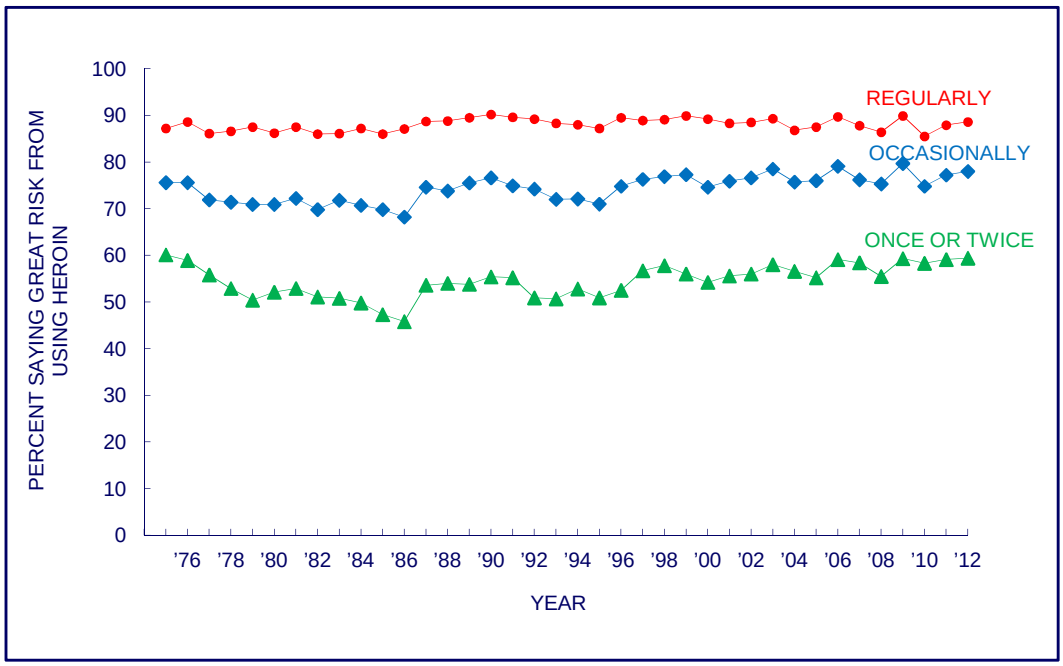


8th, 10th, and 12th Graders



Source. The Monitoring the Future study, the University of Michigan.

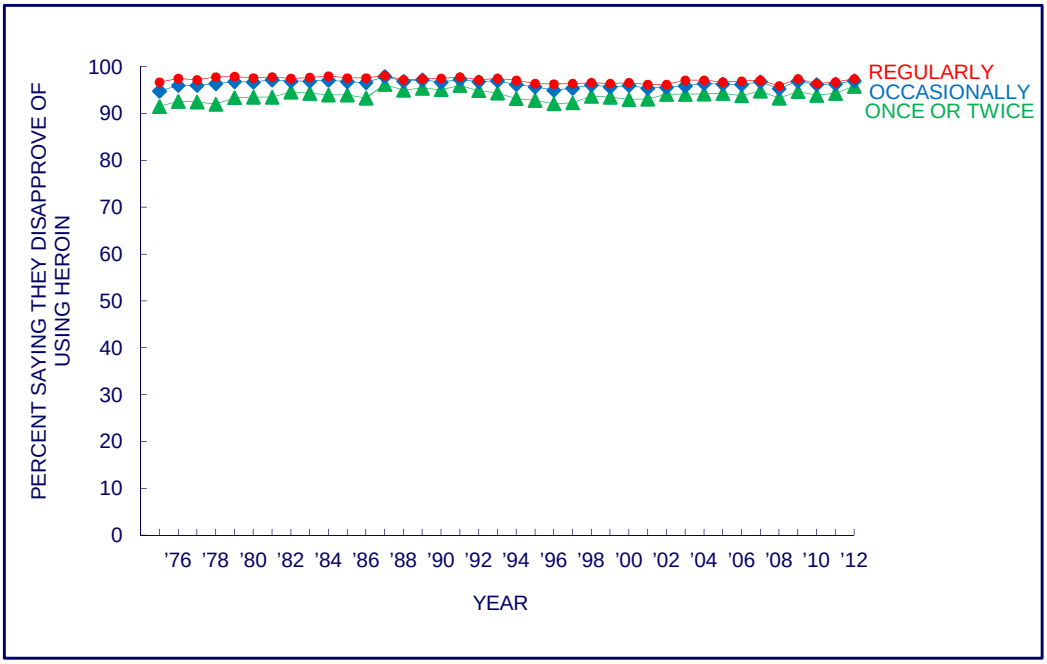
FIGURE 8-9a
HEROIN
Trends in Perceived Harmfulness in Grade 12



Source. The Monitoring the Future study, the University of Michigan.

Note. Data not available for 8th and 10th graders.

FIGURE 8-9b
HEROIN
Trends in Disapproval in Grade 12

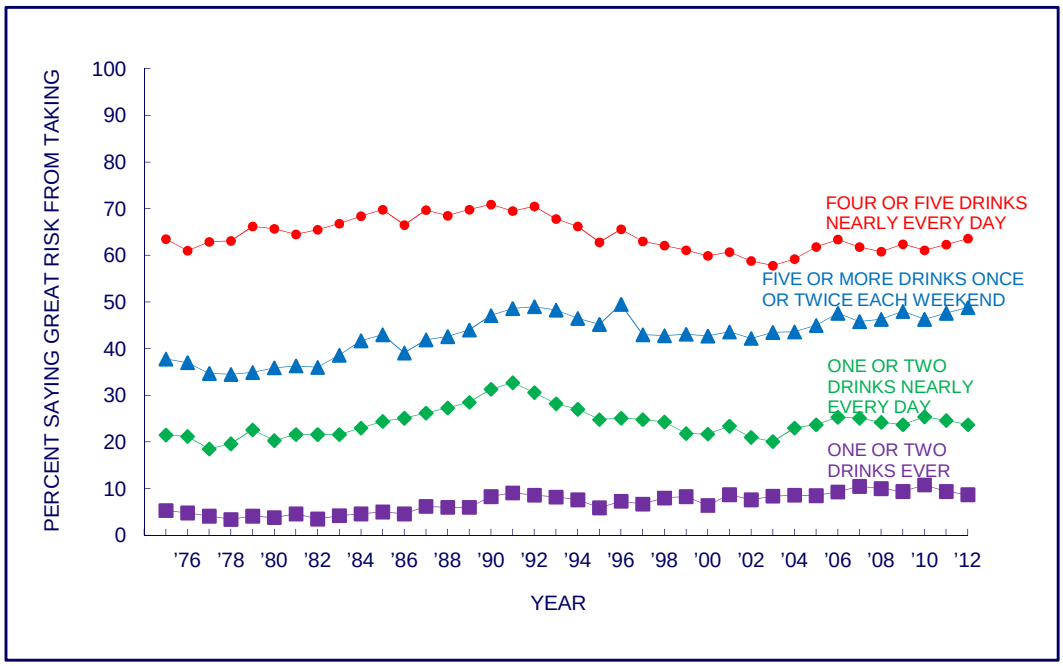


Source. The Monitoring the Future study, the University of Michigan.

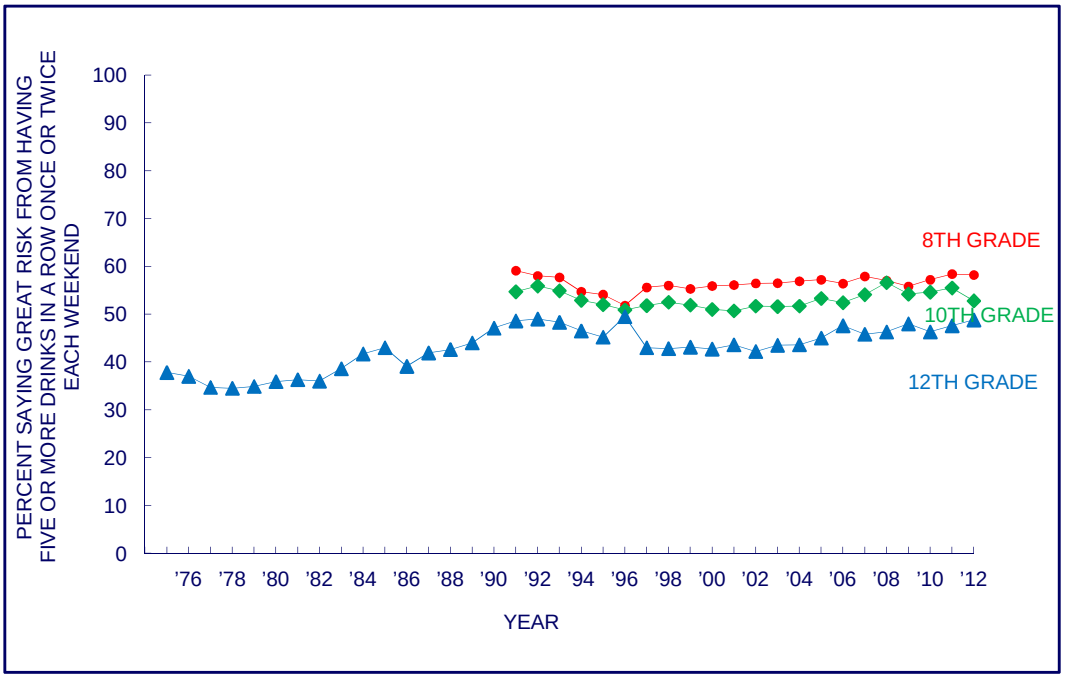
Note. Data not available for 8th and 10th graders.

FIGURE 8-10a
ALCOHOL
Trends in Perceived Harmfulness in Grades 8, 10, and 12

12th Graders



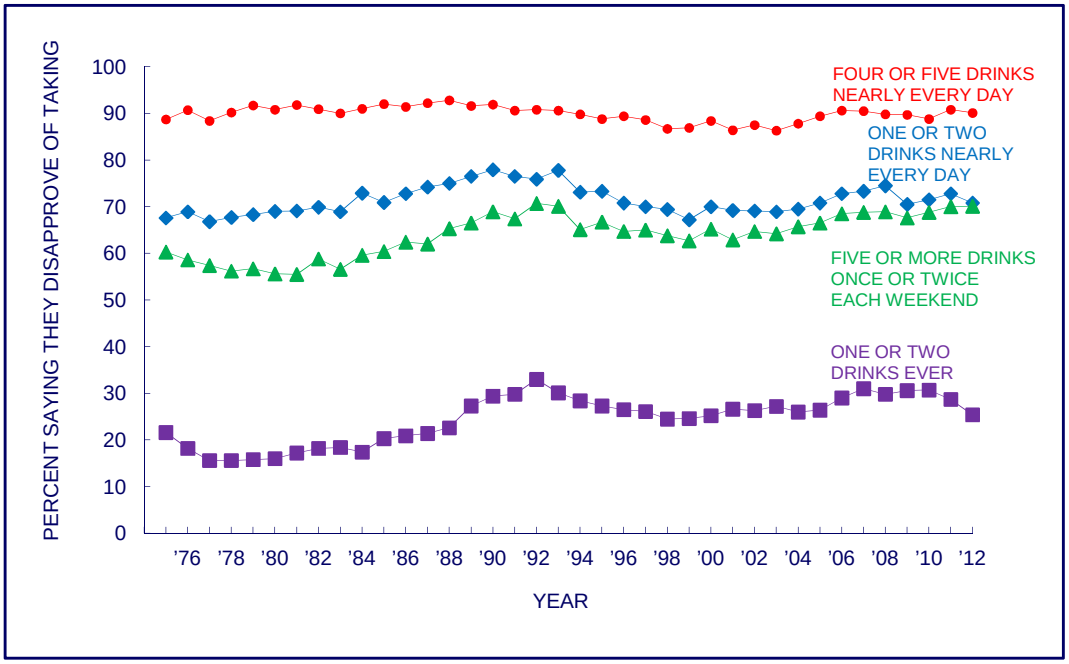
8th, 10th, and 12th Graders



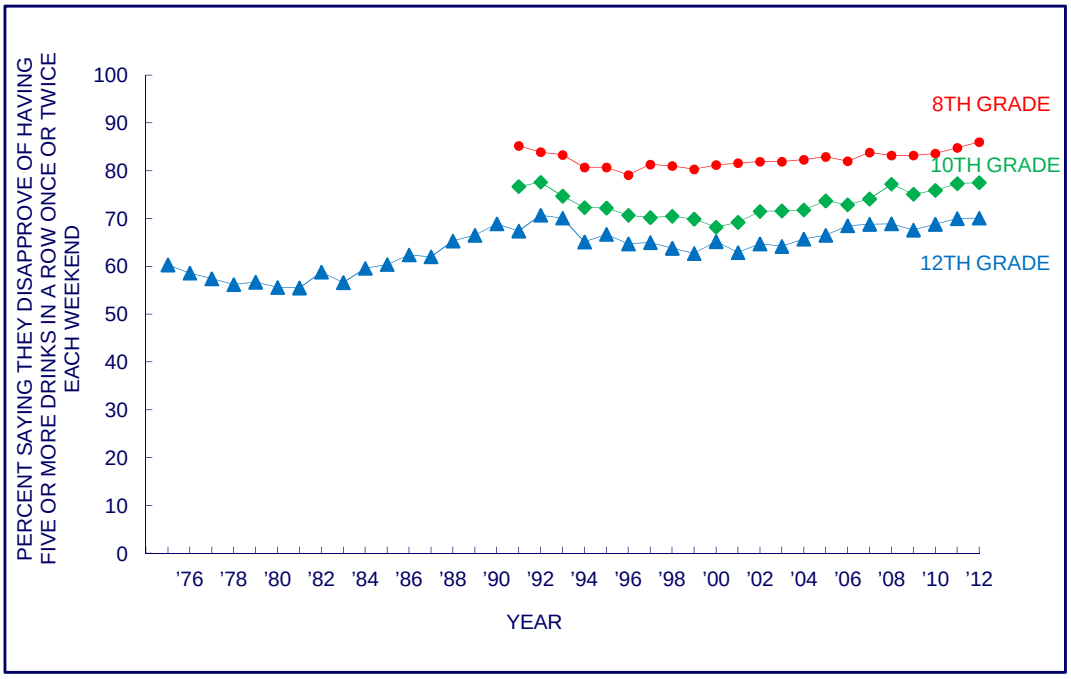
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-10b
ALCOHOL
Trends in Disapproval
in Grades 8, 10, and 12

12th Graders

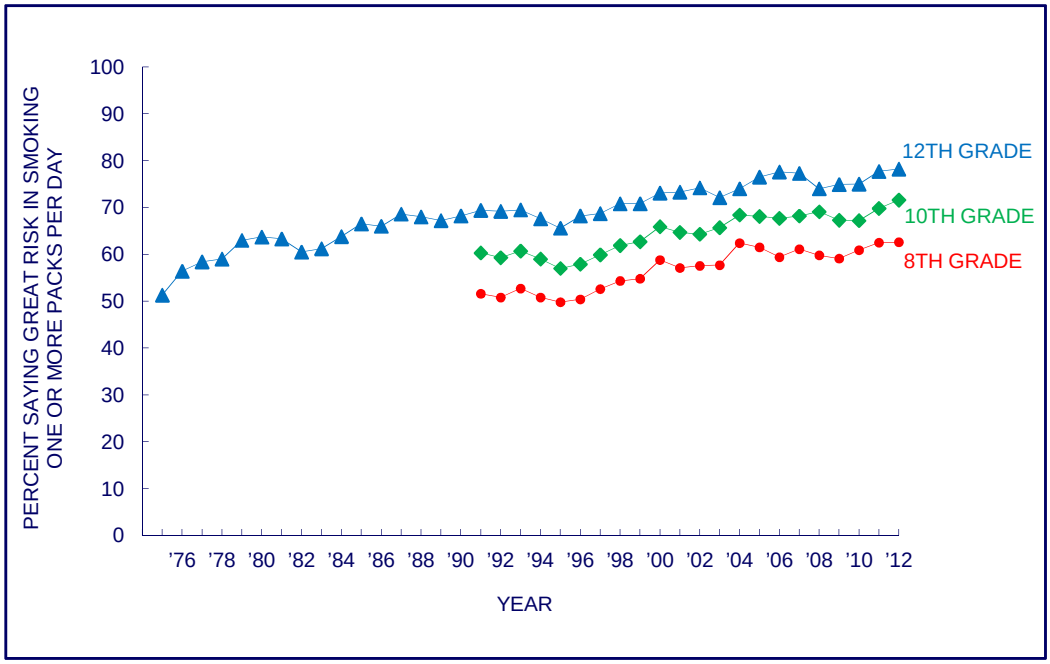


8th, 10th, and 12th Graders



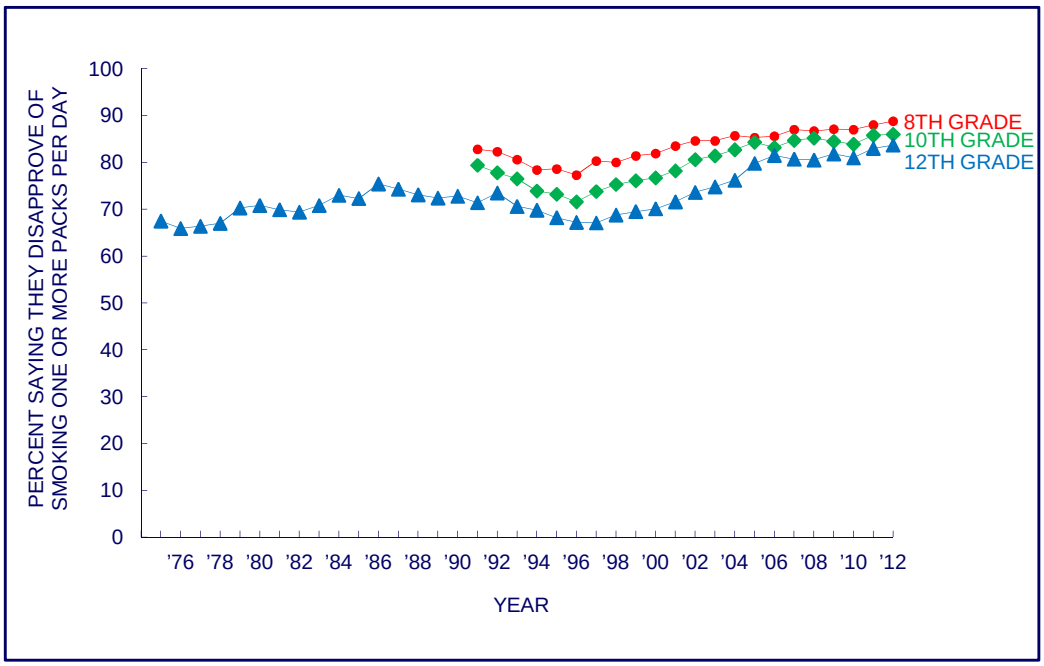
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-11a
CIGARETTES
Trends in Perceived Harmfulness of Smoking 1 or More Packs per Day in Grades 8, 10, and 12



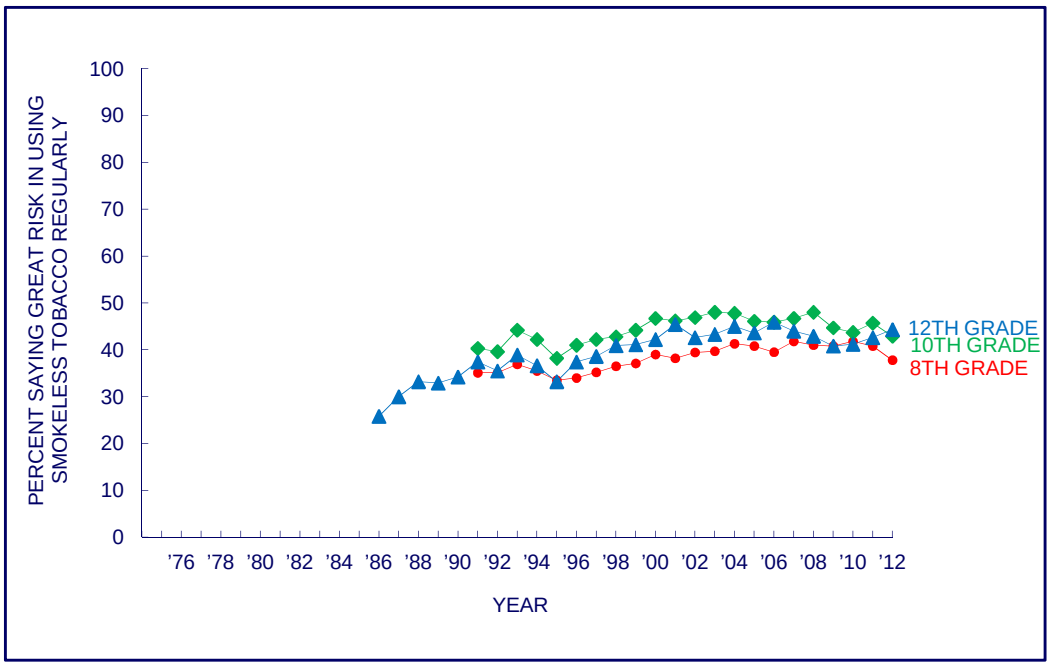
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-11b
CIGARETTES
Trends in Disapproval of Smoking 1 or More Packs per Day in Grades 8, 10, and 12



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-12a
SMOKELESS TOBACCO
Trends in Perceived Harmfulness of Regular Use in Grades 8, 10, and 12



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 8-12b
SMOKELESS TOBACCO
Trends in Disapproval of Regular Use in Grades 8 and 10

Source. The Monitoring the Future study, the University of Michigan.

Note. Data not available for 12th graders.

Chapter 9

THE SOCIAL CONTEXT

In this chapter we consider some forces in the social context that may influence attitudes and beliefs about drugs as well as use. For 8th, 10th, and 12th graders, we report the proportions of friends who use drugs and the perceived availability of various drugs. For 12th graders only, we also report measures of friends' and parents' perceived disapproval of drug use, and the extent of direct exposure to people using drugs.

Measures of perceived *parental* attitudes were included near the beginning of the study, in 1975–1979, but these measures were dropped because students' responses varied little over time and across drugs. Even at the height of the drug epidemic in 1979, a large majority of 12th graders reported that they believed their parents would disapprove or strongly disapprove of their engaging in any of the drug using behaviors listed in Table 9-1. (The relevant early data on parents are displayed in Figures 9-1a through 9-2b, but are not discussed except in comparison to peer attitudes.) Thus, the data about parental attitudes presented in this chapter are based on those very early results. We have retained them here to illustrate that drug use appears to have been one area in which the perceived position of parents approached unanimity.

PERCEIVED ATTITUDES OF FRIENDS: TWELFTH GRADERS

Perceptions of Friends' Attitudes

Since the beginning of the study, a set of questions has asked 12th graders to estimate their friends' attitudes about drug use (see Table 9-1). These questions ask, "*How do you think your close friends feel (or would feel) about you* [using the specified drug at the specified level]?" The questions parallel the questions asked of students about their own attitudes, which are discussed in chapter 8. Disapproval is defined here as the percent of respondents indicating that their close friends would either "disapprove" or "strongly disapprove" of their using each drug at the specified level.

- In 2012, overwhelming majorities of 12th graders reported that their friends would disapprove of their even experimenting with ("trying once or twice") ***crack*** or ***cocaine powder*** (95%). Nearly as many indicated that their friends would disapprove of their trying ***cocaine*** in general (89%), ***LSD*** (85%), or ***amphetamines*** (84%). Presumably, if ***heroin***, ***PCP***, or ***crystal methamphetamine*** (***ice***) were on the list, they, too, would show very high peer disapproval.

- A little more than half of 12th graders in 2012 (53%) thought their close friends would disapprove of them experimenting with ***marijuana***, and about three fourths (73%) reported that their friends would disapprove of them smoking marijuana regularly.

- About four fifths of all 2012 twelfth graders (83%) reported they would face peer disapproval if they ***smoked a pack or more of cigarettes daily***.

- The proportion of 12th graders who anticipated disapproval from friends for alcohol use varied with level of consumption: 62% for ***heavy drinking on weekends***, 74% for consuming ***one or two drinks nearly every day***, and 84% for having ***four or five drinks nearly every day***.

In sum, peer norms among 12th-grade students differ considerably for various drugs and also for varying degrees of involvement with those drugs, but overall they tend to be quite conservative. *The majority of 12th graders have friendship circles that do not condone the use of illicit drugs other than marijuana, and more than half (53%) of 12th graders believe that their friends would disapprove of their even trying marijuana.*

Although these questions are not included in the 8th- and 10th-grade questionnaires, there seems little doubt that these students would have reported at least as restrictive peer norms as the 12th graders, and quite likely more restrictive ones, based on the cross-grade comparisons in levels of personal disapproval (discussed in chapter 8). The one exception might be cigarette smoking, which exhibits less personal disapproval at lower grades.

A Comparison of the Attitudes of Parents, Peers, and Twelfth Graders

A comparison of 12th graders' perceptions of drug use disapproval by their friends versus their parents for the classes of 1975 to 1979, the only years for which comparison data are available, shows several interesting findings.

- First, students have shown rather little variability—between drugs or across years—in their perceptions of their *parents'* attitudes. As mentioned previously, nearly *all* 12th graders in each year said their parents would disapprove of *any* of the drug behaviors listed. However, *peer* norms varied considerably from drug to drug and also across time, thus helping to explain the variability in the respondents' own attitudes and use. While parental norms do not show much variance, we emphasize that this is quite different from saying that parental attitudes do not matter, or even that they matter less than peer attitudes.

- Despite differences in how students characterized disapproval of drug use by parents versus friends in 1975 to 1979, they ranked drug-specific disapproval similarly for the two groups.

- A comparison with 12th graders' own attitudes regarding drug use reveals that, on average, they were much more in accord with peers than parents, at least in the years in which both were measured (see Figures 9-1a through 9-2b). The differences between 12th graders' own disapproval ratings in 1979 and those attributed to their parents tended to be large, with parents seen as more conservative overall in relation to ***every drug***, licit or illicit. The largest difference occurred in the case of ***marijuana*** experimentation, of which only 34% of 12th graders in 1979 said they disapproved, versus 85% who said their parents would disapprove.

Trends in Perceptions of Friends' Attitudes

A number of important changes in 12th graders' perceptions of peer attitudes has taken place over the life of the study. These shifts are presented graphically in Figures 9-1a through 9-2b. Adjusted trend lines have been used for data collected before 1980. We discovered that the deletion in 1980 of the parental attitude questions, which were located immediately preceding the questions about friends' attitudes, removed what we judged to be an artifactual depression of the ratings of friends' attitudes, a phenomenon known as a *question-context effect*. This effect was particularly evident in the trend lines dealing with friends' disapproval of alcohol use, where otherwise smooth trend lines for peer disapproval showed abrupt upward shifts in 1980. It appears that when questions about parents' attitudes were present, respondents tended to understate peer disapproval in order to emphasize the *difference* between their parents' attitudes and their peers' attitudes. In the adjusted lines, we have attempted to correct for that artifactual depression in the 1975, 1977, and 1979 scores[98] and provide a more accurate picture of the change that took place then. Note that the question-context effect seems to have had more influence on the questions dealing with cigarettes and alcohol than on those dealing with illicit drugs. Aside from this change attributable to question context, a number of real and important changes have occurred in respondent perceptions of their friends' disapproval, as discussed below.

- For each level of ***marijuana*** use—trying once or twice, occasional use, and regular use—there was a *drop* in perceived disapproval of both parents and friends in the late 1970s. We know from our other findings that these perceptions of peer norms reflected actual shifts in the individual attitudes of peers—that is, self-reported disapproval of marijuana use was indeed decreasing among 12th graders (see Figure 9-1a). There is little reason to suppose that such perceptions were less accurate in reflecting shifts in parents' attitudes. Therefore, we conclude that the social norms regarding marijuana use among adolescents and adults had been relaxing before 1979. However, consistent with the reversal that began in 1980 for 12th graders' own attitudes; their perception of peer disapproval of marijuana use also began to rise and increased for more than a decade, through 1992. In 1993 another sharp reversal occurred, with the percentage of 12th graders saying that their friends would disapprove dropping by four to seven percentage points, depending on the level of use. Perceived peer disapproval dropped another nine to fourteen percentage points by 1997 before beginning to turn upward again between 1998 and 2001, and then dropping three to four percentage points in 2002. Perceived peer disapproval of trying or occasionally smoking marijuana increased each year from 2003 through 2006, before leveling. But in 2010 both measures decreased significantly, by seven percentage points; and perceived risk of regular use also dropped significantly, by five percentage points. In 2011 there was further decline in peer disapproval (not significant), followed in 2012 by a leveling. The recent turnaround in perceived peer

[98]The correction evolved as follows: We assumed that a more accurate estimate of the true change between 1979 and 1980 could be obtained by taking an average of the changes observed in the year prior and the year subsequent, rather than by taking the observed change (which we knew to contain the effect of a change in question context). We thus calculated an *adjusted* 1979–1980 change score by taking an average of one half the 1977–1979 change score (our best estimate of the 1978–1979 change) plus one half the 1980–1981 change score. This estimated change score was then subtracted from the observed change score for 1979–1980, the difference being our estimate of the amount by which peer disapproval of the behavior in question was being understated due to question context prior to 1980. The 1975, 1977, and 1979 observations were then adjusted upward by the amount of that correction factor.

disapproval accompanied an increase in self-reported marijuana use, but did not precede it.

- As is true for most of the illicit drugs other than marijuana, perceived peer disapproval of ***amphetamines*** has been quite high for the entire life of the study, though there have been some important fluctuations. From 1975 through 1980, relatively little change occurred in either self-reported attitudes or perceived peer attitudes toward trying amphetamines once or twice (see Figure 9-1c); then, in 1981, both measures showed significant and parallel dips in disapproval, and at the same time use rose sharply. From 1981 to 1992, disapproval rose fairly steadily as use declined. Between 1992 and 1996, both friends' disapproval and personal disapproval of experimental use decreased significantly as use increased. Friends' disapproval leveled in 1997 at 80%, but by 2006 was up to 87%; it has varied between 84% and 87% since then. Meanwhile, use remained fairly level through 2002, and then decreased before increasing in 2010 and 2011; it remained level in 2012.

- Perceived peer disapproval of trying ***LSD***, which had been high and relatively stable for some years, decreased steadily between 1988 and 1997 as use increased significantly (see Figure 9-1b). From 1998 through 2006 perceived peer disapproval continued to increase to 90%, while use decreased substantially during that interval. However, since 2006, perceived peer disapproval of trying LSD has been in decline, including a significant three percentage-point drop in 2010, while use rose a bit in 10th grade and significantly so in 12th grade that year. In 2011, there was a small increase in peer disapproval, followed by no change in 2012; also, there was no change in use in either year.

- Twelfth graders' own disapproval of experimental ***cocaine*** use dropped between 1976 and 1979, accompanied by an increase in use; then it rose very gradually through 1991 (see Figure 9-1b). Questions on friends' attitudes about cocaine use were added to the study in 1986. Between 1986 and 1992, the proportion of students saying that their close friends would disapprove of their experimenting with cocaine rose from 80% to 92%. This corresponds to an even larger increase in perceived risk and a precipitous drop in actual use, suggesting that fears of potential harm caused cocaine use to become less acceptable.[99] Perceived peer disapproval changed relatively little after 1992, and remains at 89% in 2012. (The perception of friends' disapproval of ***crack cocaine***, first asked about in 1989, closely parallels the findings for cocaine in general, but at slightly higher levels of perceived disapproval.)

- With regard to ***regular cigarette smoking***, the proportion of 12th graders saying that their friends would disapprove of their smoking a pack or more daily rose from 64% (adjusted) in 1975 to 74% in 1980 (see Figure 9-2b), as use declined from 1977 to 1981. Through the next 12 years, perceived peer disapproval fluctuated by only a few percentage points

[99]Johnston, L. D. (1991). Toward a theory of drug epidemics. In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93–132). Hillsdale, NJ: Lawrence Erlbaum. Available online at http://monitoringthefuture.org/pubs/chapters/ldj1991theory.pdf. See also Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (1990). Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use. *Journal of Health and Social Behavior, 31*, 173–184.

and then dropped significantly between 1992 and 1995, from 76% to 69%, as actual use rose during the relapse period in this drug epidemic. Reported peer disapproval flattened from 1995 to 1998; then it generally increased until 2008. In 2008, peer disapproval of regular cigarette smoking reached 83%, the highest level in MTF's history; it has remained near that peak since then, standing at 83% in 2012. Clearly, smoking became a less acceptable behavior among young people after 1998, and this corresponds to a period of considerable decline in smoking.

- For ***alcohol***, perceived peer norms for ***weekend binge drinking*** generally moved in parallel with 12th graders' statements about their own personal disapproval. A slight decline in friends' disapproval occurred between the mid-1970s and the early 1980s, followed by a period of gradual increase between 1983 and 1992 (see Figure 9-2a). During that 1983–1992 period, laws mandating an increase in the drinking age occurred in a number of states, an ad campaign was launched aimed at deterring drinking and driving, and a subsequent ad campaign was launched encouraging the use of designated drivers. Some divergence occurred when 12th graders' own attitudes became less tolerant while perceived peer norms among friends changed more slowly, suggesting some collective ignorance of the extent to which peers had come to disapprove of weekend binge drinking. Both measures declined some between 1992 and 1998 in the relapse phase of the epidemic. The proportion saying their close friends would disapprove dropped from 61% in 1992 to 56% in 1998, increased significantly to 60% in 2003 and then increased further, reaching 64% in 2009. It then dropped a little to 62% in 2010, where it remained in 2012. In general, binge drinking has been in decline among 12th graders during the period of increased peer disapproval and is now very near its historical low.

- Little systematic change occurred from 1975 to 1993 in perceived peer disapproval of ***heavy daily drinking***. Following a slight decline between 1993 and 1997 (to 83%), this rate has remained fairly level since, standing at 84% in 2012. Having ***one or two drinks nearly every day*** saw some growth in peer disapproval between 1981 and 1990 (from 70% to 79%), but has fallen back some since then, to 74% in 2012.

Methodological Implications

The very close tracking of *self-reported disapproval* with *reported friends' disapproval*—across all of the drugs about which both variables are asked of 12th graders—suggests that self-reported disapproval gives a very good approximation of perceived peer norms in the aggregate (see Figures 9-1a through 9-2b). This is valuable to know for two reasons: first, it may not be necessary for both to be measured in most surveys (and we did not include perceptions of peer attitudes in the questionnaires developed for 8th and 10th graders for that reason); and second, the self-reported disapproval provided by the 8th and 10th graders in this study should serve quite well in the aggregate to reflect perceived peer norms.

FRIENDS' USE OF DRUGS

It is generally acknowledged that peer influences are among the most powerful mechanisms of substance use initiation during adolescence. Much youthful drug use is initiated through a peer social-learning process, and research has shown a high correlation between an individual's illicit drug use and that of his or her friends. Such a correlation can, and probably does, reflect several causal patterns: (a) a person with friends who use a drug will be more likely to try the drug; (b) conversely, the individual who is already using a drug will be more likely to introduce friends to the experience; and (c) users are more likely to establish friendships with other people who use (and likewise, nonusers are more likely to form friendships with other nonusers).

Given the importance of exposure to drug use by others, it is useful to monitor students' associations with others taking drugs, as well as their perceptions about the extent to which their friends use drugs. For 12th graders, two sets of questions—each in a different questionnaire form and together covering nearly all categories of drug use addressed in this report—ask students to indicate for each drug (a) how often during the prior 12 months they were around people taking it to get high or for "kicks" (Table 9-2) and, separately, (b) what proportion of their own friends use it (Tables 9-5a and 9-5b). As would be expected, respondents' answers to these two questions tend to be consistent with the respondents' self-reported drug use; thus, for example, 12th graders who have recently used marijuana are much more likely to report that they have often been around others getting high on marijuana and that most or all of their friends use. For 8th and 10th graders, questions on the proportion of friends using the various drugs were included in the questionnaires from the beginning of the 8th- and 10th-grade surveys in 1991 (Tables 9-3 and 9-4); the results are discussed below in a separate section. However, questions on exposure were not included for 8th and 10th graders for the reasons just mentioned.

Exposure to Drug Use by Friends and Others: Twelfth Graders, 2012

A comparison of the aggregated responses about friends' use and about being around people in the prior 12 months who were using various drugs to get high reveals a high degree of correspondence between these two indicators of exposure, even though these two questions appear in separate questionnaire forms. For each drug, the proportion of respondents saying none of their friends use is fairly close to the proportion reporting that during the prior 12 months they have not been around anyone who was using that drug to get high. Similarly, the proportion reporting that most or all of their friends use a given drug bears a rough similarity to the proportion saying they have often been around people getting high on that drug.

- As would be expected, reports of exposure and friends' use closely parallel 12th graders' own use (compare Figures 4-1 and 9-4). It is no surprise that the highest levels of exposure involved ***alcohol***; about four tenths (43%) of the 2012 twelfth graders said they have often been around people using it to get high. What may come as a surprise is that 21% of all 12th graders said that most or all of their friends ***get drunk*** at least once a week. (This large proportion is consistent with the 24% of 12th-grade respondents reporting that they personally had taken five or more drinks in a row at least once during the prior two weeks and the 28% reporting that they had been drunk at least once in the past 30 days.)

- After alcohol, students are exposed next most frequently to ***marijuana*** (Table 9-2). Three fourths of the 2012 twelfth graders (75%) reported having been around people using marijuana during the prior year. Some 32% said they have often been around people using it to get high, and another 24% said they have been exposed occasionally. On the question about friends' use, 25% said that most or all of their friends smoke marijuana, and 78% said that they have at least some friends who use the drug. *Indeed, only 22% of 12th graders in 2012 said that none of their friends used marijuana.*

- ***Narcotics other than heroin***, ***amphetamines***, and ***hallucinogens other than LSD*** rank next in exposure, with 27%, 26%, and 23%, respectively, of 12th graders reporting some exposure in the prior year. The proportions who said they have at least some friends who use are 31% for amphetamines, 29% for narcotics other than heroin, and 30% for hallucinogens other than LSD.

- For the remaining illicit drugs, any exposure to use in the past year ranged from 18% for ***tranquilizers*** down to 6% for ***heroin*** in 2012.

- Nearly a quarter (24%) of 12th graders reported no exposure to ***any illicit drug*** use during the prior year.

- Just over half (55%) of 12th graders reported *no* exposure to use of ***any illicit drug other than marijuana*** during the prior year—which means that just under half (45%) had some exposure to use.

- Only about one in eight (12%) 12th graders reported that most or all of their friends smoke ***cigarettes***, but the great majority (74%) reported having at least *some* friends who smoke.

Friends' Use of Drugs: Eighth and Tenth Graders, 2012

While the questions about exposure to use were not included in the 8th- and 10th-grade questionnaires, data on friends' use were included.

- As would be expected, with few exceptions, 10th-grade students are less likely than 12th-graders to have friends who use, and 8th graders are less likely still (see Tables 9-3, 9-4, and 9-5). For example, 41% of 8th graders in 2012 said that they have friends who smoke ***marijuana***, compared with 71% of 10th graders and 78% of 12th graders. Still, that means that about four tenths of 8th graders—most of whom are 13 or 14 years old—do have friends who smoke marijuana.

- ***Inhalants*** are one important exception to the typical developmental trend. Consistent with our finding that current inhalant use is more prevalent in 8th grade than in 10th or 12th grades, 23% of 8th graders said they have some friends who use inhalants versus 15% of 10th graders and 12% of 12th graders in 2012.

- Exposure to ***alcohol*** use by friends is widespread, with 57% of 8th graders and 85% of 10th graders reporting having friends who use alcohol. In fact, 14% of 8th graders and

39% of 10th graders said that most or all of their friends drink, and the proportions saying that most or all of their friends ***get drunk*** at least once a week are 5% in 8th grade and 16% in 10th grade, compared to 21% of 12th graders.

- Exposure to ***cigarette smoking*** by friends is also very high for these young people, with more than four tenths (44%) of 8th graders and two thirds (67%) of 10th graders saying they have at least some friends who smoke cigarettes.

- Considerably smaller proportions have friends who use ***smokeless tobacco***: 24% of 8th graders and 44% of 10th graders in 2012.

In sum, today's American adolescents—even in middle school—have a high degree of exposure to illicit drug use among their peers, whether or not they use illicit drugs themselves. They also have a very high level of exposure to cigarette smoking, drinking, and drunkenness.

TRENDS IN EXPOSURE TO DRUG USE AND FRIENDS' USE OF DRUGS

The extent of exposure to licit and illicit drug use among American adolescents has seen important changes over the past 38 years. Table 9-2 presents long-term trends in reported exposure to the use of various drugs by 12th graders, and Tables 9-3, 9-4, and 9-5 present trends in reported friends' use of the various drugs for all three grades.

Trends in Exposure to Drug Use by Friends and Others: Twelfth Graders

- Twelfth graders' reports of their own monthly use and their exposure to ***marijuana*** use both increased in the early years of the study (1976–1978), and then both dropped steadily so that the proportion saying they were often around people using marijuana decreased by more than half between 1979 and 1992 (from 39% to 16%). After 1992, however, the reported level of exposure doubled, reaching 33% in 1997, and paralleled the significant rise in self-reported use. By 2007 the proportion reporting frequent exposure fell back to 25% among 12th graders, and use declined some, as well. Actual marijuana use as well as frequent exposure to use have increased in recent years, with 30-day prevalence rising from 19% in 2007 to 23% in 2011 and 2012 and frequent exposure to use increasing from 25% to 32% over the same intervals.

- The proportion of 12th graders exposed to ***cocaine*** use showed a consistent increase from 1976 to 1979, while self-reported use was also rising. After 1979, there was little change in either measure, until both increased in 1985, corresponding to the peak in self-reported use. From 1986 through 1993, 12th graders' exposure to cocaine use dropped appreciably, with the proportion saying they had any friends who used cocaine falling from 46% in 1986 to 25% in 1993 (see Tables 9-5a and 9-5b). Self-reported prior-year prevalence fell by three quarters during this same interval. Then, during the relapse phase in the illicit drug epidemic, self-reported cocaine use doubled between 1992 and 1999, and the proportion reporting that most or all of their friends used cocaine also nearly doubled (from 1.5% to 2.9%). Both remained fairly level through 2007; but by 2012, both measures were down from 2007 (with annual use down from 5.2% in 2007 to 2.7% in

2012, and the proportion saying that most or all of their friends use cocaine down from 2.1% to 0.8% in the same interval.)

- The proportion of 12th graders having any friends who used ***amphetamines*** rose from 41% to 51% between 1979 and 1982, paralleling a sharp increase in self-reported use during that period. The proportion saying they were around people using amphetamines "to get high or for kicks" also jumped substantially between 1980 and 1982 (by nine percentage points).[100] It then fell continually—a full 26 percentage points—between 1982 and 1992 (to 25%), as self-reported use declined quite substantially. From 1992 to 1997, both self-reported use and exposure to use increased and then leveled. Both their friends' use and their own use showed some decline from 2001 through 2009, with friends' use remaining level and self-reported use showing little change through 2012.

- Although we did not ask students about their own use of ***ecstasy*** (***MDMA***) until 1996, we did ask about friends' use beginning in 1990. That measure stayed fairly stable, with 11% to 13% between 1990 and 1993 saying that they had any friends who used. That was followed by a substantial increase between 1993 and 1997 as reported friends' use more than doubled (from 13% to 28%). Little change occurred after this until 2000, when friends' use jumped dramatically to 37%, concurrent with an increase in self-reported use. Reported use by friends peaked at 42% in 2001, coinciding with a peak in self-reported use. Then, in each year from 2002 to 2005, use by friends declined significantly (to 23% by 2005) while self-reported use decreased by more than two thirds from its highest point in 2001. After that time self-reported use and friends' use remained fairly level until 2009, after which there were small increases. Use by friends was at 27% in 2012 after falling a non-significant 0.7 percentage points in 2012; annual self-reported use fell by a significant 1.6 percentage points.

- The proportion of 12th graders saying that most or all of their friends smoked ***cigarettes*** dropped steadily and substantially between 1976 and 1981, from 37% to 22%. During this period, self-reported use also dropped markedly, and more 12th graders perceived their friends as disapproving of regular smoking. After 1981, friends' use and self-reported use remained relatively stable until a significant increase in 1993 in the proportion who said most or all of their friends smoke cigarettes. Use by most or all friends continued to rise, peaking at 34% in 1997, with self-reported smoking following a similar pattern. However, 1998 was a turnaround year for 12th graders: smoking rates started to drop, as did reported friends' use. Both dropped substantially until 2003, when only 20% said that most or all of their friends smoke, a rate that held at 21% for 2004. Both measures declined again after 2004. In 2012, the proportion saying that *any* of their friends smoke was at 74%, well below the highest level reported in the study (95% in 1975) and the more recent high levels of 90% in 1997 and 1998.

[100]This finding was important because it indicated that a substantial part of the increase observed in self-reported amphetamine use was due to influences other than simply an increase in the use of over-the-counter diet pills or stay-awake pills, which presumably are not used to get high. Obviously, more young people were using stimulants for recreational purposes. Of course, the question still remains of whether the active ingredients in those stimulants really were amphetamines.

- From 1975 through 1990, the proportion reporting binge drinking themselves exceeded the proportion reporting that most or all of their friends ***get drunk*** at least once a week, sometimes by a considerable margin (for example, by 12 percentage points in 1981, 41% versus 29%). Since 1991, the two measures have tracked fairly closely. The most impressive findings here are that in 2012, about one fifth (21%) of 12th graders said that most or all of their friends get drunk at least once a week—a historical low—and nearly the same proportion (24%) said they personally had been binge drinking in the prior two weeks, close to the historical low reached a year earlier. Fewer than one in three (31%) said that *none* of their friends get drunk at least once a week.

***Implications for validity of self-reported usage questions*.** We have noted a high degree of concurrence in the aggregate-level data presented in this report among 12th graders' self-reports of their own drug use, their friends' use, and their own exposure to such use. Drug-to-drug comparisons in any given year across these three measures tend to be highly parallel, as are the changes from year to year.[101] We take this consistency as additional evidence of the validity of the self-report data (and also of the trends in the self-report data), because respondents should have little reason to distort answers about use by unidentified friends or their general exposure to use. Figure 9-3 illustrates the high degree of cross-time correspondence between the proportion of 12th graders saying they personally used marijuana in the 30 days prior to the survey and those saying most or all of their friends use marijuana. We believe that this close correspondence provides persuasive evidence that the changing social acceptability of drug use has not affected the truthfulness of self-reports of use.

Trends in Friends' Drug Use: Eighth and Tenth Graders

As with 12th graders, data on friends' use among 8th and 10th graders (available since 1991) show trends that are highly consistent with trends in self-reported use. Questions on friends' use are included in all 8th- and 10th-grade questionnnaire forms through 1998 and on three of the four forms beginning in 1999, providing very large sample sizes. Selected trend results for these questions are discussed below, with comparisons to 12th graders when salient, and are presented in Tables 9-3 and 9-4.

- Paralleling the increase in use between 1992 and 1996, there were large increases in the proportions saying that any of their friends smoke ***marijuana***. Between 1993 and 1994, friends' use rose by 10 percentage points among 8th graders and 11 percentage points among 10th graders, and then another 10 percentage points in both grades between 1994 and 1996. Among both 8th and 10th graders, friends' use declined between 1996 and 2004, with little change through 2008. This was followed by some increase in both grades in 2009 and 2010 for both self-reported use and friends' use. There was no significant change in 2012; reported friends' use of marijuana saw a non-significant decline among 8th and 10th graders, and self-reported use also declined non-significantly in both grades.

[101]Those minor instances of noncorrespondence may well result from the larger sampling errors in our estimates of these environmental variables, which are measured on a sample size one fifth or one sixth the size of the self-reported usage measures. They may also result, of course, from a lag between a change in the reality and students' recognition of that change.

- In all three grades, the proportions reporting having friends who use ***inhalants*** rose consistently from 1991 through 1996 or 1997, again coinciding with rises in self-reported use. From 1996 through about 2003, reports of friends' use generally declined along with self-reported use. After 2003, there was little systematic change in these rates, at least until 2012, when a significant 2.8 percentage point drop was observed in both grades in the percent saying any friends use inhalants.

- As the use of illicit drugs rose between 1992 and 1996, the rate of self-reported ***drunkenness*** increased slightly in both 8th and 10th grades, as did the proportion saying they have any friends who get drunk weekly. Here, too, both measures then declined some among 8th graders between 1997 and 2001, while changing little among 10th and 12th graders. All grades have since shown some continual decline in self-reported drunkenness and reported friends' drunkenness, with the greatest change observed among 8th graders and with the inflection points staggered across grades, from 1999 for use in 8th grade to 2001 for use among 12th graders.

- The data from 8th and 10th graders showed a steadily increasing proportion of friends smoking ***cigarettes*** between 1991 and 1996, and a sharp increase in self-reported smoking. In 1997, both measures showed a slight reversal in both grades—a reversal that continued into 2008, including a significant drop in self-reported use among 8th and 10th graders. In 1996, 78% of 8th graders reported having any friends who smoked; by 2012 that proportion had fallen to 44%, the lowest level ever recorded by the study. Friends' use also fell considerably among 10th graders, from 89% in 1996 to 67% in 2012—again a new historic low. Among 12th graders, friends' use and self-reported use began their declines later, and continued to decline in 2012.

PERCEIVED AVAILABILITY OF DRUGS

One set of questions in the MTF surveys asks respondents how difficult they think it would be to obtain each of a number of different drugs if they wanted some. The answers range across five categories from "probably impossible" to "very easy."[102] We use the term "perceived availability" in discussing the responses to these questions because it is the person's perception that is being measured. We recognize that availability is multidimensional, and respondents may consider a variety of factors in their answers, including knowing where to get access, the difficulty of getting to an access location, and possibly even the monetary cost. We suspect, however, that for most respondents, what we are measuring is perceived access, with little or no consideration of monetary cost.

While no systematic effort has been undertaken to directly assess the validity of these measures (because such an assessment would involve actual attempts to obtain drugs), it must be said that the measures do have a rather high level of face validity, particularly since it is the subjective reality of perceived availability being measured. It also seems quite reasonable to assume that, to

[102]In the 8th- and 10th-grade questionnaires, an additional answer category of "can't say, drug unfamiliar" is offered; respondents who chose this answer are included in the calculation of percentages. Generally, fewer than 20% of respondents selected this answer.

a considerable extent, perceived availability tracks actual availability. In addition, differences across drugs in reported availability generally correspond to differences in reported prevalence of use, providing further evidence of validity.

Perceived Availability of Drugs, 2012: All Grades

- Substantial differences were found in perceived availability of the various drugs. In general, the more widely used drugs are reported to be available by higher proportions of the age group, as would be expected (see Tables 9-6, 9-7, and 9-8). Also, older age groups generally perceive drugs to be more available. For example, in 2012, 37% of 8th graders said ***marijuana*** would be fairly easy or very easy to get (which we refer to as "readily available"), versus 69% of 10th graders and 82% of 12th graders. In fact, compared to 8th graders, the proportion of 12th graders indicating that drugs are available to them is two to four times as high for ***other drugs*** included in the study and five times as high for ***narcotics other than heroin***. (***Tranquilizers***, on the other hand, are reported as only a little less available by 8th graders.) Both associations are consistent with the notion that availability is largely attained through friendship circles. The differences among age groups may also reflect less willingness and/or motivation on the part of those who deal drugs to establish contact with younger adolescents. Because many ***inhalants***—such as glues, butane, and aerosols—are universally available, we do not ask about their availability. See Table 9-8 for the full list of drugs included in the questions for 12th graders; a few of these drugs were not asked of the younger students (see Tables 9-6 and 9-7).

- Measures on the availability of ***cigarettes*** are not included in the 12th-grade questionnaires because we have assumed that they are almost universally available to this age group. However, data on this measure are collected from 8th and 10th graders, which clearly show that cigarettes are readily available to most of them. In 2012, 51% of 8th graders and 73% of 10th graders thought that cigarettes would be fairly easy or very easy for them to get if they wanted some.

- The great majority of teens also see ***alcohol*** as readily available: in 2012, 58% of 8th graders, 78% of 10th graders, and 91% of 12th graders said it would be fairly easy or very easy to get.

- Far fewer 8th graders report that illicit drugs are readily available. Even so, ***marijuana*** was described as readily available by 37% of 8th graders in 2012, followed by ***crack*** and ***cocaine powder*** (both at 14%), ***amphetamines*** and ***steroids*** (both at 13%), ***sedatives*** (***barbiturates***), ***narcotics other than heroin***, and ***tranquilizers*** (all at 11%), ***ecstasy*** (***MDMA***) (10%), ***heroin*** and ***crystal methamphetamine*** (***ice***) (both at 9%), ***LSD*** (8%), and ***PCP*** (7%).

- ***Marijuana*** appears to be readily available to the great majority of 12th graders; in 2012, 82% reported that they think it would be very easy or fairly easy for them to get—nearly twice the number who reported ever having used it (45%).

- There is a fair-sized drop in availability after marijuana; the next most readily available class of drugs for 12th graders is ***narcotics other than heroin***, with 50% saying these drugs would be very or fairly easy to get, followed by ***amphetamines*** (45%). A section in Chapter 10 of Volume I elucidates the sources that students identify for the prescription-type drugs they obtained in the past year.

- Between 22% and 38% of 12th graders perceived ***hallucinogens other than LSD*** (38%), ***ecstasy*** (***MDMA***) (36%), ***cocaine*** (30%), ***sedatives*** (***barbiturates***) (29%), ***LSD*** (28%), ***cocaine powder*** and ***steroids*** (both at 25%), and ***crack*** (22%) as readily available.

- ***Heroin***, ***crystal methamphetamine*** (***ice***), ***tranquilizers***, and ***PCP*** were reported as readily available by smaller but still substantial minorities of 12th graders in 2012 (20%, 15%, 15%, and 14%, respectively).

- Even drugs with lower usage rates, such as the ***nitrite inhalants***, are seen as readily available by substantial numbers of 12th graders (16% in 2009; the question was discontinued in 2010).

Trends in Perceived Availability for Twelfth Graders

Trend data on availability for 12th graders are presented in Table 9-8 and Figures 9-5a through 9-5d. A glance at the four figures will show some substantial fluctuations in the perceived availability of most drugs over the interval covered by the study.

- ***Marijuana*** has been the most consistently available illicit drug, but even it has shown some small variations over the years (see Figure 9-5a). For the first time since the study began in 1975, marijuana showed a small but statistically significant decline in perceived availability between 1982 and 1984 (down four percentage points to 85%), undoubtedly reflecting the reduced proportion of 12th graders who reported having friends who were users. Perceived availability leveled over the next four years, followed by a slight decline between 1988 and 1992, then a moderate increase (to 90%) between 1992 and 1998, which corresponded to a sharp increase in the proportion of friends using marijuana. Between 1999 and 2001 availability held steady at 89%, then declined a bit to 84% by 2008, decreased significantly to 81% in 2009, about where it remained in 2012 (82%). What is most noteworthy, however, is how little change has occurred in the proportion of 12th graders who say that marijuana is fairly or very easy to get. *By this measure, marijuana has been almost universally available to American 12th graders (from 81% to 90%) since 1975.*

- The perceived availability of ***amphetamines*** jumped 13 percentage points between 1977 and 1982 (to 71%)—a period in which "look-alike" stimulants were commonly available and may have been reported as amphetamines—but then dropped back gradually by 14 percentage points between 1982 and 1991 (to 57%) (see Figure 9-5a). Then, between 1991 and 1995, as the relapse phase in the drug epidemic began, perceived availability increased steadily, reaching 63% in 1995, followed by a significant decrease to 59% in 1996. Since 1998, perceived availability of amphetamines has generally declined, reaching 44% in 2010, the lowest level since the study began in 1975. The question about

availability of amphetamines was changed in 2011 to include Adderall and Ritalin among the examples. Consequently, the 2011 and 2012 rates, 47% and 45%, respectively (and not significantly different from one another), are not comparable to data from prior years.

- The perceived availability of ***sedatives*** (***barbiturates***) (see Figure 9-5b) fell by 11 percentage points from 1975 to 1980, but then jumped 6 percentage points from 1980 to 1981, when look-alikes were common. From 1982 to 1991 a long gradual decline of 13 points occurred, parallel to a long-term drop in the number of sedative (barbiturate) users. Perceived availability rose slightly, along with use, in the early 1990s; but it then fell back again between 1993 and 2001 (to 36%), even though use continued to increase slightly through 2002. In 2003 both use and availability showed some (not statistically significant) decline. In 2004, the question text was changed (as described in the relevant footnote in Table 9-8), apparently causing an increase in reported availability; thus, the trend between 2003 and 2004 cannot be estimated. Based on the new question, availability declined further, from 46% in 2004 to 29% by 2012. Use continued to decrease after 2005. In sum, the availability of sedatives (barbiturates) has declined considerably over the life of the study, much as was true for amphetamines.

- Between 1977 and 1980—a period of increased overall ***cocaine*** use—there was a substantial increase (15 percentage points) in the perceived availability of cocaine among 12th graders (see Table 9-8 and Figure 9-5a). Perceived availability then leveled and even dropped some in 1983, before rising sharply and steadily through 1989. It is noteworthy that, after 1986, reported availability continued to rise as actual use of cocaine dropped sharply through 1993. Because perceived availability increased between 1986 and 1989, we are inclined to discount reduction in supply as an explanation for the significant and important decline in cocaine use observed during that period. The sharp increase in perceived risk for cocaine seems the more compelling explanation.

  Between 1989 and 1994, perceived availability of cocaine decreased significantly—by 12 percentage points—perhaps reflecting the impact of the greatly reduced proportion of 12th graders who were using cocaine or who had friends using cocaine. (The proportion having any friends who used dropped by 11 percentage points during that interval.) From 1994 to 1998, use and perceived availability of cocaine increased slightly. Availability declined some between 1999 (48%) and 2003 (43%), before rising to 47% by 2007 (while use held fairly steady). From 2007 through 2011 there was a rather sharp decline in perceived availability for cocaine, reaching 31% in 2011, and 30% in 2012.

- Questions on the perceived availability of ***crack*** were added to the 12th-grade questionnaires in 1987; between 1987 and 2009, availability has generally fluctuated between 32% and 47%, with generally lower rates in the mid-2000s than in the late 1990s (see Figure 9-5a). The trend pattern for crack has tracked fairly closely that for cocaine in general, though availability was usually lower than for powder cocaine. Since 2006, perceived availability of crack has decreased significantly; in 2012, 22% said it would be fairly or very easy to get. Use has also been in decline over that period.

- Among 12th graders, both use and perceived availability of ***tranquilizers*** declined fairly steadily and sharply over the 15-year interval between 1977 and 1992 (see Figure 9-5b). In fact, by 2012 the proportion of 12th graders who thought tranquilizers were readily available had fallen by nearly eight tenths—from 72% in 1975 to 15% in 2012. Despite that decline in perceived availability, tranquilizer *use* among 12th graders had been slowly rising through most of the 1990s and through 2002, followed by a slight decline in use since. This is another example of changes in availability not being able to explain the trends in use.

  The perceived availability of ***LSD*** fell sharply in the first several years covered by the study (1975–1978), perhaps reflecting the end of a longer term steep decline (see Figure 9-5c). Perceived availability then leveled for a while before dropping further in the first half of the 1980s. Between 1986 and 1995, a substantial increase in the perceived availability of LSD occurred among 12th graders, rising from 29% to 54% (the highest level in over two decades). After 1995, there was considerable decline in perceived availability (back to 29% in 2005, where it remained for several years before dropping further to 25% by 2011). This drop in perceived availability was accompanied by a substantial decline in use through 2006, slight increases in 2007 and 2008, then a significant decrease in use in 2009 followed by a significant increase in 2010 and no further change in 2011. In 2012 availability showed some increase while use declined slightly. In general, attitudes and beliefs—perceived risk and disapproval of LSD use—have not moved in ways that could explain the sharp drop in use that was observed between 2000 and 2003. It seems highly likely that it was this decrease in availability that helped to drive use down.

- The perceived availability of ***hallucinogens other than LSD*** followed a similar trajectory to that of LSD from 1975 through 1986 (see Figure 9-5c), but quite a different one thereafter. From 1986 to 1994 there was only a gradual rise in perceived availability of hallucinogens other than LSD, in contrast to the sharp rise for LSD. From 1995 to 2000, the availability of LSD showed a general decline (from 54% to 47%), while the availability of other hallucinogens changed very little (from 36% to 35%). While LSD and the other hallucinogens, taken as a set, were about equally available in the late 1970s, LSD availability was substantially higher in the 1990s (note the crossover of the lines between 2000 and 2001). The availability of LSD declined again in 2001 (to 45%), while the availability of other hallucinogens showed an apparent sharp increase, which likely was due to a question change. (In 2001 the question text changed from "other psychedelics" to "other hallucinogens," and the term "shrooms" was added to the list of examples. After this change, this class of drugs was actually reported to be slightly more available than LSD.) Since 2001, availability of hallucinogens other than LSD has declined fairly steadily to 38% by 2012 (while LSD availability fell sharply). LSD is now substantially less available than the other hallucinogens taken as a class.

- The perceived availability of ***ecstasy*** rose quite dramatically among 12th graders during the late 1990s (see Figure 9-5d). From 1989, when availability was first measured for this drug, through 1991, only 22% of 12th graders reported easy access. Availability rose steadily thereafter to 39% by 1997, where it remained for two years. However,

availability jumped dramatically in 2000 to 51% and again in 2001 to 62%— nearly three times the 1991 level—an increase that probably played an important role in the sharp increase in *use* after 1998. In 2002, availability of ecstasy declined for the first time in several years. But while use dropped quite sharply between 2001 and 2003, perceived availability declined only slightly in that interval and did not show a sharp decline until 2004, when it dropped by 10 percentage points. This was followed by another significant decline in perceived availability (eight percentage points) and a nonsignificant decrease in use in 2005. This suggests that a reduction in availability was not key to the important downturn in ecstasy use; rather, the fall in perceived availability may simply have resulted from fewer 12th graders having friends who were users. In fact, friends' use of ecstasy dropped significantly in 2005. In 2006, there was no significant change in perceived availability, friends' use, or own use; all three measures showed some increase in 2007, but none was significant. In 2008, perceived availability and friends' use continued to rise while self-reported use leveled. There was a significant drop in perceived availability in 2009, a slight decline in friends' use, and no further change in own use. From 2009 through 2011 all three of these variables rose some but in 2012 showed some decline.

- Self-reported *use* of ***PCP*** among 12th graders dropped substantially between 1979 and 1987 before stabilizing at a very low level and then decreasing slightly between 2000 and 2006 and leveling again after 2006. However, perceived availability rose from 23% in 1987 (when it was first measured) to 32% in 1992, and then changed very little through 1998 before starting to decline gradually. It stood at 14% in 2012, following a statistically significant decline from 2011 (-3.0 percentage points, s). For this drug, as for many others, it appears that availability was not the determining factor in the shifts in use.

- There has been a fairly wide fluctuation in the reported availability of ***heroin*** during the study, with a rise from the early 1980s through the mid-1990s, and a decline from the late 1990s through 2012 (Figure 9-5b). The stability of heroin use during the 1980s and early 1990s, despite a substantial increase in availability, is worthy of note. It suggests that availability alone is not sufficient to stimulate use (though it may well affect the consumption pattern of established users). It was not until the 1990s that methods for taking heroin by other than injection began to be widely known, as purity continued to increase. The view that these methods (snorting and smoking) were less dangerous probably removed an important deterrent for a number of teenagers. By 2012, only 20% of 12th graders thought they could get heroin fairly or very easily, compared with 36% in 1998.

- Much like heroin, ***narcotics other than heroin*** showed a gradual upward shift in perceived availability among 12th graders, from 26% in 1978 to 38% in 1989 (see Figure 9-5b). Some decline in 1991 was followed by a second period of gradual increase from 1991 through 2000 (to 44%). Perceived availability then fell back to 36% by 2009. Use of narcotics other than heroin grew substantially during the 1990s through 2002, before leveling. Unfortunately, the availability question for narcotics other than heroin did not address the issue of changes in the availability of specific drugs within this general class, like OxyContin and Vicodin. Since it seemed quite likely that they had different trends in

availability than the class as a whole, the list of drug examples given for narcotics other than marijuana was changed in 2010 to include OxyContin, Vicodin, and Percocet (methadone and opium were dropped from the list). The change in the question wording likely explains the large change seen in the data. For this reason 2009 and 2010 data cannot be compared. In 2012, 50% of 12th graders say they could get drugs of this type fairly easily, making these drugs the next most available after marijuana.

- As illustrated in Figure 9-5b, ***sedatives*** (***barbiturates***) and ***tranquilizers*** were much more available to 12th graders in 1975 compared to 2012, while the availability of ***heroin*** is very similar between 1975 and 2012.[103]

- ***Anabolic steroid*** availability was quite high (at 47%) among 12th graders from the point of first measurement in 1991 through about 2002 (46%), before some decline began to occur, dropping to 40% in 2007 and to 25% by 2012 (see Figure 9-5d).

Trends in Perceived Availability for Eighth and Tenth Graders

Data on the perceived availability of drugs was first gathered from 8th and 10th graders in 1992. For most of the illegal drugs, perceived availability among these students increased during the first half of the 1990s, peaked around 1996 or 1997, leveled or began dropping thereafter, and reached a low in 2012 among 8th and 10th graders. The exception was marijuana for 10th graders, which reached its low point in 2011 and then leveled. These changes generally parallel fluctuations in use. The trend data on perceived availability are presented in Tables 9-6 and 9-7.

- Availability of ***ecstasy*** (***MDMA***) was first measured for 8th and 10th graders in 2001. In 2002, both use and availability declined some. Among 8th graders, availability declined from 2001 (24%) through 2012 (10%). Among 10th graders availability declined between 2002 (41%) and 2012 (21%). In both grades the declines between 2011 and 2012 were significant (-2.5 and -3.9 percentage points, respectively). As with 12th graders, the decline in availability seemed to lag behind the decline in use for this drug, suggesting that use was driving availability and not vice versa.

- Between 1992 and 1996, the proportion of students seeing ***marijuana*** as readily available rose sharply, from 42% to 55% among 8th graders and from 65% to 81% among 10th graders. After 1996, perceived availability declined in both grades; however, there has been relatively little change in the past few years, suggesting that the recent upturn in use was related more to the declining perceptions of risk than to changes in availability.

- In the mid-1990s, the perceived availability of several other illicit drugs (***LSD***, ***crack***, ***powdered cocaine***, ***heroin***, and ***amphetamines***) rose modestly among 8th and 10th graders as their use of these drugs increased. (Use is not measured in these grades for ***PCP*** and ***narcotics other than heroin***; but availability is, and it rose also.) Both grades then showed some decline in the availability of these drugs, and most have continued to drop since, with the 2012 declines being significant for LSD and ecstasy in both grades.

[103]Figure 9-5b shows a sharp increase in the availability of sedatives (barbiturates) in 2004, but this shift may have been caused by a change in question wording.

- Availability of ***LSD*** dropped sharply in the early 2000s, coinciding with a steep decline in use among 8th and 10th graders. In recent years perceived availability has continued to decline gradually and use generally has leveled. There was a significant decline in availability in 2012 reported by both grades. As stated above, because perceived risk and disapproval did not move in a way that could explain this decline in use, but availability did, we are inclined to believe that a change in availability was driving use in this case.

- ***Sedatives*** (***barbiturates***) and ***tranquilizers*** did not show any increase in perceived availability in the early 1990s in 8th or 10th grade, but both drugs did show a decline after 1995 or 1996 until about 2000, when availability leveled. In both grades, perceived availability for both classes of drugs has shown some further decline since about 2001, including significant drops in perceived availability of sedatives (barbiturates) among 8th graders in 2009 and again in 2011 and in 2012, and among 10th graders in 2011 and in 2012. Overall, the proportion saying sedatives are fairly or very easy to get has fallen from 21% in 2001 to 11% in 2012 in 8th grade, and from 33% to 20% in 10th grade. For tranquilizers, perceived availability has been declining in 8th and 10th grades since 2001, including significant drops in both 2011 and 2012 in 8th grade. The proportion saying they could get tranquilizers fairly or very easily has declined from 18% in 2001 to 11% in 2012 among 8th graders, and from 29% to 20% among 10th graders.

  Prescription type drugs used outside of medical supervision (tranquilizers, sedatives, amphetamines, and narcotics) have been the subject of particular concern in the past decade, as their prevalence rose and then sustained for some years. Substantial efforts to curb their availability to young people include "take-back" programs sponsored by the DEA (see http://www.deadiversion.usdoj.gov/drug_disposal/takeback/) and efforts by various government agencies and private organizations to persuade parents and other family members not to leave any such drugs where adolescents can get them. The results reported here, showing a considerable decline in perceived availability of these drugs to adolescents, suggest that these efforts have been working.

- ***Crystal methamphetamine*** has generally been one of the less available drugs to 8th and 10th graders. For 8th graders, availability was level from 1992 to 1998 at around 16%, and declined some through 2012 (9%). For 10th graders, availability increased a little from 1992 (19%) to 1997 (23%), declined in the late 1990s, stayed fairly level in the early 2000s, and has been dropping since 2005. In 2012 it stands at 11%.

- After holding fairly steady at very high levels for some years, the availability of ***cigarettes*** to 8th and 10th graders began to decline modestly after 1996, very likely as a result of increased enforcement of laws prohibiting sale to minors under the Synar Amendment and FDA regulations. Those declines continued among 8th graders, including a significant decrease in 2009; the proportion saying that they could get cigarettes fairly or very easily fell from 77% in 1996 to 56% in 2010, before declining significantly to 51% in 2012. Over the same interval, the decline among 10th graders was from 91% in 1996 to 73% in 2012. These are encouraging changes.

- ***Alcohol*** also has shown some declines in availability among 8th graders, from 76% in 1992 to 58% in 2012. For 10th graders availability is down from the peak level of 90% in 1996 to 78% in 2012. It is worth noting that even after these modest declines, alcohol clearly remains accessible to the great majority of underage teens.

- The availability of ***anabolic steroids*** changed rather little among 8th and 10th graders between 1992 and about 2000 or 2001; since then there has been a relatively steady and substantial decline (from 23% in 2001 to 13% in 2012 among 8th graders, and from 35% in 2000 to 18% among 10th graders). The scheduling of steroids by the DEA no doubt played a role in this decline in availability. Anabolic steroids were placed on Schedule III of the Controlled Substances Act in 1990 to take effect in early 1991, while androstenedione was scheduled in 2004 to take effect in early 2005.

The Importance of Supply Reduction Versus Demand Reduction

Overall, supply reduction—that is, reducing the availability of drugs—does not appear to have played as major a role as many had assumed in four of the five most important downturns in illicit drug use that have occurred to date, namely, those for ***marijuana***, ***cocaine***, ***crack***, and ***ecstasy*** (see, for example, Figures 8-4, 8-5, and 8-6). In the case of cocaine, perceived availability actually rose during much of the period of downturn in use. (These data are corroborated by data from the Drug Enforcement Administration on trends in the price and purity of cocaine on the streets.[104]) For ***marijuana***, perceived availability has remained very high for 12th graders since 1976, while use dropped substantially from 1979 through 1992 and fluctuated considerably thereafter. Perceived availability for ecstasy did increase in parallel with increasing use in the 1990s, but the decline phase for use appears to have been driven much more by changing beliefs about the dangers of ecstasy than by any sharp downturn in availability. Similarly, ***amphetamine*** use declined appreciably from 1981 to 1992, with only a modest corresponding change in perceived availability. Finally, until 1995, ***heroin*** use had not risen among 12th graders even though availability had increased substantially.

- What *did* change dramatically were young peoples' beliefs about the dangers of using ***marijuana***, ***cocaine***, ***crack***, and ***ecstasy***. We believe that increases in perceived risk led to a decrease in use directly through their impact on young people's demand for these drugs and indirectly through their impact on personal disapproval and, subsequently, peer norms. Because the perceived risk of ***amphetamine*** use was changing little when amphetamine use was declining substantially (1981–1986), other factors must have helped to account for the decline in demand for that class of drugs—quite conceivably some displacement by cocaine. Because three classes of drugs (marijuana, cocaine, and amphetamines) have shown *different* patterns of change, it is highly unlikely that a general factor (e.g., a broad shift against drug use) can explain their various trends.

- The increase in ***marijuana*** use in the 1990s among 12th graders added more compelling evidence to this interpretation. It was *both* preceded and accompanied by a decrease in perceived risk. (Between 1991 and 1997, the perceived risk of regular marijuana use

[104]Caulkins, J. P. (1994). *Developing price series for cocaine.* Santa Monica, CA: RAND.

declined 21 percentage points.) Peer disapproval dropped sharply from 1993 through 1997, *after* perceived risk began to change, consistent with our interpretation that perceived risk can be an important determinant of disapproval as well as of use. Perceived availability remained fairly constant from 1991 to 1993 and then increased seven percentage points through 1998.

- We do think that the expansion in the world supply of ***heroin***, particularly in the 1990s, had the effect of dramatically raising the purity of heroin available on the streets, thus allowing for new means of ingestion. The advent of new forms of heroin, rather than any change in respondents' beliefs about the dangers associated with injecting heroin, very likely contributed to the fairly sharp increase in heroin use in the 1990s. Evidence from this study, showing that a significant portion of the self-reported heroin users in recent years are using by means other than injection, lends credibility to this interpretation. The dramatic decline in ***LSD*** use in the early to mid-2000s is also not explainable by means of concurrent changes in perceived risk or disapproval; but availability did decline sharply during this period and very likely played a key role in reducing use.

We should also note that other factors, such as price, could play an important role. Analyses of MTF data have shown, for example, that price probably played an important role in the decline of marijuana use in the 1980s, and in changes in cigarette use in the 1990s.[105, 106]

[105]Pacula, R. L., Grossman, M., Chaloupka, F. J., O'Malley, P. M., Johnston, L. D., & Farrelly, M. C. (2001). Marijuana and youth. In J. Gruber (Ed.), *Risky behavior among youths: An economic analysis* (pp. 271–326). Chicago: The University of Chicago Press. Also appears as Working Paper No. 7703, National Bureau of Economic Research, Inc. (2000).

[106]Tauras, J. A., O'Malley, P. M., & Johnston, L. D. (2001). *Effects of price and access laws on teenage smoking initiation: A national longitudinal analysis.* (ImpacTeen/Youth, Education, and Society Research Paper No. 1.) Chicago, IL: University of Illinois at Chicago and Ann Arbor, MI: The University of Michigan, Institute for Social Research. Available online at http://www.yesresearch.org/publications/reports/AccessLaws.pdf.

TABLE 9-1
Trends in Proportion of Friends Disapproving of Drug Use for 12th Graders

How do you think your close friends feel (or would feel) about you . . .	Percentage saying friends disapprove [a]																		
	1975[b]	1976	1977[b]	1978	1979[b]	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Trying marijuana once or twice	44.3	—	41.8	—	40.9	42.6	46.4	50.3	52.0	54.1	54.7	56.7	58.0	62.9	63.7	70.3	69.7	73.1	66.6
Smoking marijuana occasionally	54.8	—	49.0	—	48.2	50.6	55.9	57.4	59.9	62.9	64.2	64.4	67.0	72.1	71.1	76.4	75.8	79.2	73.8
Smoking marijuana regularly	75.0	—	69.1	—	70.2	72.0	75.0	74.7	77.6	79.2	81.0	82.3	82.9	85.5	84.9	86.7	85.9	88.0	83.5
Trying LSD once or twice	85.6	—	86.6	—	87.6	87.4	86.5	87.8	87.8	87.6	88.6	89.0	87.9	89.5	88.4	87.9	87.9	87.3	83.5
Trying cocaine once or twice	—	—	—	—	—	—	—	—	—	—	—	79.6	83.9	88.1	88.9	90.5	91.8	92.2	91.1
Taking cocaine occasionally	—	—	—	—	—	—	—	—	—	—	—	87.3	89.7	92.1	92.1	94.2	94.7	94.4	93.7
Trying crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.2	95.0	94.4	94.6	95.1
Taking crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	95.7	96.5	95.7	95.9	96.4
Trying cocaine powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	91.7	93.4	93.3	94.0	94.2
Taking cocaine powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.0	95.0	94.8	94.8	95.2
Trying an amphetamine once or twice [c]	78.8	—	80.3	—	81.0	78.9	74.4	75.7	76.8	77.0	77.0	79.4	80.0	82.3	84.1	84.2	85.3	85.7	83.2
Taking one or two drinks nearly every day	67.2	—	71.0	—	71.0	70.5	69.5	71.9	71.7	73.6	75.4	75.9	71.8	74.9	76.4	79.0	76.6	77.9	76.8
Taking four or five drinks nearly every day	89.2	—	88.1	—	88.5	87.9	86.4	86.6	86.0	86.1	88.2	87.4	85.6	87.1	87.2	88.2	86.4	87.4	87.2
Having five or more drinks once or twice each weekend	55.0	—	53.4	—	51.3	50.6	50.3	51.2	50.6	51.3	55.9	54.9	52.4	54.0	56.4	59.0	58.1	60.8	58.5
Smoking one or more packs of cigarettes per day	63.6	—	68.3	—	73.4	74.4	73.8	70.3	72.2	73.9	73.7	76.2	74.2	76.4	74.4	75.3	74.0	76.2	71.8
Approximate weighted N =	*2,488*	—	*2,615*	—	*2,716*	*2,766*	*3,120*	*3,024*	*2,722*	*2,721*	*2,688*	*2,639*	*2,815*	*2,778*	*2,400*	*2,184*	*2,160*	*2,229*	*2,220*

(Years cont.)

(Table continued on next page.)

TABLE 9-1 (cont.)
Trends in Proportion of Friends Disapproving of Drug Use for 12th Graders

How do you think your close friends feel (or would feel) about you . . .	Percentage saying friends disapprove [a]																			
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Trying marijuana once or twice	62.7	58.1	55.8	53.0	53.8	55.1	58.1	57.6	54.1	58.4	59.5	60.9	62.3	60.4	60.8	61.4	54.9	53.0	52.9	-0.1
Smoking marijuana occasionally	69.1	65.4	63.1	59.9	60.4	61.6	63.9	64.3	60.3	64.2	65.0	67.6	68.1	65.8	66.3	68.5	61.8	59.4	59.5	+0.1
Smoking marijuana regularly	80.6	78.9	76.1	74.1	74.7	74.5	76.1	77.8	75.3	77.0	77.3	79.5	79.8	78.3	78.0	79.1	73.8	73.3	72.7	-0.6
Trying LSD once or twice	83.4	82.6	80.8	79.3	81.7	83.2	84.7	85.5	84.9	87.5	87.3	88.4	89.5	88.4	86.3	87.2	84.5	85.6	85.0	-0.7
Trying cocaine once or twice	91.4	91.1	89.2	87.3	88.8	88.7	90.2	89.3	89.1	91.2	87.9	89.0	88.7	89.6	88.7	90.2	89.7	89.7	89.2	-0.5
Taking cocaine occasionally	93.9	93.8	92.5	90.8	92.2	91.8	92.8	92.2	92.2	93.0	91.0	92.3	92.4	93.1	92.0	92.7	91.8	92.9	92.8	0.0
Trying crack once or twice	93.9	93.8	93.0	92.3	93.7	93.9	94.6	92.3	93.1	94.5	92.2	92.8	93.5	93.2	93.6	94.5	93.1	93.5	95.1	+1.6
Taking crack occasionally	95.3	96.1	94.7	94.8	96.2	96.0	96.9	95.0	94.7	95.6	94.3	95.5	95.3	95.0	95.4	95.7	94.7	94.7	96.2	+1.5
Trying cocaine powder once or twice	93.2	93.5	92.1	91.4	91.9	91.8	93.3	91.9	92.3	92.7	90.9	91.1	91.9	91.8	92.4	93.5	92.8	92.4	94.6	+2.2 s
Taking cocaine powder occasionally	94.7	95.3	93.6	93.9	94.5	94.0	96.3	93.7	93.8	94.1	92.9	94.1	94.6	93.9	94.2	94.6	94.3	93.7	96.2	+2.5 ss
Trying an amphetamine once or twice [c]	84.5	81.9	80.6	80.4	82.6	83.0	84.1	83.8	83.3	85.9	84.7	86.1	86.7	87.3	87.1	87.0	85.8	84.6	83.7	-0.9
Taking one or two drinks nearly every day	75.8	72.6	72.9	71.5	72.3	71.7	71.6	73.4	71.6	74.7	72.8	74.0	73.2	74.5	75.2	75.5	75.0	74.9	74.0	-1.0
Taking four or five drinks nearly every day	85.2	84.1	82.6	82.5	82.8	82.2	82.8	84.4	80.1	83.1	82.9	82.7	83.3	84.8	84.7	84.6	83.4	85.8	84.1	-1.7
Having five or more drinks once or twice each weekend	59.1	58.0	57.8	56.4	55.5	57.6	57.7	57.8	55.6	60.3	59.4	59.9	60.6	60.0	62.1	63.5	62.0	62.2	62.3	+0.1
Smoking one or more packs of cigarettes per day	72.4	69.2	69.3	68.5	69.0	71.2	72.6	74.5	75.7	79.2	78.6	81.1	81.2	81.4	82.5	81.6	81.4	81.6	83.2	+1.7
Approximate weighted N =	*2,149*	*2,177*	*2,030*	*2,095*	*2,037*	*1,945*	*1,775*	*1,862*	*1,820*	*2,133*	*2,208*	*2,183*	*2,188*	*2,161*	*2,090*	*2,033*	*2,101*	*2,132*	*2,126*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

[b] These numbers have been adjusted to correct for a lack of comparability of question context among administrations. (See text for discussion.)

[c] In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin.

TABLE 9-2
Trends in 12th Graders' Exposure to Drug Use

(Entries are percentages.)

During the LAST 12 MONTHS, how often have you been around people who were taking each of the following to get high or for "kicks"?	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Any illicit drug [a]																			
% saying not at all	—	17.4	16.5	15.1	15.0	15.7	17.3	18.6	20.6	22.1	22.3	24.5	26.1	28.7	31.4	32.4	35.8	38.7	33.9
% saying often	—	34.8	39.0	40.7	40.4	36.3	36.1	31.4	29.8	28.3	27.2	26.3	23.3	20.8	22.0	20.7	18.2	18.0	24.0
Any illicit drug other than marijuana [a]																			
% saying not at all	—	44.9	44.2	44.7	41.7	41.5	37.4	37.5	40.6	40.2	40.7	44.7	48.3	52.2	52.9	54.6	60.0	58.4	57.4
% saying often	—	11.8	13.5	12.1	13.7	14.1	17.1	16.6	14.2	14.6	12.9	12.1	10.2	9.6	10.7	9.2	7.9	7.5	9.6
Marijuana																			
% saying not at all	—	20.5	19.0	17.3	17.0	18.0	19.8	22.1	23.8	25.6	26.5	28.0	29.6	33.0	35.2	36.6	40.4	43.2	39.0
% saying often	—	32.5	37.0	39.0	38.9	33.8	33.1	28.0	26.1	24.8	24.2	24.0	20.6	17.9	19.5	17.8	16.0	15.6	20.9
LSD																			
% saying not at all	—	78.8	80.0	81.9	81.9	82.8	82.6	83.9	86.2	87.5	86.8	86.9	87.1	86.6	85.0	85.1	84.3	82.2	79.0
% saying often	—	2.2	2.0	1.8	2.0	1.4	2.0	1.9	1.4	1.5	1.3	1.6	1.8	1.6	2.2	2.6	2.9	3.0	3.9
Other hallucinogens [b]																			
% saying not at all	—	76.5	76.7	76.7	77.6	79.6	82.4	83.2	86.9	87.3	87.5	88.2	90.0	91.0	91.2	90.6	90.6	90.3	87.9
% saying often	—	3.1	3.2	2.9	2.2	2.2	2.0	2.6	1.1	1.7	1.4	1.5	1.2	1.1	1.3	1.2	1.3	1.1	1.9
Cocaine																			
% saying not at all	—	77.0	73.4	69.8	64.0	62.3	63.7	65.1	66.7	64.4	61.7	62.6	65.1	69.8	69.8	72.3	78.7	80.2	80.8
% saying often	—	3.0	3.7	4.6	6.8	5.9	6.6	6.6	5.2	6.7	7.1	7.8	5.9	5.1	5.4	4.7	3.4	2.7	2.9
Heroin																			
% saying not at all	—	91.4	90.3	91.8	92.4	92.6	93.4	92.9	94.9	94.0	94.5	94.0	94.2	94.3	93.5	94.6	94.9	94.6	94.3
% saying often	—	0.8	1.1	0.9	0.7	0.4	0.6	1.0	0.7	1.1	0.5	1.0	0.9	0.8	1.0	0.5	0.9	0.7	1.1
Narcotics other than heroin [c]																			
% saying not at all	—	81.9	81.3	81.8	82.0	80.4	82.5	81.5	82.7	82.0	81.6	84.4	85.6	85.2	86.2	85.8	88.7	88.9	87.6
% saying often	—	1.8	2.4	2.0	1.7	1.7	1.7	2.4	2.2	2.0	1.8	2.1	1.7	1.7	1.7	1.6	1.4	1.3	1.7
Amphetamines [d]																			
% saying not at all	—	59.6	60.3	60.9	58.1	59.2	50.5	49.8	53.9	55.0	59.0	63.5	68.3	72.1	72.6	71.7	76.4	75.5	75.3
% saying often	—	6.8	7.9	6.7	7.4	8.3	12.1	12.3	10.1	9.0	6.5	5.8	4.5	4.1	4.7	4.1	3.1	3.0	3.9
Sedatives (barbiturates) [e]																			
% saying not at all	—	69.0	70.0	73.5	73.6	74.8	74.1	74.3	77.5	78.8	81.1	84.2	86.9	87.6	88.2	86.7	90.0	89.8	88.1
% saying often	—	4.5	5.0	3.4	3.3	3.4	4.0	4.3	3.0	2.7	1.7	2.1	1.5	1.4	1.7	1.7	1.2	1.1	1.6
Tranquilizers [f]																			
% saying not at all	—	67.7	66.0	67.5	67.5	70.9	71.0	73.4	76.5	76.9	76.6	80.4	81.6	81.8	84.9	83.7	85.8	87.3	86.2
% saying often	—	5.5	6.3	4.9	4.3	3.2	4.2	3.5	2.9	2.9	2.2	2.5	2.6	2.2	2.1	1.9	1.4	1.9	1.7
Alcohol																			
% saying not at all	—	6.0	5.6	5.5	5.2	5.3	6.0	6.0	6.0	6.0	6.0	5.9	6.1	6.9	7.7	6.4	8.3	9.4	8.2
% saying often	—	57.1	60.8	60.8	61.2	60.2	61.0	59.3	60.2	58.7	59.5	58.0	58.7	56.4	55.5	56.1	54.5	53.1	51.9
Approximate weighted N =	—	*2,950*	*3,075*	*3,682*	*3,253*	*3,259*	*3,608*	*3,645*	*3,334*	*3,238*	*3,252*	*3,078*	*3,296*	*3,300*	2,795	*2,556*	*2,525*	*2,630*	*2,730*

(Years cont.)

(Table continued on next page.)

TABLE 9-2 (cont.)
Trends in 12th Graders' Exposure to Drug Use

(Entries are percentages.)

During the LAST 12 MONTHS, how often have you been around people who were taking each of the following to get high or for "kicks"?	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Any illicit drug [a]																				
% saying not at all	29.2	24.7	22.0	21.2	22.8	22.1	24.0	23.5	23.5	26.4	25.7	27.0	26.3	29.2	28.1	25.9	24.0	23.4	23.6	+0.2
% saying often	29.3	32.3	33.8	34.7	33.2	35.6	32.6	33.6	32.6	31.8	30.3	29.9	29.7	27.8	28.6	31.4	33.2	34.6	34.9	+0.2
Any illicit drug other than marijuana [a]																				
% saying not at all	54.7	52.8	50.3	52.1	52.7	53.5	52.8	50.1	50.7	53.7	51.7	54.1	54.7	54.6	56.2	55.7	52.8	53.4	55.0	+1.5
% saying often	9.4	11.1	12.1	11.7	9.9	11.7	10.5	11.9	12.6	10.8	11.4	10.6	11.4	10.8	8.2	9.4	10.2	11.5	11.6	+0.1
Marijuana																				
% saying not at all	32.8	27.3	24.4	23.2	24.5	24.2	26.2	25.1	25.8	28.6	27.8	29.2	28.6	31.6	30.2	28.2	25.8	25.4	24.9	-0.5
% saying often	27.6	30.7	31.8	32.9	31.4	34.4	30.3	30.8	30.7	30.4	28.0	27.0	27.8	25.1	27.0	29.3	31.3	32.3	32.2	-0.2
LSD																				
% saying not at all	75.8	73.9	72.4	74.1	76.9	76.4	78.0	78.4	82.8	85.8	87.6	89.2	88.4	87.6	87.9	88.1	85.9	86.5	87.0	+0.5
% saying often	4.2	6.1	4.7	5.1	3.2	4.1	3.3	2.8	2.6	1.8	1.6	1.5	1.9	1.7	0.8	1.3	1.4	1.4	1.6	+0.2
Other hallucinogens [b]																				
% saying not at all	86.0	84.2	83.4	82.2	84.1	82.3	83.7‡	71.9	73.6	74.2	75.2	75.7	76.2	76.5	76.4	78.0	75.0	76.2	77.3	+1.1
% saying often	2.3	2.5	2.7	2.8	1.7	2.7	2.1‡	3.6	4.5	3.2	3.2	2.6	4.1	3.0	1.9	2.7	2.2	2.5	2.7	+0.2
Cocaine																				
% saying not at all	81.2	78.4	75.0	74.4	73.4	74.2	75.8	75.5	75.1	75.2	75.6	74.3	71.8	74.8	75.9	80.0	80.0	80.7	82.6	+2.0
% saying often	2.5	3.2	4.0	4.2	3.7	4.6	4.6	4.5	5.3	5.0	4.7	4.2	5.4	4.6	3.6	2.6	2.1	2.3	2.8	+0.5
Heroin																				
% saying not at all	92.7	92.1	91.4	90.9	91.3	91.9	90.9	91.3	91.7	92.7	93.4	92.7	91.1	91.4	93.2	92.7	91.7	93.6	94.0	+0.4
% saying often	0.7	1.2	1.6	1.2	0.9	1.3	1.5	0.7	1.3	1.2	1.2	0.8	1.7	1.1	0.8	0.8	1.0	1.1	1.3	+0.2
Narcotics other than heroin [c]																				
% saying not at all	85.1	84.5	81.5	79.6	79.3	78.1	78.9	78.4	77.5	78.2	79.7	81.0	81.1	81.1	83.7	83.7‡	69.7	72.5	72.9	+0.5
% saying often	1.7	2.1	3.4	2.5	2.8	3.9	2.9	3.0	3.8	3.0	3.3	2.6	3.4	3.4	2.1	2.7‡	5.3	5.6	5.7	+0.2
Amphetamines [d]																				
% saying not at all	71.8	71.9	68.5	69.0	70.1	69.9	70.5	68.5	69.4	72.6	72.8	73.6	73.4	76.2	76.7	76.2	76.4‡	72.0	73.8	+1.8
% saying often	4.1	4.5	5.6	5.2	4.7	6.3	4.4	6.0	6.4	4.9	5.3	4.1	5.6	4.3	3.0	4.3	3.3‡	6.1	5.7	-0.4
Sedatives (barbiturates) [e]																				
% saying not at all	87.0	85.5	84.5	83.9	83.9	82.9	83.7	82.9	82.3	85.2‡	78.5	79.6	78.7	81.2	83.3	82.4	81.2	83.8	84.0	+0.2
% saying often	1.7	2.0	2.9	2.5	2.7	3.8	2.7	2.7	4.6	2.8‡	4.1	3.7	3.9	3.9	2.1	3.4	2.5	3.1	2.9	-0.1
Tranquilizers [f]																				
% saying not at all	83.5	84.3	82.1	81.1	82.7	81.8	82.3‡	76.2	77.3	79.0	77.9	79.1	78.2	80.7	80.1	80.0	81.8	83.0	82.4	-0.6
% saying often	1.8	2.3	3.5	3.2	2.8	3.7	3.5‡	4.9	5.8	4.2	4.1	4.5	5.4	4.9	3.7	3.9	2.8	3.4	3.3	-0.1
Alcohol																				
% saying not at all	10.0	8.8	8.5	8.6	7.8	8.2	9.3	9.2	10.5	11.7	12.4	12.6	12.4	13.5	14.3	13.5	14.8	15.0	14.7	-0.3
% saying often	54.0	54.0	54.5	53.9	54.5	53.5	50.2	52.7	50.8	49.0	48.2	49.1	47.8	46.4	45.4	46.3	45.8	40.7	43.0	+2.3
Approximate weighted N =	*2,581*	*2,608*	*2,407*	*2,595*	*2,541*	*2,312*	*2,153*	*2,147*	*2,162*	*2,454*	*2,456*	*2,469*	*2,372*	*2,448*	*2,332*	*2,274*	*2,434*	*2,372*	*2,299*	

(Table continued on next page.)

TABLE 9-2 (cont.)
Trends in 12th Graders' Exposure to Drug Use

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' ‡ ' indicates some change in the question. See relevant footnote.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]The data presented here were derived from responses to questions on the drugs included in this table. Any illicit drug includes exposure to any of the drugs presented in this table with the exception of alcohol.

[b]In 2001 the question text was changed from other psychedelics to other hallucinogens and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

[c]In 2010 the list of examples for narcotics other than heroin was changed from methadone and opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

[d]In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin. This change likely explains the discontinuity in the 2011 results.

[e]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

[f]In 2001 for tranquilizers, Xanax was added to the list of examples. This change likely explains the discontinuity in the 2001 results.

TABLE 9-3
Trends in Friends' Use of Drugs as Estimated by 8th Graders

(Entries are percentages.)

How many of your friends would you estimate . . .	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Smoke marijuana																							
% saying any	21.9	25.1	30.8	41.1	46.1	50.8	50.8	46.7	44.4	42.6	46.1	42.3	40.9	38.3	38.7	38.1	35.6	37.5	39.3	43.8	41.9	41.0	-0.9
% saying most or all	3.3	4.1	6.0	10.5	12.7	15.2	13.8	12.6	12.1	10.4	11.4	10.0	9.4	7.8	9.1	8.9	7.7	8.0	9.1	12.1	10.7	11.0	+0.3
Use inhalants																							
% saying any	20.5	23.1	26.3	29.2	32.1	32.3	32.9	31.9	31.0	29.0	29.3	25.7	27.8	27.4	28.1	28.8	25.8	27.1	27.5	27.5	25.7	22.9	-2.8 s
% saying most or all	2.4	2.9	3.7	4.2	5.0	5.2	4.8	4.5	4.7	4.0	3.9	3.4	4.0	4.0	4.2	4.5	3.6	3.6	4.6	4.0	3.4	3.2	-0.3
Take crack																							
% saying any	8.6	10.9	12.5	15.2	17.7	18.5	19.3	19.2	18.5	18.1	18.9	17.4	17.2	15.8	16.7	17.0	15.2	16.1	15.8	16.6	15.1	14.3	-0.8
% saying most or all	0.9	1.0	1.3	1.6	1.6	2.0	1.8	1.9	1.9	1.6	2.0	1.6	1.7	1.7	1.7	1.8	1.6	1.4	1.7	1.8	1.5	1.4	0.0
Take cocaine powder																							
% saying any	8.4	10.7	12.1	14.3	16.2	17.4	17.6	17.1	16.7	16.1	16.3	14.8	14.9	13.8	15.0	15.6	13.4	14.6	13.2	14.4	12.8	12.5	-0.4
% saying most or all	0.9	1.1	1.3	1.7	1.6	1.7	1.6	2.0	1.8	1.6	1.8	1.7	1.6	1.6	1.5	1.8	1.5	1.4	1.6	1.5	1.4	1.2	-0.2
Take heroin																							
% saying any	6.1	7.3	8.9	10.3	11.6	12.0	12.2	11.8	11.4	10.9	11.2	10.5	10.2	9.4	9.8	10.3	8.9	9.3	9.5	10.1	9.2	8.1	-1.1
% saying most or all	0.7	0.9	0.9	1.3	1.3	1.4	1.2	1.3	1.3	1.1	1.4	1.3	1.0	1.2	1.1	1.1	1.1	1.1	1.2	1.1	1.2	0.9	-0.3 s
Drink alcoholic beverages																							
% saying any	72.1	76.4	75.7	77.0	75.9	77.1	75.8	74.6	73.4	72.7	72.3	68.1	65.4	65.9	63.9	64.7	63.7	64.1	62.8	63.7	59.8	57.2	-2.5
% saying most or all	21.0	23.7	25.5	27.4	27.5	28.8	25.9	25.0	24.9	23.6	22.7	20.1	19.6	19.3	17.6	19.1	17.6	17.9	17.8	18.0	15.3	13.9	-1.5
Get drunk at least once a week																							
% saying any	42.8	48.0	48.0	50.3	48.7	51.2	48.3	47.6	48.7	46.6	45.5	42.3	40.6	39.8	38.4	40.5	39.5	39.3	38.3	39.9	34.8	33.2	-1.6
% saying most or all	7.2	8.4	9.0	10.6	9.9	10.9	9.3	8.8	9.6	9.1	8.6	7.4	7.7	7.1	6.6	6.6	6.6	6.2	6.9	6.9	5.6	5.1	-0.5
Smoke cigarettes																							
% saying any	67.7	72.4	73.8	76.1	76.1	78.1	76.9	75.2	70.9	67.9	64.2	58.6	56.0	54.0	52.2	51.7	49.7	49.6	49.5	51.6	47.3	43.9	-3.3
% saying most or all	11.8	14.4	16.7	19.0	20.5	22.5	19.7	19.4	16.4	13.0	10.6	9.0	8.9	8.1	7.5	7.5	6.1	5.7	5.7	6.3	5.1	4.5	-0.6
Use smokeless tobacco																							
% saying any	36.5	37.5	37.3	38.6	37.8	37.9	34.5	32.7	30.0	28.0	27.3	24.5	25.1	24.9	23.3	25.5	24.6	25.1	26.7	27.4	26.7	23.9	-2.8
% saying most or all	3.8	4.2	3.8	4.8	4.7	5.1	3.5	3.5	3.5	2.6	2.9	2.5	2.9	3.0	2.5	2.7	2.6	2.7	3.4	3.3	3.2	2.4	-0.8
Approximate weighted N =	*16,000*	*16,600*	*16,500*	*15,800*	*15,300*	*16,100*	*16,100*	*16,000*	*10,100*	*10,000*	*9,700*	*9,200*	*10,400*	*10,500*	*10,400*	*10,200*	*9,900*	*9,600*	*9,200*	*9,600*	*10,200*	*9,400*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. In 2000, this set of questions was removed from one of the four forms in which it appeared, which resulted in a slight adjustment in the average change scores that year. To correct for this, although this set of questions was asked in all four forms in 1999, the data presented here for 1999 are from only the three forms in which the questions are still asked. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

TABLE 9-4
Trends in Friends' Use of Drugs as Estimated by 10th Graders

(Entries are percentages.)

How many of your friends would you estimate . . .	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Smoke marijuana																							
% saying any	48.3	45.9	52.7	63.4	68.5	73.5	73.4	70.4	70.5	70.6	72.8	69.6	68.0	66.2	66.2	66.3	66.4	64.6	67.6	70.9	70.9	70.7	-0.2
% saying most or all	7.9	8.0	11.2	18.0	21.3	26.4	25.0	23.5	23.3	22.4	23.8	23.3	21.8	19.2	19.5	18.5	17.8	18.9	22.0	23.9	25.6	26.2	+0.6
Use inhalants																							
% saying any	17.3	17.8	21.1	23.6	25.3	25.7	23.7	22.8	21.4	20.6	21.4	19.3	18.8	18.4	18.7	20.6	21.2	21.1	19.7	20.2	18.1	15.3	-2.8 s
% saying most or all	1.4	1.5	1.8	2.0	2.1	2.2	2.2	2.5	2.1	2.2	1.8	2.1	1.9	1.7	2.0	2.2	2.1	2.2	2.0	2.1	1.7	1.5	-0.1
Take crack																							
% saying any	13.2	13.2	15.1	17.3	19.8	21.4	22.0	22.2	21.2	21.1	21.4	21.0	19.3	18.7	19.6	20.5	20.1	19.4	18.4	19.1	17.0	15.4	-1.6
% saying most or all	0.8	0.7	0.9	1.0	1.2	1.2	1.5	1.7	1.6	1.5	1.5	1.8	1.5	1.4	1.5	1.3	1.5	1.4	1.2	1.5	1.1	1.1	0.0
Take cocaine powder																							
% saying any	14.7	14.1	15.4	17.3	19.7	21.7	22.5	23.0	21.0	21.2	20.9	20.5	18.5	19.0	19.8	20.9	21.2	20.2	18.6	18.5	16.7	15.6	-1.1
% saying most or all	0.8	0.8	0.8	1.1	1.3	1.4	1.7	2.0	1.9	1.7	1.5	2.0	1.5	1.4	1.5	1.6	1.5	1.4	1.4	1.4	1.0	1.1	0.0
Take heroin																							
% saying any	7.8	8.1	9.3	10.5	11.1	11.7	11.8	11.5	10.7	10.1	11.4	10.3	9.9	9.0	9.8	10.1	9.9	10.6	10.0	10.6	9.1	8.8	-0.3
% saying most or all	0.6	0.6	0.7	0.6	0.8	0.7	0.9	1.0	1.0	0.8	0.9	1.2	1.0	0.8	1.0	0.9	0.9	1.1	1.1	0.9	0.6	0.8	+0.2
Drink alcoholic beverages																							
% saying any	92.9	91.3	91.8	92.8	92.2	92.4	92.2	91.4	91.4	92.0	91.3	89.4	87.5	87.7	88.0	88.1	88.2	87.0	87.5	87.8	85.9	84.9	-1.0
% saying most or all	49.6	48.2	49.9	50.3	50.7	53.4	50.7	50.1	50.3	52.0	50.2	45.7	44.9	44.5	43.9	46.2	44.7	41.3	42.1	42.0	38.2	39.3	+1.0
Get drunk at least once a week																							
% saying any	75.1	72.6	74.5	76.9	75.3	76.7	76.2	74.9	75.9	77.3	76.4	73.1	72.1	71.1	71.1	72.8	73.5	70.1	70.4	69.7	66.4	66.3	-0.1
% saying most or all	19.3	18.6	20.2	20.3	20.6	23.1	21.8	21.2	22.8	23.5	22.4	19.9	20.9	19.0	18.3	20.5	19.7	16.1	16.8	16.0	15.2	15.9	+0.7
Smoke cigarettes																							
% saying any	81.2	82.0	85.4	86.3	88.0	89.3	88.1	87.1	85.4	84.6	82.7	77.2	75.1	73.9	73.6	72.5	72.1	70.7	71.3	72.7	70.2	66.5	-3.6 ss
% saying most or all	18.2	18.7	22.8	24.7	27.8	32.8	29.3	27.8	25.9	21.2	19.3	15.8	14.2	13.4	12.6	13.0	11.8	10.5	11.4	11.8	10.2	8.9	-1.2
Use smokeless tobacco																							
% saying any	53.1	53.1	57.5	58.4	57.9	55.0	52.0	47.5	44.8	42.3	45.5	41.8	38.6	37.6	41.5	45.3	44.5	41.6	45.6	48.8	47.1	44.2	-2.9
% saying most or all	7.5	7.3	7.7	7.6	7.3	6.0	6.4	5.8	4.7	4.6	5.2	5.2	4.4	4.5	5.6	5.8	5.1	4.8	5.7	7.3	5.5	6.0	+0.6
Approximate weighted N =	*14,300*	*14,000*	*14,600*	*15,000*	*16,100*	*14,800*	*14,700*	*14,400*	*8,700*	*9,100*	*9,000*	*9,100*	*10,100*	*10,500*	*10,400*	*10,500*	*10,300*	*9,700*	*10,300*	*9,900*	*9,700*	*9,700*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. In 2000, this set of questions was removed from one of the four forms in which it appeared, which resulted in a slight adjustment in the average change scores that year. To correct for this, although this set of questions was asked in all four forms in 1999, the data presented here for 1999 are from only the three forms in which the questions are still asked. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

TABLE 9-5
Trends in Friends' Use of Drugs as Estimated by 12th Graders

(Entries are percentages.)

How many of your friends would you estimate . . .	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Take any illicit drug [a]																			
% saying any	85.8	84.6	86.9	87.5	89.0	87.5	85.4	86.3	82.6	81.0	82.4	82.2	81.7	79.1	76.9	71.0	69.1	67.3	71.0
% saying most or all	31.9	31.7	33.2	36.3	37.0	32.5	29.8	26.5	23.8	20.9	22.7	21.5	18.6	15.8	15.7	11.6	11.7	12.0	15.5
Take any illicit drug other than marijuana [a]																			
% saying any	66.7	55.5	57.5	56.4	61.3	62.4	63.3	64.7	61.2	61.3	61.8	63.3	62.4	56.5	56.2	50.1	46.3	47.1	48.7
% saying most or all	10.6	8.9	7.7	8.5	10.4	11.1	11.9	10.9	11.0	10.3	10.4	10.3	9.2	6.9	7.7	5.1	4.6	5.3	7.1
Smoke marijuana																			
% saying any	83.0	82.9	85.9	86.1	87.6	86.4	83.0	84.4	80.3	77.7	79.5	79.2	78.4	75.3	72.5	68.3	65.8	63.1	67.4
% saying most or all	30.3	30.6	32.3	35.3	35.5	31.3	27.7	23.8	21.7	18.3	19.8	18.2	15.8	13.6	13.4	10.1	10.0	10.3	13.9
Use inhalants																			
% saying any	24.3	18.6	18.9	20.0	19.1	17.8	16.5	18.4	16.1	19.3	21.2	22.4	24.7	20.8	22.1	20.0	19.2	22.2	23.7
% saying most or all	1.1	1.1	1.0	1.1	1.1	1.2	0.9	1.3	1.1	1.1	1.5	2.0	1.9	1.2	1.9	1.0	0.7	1.8	1.8
Use nitrites																			
% saying any	—	—	—	—	21.6	19.0	17.4	17.5	14.5	15.0	15.6	18.0	18.3	13.6	13.3	10.4	8.9	9.0	10.7
% saying most or all	—	—	—	—	1.9	1.3	1.2	0.9	0.7	1.2	1.0	1.2	1.3	0.7	0.9	0.6	0.4	0.7	0.7
Take LSD																			
% saying any	36.5	30.6	31.9	29.9	28.9	28.1	28.5	27.8	24.0	23.9	24.4	24.5	25.3	24.1	25.2	25.0	23.4	28.1	31.3
% saying most or all	2.7	2.8	3.0	2.0	1.9	1.8	2.2	2.4	1.4	2.0	1.5	1.8	1.6	1.5	2.4	1.9	1.7	2.4	3.8
Take other hallucinogens [b]																			
% saying any	41.2	30.3	31.4	29.2	28.2	28.2	26.3	25.6	22.1	21.3	22.0	22.3	21.7	17.8	18.1	15.9	15.1	17.0	19.3
% saying most or all	4.7	3.0	2.8	2.0	2.2	2.2	2.1	1.9	1.6	1.9	1.4	1.3	1.2	0.9	1.4	1.0	0.8	1.0	1.7
Take PCP																			
% saying any	—	—	—	—	27.8	22.2	17.2	17.3	14.2	14.2	15.9	16.1	15.5	13.5	14.7	13.0	12.0	12.7	15.6
% saying most or all	—	—	—	—	1.7	1.6	0.9	0.9	1.1	1.1	1.2	1.2	1.1	0.8	1.2	0.5	0.5	0.9	1.9
Take ecstasy (MDMA)																			
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.4	11.9	10.7	12.8
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.2	1.7	2.1	1.2
Take cocaine																			
% saying any	33.6	28.8	30.1	33.2	38.9	41.6	40.1	40.7	37.6	38.9	43.8	45.6	43.7	37.7	37.4	31.7	26.8	26.3	24.5
% saying most or all	3.4	3.2	3.6	4.0	6.0	6.1	6.3	4.9	5.1	5.1	5.8	6.2	5.1	3.4	3.7	2.1	1.5	1.5	2.1
Take crack																			
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	27.4	25.4	26.1	19.2	17.6	17.8	17.9
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	2.2	1.1	2.1	0.6	0.6	0.7	0.9
Take cocaine powder																			
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.3	24.6	19.8	19.7	18.1
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	2.5	1.8	2.0	1.6
Approximate weighted N =	*2,640*	*2,697*	*2,788*	*3,247*	*2,933*	*2,987*	*3,307*	*3,303*	*3,095*	*2,945*	*2,971*	*2,798*	*2,948*	*2,961*	*2,587*	*2,361*	*2,339*	*2,373*	*2,410*

(Years cont.)

(Table continued on next page.)

TABLE 9-5 (cont.)
Trends in Friends' Use of Drugs as Estimated by 12th Graders

(Entries are percentages.)

How many of your friends would you estimate . . .	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Take any illicit drug [a]																				
% saying any	78.3	78.6	80.6	83.4	84.6	82.0	82.0	82.8	81.8	80.7	81.2	79.8	78.8	77.7	80.1	79.2	80.4	81.7	78.9	-2.8
% saying most or all	20.3	21.7	23.8	23.7	25.9	25.5	24.5	25.2	23.1	23.5	23.0	20.2	20.9	21.7	21.3	22.4	25.4	29.1	26.4	-2.6
Take any illicit drug other than marijuana [a]																				
% saying any	53.7	53.7	54.5	55.1	55.6	51.2	52.5	55.0	54.3	50.0	51.4	51.3	51.0	50.0	49.3	49.4	53.7	49.9	48.9	-1.0
% saying most or all	7.1	7.7	8.9	7.0	8.9	7.4	7.4	7.0	6.1	6.7	7.3	6.7	5.3	6.5	5.3	5.6	7.1	6.5	5.5	-1.0
Smoke marijuana																				
% saying any	75.6	76.1	78.0	81.4	83.2	80.7	80.5	81.2	79.4	78.9	79.5	77.4	76.4	74.8	78.2	77.2	79.7	80.6	77.7	-2.9
% saying most or all	18.9	20.7	22.2	22.5	23.8	24.2	23.2	24.0	21.4	21.7	21.1	17.9	19.6	19.2	19.9	20.9	23.6	27.3	25.0	-2.4
Use inhalants																				
% saying any	26.5	27.5	27.2	27.4	25.9	21.6	23.5	22.2	21.0	17.5	17.9	18.1	19.0	17.9	18.0	18.0	19.0	16.4	12.3	-4.1 ss
% saying most or all	2.0	2.0	2.4	1.9	2.7	1.8	1.4	1.4	1.2	1.1	1.2	2.0	1.2	1.6	1.1	0.9	1.8	1.4	0.9	-0.5
Use nitrites																				
% saying any	10.0	10.7	11.2	11.9	12.9	10.9	11.0	11.9	11.2	8.5	9.4	9.1	8.1	7.7	7.3	7.7	—	—	—	—
% saying most or all	0.8	0.8	0.8	0.7	1.0	0.7	1.0	0.6	0.8	1.0	1.2	1.0	0.5	0.7	0.5	0.2	—	—	—	—
Take LSD																				
% saying any	34.1	36.9	37.9	36.5	36.8	32.2	31.9	32.2	28.6	21.9	23.5	19.5	18.7	18.3	20.9	21.3	22.3	22.5	21.3	-1.2
% saying most or all	4.2	4.8	5.0	3.7	4.7	3.9	3.1	2.9	1.7	1.9	1.5	1.5	0.8	1.2	1.1	1.1	1.5	1.4	1.3	0.0
Take other hallucinogens [b]																				
% saying any	21.4	23.8	26.4	26.3	27.4	22.5	24.0‡	35.4	33.6	30.1	31.9	31.0	30.1	30.1	29.4	30.5	32.3	31.8	29.5	-2.3
% saying most or all	2.2	2.2	2.3	2.6	3.1	2.4	2.4‡	2.9	2.3	2.4	2.6	2.2	1.7	1.7	1.8	1.6	2.0	2.1	2.0	-0.2
Take PCP																				
% saying any	15.5	18.3	20.3	19.7	20.2	16.8	17.5	19.1	17.2	13.6	11.8	10.1	10.6	9.4	9.4	9.3	—	—	—	—
% saying most or all	1.2	1.2	1.3	1.4	1.6	1.5	1.7	1.3	1.0	1.5	1.1	1.0	0.5	0.8	0.5	0.5	—	—	—	—
Take ecstasy (MDMA)																				
% saying any	15.9	20.7	24.2	27.7	24.5	26.7	37.3	41.9	38.0	34.2	28.9	23.1	23.1	23.6	24.7	23.5	25.9	27.5	26.8	-0.7
% saying most or all	1.7	2.8	3.0	2.6	2.5	2.7	4.8	5.2	3.7	2.7	3.2	2.5	1.9	2.1	2.4	2.2	2.1	2.7	2.7	0.0
Take cocaine																				
% saying any	26.1	24.8	28.1	28.5	31.2	27.8	27.2	27.1	26.8	23.8	29.3	28.1	29.7	29.7	25.2	24.0	22.9	18.8	18.1	-0.7
% saying most or all	1.5	2.0	2.2	2.0	3.2	2.9	2.0	1.7	1.7	2.4	2.3	2.3	1.9	2.1	1.2	1.8	1.4	1.0	0.8	-0.2
Take crack																				
% saying any	20.0	19.2	21.6	22.2	24.4	19.0	21.4	23.4	21.5	18.7	22.5	22.9	22.3	21.8	19.1	18.8	15.2	12.1	10.4	-1.7
% saying most or all	1.0	1.1	0.9	1.1	1.7	1.5	1.4	0.8	0.8	1.4	1.6	1.6	1.0	1.3	1.1	1.1	1.5	0.9	0.8	-0.1
Take cocaine powder																				
% saying any	20.7	19.2	22.8	24.8	22.9	22.0	21.3	20.1	22.4	23.2	25.4	23.2	22.8	22.3	22.6	19.1	17.6	15.9	17.4	+1.5
% saying most or all	1.9	1.7	1.9	2.0	1.9	1.9	1.8	1.5	1.9	1.9	3.3	1.7	1.7	1.8	1.5	1.5	1.0	1.6	1.5	-0.1
Approximate weighted N =	*2,337*	*2,379*	*2,156*	*2,292*	*2,313*	*2,060*	*1,838*	*1,923*	*1,968*	*2,233*	*2,271*	*2,266*	*2,217*	*2,253*	*2,125*	*2,110*	*2,195*	*2,208*	*2,144*	

(List of drugs continued)

TABLE 9-5 (cont.)
Trends in Friends' Use of Drugs as Estimated by 12th Graders

(Entries are percentages.)

How many of your friends would you estimate . . .	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Take heroin																			
% saying any	15.2	13.6	12.9	14.3	12.9	13.0	12.5	13.2	12.0	13.0	14.5	15.3	13.9	12.4	14.0	11.4	11.4	13.2	13.3
% saying most or all	0.7	0.8	0.7	0.9	0.5	1.0	0.5	0.7	0.8	0.8	0.9	1.1	0.9	0.7	1.1	0.4	0.4	0.7	1.1
Take other narcotics [c]																			
% saying any	28.8	24.1	23.7	23.2	23.1	22.4	23.1	23.9	20.8	21.4	22.8	21.8	23.2	19.2	19.2	17.2	13.7	14.9	16.1
% saying most or all	2.1	2.2	1.7	1.4	1.5	1.7	1.5	1.4	1.4	1.6	1.4	1.8	1.4	1.2	1.4	0.9	0.5	1.1	1.2
Take amphetamines [d]																			
% saying any	51.0	42.2	41.3	40.7	40.7	43.9	48.8	50.6	46.1	45.1	43.3	41.8	39.5	33.4	33.5	28.7	24.3	24.3	27.5
% saying most or all	5.9	5.6	4.1	4.7	4.3	4.8	6.4	5.4	5.1	4.5	3.4	3.4	2.6	1.9	2.6	1.9	1.3	1.3	2.0
Take crystal methamphetamine (ice)																			
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.1	10.2	8.9	9.4
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.7	1.0	1.5	1.2
Take sedatives (barbiturates) [e]																			
% saying any	45.0	36.3	34.7	32.5	30.7	30.5	31.1	31.3	28.3	26.6	27.1	25.6	24.3	19.7	20.3	17.4	14.8	16.4	17.8
% saying most or all	4.3	3.5	3.0	2.3	2.1	2.6	2.1	1.8	1.7	1.7	1.6	1.4	1.1	1.1	1.4	0.6	0.5	0.6	1.0
Take quaaludes																			
% saying any	31.7	27.0	28.3	27.0	27.7	32.5	35.0	35.5	29.7	26.1	26.0	23.5	22.0	17.1	16.6	14.3	12.0	13.1	14.2
% saying most or all	3.0	1.8	2.9	2.2	2.8	3.6	3.6	2.6	2.6	1.7	1.3	1.6	1.0	1.0	1.3	0.8	0.5	0.8	1.1
Take tranquilizers [f]																			
% saying any	45.6	36.3	37.8	34.8	32.0	29.7	29.5	29.9	26.7	26.6	25.8	24.2	23.3	19.9	18.0	14.9	13.5	14.6	15.5
% saying most or all	3.5	3.1	2.7	1.8	2.0	1.9	1.4	1.1	1.2	1.5	1.2	1.3	1.0	0.7	1.5	0.5	0.4	0.7	0.9
Drink alcoholic beverages																			
% saying any	96.7	95.1	94.4	94.9	95.4	96.1	94.7	95.7	95.5	94.6	94.6	95.6	95.4	95.7	95.1	92.0	91.2	90.5	88.9
% saying most or all	68.4	64.7	66.2	68.9	68.5	68.9	67.7	69.7	69.0	66.6	66.0	68.0	71.8	68.1	67.1	60.5	58.6	56.9	57.0
Get drunk at least once a week																			
% saying any	82.4	80.7	81.0	82.0	83.3	83.1	81.8	83.1	83.9	81.5	82.5	84.7	85.6	84.4	82.8	79.2	79.8	79.9	79.2
% saying most or all	30.1	26.6	27.6	30.2	32.0	30.1	29.4	29.9	31.0	29.6	29.9	31.8	31.3	29.6	31.1	27.5	29.7	28.6	27.6
Smoke cigarettes																			
% saying any	95.2	93.7	93.7	93.1	92.1	90.6	88.5	88.3	87.0	86.0	87.0	87.8	88.3	87.7	86.5	84.9	85.7	84.4	84.8
% saying most or all	41.5	36.7	33.9	32.2	28.6	23.3	22.4	24.1	22.4	19.2	22.8	21.5	21.0	20.2	23.1	21.4	21.8	21.4	25.0
Take steroids																			
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.9	24.7	21.5	19.0
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.0	1.7	0.9
Approximate weighted N =	*2,640*	*2,697*	*2,788*	*3,247*	*2,933*	*2,987*	*3,307*	*3,303*	*3,095*	*2,945*	*2,971*	*2,798*	*2,948*	*2,961*	*2,587*	*2,361*	*2,339*	*2,373*	*2,410*

(Years cont.)

(Table continued on next page.)

TABLE 9-5 (cont.)
Trends in Friends' Use of Drugs as Estimated by 12th Graders

(Entries are percentages.)

How many of your friends would you estimate . . .	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Take heroin																				
% saying any	14.3	14.5	15.6	15.6	16.5	12.7	14.9	13.1	12.9	10.3	12.7	13.1	12.8	12.9	11.2	12.7	12.4	10.2	7.7	-2.5 s
% saying most or all	1.0	1.1	0.9	0.8	1.3	1.0	1.1	0.9	0.7	0.9	0.9	1.1	0.8	1.4	0.7	0.9	1.3	0.6	0.6	+0.1
Take other narcotics [c]																				
% saying any	18.5	19.5	21.8	22.2	24.8	22.9	23.1	24.0	27.5	21.6	24.6	21.4	23.0	20.7	20.6	21.5‡	36.3	31.0	28.5	-2.4
% saying most or all	1.0	1.6	1.5	1.4	2.9	1.8	2.0	2.0	2.1	2.4	2.4	1.9	1.9	2.6	1.3	1.9‡	3.8	2.6	1.8	-0.8
Take amphetamines [d]																				
% saying any	28.1	30.3	32.2	32.7	33.8	30.8	32.9	33.2	34.4	28.1	31.4	28.8	29.0	27.4	27.3	30.0	31.1	31.3	30.5	-0.8
% saying most or all	1.8	2.0	2.8	2.4	3.4	2.8	3.1	2.2	2.4	2.1	2.9	2.2	2.0	2.4	1.8	2.0	2.9	2.2	2.4	+0.2
Take crystal methamphetamine (ice)																				
% saying any	11.8	12.9	15.9	18.6	16.8	15.7	16.9	17.0	17.5	16.2	17.8	14.3	13.4	11.9	10.9	9.4	9.2	8.9	9.6	+0.7
% saying most or all	1.5	1.7	1.5	2.3	2.1	1.1	2.0	1.6	2.0	1.8	3.0	1.9	1.2	0.8	1.4	1.5	1.0	1.3	1.5	+0.2
Take sedatives (barbiturates) [e]																				
% saying any	18.2	17.8	21.6	20.4	22.8	20.9	21.6	22.1	25.3	18.1‡	25.2	22.3	22.5	20.8	19.8	21.0	23.5	21.1	17.3	-3.8 ss
% saying most or all	1.1	1.4	1.6	1.1	2.5	1.4	1.7	1.1	1.7	1.9‡	2.0	1.8	1.3	1.6	1.3	1.3	1.5	1.3	1.5	+0.2
Take quaaludes																				
% saying any	14.2	15.5	18.1	16.1	17.4	15.5	16.2	17.8	18.0	14.2	16.6	13.6	13.4	13.6	11.2	14.3	—	—	—	—
% saying most or all	1.1	1.3	1.7	1.1	2.0	1.4	1.4	1.2	1.2	1.2	1.6	1.3	1.3	1.6	0.8	1.1	—	—	—	—
Take tranquilizers [f]																				
% saying any	16.5	15.8	18.1	17.9	19.7	16.4	19.4	18.6	21.2	17.2	18.3	16.9	15.3	15.5	15.0	15.8	16.1	13.9	13.3	-0.6
% saying most or all	0.9	1.1	1.4	0.8	2.3	1.3	2.1	1.3	1.6	1.5	1.7	1.6	1.2	1.8	1.2	1.5	1.4	0.8	0.8	0.0
Drink alcoholic beverages																				
% saying any	90.1	90.9	89.6	90.7	91.2	90.2	89.8	89.2	88.0	87.9	87.8	87.2	86.0	85.1	85.2	83.7	83.9	82.6	82.0	-0.6
% saying most or all	59.6	56.4	56.4	60.9	61.0	58.2	57.2	59.2	53.7	53.1	53.9	55.3	52.4	52.0	51.6	50.5	51.4	50.3	49.4	-0.9
Get drunk at least once a week																				
% saying any	81.4	78.9	78.5	82.4	81.1	81.5	79.5	79.6	78.3	77.3	79.0	78.7	77.4	75.5	76.2	76.2	73.5	71.9	68.9	-3.0
% saying most or all	28.4	27.4	29.0	30.9	31.7	30.1	32.4	32.7	28.3	27.1	27.6	28.5	27.7	27.0	25.2	24.4	23.7	23.8	21.2	-2.6
Smoke cigarettes																				
% saying any	88.1	87.9	88.3	89.9	89.5	89.3	87.2	86.8	85.4	83.3	83.7	81.8	81.4	77.1	78.4	79.6	78.0	75.4	74.3	-1.2
% saying most or all	25.3	27.5	30.4	34.4	33.9	31.1	28.2	25.0	23.0	19.6	20.6	16.7	15.8	16.4	13.9	14.1	14.9	14.1	12.2	-1.9
Take steroids																				
% saying any	18.1	19.5	17.9	18.9	18.3	20.0	19.8	21.7	21.6	21.1	22.8	19.1	19.8	20.1	19.4	19.3	16.4	16.0	18.7	+2.8
% saying most or all	1.2	1.3	0.8	1.7	1.4	0.9	1.9	1.2	1.5	1.5	2.6	1.5	0.9	1.2	1.3	1.5	1.7	1.1	1.8	+0.7
Approximate weighted N =	*2,337*	*2,379*	*2,156*	*2,292*	*2,313*	*2,060*	*1,838*	*1,923*	*1,968*	*2,233*	*2,271*	*2,266*	*2,217*	*2,253*	*2,125*	*2,110*	*2,195*	*2,208*	*2,144*	

(Table continued on next page.)

TABLE 9-5 (cont.)
Trends in Friends' Use of Drugs as Estimated by 12th Graders

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' ‡ ' indicates some change in the question. See relevant footnote.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]These estimates were derived from responses to the questions listed. Any illicit drug includes all drugs listed except ecstasy (MDMA), cocaine powder, crystal methamphetamine (ice), alcohol, get drunk, cigarettes, and steroids. PCP and the nitrites were not included from 1975 to 1978. Crack was not included from 1975 to 1986. Methaqualone was not included beginning in 2010.

[b]In 2001 the question text was changed from other psychedelics to other hallucinogens, and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

[c]In 2010 the list of examples for narcotics other than heroin was changed from methadone and opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

[d]In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin.

[e]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

[f]In 2001 for tranquilizers, Xanax was added to the list of examples. This change likely explains the discontinuity in the 2001 results.

TABLE 9-6
Trends in Availability of Drugs as Perceived by 8th Graders

How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Percentage saying fairly easy or very easy to get [a]																						2011–2012 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Marijuana	—	42.3	43.8	49.9	52.4	54.8	54.2	50.6	48.4	47.0	48.1	46.6	44.8	41.0	41.1	39.6	37.4	39.3	39.8	41.4	37.9	36.9	-1.0
LSD	—	21.5	21.8	21.8	23.5	23.6	22.7	19.3	18.3	17.0	17.6	15.2	14.0	12.3	11.5	10.8	10.5	10.9	10.0	10.0	9.3	7.5	-1.8 ss
PCP [b]	—	18.0	18.5	17.7	19.0	19.6	19.2	17.5	17.1	16.0	15.4	14.1	13.7	11.4	11.0	10.5	9.5	10.1	9.1	8.0	7.9	6.7	-1.2
Ecstasy (MDMA) [b]	—	—	—	—	—	—	—	—	—	—	23.8	22.8	21.6	16.6	15.6	14.5	13.4	14.1	13.1	12.9	12.0	9.6	-2.5 ss
Crack	—	25.6	25.9	26.9	28.7	27.9	27.5	26.5	25.9	24.9	24.4	23.7	22.5	20.6	20.8	20.9	19.7	20.2	18.6	17.9	15.7	14.4	-1.3
Cocaine powder	—	25.7	25.9	26.4	27.8	27.2	26.9	25.7	25.0	23.9	23.9	22.5	21.6	19.4	19.9	20.2	19.0	19.5	17.8	16.6	14.9	14.1	-0.8
Heroin	—	19.7	19.8	19.4	21.1	20.6	19.8	18.0	17.5	16.5	16.9	16.0	15.6	14.1	13.2	13.0	12.6	13.3	12.0	11.6	9.9	9.4	-0.4
Narcotics other than Heroin [b,c]	—	19.8	19.0	18.3	20.3	20.0	20.6	17.1	16.2	15.6	15.0	14.7	15.0	12.4	12.9	13.0	11.7	12.1	11.8‡	14.6	12.3	10.6	-1.7
Amphetamines [d]	—	32.2	31.4	31.0	33.4	32.6	30.6	27.3	25.9	25.5	26.2	24.4	24.4	21.9	21.0	20.7	19.9	21.3	20.2	19.6‡	15.0	13.4	-1.6 s
Crystal methamphetamine (ice) [b]	—	16.0	15.1	14.1	16.0	16.3	15.7	16.0	14.7	14.9	13.9	13.3	14.1	11.9	13.5	14.5	12.1	12.8	11.9	10.9	9.6	8.8	-0.8
Sedatives (barbiturates)	—	27.4	26.1	25.3	26.5	25.6	24.4	21.1	20.8	19.7	20.7	19.4	19.3	18.0	17.6	17.3	16.8	17.5	15.9	15.3	12.6	11.1	-1.5 s
Tranquilizers	—	22.9	21.4	20.4	21.3	20.4	19.6	18.1	17.3	16.2	17.8	16.9	17.3	15.8	14.8	14.4	14.4	15.4	14.1	13.7	12.0	10.5	-1.5 s
Alcohol	—	76.2	73.9	74.5	74.9	75.3	74.9	73.1	72.3	70.6	70.6	67.9	67.0	64.9	64.2	63.0	62.0	64.1	61.8	61.1	59.0	57.5	-1.5
Cigarettes	—	77.8	75.5	76.1	76.4	76.9	76.0	73.6	71.5	68.7	67.7	64.3	63.1	60.3	59.1	58.0	55.6	57.4	55.3	55.5	51.9	50.7	-1.2
Steroids	—	24.0	22.7	23.1	23.8	24.1	23.6	22.3	22.6	22.3	23.1	22.0	21.7	19.7	18.1	17.1	17.0	16.8	15.2	14.2	13.3	12.5	-0.8
Approximate weighted N =		*8,355*	*16,775*	*16,119*	*15,496*	*16,318*	*16,482*	*16,208*	*15,397*	*15,180*	*14,804*	*13,972*	*15,583*	*15,944*	*15,730*	*15,502*	*15,043*	*14,482*	*13,989*	*14,485*	*15,233*	*14,235*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' ‡ ' indicates some change in the question. See relevant footnote for that drug. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, (5) Very easy, and (6) Can't say, drug unfamiliar.

[b] Beginning in 1993, data based on one of two of forms; *N* is one half of *N* indicated.

[c] In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

[d] In 2012 the list of examples for amphetamines was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2012 results.

TABLE 9-7
Trends in Availability of Drugs as Perceived by 10th Graders

How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Percentage saying fairly easy or very easy to get[a]																					2011–2012 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Marijuana	—	65.2	68.4	75.0	78.1	81.1	80.5	77.9	78.2	77.7	77.4	75.9	73.9	73.3	72.6	70.7	69.0	67.4	69.3	69.4	68.4	68.8	+0.4
LSD	—	33.6	35.8	36.1	39.8	41.0	38.3	34.0	34.3	32.9	31.2	26.8	23.1	21.6	20.7	19.2	19.0	19.3	17.8	18.3	16.6	14.9	-1.7 s
PCP[b]	—	23.7	23.4	23.8	24.7	26.8	24.8	23.9	24.5	25.0	21.6	20.8	19.4	18.0	18.1	15.8	15.4	14.4	13.4	12.6	12.0	10.2	-1.7
Ecstasy (MDMA)[b]	—	—	—	—	—	—	—	—	—	—	41.4	41.0	36.3	31.2	30.2	27.4	27.7	26.7	25.6	25.7	24.8	21.0	-3.9 ss
Crack	—	33.7	33.0	34.2	34.6	36.4	36.0	36.3	36.5	34.0	30.6	31.3	29.6	30.6	31.0	29.9	29.0	27.2	23.9	22.5	19.7	18.4	-1.3
Cocaine powder	—	35.0	34.1	34.5	35.3	36.9	37.1	36.8	36.7	34.5	31.0	31.8	29.6	31.2	31.5	30.7	30.0	28.2	24.7	22.6	20.6	19.2	-1.4
Heroin	—	24.3	24.3	24.7	24.6	24.8	24.4	23.0	23.7	22.3	20.1	19.9	18.8	18.7	19.3	17.4	17.3	17.2	15.0	14.5	13.2	11.9	-1.3 s
Narcotics other than Heroin[b,c]	—	26.9	24.9	26.9	27.8	29.4	29.0	26.1	26.6	27.2	25.8	25.4	23.5	23.1	23.6	22.2	21.5	20.3	18.8‡	28.7	25.0	24.3	-0.7
Amphetamines[d]	—	43.4	46.4	46.6	47.7	47.2	44.6	41.0	41.3	40.9	40.6	39.6	36.1	35.7	35.6	34.7	33.3	32.0	31.8	32.6‡	28.5	27.3	-1.3
Crystal methamphetamine (ice)[b]	—	18.8	16.4	17.8	20.7	22.6	22.9	22.1	21.8	22.8	19.9	20.5	19.0	19.5	21.6	20.8	18.8	15.8	14.0	13.3	11.8	10.7	-1.1
Sedatives (barbiturates)	—	38.0	38.8	38.3	38.8	38.1	35.6	32.7	33.2	32.4	32.8	32.4	28.8	30.0	29.7	29.9	28.2	26.9	25.5	24.9	22.0	20.2	-1.8 s
Tranquilizers	—	31.6	30.5	29.8	30.6	30.3	28.7	26.5	26.8	27.6	28.5	28.3	25.6	25.6	25.4	25.1	24.9	24.1	22.3	21.6	20.8	19.7	-1.1
Alcohol	—	88.6	88.9	89.8	89.7	90.4	89.0	88.0	88.2	87.7	87.7	84.8	83.4	84.3	83.7	83.1	82.6	81.1	80.9	80.0	77.9	78.2	+0.3
Cigarettes	—	89.1	89.4	90.3	90.7	91.3	89.6	88.1	88.3	86.8	86.3	83.3	80.7	81.4	81.5	79.5	78.2	76.5	76.1	75.6	73.6	72.9	-0.7
Steroids	—	37.6	33.6	33.6	34.8	34.8	34.2	33.0	35.9	35.4	33.1	33.2	30.6	29.6	29.7	30.2	27.7	24.5	20.8	20.3	18.8	18.0	-0.8
Approximate weighted N =		*7,014*	*14,652*	*15,192*	*16,209*	*14,887*	*14,856*	*14,423*	*13,112*	*13,690*	*13,518*	*13,694*	*15,255*	*15,806*	*15,636*	*15,804*	*15,511*	*14,634*	*15,451*	*14,827*	*14,509*	*14,628*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' ‡ ' indicates some change in the question. See relevant footnote for that drug.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, (5) Very easy, and (6) Can't say, drug unfamiliar.

[b]Beginning in 1993, data based on one of two forms; *N* is one half of *N* indicated.

[c]In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

[d]In 2011 the list of examples for amphetamines was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

TABLE 9-8
Trends in Availability of Drugs as Perceived by 12th Graders

How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Percentage saying fairly easy or very easy to get [a]																		
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Marijuana	87.8	87.4	87.9	87.8	90.1	89.0	89.2	88.5	86.2	84.6	85.5	85.2	84.8	85.0	84.3	84.4	83.3	82.7	83.0
Amyl/butyl nitrites	—	—	—	—	—	—	—	—	—	—	—	—	23.9	25.9	26.8	24.4	22.7	25.9	25.9
LSD	46.2	37.4	34.5	32.2	34.2	35.3	35.0	34.2	30.9	30.6	30.5	28.5	31.4	33.3	38.3	40.7	39.5	44.5	49.2
Some other hallucinogen [b]	47.8	35.7	33.8	33.8	34.6	35.0	32.7	30.6	26.6	26.6	26.1	24.9	25.0	26.2	28.2	28.3	28.0	29.9	33.5
PCP	—	—	—	—	—	—	—	—	—	—	—	—	22.8	24.9	28.9	27.7	27.6	31.7	31.7
Ecstasy (MDMA)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.7	22.0	22.1	24.2	28.1
Cocaine	37.0	34.0	33.0	37.8	45.5	47.9	47.5	47.4	43.1	45.0	48.9	51.5	54.2	55.0	58.7	54.5	51.0	52.7	48.5
Crack	—	—	—	—	—	—	—	—	—	—	—	—	41.1	42.1	47.0	42.4	39.9	43.5	43.6
Cocaine powder	—	—	—	—	—	—	—	—	—	—	—	—	52.9	50.3	53.7	49.0	46.0	48.0	45.4
Heroin	24.2	18.4	17.9	16.4	18.9	21.2	19.2	20.8	19.3	19.9	21.0	22.0	23.7	28.0	31.4	31.9	30.6	34.9	33.7
Some other narcotic (including methadone) [c]	34.5	26.9	27.8	26.1	28.7	29.4	29.6	30.4	30.0	32.1	33.1	32.2	33.0	35.8	38.3	38.1	34.6	37.1	37.5
Amphetamines [d]	67.8	61.8	58.1	58.5	59.9	61.3	69.5	70.8	68.5	68.2	66.4	64.3	64.5	63.9	64.3	59.7	57.3	58.8	61.5
Crystal methamphetamine (ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.1	24.3	26.0	26.6
Sedatives (barbiturates) [e]	60.0	54.4	52.4	50.6	49.8	49.1	54.9	55.2	52.5	51.9	51.3	48.3	48.2	47.8	48.4	45.9	42.4	44.0	44.5
Tranquilizers	71.8	65.5	64.9	64.3	61.4	59.1	60.8	58.9	55.3	54.5	54.7	51.2	48.6	49.1	45.3	44.7	40.8	40.9	41.1
Alcohol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46.7	46.8	44.8
Approximate weighted N =	*2,627*	*2,865*	*3,065*	*3,598*	*3,172*	*3,240*	*3,578*	*3,602*	*3,385*	*3,269*	*3,274*	*3,077*	*3,271*	*3,231*	*2,806*	*2,549*	*2,476*	*2,586*	*2,670*

(Years cont.)

(Table continued on next page.)

TABLE 9-8 (cont.)
Trends in Availability of Drugs as Perceived by 12th Graders

How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Percentage saying "fairly easy" or "very easy" to get [a]																			2011–2012 change
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Marijuana	85.5	88.5	88.7	89.6	90.4	88.9	88.5	88.5	87.2	87.1	85.8	85.6	84.9	83.9	83.9	81.1	82.1	82.2	81.6	-0.7
Amyl/butyl nitrites	26.7	26.0	23.9	23.8	25.1	21.4	23.3	22.5	*22.3*	19.7	20.0	19.7	18.4	18.1	16.9	15.7	—	—	—	—
LSD	50.8	53.8	51.3	50.7	48.8	44.7	46.9	44.7	39.6	33.6	33.1	28.6	29.0	28.7	28.5	26.3	25.1	25.1	27.6	+2.5
Some other hallucinogen [b]	33.8	35.8	33.9	33.9	35.1	29.5	34.5‡	48.5	47.7	47.2	49.4	45.0	43.9	43.7	42.8	40.5	39.5	38.3	37.8	-0.5
PCP	31.4	31.0	30.5	30.0	30.7	26.7	28.8	27.2	25.8	21.9	24.2	23.2	23.1	21.0	20.6	19.2	18.5	17.2	14.2	-3.0 s
Ecstasy (MDMA)	31.2	34.2	36.9	38.8	38.2	40.1	51.4	61.5	59.1	57.5	47.9	40.3	40.3	40.9	41.9	35.1	36.4	37.1	35.9	-1.2
Cocaine	46.6	47.7	48.1	48.5	51.3	47.6	47.8	46.2	44.6	43.3	47.8	44.7	46.5	47.1	42.4	39.4	35.5	30.5	29.8	-0.7
Crack	40.5	41.9	40.7	40.6	43.8	41.1	42.6	40.2	38.5	35.3	39.2	39.3	38.8	37.5	35.2	31.9	26.1	24.0	22.0	-1.9
Cocaine powder	43.7	43.8	44.4	43.3	45.7	43.7	44.6	40.7	40.2	37.4	41.7	41.6	42.5	41.2	38.9	33.9	29.0	26.4	25.1	-1.3
Heroin	34.1	35.1	32.2	33.8	35.6	32.1	33.5	32.3	29.0	27.9	29.6	27.3	27.4	29.7	25.4	27.4	24.1	20.8	19.9	-0.9
Some other narcotic (including methadone) [c]	38.0	39.8	40.0	38.9	42.8	40.8	43.9	40.5	44.0	39.3	40.2	39.2	39.6	37.3	34.9	36.1‡	54.2	50.7	50.4	-0.2
Amphetamines [d]	62.0	62.8	59.4	59.8	60.8	58.1	57.1	57.1	57.4	55.0	55.4	51.2	52.9	49.6	47.9	47.1	44.1‡	47.0	45.4	-1.5
Crystal methamphetamine (ice)	25.6	27.0	26.9	27.6	29.8	27.6	27.8	28.3	28.3	26.1	26.7	27.2	26.7	25.1	23.3	22.3	18.3	17.1	14.5	-2.6
Sedatives (barbiturates) [e]	43.3	42.3	41.4	40.0	40.7	37.9	37.4	35.7	36.6	35.3‡	46.3	44.4	43.8	41.7	38.8	37.9	36.8	32.4	28.7	-3.7 s
Tranquilizers	39.2	37.8	36.0	35.4	36.2	32.7	33.8	33.1	32.9	29.8	30.1	25.7	24.4	23.6	22.4	21.2	18.4	16.8	14.9	-1.8
Alcohol	—	—	—	—	—	95.0	94.8	94.3	94.7	94.2	94.2	93.0	92.5	92.2	92.2	92.1	90.4	88.9	90.6	+1.7
Steroids	42.9	45.5	40.3	41.7	44.5	44.6	44.8	44.4	45.5	40.7	42.6	39.7	41.1	40.1	35.2	30.3	27.3	26.1	25.0	-1.1
Approximate weighted N =	*2,526*	*2,552*	*2,340*	*2,517*	*2,520*	*2,215*	*2,095*	*2,120*	*2,138*	*2,391*	*2,169*	*2,161*	*2,131*	*2,420*	*2,276*	*2,243*	*2,395*	*2,337*	*2,280*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' ‡ ' indicates some change in the question. See relevant footnote for that drug.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, and (5) Very easy.

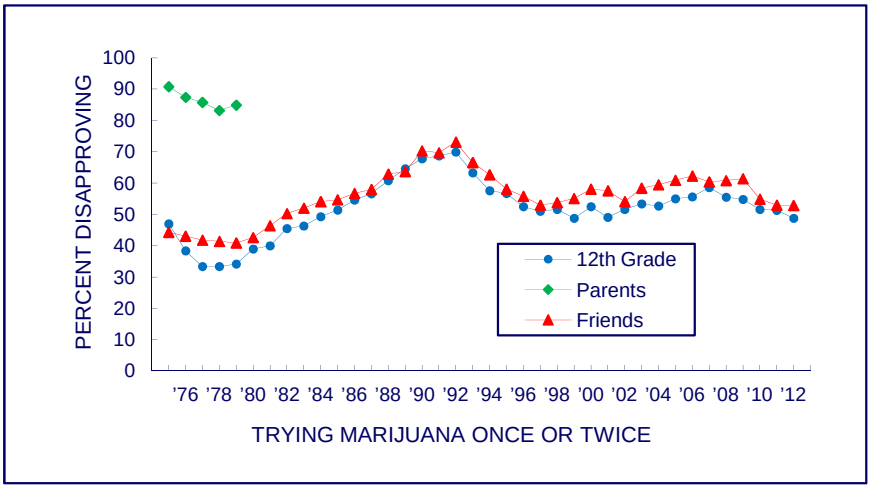
[b] In 2001 the question text was changed from other psychedelics to other hallucinogens and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

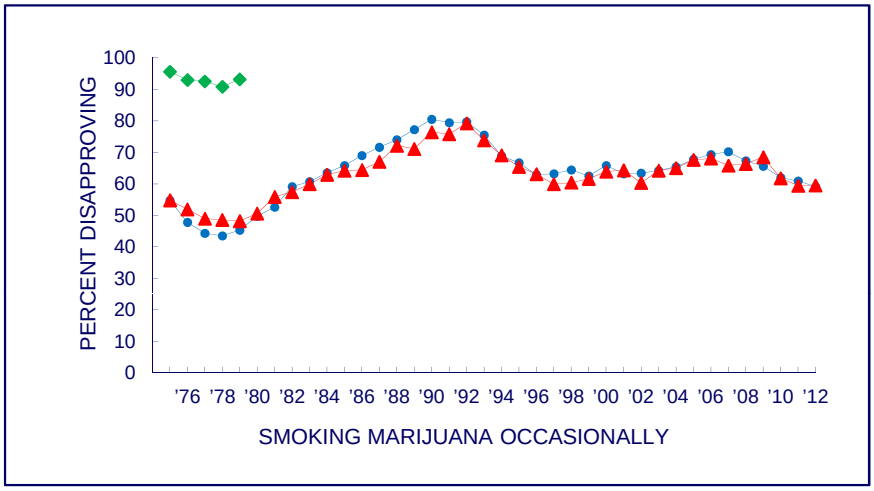
[c] In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

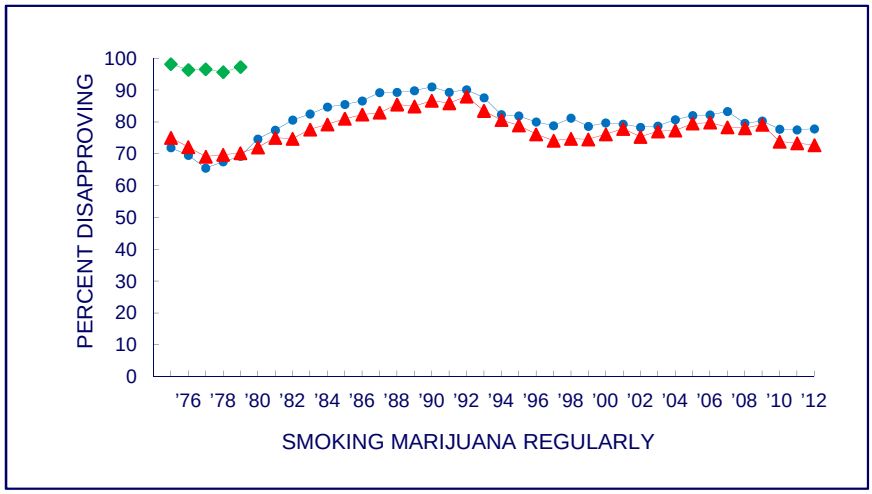
[d] In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

[e] In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

FIGURE 9-1a
MARIJUANA
Trends in Disapproval
12th Graders, Parents, and Friends



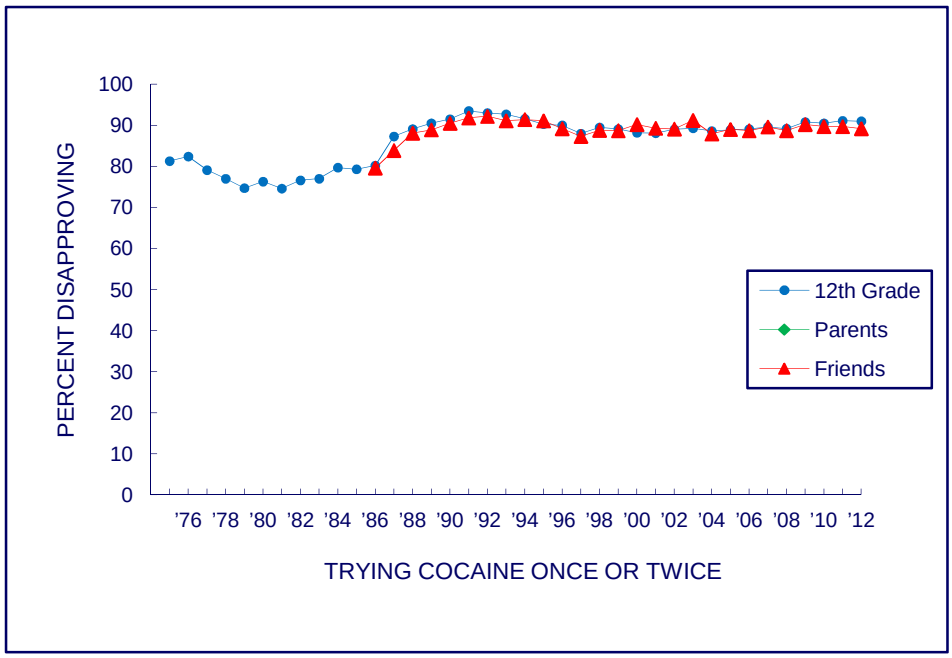


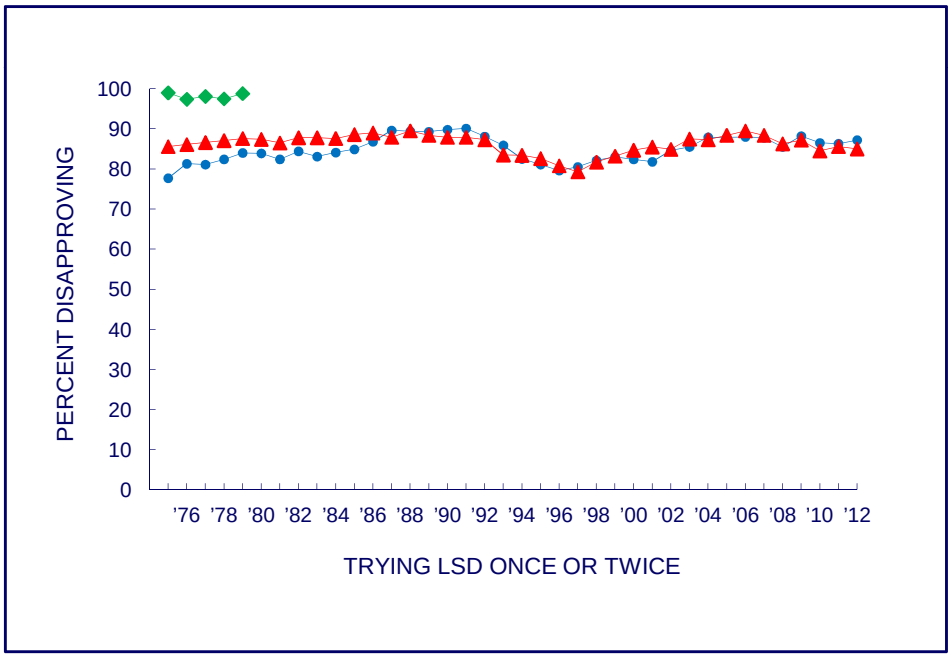


Source. The Monitoring the Future study, the University of Michigan.

Note. The 1975, 1977, and 1979 points indicating the percentage of 12th graders who said their friends would disapprove have been adjusted to compensate for lack of comparability of question context between administration years.

FIGURE 9-1b
COCAINE AND LSD
Trends in Disapproval
12th Graders, Parents, and Friends

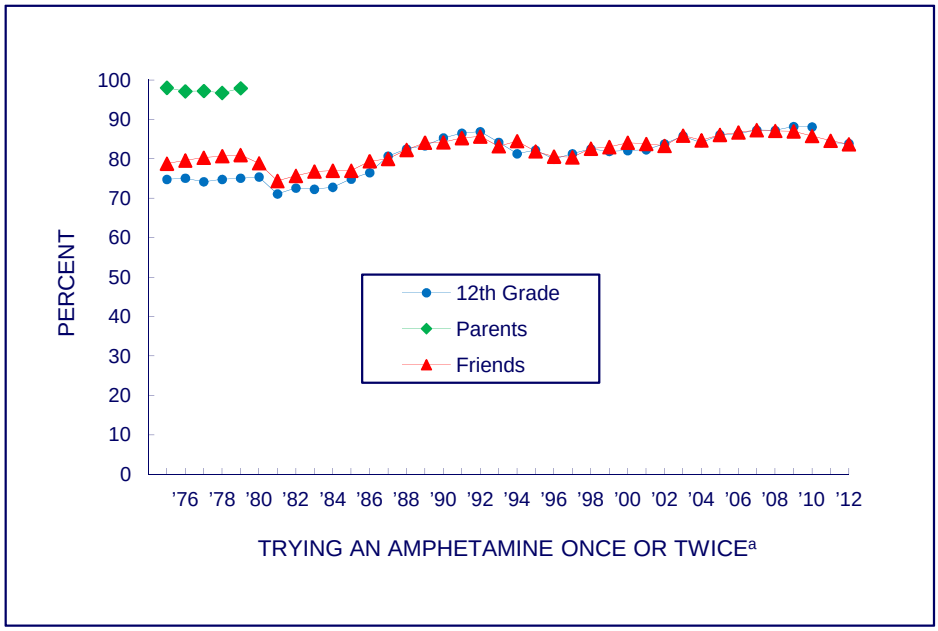


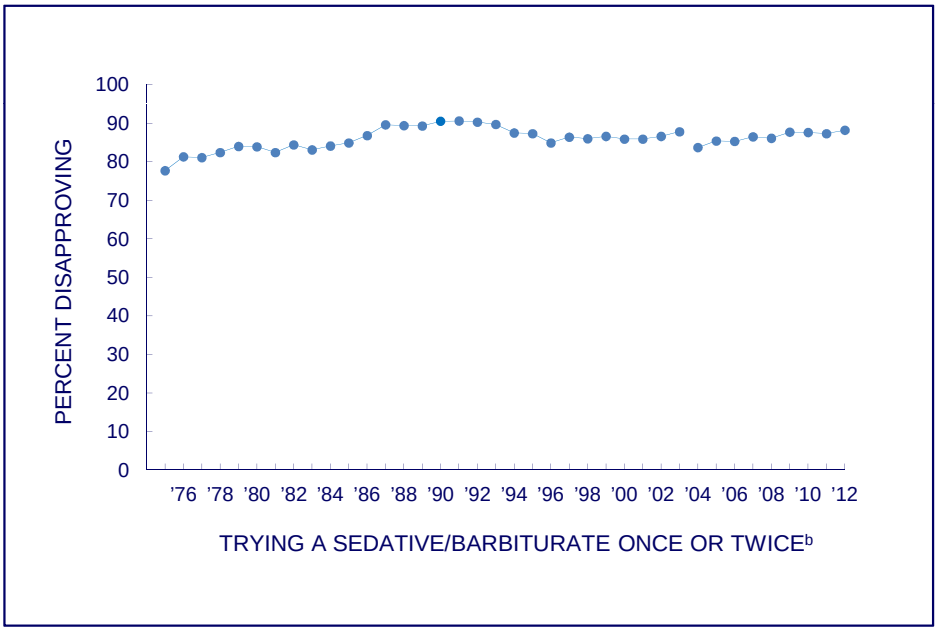


Source. The Monitoring the Future study, the University of Michigan.

Note. The 1975, 1977, and 1979 points indicating the percentage of 12th graders who said their friends would disapprove have been adjusted to compensate for lack of comparability of question text between administration years.

FIGURE 9-1c
AMPHETAMINES AND SEDATIVES (BARBITURATES)
Trends in Disapproval
12th Graders, Parents, and Friends





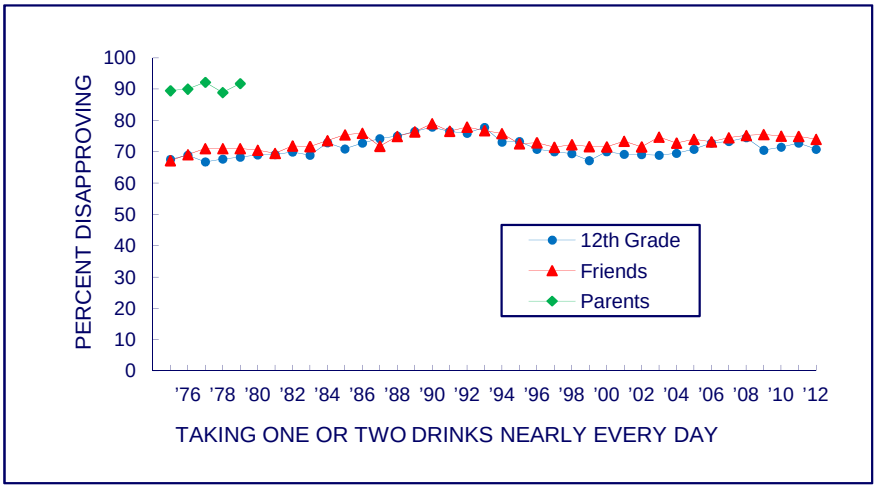
Source. The Monitoring the Future study, the University of Michigan.

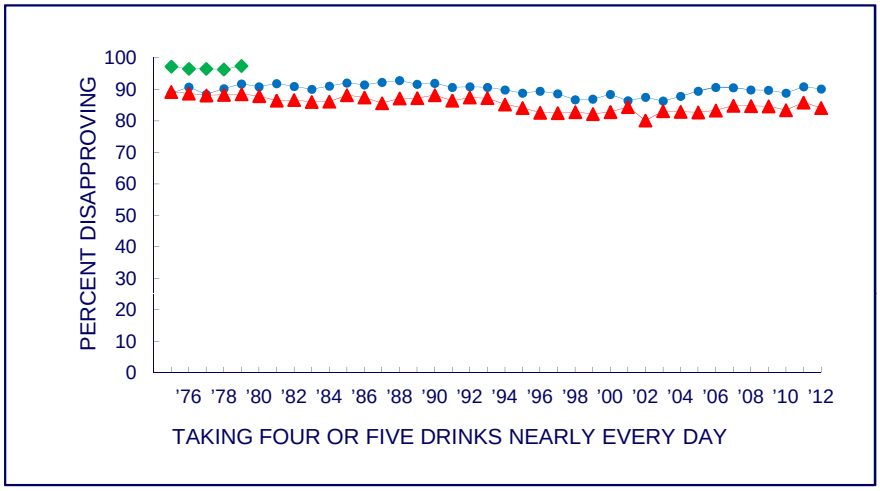
Note. The 1975, 1977, and 1979 points indicating the percentage of 12th graders who said their friends would disapprove have been adjusted to compensate for lack of comparability of question text between administration years.

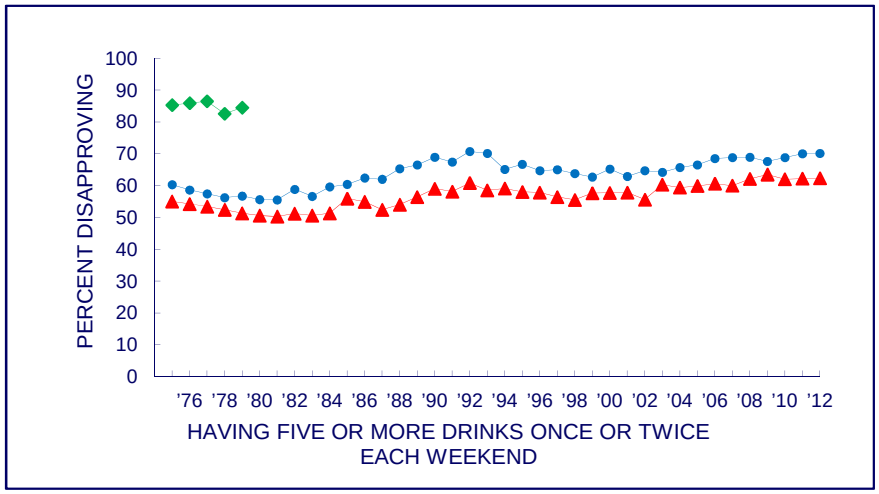
[a]For 12th graders only: In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

[b]In 2004 the question text was changed from barbiturates to sedatives/barbiturates, and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

FIGURE 9-2a
ALCOHOL
Trends in Disapproval
12th Graders, Parents, and Friends



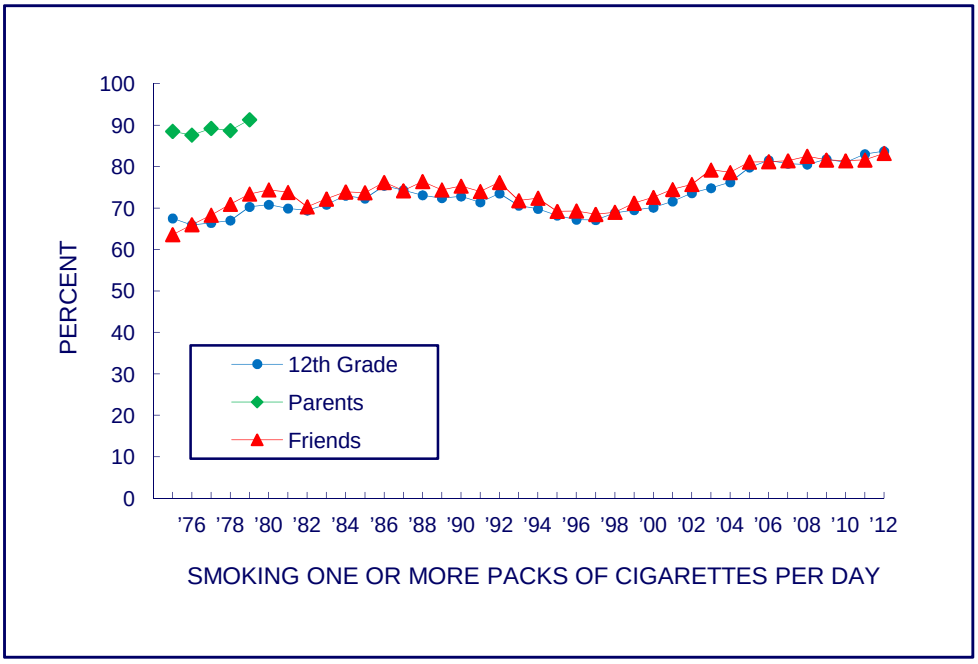




Source. The Monitoring the Future study, the University of Michigan.

Note. The 1975, 1977, and 1979 points indicating the percentage of 12th graders who said their friends would disapprove have been adjusted to compensate for lack of comparability of question context between administration years.

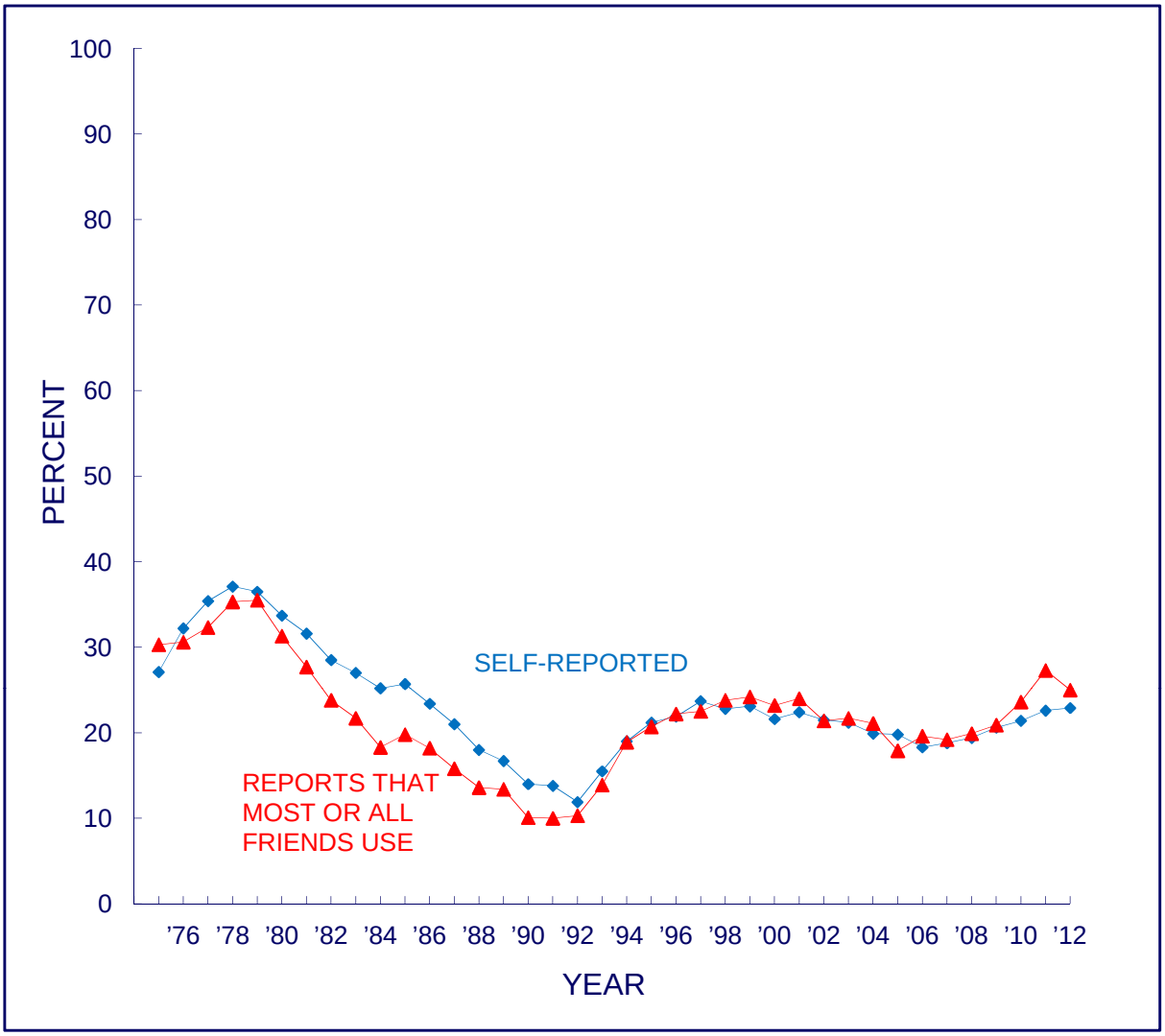
FIGURE 9-2b
CIGARETTES
Trends in Disapproval
12th Graders, Parents, and Friends



Source. The Monitoring the Future study, the University of Michigan.

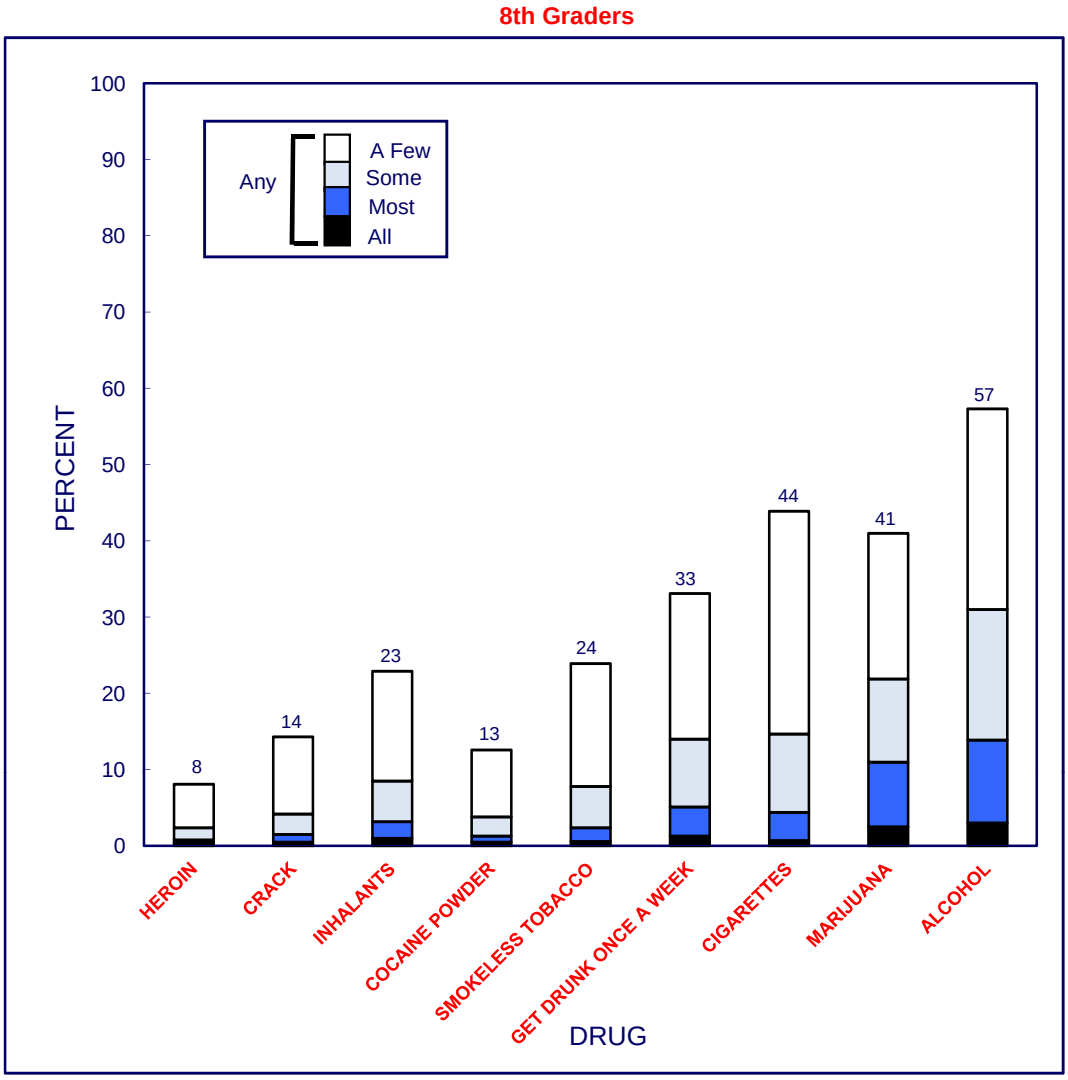
Note. The 1975, 1977, and 1979 points indicating the percentage of 12th graders who said their friends would disapprove have been adjusted to compensate for lack of comparability of question text between administration years.

FIGURE 9-3
MARIJUANA
Trends in 30-Day Prevalence and Friends' Use in Grade 12



Source. The Monitoring the Future study, the University of Michigan.

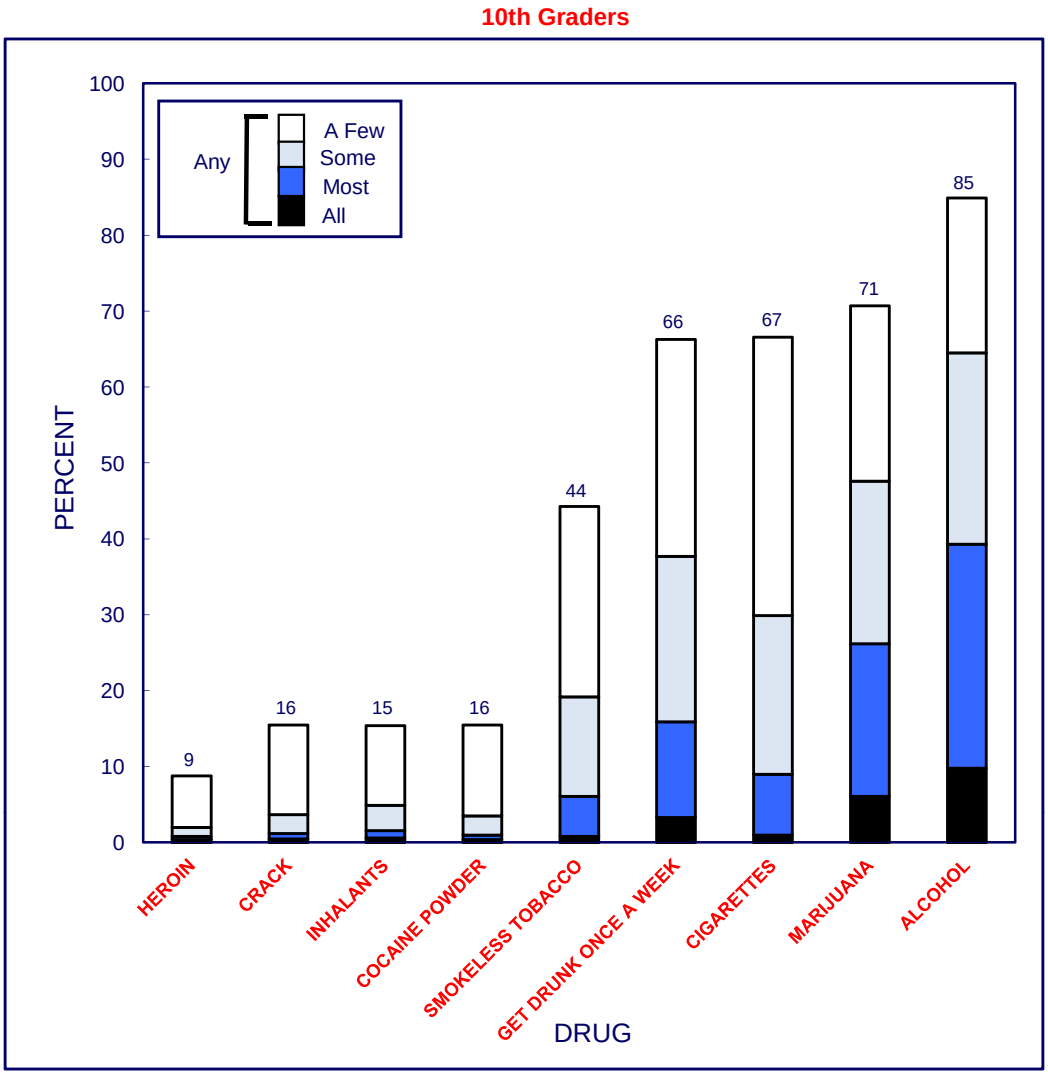
FIGURE 9-4
Proportion of Friends Using Each Drug as Estimated by 8th, 10th, and 12th Graders, 2012



Source. The Monitoring the Future study, the University of Michigan.

(Figure continued on next page.)

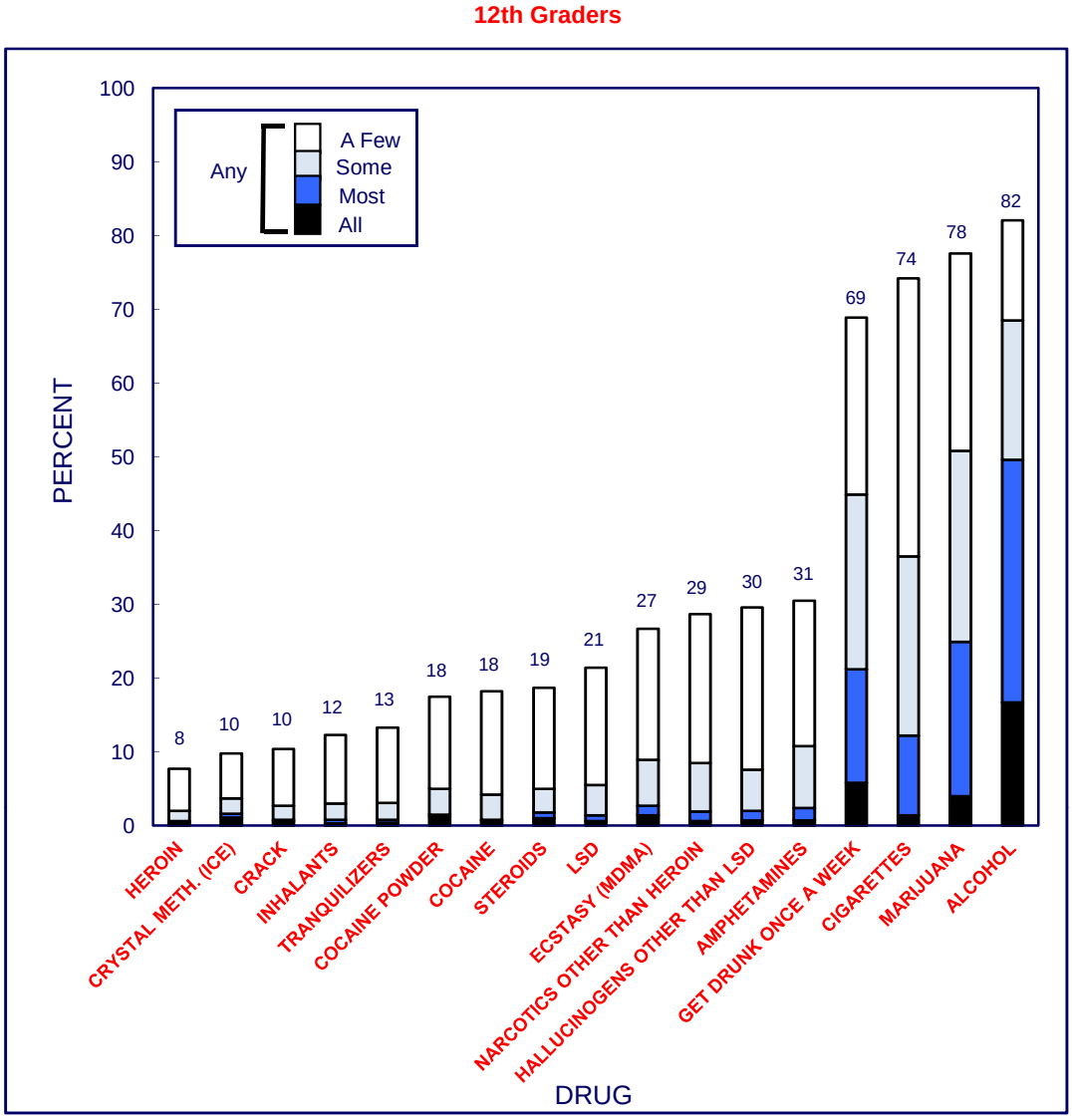
FIGURE 9-4 (cont.)
Proportion of Friends Using Each Drug as Estimated by 8th, 10th, and 12th Graders, 2012



Source. The Monitoring the Future study, the University of Michigan.

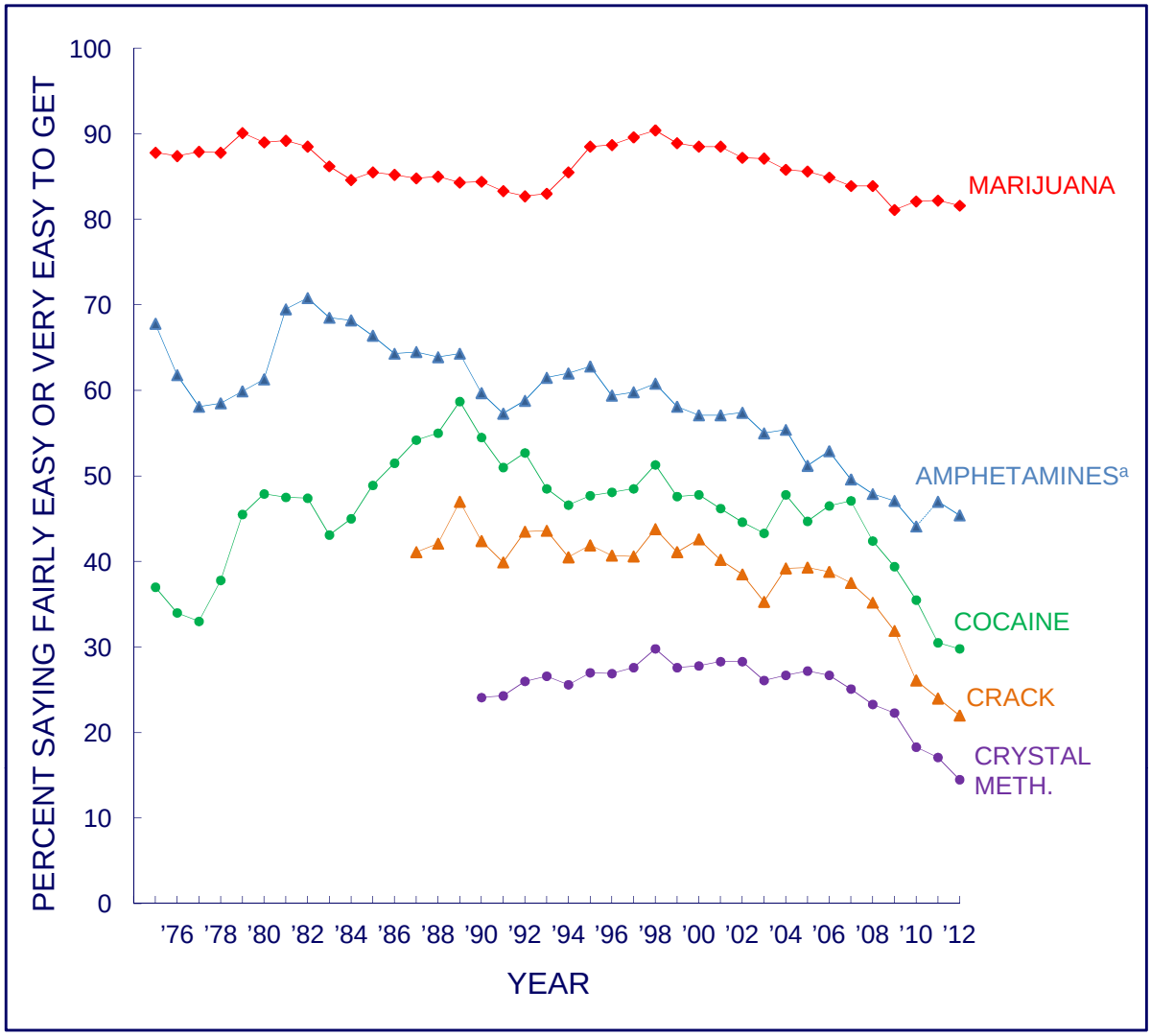
(Figure continued on next page.)

FIGURE 9-4 (cont.)
Proportion of Friends Using Each Drug as Estimated by 8th, 10th, and 12th Graders, 2012



Source. The Monitoring the Future study, the University of Michigan.

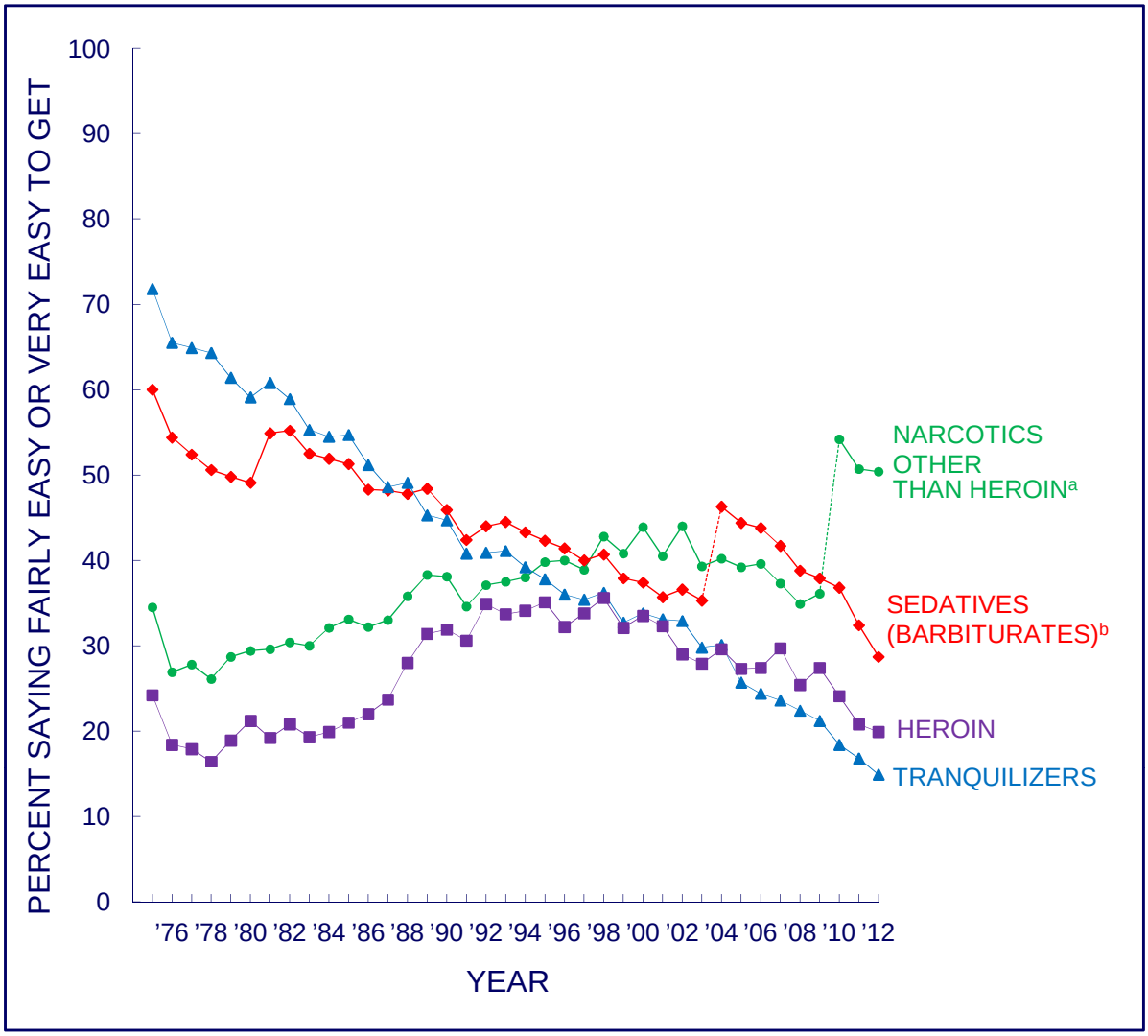
FIGURE 9-5a
Various Drugs: Trends in Perceived Availability in Grade 12



Source. The Monitoring the Future study, the University of Michigan.

[a]For 12th graders only: In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

FIGURE 9-5b
Various Drugs: Trends in Perceived Availability in Grade 12



Source. The Monitoring the Future study, the University of Michigan.

[a]In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

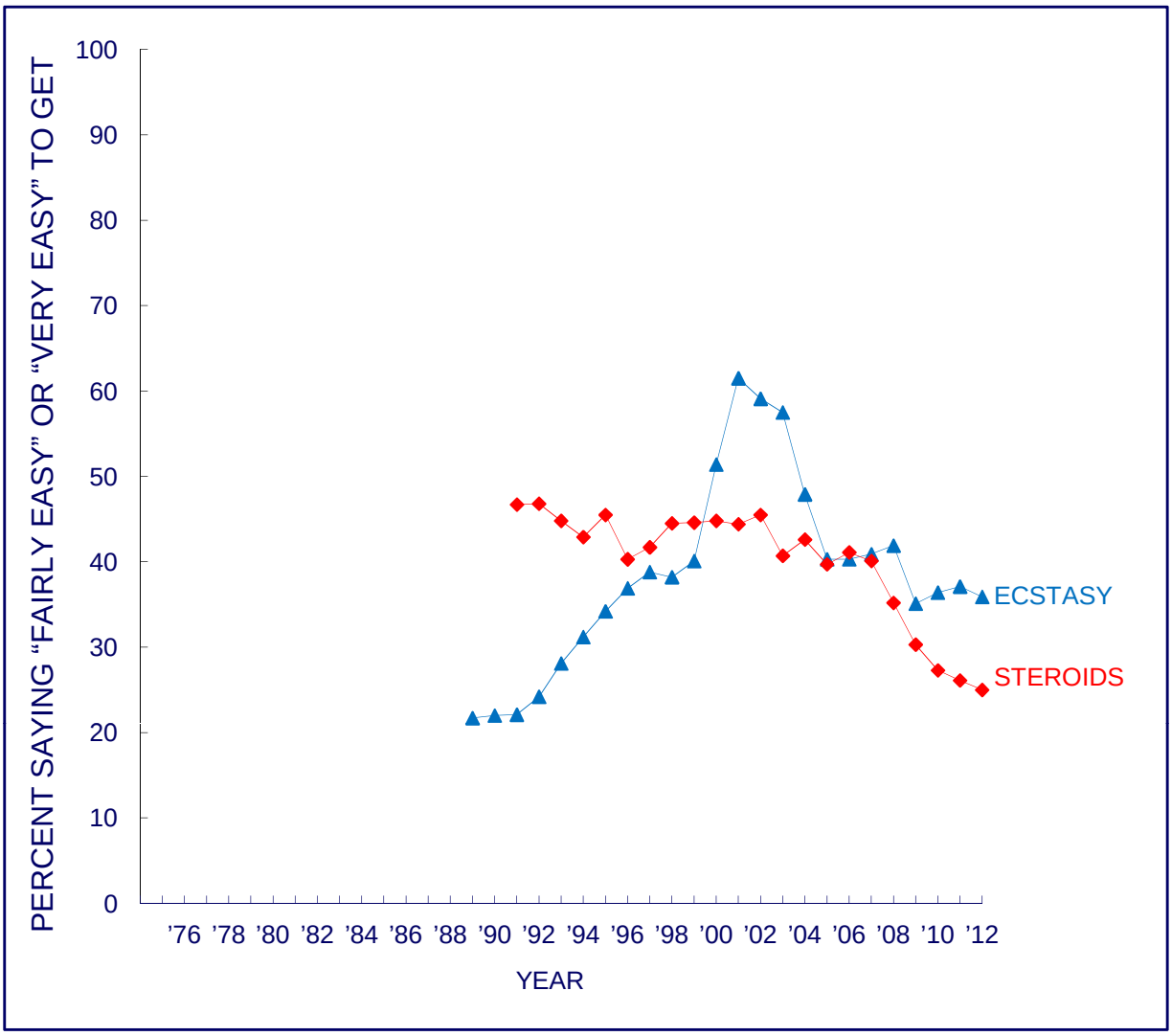
[b]In 2004 the question text was changed from barbiturates to sedatives/barbiturates, and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

FIGURE 9-5c
LSD AND HALLUCINOGENS OTHER THAN LSD
Trends in Perceived Availability in Grade 12

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2001 the question text was changed from other psychedelics to other hallucinogens, and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

FIGURE 9-5d
ECSTASY (MDMA) AND STEROIDS
Trends in Perceived Availability in Grade 12



Source. The Monitoring the Future study, the University of Michigan.

Chapter 10

OTHER FINDINGS

In this chapter we present original findings not published elsewhere on the following special topics.

- The percentage of 12th graders who use three classes of nonprescription stimulants—diet pills, stay-awake pills, and look-alikes.
- The percentage of 12th graders who report using *any* of the prescription-type drugs *without* a doctor's orders.
- The various sources through which 12th graders obtain prescription drugs used without a doctor's orders.
- The extent of use by 8th, 10th, and 12th graders of prescription stimulants under medical supervision for the treatment of attention deficit hyperactivity disorder (ADHD).
- The extent of use by 8th, 10th, and 12th graders of three substances taken to enhance performance or physique—anabolic steroids, androstenedione, and creatine.
- Rates of use by 12th graders of marijuana on a daily basis over an extended period of time.

This chapter also contains synopses of seven recent journal articles and other publications from the study. A complete listing of all study publications, including abstracts and in many cases full text, is available on the MTF website at www.monitoringthefuture.org.

THE USE OF NONPRESCRIPTION STIMULANTS

As discussed earlier in this volume, stimulant use reported by 12th graders reached peak levels between 1979 and 1981. We had reason to believe that much of that increase was attributable to the use of nonprescription stimulants of two general types—look-alike drugs (pseudoamphetamines, usually sold by mail order, which look like and often have names that sound like real amphetamines) and over-the-counter stimulants (primarily diet pills and stay-awake pills). These drugs usually contained caffeine, ephedrine, and/or phenylpropanolamine as active ingredient(s).

Prompted by this development, in 1982 we introduced new questions in some of the 12th-grade questionnaire forms to more accurately assess the use of amphetamines, look-alikes, diet pills, and stay-awake pills of the nonprescription variety. For example, in one of the randomly distributed 12th-grade questionnaire forms, respondents were asked to indicate on how many occasions (if any) they had taken nonprescription diet pills such as Dietac, Dexatrim, and Prolamine (a) in their lifetime, (b) in the prior 12 months, or (c) in the prior 30 days. The timeframes correspond to the standard usage questions asked for nearly all drugs. Similar questions were asked about the use of nonprescription stay-awake pills, such as No-Doz, Vivarin, Wake, and Caffedrine, and the look-alike stimulants. (The look-alikes are described at some length in the actual question.)

In three of the five 12th-grade questionnaire forms used in 1982 and 1983 (and in all questionnaire forms thereafter), respondents were also asked about their use of prescription amphetamines *outside* of medically prescribed use, with explicit instructions to exclude the use of over-the-counter and look-alike drugs. These data have been collected only from 12th-grade respondents.[107]

Prevalence of Use in 2012 among Twelfth Graders

Tables 10-1a, 10-1b, and 10-1c contain the 2012 prevalence-of-use levels for nonprescription stimulants.

- As can be seen, a substantial proportion of 12th-grade students (7.7%) have used over-the-counter ***diet pills*** in their lifetime, and 3.4% have used them in just the prior month.

- ***Stay-awake pills*** are used by slightly lower proportions: 5.9% of 12th graders have used in their lifetime, while the monthly prevalence rate is 1.9%.

- Fewer students indicate use of ***look-alikes*** (2.9% lifetime and 0.8% monthly prevalence rates). It is possible that some proportion of those who think they are getting real amphetamines are actually sold look-alikes, which are far cheaper for drug suppliers to purchase.

- Higher proportions report using actual ***amphetamines*** outside of medically prescribed use, with prevalence rates at 12.0% lifetime, 3.3% monthly, and 0.3% daily use.

Subgroup Differences among Twelfth Graders

- Subgroups are defined by gender, college plans, region, population size, parental education, and race/ethnicity. Also considered are subgroups by type of drug use, such as students who use illicit drugs.

- Tables 10-1a through 10-1c show the prevalence data for these drug classes for *males and females* separately. It can be seen that the use of over-the-counter ***diet pills*** was

[107]In 1983, a revised question on amphetamine use was used to try to get respondents to omit use of over-the-counter stimulants from their answers. It yielded prevalence estimates about one quarter to one third lower than those yielded by the original version of the question, indicating that, indeed, some distortion in the unadjusted estimates occurred as a result of respondents including some nonprescription stimulant use in their answers. However, little or no such distortion should have occurred in recent years, in part because of the refined questions, but also due to the considerable decline in use of diet pills and look-alikes, as is discussed later.

dramatically higher among females than males in the past, but that the gap has since diminished somewhat. Absolute prevalence levels for 12th graders in 2012 are fairly high with 11% of females and 4% of males reporting any lifetime use. Past month use is 4.2% for females and 2.5% for males. For all other types of stimulants, the prevalence rates for males and females have been, and remain, fairly close.

- Annual prevalence rates for diet pills do not consistently differ much by *college plans*, *region*, *population density*, or *parental education* (see Tables 10-2a through 10-2c).

- Consistent with *racial/ethnic differences* observed over time on most drugs, African-American 12th graders are lower than Whites in their use of all three types of ***over-the-counter stimulants***. Hispanic 12th graders generally have tended to be in the middle, though in 2010 through 2012 they show the highest rate of use for diet pills and in 2012 of stay-awake pills.

- The use of all ***nonprescription stimulants*** is substantially higher among 12th graders who use illicit drugs than among those who do not. (See Table 10-3.) For example, only 1.8% of 12th graders who have abstained from any illicit drug use report ever having used a ***stay-awake*** stimulant, compared to 2.9% of those who report having used only marijuana, and 17.8% of those who report having used some illicit drug other than marijuana (usually in addition to marijuana). We already know that use of illicit drugs is correlated with use of alcohol and cigarettes.[108] These findings show that the constellation of correlated substance-using behaviors also includes use of over-the-counter psychoactive substances.

Trends in Use among Twelfth Graders

- Questions on amphetamine use were revised in 1982 to eliminate the inappropriate reporting of nonprescription stimulant use. Note that 1982 rates for the use of ***amphetamines*** *adjusted* (i.e., excluding the use of nonprescription stimulants) were higher than the *unadjusted* rates for all years prior to 1980 (see Chapter 5, Tables 5-1 through 5-4), which suggests that amphetamine use—or at least the use of what, to the best of the respondents' knowledge, were amphetamines—indeed increased between 1979 and 1982. Not all of the increase in amphetamine use was an artifact of the measure. The data presented in chapter 9 on the proportion of 12th graders who were around people using amphetamines to "get high" support this conclusion.

- The trend in use of ***look-alikes*** from 1982 onward resembles the trend for illicit drug use during the same period. Annual prevalence declined from 10.8% in 1982 to 5.2% in 1991, followed by a period of increase in the first half of the 1990s (to 6.8% in 1995), stabilization, then some decline again after 2001, to 2.1% in 2012 (see Table 10-1c). Most of the initial decline in use occurred among those who had used illicit drugs other than marijuana—the group primarily involved in the use of look-alikes. Further, that group was a shrinking proportion of the total.

[108] Johnston, L.D. (2003). Alcohol and illicit drugs: The role of risk perceptions. In D. Romer (Ed.), *Reducing adolescent risk: Toward an integrated approach* (pp. 56–74). Thousand Oaks, CA: Sage. Available at http://www.monitoringthefuture.org/pubs/chapters/ldj2003.pdf .

- The use of nonprescription ***diet pills*** decreased even more substantially, in this case between 1983 and 1993 (see Table 10-1a). Over that interval, annual prevalence fell by more than from 20.5% to 8.0%. This was a particularly positive development, because nearly all of these diet pills contained phenylpropanolamine, which the Food and Drug Administration has since determined to have health risks for the user.[109] Nearly all the decline occurred among the group who had used illicit drugs other than marijuana. Use stabilized through the mid-1990s at around 9.4%, rose after 1998 to reach 15.1% in 2002, and declined since then to 5.5% by 2012.

- Unlike the use of other nonprescription stimulants, use of ***stay-awake pills*** increased substantially in the early to mid-1980s (see Table 10-1b). Annual prevalence of use increased from 11.8% in 1982 (when use was first measured) to 26.4% in 1988, dropped somewhat to 20.4% by 1992, and remained fairly level until 1998 (19.0%). Since then, it has declined substantially, and in 2012 is at 3.8%. In other words, between 1988 and 2012 there was a decline of nearly 90% in the proportion of students using over-the-counter stay-awake pills. (Again, both the increase and decrease were observed most strongly among illicit drug users.)

- In 2010 all three classes of ***over-the-counter stimulants*** reached the lowest levels ever recorded by MTF; in 2012 they are only slightly higher.

Subgroup Differences in Trends among Twelfth Graders

- All subgroups (defined by gender, college plans, region, population size, parental education, and race/ethnicity) showed similarly large increases from 1982 to 1988 in their use of ***stay-awake pills***. Then, between 1988 and 1992 annual prevalence decreased for all subgroups except for one of the parental education groups, and the decrease was rather slight in the Midwest region. After 1992, use stabilized in virtually all subgroups until the 1999 decline, which also occurred broadly. Since then, use has continued to decline in most subgroups, although sometimes unevenly.

- For ***diet pills***, subgroup trends generally parallel the overall trend across time, at least until 2012. Diet pill use among girls has tended to run from two to four times as high as among boys. Girls now have an annual prevalence of 7.0%— about twice the rate for boys (3.7%). There was a substantial decline in both groups from 2002 to 2010, but in 2012 both groups showed non-significant increases.

- Subgroup differences in trends in the use of ***look-alikes*** also generally parallel the overall trends. Use among all subgroups has declined some since recent peaks in 2001 or 2002.

INDEX OF USE OF ANY PRESCRIPTION DRUG AMONG TWELFTH GRADERS

Because we believe that the answers given by younger students regarding their use of sedatives or other narcotics may not be entirely accurate, we report here only the data for 12th graders who

[109]We expressed our concern years ago about the large number of adolescent females taking this drug, about which so little was known. The widespread use of creatine among young males raises similar concern today.

report using *any* of the prescription drugs that we cover—***amphetamines***, ***sedatives*** (***barbiturates***), ***tranquilizers***, and ***narcotics other than heroin***. Trends since 2005 in the proportion of 12th graders who report using any of these four classes of psychotherapeutic drugs without a doctor's orders are presented in Table 10-5 for each of the three standard prevalence periods.

Tables 2-1 through 2-3 in chapter 2 show that in 2012 significant proportions of 12th graders used one or more of these drugs without a doctor's order—21.2%, 14.8%, and 7.0% for lifetime, annual, and 30-day prevalence, respectively. Rates fell modestly from 2005 to 2008. All three prevalence measures have been quite level since 2008, leaving significant numbers of teens still misusing prescription drugs.

Table 10-4 shows trend data since 2005 for annual prevalence for the same index by *demographic subgroups*. Males are only slightly more likely than females to use one or more of these drugs—a consistent finding across time. Another consistent finding is that college-bound students are consistently less likely to use these drugs outside of medical supervision compared to those who are not college bound. This difference diminishes considerably in 2012 with a drop of 5.5 percentage points in annual prevalence ($p < .001$; 22.2% in 2011 to 16.7% in 2012) among the noncollege-bound and no change among the college-bound, who remain at 14.0%. (The decline among the noncollege-bound was due primarily to declines in narcotics other than heroin.) There are no consistent differences by region of the country. Prevalence rates do not vary consistently or by much among the three levels of population density. Prevalence rates also do not vary much by parental education, except that the lowest stratum tends to have a slightly lower prevalence than the others, perhaps because of its racial/ethnic makeup.[110]

The largest subgroup differences by far are found among the three racial/ethnic groups, with annual usage rates among Whites more than half again as high as among Hispanics, and nearly three times as high as among African-American 12th graders (Table 10-4).

SOURCES OF CERTAIN PRESCRIPTION DRUGS

The misuse of prescription drugs—that is, their use outside of a physician's supervision—grew as a problem in the 1990s and into the 2000s, as is documented in chapter 5. Because of the re-emergence of this problem (which was also an issue in the late 1970s and early 1980s) we thought it important to understand the sources of such drugs. In 2007, we added a set of questions to one of the six randomly distributed 12th-grade questionnaire forms asking about how these drugs were obtained. Respondents who indicated that in the prior 12 months they used ***tranquilizers***, for example, were branched to a set of more detailed questions about their tranquilizer use. One of those questions (the new one) asked them to indicate where they got the tranquilizers by marking all that apply out of a pre-specified set of answers. Similar measures were introduced for ***narcotics other than heroin*** (most of which are analgesics) and ***amphetamines***. (Sources of ***sedatives (barbiturates)*** were not asked.)

[110]Bachman, J.G., O'Malley, P.M., Johnston, L.D., Schulenberg, J.E., & Wallace, J.M., Jr. (2011). Racial/ethnic differences in the relationship between parental education and substance use among U.S. 8th-, 10th-, and 12th-grade students: Findings from the Monitoring the Future project. *Journal of Studies on Alcohol and Drugs* 72(2):279-85.

Unfortunately, there was not sufficient space available in the 2007 and 2008 questionnaires to elaborate the answer categories as much as we would have liked, but the several answers that were offered told a compelling story. In 2009 it became possible to include a more detailed set of answer categories. The original set of categories asked about obtaining a drug from "a friend or a relative." The expanded set of answer categories asks first about obtaining a drug from a friend, and then separately about obtaining a drug from a relative. These detailed answer categories have added substantial information about where these students obtain selected drugs. The detailed categories are also presented in combined form to enable comparisons to 2007–2008 data.

The questions about source of tranquilizers, amphetamines, and narcotics other than heroin appear on only one questionnaire form, and are asked only of past-year users of each drug; thus, there are limited numbers of cases. Table 10-5 provides the responses, with 2007–2008 data combined and 2009–2012 data combined in order to increase sample size and provide more stable estimates. Note that for the 2007 and 2008 combined data the weighted numbers of cases range between 226 and 361 for each of the drugs presented. For the 2009 through 2012 combined detailed data the weighted numbers of cases range from 377 to 582. Thus, the confidence intervals around the estimates are fairly wide.

One interesting finding is that the distribution of sources is similar for the three different types of psychotherapeutic drugs. For the 2009–2012 combined data, the most common source is "given for free by friend or relative," from 64% to 76% for each of the three. Another common source is "bought from friend or relative," ranging from 38% to 48% for each. Taking the drug from a friend or relative without asking (i.e., stealing it) was mentioned by only 13%–22%.

The expanded set of responses in Table 10-5 shows that "given for free by a friend" and "bought from a friend" are two of the most common methods for obtaining these drugs and are considerably more frequently mentioned than "given for free by a relative" or "bought from a relative." Clearly the informal network of friends is a major source of these drugs for adolescents, far more common a source than any family network.

"From a prescription I had" is a relatively common source for narcotic drugs at 36%, similar to "bought from a friend" at 34%. "From a drug dealer/stranger" is not a common source for amphetamine users (20%) or for tranquilizer user (25%) and is mentioned by only 17% of narcotic users.

The least likely sources are "bought from a relative" and "bought on the Internet." The Internet is mentioned as a source by only 6.3% of the users of amphetamines, 4.3% of the users of tranquilizers, and 1.3% of the users of narcotics other than heroin. This may be in part because young people this age are usually living at home and do not want to risk their parents intercepting a shipped package containing illicitly purchased drugs. The Internet may well be an important source for older people, especially those who sell these drugs.

Not all of the answers are similar across drugs, however. While obtaining the drug "from a prescription I had" is mentioned by 36% of past-year users for narcotics other than heroin, it is mentioned by only 17% of the amphetamine users and 14% of the tranquilizer users. For narcotic drugs especially, leftover prescriptions appear to be an important source for adolescents. But, "given for free by a friend" and "bought from a friend" are two of the three most common means

for obtaining narcotics, at 52% and 34%, respectively, in 2009–2012; these are also the most common means for obtaining amphetamines and tranquilizers.

A minority (17–25%) of users reported obtaining any of these prescription drugs by purchase from a drug dealer or stranger. Relatively few indicated sources other than those explicitly listed in the answer set by checking "other method" for tranquilizers (10%), narcotics other than heroin (10%), and amphetamines (13%).

DRUGS USED IN THE TREATMENT OF ADHD

Attention deficit hyperactivity disorder, or ADHD, is a chronic condition that is usually diagnosed in childhood or adolescence and can persist into adulthood. ADHD symptoms—inattention and hyperactive, impulsive behavior—have been treated for some years with prescribed ***stimulant drugs***, often amphetamines. These have included Ritalin and more recently Adderall and Concerta, among others. ***Nonstimulant medications*** are now also in use, and are sometimes prescribed when stimulants have proven ineffective or not well tolerated. One of these is Strattera, which was approved by the FDA in 2003.

How extensive is the use of stimulant drugs for treating ADHD, and what are the characteristics of the children receiving them? To what extent are the nonstimulant drugs like Strattera, Provigil, and others being used for the same therapeutic purposes, and is the use of these two different classes of drugs—stimulants and nonstimulants—changing over time? These are among the questions that prompted us to add a section on the use of these drugs to some questionnaire forms in all three grades. Tables 10-6 through 10-8 provide the relevant introduction and questions verbatim. The introduction to the question set is intended to orient respondents to the purposes for which these medications are prescribed and to distinguish between the stimulant and nonstimulant therapeutic drugs. Four questions follow—three about stimulant drugs and one about nonstimulant drugs. For the stimulant drugs, respondents are asked (a) whether they use them now or have used them in the past under a doctor's orders for ADHD; (b) at what age they began such use; and (c) for about how long they have actually taken them. Space limitations precluded our going into the history of their use of the nonstimulant drugs, so only one question is asked about whether they now use them under a doctor's orders or have done so in the past. Lifetime and current prevalence of each type of drug, as well as the proportion of students who use either or both of them, are shown at the bottom of the table.

Prevalence of Use under Medical Supervision

Tables 10-6 through 10-8 show the proportion of students in 2012 who have taken either stimulant and/or nonstimulant drugs for the treatment of ***ADHD*** under a doctor's care.

Lifetime prevalence of use of *either type* of drug under medical supervision was 11.6%, 12.0%, and 12.7% in grades 8, 10, and 12, respectively, in 2012. Thus, about one in every eight or nine 8th-, 10th- and 12th-grade student has received medication for ADHD at some time.

- Lifetime prevalence for ***stimulant-type*** drugs**,** like Ritalin, was 7.7%, 8.0%, and 9.0% for the three grades in 2012.

- In 2012 lifetime prevalence for ***nonstimulant-type*** drugs like Strattera was somewhat lower at 5.1%, 5.2%, and 5.9% for 8th, 10th, and 12th grades, respectively.

- Current prevalence (as indicated by the answer, "I take them now") for the use of *either type* of drug—stimulants or nonstimulants—was 4.7%, 5.1%, and 5.5% in grades 8, 10, and 12, respectively, in 2012. Thus, roughly one in every twenty students is currently taking prescribed medication for ADHD.

- Current prevalence for ***stimulant-type*** drugs in 2012 for the three grades was 3.5%, 3.8%, and 3.8%, respectively, and for ***nonstimulant-type*** drugs it was lower, at 1.2%, 1.3%, and 1.8%.

- Thus lifetime experience with ***nonstimulant-type*** drugs is only modestly lower than it is for ***stimulant-type drugs***, but current prevalence is considerably lower for the nonstimulant-type drugs.

- Note that the last column in each of these three tables (10-6 through 10-8) gives the prevalence rates and answer distributions based on respondents in all eight years combined (2005–2012); and they tell a similar story.

Trends in Use under Medical Supervision

Tables 10-6 through 10-8 also show trends in the use of stimulant- and/or nonstimulant-type drugs for the treatment of ***ADHD*** since 2005.

- Lifetime prevalence for taking either a ***stimulant*** or ***nonstimulant*** drug for the treatment of ADHD—shown at the bottom of each table—declined very slightly among 8th and 10th graders between 2005 and 2012 from 14% to 12% in both grades. There was very little change among 12th graders, from 12.4% to 12.7%. Trends for current prevalence show slight declines for 8th and 10th graders, whereas there has been a slight increase among 12th graders.

- Lifetime prevalence for ***stimulant*** ADHD drugs appears to have declined modestly since 2005 in the lower grades. For example, lifetime prevalence for 8th graders fell from 8.3% in 2005 to 7.7% in 2012, while for 10th graders lifetime prevalence fell from 8.7% to 8.0% over the same interval. *Current* use in grades 8 and 10 has changed rather little, but has increased somewhat in 12th grade (from 2.9% in 2005 to 3.8% in 2012).

- Lifetime and current prevalence of taking ***nonstimulant*** ADHD drugs declined between 2005 and 2012 in 8th and 10th grades, but held fairly steady in 12th grade.

Subgroup Differences

Tables 10-9 through 10-14 provide prevalence and trend data for several demographic subgroups. They also contain a column of data for 2005–2012 combined to help compensate for the limited numbers of cases available. Given the lack of much change in the overall trends, we will rely on the combined statistics in this section as providing the most reliable evidence of subgroup differences. Several findings stand out:

- *Gender*: Males are considerably more likely than females to receive ***any medication*** (stimulant or nonstimulant) for ADHD. This holds for both lifetime and current prevalence in each grade, with the single exception that among 12th graders, females are slightly more likely than males to report current use of ***nonstimulant drugs*** (1.8% vs. 1.6%, respectively, for 2005–2012 combined current use).

- *College plans*: For 2005–2012 combined, students who say that they do not plan to complete four years of college are more likely to receive ***any medication*** for ADHD, either ***stimulant*** or ***nonstimulant*** drugs. This has held generally for lifetime and current prevalence in each grade.

- *Region*: In general, there are not large regional differences in the prevalence of ADHD medication either in lifetime or current use, but the West generally has had the lowest reported current rates (for the combined score) of using either ***stimulant*** or ***nonstimulant*** drugs in the upper grades.

- *Population density*: Medication rates do not appear to vary systematically by population density.

- *Parents' education*: We use the average education level of parents as a proxy for socioeconomic status (SES). *Lifetime* prevalence of receiving any ADHD medication, and for both subclasses of ADHD drugs, tends to be slightly negatively correlated with family SES in 8th grade, not correlated in 10th grade, and slightly positively correlated in 12th grade. *Current* use at 10th and 12th grades, however, does appear to be positively correlated with SES for stimulant-type and either-type. Current use of either type of ADHD medication tends to be higher in the upper SES groups in all three grades. To the extent that children from high-SES families tend to be treated more for ADHD than others, it probably reflects that those families are more likely to receive professional assessment and undertake treatment.

- *Race/ethnicity*: There are some important differences in ADHD treatment related to student race/ethnicity. In general, White students are more likely to have been treated with prescription ADHD drugs at each grade than African-American or Hispanic students. Current use of ***either subclass*** of drugs is also substantially higher among White students than among African-American or Hispanic students in all three grades, with the exception that these differences are not very great for non-stimulant drugs in grades 10 and 12. In the upper grades, African Americans and Hispanics have usage rates that are roughly equivalent to each other; in 8th grade, Hispanics have a somewhat lower rate than African Americans and less than the rate of Whites. As to why White students are more likely to be treated with ADHD drugs than African-American and Hispanic students, it again may well be due to White families being more likely to get access, or being able to afford, professional assessment and treatment.

PERFORMANCE-ENHANCING SUBSTANCES: ANDRO AND CREATINE

In order to better understand the sharp increase in teen steroid use that we observed in the late 1990s, we added a single tripwire question in 2001 about the frequency of use of ***androstenedione*** (or "andro," a precursor to anabolic steroids) because it is used for many of the same purposes as anabolic steroids. A small minority of respondents report use of both steroids and andro, thus introducing the possibility of some double counting of events in the two questions; however, the majority of use is not overlapping. The 2012 annual prevalence rates for andro are 0.6%, 0.9%, and 1.0% in grades 8, 10, and 12, respectively. Use tends to be higher among males: Their prevalence rates are 0.7%, 1.3%, and 1.3%, respectively, compared with 0.3%, 0.5%, and 0.6% for females. It should be noted that androstenedione was scheduled by the Drug Enforcement Administration in early 2005, making its sale and possession no longer legal.

We also examined teens' use of another substance used for performance and physical enhancement—***creatine***. This substance is not a hormone or a drug, but a nutrient found in the skeletal muscle of most animals. Creatine is used to enhance performance capacity, reduce the recovery time of muscles, and increase muscle mass. It is readily available over the counter, which undoubtedly helps to explain the high levels of use we have found among teens. The annual prevalence of use in 2012 was 1.9%, 6.8%, and 9.5% in grades 8, 10, and 12, respectively. Again, the use rates are substantially higher for males: 2.9%, 13.1%, and 17.9% in grades 8, 10, and 12, respectively, versus 0.8%, 1.0%, and 1.1% for females. The figure for 12th-grade males' creatine use in just the prior 12 months (18%) seems very high, considering that the long-term effects of using this substance have not been well researched.

As suspected, there is a strong association between ***andro*** and ***creatine*** use. The great majority of andro users in the prior 12 months indicate that they also used creatine in the same period: 69%, 84%, and 82% of the andro users in grades 8, 10, and 12, respectively. The association is asymmetric, however, because there are many more creatine users than andro users. Of those reporting creatine use in the prior 12 months, the proportions also reporting andro use in the same interval were 23%, 11%, and 9% in grades 8, 10, and 12, respectively.

The self-reported use of ***steroids*** is likewise associated with ***creatine*** use. Of those reporting steroid use in the prior 12 months, the proportions also reporting creatine use were 34%, 63%, and 45% in the three grades, respectively. Conversely, the proportions of creatine users reporting steroid use in that interval were 11%, 9%, and 6%. In sum, the majority of andro users and substantial proportions of steroid users also use creatine.

Tables 10-15a through 10-16c present overall and subgroup trend data on the annual use of andro and creatine since 2001, when these substances were first included in the study. ***Andro*** use declined between 2001 and 2012 for all three grades: from 1.1% to 0.6% among 8th graders, from 2.2% to 0.9% among 10th graders, and from 3.0% to 1.0% among 12th graders. (As mentioned above, androstenedione was scheduled by the Drug Enforcement Administration in early 2005.)

Creatine use was also down from 2001—when it was first measured—through 2005 in all three grades, but since 2005 there have actually been some increases in annual prevalence among 10th and 12th graders.

Usage rates for creatine are far lower among females than males, while the gender difference is more modest for andro. Generally, use of both drugs has been somewhat lower among those planning to go to college than among those who are not, although in 2012 use among noncollege-bound 12th graders was higher.

Because there is some *overlap* in the reporting of anabolic ***steroids*** and ***androstenedione***, it seems useful to examine how many teens are using either drug. Tables 10-17a through 10-17c present trend data on the use of andro only, use of steroids only, use of both, and use of either or both. The annual prevalence for the use of ***either drug*** (***or both***) among males in 2012 is 1.3%, 2.0%, and 2.2% for 8th, 10th, and 12th grades, respectively. In other words, about 1 in every 45 twelfth-grade males used steroids and/or andro in the prior year. However, these percentages are all substantially lower than they were in 2001.

DAILY USE OF MARIJUANA BY TWELFTH GRADERS

In earlier reports in this series, we summarized a number of findings regarding daily marijuana users, including what kind of people they are, how use changes after high school for different subgroups, and what daily users see as the negative consequences of their use.[111] In 1982, a special question segment was introduced in one 12th-grade questionnaire form to secure more detailed measurement of individual patterns of daily marijuana use. Respondents were asked whether at any time during their lives they had ever used marijuana on a daily or near-daily basis for at least a month and, if so, (a) how recently they had done so, (b) when they first had done so, and (c) how many total months they had smoked marijuana daily, cumulating over their lifetime. The results of our analyses of these more in-depth data on marijuana use follow.

Lifetime Prevalence of Daily Marijuana Use

- ***Current daily marijuana use***, defined as use on 20 or more occasions in the last 30 days, has fluctuated widely since the study began, as we know from the trend data presented in chapter 5. Among 12th-grade respondents, it rose from 6.0% in 1975 to 10.7% in 1978, declined to 1.9% by 1992, and then began to increase again. Current daily use reached 6.6% in 2011, the highest prevalence rate seen in the last 30 years (i.e., since 1981; Table 5-4). In 2012 daily use of marijuana was at 6.5%.

- Using the questions on duration of daily use, we have found that, since 1982, the ***lifetime prevalence of daily marijuana use for a month or more*** has been far higher than current daily marijuana use. For example, among 12th graders in 2012, 18.2% reported using marijuana daily for at least a month at some point in their lives, which is nearly three times greater than the 6.5% reporting current daily use.

[111]For the original reports, see the following,: Johnston, L.D. (1981). Frequent marijuana use: Correlates, possible effects, and reasons for using and quitting. In R. DeSilva, R. Dupont, & G. Russell (Eds.), *Treating the marijuana dependent person* (pp. 8–14). New York: The American Council on Marijuana. http://monitoringthefuture.org/pubs/chapters/mj81.pdf. Also see Johnston, L. D. (1982). A review and analysis of recent changes in marijuana use by American young people. In *Marijuana: The national impact on education* (pp. 8–13). New York: The American Council on Marijuana. http://monitoringthefuture.org/pubs/chapters/mj82.pdf.

However, we believe it very likely that this ratio has changed dramatically over the life of the study as a result of the large secular trends in daily use. Therefore, it would be inaccurate to extrapolate, for example, that the lifetime prevalence of daily use for the class of 1978 was three to four times their 10.7% current use figure for that year. (In fact, an analysis of follow-up panel data for the class of 1978 confirms this assertion.)

Using data collected in 1989 from follow-up panels combining the graduating classes of 1976 through 1988 (ages 19–31 in 1989) we found a lifetime prevalence of daily marijuana use of 20%. Approximately one fourth of the older portion of that group—graduates from the classes of 1976 through 1979—indicated having been daily marijuana users for a month or more at some time in their lives. Thus, experience with daily use of marijuana was widespread in the cohorts of Americans who passed through late adolescence in the peak years of the drug epidemic. In 2012 these cohorts would range in age from about 51 to 54. *Volume II* provides more detailed information on the drug use history and current use of these and other adult age groups.

Grade of First Daily Marijuana Use

Daily marijuana use can begin at quite a young age. Of the 2012 twelfth graders who reported being daily marijuana users for a month or more at some time in their lives (i.e., 18.2% of the sample), 53% (or 9.6% of all 12th graders) began that pattern of use *before* 10th grade. Different graduating classes show disparate age-associated patterns of onset, depending on the secular trends and, to a lesser degree, cohort effects that were occurring. The percentages of all 12th graders in 2012 that started daily marijuana use in each grade level are presented in Table 10-18. It shows that a substantial proportion began such daily marijuana use in grades 7 through 9, with the incidence rate remaining fairly high in grades 10 and 11 and declining by 12th grade.

Recency of Daily Marijuana Use

About four in five (82%) of those 12th graders in 2012 who reported *ever* having been daily marijuana users for at least a one-month interval also reported using marijuana that frequently in the prior year, while about one fifth (18%) said they last used marijuana that frequently about two or more years ago. Thus the pattern of heavy use tends to be one that sustains at least into late adolescence.

About one third (37%) of all 12th graders in 2012 who said they had *ever* been daily marijuana users for a month or more classified themselves as having used it daily or almost daily during the past 30 days (6.8% of the entire sample). Our operational definition of current daily users on the standard prevalence and frequency-of-use questions (i.e., 20 or more occasions of use in the last 30 days) yields a 6.5% rate in 2012, very close to the 6.8% rate based on the respondents' own definition. (These two rates have generally been quite close across the years.)

Duration of Daily Marijuana Use

It seems likely that the most serious long-term health consequences associated with marijuana use will be directly related to the duration of heavy use, and in the late 1970s there was considerable concern that a large population of chronic heavy users would evolve. Thus, a question was introduced asking respondents to estimate the *cumulative* number of months they have smoked marijuana daily or nearly daily. While hardly an adequate measure of the many

possible cross-time patterns of use, this question does provide a gross measure of the total length of exposure to heavy use.

Table 10-18 gives the distribution of answers to this question for 12th graders in 2012. It shows that, of the 18% of all 12th graders reporting daily marijuana use lasting a month or more, about one fifth (21%) said this level of use cumulated to less than three months; about half (52%) reported it totaled about one year or less; and about one third (36%, or 6.6% of *all* 12th graders who used marijuana daily for a month or more) reported it totaled about two years or more, with 0.8% reporting daily use of the drug for a total of six years or longer. *Particularly striking is the fact that one in every fifteen high school seniors (6.6%) in 2012 smoked marijuana daily (or almost daily) for two years or more.*

Subgroup Differences in Daily Marijuana Use

- There is a ***gender*** difference in the proportion of 12th graders who report ever having been daily marijuana users for a month or more (22% for males and 12% for females; Table 10-19a), and long-term duration of daily use is somewhat higher for males (Table 10-18).

- Whether or not the student has ***college plans*** is strongly related to several marijuana use characteristics. Of those 12th graders planning four years of college, 14% have used marijuana daily at some time, compared with 28% of those without such plans. In addition, the college-bound users show a distinctly shorter cumulative duration of daily use, and a lower proportion of them used marijuana daily during the past month. Also, among daily users, non-college-bound 12th graders have an earlier age of onset (see Table 10-18) and a higher rate of long-term heavy use of three or more years.

- In 2012, the four ***regions*** of the country show lifetime prevalence of daily marijuana use between 16% and 23%.

- The differences in lifetime daily marijuana use associated with ***population density*** have generally not been large, with a range of 15% to 20% in 2012.

Trends in Use of Marijuana on a Daily Basis

- Table 10-19a presents trend data on ***lifetime daily marijuana use*** for a month or more. It shows a large decline from 1982, when this measure was first used, through 1992—from 21% to 8%. By 1997 it had risen substantially, reaching 19%. After 1998, it stabilized for a period of time, and then showed a modest decline after 2006 (to 15% in 2009). Since 2009 there has been a rise in this statistic to 18% in 2012, bringing it back to a level last seen in 2001.

- Between 1982 and 1992, the decline in ***lifetime daily marijuana use for a month or more*** was slightly steeper among males (from 20% to 8%) than among females (from 18% to 8%), and the absolute drop was larger among the non-college-bound (23% to 11%) than among the college-bound (14% to 6%), although the proportional drop was not. In the turnaround that began in 1993, most of the increase appears to have occurred among the males and the non-college-bound (who are at 22% and 28%, respectively, in

2012). Trends for regions and population density levels have generally paralleled the total sample trends, though in recent years use has increased most in large metropolitan areas and least in non-metropolitan areas (Table 10-19a).

- ***Daily prevalence of marijuana use for a month or more*** prior to 10th grade (see Table 10-19b for totals and subgroup trends) declined from 13% in the class of 1982 to 5% in the class of 1993. (These classes were 9th graders between 1979 and 1990.) This decline halted among 12th graders surveyed in 1994 and then began to climb through the class of 2001 (11.4%). Since 2002, the percentage has ranged between 8% and 10%: it stood at 10% in 2011 and 2012.

OTHER MTF PUBLICATIONS

MTF results are reported in a number of other types of publications, in particular journal articles. Selected articles published in the past year or in press as of this writing are summarized below. Further details, as well as a more complete listing, may be found under "Publications" on the MTF website: www.monitoringthefuture.org.

Relationship between school administrators' reports of parental involvement in school and students' substance use: A national study[112]

This study examined the relationship between student substance use and school-level parental involvement as reported by administrators. Questionnaires were administered to school administrators and 111,652 students in 1,011 U.S. schools. Hierarchical logistic regression analyses conducted on 1998–2003 data from students and administrators indicate significantly lower prevalence of alcohol use among 8th graders in schools where administrators reported high parental involvement. Overall, administrators' reports of high parental involvement were unrelated to prevalence of substance use among 10th graders, and were associated with higher prevalence of alcohol use among 12th-graders. Implications and limitations were discussed, along with suggestions for future research.

Alcohol, tobacco, and other drug use prevention programs in U.S. schools: A descriptive summary[113]

This report identified prevalence of state, local, and commercially developed substance abuse prevention programs in middle and high schools from 2001 to 2007, using survey data from nationally representative samples of 1,206 schools. Based on school administrators' reports, schools and school districts offered students an average of 1.62 prevention programs during their school years from elementary through high school. Bivariate and multivariate regression analyses were conducted with school demographic characteristics (public versus private, size, population density, region of the country, school race/ethnic composition and socioeconomic status of the student body [SES]) as predictors of total number of programs that students received and of the relative use of local, state, and commercial programs. Schools in the West had

[112]Kumar, R., O'Malley, P. M., & Johnston, L. D. (in press). Relationship between school administrators' reports of parental involvement in school and students' substance use: A national study. *Journal of Child and Adolescent Substance Abuse*.

[113]Kumar, R., O'Malley, P. M., Johnston, L. D., & Laetz, V. B. (2013). Alcohol, tobacco, and other drug use prevention programs in U.S. schools: A descriptive summary. *Prevention Science, online first*. doi: 10.1007/s11121-012-0340-z

significantly fewer prevention programs than those in other regions of the country. Students in predominantly White and in higher SES schools received significantly more prevention programs than students in majority African American, majority Hispanic, or in lower SES schools. The most frequently reported programs that students received were locally developed. D.A.R.E. was the most widely adopted prevention program. Findings from this study suggest that schools often develop their own curriculum to suit their students' needs, and students are exposed to multiple prevention programs through their school years, making it difficult to examine the effectiveness of any single program in preventing and reducing substance use among students.

Middle and high school drug testing and student illicit drug use: A national study, 1998–2011[114]

This study used 14 years of data from the Monitoring the Future study to examine associations between school student drug testing (SDT), substance use, and participation in extracurricular activities. Analyses used questionnaire data collected from 1998–2011 from 89,575 students in 883 middle schools and 157,400 students in 1,463 high schools to examine: (1) the current prevalence of SDT; (2) SDT trends over time; (3) associations between substance use and SDT type, volume, or duration among the general student population or students participating in activities subject to testing; (4) associations between students' beliefs/attitudes about marijuana use and SDT; and (5) associations between extracurricular participation rates and SDT. Moderately lower marijuana use was found to be associated with any random testing of the general high school student population and for SDT of middle and high school sub-populations specifically subject to testing (athletes or participants in non-athletic extracurricular activities). However, SDT generally was associated with increased use of illicit drugs other than marijuana. Because the study design was observational, and the data cross-sectional, no strong causal conclusions could be drawn. Nevertheless, the evidence of lower use of marijuana and higher use of other illicit drugs should raise cautions about the use of testing students.

Adolescent work intensity, school performance, and substance use: Links vary by race/ethnicity and socioeconomic status[115]

Research has shown that high school students who spend long hours in paid employment during the school year are at increased risk of lower grades and higher substance use, although questions remain about whether these linkages reflect causation or prior differences (selection effects). Questions also remain about whether such associations vary by socioeconomic status (SES) and race/ethnicity. This study examined those questions using nationally representative data from two decades (1991–2010) of annual Monitoring the Future surveys involving about 600,000 students in 10th and 12th grades. White students were consistently more likely than minority students to hold paid employment during the school year. Among White and Asian American students, paid work intensity was negatively related to parental education and grade point averages (GPA) and was positively related to substance use. Also among Whites and Asian

[114]Terry-McElrath, Y. M., O'Malley, P. M., & Johnston, L. D. (in press). Middle and high school drug testing and student illicit drug use: A national study 1998-2011. *Journal of Adolescent Health Care*.

[115]Bachman, J. G., Staff, J., O'Malley, P. M., & Freedman-Doan, P. (2013). Adolescent work intensity, school performance, and substance use: Links vary by race/ethnicity and socioeconomic status. *Developmental Psychology, online first*. http://www.ncbi.nlm.nih.gov/pubmed/23316768

Americans, students with the most highly educated parents showed the strongest negative relations between work intensity and GPA, whereas the links were weaker for those with less educated parents (i.e., lower SES levels). All of these relations were less evident for Hispanic students and still less evident for African American students. It thus appears that any costs possibly attributable to long hours of student work are most severe for those who are most advantaged—White or Asian American students with highly educated parents. Working long hours is linked with fewer disadvantages among Hispanic students and especially among African American students. Youth employment dropped in 2008–2010, but the relations described above have shown little change over two decades.

Extreme binge drinking among American 12th-grade students: Prevalence and predictors[116]

The prevalence of underage alcohol use has been studied extensively but binge drinking among youth in the U.S. is not yet well understood. In particular, adolescents may drink much larger amounts than the threshold (5 drinks) often used in definitions of binge drinking. Delineating various levels of binge drinking, including extreme levels, and understanding predictors of such extreme binge drinking among adolescents will benefit public health efforts. In this paper, we sought to examine the prevalence and predictors of 5+ binge drinking and of 10+ and 15+ extreme binge drinking among 12th graders in the U.S. We used a nationally representative sample of 16,332 high school seniors (modal age 18) in the U.S. who participated in the annual Monitoring the Future study between 2005 and 2011. We found that between 2005 and 2011, 20.2% of high school seniors reported 5+ binge drinking, 10.5% reported 10+ extreme binge drinking, and 5.6% reported 15+ extreme binge drinking in the past 2 weeks. Rates of 5+ binge drinking and 10+ extreme binge drinking have declined since 2005, but the rate of 15+ extreme binge drinking has not. Students with college-educated parents were more likely to consume 5+ drinks but less likely to consume 15+ drinks than students whose parents were not college educated. Students from more rural areas were more likely than students from large metropolitan areas to drink 15+ drinks. Socializing with substance-using peers, number of evenings out with friends, substance-related attitudes, and other substance use (cigarettes, marijuana) predicted all three levels of binge and extreme binge drinking. These data suggest the importance of assessing multiple levels of binge drinking behavior and their predictors among adolescents in order to target effective screening and intervention efforts.

Depressive symptoms, conduct problems, and risk for polysubstance use among adolescents: Results from US national surveys[117]

Polysubstance use in adolescence is a known precursor to chronic substance misuse. Identifying risk factors for polysubstance use is necessary to inform its prevention. The present study examined the association of elevated levels of multiple mental health symptoms with adolescents' engagement in polysubstance use (past month use of alcohol, cigarettes, and marijuana). In a US national sample of 8th, 10th, and 12th grade students from Monitoring the

[116]Patrick, M. E., Schulenberg, J. E., Martz, M. E., Maggs, J. L., O'Malley, P. M., & Johnston, L. (in press). Extreme binge drinking among American 12th-grade students: Prevalence and predictors. *JAMA Pediatrics.*

[117]Maslowsky, J., Schulenberg, J. E., O'Malley, P. M., & Kloska, D. D. (in press). Depressive symptoms, conduct problems, and risk for polysubstance use among adolescents: Results from US national surveys. *Mental Health and Substance Use.*

Future surveys, we estimated probability of polysubstance use associated with high levels of depressive symptoms, conduct problems, or both. Depressive symptoms and conduct problems, alone and particularly in combination, were associated with drastically elevated probability of polysubstance use. Adolescents with high levels of both depressive symptoms and conduct problems had the highest probability of polysubstance use. Among 8th and 10th graders, probability of polysubstance use associated with co-occurring mental health problems was significantly higher for girls than boys.

Birth cohort effects on adolescent alcohol use: The influence of social norms 1976-2007[118]

The substantial changes adolescent alcohol use prevalence over time suggests that population-level environmental factors are important determinants of use, yet the potential influence of such environmental factors is inadequately understood. The present study investigated whether adolescents in birth cohorts and/or time periods characterized by restrictive social norms towards alcohol were at decreased risk for alcohol use and binge drinking, controlling for individual attitudes (disapproval) towards use. Aggregated data from thirty-two annual national surveys from the Monitoring the Future study were included. A total of 967,562 students contributed outcome data from 1976 through 2007. The social norm was measured by creating scores for each time period and birth cohort indicating the proportion disapproving of weekend binge drinking. Frequency of past-year alcohol use and any instance of binge drinking (5+ drinks) in the past two-weeks, was analyzed using multi-level models clustering individuals within time periods and birth cohorts. Period- and cohort-specific social norm scores were modeled as predictors, controlling for individual attitudes and demographics. We found that individuals who matured in birth cohorts with more restrictive social norms were less likely to use alcohol compared to individuals who matured in cohorts with more permissive norms; each 5% increase in the cohort-specific disapproval was associated with a 12% decrease in the odds of past-year alcohol use (OR = 0.88, 99% C.I. 0.87–0.89). The effects of cohort-specific disapproval were notably stronger among White than non-White adolescents. The present study documents the importance of considering time-varying population-level risk factors in the study of adolescent alcohol use, and indicates that even after an individual's personal attitudes are accounted for, risk is shaped by cohort effects whereby the norms within the cohort contribute to the risk of adolescent alcohol use.

OTHER DATA ON CORRELATES AND TRENDS

Hundreds of correlates of drug use, without accompanying interpretation, may be found in MTF's series of annual volumes entitled *Monitoring the Future: Questionnaire Responses from the Nation's High School Seniors*. For each year since 1975, a separate volume presents univariate and selected bivariate distributions on all questions asked of 12th graders. A host of variables dealing explicitly with drugs—many of them not covered here—are contained in that

[118]Keyes, K. M., Schulenberg, J. E., O'Malley, P. M., Johnston, L. D., Bachman, J. G., Li, G., & Hasin, D. (2012). Birth cohort effects on adolescent alcohol use: The influence of social norms from 1976 to 2007. *Archives of General Psychiatry*, *69*(12), 1304-1313. doi: 10.1001/archgenpsychiatry.2012.787.

series. Bivariate tables are provided for *all* questions asked of high school seniors each year distributed against an index of lifetime illicit drug involvement, making it possible to examine the relationships between hundreds of potential risk factors and illicit drug use. It is available on the MTF website (www.monitoringthefuture.org) under "Publications" and then "Reference Volumes."

A special cross-time reference index is contained in each volume to facilitate locating the same question across different years. One can thus derive *trend* data on approximately 1,500–2,000 variables for the entire 12th-grade samples or for important subgroups (based on gender, race, region, college plans, and drug involvement). These volumes can also be helpful to analysts using the publicly available MTF data in the Inter-university Consortium of Political and Social Research archive.

As mentioned in Appendix D, an annual occasional paper presents trends in both *graphic* and *tabular* form for the various subgroups for each of the many drug classes. It covers all years for all three grades in which data have been collected. It is available on the MTF website (see http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf) [119]

WEBSITE

Any reader wishing to obtain more information on the study, or to check for recent findings and publications, may go to the MTF website at www.monitoringthefuture.org. Prior to their publication in this monograph series, many of the most recent findings on substance use trends and related attitudes and beliefs are posted on the website in two forms: (1) a pair of press releases issued in mid-December of the year in which the data were collected; and (2) an *Overview of Key Findings* monograph posted at the end of the following January.

[119] Johnston, L.D., O'Malley, P.M., Bachman, J.G., & Schulenberg, J.E. (2013. *Demographic subgroup trends for various licit and illicit drugs, 1975–2012* (Monitoring the Future Occasional Paper No. 79). Ann Arbor, MI: Institute for Social Research. Available online at www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf.

TABLE 10-1a
Nonprescription Diet Pills
Trends in Lifetime, Annual, and 30-Day Prevalence of Use by Gender in Grade 12 [a]

(Entries are percentages.)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Lifetime																	
Total	29.6	31.4	29.7	28.7	26.6	25.5	21.5	19.9	17.7	17.2	15.0	14.8	14.9	15.6	16.0	16.6	15.7
Males	16.5	17.4	14.8	14.8	13.1	12.4	9.4	9.1	7.8	5.9	6.4	5.6	4.5	6.1	5.5	8.1	6.4
Females	42.2	44.8	43.1	41.5	39.7	38.3	32.6	30.2	28.3	28.1	23.2	23.3	23.7	23.9	25.5	24.5	25.7
Annual																	
Total	20.5	20.5	18.8	16.9	15.3	13.9	12.2	10.9	10.4	8.8	8.4	8.0	9.3	9.8	9.3	9.8	9.6
Males	10.7	10.6	9.2	9.0	6.9	6.4	4.9	4.3	4.3	3.0	4.3	3.2	2.5	3.5	3.7	4.9	4.3
Females	29.5	30.0	27.5	24.4	23.2	21.1	18.8	17.2	16.7	14.2	12.2	12.3	14.9	15.1	14.1	14.6	15.4
30-Day																	
Total	9.8	9.5	9.9	7.3	6.5	5.8	5.1	4.8	4.3	3.7	4.0	3.8	4.2	3.8	4.3	4.6	4.8
Males	5.0	4.0	4.8	3.7	3.2	2.7	1.8	2.3	1.9	1.4	1.9	1.9	1.3	1.1	2.3	2.3	2.2
Females	14.0	13.7	14.2	10.7	9.6	8.9	8.3	7.0	6.7	5.5	5.8	4.9	6.4	5.7	5.8	7.0	7.6

(Years cont.)

(Table continued on next page.)

TABLE 10-1a (cont.)
Nonprescription Diet Pills
Trends in Lifetime, Annual, and 30-Day Prevalence of Use by Gender in Grade 12 [a]

(Entries are percentages.)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Lifetime															
Total	17.1	16.6	17.1	21.0	17.9	15.6	13.7	13.0	10.4	10.5	9.5	7.2	7.7	7.7	0.0
Males	6.5	7.2	8.3	9.8	9.3	8.8	7.8	7.0	5.1	6.1	4.3	3.3	5.2	4.4	-0.8
Females	26.5	26.4	23.6	29.3	24.7	21.6	18.3	18.3	14.3	14.5	14.6	10.5	9.5	10.6	+1.1
Annual															
Total	10.2	11.1	11.8	15.1	13.0	10.7	10.0	9.4	6.7	7.2	6.1	4.3	4.9	5.5	+0.6
Males	4.0	4.9	6.2	8.1	6.9	6.5	6.0	5.7	3.4	4.2	3.0	2.4	3.0	3.7	+0.6
Females	15.7	17.2	15.6	20.0	17.5	14.1	13.2	12.5	9.2	9.9	9.3	6.0	6.1	7.0	+0.9
30-Day															
Total	5.4	5.8	6.3	9.2	6.5	5.6	4.4	5.3	3.8	3.7	2.6	2.1	2.4	3.4	+1.0
Males	2.6	2.1	3.7	4.7	3.2	3.9	2.1	3.1	1.8	2.2	1.6	1.7	1.8	2.5	+0.7
Females	7.8	9.4	8.0	12.2	8.7	6.8	5.9	7.1	5.0	5.0	3.4	2.4	2.5	4.2	+1.8

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]Data based on one form. The total *N* each year for 1982–1989 is approximately 3,300. The total *N* each year for 1990–1998 is approximately 2,600. Beginning in 1999, the total *N* each year is approximately 2,200.

TABLE 10-1b
Stay-Awake Pills
Trends in Lifetime, Annual, and 30-Day Prevalence of Use by Gender in Grade 12 [a]

(Entries are percentages.)

(Years cont.)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Lifetime																	
Total	19.1	20.4	22.7	26.3	31.5	37.4	37.4	36.3	37.0	37.0	35.6	30.5	31.3	31.2	30.5	31.0	29.6
Males	20.2	22.3	23.2	28.0	32.0	34.8	38.0	37.7	35.3	36.0	34.4	30.4	30.2	29.0	27.4	27.3	29.0
Females	16.9	18.2	21.7	24.9	31.3	39.4	36.7	35.1	39.2	37.9	37.3	30.1	32.2	32.3	32.1	34.5	30.1
Annual																	
Total	11.8	12.3	13.9	18.2	22.2	25.2	26.4	23.0	23.4	22.2	20.4	19.1	20.7	20.3	19.0	19.7	19.0
Males	12.8	13.8	15.4	19.7	22.3	25.5	27.6	24.8	22.3	22.3	20.9	19.7	20.3	19.7	18.2	17.4	19.5
Females	10.0	10.5	12.5	17.0	22.2	25.0	25.2	21.7	24.5	22.0	20.2	17.6	20.4	20.1	18.7	21.0	18.0
30-Day																	
Total	5.5	5.3	5.8	7.2	9.6	9.2	9.8	8.5	7.3	6.8	7.2	7.0	6.3	7.3	7.5	7.8	7.4
Males	6.0	5.5	6.2	7.7	9.5	9.3	11.0	10.0	7.1	7.6	7.8	7.9	5.9	6.3	8.0	6.7	8.7
Females	4.7	4.5	5.5	6.7	9.3	9.1	8.6	6.9	7.3	5.5	6.5	5.5	5.8	7.1	6.1	8.2	5.8

(Table continued on next page.)

TABLE 10-1b (cont.)
Stay-Awake Pills
Trends in Lifetime, Annual, and 30-Day Prevalence of Use by Gender in Grade 12 [a]

(Entries are percentages.)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Lifetime															
Total	25.5	23.0	25.6	22.5	19.8	18.4	15.8	14.8	12.3	9.6	7.6	6.4	6.3	5.9	-0.4
Males	23.3	21.4	25.2	19.2	16.1	16.3	14.5	14.8	11.4	7.7	8.0	6.9	5.4	5.9	+0.5
Females	26.9	24.0	26.0	24.5	22.4	20.0	15.9	14.5	13.1	10.9	6.9	5.9	6.8	5.7	-1.1
Annual															
Total	15.7	15.0	17.3	14.9	12.5	11.8	10.4	10.0	7.6	6.3	4.8	3.2	3.9	3.8	-0.1
Males	14.5	14.0	17.8	13.9	9.3	11.1	9.4	10.2	7.8	5.2	5.9	3.2	2.8	3.9	+1.1
Females	15.9	15.9	16.5	14.6	14.3	12.3	10.3	9.4	7.1	7.0	3.5	3.1	4.6	3.8	-0.8
30-Day															
Total	6.8	7.3	7.2	5.8	5.0	4.5	4.2	4.2	3.3	2.6	2.3	1.6	2.2	1.9	-0.3
Males	5.0	6.8	6.8	5.6	3.2	5.1	3.6	4.3	3.8	2.3	2.8	1.7	1.8	1.6	-0.2
Females	7.4	7.3	7.3	5.6	5.9	3.8	4.5	3.5	2.5	3.1	1.6	1.4	2.2	2.1	-0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]Data based on one form. The total *N* each year for 1982–1989 is approximately 3,300. The total *N* each year for 1990–1998 is approximately 2,600. Beginning in 1999, the total *N* each year is approximately 2,200.

TABLE 10-1c
Look-Alikes
Trends in Lifetime, Annual, and 30-Day Prevalence of Use by Gender in Grade 12 [a]

(Entries are percentages.)

(Years cont.)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Lifetime																	
Total	15.1	14.8	15.3	14.2	12.7	11.9	11.7	10.5	10.7	8.9	10.1	10.5	10.3	11.6	10.7	10.8	9.4
Males	13.6	14.2	14.1	14.1	12.3	10.9	10.4	10.1	11.6	8.3	11.0	10.1	9.0	10.8	10.0	10.6	9.4
Females	15.1	14.4	15.2	13.8	12.6	12.3	12.1	10.2	9.9	8.8	9.3	10.4	11.2	10.6	10.3	10.7	8.9
Annual																	
Total	10.8	9.4	9.7	8.2	6.9	6.3	5.7	5.6	5.6	5.2	5.4	6.2	6.0	6.8	6.5	6.4	5.7
Males	9.5	9.2	9.7	8.3	6.5	6.4	4.2	6.1	6.6	4.9	6.2	6.4	5.9	7.0	5.7	7.2	6.0
Females	10.7	8.6	8.5	7.8	6.7	6.0	6.3	5.0	4.6	4.7	4.5	5.4	5.7	5.4	6.0	5.5	5.0
30-Day																	
Total	5.6	5.2	4.4	3.6	3.4	2.7	2.7	2.4	2.3	2.1	2.4	2.7	2.4	3.0	3.1	2.7	2.7
Males	4.0	4.5	4.5	3.8	3.4	2.4	1.7	2.3	2.6	2.0	2.5	2.0	2.5	3.0	2.6	2.7	3.1
Females	5.2	5.4	3.8	3.1	3.0	2.7	3.0	2.2	1.8	1.8	2.2	2.9	2.0	2.1	2.7	2.6	2.0

(Table continued on next page.)

TABLE 10-1c (cont.)
Look-Alikes
Trends in Lifetime, Annual, and 30-Day Prevalence of Use by Gender in Grade 12 [a]

(Entries are percentages.)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Lifetime															
Total	9.2	10.0	9.8	9.6	8.6	8.1	7.4	5.7	4.6	5.2	4.3	2.6	3.5	2.9	-0.5
Males	7.2	11.3	9.4	9.1	7.6	7.2	7.1	5.1	3.6	4.7	3.8	2.6	3.3	2.8	-0.5
Females	9.7	8.0	9.3	9.3	8.7	8.3	6.6	5.8	5.1	5.2	4.7	2.3	3.1	2.4	-0.7
Annual															
Total	5.0	5.8	7.1	6.6	5.4	5.0	4.2	3.7	2.8	3.1	2.6	1.7	2.2	2.1	-0.1
Males	4.6	7.0	7.3	6.8	5.2	4.3	3.9	3.3	2.5	2.5	2.3	1.7	2.1	2.1	0.0
Females	4.4	4.3	6.6	5.9	5.1	5.2	3.8	3.8	2.6	3.2	2.8	1.4	2.0	1.9	-0.1
30-Day															
Total	2.4	2.6	3.3	2.8	2.4	2.5	1.9	2.3	1.1	1.6	1.0	0.8	1.2	0.8	-0.3
Males	1.9	3.1	3.0	2.8	2.2	2.7	1.4	2.3	1.1	1.5	0.9	0.9	1.2	0.8	-0.5
Females	2.0	1.7	2.8	2.3	2.1	2.1	1.7	2.2	0.9	1.5	1.0	0.9	0.8	0.7	-0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]Data based on one form. The total *N* each year for 1982–1989 is approximately 3,300. The total *N* each year for 1990–1998 is approximately 2,600. Beginning in 1999, the total *N* each year is approximately 2,200.

TABLE 10-2a
Nonprescription Diet Pills
Trends in Annual Prevalence of Use by Subgroups in Grade 12

Percentage who used in last 12 months

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Approximate weighted N =	—	—	—	—	—	—	—	*17,700*	*16,300*	*15,900*	*16,000*	*15,200*	*16,300*	*16,300*	*16,700*	*15,200*	*15,000*	*15,800*	*16,300*
Total	—	—	—	—	—	—	—	20.5	20.5	18.8	16.9	15.3	13.9	12.2	10.9	10.4	8.8	8.4	8.0
Gender																			
Male	—	—	—	—	—	—	—	10.7	10.6	9.2	9.0	6.9	6.4	4.9	4.3	4.3	3.0	4.3	3.2
Female	—	—	—	—	—	—	—	29.6	30.0	27.5	24.4	23.2	21.1	18.8	17.2	16.7	14.2	12.2	12.3
College Plans																			
None or under 4 years	—	—	—	—	—	—	—	23.3	21.4	18.2	20.7	16.1	14.9	13.1	11.9	13.2	8.9	10.5	9.7
Complete 4 years	—	—	—	—	—	—	—	17.5	19.0	18.8	14.7	15.0	13.3	11.7	10.9	9.7	8.6	8.0	7.3
Region																			
Northeast	—	—	—	—	—	—	—	19.1	18.5	18.4	16.5	14.9	14.3	10.5	10.4	11.5	5.7	6.3	7.6
Midwest	—	—	—	—	—	—	—	24.6	23.3	20.2	19.2	16.6	15.0	13.7	15.0	11.1	10.7	9.3	8.4
South	—	—	—	—	—	—	—	18.2	19.2	19.6	14.9	13.9	13.1	12.0	9.3	10.0	9.0	7.7	9.2
West	—	—	—	—	—	—	—	18.9	21.1	15.8	17.3	16.4	13.5	12.1	8.7	8.9	8.8	10.3	5.4
Population Density																			
Large MSA	—	—	—	—	—	—	—	19.7	18.7	17.3	17.1	15.0	13.0	12.1	10.3	7.4	7.7	7.4	7.3
Other MSA	—	—	—	—	—	—	—	20.0	22.8	18.6	17.1	15.6	13.7	12.4	10.9	11.2	9.2	8.4	6.8
Non-MSA	—	—	—	—	—	—	—	21.7	19.2	20.5	16.5	15.2	15.2	11.9	11.7	11.7	9.1	9.2	10.5
Parental Education [a]																			
1.0–2.0 (Low)	—	—	—	—	—	—	—	19.5	15.9	19.2	14.6	12.0	13.5	13.4	9.5	5.1	9.4	10.6	6.9
2.5–3.0	—	—	—	—	—	—	—	21.6	21.3	18.2	17.8	15.6	13.1	12.0	9.9	12.3	8.6	8.9	8.9
3.5–4.0	—	—	—	—	—	—	—	20.6	20.2	20.6	18.0	16.6	14.5	11.5	11.8	9.2	8.2	7.9	7.8
4.5–5.0	—	—	—	—	—	—	—	19.3	22.4	17.4	16.8	15.0	15.9	12.0	10.4	12.0	9.3	6.6	8.0
5.5–6.0 (High)	—	—	—	—	—	—	—	21.0	22.3	19.1	17.1	15.7	11.6	13.6	13.4	12.2	8.5	8.2	6.2
Race/Ethnicity (2-year average) [b]																			
White	—	—	—	—	—	—	—	—	23.2	22.2	20.4	18.4	16.3	14.7	13.4	12.5	11.0	9.8	9.2
African American	—	—	—	—	—	—	—	—	6.6	8.1	6.4	5.5	7.5	6.9	4.3	2.9	3.5	3.0	4.5
Hispanic	—	—	—	—	—	—	—	—	11.6	12.6	14.8	10.8	7.8	7.9	9.6	9.8	5.6	4.6	7.1

(Years cont.)

(Table continued on next page.)

TABLE 10-2a (cont.)
Nonprescription Diet Pills
Trends in Annual Prevalence of Use by Subgroups in Grade 12

Percentage who used in last 12 months

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Approximate weighted N =	*15,400*	*15,400*	*14,300*	*15,400*	*15,200*	*13,600*	*12,800*	*12,800*	*12,900*	*14,600*	*14,600*	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*14,400*	*14,100*	*13,700*	
Total	9.3	9.8	9.3	9.8	9.6	10.2	11.1	11.8	15.1	13.0	10.7	10.0	9.4	6.7	7.2	6.1	4.3	4.9	5.5	+0.6
Gender																				
Male	2.5	3.5	3.7	4.9	4.3	4.0	4.9	6.2	8.1	6.9	6.5	6.0	5.7	3.4	4.2	3.0	2.4	3.0	3.7	+0.6
Female	15.0	15.1	14.1	14.6	15.4	15.7	17.2	15.6	20.0	17.5	14.1	13.2	12.5	9.2	9.9	9.3	6.0	6.1	7.0	+0.9
College Plans																				
None or under 4 years	10.8	11.5	10.8	12.0	10.7	9.1	10.0	9.4	17.8	13.9	10.4	11.5	12.1	4.4	10.2	9.4	4.3	6.1	5.2	-0.9
Complete 4 years	9.3	9.3	8.6	9.2	10.1	10.4	11.5	11.6	13.8	12.6	10.5	9.3	8.6	7.1	6.8	5.6	4.5	4.4	5.5	+1.1
Region																				
Northeast	8.6	8.2	10.1	8.1	8.6	8.6	8.0	12.8	16.7	11.6	11.9	9.1	12.0	7.2	6.3	4.6	3.5	3.2	4.8	+1.7
Midwest	11.8	11.8	9.5	10.2	10.4	10.4	12.6	15.5	14.4	14.4	9.1	10.0	9.9	7.4	8.0	6.0	5.4	5.8	4.3	-1.5
South	8.9	10.8	9.4	11.5	10.1	11.2	12.9	9.9	16.7	13.6	10.5	10.4	9.2	6.9	6.5	6.8	3.8	4.7	7.4	+2.7
West	7.4	6.3	7.9	7.8	8.6	9.3	9.3	8.6	12.4	11.7	12.2	10.1	6.5	5.3	8.0	6.6	4.7	5.4	4.8	-0.6
Population Density																				
Large MSA	8.5	10.7	8.5	9.4	9.5	9.0	8.3	12.3	13.9	12.5	9.8	7.9	8.0	4.8	6.8	5.2	3.9	4.2	6.1	+1.9
Other MSA	9.9	8.9	9.3	8.7	9.1	9.5	11.5	11.5	13.6	10.8	11.5	10.7	9.9	7.4	7.0	5.8	5.0	4.3	5.6	+1.3
Non-MSA	9.1	10.1	10.0	12.3	11.0	12.6	13.6	11.7	19.8	17.7	10.3	11.1	10.3	8.3	7.9	8.0	3.1	7.3	4.6	-2.7
Parental Education [a]																				
1.0–2.0 (Low)	11.0	8.9	8.3	14.4	11.8	9.9	9.8	5.6	12.7	15.8	7.0	10.5	6.9	5.8	7.4	5.9	4.4	5.5	8.9	+3.4
2.5–3.0	11.0	10.9	8.5	10.5	8.9	11.1	13.1	15.0	17.7	13.8	14.1	11.1	13.3	8.8	7.8	8.2	4.6	4.7	4.5	-0.2
3.5–4.0	10.6	11.5	9.7	8.8	9.9	10.5	11.6	14.1	15.6	11.1	10.7	10.2	9.0	6.0	7.5	5.9	5.0	6.0	4.9	-1.1
4.5–5.0	8.5	7.5	8.8	10.7	11.6	11.2	12.7	9.0	14.8	11.5	9.0	8.9	8.6	5.0	8.7	4.9	3.7	4.7	5.7	+1.1
5.5–6.0 (High)	5.3	9.2	8.4	9.4	9.6	7.4	7.4	7.9	8.5	13.4	10.1	7.5	6.4	7.4	3.0	6.5	4.9	2.7	3.7	+1.0
Race/Ethnicity (2-year average) [b]																				
White	9.7	10.9	10.9	10.8	11.2	11.2	11.8	12.9	14.8	15.4	13.1	11.3	10.7	9.3	8.1	7.2	4.8	4.3	4.9	+0.6
African American	6.1	5.3	4.3	5.3	4.9	4.2	5.5	6.5	5.5	4.6	4.8	4.5	4.2	3.2	2.5	3.4	4.4	3.0	3.3	+0.3
Hispanic	7.1	7.5	7.0	8.2	9.3	9.8	10.0	9.1	13.2	12.7	7.9	7.5	7.7	4.9	5.2	7.2	6.4	5.5	5.6	+0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1982–1988; *N* is one fifth of *N* indicated in Table D-S3. Beginning in 1989, data based on one of six forms; *N* is one sixth of *N* indicated in Table D-S3.

Caution: ***Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.***

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[b]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. For the data beginning in 2005, see appendix B for details on how race/ethnicity is defined.

TABLE 10-2b
Stay-Awake Pills
Trends in Annual Prevalence of Use by Subgroups in Grade 12

Percentage who used in last 12 months

(Years cont.)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Approximate weighted N =	—	—	—	—	—	—	—	*17,700*	*16,300*	*15,900*	*16,000*	*15,200*	*16,300*	*16,300*	*16,700*	*15,200*	*15,000*	*15,800*	*16,300*
Total	—	—	—	—	—	—	—	11.8	12.3	13.9	18.2	22.3	25.2	26.4	23.0	23.4	22.2	20.4	19.2
Gender																			
Male	—	—	—	—	—	—	—	12.8	13.8	15.4	19.7	22.3	25.5	27.6	24.8	22.3	22.3	20.9	19.7
Female	—	—	—	—	—	—	—	10.0	10.5	12.5	17.0	22.2	25.0	25.2	21.7	24.5	22.0	20.2	17.6
College Plans																			
None or under 4 years	—	—	—	—	—	—	—	11.4	10.8	12.5	15.5	18.1	23.1	23.3	21.8	22.9	21.0	20.5	18.6
Complete 4 years	—	—	—	—	—	—	—	10.5	12.6	14.0	20.4	24.9	26.5	27.5	24.1	24.1	22.3	21.0	18.7
Region																			
Northeast	—	—	—	—	—	—	—	9.6	9.5	11.9	18.2	20.4	26.4	23.8	18.4	22.0	18.3	18.2	20.2
Midwest	—	—	—	—	—	—	—	15.1	16.8	16.3	18.4	24.5	26.8	27.5	29.1	28.4	31.8	25.7	22.0
South	—	—	—	—	—	—	—	9.6	10.7	12.0	13.3	19.8	20.9	25.6	20.4	20.6	16.1	17.6	18.7
West	—	—	—	—	—	—	—	13.5	11.5	16.0	25.6	25.5	28.9	28.9	24.0	22.9	23.4	20.0	14.9
Population Density																			
Large MSA	—	—	—	—	—	—	—	11.5	11.1	12.2	17.7	19.0	25.6	23.2	20.9	19.0	16.7	15.2	16.7
Other MSA	—	—	—	—	—	—	—	12.4	14.5	14.0	19.1	24.1	24.1	27.7	22.9	25.1	25.3	21.2	19.8
Non-MSA	—	—	—	—	—	—	—	11.3	10.5	15.4	17.4	22.1	27.0	27.4	25.2	24.5	21.7	23.4	19.9
Parental Education [a]																			
1.0–2.0 (Low)	—	—	—	—	—	—	—	8.8	8.2	8.3	10.9	12.0	15.0	17.1	18.1	15.3	14.9	16.2	11.0
2.5–3.0	—	—	—	—	—	—	—	10.6	10.1	13.9	15.5	19.5	22.8	22.5	21.6	23.2	20.2	22.8	19.0
3.5–4.0	—	—	—	—	—	—	—	12.6	13.5	13.5	21.3	26.5	30.0	28.4	26.0	25.6	23.9	22.4	18.6
4.5–5.0	—	—	—	—	—	—	—	13.2	15.3	16.1	24.0	23.7	29.9	30.3	24.0	28.0	25.1	20.0	21.1
5.5–6.0 (High)	—	—	—	—	—	—	—	13.0	16.7	18.0	20.2	28.7	24.9	32.3	25.1	22.3	25.8	17.8	20.2
Race/Ethnicity (2-year average) [b]																			
White	—	—	—	—	—	—	—	—	13.6	15.0	18.7	23.7	27.7	30.4	29.8	27.7	27.4	25.8	24.0
African American	—	—	—	—	—	—	—	—	2.0	3.0	3.6	4.4	5.5	6.2	6.0	6.4	5.1	3.5	3.5
Hispanic	—	—	—	—	—	—	—	—	5.7	8.3	8.4	9.7	13.8	15.6	16.5	14.1	11.6	11.9	13.3

(Table continued on next page.)

TABLE 10-2b (cont.)
Stay-Awake Pills
Trends in Annual Prevalence of Use by Subgroups in Grade 12

Percentage who used in last 12 months

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Approximate weighted N =	*15,400*	*15,400*	*14,300*	*15,400*	*15,200*	*13,600*	*12,800*	*12,800*	*12,900*	*14,600*	*14,600*	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*14,400*	*14,100*	*13,700*	
Total	20.7	20.3	19.0	19.7	19.0	15.7	15.0	17.3	14.9	12.5	11.8	10.4	10.0	7.6	6.3	4.8	3.2	3.9	3.8	-0.1
Gender																				
Male	20.3	19.7	18.2	17.4	19.5	14.5	14.0	17.8	13.9	9.3	11.1	9.4	10.2	7.8	5.2	5.9	3.2	2.8	3.9	+1.1
Female	20.4	20.1	18.7	21.0	18.0	15.9	15.9	16.5	14.6	14.3	12.3	10.3	9.4	7.1	7.0	3.5	3.1	4.6	3.8	-0.8
College Plans																				
None or under 4 years	20.1	21.1	18.2	21.8	18.5	14.3	15.5	18.9	16.1	14.3	13.0	11.2	9.1	9.5	9.5	3.9	3.0	5.1	4.4	-0.7
Complete 4 years	20.6	19.7	18.3	19.1	18.4	15.1	14.7	16.5	14.0	11.9	11.4	9.3	9.8	7.1	5.3	4.7	3.3	3.6	3.5	-0.1
Region																				
Northeast	21.2	18.4	22.5	19.1	17.6	16.0	10.2	14.7	13.9	10.9	14.0	8.0	8.3	5.7	6.7	5.6	3.0	2.7	3.0	+0.4
Midwest	26.2	24.2	19.8	23.8	22.0	17.3	19.3	24.4	18.9	12.9	12.3	13.4	14.1	10.9	6.6	6.1	3.1	4.2	3.1	-1.1
South	20.2	18.8	17.5	20.1	18.8	15.6	13.8	15.4	13.5	11.6	9.7	11.0	9.7	7.4	5.9	4.6	3.3	2.8	4.2	+1.5
West	13.7	19.1	16.5	13.3	16.8	13.3	16.3	12.4	13.2	14.9	12.5	8.0	7.0	6.3	6.2	3.0	3.2	6.2	4.5	-1.7
Population Density																				
Large MSA	18.4	18.9	14.4	15.5	15.3	9.6	11.0	15.7	11.9	9.2	8.3	7.4	7.7	5.3	7.2	4.9	2.8	3.9	2.5	-1.5
Other MSA	21.1	19.3	20.2	18.4	21.1	18.4	15.2	14.3	14.7	12.6	13.6	11.7	10.2	8.9	5.0	4.4	3.8	3.8	4.1	+0.3
Non-MSA	22.3	23.6	20.7	26.8	18.9	17.3	19.3	24.3	19.3	16.5	12.2	11.4	12.7	8.3	8.1	5.9	2.3	4.1	5.1	+1.0
Parental Education [a]																				
1.0–2.0 (Low)	16.6	13.2	11.5	18.2	11.7	7.9	7.3	15.3	8.9	10.3	5.9	4.2	6.1	3.7	6.0	3.3	1.8	3.5	6.5	+3.1
2.5–3.0	18.1	18.1	19.0	21.0	16.5	13.4	15.1	17.1	13.4	12.0	13.9	9.7	9.0	9.5	6.7	4.7	1.6	4.3	4.7	+0.3
3.5–4.0	21.6	24.3	17.4	17.6	19.9	18.3	17.0	20.3	16.5	11.4	13.5	12.8	11.4	7.6	7.4	3.7	3.9	5.1	3.3	-1.8
4.5–5.0	24.4	20.4	23.2	20.2	20.3	15.6	16.7	16.2	14.9	12.7	11.3	9.7	10.0	6.2	4.9	4.5	3.3	3.1	3.3	+0.2
5.5–6.0 (High)	18.4	17.3	17.4	19.3	22.6	14.9	13.4	13.6	15.7	14.5	11.4	8.3	8.9	9.7	5.4	5.7	5.5	2.9	2.4	-0.5
Race/Ethnicity (2-year average) [b]																				
White	23.7	23.9	23.3	23.1	23.2	20.7	18.2	19.9	19.5	16.0	14.2	12.8	11.6	10.6	8.4	6.3	4.4	3.8	4.0	+0.2
African American	3.6	4.8	4.4	5.3	6.2	3.6	3.0	4.2	3.2	2.2	1.9	2.3	2.6	1.2	1.2	3.0	3.3	2.0	2.2	+0.2
Hispanic	14.2	12.3	9.5	9.6	10.1	12.3	11.8	10.6	12.3	9.4	5.6	5.7	6.9	5.2	4.4	4.4	2.7	2.7	4.5	+1.9

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1982–1988; *N* is one fifth of *N* indicated in Table D-S3. Beginning in 1989, data based on one of six forms; *N* is one sixth of *N* indicated in Table D-S3.

Caution: ***Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.***

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[b]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. For the data beginning in 2005, see appendix B for details on how race/ethnicity is defined.

TABLE 10-2c
Look-Alikes
Trends in Annual Prevalence of Use by Subgroups in Grade 12

Percentage who used in last 12 months

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Approximate weighted N =	—	—	—	—	—	—	—	*17,700*	*16,300*	*15,900*	*16,000*	*15,200*	*16,300*	*16,300*	*16,700*	*15,200*	*15,000*	*15,800*	*16,300*
Total	—	—	—	—	—	—	—	10.8	9.4	9.7	8.2	6.9	6.3	5.7	5.6	5.6	5.2	5.4	6.2
Gender																			
Male	—	—	—	—	—	—	—	9.5	9.2	9.7	8.3	6.5	6.4	4.2	6.1	6.6	4.9	6.2	6.4
Female	—	—	—	—	—	—	—	10.7	8.7	8.5	7.8	6.7	6.0	6.3	5.0	4.6	4.7	4.5	5.5
College Plans																			
None or under 4 years	—	—	—	—	—	—	—	13.6	11.9	11.2	10.0	10.0	8.1	7.0	8.0	7.9	7.2	4.4	7.6
Complete 4 years	—	—	—	—	—	—	—	7.1	6.1	7.0	6.5	4.8	4.9	3.8	4.6	4.4	3.9	5.4	5.5
Region																			
Northeast	—	—	—	—	—	—	—	9.3	9.0	10.7	9.0	7.4	4.6	4.9	4.0	3.8	4.4	4.9	4.4
Midwest	—	—	—	—	—	—	—	14.5	12.3	10.9	9.0	7.6	7.6	7.3	8.5	7.3	8.2	7.1	8.4
South	—	—	—	—	—	—	—	9.8	7.7	9.0	7.3	5.6	6.1	5.5	4.7	6.0	4.5	4.7	6.2
West	—	—	—	—	—	—	—	7.4	7.9	7.6	7.7	7.7	6.9	4.7	4.6	4.4	3.1	4.4	4.6
Population Density																			
Large MSA	—	—	—	—	—	—	—	10.2	9.5	10.2	6.1	7.1	4.4	4.3	3.3	3.0	3.3	3.0	4.7
Other MSA	—	—	—	—	—	—	—	10.8	10.0	9.4	9.2	6.3	6.4	6.4	5.9	6.0	6.0	4.7	7.3
Non-MSA	—	—	—	—	—	—	—	11.2	8.4	9.6	8.6	7.8	8.2	5.9	7.2	7.3	5.4	8.7	5.5
Parental Education [a]																			
1.0–2.0 (Low)	—	—	—	—	—	—	—	9.8	7.2	9.9	9.0	6.1	5.7	6.3	4.6	3.1	6.6	4.3	4.9
2.5–3.0	—	—	—	—	—	—	—	11.4	9.8	9.9	8.3	6.9	6.9	5.2	5.7	6.3	5.1	5.3	7.5
3.5–4.0	—	—	—	—	—	—	—	10.3	9.5	9.6	8.8	8.0	6.3	5.7	5.9	5.9	5.1	6.6	6.5
4.5–5.0	—	—	—	—	—	—	—	10.4	8.3	6.1	5.9	5.9	6.7	4.5	5.4	5.9	4.7	4.0	5.6
5.5–6.0 (High)	—	—	—	—	—	—	—	6.9	6.7	8.1	7.9	4.3	4.6	4.3	5.3	4.7	2.5	5.4	3.0
Race/Ethnicity (2-year average) [b]																			
White	—	—	—	—	—	—	—	—	10.9	10.3	9.8	8.3	7.1	6.3	6.1	6.4	6.2	6.1	6.6
African American	—	—	—	—	—	—	—	—	2.0	2.4	2.4	2.2	2.7	2.7	2.6	2.1	1.5	1.7	1.6
Hispanic	—	—	—	—	—	—	—	—	6.1	7.0	5.8	3.8	3.0	3.2	3.5	3.4	2.2	1.6	5.3

(Table continued on next page.)

TABLE 10-2c (cont.)
Look-Alikes
Trends in Annual Prevalence of Use by Subgroups in Grade 12

Percentage who used in last 12 months

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Approximate weighted N =	*15,400*	*15,400*	*14,300*	*15,400*	*15,200*	*13,600*	*12,800*	*12,800*	*12,900*	*14,600*	*14,600*	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*14,400*	*14,100*	*13,700*	
Total	6.0	6.8	6.5	6.4	5.7	5.0	5.8	7.1	6.6	5.4	5.0	4.2	3.7	2.8	3.1	2.6	1.7	2.2	2.1	-0.1
Gender																				
Male	5.9	7.0	5.7	7.2	6.0	4.6	7.0	7.3	6.8	5.2	4.3	3.9	3.3	2.5	2.5	2.3	1.7	2.1	2.1	0.0
Female	5.7	5.4	6.0	5.5	5.0	4.4	4.3	6.6	5.9	5.1	5.2	3.8	3.8	2.6	3.2	2.8	1.4	2.0	1.9	-0.1
College Plans																				
None or under 4 years	7.0	7.5	7.0	10.1	6.2	5.2	8.4	9.9	8.7	6.7	6.2	7.0	5.7	5.1	7.1	2.0	2.9	3.8	4.0	+0.1
Complete 4 years	5.7	6.2	5.5	4.9	4.8	4.4	4.9	5.7	5.7	4.6	4.2	2.9	2.8	2.2	2.1	2.4	1.4	1.7	1.7	0.0
Region																				
Northeast	4.6	5.6	6.3	5.6	6.5	5.1	5.3	7.5	5.9	5.8	4.6	2.6	3.3	1.9	3.2	2.0	0.7	2.0	1.6	-0.4
Midwest	8.7	8.5	7.9	7.7	6.2	4.8	6.8	8.4	7.3	5.0	4.2	4.9	4.2	3.7	3.4	3.6	2.2	3.0	2.7	-0.3
South	5.1	5.8	5.6	6.7	5.0	6.7	6.2	6.7	6.3	5.0	6.6	5.4	4.1	2.4	2.0	2.0	2.0	1.7	2.7	+1.1
West	5.0	7.3	6.3	5.1	6.0	1.9	4.7	5.8	6.9	6.1	3.4	2.6	2.7	3.3	4.4	2.8	1.7	2.3	1.1	-1.3
Population Density																				
Large MSA	5.3	7.2	5.4	4.5	6.1	3.0	3.7	6.8	4.5	4.4	3.3	2.9	4.8	1.6	4.0	2.7	1.7	1.7	1.8	+0.1
Other MSA	6.0	6.0	5.4	4.8	6.2	5.7	6.2	6.2	7.3	5.5	5.7	4.5	2.7	3.1	2.7	2.9	2.0	2.5	1.7	-0.8
Non-MSA	6.7	7.6	9.2	11.7	4.3	5.9	7.6	9.4	8.2	6.5	5.6	5.1	3.9	3.8	3.2	1.6	1.1	2.2	3.7	+1.5
Parental Education [a]																				
1.0–2.0 (Low)	8.2	6.5	3.2	7.0	3.3	4.7	5.7	5.2	8.5	8.0	4.5	2.9	5.8	4.7	2.0	2.6	0.6	2.1	3.8	+1.7
2.5–3.0	6.5	5.3	6.7	7.1	5.5	7.3	5.7	8.2	5.5	4.6	6.4	4.4	4.1	2.9	4.1	4.0	1.3	2.8	3.3	+0.4
3.5–4.0	4.4	9.5	5.4	7.4	5.0	3.4	5.2	6.8	7.6	4.4	4.8	5.1	3.4	3.1	3.6	1.6	2.1	1.9	1.4	-0.5
4.5–5.0	7.1	4.9	6.7	5.8	6.2	5.0	7.5	7.2	5.6	5.1	4.7	3.2	3.2	1.9	2.3	2.3	1.4	1.7	1.9	+0.2
5.5–6.0 (High)	4.0	4.3	6.3	2.8	6.1	3.1	5.5	4.5	2.2	5.4	2.4	2.8	1.0	1.0	1.3	2.3	1.9	2.3	0.0	-2.3
Race/Ethnicity (2-year average) [b]																				
White	7.0	7.2	7.1	7.6	7.4	6.0	5.9	7.0	7.2	6.5	5.6	4.9	4.4	3.7	3.4	2.9	2.2	2.1	2.4	+0.3
African American	1.4	1.9	1.4	0.9	0.9	1.0	1.2	1.9	1.8	0.7	0.8	1.1	1.2	1.2	1.3	1.6	1.3	0.8	1.3	+0.5
Hispanic	5.8	3.6	3.9	3.6	3.4	3.4	4.6	7.1	8.1	5.5	3.2	3.2	3.3	2.5	2.0	2.6	1.8	1.4	1.7	+0.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S3 for the number of subgroup cases. See appendix B for definition of variables in table.

Data based on one of five forms in 1982–1988; *N* is one fifth of *N* indicated in Table D-S3. Beginning in 1989, data based on one of six forms; *N* is one sixth of *N* indicated in Table D-S3.

Caution: ***Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.***

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[b]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. For the data beginning in 2005, see appendix B for details on how race/ethnicity is defined.

TABLE 10-3
Percentage of 12th Graders in Each Category of an Illicit Drug Use Index Who Have Tried Various Over-the-Counter Stimulants
2012

(Entries are percentages.)

	Lifetime Illicit Drug Use Groupings		
Their lifetime use of . . .	No Use	Used Marijuana Only	Used Other Illicit Drugs
Diet pills	3.2 [a]	5.1	20.3
Stay-awake pills	1.8	2.9	17.8
Look-alikes	0.0	1.2	11.0
Approximate weighted N =	*1,037*	*520*	*479*

Source. The Monitoring the Future study, the University of Michigan.

[a]This means that, of those who have never used an illicit drug, 3.2% have used a diet pill at least once.

TABLE 10-4

Any Prescription Drug [a] without Medical Supervision

Trends in Annual Prevalence of Use by Subgroups in Grade 12

(Entries are percentages.)

	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	
Approximate weighted N =	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*13,700*	*13,700*	*13,600*		
Total	17.1	16.8	15.8	15.4	14.4	15.0	15.2	14.8	-0.4	
Gender										
Male	18.2	17.0	16.4	16.3	16.1	16.1	15.9	15.5	-0.4	
Female	15.7	16.3	14.8	14.4	13.5	13.7	14.0	13.7	-0.4	
College Plans										
None or under 4 years	22.2	22.3	21.7	20.9	18.6	20.0	22.3	16.7	-5.5	sss
Complete 4 years	15.8	15.2	14.3	14.1	13.9	13.8	13.7	14.0	+0.4	
Region										
Northeast	15.5	17.4	15.8	15.2	14.7	15.1	13.3	12.4	-0.9	
Midwest	18.9	16.1	16.5	15.0	17.3	15.0	15.9	15.6	-0.3	
South	17.9	17.4	16.3	16.1	14.3	15.6	14.3	13.5	-0.8	
West	15.2	16.2	14.1	15.0	12.8	14.0	17.2	17.0	-0.2	
Population Density										
Large MSA	15.5	16.9	15.0	13.3	13.6	14.9	14.1	15.8	+1.7	
Other MSA	18.0	16.5	15.7	15.7	15.3	15.5	15.9	14.7	-1.2	
Non-MSA	17.4	17.5	17.1	17.3	15.4	14.1	15.0	13.2	-1.8	
Parental Education [b]										
1.0–2.0 (Low)	11.8	15.7	13.7	13.2	11.5	11.9	13.2	13.3	+0.1	
2.5–3.0	18.1	17.2	16.4	15.3	15.6	15.6	15.1	16.1	+0.9	
3.5–4.0	18.9	18.2	16.2	16.3	15.5	16.3	16.1	15.5	-0.6	
4.5–5.0	17.4	16.6	15.9	15.2	15.7	14.6	14.6	14.6	+0.0	
5.5–6.0 (High)	15.0	15.5	14.8	15.1	13.5	14.1	15.5	13.0	-2.5	
Race/Ethnicity (2-year average) [c]										
White	—	19.8	19.3	18.9	18.2	17.8	17.8	17.5	-0.3	
African American	—	6.1	5.8	5.7	5.7	7.3	7.5	6.5	-1.0	
Hispanic	—	12.8	11.9	10.3	10.1	9.9	10.3	10.9	+0.5	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S3 for the number of subgroup cases.

See appendix B for definition of variables in table.

[a]The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers …without a doctor telling you to use them.

[b]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[c]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

TABLE 10-5
Source of Prescription Drugs [a]
among Those Who Used in Last Year
Grade 12, 2007–2012

(Entries are percentages.)

Where did you get the [insert drug name here] you used without a doctor's orders during the past year? (Mark all that apply.)	Amphetamines		Tranquilizers		Narcotics other than Heroin	
	2007–2008	2009–2012	2007–2008	2009–2012	2007–2008	2009–2012
Bought on Internet	4.6	6.3	2.4	4.3	2.3	1.3
Took from friend/relative without asking	19.6	12.8	21.1	21.3	24.2	22.2
Took from a friend	—	4.2	—	5.3	—	4.4
Took from a relative	—	8.6	—	15.9	—	17.9
Given for free by friend or relative	58.2	64.2	59.8	76.3	50.5	67.8
Given for free by a friend	—	54.9	—	55.8	—	52.1
Given for free by a relative	—	9.2	—	20.5	—	15.6
Bought from friend or relative	45.0	46.1	44.1	47.8	37.1	37.6
Bought from a friend	—	43.5	—	42.4	—	33.6
Bought from a relative	—	2.6	—	5.5	—	4.1
From a prescription I had	15.1	16.6	18.4	13.9	40.2	36.1
Bought from drug dealer/stranger	26.7	19.9	24.2	24.5	18.6	16.5
Other method	17.8	13.3	7.5	9.6	8.5	9.9
Weighted N =	*261*	*516*	*226*	*377*	*361*	*582*

Source. The Monitoring the Future study, the University of Michigan.

Note. ' — ' indicates data not available.

[a]In 2009, the response categories were expanded to differentiate between friends and relatives.

TABLE 10-6
Trends in Use of ADHD Drugs in Grade 8
(Entries are percentages.)

The next questions are about drugs that doctors sometimes prescribe for people who have problems concentrating on one task at a time (attention deficit disorder), or with being too active or too disruptive (hyperactive), or both (ADHD). Stimulant-type drugs (i.e., amphetamine, methylphenidate, and pemoline) are prescribed for these conditions. These drugs include Ritalin, Adderall, Concerta, Metadate, Dexedrine, Focalin, Cylert, and others.

	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined
Have you ever taken any of these stimulant-type prescription drugs under a doctor's supervision for these conditions? (Do not count drugs that are not stimulant-type, like Strattera, Wellbutrin, Provigil, Tenex, or Tofranil)									
No	91.7	90.7	91.7	91.9	92.2	91.8	92.4	92.3	91.8
Yes, in the past, but not now	4.5	5.9	5.2	4.7	4.2	4.8	4.3	4.2	4.7
Yes, I take them now	3.9	3.5	3.1	3.5	3.7	3.4	3.3	3.5	3.5
Weighted N	*5,015*	*5,058*	*4,882*	*4,635*	*4,491*	*4,703*	*4,909*	*4,465*	*38,158*
How old were you when you first took one of these stimulant-type drugs under a doctor's supervision? [as a percent of current users]									
1–4 years old	13.3	13.4	9.6	15.3	13.8	14.8	16.2	15.4	13.9
5–9	30.6	32.2	40.8	33.7	39.2	34.2	34.5	32.2	34.6
10–14	55.2	52.8	48.5	48.3	44.6	48.8	48.0	50.5	49.8
15+ years old	1.0	1.6	1.1	2.7	2.5	2.2	1.3	2.0	1.8
Weighted N	*420*	*476*	*407*	*385*	*352*	*379*	*381*	*349*	*3,148*
Altogether, for about how many years have you actually taken such drugs under a doctor's supervision? [as a percent of current users]									
Less than 1 year	30.9	34.7	34.5	33.7	31.7	33.6	34.3	30.6	33.1
1 year	10.9	11.8	8.3	11.0	6.1	10.4	9.7	10.9	10.0
2 years	14.8	14.7	12.1	14.6	12.7	12.9	10.6	14.1	13.4
3–5 years	21.6	18.4	25.1	22.3	22.8	18.6	20.1	20.5	21.1
6–9 years	12.6	11.7	12.4	11.0	16.0	14.5	13.8	13.5	13.1
10 or more years	9.3	8.8	7.7	7.4	10.6	10.0	11.4	10.4	9.4
Weighted N	*412*	*473*	*410*	*388*	*344*	*381*	*381*	*350*	*3,140*
Have you ever taken a non-stimulant-type prescription drug under a doctor's supervision for these conditions (like Strattera, Wellbutrin, Provigil, Tenex, or Tofranil)?									
No	83.5	81.3	82.0	81.8	82.0	83.7	83.3	83.8	82.7
Yes, in the past, but not now	4.6	5.3	4.3	4.1	4.0	3.9	4.2	3.4	4.2
Yes, I take them now	2.0	1.7	1.2	1.4	1.0	1.2	1.3	1.1	1.4
Don 't know	10.0	11.7	12.5	12.7	13.0	11.2	11.3	11.7	11.7
Weighted N	*4,968*	*5,048*	*4,855*	*4,594*	*4,475*	*4,704*	*4,886*	*4,483*	*38,012*
Lifetime Prevalence Stimulant-Type Drugs	8.3	9.3	8.3	8.1	7.8	8.2	7.6	7.7	8.2
Lifetime Prevalence Non-Stimulant-Type Drugs	7.3	7.9	6.3	6.3	5.8	5.8	6.1	5.1	6.3
Lifetime Prevalence Either Stimulant-Type or Non-Stimulant-Type Drugs	13.7	15.8	13.4	13.1	12.8	12.8	12.4	11.6	13.3
Current Prevalence Stimulant-Type Drugs	3.9	3.5	3.1	3.5	3.7	3.4	3.3	3.5	3.5
Current Prevalence Non-Stimulant-Type Drugs	2.2	1.9	1.4	1.6	1.2	1.4	1.5	1.2	1.6
Current Prevalence Either Stimulant-Type or Non-Stimulant-Type Drugs	6.1	5.2	4.5	5.1	4.9	4.7	4.9	4.7	5.0

Source. The Monitoring the Future study, the University of Michigan.

Note. For the non-stimulant-type drugs, the don't know response category has been treated as missing data.

TABLE 10-7
Trends in Use of ADHD Drugs in Grade 10

(Entries are percentages.)

The next questions are about drugs that doctors sometimes prescribe for people who have problems concentrating on one task at a time (attention deficit disorder), or with being too active or too disruptive (hyperactive), or both (ADHD). Stimulant-type drugs (i.e. amphetamine, methylphenidate, and pemoline) are prescribed for these conditions. These drugs include Ritalin, Adderall, Concerta, Metadate, Dexedrine, Focalin, Cylert, and others.

	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined
Have you ever taken any of these stimulant-type prescription drugs under a doctor's supervision for these conditions? (Do not count drugs that are not stimulant-type, like Strattera, Wellbutrin, Provigil, Tenex, or Tofranil)									
No	91.3	91.5	91.6	92.2	91.8	91.4	92.8	92.0	91.8
Yes, in the past, but not now	5.3	5.7	5.6	4.9	4.9	5.5	4.4	4.2	5.1
Yes, I take them now	3.4	2.8	2.8	2.9	3.3	3.1	2.8	3.8	3.1
Weighted N	*5,092*	*5,210*	*5,124*	*4,830*	*5089*	*4861*	*4754*	*4,709*	*39,670*
How old were you when you first took one of these stimulant-type drugs under a doctor's supervision? [as a percent of current users]									
1–4 years old	8.0	6.4	11.7	8.1	7.8	9.4	8.5	6.2	8.3
5–9	32.2	30.8	27.8	29.6	21.9	27.6	29.0	31.1	28.8
10–14	39.5	41.4	42.5	34.7	46.6	40.6	39.6	41.8	40.9
15+ years old	20.4	21.4	18.0	27.6	23.7	22.4	22.9	20.9	22.1
Weighted N	*446*	*444*	*424*	*378*	*412*	*416*	*344*	*380*	*3,245*
Altogether, for about how many years have you actually taken such drugs under a doctor's supervision? [as a percent of current users]									
Less than 1 year	32.9	34.7	34.4	34.0	34.2	32.6	32.9	26.3	32.8
1 year	10.2	10.6	9.4	9.3	11.2	8.7	7.7	9.4	9.6
2 years	11.7	14.4	13.3	12.7	13.7	13.5	14.8	14.4	13.5
3–5 years	20.2	16.8	19.6	20.9	20.6	21.0	21.4	22.9	20.3
6–9 years	16.6	13.5	15.9	10.6	8.5	15.5	14.8	14.3	13.8
10 or more years	8.4	10.0	7.4	12.4	11.8	8.6	8.5	12.6	9.9
Weighted N	*443*	*442*	*419*	*374*	*415*	*417*	*340*	*377*	*3,226*
Have you ever taken a non-stimulant-type prescription drug under a doctor's supervision for these conditions (like Strattera, Wellbutrin, Provigil, Tenex, or Tofranil)?									
No	84.8	85.0	86.0	85.8	85.2	87.1	86.3	87.4	85.9
Yes, in the past, but not now	5.6	5.5	4.8	4.7	4.5	4.2	4.7	3.6	4.7
Yes, I take them now	2.1	2.2	1.4	1.6	1.8	1.5	1.2	1.2	1.6
Don't know	7.5	7.3	7.8	8.0	8.5	7.2	7.8	7.9	7.8
Weighted N	*5,092*	*5,189*	*5,091*	*4,805*	*5059*	*4847*	*4726*	*4,709*	*39,517*
Lifetime Prevalence Stimulant-Type Drugs	8.7	8.5	8.4	7.8	8.2	8.6	7.2	8.0	8.2
Lifetime Prevalence Non-Stimulant-Type Drugs	8.3	8.3	6.7	6.8	6.8	6.1	6.4	5.2	6.9
Lifetime Prevalence Either Stimulant-Type or Non-Stimulant-Type Drugs	14.3	14.2	12.9	12.8	13.0	12.7	12.0	12.0	13.0
Current Prevalence Stimulant-Type Drugs	3.4	2.8	2.8	2.9	3.3	3.1	2.8	3.8	3.1
Current Prevalence Non-Stimulant-Type Drugs	2.3	2.3	1.6	1.7	1.9	1.6	1.3	1.3	1.8
Current Prevalence Either Stimulant-Type or Non-Stimulant-Type Drugs	5.6	4.8	4.2	4.5	5.0	4.6	4.2	5.1	4.7

Source. The Monitoring the Future study, the University of Michigan.

Note. For the non-stimulant-type drugs, the don't know response category has been treated as missing data.

TABLE 10-8
Trends in Use of ADHD Drugs in Grade 12
(Entries are percentages.)

The next questions are about drugs that doctors sometimes prescribe for people who have problems concentrating on one task at a time (attention deficit disorder), or with being too active or too disruptive (hyperactive), or both (ADHD). Stimulant-type drugs (i.e. amphetamine, methylphenidate, and pemoline) are prescribed for these conditions. These drugs include Ritalin, Adderall, Concerta, Metadate, Dexedrine, Focalin, Cylert, and others.

	2005 [a]	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined [b]
Have you ever taken any of these stimulant-type prescription drugs under a doctor's supervision for these conditions? (Do not count drugs that are not stimulant-type, like Strattera, Wellbutrin, Provigil, Tenex, or Tofranil)									
No	91.5	92.2	92.4	91.4	91.8	91.7	91.6	91.0	91.7
Yes, in the past, but not now	5.7	5.5	5.0	5.7	5.3	5.3	5.0	5.2	5.3
Yes, I take them now	2.9	2.3	2.6	2.9	2.9	3.0	3.3	3.8	3.0
Weighted N	*2,263*	*4,477*	*4,507*	*4,328*	*4244*	*4341*	*4,397*	*4,371*	*35,191*
How old were you when you first took one of these stimulant-type drugs under a doctor's supervision? [as a percent of current users]									
1–4 years old	9.1	6.0	4.9	5.3	8.2	6.1	6.3	7.3	6.7
5–9	32.0	23.6	34.2	26.6	29.7	27.4	30.1	26.6	28.7
10–14	30.2	32.4	30.1	37.0	30.7	31.4	35.1	30.0	32.1
15+ years old	28.7	38.0	30.7	31.1	31.4	35.1	28.6	36.1	32.5
Weighted N	*191*	*348*	*338*	*372*	*348*	*359*	*362*	*396*	*2,907*
Altogether, for about how many years have you actually taken such drugs under a doctor's supervision? [as a percent of current users]									
Less than 1 year	31.1	27.7	25.8	23.5	24.1	23.3	24.1	25.4	25.6
1 year	11.5	11.6	8.9	8.1	11.5	8.4	9.5	10.9	10.1
2 years	13.3	14.6	16.8	16.9	13.9	19.7	13.9	15.7	15.6
3–5 years	18.7	24.3	21.6	26.1	22.7	25.9	27.0	17.4	22.9
6–9 years	13.6	12.1	15.0	14.2	11.9	12.8	11.3	16.5	13.5
10 or more years	11.8	9.7	12.0	11.3	16.0	9.9	14.2	14.2	12.4
Weighted N	*190*	*347*	*339*	*373*	*349*	*366*	*367*	*398*	*2,920*
Have you ever taken a non-stimulant-type prescription drug under a doctor's supervision for these conditions (like Strattera, Wellbutrin, Provigil, Tenex, or Tofranil)?									
No	89.4	89.7	88.4	89.0	89.9	88.0	88.3	88.1	88.8
Yes, in the past, but not now	4.4	4.3	5.0	4.2	3.7	4.2	3.7	3.8	4.2
Yes, I take them now	1.5	1.5	1.6	1.8	1.4	2.2	1.8	1.7	1.7
Don't know	4.7	4.5	5.0	4.9	5.0	5.6	6.3	6.4	5.3
Weighted N	*2,215*	*4,408*	*4,464*	*4,273*	*4194*	*4283*	*4,354*	*4,342*	*34,748*
Lifetime Prevalence Stimulant-Type Drugs	8.5	7.8	7.6	8.6	8.2	8.3	8.4	9.0	8.3
Lifetime Prevalence Non-Stimulant-Type Drugs	6.2	6.1	7.0	6.4	5.4	6.7	5.8	5.9	6.2
Lifetime Prevalence Either Stimulant-Type or Non-Stimulant-Type Drugs	12.4	11.7	12.1	13.1	11.0	12.7	12.2	12.7	11.9
Current Prevalence Stimulant-Type Drugs	2.9	2.3	2.6	2.9	2.9	3.0	3.3	3.8	3.0
Current Prevalence Non-Stimulant-Type Drugs	1.6	1.6	1.7	1.9	1.5	2.3	1.9	1.8	1.8
Current Prevalence Either Stimulant-Type or Non-Stimulant-Type Drugs	4.5	3.7	4.1	4.4	4.3	5.2	5.1	5.5	4.5

Source. The Monitoring the Future study, the University of Michigan.

Note. For the non-stimulant-type drugs, the don't know response category has been treated as missing data.

[a]Data from Form 4 omitted in 2005 due to an error in the skip pattern in the questionnaire.

[b]Due to an error in the questionnaire, Form 4 data for 2005 were double-weighted to produce this estimate.

TABLE 10-9
Trends in Lifetime Use of Prescribed ADHD Drugs by Subgroups in Grade 8

	Stimulant-Type Drugs									Non-Stimulant-Type Drugs									Either Stimulant- or Non-Stimulant-Type Drugs								
	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined
Number of Lifetime Users=	*415*	*474*	*407*	*373*	*351*	*385*	*373*	*342*	*3,120*	*329*	*356*	*265*	*252*	*226*	*244*	*266*	*201*	*2,137*	*617*	*711*	*563*	*524*	*499*	*525*	*541*	*460*	*4,439*
Approximate weighted N=	*5,000*	*5,100*	*4,900*	*4,600*	*4,500*	*4,700*	*4,900*	*4,500*	*38,200*	*4,500*	*4,500*	*4,200*	*4,000*	*3,900*	*4,200*	*4,300*	*4,000*	*33,600*	*4,500*	*4,500*	*4,200*	*4,000*	*3,900*	*4,100*	*4,300*	*4,000*	*33,500*
Total	8.3	9.3	8.3	8.1	7.8	8.2	7.6	7.7	8.2	7.3	7.9	6.3	6.3	5.8	5.8	6.1	5.1	6.4	13.7	15.8	13.4	13.1	12.8	12.8	12.4	11.6	13.3
Gender																											
Male	9.3	11.2	9.4	9.9	9.2	9.3	8.6	9.1	9.5	7.6	8.7	6.7	6.8	6.5	6.6	6.7	5.2	6.9	14.9	18.0	14.8	14.7	14.5	14.5	13.7	13.3	14.8
Female	7.2	7.4	7.3	6.5	6.8	7.1	6.4	6.4	6.9	7.0	6.8	5.9	5.7	5.1	4.9	5.4	4.9	5.7	12.4	13.2	12.1	11.5	11.4	11.3	10.9	10.0	11.6
College Plans																											
None or under 4 years	14.4	16.6	10.8	10.8	7.7	11.1	11.3	10.3	12.0	11.1	12.9	8.1	7.3	8.9	8.8	11.7	8.8	9.9	20.6	24.2	17.9	17.1	15.8	17.2	18.8	16.7	19.0
Complete 4 years	7.6	8.6	8.0	7.8	7.9	7.9	7.2	7.5	7.8	6.9	7.4	6.0	6.2	5.5	5.4	5.7	4.9	6.0	12.9	14.9	12.9	12.7	12.6	12.4	11.9	11.3	12.7
Region																											
Northeast	7.8	7.9	7.2	9.0	8.5	6.3	6.0	5.6	7.3	7.4	6.0	4.3	5.1	6.1	4.6	5.0	4.2	5.4	12.9	12.0	10.6	13.7	14.3	9.9	11.0	9.7	11.8
Midwest	8.5	8.6	8.8	6.7	7.0	8.9	8.2	7.6	8.1	6.9	8.8	7.6	6.7	5.3	6.2	5.5	5.5	6.6	14.2	15.3	14.7	12.5	11.6	13.8	12.0	11.4	13.3
South	9.3	10.2	9.3	9.9	9.5	8.9	7.5	9.4	9.3	7.9	7.5	6.6	7.2	5.8	6.4	7.0	5.7	6.8	15.1	16.5	14.7	15.0	14.2	14.1	13.2	13.9	14.6
West	6.7	9.7	6.8	6.6	5.6	7.4	8.4	6.0	7.2	6.5	9.3	5.3	5.3	6.0	5.0	6.2	4.1	6.0	11.3	17.8	11.3	10.8	11.0	11.6	12.7	8.9	12.0
Population Density																											
Large MSA	7.2	7.6	7.1	7.2	6.5	7.2	7.5	6.4	7.1	5.3	7.8	4.5	6.0	4.0	5.3	5.6	4.4	5.4	11.4	14.1	11.1	12.3	10.1	11.3	11.9	10.6	11.7
Other MSA	10.0	10.3	9.0	9.32	8.2	8.9	7.7	8.1	8.9	8.0	7.8	7.7	6.7	6.8	6.6	6.7	4.7	6.9	15.7	16.2	14.7	14.3	14.2	14.3	13.2	11.7	14.3
Non-MSA	6.9	10.0	8.5	7.0	8.6	7.9	7.6	8.7	8.2	8.6	8.4	5.9	5.9	5.8	4.4	5.7	6.9	6.5	13.1	17.6	13.9	11.6	13.2	11.4	11.7	13.1	13.3
Parental Education [a]																											
0–2.0 (Low)	12.1	12.0	9.0	11.2	11.0	7.2	8.6	7.7	9.9	8.7	8.1	4.5	7.0	7.7	7.1	9.1	8.0	7.5	18.8	17.8	12.6	17.5	17.0	13.9	15.3	12.5	15.6
2.5–3.0	7.9	10.6	9.1	7.8	7.5	8.9	8.0	8.8	8.6	9.6	6.7	7.4	5.5	6.0	5.8	6.2	4.4	6.6	14.3	16.3	15.6	11.9	12.9	13.9	13.0	12.4	13.9
3.5–4.0	9.7	7.9	8.7	6.8	8.0	7.3	8.4	7.4	8.0	8.1	10.1	6.5	6.4	5.5	5.4	7.1	5.9	7.0	15.7	16.2	14.2	12.6	12.6	11.7	14.0	12.1	13.7
4.5–5.0	6.9	9.0	7.5	8.6	7.5	8.3	7.1	7.8	7.8	5.5	8.0	5.6	6.9	5.0	5.2	5.3	5.0	5.8	11.3	15.5	11.7	13.3	12.0	12.5	11.3	12.0	12.4
5.5–6.0 (High)	8.2	8.5	8.8	9.7	8.1	9.2	6.9	6.2	8.1	6.6	5.4	6.6	6.3	7.1	5.9	5.4	4.6	6.0	13.0	13.4	13.5	14.8	13.7	13.7	11.5	9.6	12.8
Race/Ethnicity																											
White	9.0	9.6	9.5	8.8	9.3	8.8	7.9	8.4	8.9	7.8	7.7	7.5	7.1	6.3	5.4	5.9	5.0	6.6	14.5	15.9	15.5	14.4	14.4	13.3	13.0	12.3	14.2
African American	6.8	5.9	5.7	7.6	6.8	7.3	5.5	6.8	6.6	5.6	6.4	3.5	5.1	4.5	5.4	5.8	3.7	5.0	11.5	10.5	8.3	11.2	11.4	11.5	9.2	9.7	10.4
Hispanic	6.2	8.4	6.5	6.8	5.3	6.2	8.1	4.6	6.6	5.7	7.1	3.4	4.0	5.4	6.5	6.7	5.2	5.5	10.1	14.0	9.5	10.0	10.8	11.4	13.0	8.3	11.0

Source. The Monitoring the Future study, the University of Michigan.

Note. For the non-stimulant-type drugs, the don't know response category has been treated as missing data.

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

TABLE 10-10
Trends in Current Use [a] of Prescribed ADHD Drugs by Subgroups in Grade 8

	Stimulant-Type Drugs									Non-Stimulant-Type Drugs									Either Stimulant- or Non-Stimulant-Type Drugs								
	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined
Number of Current Users=	*195*	*179*	*152*	*161*	*167*	*160*	*164*	*155*	*1,332*	*99*	*86*	*59*	*64*	*47*	*59*	*63*	*48*	*524*	*275*	*234*	*189*	*204*	*191*	*193*	*213*	*186*	*1,684*
Approximate weighted N=	*5,000*	*5,100*	*4,900*	*4,600*	*4,500*	*4,700*	*4,900*	*4,500*	*38,200*	*4,500*	*4,500*	*4,200*	*4,000*	*3,900*	*4,200*	*4,300*	*4,000*	*33,600*	*4,500*	*4,500*	*4,200*	*4,000*	*3,900*	*4,100*	*4,300*	*4,000*	*33,500*
Total	3.9	3.5	3.1	3.5	3.7	3.4	3.3	3.5	3.5	2.2	1.9	1.4	1.6	1.2	1.4	1.5	1.2	1.6	6.1	5.2	4.5	5.1	4.9	4.7	4.9	4.7	5.0
Gender																											
Male	4.7	4.8	4.0	4.5	4.6	3.7	4.3	4.6	4.4	2.4	2.3	1.6	1.7	1.2	1.5	1.9	1.1	1.7	7.1	6.9	5.6	6.3	5.9	5.0	6.3	5.8	6.1
Female	3.0	2.1	2.2	2.4	3.0	3.1	2.4	2.5	2.6	1.9	1.5	1.3	1.5	1.1	1.3	0.9	1.1	1.3	5.0	3.3	3.3	3.9	4.1	4.4	3.5	3.6	3.9
College Plans																											
None or under 4 years	4.9	6.0	3.9	3.6	3.0	5.0	2.3	4.1	4.2	2.5	3.8	1.3	3.1	1.6	2.1	3.9	1.6	2.6	7.1	8.6	5.3	6.9	4.6	6.5	6.3	5.5	6.5
Complete 4 years	3.7	3.2	3.0	3.4	3.7	3.3	3.4	3.4	3.4	2.1	1.7	1.4	1.5	1.1	1.3	1.2	1.2	1.5	5.9	4.8	4.4	4.9	4.9	4.5	4.8	4.7	4.9
Region																											
Northeast	4.2	3.0	3.1	3.1	5.0	2.1	2.6	2.9	3.3	2.4	2.5	1.1	1.8	1.0	1.1	1.1	1.5	1.6	6.2	5.0	4.1	4.8	6.1	3.5	4.1	4.4	4.8
Midwest	4.4	3.1	3.3	2.7	2.7	3.8	4.0	4.1	3.5	2.0	2.7	1.9	1.7	0.7	1.8	1.7	1.3	1.7	6.9	5.2	5.5	4.8	3.6	5.3	5.8	5.3	5.3
South	3.7	4.1	3.3	4.8	4.3	3.9	3.1	4.4	3.9	2.2	1.6	1.5	1.8	1.3	1.4	1.4	1.2	1.6	5.9	5.7	4.6	6.5	5.7	5.3	4.7	5.6	5.5
West	3.3	3.0	2.5	2.4	2.7	3.0	3.7	1.7	2.8	2.0	1.3	0.8	1.2	1.5	1.0	1.4	1.0	1.3	5.6	4.4	3.5	3.6	4.2	3.8	5.0	2.8	4.1
Population Density																											
Large MSA	3.7	2.5	2.7	3.8	4.0	3.0	3.2	3.0	3.2	1.4	1.7	0.9	1.9	1.0	1.2	1.3	1.3	1.4	5.5	4.1	3.9	5.4	4.9	4.1	4.9	4.7	4.7
Other MSA	4.5	4.1	3.0	3.3	3.8	3.8	3.4	4.0	3.7	2.3	2.1	1.9	1.5	1.4	1.6	1.7	1.2	1.7	6.7	5.8	4.7	5.1	5.3	5.4	5.2	5.2	5.4
Non-MSA	3.0	3.6	3.9	3.3	3.0	3.0	3.4	3.0	3.3	2.9	1.9	1.1	1.6	0.9	1.1	1.2	0.9	1.5	5.7	5.6	5.0	4.6	4.1	3.9	4.4	3.8	4.7
Parental Education [b]																											
1.0–2.0 (Low)	4.3	3.9	2.8	3.1	3.5	2.2	2.0	2.5	3.0	2.8	1.2	1.2	1.3	2.1	1.1	1.7	0.4	1.5	7.0	4.5	3.7	4.9	4.7	3.3	3.7	2.9	4.3
2.5–3.0	3.2	3.7	3.1	2.2	3.2	2.8	3.0	3.6	3.1	2.4	1.4	1.1	0.9	0.5	0.7	1.4	0.8	1.2	5.3	5.0	4.5	3.0	3.9	3.6	4.5	4.3	4.3
3.5–4.0	3.7	2.7	2.5	2.5	3.3	3.3	2.9	3.1	3.0	2.3	2.8	0.9	1.9	0.4	1.2	1.7	1.0	1.6	6.1	5.3	3.4	4.4	4.1	4.3	4.7	4.2	4.6
4.5–5.0	3.9	2.9	3.2	4.2	3.6	3.3	3.9	3.6	3.6	1.8	1.8	1.8	1.6	1.9	1.6	1.3	2.0	1.7	5.9	4.5	4.7	5.8	5.6	4.7	5.2	5.8	5.3
5.5–6.0 (High)	4.7	4.0	3.9	5.8	5.3	4.1	3.5	3.5	4.3	2.3	1.5	2.2	2.3	1.2	1.6	1.4	1.4	1.7	7.1	5.3	6.2	8.4	6.2	6.1	5.3	4.5	6.1
Race/Ethnicity																											
White	4.7	3.7	3.7	4.3	4.9	4.2	4.1	4.6	4.3	2.5	2.0	1.9	1.8	1.3	1.5	1.6	1.3	1.8	7.4	5.4	5.5	6.4	6.2	5.7	6.0	6.0	6.1
African American	1.5	2.7	1.7	3.3	2.1	1.5	2.2	2.5	2.2	1.3	1.3	0.6	1.3	0.9	2.2	0.9	1.1	1.2	2.7	3.9	2.4	4.4	3.1	3.2	2.9	3.4	3.3
Hispanic	2.4	2.7	1.2	1.5	1.5	1.9	2.1	1.2	1.8	1.0	1.0	0.6	0.9	0.4	0.5	1.5	0.6	0.8	3.2	3.5	1.9	2.4	2.2	2.5	3.6	1.8	2.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. For the non-stimulant-type drugs, the don't know response category has been treated as missing data.

[a] Current use are those reporting "Yes, I take them now."

[b] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

TABLE 10-11
Trends in Lifetime Use of Prescribed ADHD Drugs by Subgroups in Grade 10

	Stimulant-Type Drugs									Non-Stimulant-Type Drugs									Either Stimulant- or Non-Stimulant-Type Drugs								
	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined
Number of Lifetime Users=	*470*	*442*	*428*	*374*	*418*	*421*	*343*	*377*	*3,274*	*390*	*398*	*315*	*299*	*313*	*275*	*278*	*224*	*2,492*	*672*	*682*	*606*	*563*	*598*	*572*	*527*	*522*	*4,742*
Approximate weighted N=	*5,400*	*5,200*	*5,100*	*4,800*	*5,100*	*4,900*	*4,800*	*4,700*	*40,000*	*4,700*	*4,800*	*4,700*	*4,400*	*4,600*	*4,500*	*4,400*	*4,300*	*36,400*	*4,700*	*4,800*	*4,700*	*4,400*	*4,600*	*4,500*	*4,400*	*4,400*	*36,500*
Total	8.7	8.5	8.4	7.8	8.2	8.6	7.2	8.0	8.2	8.3	8.3	6.7	6.8	6.8	6.1	6.4	5.2	6.9	14.3	14.2	12.9	12.8	13.0	12.7	12.0	12.0	13.0
Gender																											
Male	10.4	9.2	9.6	9.3	9.1	10.0	8.1	8.8	9.3	9.5	9.2	8.0	7.4	8.9	6.6	6.7	6.4	7.9	16.5	15.2	15.1	14.8	15.5	14.1	13.2	13.8	14.8
Female	6.9	7.7	7.4	6.4	7.3	7.2	6.4	7.2	7.1	7.0	7.5	5.2	6.2	4.8	5.5	6.2	4.1	5.8	12.0	12.9	10.8	10.9	10.5	11.3	11.0	10.3	11.2
College Plans																											
None or under 4 years	12.6	14.7	10.6	13.3	14.4	12.8	10.2	11.7	12.5	12.6	10.1	9.5	10.5	14.0	10.1	10.6	11.2	11.0	19.2	20.9	16.6	20.1	20.9	19.3	16.7	17.7	18.9
Complete 4 years	8.2	7.6	8.1	7.2	7.6	8.2	6.9	7.6	7.7	7.7	8.0	6.3	6.3	6.1	5.6	5.9	4.5	6.3	13.6	13.2	12.4	11.8	12.2	11.9	11.5	11.4	12.3
Region																											
Northeast	9.1	6.4	7.0	6.8	7.5	7.4	6.1	8.0	7.3	8.6	8.8	6.5	6.1	7.0	5.7	7.2	5.3	7.0	14.3	11.8	12.2	11.4	11.5	11.8	12.0	12.2	12.2
Midwest	8.0	7.9	8.6	8.9	9.9	10.3	9.0	6.7	8.6	6.9	7.4	6.8	7.7	7.7	5.9	6.7	3.8	6.6	12.8	12.9	13.7	14.5	14.2	13.3	13.6	9.6	13.1
South	10.2	10.8	9.3	8.7	9.7	9.9	8.8	10.5	9.8	10.6	9.6	7.2	8.2	7.2	7.0	6.6	6.1	7.8	17.6	17.8	13.2	14.2	15.2	14.7	13.5	15.3	15.2
West	6.8	7.6	8.0	6.4	5.2	5.8	3.6	6.0	6.2	6.6	7.0	6.1	4.6	5.4	5.3	5.1	5.2	5.6	11.3	12.0	12.3	10.2	10.0	9.5	7.9	9.8	10.4
Population Density																											
Large MSA	7.5	7.5	6.8	6.7	8.5	8.1	6.4	6.9	7.3	6.0	7.2	6.1	4.3	6.2	6.1	5.1	5.3	5.8	12.0	12.3	11.2	10.3	12.8	11.7	10.8	11.4	11.6
Other MSA	9.4	9.2	9.2	7.3	8.3	8.7	7.3	8.7	8.5	9.2	8.4	6.5	7.1	7.5	5.7	6.8	4.9	7.1	15.5	15.1	13.7	12.3	13.6	12.9	12.0	12.1	13.5
Non-MSA	8.6	8.5	9.0	10.5	7.7	9.3	8.1	8.1	8.7	9.3	9.7	8.2	9.6	6.4	6.8	7.4	5.6	7.9	14.7	14.7	13.9	17.4	12.0	13.6	13.6	12.6	14.1
Parental Education [a]																											
1.0–2.0 (Low)	6.6	8.7	8.0	5.8	7.3	9.0	5.4	7.2	7.2	8.2	10.5	6.6	5.1	7.0	6.2	6.3	7.5	7.1	11.9	16.0	11.5	9.6	12.7	12.6	11.0	12.3	12.1
2.5–3.0	8.6	9.0	8.8	8.2	7.9	10.6	8.3	9.6	8.9	8.7	7.6	6.0	8.3	6.9	6.5	7.7	4.3	7.0	15.0	14.6	12.6	14.0	12.3	14.5	14.4	12.5	13.8
3.5–4.0	8.2	9.8	7.7	8.3	7.6	8.4	7.5	6.9	8.1	7.4	9.7	7.4	7.1	5.3	6.4	5.6	5.3	6.8	12.9	16.1	12.8	14.0	11.1	12.6	11.5	11.2	12.8
4.5–5.0	8.7	7.4	8.8	7.6	8.5	7.9	7.0	8.4	8.0	9.1	7.4	6.3	7.4	7.2	5.5	5.9	5.9	6.9	14.8	12.2	13.5	13.2	13.5	11.8	11.2	13.0	12.9
5.5–6.0 (High)	10.0	8.0	8.8	7.9	10.3	8.8	6.0	8.4	8.5	8.6	8.3	6.3	5.1	7.8	6.4	6.8	4.0	6.7	15.9	13.5	12.6	10.7	15.6	13.5	11.1	11.6	13.1
Race/Ethnicity																											
White	10.3	9.3	9.5	8.9	9.0	9.8	8.4	8.9	9.3	9.5	9.3	7.2	7.5	7.3	6.5	7.0	5.3	7.5	16.5	15.6	14.3	14.4	13.9	13.9	13.4	13.0	14.4
African American	4.2	6.4	7.0	5.1	4.6	7.9	5.6	5.7	5.7	4.2	5.4	4.6	3.9	5.4	7.0	2.8	3.7	4.6	7.6	10.5	10.3	7.8	9.0	12.1	7.7	9.0	9.2
Hispanic	6.0	5.2	5.6	4.0	6.6	5.3	4.8	7.1	5.5	4.7	5.1	4.1	5.8	5.6	4.0	7.4	5.3	5.2	9.1	8.2	8.7	8.4	11.2	8.2	10.7	10.3	9.4

Source. The Monitoring the Future study, the University of Michigan.

Note. For the non-stimulant-type drugs, the don't know response category has been treated as missing data.

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

TABLE 10-12
Trends in Current Use [a] of Prescribed ADHD Drugs by Subgroups in Grade 10

	Stimulant-Type Drugs									Non-Stimulant-Type Drugs									Either Stimulant- or Non-Stimulant-Type Drugs								
	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined
Number of Current Users=	*184*	*146*	*143*	*139*	*168*	*152*	*134*	*180*	*1,245*	*108*	*110*	*75*	*75*	*87*	*72*	*55*	*55*	*638*	*263*	*230*	*197*	*198*	*230*	*207*	*184*	*220*	*1,730*
Approximate weighted N=	*5,400*	*5,200*	*5,100*	*4,800*	*5,100*	*4,900*	*4,800*	*4,700*	*40,000*	*4,700*	*4,800*	*4,700*	*4,400*	*4,600*	*4,500*	*4,400*	*4,300*	*36,400*	*4,700*	*4,800*	*4,700*	*4,400*	*4,600*	*4,500*	*4,400*	*4,300*	*36,400*
Total	3.4	2.8	2.8	2.9	3.3	3.1	2.8	3.8	3.1	2.3	2.3	1.6	1.7	1.9	1.6	1.3	1.3	1.8	5.6	4.8	4.2	4.5	5.0	4.6	4.2	5.1	4.7
Gender																											
Male	4.1	3.5	3.2	3.4	3.6	4.1	3.0	4.4	3.7	2.6	2.7	1.8	1.9	2.2	2.1	1.3	1.6	2.0	6.4	5.6	4.8	5.2	5.7	5.8	4.5	5.8	5.5
Female	2.7	2.1	2.5	2.4	3.1	2.1	2.7	3.4	2.6	1.9	2.0	1.4	1.4	1.5	1.2	1.3	0.9	1.5	4.5	3.9	3.7	3.8	4.3	3.2	4.0	4.5	4.0
College Plans																											
None or under 4 years	4.8	4.1	3.5	3.2	6.9	4.7	3.3	2.4	4.1	4.4	2.6	2.5	1.8	4.4	3.5	2.8	2.3	3.1	8.7	6.2	5.4	4.8	9.9	7.7	6.2	3.9	6.6
Complete 4 years	3.2	2.6	2.7	2.9	3.0	2.9	2.8	4.0	3.0	2.0	2.2	1.4	1.6	1.7	1.4	1.0	1.2	1.6	5.2	4.5	4.0	4.4	4.5	4.2	4.0	5.2	4.5
Region																											
Northeast	3.3	1.9	2.4	2.9	2.1	2.7	2.9	3.3	2.7	3.1	2.6	1.6	1.6	2.9	1.4	1.0	1.4	2.0	6.0	3.8	4.0	4.3	4.4	4.0	4.1	4.8	4.4
Midwest	3.5	2.9	3.1	3.9	5.2	3.3	3.1	4.1	3.6	2.2	2.2	2.3	2.6	2.5	1.2	1.3	0.7	1.9	5.7	4.7	5.1	6.2	7.3	4.1	4.5	4.6	5.3
South	4.2	3.4	3.5	2.9	4.1	3.6	3.5	5.3	3.8	2.2	2.5	1.4	1.9	1.4	2.4	1.3	1.7	1.9	6.2	5.7	4.6	4.8	5.5	6.0	4.9	7.2	5.6
West	2.0	2.5	2.0	2.1	1.4	2.5	1.4	1.8	2.0	1.8	2.0	1.0	0.7	1.2	1.1	1.4	1.1	1.3	3.9	4.2	2.9	2.6	2.4	3.4	2.9	2.9	3.1
Population Density																											
Large MSA	2.9	2.5	2.2	3.2	3.4	3.3	3.2	3.4	3.0	1.5	1.9	1.5	0.9	2.3	2.1	1.2	1.3	1.6	4.6	4.0	3.2	4.1	5.5	4.9	4.5	4.8	4.4
Other MSA	3.9	3.0	3.1	2.7	3.2	2.9	2.5	4.1	3.2	2.7	2.7	1.6	1.9	2.0	1.2	1.0	1.3	1.8	6.4	5.4	4.8	4.3	5.0	4.2	3.8	5.2	4.9
Non-MSA	3.1	2.6	3.1	3.2	3.4	3.2	3.0	3.9	3.2	2.3	2.2	1.7	2.2	1.2	1.8	1.9	1.2	1.8	4.9	4.4	4.2	5.5	4.3	5.0	4.8	5.3	4.8
Parental Education [b]																											
1.0–2.0 (Low)	2.6	3.6	1.8	1.7	1.5	1.4	1.8	1.9	2.0	1.4	3.2	2.5	1.2	1.3	1.5	1.5	0.5	1.6	3.5	5.7	3.6	2.6	2.3	3.0	3.5	2.3	3.2
2.5–3.0	2.7	1.7	2.1	3.1	2.7	3.2	3.1	4.0	2.8	1.6	1.5	0.6	1.8	1.9	1.6	1.4	1.0	1.4	4.2	3.2	2.8	4.6	4.4	4.7	4.7	5.1	4.2
3.5–4.0	3.7	3.4	3.1	2.3	2.9	3.5	1.8	4.3	3.1	2.5	2.5	1.5	1.4	1.0	2.0	1.2	0.9	1.6	5.9	5.1	4.5	3.7	3.8	5.3	3.1	5.2	4.6
4.5–5.0	2.9	2.6	2.9	2.8	3.6	2.9	3.6	3.6	3.1	2.9	2.6	1.7	2.2	2.7	1.4	1.3	1.8	2.1	5.6	4.9	4.5	5.0	5.8	4.2	4.9	5.2	5.0
5.5–6.0 (High)	5.1	3.1	3.3	4.2	5.5	4.6	3.4	4.1	4.2	2.2	2.5	2.0	1.6	2.8	1.6	1.0	1.9	2.0	7.6	5.3	5.1	5.2	8.1	5.7	4.7	6.1	6.0
Race/Ethnicity																											
White	4.5	3.2	3.4	3.6	3.9	3.7	3.5	4.5	3.8	2.5	2.7	1.9	1.9	2.1	1.8	1.4	1.2	2.0	6.8	5.4	5.1	5.4	5.6	5.2	5.0	5.8	5.6
African American	0.8	1.6	2.2	1.5	1.0	1.4	2.4	3.2	1.7	1.8	1.7	0.7	0.7	0.7	1.4	0.7	0.9	1.1	2.6	2.6	2.9	2.4	1.8	2.9	3.3	4.3	2.8
Hispanic	1.0	1.6	1.1	1.1	2.0	1.3	1.3	2.1	1.4	1.2	1.4	0.3	1.9	1.2	0.9	1.2	1.4	1.2	2.2	2.3	1.3	2.4	3.2	2.1	2.5	3.1	2.4

Source. The Monitoring the Future study, the University of Michigan.

Note. For the non-stimulant-type drugs, the don't know response category has been treated as missing data.

[a]Current user are those reporting "Yes, I take them now."

[b]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

TABLE 10-13
Trends in Lifetime Use of Prescribed ADHD Drugs by Subgroups in Grade 12

	Stimulant-Type Drugs									Non-Stimulant-Type Drugs									Either Stimulant- or Non-Stimulant-Type Drugs								
	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined
Number of Lifetime Users=	*213*	*351*	*342*	*370*	*344*	*357*	*369*	*394*	*2,740*	*130*	*256*	*294*	*262*	*216*	*268*	*238*	*240*	*1,905*	*260*	*491*	*508*	*537*	*440*	*508*	*497*	*518*	*3,760*
Approximate weighted N=	*2,500*	*4,500*	*4,500*	*4,300*	*4,200*	*4,300*	*4,400*	*4,400*	*33,100*	*2,100*	*4,200*	*4,200*	*4,100*	*4,000*	*4,000*	*4,100*	*4,100*	*30,800*	*2,100*	*4,200*	*4,200*	*4,100*	*4,000*	*4,000*	*4,100*	*4,100*	*30,800*
Total	8.5	7.8	7.6	8.6	8.2	8.3	8.4	9.0	8.3	6.2	6.1	7.0	6.4	5.4	6.7	5.8	5.9	6.2	12.4	11.7	12.1	13.1	11.0	12.7	12.2	12.7	12.2
Gender																											
Male	12.0	10.2	10.1	10.3	8.7	9.8	10.3	10.5	10.3	7.0	6.1	8.3	7.0	6.5	7.7	6.4	5.8	6.8	15.8	13.2	15.7	14.6	13.0	14.7	14.3	14.4	14.4
Female	5.3	5.4	4.9	7.0	6.5	6.3	6.4	7.4	6.2	5.0	5.7	5.6	6.5	4.0	5.6	5.2	5.6	5.4	8.8	9.6	8.6	11.5	9.1	10.1	9.9	10.8	9.8
College Plans																											
None or under 4 years	12.3	11.1	10.8	13.6	13.4	11.2	13.2	11.4	12.1	9.2	7.6	9.4	9.9	6.7	9.0	8.0	8.1	8.5	16.7	16.3	15.7	18.8	17.3	16.1	17.4	16.6	16.9
Complete 4 years	7.8	7.0	6.9	7.5	7.2	7.6	7.4	8.4	7.5	5.3	5.8	6.4	5.5	5.0	6.1	5.2	5.4	5.6	11.3	10.6	11.2	11.2	10.6	11.8	11.0	11.8	11.2
Region																											
Northeast	8.8	9.8	7.8	9.5	7.4	7.7	8.3	8.0	8.4	6.0	5.9	7.6	8.0	5.1	4.9	5.4	6.5	6.2	13.1	13.8	12.2	14.2	11.2	11.1	12.0	13.1	12.6
Midwest	9.3	6.0	7.8	8.5	8.9	9.6	8.9	9.0	8.5	5.8	5.5	7.1	6.8	6.1	8.4	5.0	6.3	6.4	12.7	9.7	12.5	12.0	12.9	14.7	12.3	12.9	12.4
South	9.2	9.5	8.5	8.4	10.3	9.1	9.2	10.3	9.3	7.6	7.4	7.6	5.2	5.7	7.0	6.8	5.8	6.7	13.9	14.0	13.3	12.3	14.0	13.6	13.0	13.0	13.4
West	6.2	5.2	5.5	8.3	4.5	5.8	6.7	8.2	6.4	4.5	4.4	5.1	6.7	4.4	5.7	5.6	5.3	5.2	8.6	8.1	9.2	12.5	7.2	10.3	10.9	12.0	10.0
Population Density																											
Large MSA	7.1	8.7	8.5	10.2	7.1	7.2	7.5	9.8	8.3	5.1	6.1	6.9	6.6	5.6	7.3	5.4	6.1	6.1	10.4	12.6	12.4	14.5	10.9	12.4	10.6	13.4	12.1
Other MSA	9.9	7.1	7.6	8.6	8.1	9.4	9.8	9.1	8.7	7.9	6.2	7.3	6.3	5.0	6.2	6.3	6.2	6.4	14.6	11.1	12.6	12.5	11.2	13.3	14.1	13.2	12.8
Non-MSA	7.5	7.8	6.3	6.9	9.7	7.0	6.4	7.7	7.4	3.8	5.8	6.3	6.4	6.2	7.2	5.5	4.9	5.8	9.9	11.6	10.5	10.6	14.2	11.8	9.8	10.5	11.1
Parental Education [a]																											
1.0–2.0 (Low)	7.7	7.0	5.8	5.4	7.5	8.5	6.9	5.9	6.9	5.2	4.3	5.5	6.6	6.0	5.1	4.9	5.8	5.4	10.1	10.3	9.5	10.7	11.1	11.5	10.4	9.7	10.5
2.5–3.0	7.1	8.4	6.3	6.5	6.5	7.2	7.1	9.6	7.3	4.1	6.2	5.7	6.4	3.4	6.1	4.5	4.8	5.1	10.0	12.5	10.8	10.1	8.9	10.5	10.0	12.5	10.7
3.5–4.0	9.0	6.2	7.6	10.3	8.1	8.8	7.8	8.7	8.3	7.6	5.9	6.9	7.0	5.2	6.6	5.9	5.6	6.3	13.6	10.4	12.2	14.4	11.8	13.1	11.7	12.5	12.5
4.5–5.0	8.1	8.5	7.2	8.3	8.4	8.6	8.7	9.1	8.4	6.8	6.4	8.1	4.7	6.5	7.9	6.5	6.1	6.6	12.1	12.3	12.2	11.2	12.8	14.4	13.0	12.8	12.6
5.5–6.0 (High)	11.3	8.7	11.2	10.2	11.1	8.2	10.7	11.1	10.3	6.4	6.8	7.8	7.5	6.4	6.6	6.8	7.0	6.9	15.3	12.2	15.2	15.2	14.9	13.4	14.9	14.8	14.5
Race/Ethnicity																											
White	9.3	8.6	8.4	10.0	9.8	9.1	10.1	10.7	9.5	6.5	6.8	7.9	6.7	6.0	7.3	6.5	5.6	6.7	13.3	12.7	13.4	13.8	13.8	14.3	14.5	14.4	13.8
African American	5.5	5.2	3.9	5.2	6.1	6.7	5.8	7.3	5.7	5.7	4.0	5.7	4.2	5.5	6.0	5.0	6.9	5.3	8.4	8.1	8.0	8.0	9.9	10.7	8.9	10.8	9.0
Hispanic	5.9	6.1	5.4	5.6	4.7	6.8	5.4	5.5	5.7	4.6	3.9	4.2	5.2	3.9	5.1	5.3	4.9	4.6	9.1	9.0	8.4	9.4	6.8	9.6	8.2	8.1	8.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. Data for 2005 based on Form 5 only. For the non-stimulant-type drugs, the don't know response category has been treated as missing data.

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

TABLE 10-14
Trends in Current Use [a] of Prescribed ADHD Drugs by Subgroups in Grade 12

	Stimulant-Type Drugs									Non-Stimulant-Type Drugs									Either Stimulant- or Non-Stimulant-Type Drugs								
	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined	2005	2006	2007	2008	2009	2010	2011	2012	2005–2012 Combined
Number of Current Users=	*73*	*104*	*117*	*125*	*122*	*129*	*147*	*166*	*982*	*34*	*67*	*71*	*78*	*60*	*92*	*77*	*73*	*552*	*95*	*155*	*172*	*180*	*172*	*208*	*207*	*221*	*1,411*
Approximate weighted N=	*2,500*	*4,500*	*4,500*	*4,300*	*4,200*	*4,300*	*4,400*	*4,400*	*33,100*	*2,100*	*4,200*	*4,200*	*4,100*	*4,000*	*4,000*	*4,100*	*4,100*	*30,800*	*2,100*	*4,200*	*4,200*	*4,100*	*4,000*	*4,000*	*4,100*	*4,000*	*30,700*
Total	2.9	2.3	2.6	2.9	2.9	3.0	3.3	3.8	3.0	1.6	1.6	1.7	1.9	1.5	2.3	1.9	1.8	1.8	4.5	3.7	4.1	4.4	4.3	5.2	5.1	5.5	4.6
Gender																											
Male	4.1	2.6	3.7	3.0	2.6	3.6	3.5	3.9	3.3	1.3	1.4	1.3	1.1	1.5	2.3	1.7	1.6	1.6	5.5	3.9	5.2	3.9	3.9	5.8	5.2	5.5	4.9
Female	1.8	2.0	2.0	2.6	3.2	2.5	3.2	3.8	2.6	1.6	1.8	1.6	2.2	1.6	2.3	1.9	2.0	1.8	3.4	3.5	3.4	4.6	4.5	4.6	4.9	5.4	4.2
College Plans																											
None or under 4 years	5.3	2.4	3.6	3.3	1.8	3.9	3.9	3.4	3.5	2.9	0.8	2.5	2.2	1.5	3.2	3.3	2.7	2.4	8.2	3.2	5.9	5.2	3.1	6.5	6.9	5.8	5.6
Complete 4 years	2.5	2.3	2.4	2.9	3.0	2.9	3.2	3.8	2.9	1.2	1.7	1.6	1.9	1.5	2.1	1.5	1.6	1.6	3.7	3.7	3.8	4.4	4.3	4.9	4.6	5.3	4.3
Region																											
Northeast	3.5	3.0	2.7	3.2	2.0	3.2	3.3	3.1	3.0	2.5	1.5	2.4	3.9	1.1	1.9	2.8	1.5	2.2	6.3	4.1	4.7	5.9	3.0	5.0	6.3	4.8	5.0
Midwest	2.7	2.0	3.3	2.9	2.7	4.0	4.6	5.0	3.4	1.6	1.5	1.7	2.0	1.9	2.8	1.5	2.5	1.9	4.0	3.5	5.0	4.5	4.5	6.7	6.3	7.2	5.2
South	2.7	2.6	2.8	2.8	4.3	3.3	3.2	3.7	3.1	1.5	1.9	1.9	1.1	1.9	2.4	2.3	1.4	1.8	4.2	4.2	4.5	3.9	5.8	5.4	4.9	4.8	4.7
West	3.0	1.6	1.2	2.9	1.6	1.4	2.3	3.1	2.2	0.8	1.1	0.8	1.8	0.7	1.9	1.1	1.8	1.3	4.0	2.7	2.1	4.5	2.3	3.3	3.3	4.8	3.4
Population Density																											
Large MSA	2.3	2.2	2.9	3.7	2.9	2.7	3.0	3.9	2.9	1.4	1.9	1.7	2.4	1.8	1.7	1.9	1.8	1.8	3.5	3.7	4.5	5.7	4.5	4.3	4.6	5.6	4.5
Other MSA	3.5	2.4	2.4	2.9	2.7	3.5	4.5	4.5	3.3	1.9	1.3	2.1	1.7	1.2	2.5	2.0	2.1	1.9	5.6	3.6	4.2	4.3	3.7	6.0	6.4	6.3	5.0
Non-MSA	2.3	2.3	2.4	2.1	3.1	2.3	1.2	2.0	2.2	1.0	1.5	1.1	1.9	1.7	2.7	1.6	1.1	1.6	3.5	3.8	3.4	3.5	4.9	4.4	2.6	3.0	3.6
Parental Education [b]																											
1.0–2.0 (Low)	2.2	1.0	1.4	1.9	1.3	2.6	2.8	2.5	2.0	0.3	2.2	1.0	2.2	1.3	3.3	1.8	2.3	1.8	2.7	3.3	2.3	4.2	2.3	5.1	4.8	3.7	3.6
2.5–3.0	2.0	1.4	2.4	1.9	1.6	2.3	2.2	3.2	2.1	1.5	0.9	1.5	1.9	0.9	2.2	1.6	1.6	1.5	3.7	2.0	3.8	3.2	2.5	4.4	3.6	4.8	3.5
3.5–4.0	2.9	2.1	2.4	2.8	2.8	3.2	3.6	3.2	2.9	2.4	1.3	1.9	1.8	1.4	2.4	1.6	1.8	1.8	5.0	3.3	4.1	4.1	3.9	5.2	5.3	5.0	4.5
4.5–5.0	3.3	3.2	2.1	3.6	3.0	2.9	3.6	4.2	3.2	1.7	1.6	1.6	1.5	2.1	2.3	2.2	1.6	1.8	5.0	4.6	3.7	4.8	4.8	5.4	5.6	5.7	4.9
5.5–6.0 (High)	3.8	3.0	4.3	3.8	5.9	4.7	4.8	6.5	4.6	0.9	2.8	2.3	2.7	1.2	1.8	1.6	2.1	1.9	4.8	5.3	6.2	6.5	7.4	6.5	6.3	8.3	6.4
Race/Ethnicity																											
White	3.3	2.8	2.9	3.6	3.4	3.9	4.8	4.8	3.7	1.7	1.7	1.8	1.9	1.5	2.6	2.2	1.6	1.9	4.9	4.3	4.6	5.1	4.7	6.4	6.9	6.4	5.4
African American	0.0	1.4	0.9	1.5	1.1	1.7	1.0	2.8	1.3	2.3	1.6	1.9	2.0	0.6	2.1	1.7	2.1	1.8	2.4	2.2	2.8	3.3	1.8	3.9	2.6	3.9	2.9
Hispanic	1.3	0.8	0.9	1.4	1.8	1.9	1.5	1.5	1.4	1.2	1.1	1.6	0.9	1.7	1.6	0.6	2.2	1.4	2.7	2.0	2.4	2.3	3.2	3.0	2.0	3.3	2.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. Data for 2005 based on Form 5 only. For the non-stimulant-type drugs, the don't know response category has been treated as missing data.

[a] Current use are those reporting "Yes, I take them now."

[b] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

TABLE 10-15a
Androstenedione
Trends in Annual Prevalence of Use by Subgroups in Grade 8

	Percentage who used in last 12 months												2011–2012 change
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Approximate weighted N =	*16,200*	*15,100*	*16,500*	*17,000*	*16,800*	*16,500*	*16,100*	*15,700*	*15,000*	*15,300*	*16,000*	*15,100*	
Total	1.1	1.2	1.0	0.9	0.6	1.0	0.9	0.9	0.8	0.9	0.6	0.6	0.0
Gender													
Male	1.3	1.7	1.2	1.2	1.0	1.4	0.9	1.3	1.1	1.1	0.5	0.7	+0.1
Female	1.0	0.8	0.8	0.5	0.3	0.5	0.8	0.5	0.6	0.8	0.5	0.3	-0.2
College Plans													
None or under 4 years	4.2	5.0	2.9	3.6	2.2	4.6	1.1	3.1	3.4	2.7	1.7	1.7	+0.1
Complete 4 years	0.8	0.8	0.8	0.6	0.4	0.6	0.8	0.7	0.6	0.7	0.5	0.6	+0.1
Region													
Northeast	0.6	1.3	0.9	0.6	0.5	1.5	0.5	0.5	0.3	1.2	0.5	0.0	-0.5
Midwest	1.1	1.7	1.0	1.2	0.3	0.9	0.4	0.8	0.4	0.9	0.6	0.0	-0.6
South	1.6	1.0	1.2	0.8	1.2	0.6	1.2	1.2	0.9	1.0	0.6	1.4	+0.7
West	0.8	0.8	0.6	0.9	0.1	1.3	0.9	1.0	1.4	0.7	0.7	0.5	-0.2
Population Density													
Large MSA	1.1	0.8	0.9	0.6	0.5	0.8	0.5	1.0	0.4	0.5	0.1	0.9	+0.8 s
Other MSA	1.2	1.3	0.9	0.9	0.7	1.3	1.2	1.0	0.6	1.4	1.0	0.6	-0.3
Non-MSA	0.9	1.7	1.3	1.2	0.8	0.7	0.7	0.8	1.7	0.5	0.7	0.2	-0.4
Parental Education [a]													
1.0–2.0 (Low)	1.3	1.7	1.1	2.2	0.8	1.3	1.1	2.6	3.1	2.0	1.6	0.6	-1.1
2.5–3.0	0.8	1.9	1.9	0.7	1.3	1.5	0.8	0.9	0.4	0.5	1.1	0.2	-0.9
3.5–4.0	1.6	1.0	0.9	1.3	0.6	0.9	0.8	0.7	1.1	1.0	0.7	0.6	0.0
4.5–5.0	1.0	0.9	0.6	0.7	0.2	0.7	0.6	0.7	0.4	0.9	0.3	0.5	+0.2
5.5–6.0 (High)	1.2	0.9	0.7	0.2	0.3	0.6	0.8	1.2	0.5	0.6	*	1.0	+0.9 s
Race/Ethnicity (2-year average) [b]													
White	—	1.1	1.1	0.8	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.4	-0.1
African American	—	0.7	0.5	0.6	0.8	0.9	1.3	1.4	1.1	1.0	0.9	1.1	+0.2
Hispanic	—	1.4	1.3	1.6	1.4	1.2	1.4	1.6	1.6	2.1	1.8	1.4	-0.4

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' * ' indicates less than 0.05% but greater than 0%. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in Table D-S1.

Caution: ***Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.***

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[b]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. For the data beginning in 2005, see appendix B for details on how race/ethnicity is defined.

TABLE 10-15b
Androstenedione
Trends in Annual Prevalence of Use by Subgroups in Grade 10

	Percentage who used in last 12 months												2011–2012 change
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Approximate weighted N =	*14,000*	*14,300*	*15,800*	*16,400*	*16,200*	*16,200*	*16,100*	*15,100*	*15,900*	*15,200*	*14,900*	*15,000*	
Total	2.2	1.9	1.7	1.1	0.9	0.9	0.6	0.9	1.1	1.0	0.8	0.9	+0.2
Gender													
Male	3.5	2.2	2.5	1.6	1.4	1.7	0.9	1.3	1.7	1.3	0.9	1.3	+0.5
Female	0.9	1.6	0.9	0.5	0.4	0.2	0.2	0.6	0.5	0.6	0.7	0.5	-0.1
College Plans													
None or under 4 years	3.9	3.5	4.0	2.8	1.9	3.3	1.6	1.4	4.1	3.6	2.2	1.5	-0.7
Complete 4 years	1.9	1.7	1.3	0.9	0.8	0.5	0.4	0.8	0.8	0.7	0.6	0.8	+0.2
Region													
Northeast	2.1	1.8	1.6	1.2	1.0	1.4	0.5	0.7	1.2	1.1	0.9	0.8	-0.1
Midwest	1.7	1.4	1.4	1.2	0.7	0.8	0.3	0.9	1.0	1.4	1.1	1.1	0.0
South	2.8	2.4	2.0	1.3	1.3	0.7	0.9	0.9	1.3	0.6	0.7	1.0	+0.3
West	1.9	1.9	1.7	0.6	0.7	0.9	0.5	0.9	0.9	1.0	0.4	0.6	+0.2
Population Density													
Large MSA	2.6	1.4	1.4	1.0	0.9	0.8	0.8	0.9	1.1	1.2	0.8	1.1	+0.3
Other MSA	1.9	2.2	1.7	1.0	0.8	0.8	0.5	0.9	1.4	0.7	0.6	0.8	+0.2
Non-MSA	2.4	2.0	2.1	1.6	1.2	1.3	0.5	0.7	0.7	1.2	1.1	0.9	-0.1
Parental Education [a]													
1.0–2.0 (Low)	3.6	3.4	1.8	1.4	1.5	2.1	1.0	0.6	1.3	2.3	0.9	1.4	+0.5
2.5–3.0	1.7	1.9	1.0	0.8	0.9	0.6	0.9	1.0	1.8	1.5	1.1	1.4	+0.3
3.5–4.0	3.4	1.7	1.9	1.0	0.6	0.8	0.5	0.9	1.3	0.7	1.0	0.8	-0.2
4.5–5.0	1.7	1.3	2.0	1.0	1.0	1.0	0.7	1.0	0.5	0.2	0.3	0.7	+0.3
5.5–6.0 (High)	1.4	2.5	1.6	1.0	0.8	0.7	0.1	0.6	1.1	1.5	0.5	0.3	-0.3
Race/Ethnicity (2-year average) [b]													
White	—	1.7	1.4	1.1	1.0	0.8	0.6	0.6	0.7	0.7	0.6	0.7	+0.1
African American	—	1.9	2.2	1.8	0.9	1.0	1.2	1.2	0.9	1.5	1.6	0.7	-0.9
Hispanic	—	2.6	2.3	1.6	0.6	0.8	0.8	0.8	1.4	1.4	1.4	1.3	-0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.
See Table D-S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in Table D-S2.

Caution: ***Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.***

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[b]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. For the data beginning in 2005, see appendix B for details on how race/ethnicity is defined.

TABLE 10-15c
Androstenedione
Trends in Annual Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 12 months												2011–2012
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	change
Approximate weighted N =	*12,800*	*12,900*	*14,600*	*14,600*	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*14,400*	*14,100*	*13,700*	
Total	3.0	2.5	2.5	2.1	1.7	1.1	0.9	1.3	1.1	1.5	0.7	1.0	+0.3
Gender													
Male	5.3	4.7	4.6	3.7	2.7	1.6	1.2	1.7	1.9	2.3	1.3	1.3	0.0
Female	0.7	0.4	0.2	0.6	0.5	0.3	0.4	0.7	0.3	0.7	0.1	0.6	+0.4
College Plans													
None or under 4 years	4.3	4.0	3.6	2.9	2.3	2.0	1.7	2.3	2.5	3.1	0.7	1.7	+0.9
Complete 4 years	2.5	2.1	2.1	1.7	1.4	0.7	0.7	1.0	0.8	1.2	0.7	0.8	+0.1
Region													
Northeast	3.1	2.8	2.7	2.1	1.5	1.2	0.9	0.6	1.0	1.8	1.2	1.3	+0.1
Midwest	3.4	2.4	2.3	2.1	2.0	0.6	1.1	1.0	1.7	2.0	0.4	0.7	+0.3
South	2.8	2.6	2.4	2.2	1.9	1.1	1.1	2.0	1.0	1.0	1.1	1.6	+0.5
West	2.9	2.1	3.0	1.8	1.2	1.5	0.3	1.2	0.6	1.5	0.3	0.6	+0.4
Population Density													
Large MSA	3.0	2.4	1.1	1.5	1.5	1.1	0.7	0.6	0.9	1.6	0.5	1.2	+0.6
Other MSA	3.3	2.0	3.1	2.8	1.7	1.0	1.0	2.0	1.4	1.6	0.8	1.0	+0.2
Non-MSA	2.7	3.4	3.4	1.5	1.9	1.1	0.9	0.8	0.7	1.1	0.9	1.0	+0.2
Parental Education [a]													
1.0–2.0 (Low)	1.5	3.5	2.3	3.4	3.4	1.3	1.2	1.7	2.5	2.2	2.5	1.5	-0.9
2.5–3.0	3.7	3.1	2.5	1.8	1.7	1.2	1.1	1.7	1.0	1.4	0.7	0.8	+0.2
3.5–4.0	2.9	2.7	3.8	1.9	2.3	1.2	0.5	0.9	1.0	1.7	0.6	0.7	+0.1
4.5–5.0	3.2	2.0	1.5	2.2	1.1	1.0	1.4	1.5	1.0	1.1	0.5	1.4	+0.9
5.5–6.0 (High)	1.9	1.4	1.5	1.4	0.8	0.5	0.2	0.3	0.7	1.0	0.6	0.6	0.0
Race/Ethnicity (2-year average) [b]													
White	—	3.0	2.7	2.3	1.8	1.2	0.8	0.9	1.1	1.3	1.1	0.7	-0.3
African American	—	0.7	1.2	2.0	2.5	1.5	1.1	1.6	1.5	1.6	1.6	1.2	-0.4
Hispanic	—	3.2	3.0	2.6	1.9	2.0	1.2	0.7	1.1	1.4	1.0	1.1	+0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.
See Table D-S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms;
N is two sixths of *N* indicated in Table D-S3.

Caution: ***Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.***

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[b]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. For the data beginning in 2005, see appendix B for details on how race/ethnicity is defined.

TABLE 10-16a
Creatine
Trends in Annual Prevalence of Use by Subgroups in Grade 8

	Percentage who used in last 12 months												2011–2012 change
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Approximate weighted N =	*16,200*	*15,100*	*16,500*	*17,000*	*16,800*	*16,500*	*16,100*	*15,700*	*15,000*	*15,300*	*16,000*	*15,100*	
Total	2.7	2.3	2.3	1.9	1.3	2.2	2.0	2.0	1.9	1.9	1.9	1.9	0.0
Gender													
Male	4.8	3.9	3.6	3.3	2.3	3.9	3.2	3.2	3.2	3.7	3.3	2.9	-0.4
Female	0.9	0.9	1.1	0.6	0.4	0.6	0.9	0.7	0.7	0.4	0.6	0.8	+0.2
College Plans													
None or under 4 years	6.0	6.0	4.6	4.7	3.4	5.6	2.6	5.0	5.3	3.0	3.6	3.0	-0.5
Complete 4 years	2.4	1.9	2.1	1.6	1.0	1.8	1.9	1.7	1.6	1.8	1.8	1.8	+0.1
Region													
Northeast	1.4	2.1	1.6	1.5	0.8	2.2	1.2	0.8	1.7	2.3	1.2	1.0	-0.2
Midwest	3.4	2.7	3.0	1.7	1.2	2.7	2.2	1.7	2.1	2.6	2.2	1.7	-0.5
South	3.8	2.6	2.5	2.3	1.9	1.8	2.4	2.7	1.8	1.6	1.7	2.5	+0.8
West	1.2	1.7	1.4	1.7	0.7	2.4	1.8	1.8	1.8	1.5	2.5	1.7	-0.8
Population Density													
Large MSA	2.3	2.3	1.4	1.5	0.8	1.9	1.0	2.0	1.2	1.4	1.2	2.0	+0.8
Other MSA	2.8	1.9	2.6	2.2	1.7	2.3	2.5	1.8	2.0	2.4	2.2	1.9	-0.2
Non-MSA	3.0	3.3	2.8	1.8	1.2	2.4	2.5	2.3	2.5	1.7	2.5	1.8	-0.7
Parental Education [a]													
1.0–2.0 (Low)	3.7	2.6	1.6	2.6	2.2	2.1	1.9	3.6	3.8	0.7	2.3	0.7	-1.7
2.5–3.0	1.8	2.7	1.7	1.6	1.8	2.0	1.4	1.9	1.5	1.7	3.8	1.6	-2.2 s
3.5–4.0	3.5	1.6	2.8	2.4	1.4	2.7	3.1	2.4	2.8	2.4	1.6	2.1	+0.5
4.5–5.0	2.8	3.1	2.6	1.8	0.8	2.2	1.9	1.0	1.6	2.0	1.3	2.3	+1.0
5.5–6.0 (High)	3.1	1.9	3.1	1.4	1.0	2.1	2.1	2.3	1.0	2.2	1.6	2.3	+0.7
Race/Ethnicity (2-year average) [b]													
White	—	2.7	2.6	2.3	1.6	1.7	2.2	2.0	2.0	2.1	2.1	2.0	-0.1
African American	—	1.0	0.9	1.1	1.3	1.4	1.7	2.1	2.0	2.0	1.8	1.7	-0.1
Hispanic	—	2.3	1.8	1.6	1.4	1.4	1.7	1.8	1.7	1.6	2.2	2.3	+0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Table D-S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in Table D-S1.

Caution: ***Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.***

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[b]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. For the data beginning in 2005, see appendix B for details on how race/ethnicity is defined.

TABLE 10-16b
Creatine
Trends in Annual Prevalence of Use by Subgroups in Grade 10

	Percentage who used in last 12 months												2011–2012 change
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Approximate weighted N =	*14,000*	*14,300*	*15,800*	*16,400*	*16,200*	*16,200*	*16,100*	*15,100*	*15,900*	*15,200*	*14,900*	*15,000*	
Total	7.9	7.6	5.8	5.3	5.1	6.5	6.1	5.8	6.0	6.0	7.1	6.8	-0.4
Gender													
Male	14.7	13.1	10.7	9.8	9.3	12.0	11.7	11.5	11.5	11.0	13.7	13.1	-0.7
Female	1.7	2.1	1.4	0.9	1.0	1.0	0.8	0.9	1.0	1.0	0.9	1.0	+0.1
College Plans													
None or under 4 years	10.3	10.3	10.1	7.2	5.5	8.3	9.1	6.6	9.2	7.8	10.9	8.3	-2.6
Complete 4 years	7.5	7.1	5.2	5.0	5.1	6.2	5.7	5.7	5.7	5.9	6.8	6.7	-0.1
Region													
Northeast	5.4	6.2	5.8	5.5	4.8	6.8	5.7	3.8	4.5	5.6	5.9	6.2	+0.3
Midwest	6.6	6.4	6.1	5.5	4.4	4.9	5.3	6.2	6.2	5.7	8.3	7.4	-1.0
South	10.8	9.1	5.9	6.0	6.3	7.7	7.3	5.9	7.2	7.2	7.4	7.8	+0.4
West	7.2	7.6	5.6	3.7	4.6	6.4	5.9	6.7	5.4	5.1	6.2	5.1	-1.1
Population Density													
Large MSA	6.6	7.0	3.7	4.3	2.9	5.3	4.7	4.4	4.6	5.5	4.9	5.6	+0.8
Other MSA	8.1	7.5	6.4	5.2	5.9	7.4	6.7	6.2	7.2	6.3	7.5	7.3	-0.2
Non-MSA	9.1	8.5	7.6	7.0	6.3	6.3	7.1	6.8	5.5	6.4	9.6	7.3	-2.4
Parental Education [a]													
1.0–2.0 (Low)	5.6	5.0	5.7	3.2	3.4	5.2	3.4	3.0	4.7	5.3	3.6	3.9	+0.3
2.5–3.0	8.1	7.8	4.9	5.7	5.2	5.4	7.1	4.7	6.2	5.9	6.6	6.6	0.0
3.5–4.0	10.2	7.6	7.8	5.2	4.8	6.7	6.6	6.9	7.4	6.4	7.4	6.8	-0.7
4.5–5.0	7.1	8.8	5.8	5.2	5.8	7.0	6.4	6.9	5.7	6.6	9.2	8.1	-1.1
5.5–6.0 (High)	7.1	7.9	5.3	5.8	5.9	7.8	5.7	5.0	5.1	6.3	7.0	6.5	-0.6
Race/Ethnicity (2-year average) [b]													
White	—	8.4	7.6	6.3	5.8	6.2	7.1	6.8	6.6	6.5	6.9	7.7	+0.8
African American	—	3.0	3.0	3.5	3.9	4.5	3.4	3.4	3.5	4.3	5.5	4.2	-1.3
Hispanic	—	9.4	8.4	5.7	4.0	4.7	3.7	3.9	4.8	5.0	5.8	6.2	+0.4

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.
See Table D-S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms;
N is one third of *N* indicated in Table D-S2.

Caution: ***Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.***

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[b]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. For the data beginning in 2005, see appendix B for details on how race/ethnicity is defined.

TABLE 10-16c
Creatine
Trends in Annual Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 12 months												2011–2012 change
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Approximate weighted N =	*12,800*	*12,900*	*14,600*	*14,600*	*14,700*	*14,200*	*14,500*	*14,000*	*13,700*	*14,400*	*14,100*	*13,700*	
Total	11.7	8.5	8.3	8.1	8.1	7.8	8.0	8.3	9.1	9.2	8.6	9.5	+0.9
Gender													
Male	22.1	16.8	15.9	15.9	15.6	15.1	15.3	15.7	18.0	17.7	16.1	17.9	+1.8
Female	2.0	1.5	1.4	1.0	0.9	1.0	1.3	1.5	1.3	1.2	1.0	1.1	0.0
College Plans													
None or under 4 years	11.7	9.3	9.5	8.5	9.8	9.8	7.8	9.8	9.2	11.1	9.8	8.7	-1.0
Complete 4 years	11.4	8.4	7.9	7.7	7.6	7.3	8.0	7.8	9.0	8.7	8.4	9.5	+1.1
Region													
Northeast	10.9	9.1	7.9	9.0	6.5	6.8	7.1	8.6	9.3	9.3	8.1	7.6	-0.4
Midwest	12.4	8.1	8.8	7.3	9.0	8.4	9.3	8.7	10.4	9.9	10.5	11.8	+1.3
South	11.4	7.6	8.0	8.3	9.1	7.7	8.3	8.0	8.5	8.7	8.4	7.7	-0.6
West	11.8	9.9	8.7	7.9	6.8	8.1	6.8	8.1	8.4	9.1	7.4	10.5	+3.1
Population Density													
Large MSA	10.2	7.7	6.6	6.9	8.9	7.4	6.4	5.6	8.5	8.4	10.2	9.0	-1.3
Other MSA	12.5	9.0	8.5	8.8	7.2	7.1	9.0	9.1	9.6	9.5	7.4	9.7	+2.3
Non-MSA	11.9	8.7	10.2	8.2	9.0	9.7	8.1	9.4	8.9	9.3	9.1	9.8	+0.7
Parental Education [a]													
1.0–2.0 (Low)	8.0	8.2	5.0	5.9	8.0	5.4	4.8	5.5	5.3	7.4	6.8	5.9	-0.9
2.5–3.0	11.8	8.6	9.2	5.6	7.9	6.8	7.7	7.5	8.3	10.7	7.9	8.9	+1.0
3.5–4.0	13.0	8.5	9.6	9.2	9.5	8.4	7.7	9.3	9.0	9.5	8.9	11.0	+2.1
4.5–5.0	11.7	9.0	7.4	9.8	8.0	9.5	9.9	8.4	11.8	9.1	10.3	10.8	+0.5
5.5–6.0 (High)	11.7	8.1	8.1	8.7	7.6	6.7	7.7	9.1	9.8	8.8	7.9	8.6	+0.6
Race/Ethnicity (2-year average) [b]													
White	—	11.2	9.2	8.9	9.0	9.0	8.9	9.5	10.5	10.6	10.3	10.4	+0.1
African American	—	3.3	4.5	5.7	5.6	4.6	4.8	4.5	4.4	5.9	5.4	4.5	-0.8
Hispanic	—	9.8	8.0	6.5	6.5	6.7	6.2	5.8	6.6	7.6	7.1	7.4	+0.4

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.
See Table D-S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms;
N is two sixths of *N* indicated in Table D-S3.

Caution: ***Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.***

[a]Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

[b]To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. For the data beginning in 2005, see appendix B for details on how race/ethnicity is defined.

TABLE 10-17a
Steroids and Androstenedione
Trends in Annual Prevalence of Use by Gender in Grade 8

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Total													
% reporting using steroids but not androstenedione	1.2	1.0	1.2	0.9	0.8	0.7	0.7	0.6	0.5	0.3	0.6	0.5	-0.1
% reporting using androstenedione but not steroids	0.7	0.6	0.7	0.7	0.4	0.8	0.7	0.6	0.5	0.7	0.5	0.5	+0.1
% reporting using both	0.4	0.6	0.3	0.2	0.2	0.2	0.1	0.3	0.3	0.3	0.2	0.1	0.0
% reporting using either or both	2.3	2.2	2.2	1.8	1.4	1.6	1.5	1.5	1.2	1.2	1.2	1.1	-0.1
Males													
% reporting using steroids but not androstenedione	1.8	1.0	1.4	1.1	0.9	0.9	0.9	0.6	0.6	0.4	0.8	0.6	-0.1
% reporting using androstenedione but not steroids	0.8	0.8	0.8	1.0	0.6	1.1	0.7	0.8	0.6	0.8	0.3	0.5	+0.2
% reporting using both	0.5	0.9	0.4	0.2	0.3	0.3	0.2	0.6	0.4	0.3	0.2	0.2	-0.1
% reporting using either or both	3.1	2.7	2.6	2.2	1.9	2.3	1.9	2.0	1.7	1.5	1.3	1.3	0.0
Females													
% reporting using steroids but not androstenedione	0.7	0.8	0.9	0.8	0.7	0.5	0.4	0.4	0.3	0.1	0.4	0.3	-0.1
% reporting using androstenedione but not steroids	0.6	0.4	0.6	0.3	0.2	0.4	0.8	0.3	0.4	0.6	0.5	0.3	-0.1
% reporting using both	0.4	0.4	0.2	0.2	0.2	0.1	*	0.1	0.2	0.2	0.1	0.0	-0.1
% reporting using either or both	1.6	1.6	1.7	1.3	1.0	1.0	1.2	0.9	0.8	0.9	0.9	0.6	-0.3
Approximate weighted Ns													
Total	*4,710*	*4,470*	*5,080*	*5,180*	*5,110*	*5,110*	*4,930*	*4,710*	*4,550*	*4,750*	*4,940*	*4,570*	
Males	*2,170*	*2,060*	*2,340*	*2,510*	*2,440*	*2,470*	*2,360*	*2,270*	*2,110*	*2,170*	*2,280*	*2,160*	
Females	*2,450*	*2,300*	*2,640*	*2,580*	*2,600*	*2,570*	*2,500*	*2,350*	*2,370*	*2,490*	*2,590*	*2,320*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' * ' indicates less than 0.05% but greater than 0%. Any apparent inconsistency between the total who used either substance or both substances and the sum of those who used only steroids, those who used only androstenedione, and those who used both is due to rounding. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

TABLE 10-17b
Steroids and Androstenedione
Trends in Annual Prevalence of Use by Gender in Grade 10

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Total													
% reporting using steroids but not androstenedione	1.5	1.5	1.2	1.1	1.1	0.9	0.8	0.6	0.5	0.6	0.7	0.4	-0.2
% reporting using androstenedione but not steroids	1.6	1.3	1.2	0.7	0.7	0.6	0.4	0.5	0.9	0.6	0.5	0.5	0.0
% reporting using both	0.6	0.7	0.5	0.5	0.2	0.3	0.2	0.4	0.3	0.4	0.2	0.4	+0.2
% reporting using either or both	3.7	3.5	2.9	2.2	2.0	1.8	1.4	1.4	1.6	1.5	1.4	1.4	-0.1
Males													
% reporting using steroids but not androstenedione	2.4	2.2	1.5	1.5	1.4	1.2	1.3	0.9	0.7	1.0	1.1	0.7	-0.4
% reporting using androstenedione but not steroids	2.6	1.2	1.7	0.9	1.0	1.0	0.6	0.7	1.3	0.9	0.5	0.7	+0.2
% reporting using both	0.9	1.0	0.8	0.8	0.4	0.7	0.4	0.6	0.5	0.3	0.3	0.6	+0.3
% reporting using either or both	5.8	4.4	4.0	3.1	2.8	2.9	2.2	2.1	2.4	2.2	2.0	2.0	0.0
Females													
% reporting using steroids but not androstenedione	0.8	0.8	1.0	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.3	0.2	0.0
% reporting using androstenedione but not steroids	0.7	1.3	0.8	0.3	0.3	0.2	0.2	0.4	0.5	0.2	0.5	0.4	-0.2
% reporting using both	0.3	0.3	0.2	0.2	0.1	0.0	0.1	0.2	*	0.3	0.1	0.1	0.0
% reporting using either or both	1.7	2.4	1.9	1.2	1.0	0.6	0.6	0.9	0.8	0.7	0.9	0.7	-0.2
Approximate weighted Ns													
Total	*4,410*	*4,450*	*4,950*	*5,180*	*5,110*	*5,230*	*5,130*	*4,820*	*5,080*	*4,920*	*4,760*	*4,760*	
Males	*2,040*	*2,210*	*2,340*	*2,430*	*2,460*	*2,580*	*2,460*	*2,200*	*2,380*	*2,370*	*2,290*	*2,250*	
Females	*2,310*	*2,180*	*2,550*	*2,680*	*2,580*	*2,610*	*2,610*	*2,570*	*2,650*	*2,490*	*2,400*	*2,430*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' * ' indicates less than 0.05% but greater than 0%. Any apparent inconsistency between the total who used either substance or both substances and the sum of those who used only steroids, those who used only androstenedione, and those who used both is due to rounding. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

TABLE 10-17c
Steroids and Androstenedione
Trends in Annual Prevalence of Use by Gender in Grade 12

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change
Total													
% reporting using steroids but not androstenedione	1.5	1.8	1.1	1.4	0.6	1.2	1.1	1.1	0.9	1.0	0.8	0.8	-0.1
% reporting using androstenedione but not steroids	2.1	1.8	1.5	1.0	0.8	0.5	0.5	0.9	0.5	1.1	0.3	0.6	+0.2
% reporting using both	0.9	0.7	1.1	1.1	0.9	0.6	0.4	0.4	0.6	0.4	0.4	0.5	+0.1
% reporting using either or both	4.5	4.3	3.6	3.5	2.3	2.2	2.0	2.4	2.0	2.5	1.6	1.8	+0.2
Males													
% reporting using steroids but not androstenedione	2.7	2.7	1.2	1.6	1.0	1.8	1.8	1.5	1.5	1.7	1.0	0.9	-0.1
% reporting using androstenedione but not steroids	4.2	3.6	2.6	2.1	1.2	0.7	0.7	0.7	1.0	1.5	0.5	0.5	0.0
% reporting using both	1.1	1.1	2.0	1.6	1.6	1.0	0.5	1.0	1.0	0.8	0.8	0.8	0.0
% reporting using either or both	8.0	7.3	5.8	5.3	3.8	3.4	3.0	3.2	3.4	4.0	2.3	2.2	-0.1
Females													
% reporting using steroids but not androstenedione	0.5	1.1	1.0	1.1	0.3	0.6	0.5	0.4	0.1	0.3	0.5	0.5	+0.1
% reporting using androstenedione but not steroids	0.1	0.2	0.1	*	0.3	0.2	0.2	0.7	*	0.7	0.1	0.4	+0.3
% reporting using both	0.6	0.2	0.1	0.7	0.1	0.1	0.1	0.0	0.3	*	*	0.1	+0.1
% reporting using either or both	1.2	1.5	1.2	1.6	0.7	0.9	0.8	1.1	0.5	1.0	0.6	1.1	+0.5
Approximate weighted Ns													
Total	*1,850*	*1,840*	*2,080*	*2,210*	*2,140*	*2,170*	*2,180*	*2,090*	*1,990*	*2,050*	*2,170*	*2,070*	
Males	*870*	*810*	*990*	*960*	*990*	*1,010*	*980*	*930*	*920*	*930*	*1,030*	*1,000*	
Females	*980*	*1,030*	*1,090*	*1,170*	*1,080*	*1,100*	*1,130*	*1,080*	*1,020*	*1,050*	*1,070*	*990*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' * ' indicates less than 0.05% but greater than 0%. Any apparent inconsistency between the total who used either substance or both substances and the sum of those who used only steroids, those who used only androstenedione, and those who used both is due to rounding. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

TABLE 10-18
Daily Marijuana Use
Responses to Selected Questions by Subgroups in Grade 12, 2012

				4-Year College Plans		Region				Population Density		
Thinking back over your whole life, has there ever been a period when you used marijuana or hashish on a daily, or almost daily, basis for at least a month?	Total	Gender								Large MSA	Other MSA	Non-MSA
		Male	Female	No	Yes	Northeast	Midwest	South	West			
No	81.8	78.4	88.1	72.0	86.0	82.4	84.3	83.4	76.8	79.8	81.8	85.1
Yes	18.2	21.6	11.9	28.0	14.1	17.6	15.7	16.7	23.2	20.2	18.2	14.9
How old were you when you first smoked marijuana or hashish that frequently?												
Grade 6 or earlier	1.5	1.3	0.9	1.2	0.7	2.5	1.4	1.5	1.1	2.2	0.6	2.7
Grade 7 or 8	4.0	4.9	3.0	5.9	3.2	3.7	4.0	3.9	4.6	4.1	4.1	3.8
Grade 9 (Freshman)	4.1	5.1	2.6	7.9	3.3	4.9	2.5	3.0	6.7	3.6	4.9	3.2
Grade 10 (Sophomore)	3.5	4.4	2.3	5.4	2.8	2.6	3.1	3.4	4.7	4.5	3.4	2.3
Grade 11 (Junior)	3.8	4.6	2.4	6.6	3.2	3.2	4.2	4.1	3.7	4.5	4.1	2.2
Grade 12 (Senior)	1.1	1.4	0.6	1.1	1.0	0.7	0.6	0.8	2.3	1.3	1.1	0.8
Never used daily	81.8	78.4	88.1	72.0	86.0	82.4	84.3	83.4	76.8	79.8	81.8	85.1
How recently did you use marijuana or hashish on a daily, or almost daily, basis for at least a month?												
During the past month	6.8	9.4	3.8	11.9	5.1	4.3	6.9	6.5	8.6	9.1	6.3	4.2
2 months ago	1.3	1.8	0.7	1.0	1.3	2.5	1.0	0.5	2.0	1.8	1.5	0.3
3 to 9 months ago	4.3	4.3	3.0	7.0	3.0	4.6	2.9	3.6	6.1	4.2	4.5	3.7
About 1 year ago	2.5	3.0	1.7	3.5	2.0	2.0	2.8	1.6	3.5	2.1	2.4	3.4
About 2 years ago	1.7	1.6	1.8	1.7	1.3	1.7	1.5	2.4	1.3	1.3	1.6	2.8
3 or more years ago	1.6	1.5	1.0	2.9	1.4	2.5	0.5	2.0	1.7	1.7	2.0	0.5
Never used daily	81.8	78.4	88.1	72.0	86.0	82.4	84.3	83.4	76.8	79.8	81.8	85.1
Over your whole lifetime, during how many months have you used marijuana or hashish on a daily or near-daily basis?												
Less than 3 months	3.8	4.3	3.3	3.8	3.5	3.1	3.2	2.9	5.9	3.7	4.1	3.2
3 to 9 months	3.4	4.0	2.5	6.0	2.7	3.4	2.4	2.8	5.1	3.3	3.6	3.0
About 1 year	2.2	2.0	1.5	2.6	1.9	1.9	2.2	2.0	2.5	3.9	1.3	1.6
About 1 and 1/2 years	2.3	3.2	1.2	6.8	1.1	2.7	2.0	2.0	2.6	2.2	2.3	2.1
About 2 years	3.2	4.1	1.6	4.7	2.6	3.1	3.2	2.9	3.7	3.5	3.6	1.8
About 3 to 5 years	2.6	3.6	1.0	3.7	1.7	2.7	2.6	2.4	2.8	3.0	2.4	2.5
6 or more years	0.8	0.4	0.9	0.5	0.5	0.8	0.2	1.6	0.6	0.5	1.0	0.8
Never used daily	81.8	78.4	88.1	72.0	86.0	82.4	84.3	83.4	76.8	79.8	81.8	85.1
Approximate weighted N =	*2,200*	*1,000*	*1,100*	*300*	*1,700*	*360*	*590*	*730*	*560*	*700*	*1,100*	*450*

Source. The Monitoring the Future study, the University of Michigan.

Note. Entries are percentages that sum vertically to 100%. ' * ' indicates less than 0.05% but greater than 0%.

TABLE 10-19a
Daily Marijuana Use for a Month or More in Lifetime
Trends by Subgroups in Grade 12 [a]

	Percentage ever using daily for at least a month																													2011–2012
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	change
Total	20.5	16.8	16.3	15.6	14.9	14.7	12.8	11.5	10.0	9.0	8.4	9.6	11.3	12.1	15.7	18.8	18.0	17.9	17.0	18.0	15.5	16.4	17.8	14.5	16.6	15.7	15.1	14.9	15.5	17.4	18.2	+0.8
Gender																																
Male	20.1	18.1	17.2	17.7	16.6	16.2	14.8	12.7	10.6	10.5	8.3	10.7	13.3	12.9	18.7	19.7	19.5	18.5	18.8	20.3	17.2	17.1	19.9	15.8	17.0	17.5	15.3	16.8	17.4	20.4	21.6	+1.2
Female	18.0	13.5	12.9	12.0	11.6	12.2	9.6	9.7	7.9	6.4	7.5	7.2	8.5	7.9	10.7	15.2	13.9	14.4	13.7	13.8	11.7	12.5	12.3	11.1	13.3	12.6	12.8	10.7	11.5	12.0	11.9	-0.1
College Plans																																
None or under 4 years	22.5	20.3	18.9	19.6	17.2	18.0	14.5	15.3	12.8	11.5	11.2	11.6	16.1	14.2	21.5	22.6	22.1	22.1	19.1	22.8	20.5	22.2	24.5	20.0	24.8	21.8	23.4	18.6	21.9	26.4	28.0	+1.6
Complete 4 years	13.8	10.5	10.7	10.6	11.0	11.1	9.8	9.1	7.4	6.5	5.9	7.7	8.6	9.2	11.9	14.9	13.4	14.2	13.7	13.8	11.7	11.9	13.4	11.4	12.2	13.3	11.0	11.8	12.5	13.9	14.1	+0.2
Region																																
Northeast	25.1	20.4	24.1	20.9	21.5	17.0	13.1	14.6	10.4	10.3	8.7	12.0	12.2	12.8	21.3	24.6	22.7	17.9	19.8	23.4	20.7	20.8	19.5	15.5	17.7	19.0	19.7	14.2	16.0	18.6	17.6	-1.0
Midwest	21.1	15.9	12.8	16.3	11.3	12.7	10.3	13.4	10.8	8.4	8.0	9.3	11.0	13.6	14.6	16.5	16.1	14.3	13.8	18.4	16.3	15.0	17.9	16.6	16.3	17.1	13.8	17.0	15.4	15.9	15.7	-0.2
South	15.7	12.7	14.0	8.9	11.3	11.9	10.9	8.1	8.7	7.4	5.9	8.3	11.8	11.2	12.7	14.9	15.6	19.1	14.7	12.7	14.6	15.5	18.6	15.8	17.1	14.2	13.3	15.9	14.8	17.5	16.7	-0.8
West	20.8	21.4	17.6	18.5	18.3	19.7	19.0	12.3	11.0	11.3	13.4	10.4	10.2	10.6	17.0	23.0	20.6	20.4	21.9	21.2	11.7	15.4	14.3	8.9	15.2	13.9	15.6	11.2	16.4	17.8	23.2	+5.4
Population Density																																
Large MSA	23.8	20.0	19.4	18.1	17.0	16.7	14.0	10.6	8.3	7.2	8.4	8.6	10.3	13.9	15.3	18.8	18.0	16.3	18.4	19.7	15.2	14.0	17.0	13.7	18.7	14.2	18.3	13.8	16.6	18.6	20.2	+1.6
Other MSA	20.3	18.2	16.6	16.0	14.9	15.0	14.9	12.4	11.7	11.1	8.9	10.2	13.6	11.3	18.2	20.1	19.7	19.2	18.3	17.5	15.1	19.0	19.5	14.6	14.2	16.2	13.5	15.4	16.5	17.1	18.2	+1.1
Non-MSA	17.9	12.6	13.2	12.8	13.2	12.2	7.6	10.4	8.2	7.1	7.6	9.6	8.4	11.2	11.6	16.2	14.4	17.1	13.0	17.1	16.8	14.8	15.5	15.3	18.2	16.8	14.8	15.1	11.5	16.1	14.9	-1.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]Data based on one form. The total *N* each year for 1982–1989 is approximately 3,300. The total *N* each year for 1990–1998 is approximately 2,600. The total *N* each year for 1999–2002 is approximately 2,200. Beginning in 2003, the total *N* each year is approximately 2,400.

TABLE 10-19b
Daily Marijuana Use for a Month or More Prior to 10th Grade
Trends by Subgroups in Grade 12 [a]

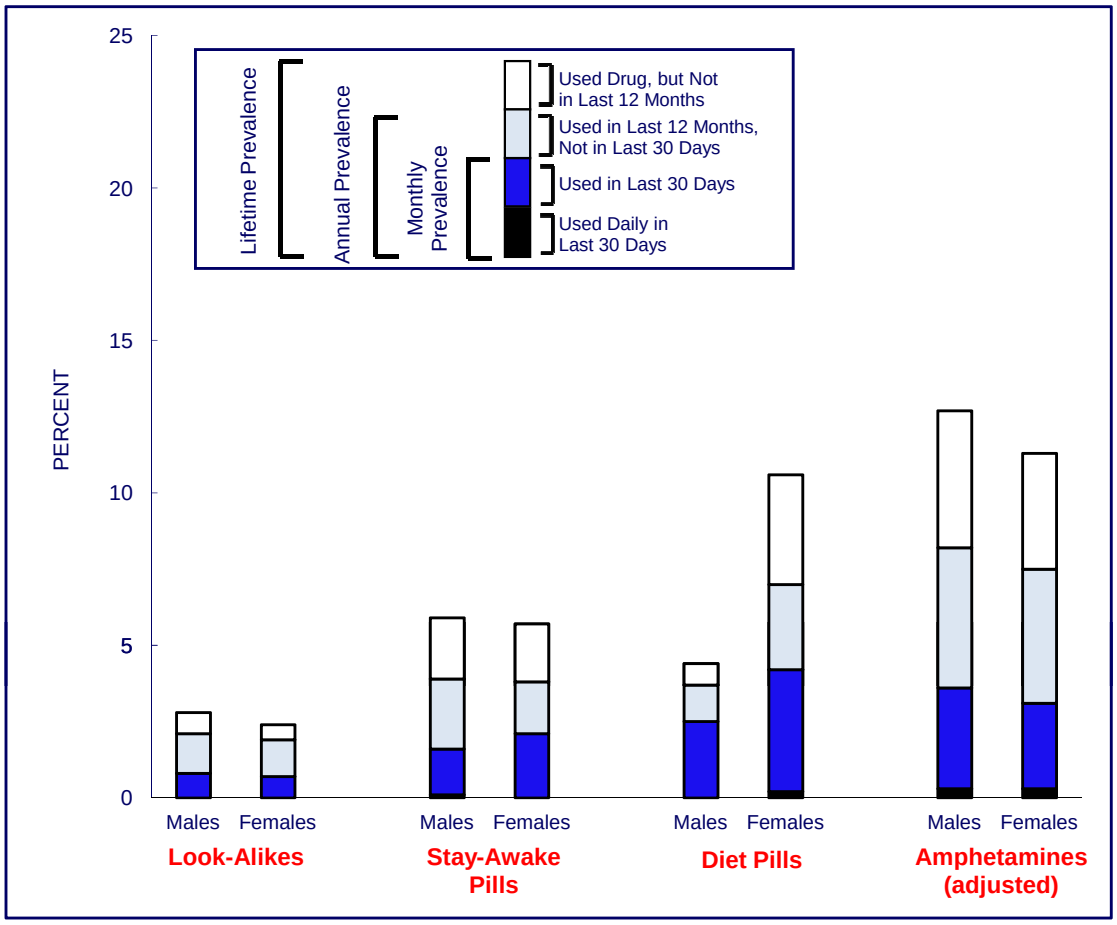
	Percentage reporting first such use prior to 10th grade																													2011–2012 change
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Total	13.1	11.1	10.9	8.8	8.5	8.9	7.8	7.6	6.7	6.4	5.6	5.2	5.5	5.5	7.8	9.7	10.1	10.7	10.8	11.4	10.1	10.1	9.8	8.1	9.9	9.8	8.9	9.0	9.2	9.9	9.7	-0.2
Gender																																
Male	12.9	12.1	11.8	9.8	8.7	10.2	8.4	8.4	6.9	7.4	5.6	5.5	6.1	5.8	9.6	9.6	11.4	10.0	10.9	11.9	11.5	9.5	11.1	8.7	9.7	10.8	7.9	10.3	9.6	11.0	11.3	+0.3
Female	11.5	8.3	8.0	6.5	6.6	7.1	6.6	6.0	4.9	4.4	5.0	4.1	4.4	3.4	4.9	8.1	8.0	8.8	9.0	9.3	7.3	7.8	5.3	5.6	7.2	7.9	8.3	5.8	7.6	7.0	6.5	-0.5
College Plans																																
None or under																																
4 years	14.2	13.5	12.3	11.8	10.7	11.4	11.0	11.6	9.0	8.7	7.8	6.3	6.7	6.7	11.0	11.0	16.9	12.2	12.7	15.1	15.8	14.0	12.5	12.4	16.7	15.2	13.5	14.2	14.6	17.9	14.9	-2.9
Complete																																
4 years	8.2	6.5	6.6	5.5	5.2	6.4	5.3	5.1	4.6	4.3	3.8	4.2	4.4	4.2	5.8	7.9	7.1	8.1	7.9	8.5	7.3	6.7	6.6	5.7	6.2	7.9	6.3	6.5	7.1	7.3	7.2	-0.1
Region																																
Northeast	17.3	11.9	17.2	12.9	10.3	10.3	9.0	10.7	6.5	8.2	4.8	6.3	5.2	6.6	8.3	13.3	12.7	8.8	13.2	13.8	13.3	12.1	12.1	11.2	10.7	10.7	11.8	8.2	9.3	11.7	11.1	-0.5
Midwest	13.3	12.4	8.4	9.1	7.3	7.7	6.0	7.6	6.7	4.9	4.7	5.5	5.8	6.2	8.9	8.2	9.6	7.8	8.3	9.9	10.1	9.5	9.0	6.8	9.5	11.4	8.6	8.7	9.5	7.7	7.8	+0.2
South	9.3	8.3	8.5	5.0	6.4	7.4	6.3	5.4	6.2	5.1	4.4	4.3	6.6	4.5	5.8	7.5	8.0	13.2	8.8	9.2	9.8	10.3	9.3	9.4	10.1	9.8	8.2	11.6	8.9	9.8	8.4	-1.4
West	12.6	13.9	12.1	8.9	11.2	11.7	11.9	8.1	8.0	8.6	9.8	5.1	3.2	5.0	10.1	12.3	12.1	11.6	14.6	15.3	8.0	8.4	8.8	4.6	9.1	7.6	8.3	5.9	9.4	11.1	12.4	+1.3
Population Density																																
Large MSA	15.6	13.7	12.4	12.0	9.6	11.8	8.1	6.0	5.9	5.4	5.7	5.5	4.6	6.0	9.2	10.0	9.3	9.7	12.2	12.7	9.4	8.0	9.8	7.5	10.4	7.7	10.3	8.2	10.8	9.2	9.9	+0.7
Other MSA	12.5	12.0	11.5	8.3	8.4	8.8	9.6	8.1	8.1	7.7	5.8	5.3	6.9	5.5	8.3	9.8	11.4	11.4	12.0	11.8	10.4	11.2	11.1	7.4	8.4	10.1	8.1	8.8	9.6	10.4	9.6	-0.7
Non-MSA	11.7	8.2	8.5	6.6	7.6	6.4	4.3	7.6	4.3	5.3	5.3	4.8	4.2	4.8	5.6	9.4	8.6	10.8	7.2	9.2	10.7	10.7	7.2	10.1	11.9	12.4	9.3	10.5	6.0	9.7	9.6	-0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. Any apparent inconsistency between this table and Table 10-18 is due to rounding.

[a]The approximate *N* prior to 1990 is 3,300; data based on one of five forms. Beginning in 1990, the approximate *N* is 2,500; data based on one of six forms.

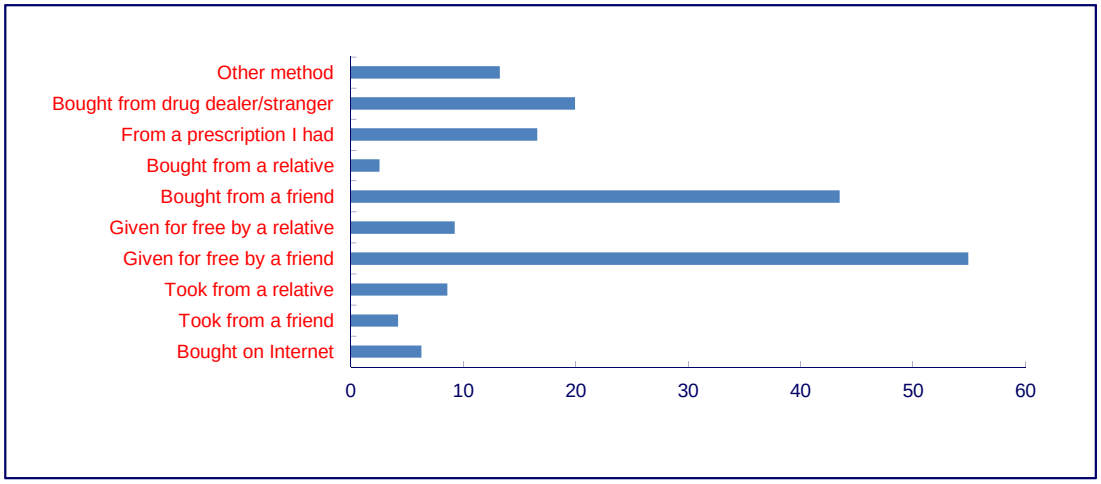
FIGURE 10-1
AMPHETAMINES AND NONPRESCRIPTION STIMULANTS
Prevalence and Recency of Use by Gender in Grade 12
2012



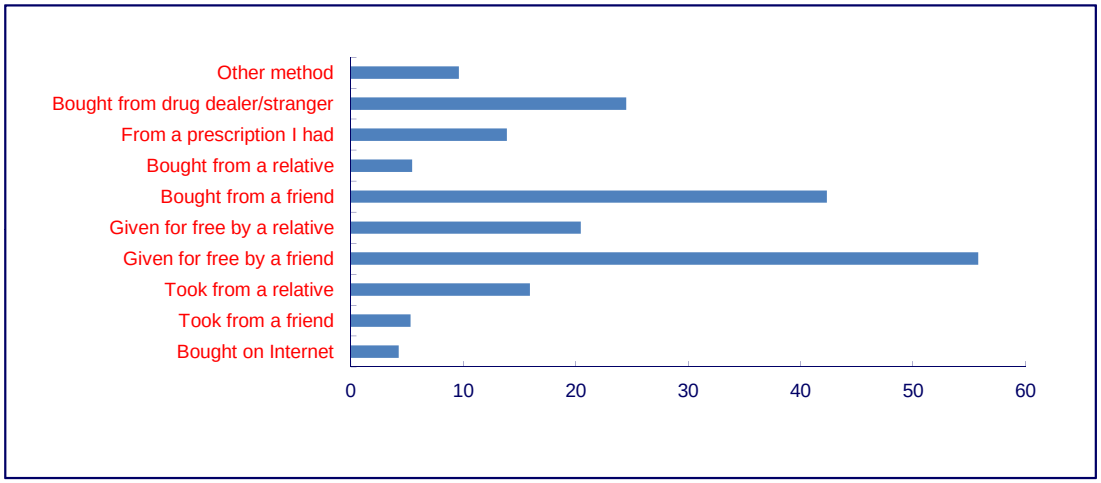
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 10-2
Source of Prescription Drugs
among Those Who Used in Past Year
Grade 12, 2009–2012

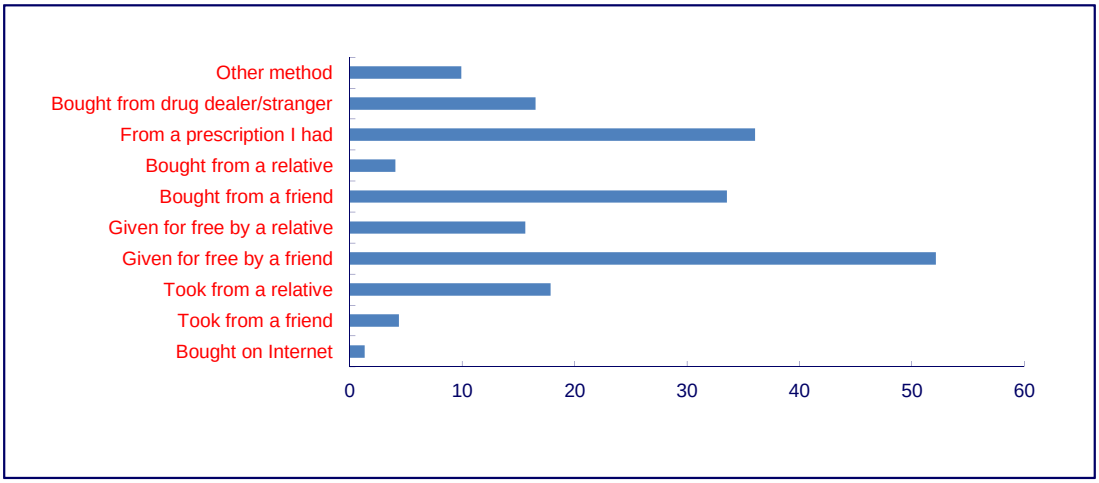
Amphetamines



Tranquilizers



Narcotics other than Heroin



Source. The Monitoring the Future study, the University of Michigan.

Note. Respondents were instructed to check all answers that apply.

Appendix A

PREVALENCE AND TREND ESTIMATES ADJUSTED FOR ABSENTEES AND DROPOUTS

To what extent do the MTF prevalence and trend estimates derived from 12th graders accurately reflect the reality that pertains to all young people in the same class or age cohort, *including* those who have dropped out of school by senior year? To answer this question, we published an extensive chapter in 1985,[120] and have since continued to estimate the degree to which MTF data accurately represent the entire class cohort. In this appendix we summarize the main points relevant to sample coverage.

We begin by noting that two segments of the entire age cohort are missing from the 12th-grade data: (a) those who are still enrolled in school but are absent the day of data collection (absentees), and (b) those who have left school and are not likely to complete high school (dropouts). Since refusal rates are negligible, absentees constitute virtually all of the nonrespondents shown in the response rate in Table 3-1, or about 20% of all 12th graders (17% of the entire age cohort, including dropouts). U.S. Census data indicate that dropouts comprised approximately 15% of the class/age cohort through most of the life of the study, until about 2002. Since then, there has been some modest decline, reaching 10% in 2012.

The methods we used to estimate the prevalence rates for these two missing segments are summarized briefly here. Then, the effects of adding these two segments to the calculation of the overall prevalence rates for two important drug classes are presented, along with the impact on the trend estimates. Two illicit drugs have been chosen for illustrative purposes: marijuana, the most prevalent of the illicit drugs, and cocaine, one of the more dangerous and less prevalent drugs. Estimates for 12th graders are presented for both lifetime and 30-day prevalence of each drug.

CORRECTIONS FOR EIGHTH AND TENTH GRADES

Twelfth grade represents the worst case in terms of potential underestimation. Rates of both dropping out and absenteeism are lower for 8th and 10th grades than for 12th grade. With respect to dropping out, only very few members of an age cohort have ceased attending school by grade 8, when most are age 13 or 14. In fact, Census data suggest that less than 2% would have dropped out at this stage. Most 10th graders are age 15 or 16, and Census data indicate that only

[120]Johnston, L. D., & O'Malley, P. M. (1985). Issues of validity and population coverage in student surveys of drug use. In B. A. Rouse, N. J. Casual, & L. G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57 (ADM) 85-1402). Washington, DC: U.S. Government Printing Office.

a small proportion (less than 5%) would have dropped out by then.[121] Thus, any correction for the missing dropouts should be negligible at 8th grade and quite small at 10th grade.

While absentees comprise 17% of the 12th graders who should be in school, they comprise only 13% of 10th graders and 9% of 8th graders in 2012 (see Table 3-1). Thus, the prevalence estimate adjustments that would result from corrections for this missing segment would also be somewhat less for 8th and 10th graders than for 12th graders.

In sum, the modest corrections in estimates of substance use rates, which we show next to the results from the corrections for dropouts and absentees at the 12th-grade level, set outer limits for what would be found at 8th and 10th grade. In fact, it is clear that the corrections would be considerably smaller at 10th grade and far smaller at 8th grade. For this reason, and because the corrections described below for 12th graders turn out to be modest ones, we have not undertaken to estimate comparable corrections for 8th and 10th graders.

THE EFFECTS OF MISSING ABSENTEES

In order to assess the effects of excluding absentees on the estimates of 12th-grade drug use, we included a question asking students how many days of school they had missed in the previous four weeks. Using this variable, we can place individuals into different strata as a function of how often they tend to be absent from school. For example, all students who had been absent 50% of the time could form one stratum. Assuming that absence on the particular day of administration is a fairly random event, we can use the actual survey participants in this stratum to represent all students in their stratum, including the ones who happen to be absent that particular day. By giving them a double weight, they can be used to represent both themselves and the other 50% of their stratum who were absent. Those who say they were absent two thirds of the time would get a weight of three to represent themselves plus the two thirds in their stratum who were not there on the day of the administration, and so forth. Using this method, we found that absentees as a group have appreciably higher-than-average usage levels for all licit and illicit drugs. However, in an analysis of 1983 data, we found that the omission of absentees did not depress prevalence estimates in any of the drugs by more than 2.7 percentage points, because they represent such a small proportion of the total target sample. Considering that a substantial proportion of those who are absent are likely absent for reasons unrelated to drug use—such as illness, participation in extracurricular activities, and community service and field trips—it may be surprising to see even these differences. In any case, from a policy or public perspective, these small corrections would appear to be of little or no significance. (The correction in 1983 across all 13 drugs in lifetime prevalence averaged only 1.4 percentage points.) Further, such corrections should have virtually no effect on cross-time trend estimates

[121]According to the *Statistical Abstract of the United States 2012* (p. 148), in 2009 the proportion of the U.S. civilian noninstitutionalized population enrolled in school was 98.2% among 7- to 13-year-olds and 98.0% among 14- to 15-year-olds. It drops to 94.6% for 16- to 17-year-olds combined, but there is probably a considerable difference between age 16 and age 17 because state laws often require attendance through age 16. Eighth graders in the spring of the school year are mostly (and about equally) 13 and 14 years old, while 10th graders are mostly (and about equally) 15 and 16 years old. Thus, extrapolating from these data, we estimate that less than 2% of 8th graders and less than 5% of 10th graders are dropouts. Derived from the U.S. Census Bureau's *Statistical Abstract of the United States: 2012* (131st Edition), Washington, DC: U.S. Census Bureau, 2011. Available at www.census.gov/compendia/statab.

unless the rate of absenteeism has changed appreciably, and we find no evidence in our data that it has.

THE EFFECTS OF MISSING DROPOUTS

Unfortunately, we cannot derive corrections from 12th-grade data to impute the prevalence rates of drug use for dropouts directly, since we have no completely appropriate stratum from which we have sampled. We believe, based on our own previous research as well as the work of others, that dropouts generally have prevalence rates for all classes of drugs that are substantially higher than the rates for those who remain in school. Indeed, dropouts may be similar to the absentees; one definition of dropouts would be those who are 100% absent from school for a defined period.

Until 2003, we estimated the proportions who fail to complete high school to be approximately 15%; Figure A-1 displays the high school completion rate for the years 1972 through 2012 based on Census data. As the figure indicates, completion (and dropout) rates were quite constant through 2002 for persons 20–24 years old.[122] (Younger age brackets are less appropriate to use because they include some young people who are still enrolled in high school.) However, since 2002 completion rates have gradually increased, reaching 89.9% in 2012 (i.e., a dropout rate of 10.1%). MTF surveys probably include some small proportion of the dropouts estimated in this way, since the surveys of 12th graders take place a few months *before* graduation, and not everyone will graduate. On the other hand, perhaps 1–2% of the age group that the U.S. Census Bureau shows as having a diploma actually received a Certificate of General Education Development (GED), and thus may not be covered by MTF. (Elliott and Voss reported this result for less than 2% of the sample in their follow-up study of 2,617 ninth graders in California who were followed through their high school years.[123]) So these two factors probably cancel each other out. Thus, we used 15% as our estimate of the proportion of an age cohort not covered through 2002; and, since then, we have used the slightly decreasing annual proportion as reported by the U.S. Census Bureau.

Extrapolation Methods

To estimate the drug usage prevalence rates for dropouts, we have used two quite different approaches. The first was based on extrapolations from 12th graders participating in the MTF study. Using this method, we developed estimates under three different assumptions about the difference between dropouts and 12th-grade respondents, namely that this difference was (a) equivalent to the difference between absentees and 12th-grade respondents, (b) 1.5 times that difference, and (c) twice that difference. The last assumption we would consider rather extreme.

The second general method involved using the best national data then available on drug use among dropouts—namely the National Survey on Drug Use and Health (NSDUH, formerly the

[122]U.S. Census Bureau (various years). *Current population reports, Series P-20,* [various numbers]. Washington, DC: U.S. Government Printing Office. Available at http://www.census.gov/cps/data/cpstablecreator.html.

[123]Elliott, D., & Voss, H. L. (1974). *Delinquency and dropout.* Lexington, MA: Lexington Books.

National Household Surveys on Drug Abuse, or NHSDA).[124] While these surveys have rather small samples of dropouts in the relevant age range in any given year, they should at least provide unbiased estimates for dropouts still in the household population.

Using the first assumption—that dropouts are just like absentees—we found that no prevalence rate was changed by more than five percentage points over the estimate based on 1983 twelfth graders only, even with the *simultaneous* correction for both absentees and dropouts. (The method for calculating prevalence rates for absentees is described in the previous section.) The largest correction involved marijuana, with lifetime prevalence rising from just under 60% to 64%. Even under the most extreme assumption—which results in exceptionally high prevalence rates for dropouts on all drugs, for example, 90% lifetime prevalence for marijuana—the overall correction in any of the prevalence figures for any drug remained 7.5 percentage points or less. Again, marijuana showed the biggest correction (7.5%, this time in annual prevalence, raising it from 46% uncorrected to 54% with corrections for both absentees and dropouts). As expected, the biggest *proportional* change occurred for heroin, because it represents a very deviant end of the drug-using spectrum and thus we would expect it to be most associated with truancy and dropping out.

The second method of estimating drug use among dropouts involved comparing NHSDA data on dropouts with MTF data from those remaining in school. We originally conducted secondary analyses of the archived data from the 1977 and 1979 National Household Surveys. (Analyses using more recent NSDUH data are shown in the next section.) Analyses were restricted to the age range 17 to 19, since about 95% of MTF 12th graders fall in this range. Of course, the number of cases is small. The 1977 NHSDA survey included only 46 dropouts and 175 enrolled 12th graders in this age group. In the 1979 survey, 92 dropouts and 266 twelfth graders were included.

For marijuana, NHSDA estimated differences between dropouts and 12th graders at a level at or below the *least* extreme assumption made in the previous method (in which dropouts are assumed to have the same drug-use levels as absentees). While reassuring, we believe these household samples underrepresented the more drug-prone dropouts to some degree. Thus we concluded that estimates closer to those made under the second assumption may be more realistic—that is, that dropouts are likely to deviate from participating 12th graders by 1.5 times the amount that absentees deviate from them.

We should note that there are a number of reasons for dropping out, many of which bear no relationship to drug use, including economic hardship and certain learning disabilities and health problems. At the national level, the extreme groups such as those in jail or without a permanent residence are undoubtedly a very small proportion of the total age group, and probably a very small proportion of all dropouts as well. Thus, regardless of their prevalence rates, they would be

[124]Fishburne, P. M., Abelson, H. I., & Cisin, I. (1980). *National survey on drug abuse: Main findings, 1979* (NIDA (ADM) 80-976). Washington, DC: U.S. Government Printing Office; Miller, J. D., et al. (1983). *National survey on drug abuse: Main findings, 1982* (NIDA (ADM) 83-1263). Washington, DC: U.S. Government Printing Office. See also Substance Abuse and Mental Health Services Administration (1995). *National Household Survey on Drug Abuse: Main findings 1992* (DHHS Publication No. (SMA) 94-3012). Rockville, MD: Substance Abuse and Mental Health Services Administration. See also Office of Applied Studies, Substance Abuse and Mental Health Services Administration (2003). *Results from the 2002 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 03-3836, NHSDA Series H-22). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

unable to move the overall prevalence estimates by a very large amount except in the case of the rarest events—in particular, heroin use. We do believe that in the case of heroin use—particularly regular use—it is probably impossible to get a perfectly accurate estimate even with the corrections used in this report. The same may be true for crack cocaine and PCP. For the remaining drugs, we conclude that our estimates based on participating 12th graders, though somewhat low, are nevertheless good approximations for the age group as a whole.

Effects of Omitting Dropouts in Trend Estimates

Whether the omission of dropouts affects the estimates of *trends* in prevalence rates is a separate question, however, from the degree to which it affects absolute estimates at a given point in time. The relevant issues parallel those discussed earlier regarding the possible effects on trends of omitting the absentees. Most important is the question of whether the rate of dropping out has changed appreciably, because a substantial change would mean that 12th graders studied in different years would represent noncomparable segments of the whole class/age cohort. The official government data provided in Figure A-1 indicate a quite stable rate of dropping out from 1972 to 2002, and only a modest decline since then.

One possible reason that 12th graders' trend data might deviate from trends for the entire age cohort (including dropouts) would be if the dropouts showed trends that differed from 12th-grade trends; even then, because of their small numbers, dropouts would have to show dramatically different trends to change the whole age group trend. No hypothesis offered for such a differential shift among dropouts has been convincing, at least to these authors.

One hypothesis occasionally voiced was that more teens were being expelled from school, or voluntarily leaving school, because of their drug use; and that this explained the downturn in the use of many drugs being reported by MTF in the 1980s. However, it is hard to reconcile this hypothesis with the virtually flat (or, if anything, slightly declining) dropout rates during this period. Further, the reported prevalence of some drugs (e.g., alcohol and narcotics other than heroin) remained remarkably stable throughout those years, and the prevalence of others rose (cocaine until 1987, and amphetamines until 1981). These facts are inconsistent with the hypothesis that there had been an increased rate of departure by the most drug-prone. Certainly, more teens leaving school in the 1980s had drug problems than was true in the 1960s. (So did more of those who stayed in.) However, they still seem likely to be very much the same segment of the population, given the degree of association that exists between drug use, deviance, and problem behaviors in general. In the present decade, with its small decline in dropping out, one might predict an increase in observed usage levels among 12th graders since 2002; this assumes, of course, that everything else was equal, and also that the higher retention rate involved some staying in school who were more likely to be drug users. In fact, however, there actually was more of a pattern of decline in use during most of that interval, most likely because everything else did not remain equal.

FURTHER EXPLORATION OF CORRECTIONS FOR DROPOUTS

Additional information on the effects of dropout exclusion can be obtained from the 1988 NHSDA report.[125] This report compared selected drug use rates for 16- to 17-year-old respondents who were classified as currently enrolled in school or as having dropped out of school, concluding that the "percentage of youth aged 16 and 17 who reported use of any illicit drug, marijuana, cocaine, and alcohol did not differ significantly among dropouts and those currently enrolled in school" (p. 22). Differences in illicit drug use between high school graduates and dropouts were also slight among 21- to 25-year-olds in the NHSDA study.

The authors noted that their findings appeared somewhat contrary to popular conceptions, as well as to some other research. Moreover, they reported that preliminary data for 20- to 34-year-olds from the 1990 NHSDA showed higher rates of cocaine and marijuana use among dropouts. The authors conjectured that perhaps differences between dropouts and graduates emerge after age 25, when more young adults have finished college. They also noted that other variables such as race, ethnicity, and socioeconomic status may confound the dropout versus graduate comparison. An additional problem was that, prior to the 1991 survey, the NHSDA did not include individuals who did not live in households; perhaps the more deviant dropouts were overrepresented in the excluded groups.

More recently, we have examined data from the 2002 National Survey on Drug Use and Health (NSDUH). Specifically, we obtained estimated prevalence rates for two key illicit drugs—marijuana and cocaine—among dropouts ages 17–18. Table A-1 indicates the lifetime and 30-day prevalence rates for MTF 12th graders and NSDUH 12th graders and dropouts.

As can be seen, the 2002 NSDUH dropouts ages 17–18 had distinctly higher cocaine and marijuana use than the 2002 NSDUH 12th graders as well as the 2002 MTF 12th graders. (This is contradictory to the 1988 findings. The relatively small numbers of dropouts make definitive statements difficult.) As discussed earlier, however, the impact that dropouts' higher prevalence rates have on overall population estimates is minimal because they represent a relatively small proportion of the population.

Table A-2 compares the total population prevalence estimates derived using two quite different methods discussed earlier in this appendix. The first method shows the estimates that result when we use the procedure that provided the data shown in Figure A-2, in which the prevalence rate among dropouts is assumed to be higher than 12th graders present by 1.5 times the difference between 12th graders present on the day of the survey and 12th graders absent that day. Column 2 in Table A-2 is calculated by reweighting the data for absenteeism and calculating the estimated prevalence among absentees. The prevalence among dropouts (Column 4) is estimated by assuming that they differ from 12th graders present by a factor 1.5 times greater than the difference between 12th graders present and 12th graders absent. The data in Columns 1 and 2 are combined in appropriate proportion to derive estimated prevalence among 12th graders present plus absentees (Column 3). The data in Columns 1, 2, and 4 are then combined in appropriate proportions to derive estimated prevalence rates for the entire class cohort (shown in

[125]National Institute on Drug Abuse (1991). *Drug use among youth: Findings from the 1988 National Household Survey on Drug Abuse* (DHHS Publication No. (ADM) 91-1765). Rockville, MD: National Institute on Drug Abuse.

Column 5). (For 2002, the percentage of dropouts is estimated at 15% and the percentage of 12th graders absent is estimated at 17% [based on data in Table 3-1]; these figures result in the following distribution for the composition of the *total* age cohort: 12th graders present, 70.6%; 12th graders absent, 14.5%; and dropouts ages 17–18, 15.0%.)

The second method for estimating prevalence rates for dropouts (Column 9) and the entire class cohort (Column 10) is based on the estimated prevalence from MTF 12th graders present and 12th graders absent. We then adjust for the missing dropout segment by assuming that the difference between NSDUH 12th graders and NSDUH dropouts (Column 8) is the best estimate of the difference between dropouts and nondropouts (Column 10).

The data in Columns 6 and 7 are prevalence rates reported by the 2002 NSDUH 12th graders and dropouts ages 17–18, and Column 8 shows the algebraic difference. This absolute "bias" is treated as an estimate of the difference between 12th graders (present plus absent) versus dropouts, and is then applied to the estimated prevalence based on MTF data of 12th graders present plus absent (Column 3) to derive an estimate of the prevalence among dropouts (Column 9). MTF estimates for nondropouts turn out to be higher than those from NSDUH, thus causing MTF dropout estimates to be higher also. Finally, the data in Columns 3 and 9 are combined in appropriate proportion to derive estimates presented in Column 10 for the entire class cohort.

Note that the estimated prevalence rates among dropouts based on NSDUH data are not very different from the estimates derived using the 1.5 factor (compare Columns 9 and 4). Consequently, the total estimates given in Column 10 turn out to be highly similar to those in Column 5. This similarity suggests that the estimates of corrections for dropouts that we have been providing, based on earlier data, are quite reasonable. In fact, based on all of the NSDUH data, they may actually be conservatively high.

Finally, an additional piece of information relative to the comparison of drug use rates among students who stay in school versus dropouts comes from Fagan and Pabon (1990),[126] who report some comparison data between high school students and dropouts from six inner-city neighborhoods. About 1,000 male students and 1,000 female students were compared with 255 male dropouts and 143 female dropouts. Although dropouts were generally more delinquent and more involved with substance use, there was also a great deal of variability by specific class of substances. As would be generally expected, marijuana use was lower among students compared to dropouts. On the other hand, psychedelic use, as well as use of tranquilizers and barbiturates, was *higher* among students. Amphetamine use was lower among male students but higher among female students compared to dropouts of the same gender. Similarly, cocaine use was lower among male students but higher among female students compared to dropouts. Surprisingly, students of both genders reported more heroin use than did dropouts. Inhalant use did not differ significantly between students and dropouts. This study shows that the usual assumption that dropouts invariably use drugs more than students is not always true.

[126]Fagan, J., & Pabon, E. (1990). Contributions of delinquency and substance use to school dropout among inner-city youths. *Youth & Society, 21,* 306–354.

EXAMPLES OF REVISED ESTIMATES FOR TWO DRUGS

Figure A-2 provides the prevalence and trend estimates of marijuana and cocaine, for both the lifetime and 30-day prevalence periods, showing (a) the original estimates based on *participating 12th graders* only; (b) the empirically derived, revised estimates based on *all 12th graders*, including the absentees; and (c) estimates for the *entire class/age cohort* (developed using the assumption described above—namely, that the prevalence rate for dropouts differs from the prevalence rate for participating 12th graders by 1.5 times the amount that the prevalence rate for absentees does). Estimates were calculated separately for each year, thus taking into account any differences from year to year in the participation or absentee rates. The dropout rate was taken as a constant 15% of the age group through 2002, then at the rates observed each year through 2012.

As Figure A-2 illustrates, any difference in the slopes of the trend lines between the original and revised estimates is extremely small. The prevalence estimates are higher, of course, but not dramatically so, and certainly not enough to have any serious policy implications. As stated earlier, the corrections for 8th- and 10th-grade samples should be considerably less than for 12th grade, and there is certainly no reason to think that absentee or dropout rates at those levels have changed since 1991 in any way that could have changed the trend data. Therefore, we have confidence that the trends that have appeared for the in-school populations represented in this study are very similar to those that would pertain if the entire age cohorts had been the universes from which we sampled.

SUMMARY AND CONCLUSIONS

While we believe that the prevalence of drug use for the entire age cohort is somewhat underestimated in the MTF results, due to the omission of dropouts from the universe of the study, the degree of underestimation appears rather limited for all drugs (with the possible exceptions of heroin, crack, and PCP) and, more importantly, trend estimates seem rather little affected. Short of having good trend data gathered directly from dropouts, who, fortunately, appear to constitute a shrinking proportion of the total age group, we cannot close the case definitively. Nevertheless, the available evidence argues strongly against alternative hypotheses—a conclusion also reached by the members of the 1982 NIDA technical review on this subject and reflected in the abstract of the review[127]: "The analyses provided in this report show that failure to include these two groups (absentees and dropouts) does not substantially affect the estimates of the incidence and prevalence of drug use."

[127]Clayton, R. R., & Voss, H. L. (1982). *Technical review on drug abuse and dropouts.* Rockville, MD: National Institute on Drug Abuse.

TABLE A-1
Comparison of 2002 Monitoring the Future Seniors, NSDUH Seniors, and NSDUH Dropouts

	MTF Seniors	NSDUH Seniors	NSDUH Dropouts 17–18
Marijuana			
Lifetime	47.8	41.8	61.1
30-Day	21.5	16.9	27.7
Cocaine			
Lifetime	7.8	5.6	19.1
30-Day	2.3	0.6	3.0

Source. The Monitoring the Future study, the University of Michigan and the National Survey on Drug Use and Health.

TABLE A-2
Estimated Prevalence Rates for Marijuana and Cocaine, 2002, Based on Data from Monitoring the Future and The National Survey on Drug Use and Health

	Monitoring the Future					NSDUH			MTF/NSDUH Combined	
	Seniors Present [a]	Seniors Absent [b]	Seniors Absent & Present [c]	Dropouts [d]	Total [e]	Seniors [f]	Dropouts (Ages 17–18 [g])	Difference [h]	Dropouts [i]	Total [j]
Marijuana										
Lifetime	47.8	63.0	50.4	70.5	53.4	41.8	61.1	19.3	69.7	53.3
30-Day	21.5	32.6	23.4	38.2	25.6	16.9	27.7	10.8	34.2	25.0
Cocaine										
Lifetime	7.8	15.5	9.1	19.4	10.6	5.6	19.1	13.5	22.6	11.1
30-Day	2.3	4.5	2.7	5.6	3.1	0.6	3.0	2.4	5.1	3.1

Source. The Monitoring the Future study, the University of Michigan and the National Survey on Drug Use and Health.

[a]Estimates based on all MTF seniors who completed questionnaires.

[b]Estimated prevalence rates among seniors who were absent (using data from seniors who were present, as explained in text).

[c]Estimated prevalence rates among seniors present plus seniors who were absent.

[d]Estimated prevalence rates among dropouts, based on assumptions described in text.

[e]Estimated prevalence rates among seniors present, seniors who were absent, and same-age dropouts.

[f]Estimates based on all NSDUH respondents who were high school seniors.

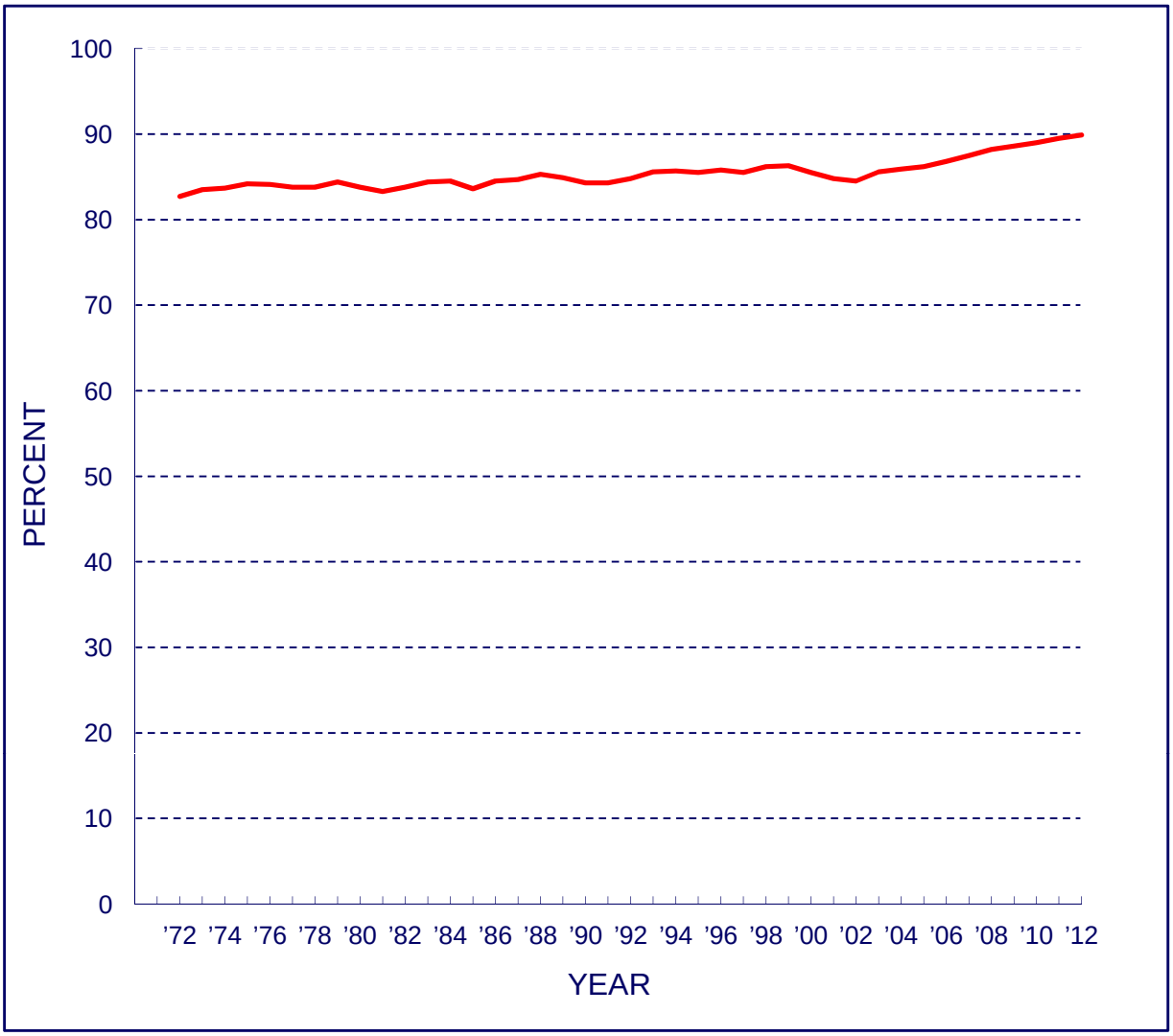
[g]Estimates based on all NSDUH respondents, 17–18 years old, who were not attending school, had not graduated, and had not received a GED.

[h]The difference between all NSDUH seniors and dropouts; this is considered a valid estimate of the population difference between all seniors and dropouts, resulting in an estimated prevalence among dropouts.

[i]Combines estimated use among all MTF seniors (absent and present) plus the estimated population difference between all NSDUH seniors and dropouts, resulting in an estimated prevalence among dropouts.

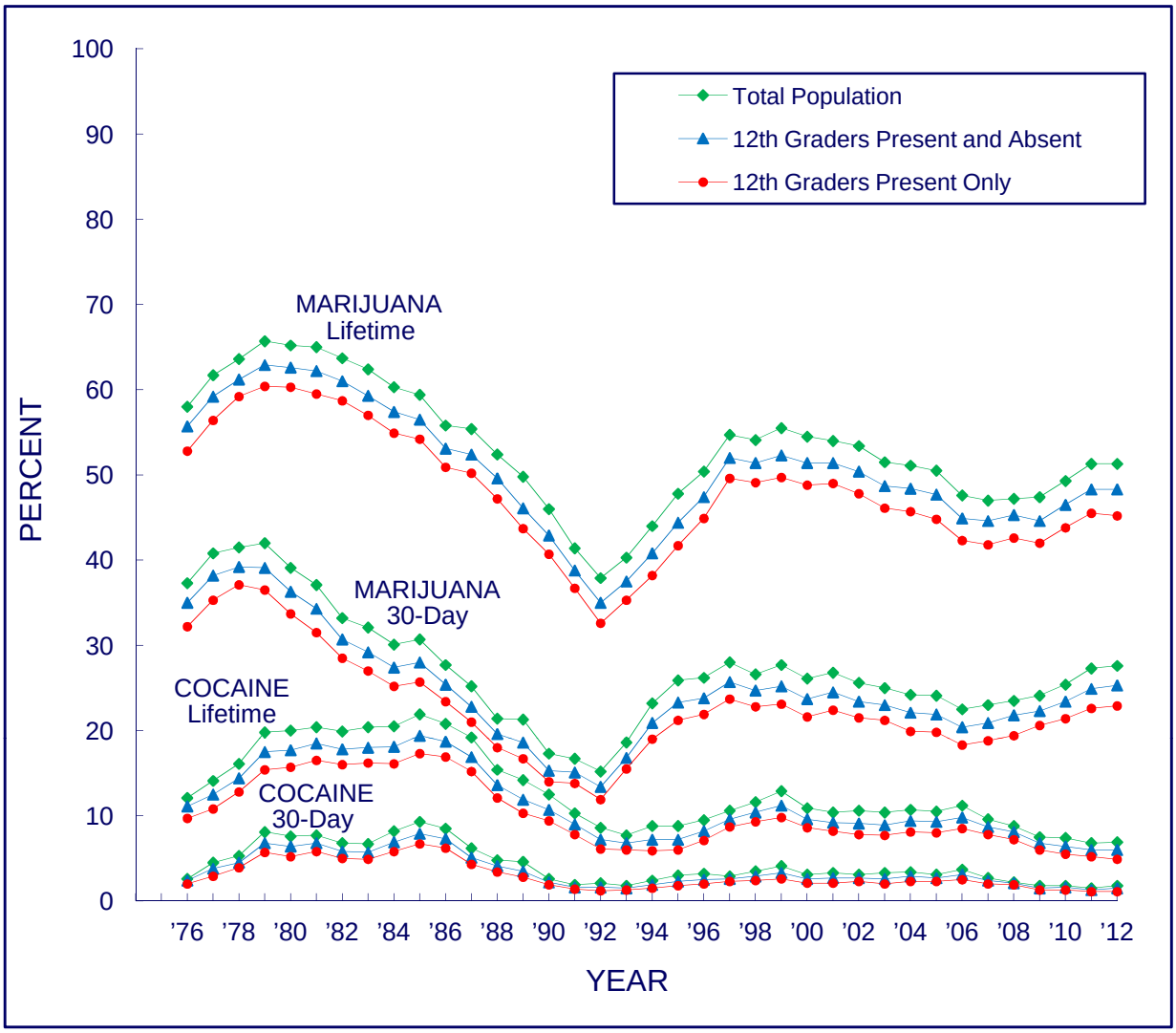
[j]Weighted combined estimate of prevalence, using estimates for MTF seniors (absent and present), and estimates of prevalence among MTF and NSDUH dropouts combined.

FIGURE A-1
High School Completion by 20- to 24-Year-Olds



Source. U.S. Census Bureau, Current Populations Survey, published and unpublished data; and 1980 Census.

FIGURE A-2
Estimates of Prevalence and Trends for the Entire Age/Class Cohort (Adjusting for Absentees and Dropouts) for 12th Graders



Source. The Monitoring the Future study, the University of Michigan.

Appendix B

DEFINITION OF BACKGROUND AND DEMOGRAPHIC SUBGROUPS

The following are brief definitions of the background and demographic subgroups used in this volume. (Note: All case counts provided in the tables are based on weighted *N*s.)

Total: The total sample of respondents in a given year based on weighted cases (set to equal the total number of actual cases).

Gender: ***Male and female.*** Respondents are asked "What is your sex?" Those with missing data on the question are omitted from the data presented by gender.

College Plans: Respondents are asked how likely it is that they will graduate from a four-year college program. College plans groupings are defined as follows:

None or under four years. Respondents who indicate they "definitely won't" or "probably won't" graduate from a four-year college program. (Note that, among those who do not expect to complete a four-year college program, a number still expect to get some postsecondary education.)

Complete four years. Respondents who indicate they "definitely will" or "probably will" graduate from a four-year college program.

Those not answering the college plans question are omitted from both groupings.

Region: Region of the country in which the respondent's school is located. There are four mutually exclusive regions based on U.S. Census Bureau categories, defined as follows:

Northeast. Census classifications of New England and Middle Atlantic states consist of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania.

Midwest. Census classifications of East North Central and West North Central states consist of Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.

South. Census classifications of South Atlantic, East South Central, and West South Central states consist of Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas.

West. Census classifications of Mountain and Pacific states consist of Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California (Alaska and Hawaii are also included in this Census region, but are not included in the MTF study).

Population Density: Population density of the area in which the schools are located. There are three mutually exclusive groups that have been variously defined, as described below. The 1975–1985 samples were based on the 1970 Census; in 1986, one half of the sample was based on the 1970 Census and the other half was based on the 1980 Census. In 1987 through 1993 the samples were based on the 1980 Census; in 1994, half of the sample was based on the 1980 Census and half on the 1990 Census. Starting in 2006, each first-year half sample of schools comes from a sample design that utilizes 2000 Census counts as the measure of size for first-stage units. (Counts from the 2010 Census will be used for the samples beginning in 2014.) The three levels of population density were defined in terms of Standard Metropolitan Statistical Area (SMSA) designations through 1985, and then changed to the new Census Bureau classifications of Metropolitan Statistical Areas (MSAs), as described here:

Large MSA. These were the 12 largest SMSAs as of the 1970 Census and were used for the 1975–1985 samples: New York, Los Angeles, Chicago, Philadelphia, Detroit, San Francisco, Washington, Boston, Pittsburgh, St. Louis, Baltimore, and Cleveland. As of the 1980 Census, the "large MSA" group consisted of the 16 largest MSAs. This new structure was used for the 1986–1994 samples. These 16 MSAs include all of the MSAs mentioned above except Cleveland, plus Dallas-Fort Worth, Houston, Nassau-Suffolk, Minneapolis-St. Paul, and Atlanta.

A new sample design was developed based on the 1990 Census, beginning with the first-year half sample of schools chosen in 1994. In the 1990s sample, only the eight largest MSAs are represented with certainty at all three grade levels; 16 other large MSAs are divided into pairs, with half randomly assigned to the 12th- and 8th-grade samples and the other half assigned to the 10th-grade sample. The eight largest MSAs are New York, Los Angeles, Chicago, Philadelphia PA-NJ, Detroit, Washington DC-MD-VA, Dallas-Ft. Worth, and Boston. The other 16 large MSAs are Houston, Atlanta, Seattle-Tacoma, Minneapolis MN-WI, St. Louis MO-IL, San Diego, Baltimore, Pittsburgh, Phoenix, Oakland, Cleveland, Miami, Newark, Denver, San Francisco, and Kansas City MO-KS.

Other MSAs. This category consists of all other MSAs, as defined by the Census, except those listed previously. Except in the New England states, an MSA is a county or group of contiguous counties that contain at least one city of 50,000 inhabitants or more, or twin cities with a combined population of at least 50,000. In the New England states, MSAs consisted of towns and cities instead of counties until 1994, after which New England Consolidated Metropolitan Areas (NECMAs) were used to define MSAs. Each MSA must include at least one central city, and the complete title of an MSA identifies the central city or cities.

For the complete description of the criteria used in defining MSAs, see the Office of Management and Budget publication, *Metropolitan Statistical Areas, 1990* (NTIS-PB90-214420), Washington, D.C. The population living in MSAs is designated as the metropolitan population.

Non-MSAs. This category consists of all areas not designated as MSAs—in other words, they do not contain a town (or twin cities) of at least 50,000 inhabitants. The population living outside MSAs constitutes the nonmetropolitan population.

Parental Education: This is an average of mother's education and father's education based on the respondent's answers about the highest level of education achieved by each parent, using the following scale: (1) completed grade school or less, (2) some high school, (3) completed high school, (4) some college, (5) completed college, (6) graduate or professional school after college. Missing data were allowed for one of the two parents. The respondent was instructed, "If you were raised mostly by foster parents, stepparents, or others, answer for them. For example, if you have both a stepfather and a natural father, answer for the one that was most important in raising you."

Race/ Ethnicity: From 1975 through 2004, respondents were asked "How do you describe yourself?" and presented with a list of various racial/ethnic categories. A general instruction told them to select the *one* best response for each question. In 2005 the instructions in half of the questionnaire forms were revised in order to be more consistent with the guidelines of the Office of Management and Budget for assessing race/ethnicity. In the changed forms, respondents were presented with a list of racial/ethnic categories and instructed to "select one or more responses." An examination of the data showed that relatively few respondents (about 6% in 2005) selected more than one racial/ethnic category. In 2006 and thereafter the revised instruction was used in all forms.

For the reporting of the 2005 results, the data from the original race/ethnicity question were combined with data from the revised race/ethnicity question in the following manner: For the original question, respondents were assigned to the racial/ethnic group specified in their response. For the revised question, those checking only White and no other racial/ethnic group were categorized as White; those checking Black or African American and no other racial ethnic group were categorized as African American; and those checking Mexican American or Chicano, Cuban American, Puerto Rican, or other Hispanic or Latino and no other racial/ethnic group were categorized as Hispanic.[128] In the volumes for 2006 and beyond, all questionnaire forms use the revised question on race/ethnicity. Those checking multiple racial/ethnic groups or one of the other specified groups are omitted from the reporting on race/ethnicity in this volume, because of the small numbers of cases.

[128]Because some survey questions appear in only one or a few forms, there was some variation in the version of the race/ethnicity question upon which the 2005 data were based. Based on the analyses we have examined, we do not believe these different permutations make any appreciable difference in the results.

White. Consists of those respondents who describe themselves as White or Caucasian in 1975–2004. In 2005 the unchanged questionnaire forms were treated in a similar manner and the changed forms were treated in the manner described above. Beginning in 2006, all forms were treated in the manner described above.

African American. Consists of those respondents who in 1975–1990 describe themselves as Black or Afro-American or who, in 1991–2004, describe themselves as Black or African American. In 2005 the unchanged questionnaire forms were treated in a similar manner and the changed forms were treated in the manner described above. Beginning in 2006, all forms were treated in the manner described above.

Hispanic. Consists of those respondents who in 1975–1990 describe themselves as Mexican American or Chicano, or Puerto Rican or other Latin American. After 1990 this group includes those respondents who describe themselves as Mexican American or Chicano, Cuban American, Puerto Rican American, or other Latin American. After 1994, the term "Puerto Rican American" was shortened to "Puerto Rican." In 2005 the unchanged questionnaire forms were treated in a similar manner and the changed forms were treated in the manner described above. Beginning in 2006, all forms were treated in the manner described above.

Appendix C

ESTIMATION OF SAMPLING ERRORS

This appendix provides some guidance for those who wish to calculate confidence intervals around the percentage estimates reported in this volume, or to assess the statistical significance of differences between percentage estimates.

All percentages reported in this volume are estimates of the response percentage that would have been obtained if, instead of using a sample survey, we had surveyed all 8th-, 10th-, or 12th-grade students throughout the coterminous United States. Because we surveyed only a sample, and not the entire population, there are sampling errors associated with each estimate. For any particular percentage resulting from a sample survey, we cannot know exactly how much error has resulted from sampling, but we can make reasonably good estimates of confidence intervals—ranges within which the true population value is very likely to fall. The word "true" in this context refers to the value that would be found if we had surveyed the total population—this concept of true population value does not take account of biases that might occur due to refusals, intentional or unintentional distortion of responses, faulty question wording, and other factors.

CALCULATING CONFIDENCE INTERVALS

The most straightforward types of samples, from a statistical standpoint at least, are simple random samples.[129] In such samples, the confidence limits for a proportion are influenced by the size of the sample, or particular subsample, under consideration and also by the value of the proportion. (Although the estimates in this volume are expressed as percentages, this appendix generally deals with the equivalent proportion, for ease of presentation.)

The ***standard error***[130] of a proportion p based on a simple random sample of n cases is equal to

$$\sqrt{p(1.0-p)/n}\,. \qquad (1)$$

With a large number of cases, a symmetrical ***confidence interval*** around p would be approximated by

$$p \pm z\sqrt{p(1.0-p)/n}\,. \qquad (2)$$

[129]A simple random sample is one in which each element is selected independently of, and with the same probability as, all other elements in the universe of elements from which the sample is drawn.

[130]The standard error of an estimate is a measure of sampling error, defined as the standard deviation of the sampling distribution of the statistic. It is used to construct the confidence interval around an estimate.

where z is the appropriate value from the z-distribution. For a 95% confidence interval, for example, $z = 1.96$.

Many of the proportions presented in this volume represent rare events, with values being close to zero. At those low values, a more appropriate confidence interval would be asymmetric. A more exact calculation for confidence intervals, which will usually produce asymmetric confidence limits, is[131]

$$\frac{n}{n+z^2}\left[p+\frac{z^2}{2n} \pm z\sqrt{\frac{p(1-p)}{n}+\frac{z^2}{4n^2}}\right] . \qquad (3)$$

Significance of Difference between Two Proportions

In addition to estimating the sampling error around a single proportion, we often wish to test the significance of a difference between two proportions, such as the difference between the proportion of marijuana users among male students as compared to among female students. The following formula produces a statistic that can be referred to as a standard normal distribution:

$$z = \frac{p_1 - p_2}{\sqrt{p_e(1-p_e)\dfrac{n_1+n_2}{n_1 n_2}}} . \qquad (4)$$

Assuming reasonably large numbers of cases, where

$$p_e = \frac{n_1 p_1 + n_2 p_2}{n_1 + n_2} \qquad (5)$$

and p_e is the estimated population proportion, p_1 is the observed proportion (of users) in the first group, p_2 is the observed proportion in the second group, n_1 is the number of cases in the first group, and n_2 is the number of cases in the second group.

DESIGN EFFECTS IN COMPLEX SAMPLES

Formulas 1–5 are appropriate only for simple random samples. In complex samples such as those used in the MTF surveys, it is also necessary to take into account the effect that the sampling design has on the size of standard errors. (A complex sample is any sample that is not a simple random sample.)

[131]Formula 6.11.1, page 240, in Hays, W. L. (1988). *Statistics* (4th ed.). New York: Holt, Rinehart, & Winston.

The MTF sample design incorporates stratification, clustering, and differential weighting to adjust for differential probabilities of selection. These design elements influence sampling error. While stratification tends to heighten the precision of a sample compared with a simple random sample of the same size (usually reducing the sampling error), the effects of clustering and weighting reduce precision (usually increasing the sampling error). The net result is that complex sample designs almost always result in increased sampling error (but usually result in more efficient samples in all other respects). Therefore, it is not appropriate to apply the standard, simple random sampling formulas to such complex samples in order to obtain estimates of sampling errors.

Methods exist to correct for this underestimation. Kish (1965, p. 258)[132] defines a correction term called the ***design effect*** (DEFF), where

$$DEFF = \frac{actual\ sampling\ variance}{variance\ expected\ from\ a\ random\ sample} \ . \qquad (6)$$

Thus, if the actual sampling variance in a complex sample is four times as large as the expected sampling variance from a simple random sample with the same number of cases, the DEFF is 4.0. Because confidence intervals are proportionate to the square root of variance, the confidence intervals for such a sample would be twice as large (because the square root of 4 is 2) as the confidence interval for a simple random sample with the same number of cases. If an estimate of design effect is available, one of the simplest correction procedures to follow is to divide the actual numbers of cases by the design effect (thereby depreciating the actual number to its equivalent value in simple random sample terms) and then employ the standard statistical procedures that are available for application to simple random samples. Thus, for example, if the design effect for a sample of 16,000 were 4.0, then one could divide the 16,000 by 4.0, and the result, 4,000, could be entered as the value of *n* in statistical tables and formulas designed for use with simple random samples. In short, the strategy involves dividing the actual number of cases by the appropriate DEFF in order to get a "simple random sampling equivalent *n*" or, more simply, an "effective *n*" for use in statistical procedures designed for random samples.

Estimating Design Effects

In principle, every different statistic resulting from a complex sample can have its own design effect and, in fact, different statistics in the same sample may have quite different design effects. However, it is not feasible to compute every design effect, nor would it be feasible to report every one. Moreover,

> Sampling errors computed from survey samples are themselves usually subject to great sampling variability . . . . Sampling theory, and experience with many and repeated computations, teach us not to rely on the precision of individual results,

[132]Kish, L. (1965). *Survey sampling*. New York: John Wiley.

> even when these are based on samples with large numbers of elements. (Kish, Groves, & Krotki, 1976, p. 19).[133]

Thus, in practice, design effects are averaged across a number of statistics, and these average values are used to estimate the design effects for other statistics based on the same sample. Sometimes a single design effect is applied to all estimates in a given study. This is usually an oversimplification. In MTF, a rather extensive exploration of design effects revealed a number of systematic differences. These systematic differences have to do with the particular measures being examined, the subgroups involved, and the question of whether a trend over time is being considered. Thus, we provide here a more elaborated set of estimates of design effects that vary along these several dimensions.[134]

Factors Affecting Design Effects

Design effects are systematically related to two factors: the amount of clustering and the average cluster size. (Each MTF school can be considered a cluster of cases, or students.) Specifically,

$$DEFF = 1 + \rho(\tilde{n} - 1) \qquad (7)$$

(Kish, 1965, section 5, p. 162; Kalton, 1983, p. 31[135]) where $\tilde{n}$ is the average cluster size and ρ is the intraclass correlation coefficient measuring the degree of cluster homogeneity. Note that the equality is approximate.

An important consequence of this relationship is that subgroups such as male or female that are typically represented within all clusters (i.e., all schools) have a lower average cluster size. All (or virtually all) of the schools in the sample have both male and female students. Thus, each of these subgroups is spread more or less evenly across the full number of clusters (schools). Because each of these subgroups includes approximately half of the total sample, the average number of cases per cluster is about half as large as for the total sample, and this leads to a smaller design effect than is found for the total sample. (There is usually not much difference in ρ, the measure of cluster homogeneity.) Other subgroups involving college plans or parental education are also distributed across all clusters (although not as evenly as gender), and thus are subject to the same phenomenon of smaller design effects because of the smaller number of cases per cluster. This is in contrast to the situation with subgroups such as region of the country, each of which will normally have the same average cluster size as the total sample from the whole country—but considerably fewer clusters. The former type of subgroup (*cross-class*) will usually have a lower design effect, while the latter (*segregated*) will usually have a design effect similar to the overall. In MTF, cross-class subgroups include gender, college plans, and parental education. Segregated subgroups include region and population density. Race/ethnicity is a mixed case in that there tends to be substantial clustering of various racial/ethnic groups by school. Consequently, design effects for minority racial/ethnic subgroups tend to be somewhat higher than average, though this tendency is not always evidenced. Because such a high

[133]Kish, L., Groves, R. M., & Krotki, K. P. (1976). *Sampling errors for fertility surveys* (Occasional Paper Series No. 17). Voorburg, The Netherlands: International Statistical Institute.

[134]All design effects were estimated using the Taylor series expansion method.

[135]Kalton, G. (1983). *Introduction to survey sampling*. Beverly Hills: Sage Publications.

proportion of respondents in most schools are White, the associated design effects for them tend to be similar to the overall design effects.

As an empirical generalization, we have observed that design effects tend to be related to the actual prevalence rates of substance use (or *p* value). Thus, rarely used substances such as heroin typically have low design effects, while more commonly used substances such as cigarettes, alcohol, and marijuana typically have high design effects. Also, the design effect associated with the estimate of lifetime prevalence of any given substance is usually greater than (or equal to) the design effect associated with annual prevalence of that substance, which is in turn greater than the design effect for monthly prevalence. This tendency would imply that 8th-grade design effects would typically be lower than those for 10th grade, which would be lower than 12th grade (because prevalence rates are usually greater in the upper grades). However, 8th-grade schools tend to be socioeconomically more homogenous than high schools, because they tend to draw from smaller geographic areas; this makes 8th-grade schools more homogenous with respect to drug use, leading to larger design effects. The combination of factors generally leads to slightly lower design effects for the lower grade levels.

Design Effects for Differences between Two Proportions

Trends between two nonadjacent years. A trend over an interval greater than one year (e.g., a comparison between 2000 and 2005) is basically a comparison between estimates from two independent samples. Therefore, the design effects for a single estimated proportion are appropriate. The relevant design effects for nonadjacent years are presented in Tables C-2a through C-2g.

Trends between adjacent years. One of MTF's central purposes is to monitor trends over time; indeed, the study procedures have been standardized across years insofar as possible in order to provide the opportunity for sensitive measurement of change. One factor designed to produce an added degree of consistency from one year to the next is the use of each school for two data collections, meaning that for any two successive years, half of the sample of schools is the same. This ensures a good deal of consistency in the sampling and clustering of the sample from one year to the next. As a result, when one-year comparisons are made between adjacent years, the design effects for the trend estimate are appreciably smaller than if completely independent samples of schools had been drawn each year. In other words, the samples in adjacent years are not independent; on the contrary, there is a considerable degree of covariance between them. This covariance, or partial matching, reduces the design effect for differences observed between adjacent years, compared to what they would have been with totally independent samples.

In order to estimate the extent of "shrinkage," we calculated about 95 DEFFs for adjacent one-year trend data where we had prevalence data for the same grade/drug combinations. The relationship between the two sets of DEFFs (prevalence vs. one-year trend) was found to be approximately linear, with a product-moment correlation of .88 for DEFFs (and .89 for the square root of DEFF). This seemed sufficiently high to justify simply estimating the linear relation, predicting the trend DEFF from the prevalence DEFF, and using that to estimate the one-year trend DEFF for all measures. The resulting design effects are given in Tables C-1a through C-1g.

Comparisons between subgroups within a single year. We examined a variety of design effects involving comparisons between subgroups based on gender, college plans, and parental education. A considerable simplification was achieved when we noted that generally, the average DEFF values for subgroup comparisons were quite similar to the average DEFF values for one-year trends.

With respect to segregated variables like region and population density, the subgroup samples are essentially independent; therefore, the prevalence design effects are appropriate for comparisons among these subgroups. Design effects for subgroup comparisons within a single year are provided in Tables C-3a through C-3g.

Differentiating design effects by drug classes. Our exploration of design effects led us to the conclusion that various groups of drugs tended to have very similar values. Thus, the following groupings of drugs, which seem to have similar design effects within group, were created for the purpose of simplification:

(a) An index of use of any illicit drug other than marijuana
(b) An index of use of any illicit drug; an index of use of any illicit drug including inhalants; and marijuana
(c) Hallucinogens, LSD, cocaine, and other cocaine (i.e., not crack)
(d) Nitrites, PCP, crack, heroin (with and without a needle), methamphetamine, crystal methamphetamine (ice), methaqualone, over-the-counter cough and cold medicines, Rohypnol, GHB, ketamine, steroids, salvia, provigil, tobacco using a hookah, small cigars, and dissolvable tobacco products
(e) Hallucinogens other than LSD, ecstasy (MDMA), narcotics other than heroin, OxyContin, Ritalin, sedatives (barbiturates), tranquilizers, flavored alcoholic beverages, alcoholic beverages with caffeine or energy drink, bidis, kreteks, androstenedione, creatine, Adderall, synthetic marijuana, snus, and prescription drugs
(f) Inhalants, Vicodin, and amphetamines
(g) Alcohol (including use of alcohol and getting drunk), cigarettes, and smokeless tobacco

Design effects were found to be generally similar for all drugs contained within each grouping, but somewhat different across groupings. Therefore, each table of design effects (Tables C-1, C-2, and C-3) has seven parts corresponding to each of these seven drug groupings (i.e., parts a through g).

In general, intervals of use (lifetime, last 12 months, last 30 days, daily) are distinguished. For some substances, though, the variation by interval was slight enough to ignore.

With regard to calculating estimates for subgroups, on both logical and empirical grounds, there seemed little reason to distinguish among the “segregated groups”: total sample, and groups defined by region and population density. The average cluster size should be about the same, and there should not be much variation in the degree to which drug use clusters by school within these categories. Some variation was evident empirically, but it did not appear to be systematic. Thus, these groups are assigned equal design effects.

Separate design effect values are provided for estimates of use (prevalence) among the three grade levels (8, 10, 12) for subgroups defined by gender (males, females), college plans (planning to complete four years, not planning to complete four years), parental education (five levels), and race/ethnicity (African American, White, Hispanic). In some cases, particularly for the less prevalent drugs where design effects are very low, the estimated design effects do not vary by group.

Estimates of design effects are provided for one-year trends. For trends across nonadjacent years, the standard design effects for prevalence are appropriate. Estimates of design effects are also provided separately for comparisons of subgroups within a given year.

DETERMINING AN EFFECTIVE *n*

Tables C-1 through C-3 provide estimates of design effects that can be used to shrink the weighted numbers of cases given in each table in this volume to an effective *n*, which is appropriate for use in standard formulas in calculating sampling errors, confidence intervals, and statistical significance of differences in proportions. The tables are in three sets: Tables C-1a through C-1g are appropriately used for a one-year trend across adjacent years, Tables C-2a through C-2g are for a single prevalence or a comparison across nonadjacent years, and Tables C-3a through C-3g are for a comparison between subgroups in a single year. (Adjacent years differ from nonadjacent years in that half of the schools are part of both years' samples.)

To access the appropriate table, the reader should determine whether the design effect is needed for a one-year trend (Table C-1), a single prevalence or a comparison of prevalence across nonadjacent years (Table C-2), or a subgroup comparison within a year (Table C-3); and which substance is involved (a–g).Within the table, the reader needs to determine which subgroup (or total sample), grade level, and interval of use are involved. Then, the appropriate design effect can be referenced and used to deflate the weighted number of cases to arrive at an effective n. *This effective* n *would be used in Formulas 1 to 5, given previously.*

As an example, suppose one wished to compare the 30-day prevalence of marijuana use for the total 8th-grade sample in 1996 with the same measure in 1997. Tables 2-1 through 2-3, provided earlier in this volume, indicate that prevalence was 11.3% in 1996, based on 17,800 cases and 10.2% in 1997, based on 18,600 cases. Table C-1b shows that an appropriate design effect for 8th-grade 30-day marijuana use is 3.2. Each year's *n* would be divided by 3.2, producing effective *n*s of 5,562 and 5,812. These effective *n*s should be used in Formula 4, given earlier in this appendix, to test whether the difference in proportions between the two years is statistically significant.

A Special Note on Racial/Ethnic Subgroups

As noted earlier in this volume, the prevalence estimates for racial/ethnic subgroups are reported only for two-year averages, instead of single years, because of limited sample sizes and a higher degree of clustering. The design effects for prevalence rates for racial/ethnic subgroups provided in Tables C-2a through C-2g are appropriately applied to the number of cases provided for the two years combined. In calculating a one-year trend between the two most recent prevalence figures, however, one is in effect taking a trend between a prevalence based on data from the

most recent single year, and a prevalence based on data from a single year two years prior to the most recent year. For example, comparing the estimate based on combined 1994 and 1995 data with the combined 1993 and 1994 data is equivalent to comparing 1993 and 1995, because the 1994 observed value is contained in both data points and therefore cancels itself out. The design effects for trends provided in Tables C-1a through C-1g are therefore appropriately applied to one half of the number of cases provided in each table for the combined years. In 2005, a shift in question wording was begun for the question regarding race/ethnicity. In half of the questionnaire forms, a new version of the question was introduced. That new version was used in all forms beginning in 2006. In the previous version of the question, the respondent was asked to choose only one of the answer alternatives, whereas in the new version the respondent is allowed to make multiple choices. For example, one might choose both African American and Mexican American. Because so few respondents provided multiple responses, we have treated those as missing data in this volume. We believe that the change has had minimal impact on the subgroup substance use estimates and on the design effects associated with race/ethnicity.

A NOTE ON INTERPRETATION OF DIFFERENCES AND STATISTICAL SIGNIFICANCE

This appendix provides the reader with procedures to assess the statistical significance of differences over time or between groups. In the text of this report, we frequently comment on particular differences over time or between groups in terms of drug use. In general, our conclusions are based to a considerable extent on *patterns* of cross-time changes rather than on the statistical significance of any single comparison. That is, we assess the overall pattern of evidence, rather than any single finding, to assess the likely validity of the finding.

There are at least five types of patterns that we inspect:

1. ***Replication across grades***. Because the annual samples of 8th-, 10th-, and 12th-grade students are three *completely independent samples*, one pattern that we look for is the similarity or contrast in changes that occur in the three groups. Although there is no requirement that changes occur similarly in all three groups, to the extent that a change is similar (or at least not inconsistent), we are more confident in its validity.

2. ***Replication across subgroups***. To the extent that a change has occurred across a broad range of subgroups, we are more confident of its validity. For example, if an increase in use occurs among males and females, among non-college-bound and college-bound, in different regions, etc., we would be more inclined to accept the change as reflecting an underlying reality.

3. ***Replication across half samples***. Because half of the schools remain the same from one year to the next, any changes across a one-year interval can be examined for the half sample that has remained constant. In other words, the data are examined for only the schools that provide data for both years. This removes any differences that may have occurred due simply to different schools being included.

4. ***Consistency across several years***. Although each year's report emphasizes the changes in the most recent year, we pay careful attention to trends across longer time intervals. For example, when we observe a third or fourth consecutive year of consistent change in one direction, then we are more inclined to accept the validity of the general trend, even if none of the changes in any of the one-year intervals was statistically significant.

5. ***Replication across different variables***. Another type of replication or validation involves examining trends in different variables that would be expected to covary. For example, we have observed that perceived risk of harm associated with use of a specific substance tends to covary (negatively) with actual use of the substance. Similarly, we would expect reports of friends' use of specific substances to covary (positively) with reports of respondents' own use. To the extent that different variables covary in the expected manner, then we would be more confident in interpreting the results.

Although we do not always discuss all of these various contributions to our confidence, we do generally assess them prior to making interpretations.

TABLE C-1a
Design Effects for 1-Year Trends in Prevalence of Use

		ANY ILLICIT DRUG OTHER THAN MARIJUANA			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	3.9	3.3	2.6	1.2
	10th Grade	4.3	3.6	2.7	1.2
	12th Grade	4.9	4.4	3.3	1.7
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.8	2.5	2.2	1.3
	10th Grade	3.1	2.7	2.4	1.2
	12th Grade	3.2	2.9	2.4	1.7
Female	8th Grade	3.1	2.8	2.1	1.2
	10th Grade	3.3	2.9	2.2	1.1
	12th Grade	3.5	3.3	2.8	1.6
College Plans					
None or under 4 years	8th Grade	2.0	1.9	1.6	1.2
	10th Grade	2.2	2.1	1.8	1.4
	12th Grade	2.1	1.9	1.6	1.5
Complete 4 years	8th Grade	3.5	2.8	2.3	1.2
	10th Grade	4.1	3.3	2.5	1.1
	12th Grade	4.4	3.8	3.0	1.7
Parental Education					
Any stratum	8th Grade	2.1	2.0	1.6	1.1
	10th Grade	2.2	2.0	1.7	1.2
	12th Grade	2.4	2.2	1.7	1.4
Racial/Ethnic Group					
White	8th Grade	4.0	3.8	2.9	1.4
	10th Grade	4.9	4.3	3.0	1.5
	12th Grade	4.2	4.0	2.9	2.0
African American	8th Grade	2.7	2.0	1.5	1.2
	10th Grade	3.0	2.6	1.9	1.3
	12th Grade	3.7	3.3	3.0	1.6
Hispanic	8th Grade	3.8	2.7	2.0	1.5
	10th Grade	4.5	2.9	1.8	1.3
	12th Grade	5.0	4.0	3.0	2.0

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-1b
Design Effects for 1-Year Trends in Prevalence of Use

		ANY ILLICIT DRUG, ANY ILLICIT DRUG INCLUDING INHALANTS, AND MARIJUANA			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	4.1	3.5	3.2	1.4
	10th Grade	5.0	4.3	3.4	1.5
	12th Grade	6.9	6.6	5.4	2.8
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.4	2.4	2.4	1.5
	10th Grade	3.4	3.0	3.0	1.5
	12th Grade	3.8	3.4	3.0	2.7
Female	8th Grade	3.4	3.0	2.4	1.3
	10th Grade	4.0	3.4	2.7	1.1
	12th Grade	4.6	4.6	4.5	2.6
College Plans					
None or under 4 years	8th Grade	2.3	2.3	2.0	1.3
	10th Grade	2.8	2.8	2.7	2.0
	12th Grade	2.4	2.4	2.1	2.1
Complete 4 years	8th Grade	3.3	2.4	2.4	1.5
	10th Grade	5.1	4.0	3.2	1.1
	12th Grade	6.1	5.3	4.5	3.0
Parental Education					
Any stratum	8th Grade	2.1	2.1	1.9	1.1
	10th Grade	2.5	2.3	2.2	1.4
	12th Grade	3.0	2.8	2.3	1.9
Racial/Ethnic Group					
White	8th Grade	4.5	4.4	4.1	1.9
	10th Grade	7.2	5.8	4.5	2.1
	12th Grade	5.0	5.0	4.2	3.7
African American	8th Grade	3.0	2.1	1.3	1.1
	10th Grade	4.0	4.0	2.6	1.5
	12th Grade	6.0	6.0	6.0	2.5
Hispanic	8th Grade	2.6	2.6	2.1	2.0
	10th Grade	4.9	3.0	1.6	1.5
	12th Grade	5.0	4.8	3.5	2.5

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-1c
Design Effects for 1-Year Trends in Prevalence of Use

		HALLUCINOGENS (UNADJUSTED AND ADJUSTED), LSD, COCAINE, AND OTHER COCAINE			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	4.3	3.5	2.5	1.1
	10th Grade	4.3	3.5	2.5	1.1
	12th Grade	4.3	3.5	2.5	1.1
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	3.2	2.8	2.4	1.1
	10th Grade	3.2	2.8	2.4	1.1
	12th Grade	3.2	2.8	2.4	1.1
Female	8th Grade	3.2	2.8	2.0	1.1
	10th Grade	3.2	2.8	2.0	1.1
	12th Grade	3.2	2.8	2.0	1.1
College Plans					
None or under 4 years	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
Complete 4 years	8th Grade	4.2	3.2	2.4	1.1
	10th Grade	4.2	3.2	2.4	1.1
	12th Grade	4.2	3.2	2.4	1.1
Parental Education					
Any stratum	8th Grade	2.1	1.9	1.5	1.1
	10th Grade	2.1	1.9	1.5	1.1
	12th Grade	2.1	1.9	1.5	1.1
Racial/Ethnic Group					
White	8th Grade	4.2	3.8	2.8	1.2
	10th Grade	4.2	3.8	2.8	1.2
	12th Grade	4.2	3.8	2.8	1.2
African American	8th Grade	1.4	1.4	1.3	1.2
	10th Grade	1.4	1.4	1.3	1.2
	12th Grade	1.4	1.4	1.3	1.2
Hispanic	8th Grade	6.1	3.3	2.3	1.2
	10th Grade	6.1	3.3	2.3	1.2
	12th Grade	6.1	3.3	2.3	1.2

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-1d
Design Effects for 1-Year Trends in Prevalence of Use

		NITRITES, PCP, CRACK COCAINE, HEROIN (INCLUDING HEROIN WITH AND WITHOUT A NEEDLE), METHAMPHETAMINE, CRYSTAL METHAMPHETAMINE (ICE), METHAQUALONE, OVER-THE-COUNTER COUGH/COLD MEDICINES, ROHYPNOL, GHB, KETAMINE, STEROIDS, SALVIA, PROVIGIL, TOBACCO USING A HOOKAH, SMALL CIGARS, AND DISSOLVABLE TOBACCO PRODUCTS			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	1.9	1.3	1.3	1.1
	10th Grade	1.9	1.3	1.3	1.1
	12th Grade	1.9	1.3	1.3	1.1
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
Female	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
College Plans					
None or under 4 years	8th Grade	1.4	1.4	1.4	1.1
	10th Grade	1.4	1.4	1.4	1.1
	12th Grade	1.4	1.4	1.4	1.1
Complete 4 years	8th Grade	1.5	1.3	1.1	1.1
	10th Grade	1.5	1.3	1.1	1.1
	12th Grade	1.5	1.3	1.1	1.1
Parental Education					
Any stratum	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
Racial/Ethnic Group					
White	8th Grade	1.6	1.5	1.4	1.2
	10th Grade	1.6	1.5	1.4	1.2
	12th Grade	1.6	1.5	1.4	1.2
African American	8th Grade	1.8	1.8	1.8	1.2
	10th Grade	1.8	1.8	1.8	1.2
	12th Grade	1.8	1.8	1.8	1.2
Hispanic	8th Grade	2.0	1.6	1.5	1.2
	10th Grade	2.0	1.6	1.5	1.2
	12th Grade	2.0	1.6	1.5	1.2

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-1e
Design Effects for 1-Year Trends in Prevalence of Use

		HALLUCINOGENS OTHER THAN LSD, ECSTASY (MDMA), NARCOTICS OTHER THAN HEROIN, OXYCONTIN, RITALIN, SEDATIVES (BARBITURATES), TRANQUILIZERS, FLAVORED ALCOHOLIC BEVERAGES, ALCOHOLIC BEVERAGE WITH CAFFEINE OR ENERGY DRINK, BIDIS, KRETEKS, ANDROSTENEDIONE, CREATINE, ADDERALL, SYNTHETIC MARIJUANA, SNUS, AND PRESCRIPTION DRUGS			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	2.4	2.2	1.5	1.1
	10th Grade	2.4	2.2	1.5	1.1
	12th Grade	2.4	2.2	1.5	1.1
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.1	2.1	1.6	1.1
	10th Grade	2.1	2.1	1.6	1.1
	12th Grade	2.1	2.1	1.6	1.1
Female	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
College Plans					
None or under 4 years	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Complete 4 years	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Parental Education					
Any stratum	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Racial/Ethnic Group					
White	8th Grade	2.5	2.5	1.9	1.2
	10th Grade	2.5	2.5	1.9	1.2
	12th Grade	2.5	2.5	1.9	1.2
African American	8th Grade	1.5	1.5	1.4	1.2
	10th Grade	1.5	1.5	1.4	1.2
	12th Grade	1.5	1.5	1.4	1.2
Hispanic	8th Grade	1.6	1.4	1.3	1.2
	10th Grade	1.6	1.4	1.3	1.2
	12th Grade	1.6	1.4	1.3	1.2

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-1f
Design Effects for 1-Year Trends in Prevalence of Use

		INHALANTS, VICODIN, AND AMPHETAMINES (UNADJUSTED AND ADJUSTED)			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	3.5	3.0	2.1	1.1
	10th Grade	3.5	3.0	2.1	1.1
	12th Grade	3.5	3.0	2.1	1.1
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.7	2.4	1.9	1.1
	10th Grade	2.7	2.4	1.9	1.1
	12th Grade	2.7	2.4	1.9	1.1
Female	8th Grade	2.7	2.7	1.9	1.1
	10th Grade	2.7	2.7	1.9	1.1
	12th Grade	2.7	2.7	1.9	1.1
College Plans					
None or under 4 years	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
Complete 4 years	8th Grade	3.0	2.7	2.0	1.1
	10th Grade	3.0	2.7	2.0	1.1
	12th Grade	3.0	2.7	2.0	1.1
Parental Education					
Any stratum	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
Racial/Ethnic Group					
White	8th Grade	3.3	3.2	1.8	1.2
	10th Grade	3.3	3.2	1.8	1.2
	12th Grade	3.3	3.2	1.8	1.2
African American	8th Grade	3.6	2.4	1.8	1.2
	10th Grade	3.6	2.4	1.8	1.2
	12th Grade	3.6	2.4	1.8	1.2
Hispanic	8th Grade	2.6	2.3	1.5	1.2
	10th Grade	2.6	2.3	1.5	1.2
	12th Grade	2.6	2.3	1.5	1.2

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-1g
Design Effects for 1-Year Trends in Prevalence of Use

		ALCOHOL AND BEEN DRUNK [a]		CIGARETTES AND SMOKELESS TOBACCO	
		Lifetime, Last 12 Months, Last 30 Days, 5+/2 Weeks	Daily	Lifetime, Last 30 Days, Daily	Half Pack or More per Day
SEGREGATED GROUPS					
Total Sample [b]					
	8th Grade	3.7	1.3	3.8	3.0
	10th Grade	3.7	1.3	3.8	3.0
	12th Grade	3.7	1.3	3.8	3.0
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.4	1.3	2.3	2.0
	10th Grade	2.4	1.3	2.3	2.0
	12th Grade	2.4	1.3	2.3	2.0
Female	8th Grade	3.1	1.3	3.6	2.6
	10th Grade	3.1	1.3	3.6	2.6
	12th Grade	3.1	1.3	3.6	2.6
College Plans					
None or under 4 years	8th Grade	2.1	1.3	2.0	2.0
	10th Grade	2.1	1.3	2.0	2.0
	12th Grade	2.1	1.3	2.0	2.0
Complete 4 years	8th Grade	3.2	1.3	3.2	2.3
	10th Grade	3.2	1.3	3.2	2.3
	12th Grade	3.2	1.3	3.2	2.3
Parental Education					
Any stratum	8th Grade	2.0	1.3	2.1	1.9
	10th Grade	2.0	1.3	2.1	1.9
	12th Grade	2.0	1.3	2.1	1.9
Racial/Ethnic Group					
White	8th Grade	3.6	1.4	3.7	2.6
	10th Grade	3.6	1.4	3.7	2.6
	12th Grade	3.6	1.4	3.7	2.6
African American	8th Grade	4.5	1.4	2.4	1.4
	10th Grade	4.5	1.4	2.4	1.4
	12th Grade	4.5	1.4	2.4	1.4
Hispanic	8th Grade	3.0	1.4	2.7	1.9
	10th Grade	3.0	1.4	2.7	1.9
	12th Grade	3.0	1.4	2.7	1.9

Source. The Monitoring the Future study, the University of Michigan.

[a]See Table C-1e for flavored alcoholic beverages.

[b]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-2a
Design Effects for (a) Prevalence of Use or (b) a Change in Prevalence of Use Across Nonadjacent Years

		ANY ILLICIT DRUG OTHER THAN MARIJUANA			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	5.6	4.6	3.3	1.3
	10th Grade	6.2	5.0	3.4	1.4
	12th Grade	7.2	6.4	4.6	2.0
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	3.6	3.2	2.6	1.4
	10th Grade	4.1	3.5	3.0	1.4
	12th Grade	4.4	3.7	3.0	2.0
Female	8th Grade	4.2	3.7	2.4	1.3
	10th Grade	4.5	3.9	2.6	1.2
	12th Grade	4.9	4.6	3.6	1.9
College Plans					
None or under 4 years	8th Grade	2.3	2.2	1.8	1.3
	10th Grade	2.7	2.5	2.2	1.5
	12th Grade	2.4	2.3	1.9	1.6
Complete 4 years	8th Grade	4.8	3.6	2.8	1.4
	10th Grade	5.9	4.5	3.2	1.2
	12th Grade	6.4	5.3	4.0	2.1
Parental Education					
Any stratum	8th Grade	2.4	2.2	1.8	1.2
	10th Grade	2.6	2.3	2.0	1.3
	12th Grade	2.9	2.6	2.0	1.5
Racial/Ethnic Group					
White	8th Grade	5.0	4.8	3.6	1.8
	10th Grade	6.1	5.3	3.8	1.9
	12th Grade	5.2	5.0	3.7	2.5
African American	8th Grade	3.3	2.5	1.8	1.5
	10th Grade	3.8	3.3	2.4	1.6
	12th Grade	4.6	4.1	3.8	2.0
Hispanic	8th Grade	4.7	3.4	2.5	1.8
	10th Grade	5.7	3.6	2.3	1.6
	12th Grade	5.0	4.0	3.0	2.0

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-2b
Design Effects for (a) Prevalence of Use or (b) a Change in Prevalence of Use Across Nonadjacent Years

		ANY ILLICIT DRUG, ANY ILLICIT DRUG INCLUDING INHALANTS, AND MARIJUANA			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	5.8	4.8	4.3	1.6
	10th Grade	7.5	6.2	4.7	1.7
	12th Grade	10.7	10.2	8.1	3.6
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	3.0	3.0	3.0	1.8
	10th Grade	4.6	4.0	4.0	1.7
	12th Grade	5.4	4.6	4.0	3.5
Female	8th Grade	4.6	4.0	2.9	1.4
	10th Grade	5.7	4.6	3.5	1.1
	12th Grade	6.8	6.7	6.5	3.3
College Plans					
None or under 4 years	8th Grade	2.7	2.7	2.2	1.5
	10th Grade	3.7	3.7	3.4	2.2
	12th Grade	3.0	3.0	2.5	2.5
Complete 4 years	8th Grade	4.5	3.0	3.0	1.7
	10th Grade	7.6	5.7	4.3	1.1
	12th Grade	9.3	8.0	6.6	3.9
Parental Education					
Any stratum	8th Grade	2.5	2.4	2.0	1.2
	10th Grade	3.1	2.8	2.6	1.6
	12th Grade	4.0	3.6	2.8	2.0
Racial/Ethnic Group					
White	8th Grade	5.6	5.5	5.1	2.4
	10th Grade	9.0	7.3	5.6	2.6
	12th Grade	6.3	6.3	5.3	4.6
African American	8th Grade	3.8	2.6	1.6	1.4
	10th Grade	5.0	5.0	3.3	1.9
	12th Grade	7.5	7.5	7.5	3.1
Hispanic	8th Grade	3.3	3.3	2.6	2.5
	10th Grade	6.1	3.8	2.0	1.9
	12th Grade	5.0	4.8	4.0	3.0

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-2c
Design Effects for (a) Prevalence of Use or (b) a Change in Prevalence of Use Across Nonadjacent Years

		HALLUCINOGENS (UNADJUSTED AND ADJUSTED), LSD, COCAINE, AND OTHER COCAINE			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	6.2	4.9	3.2	1.2
	10th Grade	6.2	4.9	3.2	1.2
	12th Grade	6.2	4.9	3.2	1.2
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	4.3	3.7	2.9	1.2
	10th Grade	4.3	3.7	2.9	1.2
	12th Grade	4.3	3.7	2.9	1.2
Female	8th Grade	4.4	3.6	2.2	1.2
	10th Grade	4.4	3.6	2.2	1.2
	12th Grade	4.4	3.6	2.2	1.2
College Plans					
None or under 4 years	8th Grade	2.2	2.0	1.6	1.2
	10th Grade	2.2	2.0	1.6	1.2
	12th Grade	2.2	2.0	1.6	1.2
Complete 4 years	8th Grade	6.0	4.4	3.0	1.2
	10th Grade	6.0	4.4	3.0	1.2
	12th Grade	6.0	4.4	3.0	1.2
Parental Education					
Any stratum	8th Grade	2.4	2.1	1.7	1.2
	10th Grade	2.4	2.1	1.7	1.2
	12th Grade	2.4	2.1	1.7	1.2
Racial/Ethnic Group					
White	8th Grade	5.3	4.8	3.5	1.5
	10th Grade	5.3	4.8	3.5	1.5
	12th Grade	5.3	4.8	3.5	1.5
African American	8th Grade	1.8	1.8	1.6	1.5
	10th Grade	1.8	1.8	1.6	1.5
	12th Grade	1.8	1.8	1.6	1.5
Hispanic	8th Grade	7.6	4.1	2.9	1.5
	10th Grade	7.6	4.1	2.9	1.5
	12th Grade	7.6	4.1	2.9	1.5

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-2d
Design Effects for (a) Prevalence of Use or (b) a Change in Prevalence of Use Across Nonadjacent Years

		NITRITES, PCP, CRACK COCAINE, HEROIN (INCLUDING HEROIN WITH AND WITHOUT A NEEDLE), METHAMPHETAMINE, CRYSTAL METHAMPHETAMINE (ICE), METHAQUALONE, OVER-THE-COUNTER COUGH/COLD MEDICINES, ROHYPNOL, GHB, KETAMINE, STEROIDS, SALVIA, PROVIGIL, TOBACCO USING A HOOKAH, SMALL CIGARS, AND DISSOLVABLE TOBACCO PRODUCTS			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	2.0	1.5	1.5	1.2
	10th Grade	2.0	1.5	1.5	1.2
	12th Grade	2.0	1.5	1.5	1.2
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	1.4	1.4	1.4	1.2
	10th Grade	1.4	1.4	1.4	1.2
	12th Grade	1.4	1.4	1.4	1.2
Female	8th Grade	2.1	1.7	1.5	1.2
	10th Grade	2.1	1.7	1.5	1.2
	12th Grade	2.1	1.7	1.5	1.2
College Plans					
None or under 4 years	8th Grade	1.6	1.6	1.6	1.2
	10th Grade	1.6	1.6	1.6	1.2
	12th Grade	1.6	1.6	1.6	1.2
Complete 4 years	8th Grade	1.7	1.4	1.2	1.2
	10th Grade	1.7	1.4	1.2	1.2
	12th Grade	1.7	1.4	1.2	1.2
Parental Education					
Any stratum	8th Grade	1.4	1.4	1.4	1.2
	10th Grade	1.4	1.4	1.4	1.2
	12th Grade	1.4	1.4	1.4	1.2
Racial/Ethnic Group					
White	8th Grade	2.0	1.9	1.8	1.5
	10th Grade	2.0	1.9	1.8	1.5
	12th Grade	2.0	1.9	1.8	1.5
African American	8th Grade	2.3	2.3	2.3	1.5
	10th Grade	2.3	2.3	2.3	1.5
	12th Grade	2.3	2.3	2.3	1.5
Hispanic	8th Grade	2.5	2.0	1.9	1.5
	10th Grade	2.5	2.0	1.9	1.5
	12th Grade	2.5	2.0	1.9	1.5

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-2e
Design Effects for (a) Prevalence of Use or (b) a Change in Prevalence of Use Across Nonadjacent Years

		HALLUCINOGENS OTHER THAN LSD, ECSTASY (MDMA), NARCOTICS OTHER THAN HEROIN, OXYCONTIN, RITALIN, SEDATIVES (BARBITURATES), TRANQUILIZERS, FLAVORED ALCOHOLIC BEVERAGES, ALCOHOLIC BEVERAGE WITH CAFFEINE OR ENERGY DRINK, BIDIS, KRETEKS, ANDROSTENEDIONE, CREATINE, ADDERALL, SYNTHETIC MARIJUANA, SNUS, AND PRESCRIPTION DRUGS			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	2.9	2.6	1.7	1.2
	10th Grade	2.9	2.6	1.7	1.2
	12th Grade	2.9	2.6	1.7	1.2
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.4	2.4	1.9	1.2
	10th Grade	2.4	2.4	1.9	1.2
	12th Grade	2.4	2.4	1.9	1.2
Female	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
College Plans					
None or under 4 years	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
Complete 4 years	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
Parental Education					
Any stratum	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
Racial/Ethnic Group					
White	8th Grade	3.1	3.1	2.4	1.5
	10th Grade	3.1	3.1	2.4	1.5
	12th Grade	3.1	3.1	2.4	1.5
African American	8th Grade	1.9	1.9	1.8	1.5
	10th Grade	1.9	1.9	1.8	1.5
	12th Grade	1.9	1.9	1.8	1.5
Hispanic	8th Grade	2.0	1.8	1.6	1.5
	10th Grade	2.0	1.8	1.6	1.5
	12th Grade	2.0	1.8	1.6	1.5

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-2f
Design Effects for (a) Prevalence of Use or (b) a Change in Prevalence of Use Across Nonadjacent Years

		INHALANTS, VICODIN, AND AMPHETAMINES (UNADJUSTED AND ADJUSTED)			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	4.8	4.0	2.4	1.2
	10th Grade	4.8	4.0	2.4	1.2
	12th Grade	4.8	4.0	2.4	1.2
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	3.4	2.9	2.0	1.2
	10th Grade	3.4	2.9	2.0	1.2
	12th Grade	3.4	2.9	2.0	1.2
Female	8th Grade	3.5	3.4	2.1	1.2
	10th Grade	3.5	3.4	2.1	1.2
	12th Grade	3.5	3.4	2.1	1.2
College Plans					
None or under 4 years	8th Grade	2.1	1.8	1.5	1.2
	10th Grade	2.1	1.8	1.5	1.2
	12th Grade	2.1	1.8	1.5	1.2
Complete 4 years	8th Grade	4.0	3.5	2.3	1.2
	10th Grade	4.0	3.5	2.3	1.2
	12th Grade	4.0	3.5	2.3	1.2
Parental Education					
Any stratum	8th Grade	2.3	2.1	1.6	1.2
	10th Grade	2.3	2.1	1.6	1.2
	12th Grade	2.3	2.1	1.6	1.2
Racial/Ethnic Group					
White	8th Grade	4.1	4.0	2.3	1.5
	10th Grade	4.1	4.0	2.3	1.5
	12th Grade	4.1	4.0	2.3	1.5
African American	8th Grade	4.5	3.0	2.3	1.5
	10th Grade	4.5	3.0	2.3	1.5
	12th Grade	4.5	3.0	2.3	1.5
Hispanic	8th Grade	3.3	2.9	1.9	1.5
	10th Grade	3.3	2.9	1.9	1.5
	12th Grade	3.3	2.9	1.9	1.5

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-2g
Design Effects for (a) Prevalence of Use or (b) a Change in Prevalence of Use Across Nonadjacent Years

		ALCOHOL AND BEEN DRUNK [a]		CIGARETTES AND SMOKELESS TOBACCO	
		Lifetime, Last 12 Months, Last 30 Days, 5+/2 Weeks	Daily	Lifetime, Last 30 Days, Daily	Half Pack or More per Day
SEGREGATED GROUPS					
Total Sample [b]					
	8th Grade	5.2	1.4	5.4	3.9
	10th Grade	5.2	1.4	5.4	3.9
	12th Grade	5.2	1.4	5.4	3.9
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.9	1.4	2.8	2.2
	10th Grade	2.9	1.4	2.8	2.2
	12th Grade	2.9	1.4	2.8	2.2
Female	8th Grade	4.2	1.4	5.1	3.3
	10th Grade	4.2	1.4	5.1	3.3
	12th Grade	4.2	1.4	5.1	3.3
College Plans					
None or under 4 years	8th Grade	2.5	1.4	2.3	2.2
	10th Grade	2.5	1.4	2.3	2.2
	12th Grade	2.5	1.4	2.3	2.2
Complete 4 years	8th Grade	4.3	1.4	4.3	2.7
	10th Grade	4.3	1.4	4.3	2.7
	12th Grade	4.3	1.4	4.3	2.7
Parental Education					
Any stratum	8th Grade	2.3	1.4	2.4	2.0
	10th Grade	2.3	1.4	2.4	2.0
	12th Grade	2.3	1.4	2.4	2.0
Racial/Ethnic Group					
White	8th Grade	4.5	1.8	4.6	3.3
	10th Grade	4.5	1.8	4.6	3.3
	12th Grade	4.5	1.8	4.6	3.3
African American	8th Grade	5.6	1.8	3.0	1.8
	10th Grade	5.6	1.8	3.0	1.8
	12th Grade	5.6	1.8	3.0	1.8
Hispanic	8th Grade	3.8	1.8	3.4	2.4
	10th Grade	3.8	1.8	3.4	2.4
	12th Grade	3.8	1.8	3.4	2.4

Source. The Monitoring the Future study, the University of Michigan.

[a]See Table C-2e for flavored alcoholic beverages.

[b]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-3a
Design Effects for Subgroup Comparisons within Any Single Year

		ANY ILLICIT DRUG OTHER THAN MARIJUANA			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	5.6	4.6	3.3	1.3
	10th Grade	6.2	5.0	3.4	1.4
	12th Grade	7.2	6.4	4.6	2.0
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.8	2.5	2.2	1.3
	10th Grade	3.1	2.7	2.4	1.2
	12th Grade	3.2	2.9	2.4	1.7
Female	8th Grade	3.1	2.8	2.1	1.2
	10th Grade	3.3	2.9	2.2	1.1
	12th Grade	3.5	3.3	2.8	1.6
College Plans					
None or under 4 years	8th Grade	2.0	1.9	1.6	1.2
	10th Grade	2.2	2.1	1.8	1.4
	12th Grade	2.1	1.9	1.6	1.5
Complete 4 years	8th Grade	3.5	2.8	2.3	1.2
	10th Grade	4.1	3.3	2.5	1.1
	12th Grade	4.4	3.8	3.0	1.7
Parental Education					
Any stratum	8th Grade	2.1	2.0	1.6	1.1
	10th Grade	2.2	2.0	1.7	1.2
	12th Grade	2.4	2.2	1.7	1.4
Racial/Ethnic Group					
White	8th Grade	3.6	3.4	2.8	1.8
	10th Grade	4.2	3.8	2.9	1.9
	12th Grade	3.7	3.6	2.8	2.2
African American	8th Grade	2.6	2.5	1.8	1.5
	10th Grade	2.9	2.6	2.4	1.6
	12th Grade	3.4	3.1	2.9	2.0
Hispanic	8th Grade	3.4	2.7	2.5	1.8
	10th Grade	4.0	2.8	2.3	1.6
	12th Grade	5.7	4.9	2.9	2.4

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-3b
Design Effects for Subgroup Comparisons within Any Single Year

		ANY ILLICIT DRUG, ANY ILLICIT DRUG INCLUDING INHALANTS, AND MARIJUANA			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	5.8	4.8	4.3	1.6
	10th Grade	7.5	6.2	4.7	1.7
	12th Grade	10.7	10.2	8.1	3.6
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.4	2.4	2.4	1.5
	10th Grade	3.4	3.0	3.0	1.5
	12th Grade	3.8	3.4	3.0	2.7
Female	8th Grade	3.4	3.0	2.4	1.3
	10th Grade	4.0	3.4	2.7	1.1
	12th Grade	4.6	4.6	4.5	2.6
College Plans					
None or under 4 years	8th Grade	2.3	2.3	2.0	1.3
	10th Grade	2.8	2.8	2.7	2.0
	12th Grade	2.4	2.4	2.1	2.1
Complete 4 years	8th Grade	3.3	2.4	2.4	1.5
	10th Grade	5.1	4.0	3.2	1.1
	12th Grade	6.1	5.3	4.5	3.0
Parental Education					
Any stratum	8th Grade	2.1	2.1	1.9	1.1
	10th Grade	2.5	2.3	2.2	1.4
	12th Grade	3.0	2.8	2.3	1.9
Racial/Ethnic Group					
White	8th Grade	4.0	3.9	3.7	2.1
	10th Grade	5.9	4.9	4.0	2.2
	12th Grade	4.3	4.3	3.7	3.4
African American	8th Grade	2.9	2.2	1.6	1.4
	10th Grade	3.6	3.6	2.6	1.9
	12th Grade	5.0	5.0	5.0	2.5
Hispanic	8th Grade	2.6	2.6	2.2	2.1
	10th Grade	4.2	2.9	2.0	1.9
	12th Grade	9.4	9.2	4.5	3.2

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-3c
Design Effects for Subgroup Comparisons within Any Single Year

		HALLUCINOGENS (UNADJUSTED AND ADJUSTED), LSD, COCAINE, AND OTHER COCAINE			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	6.2	4.9	3.2	1.2
	10th Grade	6.2	4.9	3.2	1.2
	12th Grade	6.2	4.9	3.2	1.2
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	3.2	2.8	2.4	1.1
	10th Grade	3.2	2.8	2.4	1.1
	12th Grade	3.2	2.8	2.4	1.1
Female	8th Grade	3.2	2.8	2.0	1.1
	10th Grade	3.2	2.8	2.0	1.1
	12th Grade	3.2	2.8	2.0	1.1
College Plans					
None or under 4 years	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
Complete 4 years	8th Grade	4.2	3.2	2.4	1.1
	10th Grade	4.2	3.2	2.4	1.1
	12th Grade	4.2	3.2	2.4	1.1
Parental Education					
Any stratum	8th Grade	2.1	1.9	1.5	1.1
	10th Grade	2.1	1.9	1.5	1.1
	12th Grade	2.1	1.9	1.5	1.1
Racial/Ethnic Group					
White	8th Grade	3.7	3.4	2.7	1.5
	10th Grade	3.7	3.4	2.7	1.5
	12th Grade	3.7	3.4	2.7	1.5
African American	8th Grade	1.8	1.8	1.6	1.5
	10th Grade	1.8	1.8	1.6	1.5
	12th Grade	1.8	1.8	1.6	1.5
Hispanic	8th Grade	5.1	3.1	2.4	1.5
	10th Grade	5.1	3.1	2.4	1.5
	12th Grade	5.1	3.1	2.4	1.5

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-3d
Design Effects for Subgroup Comparisons within Any Single Year

		NITRITES, PCP, CRACK COCAINE, HEROIN (INCLUDING HEROIN WITH AND WITHOUT A NEEDLE), METHAMPHETAMINE, CRYSTAL METHAMPHETAMINE (ICE), METHAQUALONE, OVER-THE-COUNTER COUGH/COLD MEDICINES, ROHYPNOL, GHB, KETAMINE, STEROIDS, SALVIA, PROVIGIL, TOBACCO USING A HOOKAH, SMALL CIGARS, AND DISSOLVABLE TOBACCO PRODUCTS			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	2.0	1.5	1.5	1.2
	10th Grade	2.0	1.5	1.5	1.2
	12th Grade	2.0	1.5	1.5	1.2
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
Female	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
College Plans					
None or under 4 years	8th Grade	1.4	1.4	1.4	1.1
	10th Grade	1.4	1.4	1.4	1.1
	12th Grade	1.4	1.4	1.4	1.1
Complete 4 years	8th Grade	1.5	1.3	1.1	1.1
	10th Grade	1.5	1.3	1.1	1.1
	12th Grade	1.5	1.3	1.1	1.1
Parental Education					
Any stratum	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
Racial/Ethnic Group					
White	8th Grade	2.0	1.9	1.8	1.5
	10th Grade	2.0	1.9	1.8	1.5
	12th Grade	2.0	1.9	1.8	1.5
African American	8th Grade	2.0	2.0	2.0	1.5
	10th Grade	2.0	2.0	2.0	1.5
	12th Grade	2.0	2.0	2.0	1.5
Hispanic	8th Grade	2.1	2.0	1.9	1.5
	10th Grade	2.1	2.0	1.9	1.5
	12th Grade	2.1	2.0	1.9	1.5

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-3e
Design Effects for Subgroup Comparisons within Any Single Year

		HALLUCINOGENS OTHER THAN LSD, ECSTASY (MDMA), NARCOTICS OTHER THAN HEROIN, OXYCONTIN, RITALIN, SEDATIVES (BARBITURATES), TRANQUILIZERS, FLAVORED ALCOHOLIC BEVERAGES, ALCOHOLIC BEVERAGE WITH CAFFEINE OR ENERGY DRINK, BIDIS, KRETEKS, ANDROSTENEDIONE, CREATINE, ADDERALL, SYNTHETIC MARIJUANA, SNUS, AND PRESCRIPTION DRUGS			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	2.9	2.6	1.7	1.2
	10th Grade	2.9	2.6	1.7	1.2
	12th Grade	2.9	2.6	1.7	1.2
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.1	2.1	1.6	1.1
	10th Grade	2.1	2.1	1.6	1.1
	12th Grade	2.1	2.1	1.6	1.1
Female	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
College Plans					
None or under 4 years	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Complete 4 years	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Parental Education					
Any stratum	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Racial/Ethnic Group					
White	8th Grade	2.5	2.5	2.1	1.5
	10th Grade	2.5	2.5	2.1	1.5
	12th Grade	2.5	2.5	2.1	1.5
African American	8th Grade	1.9	1.9	1.8	1.5
	10th Grade	1.9	1.9	1.8	1.5
	12th Grade	1.9	1.9	1.8	1.5
Hispanic	8th Grade	2.0	1.8	1.6	1.5
	10th Grade	2.0	1.8	1.6	1.5
	12th Grade	1.2	1.8	1.6	1.5

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-3f
Design Effects for Subgroup Comparisons within Any Single Year

		INHALANTS, VICODIN, AND AMPHETAMINES (UNADJUSTED AND ADJUSTED)			
		Lifetime	Last 12 Months	Last 30 Days	Daily
SEGREGATED GROUPS					
Total Sample [a]					
	8th Grade	4.8	4.0	2.4	1.2
	10th Grade	4.8	4.0	2.4	1.2
	12th Grade	4.8	4.0	2.4	1.2
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.7	2.4	1.9	1.1
	10th Grade	2.7	2.4	1.9	1.1
	12th Grade	2.7	2.4	1.9	1.1
Female	8th Grade	2.7	2.7	1.9	1.1
	10th Grade	2.7	2.7	1.9	1.1
	12th Grade	2.7	2.7	1.9	1.1
College Plans					
None or under 4 years	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
Complete 4 years	8th Grade	3.0	2.7	2.0	1.1
	10th Grade	3.0	2.7	2.0	1.1
	12th Grade	3.0	2.7	2.0	1.1
Parental Education					
Any stratum	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
Racial/Ethnic Group:					
White	8th Grade	3.1	3.0	2.0	1.5
	10th Grade	3.1	3.0	2.0	1.5
	12th Grade	3.1	3.0	2.0	1.5
African American	8th Grade	3.3	2.4	2.0	1.5
	10th Grade	3.3	2.4	2.0	1.5
	12th Grade	3.3	2.4	2.0	1.5
Hispanic	8th Grade	2.6	2.4	1.9	1.5
	10th Grade	2.6	2.4	1.9	1.5
	12th Grade	2.6	2.4	1.9	1.5

Source. The Monitoring the Future study, the University of Michigan.

[a]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

TABLE C-3g
Design Effects for Subgroup Comparisons within Any Single Year

		ALCOHOL AND BEEN DRUNK [a]		CIGARETTES AND SMOKELESS TOBACCO	
		Lifetime, Last 12 Months, Last 30 Days, 5+/2 Weeks	Daily	Lifetime, Last 30 Days, Daily	Half Pack or More per Day
SEGREGATED GROUPS					
Total Sample: [b]					
	8th Grade	5.2	1.4	5.4	3.9
	10th Grade	5.2	1.4	5.4	3.9
	12th Grade	5.2	1.4	5.4	3.9
CROSS-CLASS GROUPS					
Gender					
Male	8th Grade	2.4	1.3	2.3	2.0
	10th Grade	2.4	1.3	2.3	2.0
	12th Grade	2.4	1.3	2.3	2.0
Female	8th Grade	3.1	1.3	3.6	2.6
	10th Grade	3.1	1.3	3.6	2.6
	12th Grade	3.1	1.3	3.6	2.6
College Plans					
None or under 4 years	8th Grade	2.1	1.3	2.0	2.0
	10th Grade	2.1	1.3	2.0	2.0
	12th Grade	2.1	1.3	2.0	2.0
Complete 4 years	8th Grade	3.2	1.3	3.2	2.3
	10th Grade	3.2	1.3	3.2	2.3
	12th Grade	3.2	1.3	3.2	2.3
Parental Education					
Any stratum	8th Grade	2.0	1.3	2.1	1.9
	10th Grade	2.0	1.3	2.1	1.9
	12th Grade	2.0	1.3	2.1	1.9
Racial/Ethnic Group					
White	8th Grade	3.3	1.8	3.4	2.6
	10th Grade	3.3	1.8	3.4	2.6
	12th Grade	3.3	1.8	3.4	2.6
African American	8th Grade	4.0	1.8	2.4	1.8
	10th Grade	4.0	1.8	2.4	1.8
	12th Grade	4.0	1.8	2.4	1.8
Hispanic	8th Grade	2.9	1.8	2.7	2.1
	10th Grade	2.9	1.8	2.7	2.1
	12th Grade	2.9	1.8	2.7	2.1

Source. The Monitoring the Future study, the University of Michigan.

[a]See Table C-3e for flavored alcoholic beverages.

[b]Any region (Northeast, Midwest, South, and West) and any population density stratum (Large MSA, Other MSA, and Non-MSA).

Appendix D

TRENDS BY SUBGROUP: SUPPLEMENTAL TABLES FOR SECONDARY SCHOOL STUDENTS

In previous years, tabular trend data for all major classes of illicit and licit drugs for the population subgroups discussed in this volume (i.e., defined by gender, college plans, region, population density, parental education, and race/ethnicity) were presented in this appendix. This year for the first time we are directing readers to a separate publication (Occasional Paper 79, www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf) that contains not only the tables that were formerly presented here, but also graphic presentations of the data included in each table.[136] We expect that readers will generally find the figures much easier to digest, particularly in examining trends. If the exact numbers that go with the data in the figures are desired, they may be found in the complete set of tables that are contained in the same Occasional Paper.

A few notes about the tables and figures are in order.

Due to the sheer quantity of information such trend tables generate for each prevalence measure (e.g., lifetime, annual, 30-day, daily), we have selected the prevalence periods that seem most useful for understanding subgroup differences. Thus, for most drugs, we include only annual prevalence; rates for different prevalence periods are provided for alcohol, cigarettes, and smokeless tobacco because of their more frequent use.

The subgroups distinguished in these tables are used throughout this volume and defined in appendix B. The reader should note that *two-year moving averages* are given for the three major racial/ethnic groups included in order to reduce random fluctuations in the trends. A footnote in each table describes the procedure. A question about race/ethnicity identification was changed in 2005 in half of the questionnaire forms, allowing respondents to select multiple categories of race/ethnicity rather than just one (see appendix B). In 2006, the remaining questionnaire forms were changed in a like manner. However, we believe that this change has had little or no effect on the results because so few respondents selected more than one of the categories offered.

For nearly all drugs there is one table presenting the subgroup trends for 8th graders, a second table for 10th graders and a third table giving the longer term trends for 12th graders. However, for two of the drugs—sedatives (barbiturates) and narcotics other than heroin—the 8th- and 10th-grade data have been omitted, as they have been throughout the volume, because we are less certain about the validity of the answers provided by those younger students. Specifically, we believe that they often fail to omit nonprescription substances. Usage questions for a few other drugs are simply not asked of 8th and 10th graders; thus only 12th-grade tables are presented.

[136]Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2013). *Demographic subgroup trends for various licit and illicit drugs, 1975–2012* (Monitoring the Future Occasional Paper No. 79). Ann Arbor, MI: Institute for Social Research, The University of Michigan. 452pp. Available at http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ79.pdf.

Sample sizes, provided in Tables D-S1 through D-S3 here and in Occasional Paper 79, should be taken into account when interpreting the importance of any changes observed. The reader should be aware that the numbers provided in those tables assume that all respondents in a given grade were asked about their use of the drug. Some of the drugs were not contained in all questionnaire forms, meaning that the subgroup and total *N*s must be adjusted accordingly. The "Notes" section at the bottom of each table will indicate if only a fraction of the sample received the question. For a few drugs that were included only in one or two forms, the actual *N* will be shown and this deviation will be mentioned in the notes section at the bottom of the table.

As stated above, Occasional Paper No. 79 also includes graphic presentations of the trends presented in the tables for the various demographic subgroups. These figures use color to help distinguish the various subgroups and improve readability. The reader interested in these trends is encouraged first to make use of the figures in the occasional paper. The "List of Figures" which is part of the front matter in the Occasional Paper contains links to all subgroup figures for all drugs. Simply click on the subgroup dimension (e.g., gender or college plans) in which you are interested for any given drug and that page will appear.

TABLE D-S1
Approximate Weighted *N*s by Subgroups in Grade 8

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	16,500	16,100	15,700	15,000	15,300	16,000	15,100
Gender																						
Male	8,600	8,800	8,600	8,300	8,100	8,400	8,600	8,600	7,800	7,900	7,500	7,000	7,600	8,100	8,000	7,800	7,800	7,600	7,100	7,100	7,600	7,200
Female	8,600	9,300	9,200	8,600	8,700	8,800	9,300	8,900	8,400	8,300	8,300	7,600	8,400	8,500	8,400	8,200	7,900	7,600	7,400	7,800	7,900	7,400
College Plans																						
None or under 4 years	2,300	2,400	2,100	2,000	1,900	2,200	1,900	1,800	1,700	1,600	1,600	1,300	1,600	1,600	1,600	1,500	1,300	1,200	1,100	1,200	1,100	980
Complete 4 years	14,600	15,400	15,400	14,700	14,800	14,800	15,800	15,600	14,500	14,500	14,100	13,400	14,500	15,000	14,800	14,600	14,400	14,000	13,500	13,800	14,500	13,700
Region																						
Northeast	3,000	3,700	3,900	3,400	3,100	3,200	3,400	3,300	3,000	2,800	2,900	2,800	3,200	3,200	3,200	2,900	2,400	2,600	2,500	2,500	2,900	2,800
Midwest	5,300	5,300	4,700	4,200	4,300	4,600	4,100	4,300	4,200	4,300	4,000	4,000	4,100	4,000	3,700	3,500	3,600	3,400	3,400	3,700	3,400	3,200
South	6,300	6,200	6,400	6,300	6,600	6,300	7,200	6,600	6,100	6,300	5,900	5,400	6,300	6,300	6,300	6,300	6,400	5,600	5,700	5,600	6,200	5,800
West	2,900	3,400	3,300	3,400	3,500	3,700	3,900	3,900	3,400	3,300	3,400	2,900	2,900	3,500	3,600	3,800	3,700	4,100	3,400	3,500	3,500	3,300
Population Density																						
Large MSA	4,500	5,700	5,500	4,400	5,200	5,200	5,000	4,800	4,800	4,900	4,700	4,500	4,900	5,000	5,400	5,400	5,000	5,100	4,500	4,600	5,400	5,200
Other MSA	8,400	8,300	8,800	8,300	7,800	8,400	9,000	8,800	7,900	7,900	7,500	6,900	7,700	7,900	7,400	7,300	7,800	7,500	7,300	7,500	7,300	6,900
Non-MSA	4,600	4,600	4,000	4,600	4,500	4,200	4,600	4,500	4,000	3,900	4,000	3,700	3,900	4,100	4,000	3,800	3,300	3,100	3,200	3,200	3,300	3,000
Parental Education																						
1.0–2.0 (Low)	1,400	1,700	1,700	1,600	1,500	1,500	1,500	1,300	1,300	1,300	1,300	1,100	1,100	1,200	1,400	1,400	1,400	1,300	1,200	1,400	1,300	1,300
2.5–3.0	4,400	4,600	4,500	4,100	3,900	4,300	4,000	3,900	3,800	3,700	3,400	3,200	3,400	3,400	3,400	3,300	3,100	2,800	2,700	2,800	2,700	2,500
3.5–4.0	4,100	4,300	4,300	4,200	4,000	4,100	4,300	4,100	3,800	3,900	4,000	3,500	3,700	4,000	3,700	3,800	3,700	3,500	3,300	3,400	3,500	3,000
4.5–5.0	4,100	4,100	4,100	3,900	3,900	3,900	4,500	4,500	4,000	3,900	3,900	3,800	4,200	4,300	4,200	4,000	3,900	4,100	3,900	3,800	4,100	3,900
5.5–6.0 (High)	2,200	2,300	2,300	2,200	2,300	2,200	2,600	2,700	2,200	2,200	2,100	2,100	2,400	2,500	2,600	2,300	2,300	2,300	2,100	2,200	2,700	2,600
Race/Ethnicity (2-year average) [a]																						
White	—	21,900	22,000	20,900	19,800	20,200	21,400	21,300	19,800	18,900	18,600	17,600	18,400	20,400	20,500	19,500	18,300	17,300	16,400	16,000	16,700	16,300
African American	—	4,200	4,800	5,500	5,600	5,300	4,700	4,900	5,000	4,800	4,500	4,500	4,400	3,900	3,800	4,000	3,900	4,000	4,100	4,000	3,700	3,500
Hispanic	—	3,400	3,600	4,000	4,000	4,000	4,200	4,100	4,100	4,000	4,100	3,900	3,400	3,200	3,600	4,700	5,400	5,100	4,700	5,000	5,200	5,200

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available. See appendix B for definition of variables in table.

Caution: **The *N*s in this table are based on the entire sample at each grade level. Some drug use questions are asked only in some of the questionnaire forms rather than in all, in which case these *N*s need to be adjusted appropriately. Look under Notes in each table to see if only a fraction of the sample was asked about that drug. If there is no such indication, the entire sample received the question.**

[a] *N*s for each racial subgroup represent the combination of the specified year and the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

TABLE D-S2
Approximate Weighted *N*s by Subgroups in Grade 10

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	16,200	16,100	15,100	15,900	15,200	14,900	15,000
Gender																						
Male	7,200	7,000	7,300	7,700	8,300	7,500	7,400	7,100	6,300	6,800	6,600	6,900	7,500	7,900	7,900	7,900	7,800	7,000	7,600	7,200	7,200	7,200
Female	7,400	7,400	7,800	7,900	8,400	7,800	7,800	7,700	7,000	7,200	7,100	7,100	8,000	8,300	8,000	8,000	7,900	7,700	8,000	7,700	7,400	7,500
College Plans																						
None or under 4 years	2,600	2,400	2,500	2,700	2,500	2,300	2,200	2,200	1,900	1,900	1,900	2,000	2,100	1,900	1,800	1,800	1,800	1,600	1,500	1,600	1,500	1,300
Complete 4 years	11,900	12,000	12,400	12,800	14,200	13,000	13,000	12,500	11,500	12,100	11,900	12,100	13,400	14,300	14,100	14,100	14,000	13,200	14,100	13,400	13,200	13,400
Region																						
Northeast	2,700	3,000	2,900	3,100	3,300	3,100	3,300	3,100	3,000	2,800	2,700	2,600	3,400	3,600	3,500	3,200	3,200	2,800	3,400	3,000	2,600	2,900
Midwest	3,700	3,800	4,800	4,700	4,400	3,900	3,900	3,600	3,100	3,700	4,100	3,700	4,000	4,600	4,500	4,300	3,900	3,600	3,700	3,700	3,800	3,800
South	4,900	5,000	4,900	5,200	6,100	5,600	5,500	5,200	4,700	5,000	5,000	5,100	4,900	4,900	5,000	5,300	5,100	4,800	5,200	5,200	5,100	4,900
West	3,500	3,000	2,700	2,800	3,200	3,000	2,800	3,100	2,800	2,800	2,200	2,900	3,500	3,300	3,200	3,400	3,900	3,900	3,600	3,300	3,400	3,400
Population Density																						
Large MSA	3,400	3,700	3,500	4,100	4,700	4,300	4,300	4,300	3,700	4,000	3,900	4,300	4,900	5,000	4,900	5,100	5,200	4,700	5,200	5,200	4,900	4,700
Other MSA	7,400	7,300	7,600	7,500	8,200	7,500	7,300	7,000	6,700	6,700	6,700	6,800	7,800	7,800	7,600	7,900	7,600	7,300	7,300	6,600	6,600	7,100
Non-MSA	4,000	3,800	4,200	4,200	4,100	3,800	3,900	3,700	3,200	3,600	3,400	3,200	3,100	3,600	3,700	3,200	3,300	3,100	3,400	3,400	3,400	3,200
Parental Education																						
1.0–2.0 (Low)	1,300	1,300	1,300	1,300	1,200	1,100	1,300	1,300	1,100	1,200	1,200	1,300	1,200	1,300	1,100	1,100	1,200	1,300	1,300	1,400	1,200	1,100
2.5–3.0	3,900	3,900	4,100	4,100	4,100	3,600	3,700	3,700	3,200	3,200	3,200	3,300	3,500	3,400	3,200	3,200	3,300	3,000	3,000	3,000	3,000	2,600
3.5–4.0	3,900	3,900	4,100	4,300	4,600	4,300	4,100	4,000	3,600	3,700	3,700	3,700	4,200	4,200	4,100	4,300	4,400	3,800	4,000	3,800	3,900	3,800
4.5–5.0	3,500	3,400	3,500	3,700	4,000	3,900	3,700	3,500	3,300	3,500	3,400	3,500	3,900	4,300	4,400	4,500	4,300	4,000	4,300	3,900	3,800	4,100
5.5–6.0 (High)	1,800	1,700	1,700	1,800	2,300	1,900	1,900	1,800	1,700	1,900	1,800	1,700	2,100	2,400	2,400	2,300	2,100	2,000	2,400	2,200	2,000	2,500
Race/Ethnicity (2-year average) [a]																						
White	—	19,600	20,700	22,000	22,900	22,400	20,900	19,800	18,400	18,200	18,600	18,000	18,500	19,900	20,400	21,100	20,800	18,300	17,900	18,400	17,600	17,600
African American	—	3,900	3,600	3,300	3,300	3,100	3,200	3,600	3,600	3,100	2,800	3,400	4,600	4,600	4,300	3,900	3,400	3,600	3,600	3,400	3,200	3,100
Hispanic	—	2,600	2,700	2,800	2,900	3,000	3,200	3,500	3,200	3,100	3,400	3,600	3,600	3,500	3,500	3,300	3,800	4,500	4,500	4,600	4,500	4,100

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available. See appendix B for definition of variables in table.

Caution: **The *N*s in this table are based on the entire sample at each grade level. Some drug use questions are asked only in some of the questionnaire forms rather than in all, in which case these *N*s need to be adjusted appropriately. Look under Notes in each table to see if only a fraction of the sample was asked about that drug. If there is no such indication, the entire sample received the question.**

[a] *N*s for each racial subgroup represent the combination of the specified year and the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

TABLE D-S3
Approximate Weighted *N*s by Subgroups in Grade 12

(Years cont.)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Total	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200	15,000	15,800	16,300
Gender																			
Male	4,300	6,900	7,100	8,500	7,500	7,500	8,400	8,500	7,800	7,600	7,600	7,100	7,700	7,700	8,000	7,700	7,400	7,400	7,500
Female	5,200	7,000	7,600	9,000	8,000	7,800	8,600	8,600	8,000	7,800	8,000	7,700	8,200	8,200	8,300	7,100	7,200	7,900	8,200
College Plans																			
None or under 4 years	—	6,500	6,700	8,100	6,800	6,300	6,700	7,200	6,300	5,900	5,600	5,100	5,000	4,700	4,800	4,200	4,000	3,700	3,700
Complete 4 years	—	6,800	7,200	8,600	8,000	8,500	9,700	9,200	8,800	8,900	9,300	9,100	10,300	10,600	11,000	10,100	10,300	11,200	11,600
Region																			
Northeast	2,200	3,400	3,700	4,400	3,800	3,600	4,100	4,600	3,900	3,200	3,700	3,600	3,500	3,200	3,200	3,300	2,800	2,800	2,700
Midwest	2,900	4,500	4,600	5,200	4,800	4,700	5,300	5,200	4,600	4,500	4,400	4,300	4,400	4,300	4,500	4,200	4,000	4,400	4,600
South	3,000	4,300	4,600	6,000	4,800	4,800	5,300	5,300	5,200	5,300	4,900	4,700	5,200	5,600	6,100	5,000	5,100	5,600	5,800
West	1,400	2,200	2,200	2,500	2,600	2,700	2,800	2,600	2,600	2,900	3,000	2,600	3,200	3,200	2,900	2,700	3,100	3,000	3,200
Population Density																			
Large MSA	2,100	3,700	4,000	4,600	4,000	3,900	4,500	4,800	4,200	4,100	4,200	3,700	4,200	4,400	4,000	3,800	3,600	3,600	3,700
Other MSA	4,000	5,700	6,200	8,000	6,800	6,700	7,100	7,300	6,800	6,900	6,900	7,000	8,000	7,700	8,800	7,700	7,200	8,200	7,800
Non-MSA	3,400	5,000	4,900	5,500	5,200	5,200	5,900	5,600	5,300	4,900	4,900	4,500	4,100	4,200	3,900	3,700	4,200	4,000	4,800
Parental Education																			
1.0–2.0 (Low)	1,700	2,200	2,600	3,100	2,500	2,300	2,400	2,700	2,200	1,900	1,800	1,800	1,700	1,600	1,700	1,600	1,500	1,400	1,600
2.5–3.0	3,000	4,300	5,400	6,200	5,600	5,300	5,800	5,900	5,500	5,100	5,100	4,600	4,500	4,500	4,600	4,300	4,100	4,100	4,300
3.5–4.0	1,600	2,500	3,200	4,000	3,600	3,600	4,200	4,200	3,900	4,000	4,000	3,800	4,300	4,400	4,500	4,100	4,200	4,600	4,500
4.5–5.0	1,100	1,600	2,200	2,800	2,600	2,700	3,100	2,900	2,800	2,900	3,000	2,900	3,400	3,500	3,500	3,100	3,100	3,400	3,600
5.5–6.0 (High)	440	710	1,100	1,200	1,200	1,300	1,500	1,300	1,200	1,400	1,500	1,500	1,800	1,900	1,700	1,600	1,500	1,700	1,700
Race/Ethnicity (2-year average) [a]																			
White	—	—	23,400	26,500	27,500	25,600	26,300	27,300	26,200	24,700	24,200	23,600	23,800	24,200	24,000	23,400	21,900	21,500	22,000
African American	—	—	3,300	3,700	3,500	3,500	4,000	4,000	3,900	4,000	4,000	3,500	3,200	3,600	3,900	3,500	3,200	3,900	4,200
Hispanic	—	—	890	1,000	940	740	930	1,300	1,300	1,200	1,200	1,500	1,900	2,100	2,400	2,500	2,400	2,600	2,900

(Table continued on next page.)

TABLE D-S3 (cont.)
Approximate Weighted *N*s by Subgroups in Grade 12

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200	14,500	14,000	13,700	14,400	14,100	13,700
Gender:																			
Male	6,900	7,200	6,700	7,100	7,100	6,300	5,800	5,800	5,800	6,600	6,800	6,800	6,600	6,500	6,400	6,300	6,700	6,800	6,600
Female	8,000	7,800	7,100	7,700	7,500	6,700	6,400	6,500	6,600	7,400	7,200	7,300	7,100	7,400	6,900	6,700	7,100	6,700	6,600
College Plans																			
None or under 4 years	3,400	3,300	2,600	3,200	3,100	2,800	2,600	2,500	2,400	2,800	2,800	2,600	2,500	2,400	2,300	2,100	2,100	2,100	2,100
Complete 4 years	11,100	11,200	10,800	11,000	11,100	10,200	9,300	9,600	9,700	11,100	11,000	11,300	11,000	11,300	10,800	10,800	11,300	11,200	10,900
Region																			
Northeast	2,700	2,800	3,000	3,300	2,800	2,500	2,500	2,400	2,500	3,100	3,100	2,900	2,600	2,700	2,400	2,600	2,700	2,400	2,300
Midwest	4,000	4,300	3,800	4,100	3,800	3,600	3,100	3,700	3,300	3,600	3,800	3,600	3,500	3,200	3,500	3,500	3,200	3,400	3,600
South	5,700	5,400	5,100	5,300	5,700	4,900	4,500	4,100	4,300	4,900	5,000	5,200	5,200	5,500	5,000	4,800	5,400	5,100	4,400
West	3,000	2,900	2,400	2,700	2,900	2,600	2,700	2,600	2,800	3,000	2,700	3,000	2,900	3,100	3,100	2,800	3,100	3,200	3,400
Population Density																			
Large MSA	4,300	4,400	3,400	4,100	4,300	3,800	3,800	3,800	4,000	4,600	4,200	4,300	4,700	4,700	3,700	3,900	4,200	4,300	4,300
Other MSA	7,100	7,000	7,000	7,500	7,500	6,200	5,800	5,800	5,900	6,500	6,800	7,000	6,200	6,600	7,100	6,900	7,300	6,900	6,700
Non-MSA	4,000	4,000	3,900	3,800	3,400	3,600	3,200	3,200	3,000	3,500	3,600	3,400	3,300	3,200	3,200	2,900	2,900	2,900	2,700
Parental Education																			
1.0–2.0 (Low)	1,400	1,200	1,100	1,300	1,200	960	860	1,000	980	1,200	1,000	1,100	1,100	1,100	1,200	1,400	1,400	1,200	1,200
2.5–3.0	3,700	3,700	3,300	3,600	3,700	3,200	3,000	2,900	2,800	3,400	3,400	3,200	3,100	3,200	3,000	2,900	3,000	2,800	2,800
3.5–4.0	4,300	4,400	3,800	4,100	4,300	3,900	3,600	3,600	3,800	4,200	4,000	3,900	4,000	4,200	3,900	3,700	4,000	3,900	3,700
4.5–5.0	3,500	3,700	3,500	3,500	3,300	3,200	3,100	3,200	3,100	3,400	3,600	3,600	3,600	3,600	3,500	3,300	3,500	3,600	3,600
5.5–6.0 (High)	1,800	1,800	2,100	2,100	2,000	1,800	1,600	1,600	1,500	1,800	2,000	2,100	1,900	1,800	1,700	1,600	1,600	1,900	1,800
Race/Ethnicity (2-year average) [a]																			
White	21,800	21,600	20,700	19,800	20,200	19,500	17,700	16,200	16,300	17,800	19,600	19,600	18,600	18,200	17,300	16,300	16,400	16,500	16,300
African American	3,600	3,300	3,200	3,600	3,700	3,400	3,300	3,100	2,900	3,000	3,200	3,000	3,000	3,200	3,500	3,100	3,000	3,400	3,200
Hispanic	3,100	2,700	2,600	2,800	3,000	2,500	2,200	2,600	3,100	3,100	2,800	2,900	3,500	3,700	4,000	4,400	4,500	4,000	3,700

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available. See appendix B for definition of variables in table.

Caution: **The *N*s in this table are based on the entire sample at each grade level. Some drug use questions are asked only in some of the questionnaire forms rather than in all, in which case these *N*s need to be adjusted appropriately. Look under Notes in each table to see if only a fraction of the sample was asked about that drug. If there is no such indication, the entire sample received the question.**

[a] *N*s for each racial subgroup represent the combination of the specified year and the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

Appendix E

TRENDS IN SPECIFIC SUBCLASSES OF HALLUCINOGENS, AMPHETAMINES, TRANQUILIZERS, NARCOTIC DRUGS OTHER THAN HEROIN, AND SEDATIVES

In one of the six questionnaire forms administered to 12th graders, respondents who answer that they used ***amphetamines*** in the prior 12 months are then asked a small set of additional questions about that use. One question asks, "What amphetamines have you taken during the last year without a doctor's orders? (Mark all that apply.)" A specified list of amphetamines (i.e., Ritalin, Adderall, Concerta, etc.) is provided, along with an additional category labeled "Other" and one labeled "Don't know the name of some amphetamines I have used."[137]

For each of four other classes of drugs (***hallucinogens other than LSD***, ***tranquilizers***, ***narcotics other than heroin***, and ***sedatives*** [***barbiturates***]) a parallel set of additional questions is asked of those who report using each drug class during the prior 12 months. As with other questions, respondents are asked to check the specific drugs that they used. All of the detailed drug questions are included in the same 12th-grade questionnaire form.

Answers to the detailed questions about the five drug classes are provided here, covering the 36-year interval from 1976 to 2012. Because these questions are contained in only one of the six 12th-grade questionnaire forms (one of five in earlier years), the number of cases on which the estimates are based is lower than for most prevalence estimates in this volume. The relevant numbers of cases are provided in the bottom row of each table; the reader is cautioned that in some years, when annual prevalence is particularly low, the case counts are low.

We provide one other caution to the reader in interpreting the results. For some of the drug classes, the absolute prevalence rates may be underestimates of true rates. This occurs because some users of a particular subclass may not realize that the substance (e.g., peyote) is actually a subclass of the more general class (in this case, hallucinogens other than LSD), even though all the subclasses are listed in the introduction to the question set. Such respondents, therefore, may not indicate use on the general question, which means they would never get to the branching question about using the subclass drug. Thus, they would not be counted among the users.

In the relevant 12th-grade questionnaire form, we go to some length to state both the full list of common street names, as well as the proper names, for the drugs in the general class *before* asking about whether they used the general class of drugs in the prior 12 months. However, because several of the drugs in the subclass lists (PCP, methamphetamine, crystal methamphetamine, Ritalin, OxyContin, and Vicodin) have also been included on a different

[137]The original question lists all subclasses of the general class. For example, the question regarding amphetamine use contains the text, "They include the following drugs: Dexedrine, Ritalin, Adderall, Concerta, Methamphetamine." A list of common street names is also given to help define the drug class for the respondent. In theory, respondents know that they would answer positively about having taken the general class of drug if they used any of the subclasses, even if they did not know in advance that the subclass belonged to the more general class.

questionnaire form in tripwire questions,[138] we have been able to determine that those questions usually yield higher prevalence rates when asked directly than when a branching question precedes them. For example, the 2003 prevalence rates for PCP use among 12th graders shows such a pattern. The 2003 annual prevalence rate for PCP generated by a single question about PCP use asked of all 12th graders was 1.3%, whereas the rate was 0.9% when the drug was treated as a subcategory of hallucinogens other than LSD.[139]

Despite the potential for underestimation of *prevalence* when using branching questions, we still think such questions are helpful for discerning long-term *trends* in use. To stay with the PCP example, both the tripwire questions about PCP use and the branching question that treats PCP as a subcategory of hallucinogens other than LSD have shown very similar trends since 1979, when they were first available for comparison. Both measures showed a substantial decline in PCP use from 1979 through the mid-1980s, followed by a period of stability in use at low levels, then a modest increase in use in the 1990s until 1996, when use leveled. (In 2001 both measures showed some decline.) Thus if we only had the results from the branching question available, we would have obtained quite an accurate picture of the trend story, even though we would have been underestimating the absolute prevalence rate to some degree.

We conclude that the data for the other specific drug classes should also provide a fair approximation of the trend stories. The majority of such prevalence data probably underestimates the true rates, however.

Note on psychotherapeutics: The pharmaceutical products that are part of each of these classes of drugs (except hallucinogens) change over the years. Therefore, the lists of drugs are updated periodically as some drugs fall out of favor and others are introduced.

Note on hallucinogens: In 2001 we changed the question wording in the branching question about use of hallucinogens other than LSD, replacing the older term "psychedelics" with the more current term "hallucinogens." That same year the term "shrooms," a common street name for hallucinogenic mushrooms or psilocybin, was added to the list of examples. We believe that these methodological changes had the effect of increasing the reported prevalence rates; thus, the 2000–2001 change for the various classes of hallucinogens other than LSD in Table E-1 should not be mistaken for a real change in use.

Note on amphetamines: Ritalin has been one of the drugs listed under the general class of amphetamines. It is a medically indicated treatment for attention deficit hyperactivity disorder (ADHD), and the issue of its diversion for other uses received increasing attention in the 1990s. For that reason, we added a separate tripwire question about its use in the 2001 survey. As with PCP, we find that the prevalence reported in response to a stand-alone question tends to be higher than that reported under a branching question. Annual prevalence in 2012 among 12th graders was 2.6% with the new question, compared to 1.9% with the branching question.

[138]A tripwire question is a single non-branching question that, for reasons of questionnaire space economy, asks only about frequency of use in the prior 12 months.

[139]This may be an atypical case; proper classification of PCP is quite ambiguous—it is actually an animal tranquilizer with hallucinogenic effects. We suspected some years ago that students were not categorizing PCP as a hallucinogen other than LSD, even though it was given in the list of examples for that question. That suspicion was what originally led us to ask separate questions about its use.

We believe that the trend results based on the branching question tell a reasonably accurate story about the pattern of change for Ritalin use, despite the difference in the absolute prevalence rate. However, since 2001 we have based our prevalence estimates for Ritalin primarily on the tripwire question.

In 2007, Preludin and Dexamyl (amphetamines with substantially decreased usage rates) were deleted to make room for Adderall and Concerta (which had become increasingly popular).

In 2011, Benzedrine and Methedrine, as well as the street term Bennies, were dropped from the list of examples for the general use of amphetamines question due to their very low usage rates. In the follow-up questions asking about use of specific amphetamines, Benzedrine and Methedrine were deleted from the list of specific drugs.

Note on sedatives (barbiturates): This class of drugs was originally referred to as "barbiturates" because barbiturates tended to predominate among the sedative medications. As more nonbarbiturate sedatives came into common use, we changed all relevant survey questions to refer to "sedatives." There was also a major interruption in the time series; as prevalence of sedative use became consistently low, the sedative use branching questions were dropped after 1989 to make space for other questions. The series was resumed in 2007 because the sedative problem had made a comeback. Some older sedatives (including Nembutal, Luminal, Desbutal, Amytal, and Adrenocal) were dropped from the list of specific drugs and some newer ones (including Ambien, Lunesta, and Sonata) were added.

Note on tranquilizers: In 2001, Xanax was added to the list of tranquilizers. In 2007, the list of drugs in the tranquilizer category was updated. Five seldom-used drugs were dropped (Equanil, meprobamate, Atarax, Tranxene, and Vistaril) and three more commonly used drugs were added (Soma, Ativan, and Klonopin).

Note on narcotics other than heroin: Because there had been considerable public comment on the diversion of OxyContin and Vicodin, in 2002 we added tripwire questions for these drugs in questionnaire forms different from the one containing the branching questions on the use of specific narcotics other than heroin. Once again, the absolute prevalence levels obtained for these drugs turned out to be higher on these stand-alone questions, asked of all respondents on that questionnaire form, than those obtained from the branching questions. In 2012 the annual prevalence of OxyContin was estimated to be 4.3% in the tripwire question versus 3.0% in the branching question, while that of Vicodin was estimated to be 7.5% in the tripwire question versus only 4.3% in the branching question. Note also that another of the narcotic drugs introduced onto the list in 2002, Percocet, has shown an annual prevalence rate similar to that for OxyContin. In 2007, Ultram was added to the list, and Dilaudid was dropped.

TABLE E-1
SPECIFIC HALLUCINOGENS OTHER THAN LSD
Trends in Annual Prevalence of Use for All Seniors [a]

What hallucinogens other than LSD [b] have you taken during the last year?	Percentage of ALL SENIORS using drug indicated in last 12 months																	
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Mescaline	5.1	5.0	5.0	4.1	4.8	3.7	3.5	2.7	3.0	2.3	2.1	1.6	0.8	0.9	0.6	0.6	0.6	0.8
Peyote	1.8	1.4	1.5	1.1	1.1	0.9	0.6	0.6	0.6	0.5	0.4	0.5	0.3	0.4	0.9	0.1	0.5	0.6
Psilocybin (shrooms) [b]	1.7	1.0	1.3	1.0	1.5	1.6	0.9	0.7	0.7	0.6	0.9	0.6	0.9	0.3	0.7	0.3	0.2	0.5
PCP	2.9	3.3	4.5	4.2	3.5	2.2	1.4	1.5	1.2	0.9	0.8	1.0	0.6	0.4	0.8	0.5	0.6	0.7
Concentrated THC	5.6	5.7	5.3	4.6	2.6	2.1	1.5	1.4	0.9	1.1	0.8	1.0	0.7	0.4	0.4	0.4	0.2	0.5
Other	3.3	3.7	3.4	3.9	2.9	2.7	1.9	1.5	1.5	1.3	0.9	0.9	0.7	0.9	0.9	0.6	1.0	0.8
Don't know the names of some I have used	1.2	1.3	1.5	1.6	1.2	1.2	1.1	1.2	0.9	1.0	0.7	0.7	0.5	0.3	0.5	0.4	0.3	0.4
Approximate weighted N =	*2,800*	*3,000*	*3,500*	*3,100*	*3,100*	*3,400*	*3,500*	*3,200*	*3,100*	*3,100*	*3,000*	*3,200*	*3,200*	*2,700*	*2,500*	*2,500*	*2,600*	*2,600*

(Years cont.)

(Table continued on next page.)

TABLE E-1 (cont.)
SPECIFIC HALLUCINOGENS OTHER THAN LSD
Trends in Annual Prevalence of Use for All Seniors [a]

What hallucinogens other than LSD [b] have you taken during the last year?	Percentage of ALL SENIORS using drug indicated in last 12 months																			2011–2012 change
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Mescaline	0.5	1.1	1.2	0.8	1.3	0.9	1.3	0.9	0.8	0.5	0.6	0.7	0.4	0.4	0.4	0.5	0.7	0.6	0.5	-0.1
Peyote	0.6	0.7	0.9	0.8	0.2	0.8	0.2	0.9	0.6	0.6	0.7	0.7	0.6	0.5	0.4	0.4	0.7	0.8	0.5	-0.3
Psilocybin (shrooms) [b]	0.5	0.9	1.4	1.1	1.4	1.2	1.4‡	4.9	4.0	4.6	5.7	4.4	3.6	4.5	3.8	4.3	3.7	3.8	4.4	+0.6
PCP	0.9	1.2	1.1	0.9	0.8	1.1	1.2	0.9	1.0	0.9	1.0	0.7	0.6	0.7	0.5	0.6	1.0	0.7	0.9	+0.2
Concentrated THC	0.4	0.9	1.5	1.2	1.1	1.3	0.9	1.3	0.8	0.9	1.3	0.8	0.9	1.0	1.3	1.2	1.1	1.2	1.5	+0.4
Other	0.7	1.3	1.8	1.9	2.2	1.9	2.4	1.6	1.2	1.6	1.4	1.4	1.2	1.3	1.8	1.2	1.6	1.9	1.1	-0.8 s
Don't know the names of some I have used	0.6	0.8	0.8	1.2	1.2	1.0	0.8	0.9	0.4	0.4	0.7	0.6	0.6	0.4	0.4	0.8	0.8	0.6	0.6	0.0
Approximate weighted N =	*2,500*	*2,500*	*2,300*	*2,500*	*2,500*	*2,200*	*2,100*	*2,100*	*2,100*	*2,400*	*2,400*	*2,400*	*2,300*	*2,400*	*2,300*	*2,300*	*2,300*	*2,300*	*2,200*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' ‡ ' indicates some change in the question. See relevant footnote.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] These are the estimated prevalence-of-use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

[b] In 2001, the question asking about the prevalence of use of specific hallucinogens other than LSD was changed in several ways: (1) the wording of the screening question was changed from psychedelics other than LSD to hallucinogens other than LSD; (2) in the list of examples given in the screening question, psilocybin was expanded to shrooms or psilocybin; and (3) the specific question about psilocybin was expanded to shrooms or psilocybin. The inclusion of the term shrooms elicited a higher reported level of use in response to both the general category and the specific drug psilocybin. This question change likely explains some of the discontinuity in the 2000–2001 results.

TABLE E-2
SPECIFIC AMPHETAMINES
Trends in Annual Prevalence of Use for All Seniors [a]

What amphetamines have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in last 12 months																	
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Benzedrine	3.5	4.1	3.7	3.1	3.2	3.6	2.9	1.6	1.7	1.9	1.4	1.1	0.5	0.7	0.6	0.1	0.2	0.3
Dexedrine	2.9	3.5	3.7	4.0	4.0	5.1	2.8	1.4	1.6	1.2	0.9	0.6	0.4	0.6	0.5	0.3	0.2	0.2
Methedrine	3.4	4.2	3.9	4.7	4.4	5.6	4.7	3.2	3.0	2.9	2.0	1.5	1.2	0.7	0.5	0.3	0.4	0.4
Ritalin	0.5	0.7	0.6	0.4	0.6	0.7	0.5	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.5	0.1	0.1	0.4
Preludin [b]	0.6	1.0	1.1	1.3	1.1	1.7	0.8	0.6	0.5	0.4	0.3	0.1	0.2	0.3	0.1	0.1	0.1	0.1
Dexamyl [b]	1.3	1.5	1.1	1.3	1.3	1.1	1.2	0.6	0.9	0.6	0.8	0.5	0.4	0.3	0.2	0.1	0.2	0.3
Adderall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Concerta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methamphetamine	1.9	2.3	2.3	2.4	2.7	3.7	2.8	1.8	2.1	2.0	1.5	1.3	1.2	0.6	0.6	0.8	0.4	0.6
Crystal methamphetamine (ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	0.8	1.2	1.1	1.1
Other	4.6	5.9	6.5	6.4	6.4	7.6	4.6	4.2	4.3	3.3	3.7	2.6	1.5	2.1	1.6	1.2	1.5	2.0
Don't know the names of some I have used	6.8	7.2	6.8	7.5	8.7	11.1	9.2	8.4	8.1	7.0	5.3	4.4	3.3	2.9	2.9	2.3	1.9	2.2
Approximate weighted N =	*2,700*	*2,900*	*3,400*	*3,100*	*3,000*	*3,400*	*3,400*	*3,200*	*3,100*	*3,100*	*3,000*	*3,200*	*3,200*	*2,700*	*2,500*	*2,500*	*2,600*	*2,600*

(Years cont.)

(Table continued on next page.)

TABLE E-2 (cont.)
SPECIFIC AMPHETAMINES
Trends in Annual Prevalence of Use for All Seniors [a]

What amphetamines have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in last 12 months																			2011–2012 change
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Benzedrine	0.6	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.6	0.2	0.8	0.4	0.2	0.5	0.4	0.4	0.2	—	—	—
Dexedrine	0.5	0.4	0.3	0.9	0.6	0.6	0.6	0.8	1.0	0.7	1.3	0.6	0.3	0.4	0.3	0.2	0.3	0.2	0.5	+0.3
Methedrine	0.5	0.3	0.3	0.5	0.3	0.3	0.3	0.5	0.2	0.2	0.4	0.6	0.2	0.2	0.0	0.1	0.2	—	—	—
Ritalin	1.0	0.8	1.2	2.8	2.8	2.4	2.2	2.4	2.6	2.3	3.9	2.3	2.3	1.7	1.5	1.3	1.5	2.0	1.9	-0.2
Preludin [b]	0.3	0.1	0.5	0.2	0.3	0.2	*	0.2	0.1	0.1	0.2	0.2	0.1	—	—	—	—	—	—	—
Dexamyl [b]	0.5	0.2	0.4	0.3	0.4	0.2	0.2	0.5	0.2	0.1	0.5	0.3	0.3	—	—	—	—	—	—	—
Adderall	—	—	—	—	—	—	—	—	—	—	—	—	—	2.8	3.2	3.3	3.5	5.1	4.0	-1.1
Concerta	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	0.9	0.8	1.0	1.0	0.9	-0.1
Methamphetamine	0.6	0.7	0.7	1.1	1.3	0.9	0.9	1.5	1.3	1.9	1.5	1.5	1.1	1.2	0.5	0.6	0.6	0.4	0.4	+0.1
Crystal methamphetamine (ice)	1.4	1.6	1.5	1.8	2.5	1.8	1.9	2.1	2.1	1.7	2.0	1.2	1.3	1.1	0.4	0.2	0.5	0.4	0.3	-0.1
Other	2.3	2.0	2.3	2.5	3.1	2.6	2.9	2.7	3.2	3.2	3.4	2.5	3.4	1.4	1.5	1.1	0.8	2.0	1.4	-0.6
Don't know the names of some I have used	2.1	2.6	2.3	2.8	3.1	2.5	2.1	2.2	2.3	2.3	2.9	1.7	1.6	1.4	1.2	0.9	1.0	0.7	0.6	-0.1
Approximate weighted N =	*2,500*	*2,500*	*2,300*	*2,500*	*2,500*	*2,200*	*2,100*	*2,000*	*2,100*	*2,400*	*2,400*	*2,400*	*2,300*	*2,400*	*2,300*	*2,300*	*2,300*	*2,300*	*2,200*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' * ' indicates less than 0.05% but greater than 0%.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] These are the estimated prevalence-of-use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

[b] In 2007 for the list of amphetamines, Preludin and Dexamyl were replaced with Adderall and Concerta.

TABLE E-3
SPECIFIC TRANQUILIZERS
Trends in Annual Prevalence of Use for All Seniors [a]

Percentage of ALL SENIORS using drug indicated in last 12 months

(Years cont.)

What tranquilizers have you taken during the last year without a doctor's orders?	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Librium	2.6	2.9	2.4	2.1	1.8	2.0	0.9	1.2	0.5	0.8	0.7	0.7	0.3	0.2	0.2	0.2	0.1	0.1
Valium	5.3	6.9	6.0	5.9	5.3	5.5	3.5	3.2	2.9	3.5	2.8	2.9	2.2	1.7	1.6	1.2	1.6	1.6
Miltown [b]	0.2	0.3	0.1	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	*	0.0
Xanax	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Equanil [c]	0.4	0.4	0.7	0.4	0.4	0.2	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.0	0.1	0.1	*	0.1
Meprobamate [c]	0.6	0.2	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	*	0.1	0.2	*	0.1	0.0
Soma	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Serax	0.2	0.2	0.1	0.2	0.1	0.2	*	0.1	0.2	0.1	0.2	0.1	0.0	0.1	0.2	0.0	0.2	*
Atarax [c]	0.2	0.1	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.2	0.2	0.2	*	*	0.1	0.1	0.1	0.1
Tranxene [c]	0.2	0.3	0.3	0.5	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	*
Vistaril [c]	0.1	0.2	0.4	0.3	0.3	0.3	0.1	0.1	0.2	0.4	0.2	0.1	0.0	*	0.3	0.0	*	*
Ativan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Klonopin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Don't know the names of some I have used	3.0	2.7	2.7	1.9	2.3	1.6	1.3	1.7	1.4	1.7	2.0	1.3	0.9	1.0	1.5	1.1	0.7	1.3
Approximate weighted N =	*2,700*	*2,900*	*3,400*	*3,100*	*3,000*	*3,300*	*3,400*	*3,200*	*3,100*	*3,100*	*3,000*	*3,100*	*3,200*	*2,700*	*2,500*	*2,400*	*2,600*	*2,600*

(Table continued on next page.)

TABLE E-3 (cont.)
SPECIFIC TRANQUILIZERS
Trends in Annual Prevalence of Use for All Seniors [a]

What tranquilizers have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in last 12 months																			2011–2012 change
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Librium	*	0.3	0.3	0.2	0.3	0.4	0.2	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.5	0.2	*	-0.2
Valium	1.6	1.3	1.5	2.0	2.0	2.7	2.6	2.8	2.8	2.8	3.1	3.1	2.3	2.4	1.9	1.9	1.9	1.6	1.1	-0.5
Miltown [b]	0.0	0.0	0.1	*	*	0.2	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—
Xanax	—	—	—	—	—	—	—	1.9	2.6	2.7	2.7	2.3	2.8	3.3	3.3	3.6	3.7	2.8	3.1	+0.3
Equanil [c]	*	*	0.2	0.2	0.1	0.1	0.2	0.1	0.4	*	0.1	*	*	—	—	—	—	—	—	—
Meprobamate [c]	0.1	0.2	0.1	0.3	0.1	0.1	*	0.1	0.1	0.1	0.2	0.1	0.1	—	—	—	—	—	—	—
Soma	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.4	0.7	1.4	0.4	1.0	+0.6 s
Serax	*	*	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	*	0.1	*	*	0.4	0.1	0.2	+0.2
Atarax [c]	0.0	*	*	0.1	0.0	0.1	0.2	0.1	0.1	0.2	0.1	0.3	0.2	—	—	—	—	—	—	—
Tranxene [c]	*	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	*	0.1	0.1	0.1	—	—	—	—	—	—	—
Vistaril [c]	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.3	0.2	0.1	0.2	0.3	—	—	—	—	—	—	—
Ativan	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.4	0.4	0.4	0.5	0.3	-0.2
Klonopin	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	1.3	1.5	1.7	0.8	1.3	+0.5
Other	—	—	—	—	—	—	—	—	1.9	1.4	2.4	1.4	1.4	1.3	1.4	0.8	1.5	0.9	0.5	-0.4
Don't know the names of some I have used	0.9	1.1	1.3	1.5	1.5	1.4	1.4	1.9	1.2	1.0	1.0	1.3	0.9	0.5	0.9	0.3	0.6	0.9	0.4	-0.4
Approximate weighted N =	*2,500*	*2,500*	*2,300*	*2,500*	*2,500*	*2,200*	*2,000*	*2,000*	*2,100*	*2,400*	*2,400*	*2,300*	*2,300*	*2,400*	*2,300*	*2,300*	*2,300*	*2,300*	*2,200*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' * ' indicates less than 0.05% but greater than 0%.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] These are the estimated prevalence-of-use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

[b] In 2001 for the list of tranquilizers, Miltown was replaced with Xanax.

[c] In 2007 for the list of tranquilizers, Equanil, meprobamate, Atarax, Tranxene, and Vistaril were replaced with Soma, Ativan, and Klonopin.

TABLE E-4
SPECIFIC NARCOTICS OTHER THAN HEROIN
Trends in Annual Prevalence of Use for All Seniors [a]

What narcotics other than heroin have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in last 12 months																	
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Methadone	0.6	0.4	0.9	0.9	0.8	0.7	0.4	0.6	0.5	0.5	0.5	0.3	0.1	*	0.5	*	0.3	0.2
Opium	2.7	2.4	2.6	3.0	2.8	2.4	1.6	1.2	1.5	1.4	1.5	1.3	0.9	0.9	0.7	0.8	0.5	0.4
Morphine	0.6	0.8	0.7	0.8	1.0	1.1	0.7	0.8	0.8	0.9	0.7	0.4	0.6	0.2	0.7	0.4	0.4	0.2
Codeine	2.5	2.3	3.0	3.4	3.8	4.2	2.6	2.5	3.3	3.3	3.0	2.5	2.2	1.7	2.2	1.8	2.5	1.7
Demerol	0.7	0.6	1.1	0.9	1.2	1.4	0.9	0.9	0.7	0.9	1.0	0.8	0.7	0.4	0.7	0.5	0.9	0.8
Paregoric [b]	0.4	0.3	0.3	0.2	0.4	0.2	0.1	0.3	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.2	0.0
Talwin [b]	0.1	0.1	0.1	0.2	0.3	0.1	0.3	0.2	0.3	0.1	0.1	0.1	*	*	0.1	0.0	0.0	0.0
Laudanum [b]	0.1	0.0	0.2	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	*	*	0.1	0.0	*	*
OxyContin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vicodin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Percocet	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Percodan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dilaudid [c]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ultram	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	0.5	0.5	1.4	0.8	0.7	0.6	0.5	0.6	0.4	0.6	0.5	0.4	0.4	0.5	0.5	0.2	0.5	0.3
Don't know the names of some I have used	1.1	1.0	0.6	0.9	0.8	0.6	0.7	0.3	0.6	0.6	0.4	0.3	0.5	0.2	0.5	0.3	0.1	0.5
Approximate weighted N =	*2,700*	*2,800*	*3,400*	*3,000*	*3,000*	*3,300*	*3,400*	*3,100*	*3,000*	*3,100*	*2,900*	*3,100*	*3,100*	*2,600*	*2,500*	*2,400*	*2,500*	*2,600*

(Years cont.)

(Table continued on next page.)

TABLE E-4 (cont.)
SPECIFIC NARCOTICS OTHER THAN HEROIN
Trends in Annual Prevalence of Use for All Seniors [a]

What narcotics other than heroin have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in last 12 months																			2011–2012 change
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Methadone	0.1	0.1	*	0.4	0.3	0.8	0.7	0.7	0.9	0.4	0.9	0.8	1.2	0.8	0.9	1.2	0.9	0.7	1.0	+0.3
Opium	0.6	1.0	1.1	1.8	2.0	1.7	2.1	2.1	2.1	2.4	2.2	1.6	1.2	1.0	1.0	1.1	1.0	0.4	0.9	+0.5
Morphine	0.3	0.3	0.6	1.0	1.0	1.2	1.2	1.4	1.5	1.8	2.1	2.1	1.5	1.8	1.9	1.5	1.6	1.4	1.7	+0.3
Codeine	1.6	1.0	2.6	2.5	3.0	3.1	3.7	2.8	4.4	4.1	4.6	4.3	3.4	4.2	3.4	4.0	3.7	3.4	3.5	+0.1
Demerol	0.6	0.4	1.0	1.2	1.1	1.5	0.9	1.2	1.4	0.9	1.3	1.2	1.4	1.0	0.8	0.7	0.7	0.7	0.5	-0.2
Paregoric [b]	*	0.1	*	0.0	0.0	*	0.0	0.1	—	—	—	—	—	—	—	—	—	—	—	—
Talwin [b]	0.1	0.0	0.0	0.0	0.1	*	0.0	0.1	—	—	—	—	—	—	—	—	—	—	—	—
Laudanum [b]	*	0.1	*	0.1	0.0	0.1	0.1	*	—	—	—	—	—	—	—	—	—	—	—	—
OxyContin	—	—	—	—	—	—	—	—	1.6	2.0	2.8	3.2	2.8	3.0	3.7	3.5	3.7	3.2	3.0	-0.2
Vicodin	—	—	—	—	—	—	—	—	4.1	4.1	5.2	4.5	4.2	5.8	5.7	4.6	4.6	4.3	4.3	-0.1
Percocet	—	—	—	—	—	—	—	—	1.9	3.1	2.9	2.5	2.2	3.2	2.9	3.3	2.8	2.5	2.7	+0.3
Percodan	—	—	—	—	—	—	—	—	0.6	0.7	0.6	0.6	0.3	0.5	0.1	0.4	0.3	0.3	0.5	+0.2
Dilaudid [c]	—	—	—	—	—	—	—	—	0.1	0.1	0.3	0.1	0.2	—	—	—	—	—	—	—
Ultram	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.3	0.1	0.5	0.3	0.4	+0.2
Other	0.6	0.3	0.7	0.6	1.2	1.6	1.4	0.9	1.6	1.8	1.7	1.6	2.0	1.5	1.5	0.7	1.4	1.4	1.5	+0.1
Don't know the names of some I have used	0.4	0.3	0.4	0.5	0.8	0.6	0.6	0.5	0.7	0.4	0.5	0.4	1.1	0.7	0.8	0.6	0.9	0.3	0.4	+0.1
Approximate weighted N =	*2,500*	*2,400*	*2,300*	*2,400*	*2,400*	*2,200*	*2,000*	*2,000*	*2,100*	*2,400*	*2,300*	*2,300*	*2,300*	*2,400*	*2,300*	*2,300*	*2,200*	*2,200*	*2,100*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' * ' indicates less than 0.05% but greater than 0%.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a] These are the estimated prevalence-of-use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

[b] In 2002 for the list of narcotics other than heroin, paregoric, Talwin, and laudanum were replaced with OxyContin, Vicodin, Percocet, Percodan, and Dilaudid.

[c] In 2007 for the list of narcotics other than heroin, Dilaudid was replaced with Ultram.

TABLE E-5
SPECIFIC SEDATIVES
Trends in Annual Prevalence of Use for All Seniors [a,b]

What sedatives have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in last 12 months																	
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Phenobarbital	2.7	2.4	2.2	1.8	1.6	1.8	1.2	1.0	0.8	1.0	0.7	0.6	0.3	0.2	—	—	—	—
Seconal	3.2	2.9	2.4	2.0	1.1	1.3	1.3	0.8	0.7	0.8	0.5	0.4	0.3	0.0	—	—	—	—
Tuinal	1.8	1.7	0.8	1.3	0.9	0.9	0.4	0.4	0.4	0.3	0.5	0.2	0.2	*	—	—	—	—
Nembutal	0.9	1.0	0.9	0.8	0.7	0.7	0.5	0.3	0.2	0.4	0.4	0.3	0.1	0.1	—	—	—	—
Luminal	0.6	0.9	0.7	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.2	0.2	0.2	0.2	—	—	—	—
Desbutal	0.2	0.3	0.5	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.1	—	—	—	—
Amytal	0.6	0.8	0.5	0.3	0.4	0.5	0.4	0.4	0.2	0.4	0.4	0.2	0.3	0.1	—	—	—	—
Adrenocal	0.3	0.3	0.4	0.2	0.3	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	—	—	—	—
Ambien	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lunesta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sonata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	3.2	3.2	3.5	2.7	2.2	2.2	1.5	1.5	1.0	1.2	1.2	0.8	0.7	0.7	—	—	—	—
Don't know the names of some I have used	3.8	3.0	3.1	2.8	2.3	2.3	2.4	2.2	2.2	1.9	1.5	1.5	1.1	0.8	—	—	—	—
Approximate weighted N =	*2,700*	*2,900*	*3,400*	*3,100*	*3,000*	*3,300*	*3,400*	*3,200*	*3,100*	*3,100*	*3,000*	*3,100*	*3,100*	*2,700*	—	—	—	—

(Years cont.)

(Table continued on next page.)

TABLE E-5 (cont.)
SPECIFIC SEDATIVES
Trends in Annual Prevalence of Use for All Seniors [a,b]

What sedatives have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in last 12 months																		2011–2012 change
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Phenobarbital	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.1	0.4	0.3	0.2	-0.1
Seconal	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.0	0.2	0.2	0.0	-0.2
Tuinal	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	*	0.0	0.2	0.1	0.2	+0.2
Nembutal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Luminal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Desbutal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Amytal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Adrenocal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ambien	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.1	1.4	1.5	1.5	1.3	-0.2
Lunesta	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	0.8	0.7	0.8	0.4	0.5	+0.1
Sonata	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.2	0.2	0.3	0.2	0.2	0.0
Other	—	—	—	—	—	—	—	—	—	—	—	—	—	2.1	1.9	1.6	1.7	1.6	1.6	0.0
Don't know the names of some I have used	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.8	0.8	0.9	0.7	1.0	+0.2
Approximate weighted N =	—	—	—	—	—	—	—	—	—	—	—	—	—	*2,400*	*2,300*	*2,300*	*2,300*	*2,300*	*2,200*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' * ' indicates less than 0.05% but greater than 0%.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

[a]These are the estimated prevalence-of-use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

[b]This question set was dropped in 1990, as sedative use had become quite low, to make room for other questions. Because of a rise in sedative use since then, it was reintroduced in 2007, and some new drugs were included in the listing.

Appendix F

TRENDS IN DRUG USE FOR THREE GRADES COMBINED

This appendix presents tables and figures showing usage trends of the various drugs covered in this monograph, in which the data from grades 8, 10, and 12 have been combined. (Data for all three grades were first gathered in 1991, so the tables cover the interval 1991–2012.) These combined figures have been requested in the past, presumably for simplicity. However, by collapsing the three grades, some important distinctions are lost. For example, inflections either up or down in use have sometimes occurred first among 8th graders and then radiated up the age spectrum on a lagged basis; such cohort effects are masked by combining the data across age and grade. But for those seeking an easier way of summarizing the overall trend results, this simplification may be useful at times.

Figures F-1 through F-9 show general shifts occurring for most of the drugs under study in MTF, both licit and illicit. These trends have been presented in more detail and discussed at length in chapter 5.

Tables F-1 through F-4 provide the numerical estimates that underlie the figures. The averages across grades in the use of each drug are calculated using a weighting procedure that takes into account the estimated number of students in the country who are enrolled in each of the three grade levels each year. The original sampling weights used at each grade level to correct for unequal probabilities of selection within grade have been retained.

These tables also show the absolute change in use between the most recent year and the recent peak level observed for each drug, along with the statistical significance of that change. The proportional change since that recent peak is also provided in the far right-hand column. Most of these changes are highly statistically significant, in part because the sample sizes are so large.

It should be noted that two important classes of drugs on which MTF routinely reports are not included in these figures, because usable data are only available from 12th graders—***narcotics other than heroin*** (taken as a class) and ***sedatives*** (barbiturates). The 12th-grade trend data for these drugs may be found in chapters 2 and 5. Several other drugs on which we lack data on the lower grades are also missing here.

TABLE F-1
Trends in Lifetime Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	Peak year–2012 change: Absolute change	Peak year–2012 change: Proportional change (%) [a]	Low year–2012 change: Absolute change	Low year–2012 change: Proportional change
Any Illicit Drug	30.4	29.8	32.1	35.7	38.9	42.2	**43.3**	42.3	41.9	41.0	40.9	39.5	37.5	36.4	35.7	34.0	32.7	32.6	33.2	34.4	34.7	34.1	-0.6	-9.2 sss	-21.2	+1.5	+4.7
Any Illicit Drug other than Marijuana	19.7	19.7	21.2	22.0	23.6	*24.2*	24.0	23.1	22.7	22.1‡	**23.2**	21.1	19.8	19.3	18.6	18.2	17.7	16.8	16.5	16.8	16.1	15.5	-0.7	-7.7 sss	-33.3	—	—
Any Illicit Drug including Inhalants	36.8	36.3	38.8	41.9	44.9	47.4	**48.2**	47.4	46.9	46.2	45.5	43.7	41.9	41.3	41.0	39.3	38.0	37.9	37.9	38.8	38.7	37.9	-0.8	-10.3 sss	-21.4	—	—
Marijuana/Hashish	22.7	21.1	23.4	27.8	31.6	35.6	**37.8**	36.5	36.4	35.3	35.3	34.0	32.4	31.4	30.8	28.9	27.9	27.9	29.0	30.4	31.0	30.7	-0.3	-7.1 sss	-18.7	+2.8 sss	+10.2
Inhalants	17.0	16.9	18.2	18.6	**19.4**	19.1	18.6	18.1	17.5	16.4	15.3	13.6	13.4	13.7	14.1	13.7	13.5	13.1	12.5	12.1	10.6	10.0	-0.7	-9.4 sss	-48.7	—	—
Hallucinogens	6.1	6.3	7.0	7.7	8.9	10.0	*10.2*	9.5	9.0	8.5‡	**9.2**	7.6	6.9	6.3	5.9	5.7	5.8	5.6	5.3	5.8	5.7	5.0	-0.6 s	-4.1 sss	-45.0	—	—
LSD	5.5	5.7	6.5	6.9	8.1	8.9	**9.1**	8.3	7.9	7.2	6.5	5.0	3.7	3.0	2.6	2.5	2.6	2.7	2.5	2.8	2.7	2.5	-0.2	-6.6 sss	-72.4	—	—
Hallucinogens other than LSD	2.4	2.5	2.7	3.6	3.9	4.8	*4.9*	4.8	4.4	4.5‡	**6.7**	6.0	5.8	5.6	5.4	5.2	5.1	4.8	4.7	5.0	4.9	4.3	-0.6 ss	-2.3 sss	-34.9	—	—
Ecstasy (MDMA)	—	—	—	—	—	4.9	5.2	4.5	5.3	7.2	**8.0**	6.9	5.4	4.7	4.0	4.3	4.5	4.1	4.6	5.5	5.5	4.6	-0.9 sss	-3.4 sss	-42.7	+0.6 ss	+15.5
Cocaine	4.6	4.0	4.1	4.5	5.1	6.0	6.6	7.0	**7.2**	6.5	5.9	5.7	5.3	5.5	5.5	5.3	5.2	4.8	4.2	3.8	3.4	3.3	-0.2	-3.9 sss	-54.1	—	—
Crack	2.0	1.9	2.0	2.5	2.8	3.2	3.4	**3.8**	**3.8**	3.5	3.2	3.2	2.9	2.9	2.8	2.6	2.5	2.2	2.0	1.9	1.6	1.5	-0.1	-2.3 sss	-60.9	—	—
Other cocaine	4.1	3.5	3.6	3.9	4.2	5.2	5.9	6.1	**6.3**	5.6	5.1	4.8	4.5	4.7	4.7	4.7	4.6	4.1	3.7	3.4	3.1	2.9	-0.2	-3.3 sss	-53.5	—	—
Heroin	1.1	1.3	1.3	1.6	1.9	2.1	2.1	**2.2**	**2.2**	2.1	1.7	1.7	1.5	1.5	1.5	1.4	1.4	1.3	1.4	1.4	1.2	1.0	-0.3 ss	-1.2 sss	-55.3	—	—
With a needle	—	—	—	—	1.1	1.2	1.1	1.1	**1.3**	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.9	0.8	0.6	-0.2 s	-0.6 sss	-49.7	—	—
Without a needle	—	—	—	—	1.3	1.7	1.7	1.6	1.6	**1.8**	1.3	1.3	1.3	1.2	1.1	1.0	1.0	0.9	0.9	1.0	0.9	0.7	-0.2 s	-1.1 sss	-61.8	—	—
Amphetamines	12.9	12.5	13.8	14.3	15.2	**15.5**	15.2	14.5	14.0	13.5	13.9	13.1	11.8	11.2	10.3	10.1	9.5	8.6	8.6	8.9	8.6	8.3	-0.3	-7.2 sss	-46.5	—	—
Methamphetamine	—	—	—	—	—	—	—	—	**6.5**	6.2	5.8	5.3	5.0	4.5	3.9	3.4	2.5	2.5	2.2	2.2	1.8	1.6	-0.2	-4.9 sss	-75.3	—	—
Tranquilizers	5.5	5.3	5.4	5.5	5.8	6.5	6.6	6.9	*7.0*	6.9‡	**7.9**	**7.9**	7.3	7.1	6.8	7.0	6.7	6.3	6.5	6.6	6.0	5.8	-0.2	-2.1 sss	-26.3	—	—
Alcohol	*80.1*	79.2‡	68.4	68.4	68.2	68.4	**68.8**	67.4	66.4	66.6	65.5	62.7	61.7	60.5	58.6	57.0	56.3	55.1	54.6	53.6	51.5	50.0	-1.5 s	-18.7 sss	-27.2	—	—
Been drunk	**46.3**	44.9	44.6	44.3	44.5	45.1	45.7	44.0	43.7	44.0	43.4	40.5	38.9	39.4	38.4	37.6	36.6	35.1	35.9	34.2	32.5	32.8	+0.4	-13.4 sss	-29.1	+0.4	+1.0
Flavored alcoholic beverages	—	—	—	—	—	—	—	—	—	—	—	—	—	**54.7**	**54.7**	53.1	51.3	49.3	47.9	46.7	44.5	42.7	-1.8	-11.9 sss	-21.8	—	—
Cigarettes	53.5	53.0	54.0	54.6	55.8	**57.8**	57.4	56.0	54.5	51.8	49.1	44.2	40.8	39.6	37.4	35.0	33.3	31.3	31.2	30.9	28.7	27.0	-1.7 ss	-30.8 sss	-53.3	—	—
Smokeless Tobacco	—	26.2	25.6	**26.3**	26.0	25.7	22.7	21.1	19.4	17.9	16.6	15.2	14.1	13.6	13.8	13.3	12.9	12.3	13.5	14.5	13.8	13.5	-0.3	-12.8 sss	-48.8	+1.2	+9.4
Steroids	1.9	1.8	1.8	2.1	2.1	1.8	2.1	2.3	2.8	3.0	**3.3**	**3.3**	3.0	2.5	2.1	2.0	1.8	1.6	1.5	1.5	1.5	1.4	-0.1	-1.9 sss	-57.3	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between classes: s = .05, ss = .01, sss = .001. Values in bold equal peak levels since 1991. ' – ' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. ' ‡ ' indicates a change in the question text.

Values in italics equal peak level before wording change. When a question change occurs, peak levels after that change are used to calculate the peak year to current year difference. Underlined values equal lowest level since recent peak level (value in bold).

[a]The proportional change is the percent by which the most recent year deviates from the peak year for the drug in question. So, if a drug was at 20% prevalence in the peak year and declined to 10% prevalence in the most recent year, that would reflect a proportional decline of 50%.

TABLE F-2
Trends in Annual Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined

(Entries are percentages.)

																								Peak year–2012 change		Low year–2012 change	
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	Absolute change	Proportional change (%) [a]	Absolute change	Proportional change
Any Illicit Drug	20.2	19.7	23.2	27.6	31.0	33.6	**34.1**	32.2	31.9	31.4	31.8	30.2	28.4	27.6	27.1	25.8	24.8	24.9	25.9	27.3	27.6	27.1	-0.4	-6.9 sss	-20.3	+2.3 ss	+9.2
Any Illicit Drug other than Marijuana	12.0	12.0	13.6	14.6	16.4	*17.0*	16.8	15.8	15.6	15.3‡	**16.3**	14.6	13.7	13.5	13.1	12.7	12.4	11.9	11.6	11.8	11.3	10.8	-0.4	-5.5 sss	-33.6	—	—
Any Illicit Drug including Inhalants	23.5	23.2	26.7	31.1	34.1	36.6	**36.7**	35.0	34.6	34.1	34.3	32.3	30.8	30.1	30.1	28.7	27.6	27.6	28.5	29.7	29.8	29.0	-0.8	-7.7 sss	-21.0	+1.4	+5.0
Marijuana/Hashish	15.0	14.3	17.7	22.5	26.1	29.0	**30.1**	28.2	27.9	27.2	27.5	26.1	24.6	23.8	23.4	22.0	21.4	21.5	22.9	24.5	25.0	24.7	-0.2	-5.3 sss	-17.7	+3.4 sss	+15.8
Synthetic marijuana	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.0	—	—	—	—	—
Inhalants	7.6	7.8	8.9	9.6	**10.2**	9.9	9.1	8.5	7.9	7.7	6.9	6.1	6.2	6.7	7.0	6.9	6.4	6.4	6.1	6.0	5.0	4.5	-0.6 s	-5.7 sss	-56.2	—	—
Hallucinogens	3.8	4.1	4.8	5.2	6.6	*7.2*	6.9	6.3	6.1	5.4‡	**6.0**	4.5	4.1	4.0	3.9	3.6	3.8	3.8	3.5	3.8	3.7	3.2	-0.5 s	-2.7 sss	-46.0	—	—
LSD	3.4	3.8	4.3	4.7	5.9	**6.3**	6.0	5.3	5.3	4.5	4.1	2.4	1.6	1.6	1.5	1.4	1.7	1.9	1.6	1.8	1.8	1.6	-0.2	-4.7 sss	-74.9	+0.2	+13.0
Hallucinogens other than LSD	1.3	1.4	1.7	2.2	2.7	*3.2*	*3.2*	3.1	2.9	2.8‡	**4.0**	3.7	3.6	3.6	3.4	3.3	3.3	3.2	3.0	3.3	3.1	2.7	-0.4 s	-1.3 sss	-32.9	—	—
Ecstasy (MDMA)	—	—	—	—	—	3.1	3.4	2.9	3.7	5.3	**6.0**	4.9	3.1	2.6	2.4	2.7	3.0	2.9	3.0	3.8	3.7	2.5	-1.2 sss	-3.5 sss	-57.9	+0.2	+6.6
Salvia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.5	**3.6**	2.7	-0.9 sss	-0.9 sss	—	—	—
Cocaine	2.2	2.1	2.3	2.8	3.3	4.0	4.3	**4.5**	**4.5**	3.9	3.5	3.7	3.3	3.5	3.5	3.5	3.4	2.9	2.5	2.2	2.0	1.9	-0.1	-2.5 sss	-57.0	—	—
Crack	1.0	1.1	1.2	1.5	1.8	2.0	2.1	**2.4**	2.2	2.1	1.8	2.0	1.8	1.7	1.6	1.5	1.5	1.3	1.2	1.1	1.0	0.9	-0.1	-1.5 sss	-64.2	—	—
Other cocaine	2.0	1.8	2.0	2.3	2.8	3.4	3.7	3.7	**4.0**	3.3	3.0	3.1	2.8	3.1	3.0	3.1	2.9	2.6	2.1	1.9	1.7	1.7	-0.1	-2.3 sss	-58.0	—	—
Heroin	0.5	0.6	0.6	0.9	1.2	**1.3**	**1.3**	1.2	**1.3**	**1.3**	0.9	1.0	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.6	-0.1 s	-0.7 sss	-55.1	—	—
With a needle	—	—	—	—	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.4	-0.1	-0.3 sss	-44.0	—	—
Without a needle	—	—	—	—	0.9	0.9	1.0	0.9	1.0	**1.1**	0.7	0.7	0.6	0.7	0.7	0.6	0.7	0.6	0.5	0.6	0.5	0.4	-0.2 s	-0.7 sss	-67.6	—	—
OxyContin	—	—	—	—	—	—	—	—	—	—	—	2.7	3.2	3.3	3.4	3.5	3.5	3.4	**3.9**	3.8	3.4	2.9	-0.6 s	-1.0 ss	-26.2	—	—
Vicodin	—	—	—	—	—	—	—	—	—	—	—	6.0	**6.6**	5.8	5.7	6.3	6.2	6.1	6.5	5.9	5.1	4.3	-0.9 s	-2.3 sss	-35.1	—	—
Amphetamines	7.5	7.3	8.4	9.1	10.0	**10.4**	10.1	9.3	9.0	9.2	9.6	8.9	8.0	7.6	7.0	6.8	6.5	5.8	5.9	6.2	5.9	5.6	-0.3	-4.7 sss	-45.5	—	—
Ritalin	—	—	—	—	—	—	—	—	—	—	**4.2**	3.8	3.5	3.6	3.3	3.5	2.8	2.6	2.5	2.2	2.1	1.7	-0.5	-2.5 sss	-60.1	—	—
Adderall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.3	**4.5**	4.1	4.4	+0.4	-0.5 s	-10.3	+0.4	+9.2
Methamphetamine	—	—	—	—	—	—	—	—	**4.1**	3.5	3.4	3.2	3.0	2.6	2.4	2.0	1.4	1.3	1.3	1.3	1.2	1.0	-0.2	-3.1 sss	-75.3	—	—
Bath salts (synthetic stimulants)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	—	—	—	—	—
Tranquilizers	2.8	2.8	2.9	3.1	3.7	4.1	4.1	4.4	4.4	*4.5*‡	**5.5**	5.3	4.8	4.8	4.7	4.6	4.5	4.3	4.5	4.4	3.9	3.7	-0.2	-1.8 sss	-32.2	—	—
OTC Cough/Cold Medicines	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**5.4**	5.0	4.7	5.2	4.8	4.4	4.4	-0.1	-1.0 ss	-18.3	—	—
Rohypnol	—	—	—	—	—	*1.1*	*1.1*	*1.1*	0.8	0.7	0.9‡	0.8	0.8	**0.9**	0.8	0.7	0.8	0.7	0.6	0.8	0.9	0.7	-0.1	-0.2	-18.9	+0.1	+24.8
GHB[b]	—	—	—	—	—	—	—	—	—	**1.4**	1.2	1.2	1.2	1.1	0.8	0.9	0.7	0.9	0.9	0.8	0.8	—	—	—	—	—	—
Ketamine [b]	—	—	—	—	—	—	—	—	—	**2.0**	1.9	**2.0**	1.7	1.3	1.0	1.1	1.0	1.2	1.3	1.2	1.2	—	—	—	—	—	—
Alcohol	67.4	66.3‡	59.7	60.5	60.4	60.9	**61.4**	59.7	59.0	59.3	58.2	55.3	54.4	54.0	51.9	50.7	50.2	48.7	48.4	47.4	45.3	44.3	-1.0	-17.1 sss	-27.8	—	—
Been drunk	35.8	34.3	34.3	35.0	35.9	36.7	**36.9**	35.5	36.0	35.9	35.0	32.1	31.2	32.5	30.8	30.7	29.7	28.1	28.7	27.1	25.9	26.4	+0.5	-10.5 sss	-28.5	+0.5	+1.9
Flavored alcoholic beverages	—	—	—	—	—	—	—	—	—	—	—	—	—	**44.5**	43.9	42.4	40.8	39.0	37.8	35.9	33.7	32.5	-1.2	-11.9 sss	-26.9	—	—
Alcoholic beverages containing caffeine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**19.7**	18.6	-1.0	-1.0 s	-5.3	—	—
Dissolvable tobacco products	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.4	—	—	—	—	—
Snus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.6	—	—	—	—	—
Steroids	1.2	1.1	1.0	1.2	1.3	1.1	1.2	1.3	1.7	1.9	**2.0**	**2.0**	1.7	1.6	1.3	1.3	1.1	1.1	1.0	0.9	0.9	0.9	-0.1	-1.1 sss	-56.7	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between classes: s = .05, ss = .01, sss = .001. Values in bold equal peak levels since 1991. ' – ' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. ' ‡ ' indicates a change in the question text.

Values in italics equal peak level before wording change. When a question change occurs, peak levels after that change are used to calculate the peak year to current year difference. Underlined values equal lowest level since recent peak level (value in bold).

[a]The proportional change is the percent by which the most recent year deviates from the peak year for the drug in question. So, if a drug was at 20% prevalence in the peak year and declined to 10% prevalence in the most recent year, that would reflect a proportional decline of 50%.

[b]Question was discontinued among 8th and 10th graders in 2012.

TABLE F-3
Trends in 30-Day Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	Peak year–2012 change: Absolute change	Peak year–2012 change: Proportional change (%) [a]	Low year–2012 change: Absolute change	Low year–2012 change: Proportional change
Any Illicit Drug	10.9	10.5	13.3	16.8	18.6	**20.6**	20.5	19.5	19.5	19.2	19.4	18.2	17.3	16.2	15.8	14.9	14.8	14.6	15.8	16.7	17.0	16.8	-0.2	-3.9 sss	-18.8	+2.1 sss	+14.4
Any Illicit Drug other than Marijuana	5.4	5.5	6.5	7.1	*8.4*	*8.4*	*8.4*	8.2	7.9	8.0‡	**8.2**	7.7	7.1	7.0	6.7	6.4	6.4	5.9	5.7	5.7	5.7	5.2	-0.5	-3.0 sss	-36.6	—	—
Any Illicit Drug including Inhalants	13.0	12.5	15.4	18.9	20.7	**22.4**	22.2	21.1	21.1	21.0	20.8	19.5	18.6	17.5	17.5	16.5	16.5	16.1	17.3	18.0	18.3	17.6	-0.7	-4.7 sss	-21.2	+1.5 s	+9.3
Marijuana/Hashish	8.3	7.7	10.2	13.9	15.6	17.7	**17.9**	16.9	16.9	16.3	16.6	15.3	14.8	13.6	13.4	12.5	12.4	12.5	13.8	14.8	15.2	15.1	-0.1	-2.8 sss	-15.6	+2.7 sss	+22.2
Inhalants	3.2	3.3	3.8	4.0	**4.3**	3.9	3.7	3.4	3.3	3.2	2.8	2.7	2.7	2.9	2.9	2.7	2.6	2.6	2.5	2.4	2.1	1.7	-0.4 ss	-2.6 sss	-60.8	—	—
Hallucinogens	1.5	1.6	1.9	2.2	*3.1*	2.7	3.0	2.8	2.5	2.0‡	**2.3**	1.7	1.5	1.5	1.5	1.3	1.4	1.4	1.3	1.4	1.3	1.1	-0.2	-1.1 sss	-50.5	—	—
LSD	1.3	1.5	1.6	1.9	**2.8**	2.1	2.4	2.3	2.0	1.4	1.5	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.5	0.7	0.7	0.5	-0.1	-2.2 sss	-80.1	—	—
Hallucinogens other than LSD	0.5	0.5	0.7	1.0	1.0	*1.2*	*1.2*	*1.2*	1.1	1.1‡	**1.4**	**1.4**	1.2	1.3	1.2	1.1	1.1	1.1	1.0	1.2	1.0	0.9	-0.1	-0.5 sss	-37.7	—	—
Ecstasy (MDMA)	—	—	—	—	—	1.5	1.3	1.2	1.6	**2.4**	**2.4**	1.8	1.0	0.9	0.9	1.0	1.1	1.2	1.2	1.5	1.4	0.8	-0.6 sss	-1.5 sss	-65.3	—	—
Cocaine	0.8	0.9	0.9	1.2	1.5	1.7	1.8	**1.9**	**1.9**	1.7	1.5	1.6	1.4	1.6	1.6	1.6	1.4	1.3	1.0	0.9	0.8	0.8	-0.1	-1.1 sss	-59.2	—	—
Crack	0.4	0.5	0.5	0.7	0.8	0.9	0.8	**1.0**	0.9	0.9	0.9	**1.0**	0.8	0.8	0.8	0.7	0.7	0.6	0.5	0.5	0.5	0.4	0.0	-0.6 sss	-62.5	—	—
Other cocaine	0.7	0.7	0.8	1.1	1.2	1.3	1.5	1.6	**1.7**	1.4	1.3	1.3	1.2	1.4	1.3	1.4	1.1	1.1	0.8	0.8	0.7	0.7	-0.1	-1.0 sss	-60.3	—	—
Heroin	0.2	0.3	0.3	0.4	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	-0.1	-0.2 sss	-43.4	—	—
With a needle	—	—	—	—	0.3	**0.4**	0.3	**0.4**	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	-0.1	-0.1 ss	-39.4	—	—
Without a needle	—	—	—	—	0.4	0.4	**0.5**	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	-0.1 s	-0.3 sss	-64.2	—	—
Amphetamines	3.0	3.3	3.9	4.0	4.5	**4.8**	4.5	4.3	4.2	4.5	4.7	4.4	3.9	3.6	3.3	3.0	3.2	2.6	2.7	2.7	2.8	2.5	-0.3 s	-2.3 sss	-50.5	—	—
Methamphetamine	—	—	—	—	—	—	—	—	**1.5**	**1.5**	1.4	**1.5**	1.4	1.1	0.9	0.7	0.5	0.7	0.5	0.6	0.5	0.5	+0.1	-1.0 sss	-64.4	—	—
Tranquilizers	1.1	1.1	1.1	1.3	1.6	1.7	1.7	1.9	1.9	*2.1*‡	2.3	**2.4**	2.2	2.1	2.1	2.1	2.0	1.9	1.9	1.9	1.7	1.5	-0.2	-0.9 sss	-37.3	—	—
Alcohol	*39.8*	38.4‡	36.3	37.6	37.8	**38.8**	38.6	37.4	37.2	36.6	35.5	33.3	33.2	32.9	31.4	31.0	30.1	28.1	28.4	26.8	25.5	25.9	+0.4	-12.8 sss	-33.1	+0.4	+1.7
Been drunk	19.2	17.8	18.2	19.3	20.3	20.4	**21.2**	20.4	20.6	20.3	19.7	17.4	17.7	18.1	17.0	17.4	16.5	14.9	15.2	14.6	13.5	14.7	+1.2 s	-6.5 sss	-30.5	+1.2 s	+9.0
Flavored alcoholic beverages	—	—	—	—	—	—	—	—	—	—	—	—	—	**23.0**	21.6	21.7	20.4	18.6	17.9	17.0	15.2	14.9	-0.4	-8.1 sss	-35.4	—	—
Cigarettes	20.7	21.2	23.4	24.7	26.6	**28.3**	**28.3**	27.0	25.2	22.6	20.2	17.7	16.6	16.1	15.3	14.4	13.6	12.6	12.7	12.8	11.7	10.6	-1.0 s	-17.7 sss	-62.4	—	—
Smokeless Tobacco	—	9.2	9.1	**9.7**	9.6	8.5	8.0	7.0	6.3	5.8	6.1	5.2	5.3	5.1	5.3	5.1	5.2	4.9	6.0	6.5	5.9	5.6	-0.3	-4.1 sss	-42.4	+0.7	+14.7
Steroids	0.6	0.6	0.6	0.7	0.6	0.5	0.7	0.7	0.9	0.9	0.9	**1.0**	0.9	0.9	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.0	-0.5 sss	-48.5	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between classes: s = .05, ss = .01, sss = .001. Values in bold equal peak levels since 1991. ' – ' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. ' ‡ ' indicates a change in the question text.

Values in italics equal peak level before wording change. When a question change occurs, peak levels after that change are used to calculate the peak year to current year difference. Underlined values equal lowest level since recent peak level (value in bold).

[a]The proportional change is the percent by which the most recent year deviates from the peak year for the drug in question. So, if a drug was at 20% prevalence in the peak year and declined to 10% prevalence in the most recent year, that would reflect a proportional decline of 50%.

TABLE F-4
Trends in Daily Prevalence of Use of Selected Drugs for Grades 8, 10, and 12 Combined

(Entries are percentages.)

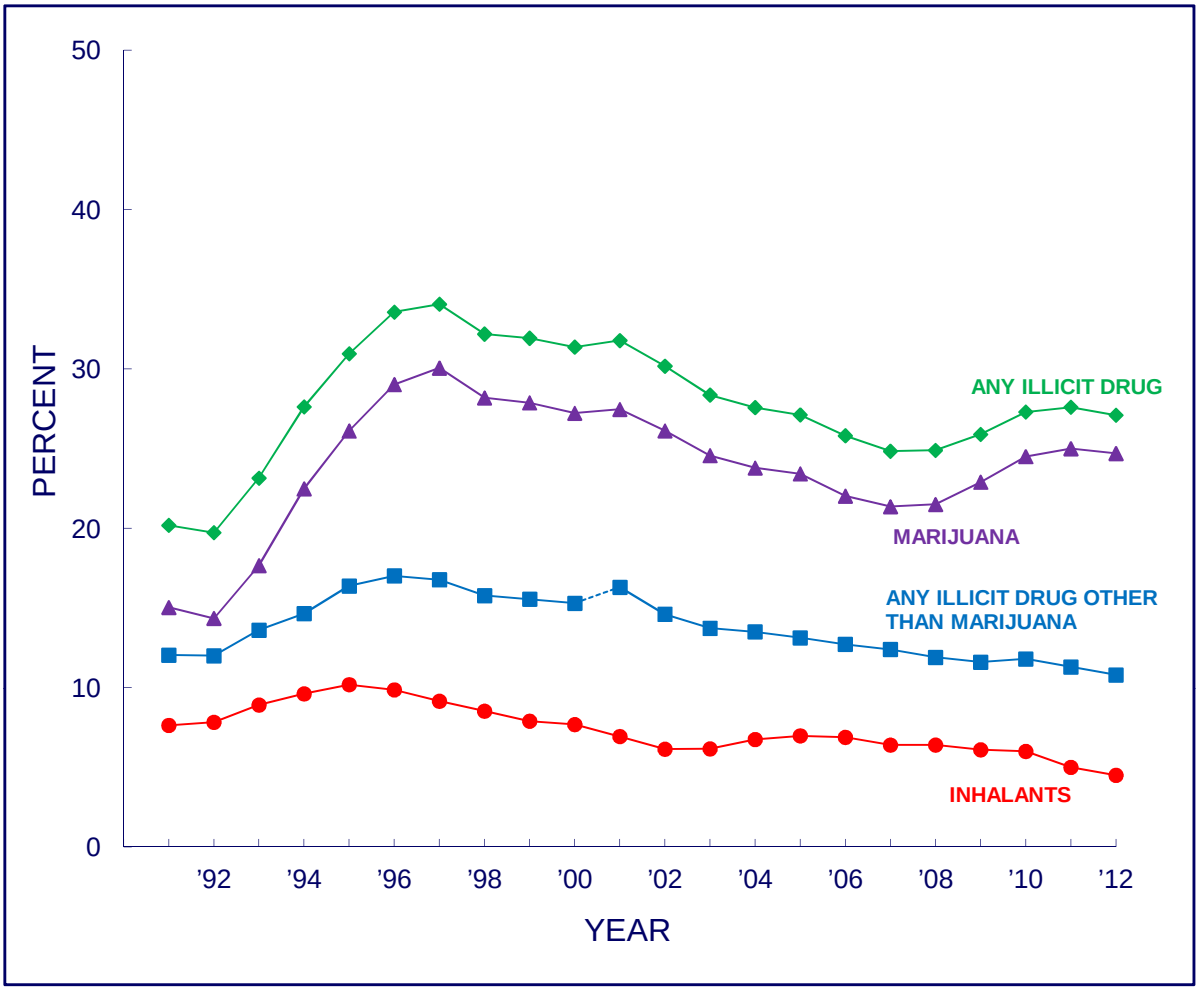
																								Peak year–2012 change		Low year–2012 change	
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2011–2012 change	Absolute change	Proportional change (%) [a]	Absolute change	Proportional change
Marijuana	0.9	0.9	1.2	2.1	2.7	3.2	3.4	3.4	3.5	3.5	**3.7**	3.5	3.4	3.0	2.9	2.8	2.7	2.8	2.8	3.4	3.6	3.6	0.0	-0.1	-3.0	+0.8 sss	+31.1
Alcohol	*1.7*	1.6‡	2.0	1.8	1.9	2.0	2.1	**2.2**	2.0	1.7	2.0	1.9	1.7	1.5	1.5	1.5	1.6	1.4	1.3	1.4	1.0	1.2	+0.2 s	-1.0 sss	-44.4	+0.2 s	+19.0
5+ drinks in a row in last 2 weeks	20.0	19.0	19.5	20.3	21.1	**21.9**	**21.9**	21.5	21.7	21.2	20.4	18.9	18.6	18.8	17.5	17.4	17.2	15.5	16.1	14.9	13.6	14.3	+0.7	-7.6 sss	-34.7	+0.7	+5.0
Been drunk	0.4	0.4	0.5	0.6	0.7	0.7	**0.9**	0.8	**0.9**	0.8	0.7	0.6	0.7	0.7	0.6	0.7	0.6	0.6	0.5	0.6	0.5	0.6	+0.1	-0.3 sss	-32.8	+0.1	+21.0
Cigarettes	12.4	11.9	13.5	14.0	15.5	16.8	**16.9**	15.4	15.0	13.4	11.6	10.2	9.3	9.0	8.0	7.6	7.1	6.4	6.4	6.4	5.7	5.2	-0.5	-11.7 sss	-69.3	—	—
1/2 pack+/day	6.5	6.1	6.9	7.2	7.9	**8.7**	8.6	7.9	7.6	6.4	5.7	4.9	4.5	4.1	3.7	3.4	3.0	2.7	2.6	2.5	2.1	1.9	-0.2	-6.8 sss	-77.9	—	—
Smokeless tobacco	—	**3.0**	2.7	2.9	2.5	2.3	2.5	2.1	1.7	1.9	2.0	1.4	1.6	1.7	1.6	1.5	1.6	1.6	1.8	2.1	1.8	1.9	+0.1	-1.1 ss	-37.5	+0.4	+27.7

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between classes: s = .05, ss = .01, sss = .001. Values in bold equal peak levels since 1991. ' – ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. ' ‡ ' indicates a change in the question text. Values in italics equal peak level before wording change. When a question change occurs, peak levels after that change are used to calculate the peak year to current year difference. Underlined values equal lowest level since recent peak level (value in bold).

[a]The proportional change is the percent by which the most recent year deviates from the peak year for the drug in question. So, if a drug was at 20% prevalence in the peak year and declined to 10% prevalence in the most recent year, that would reflect a proportional decline of 50%.

FIGURE F-1
ANY ILLICIT DRUG, MARIJUANA, AND INHALANTS
Trends in Annual Prevalence for Grades 8, 10, and 12 Combined

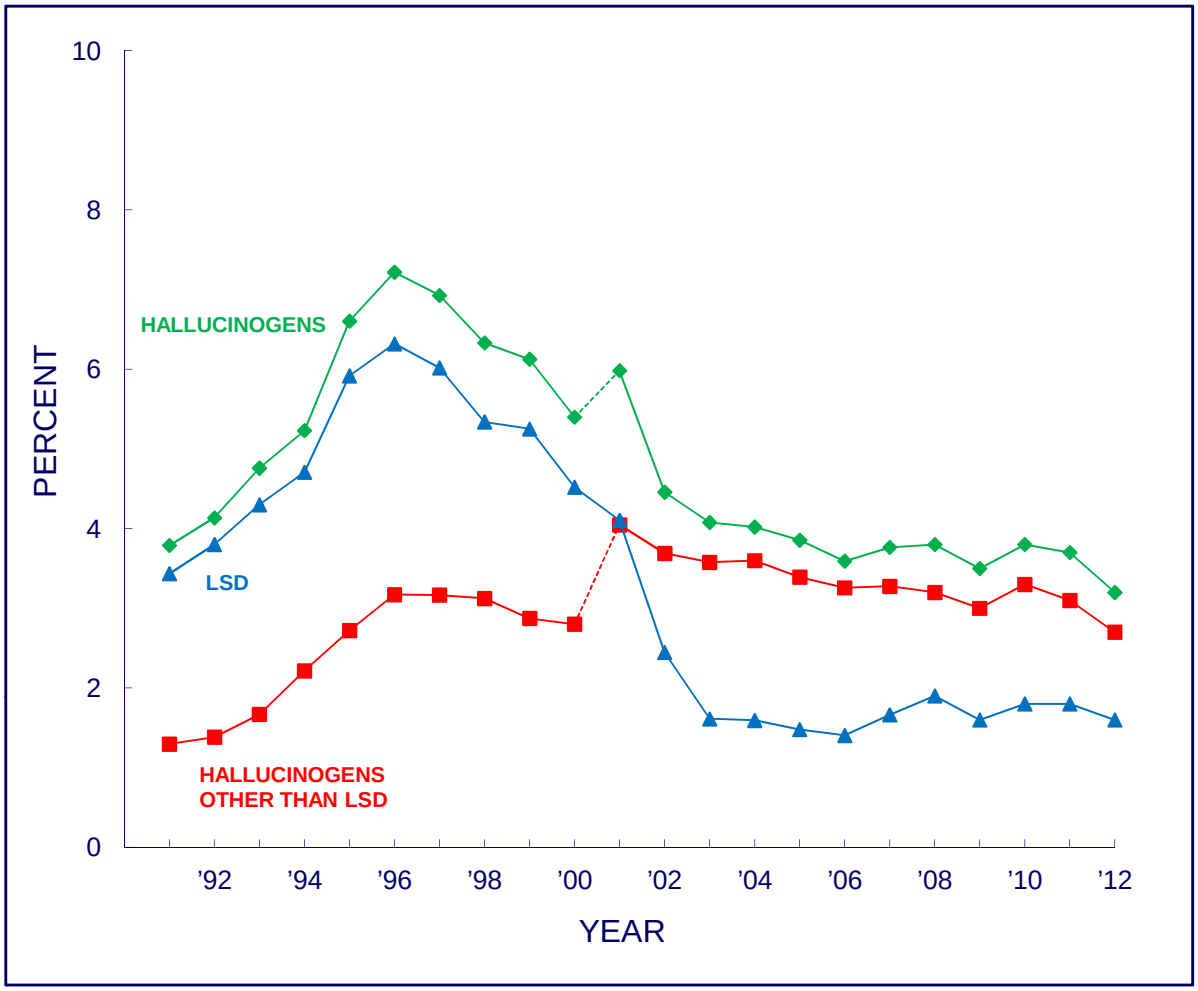


Source. The Monitoring the Future study, the University of Michigan.

Notes. A dashed line indicates a change in the question text between the years it connects.

Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are slightly affected by these changes. From 2001 on, data points are based on the revised questions.

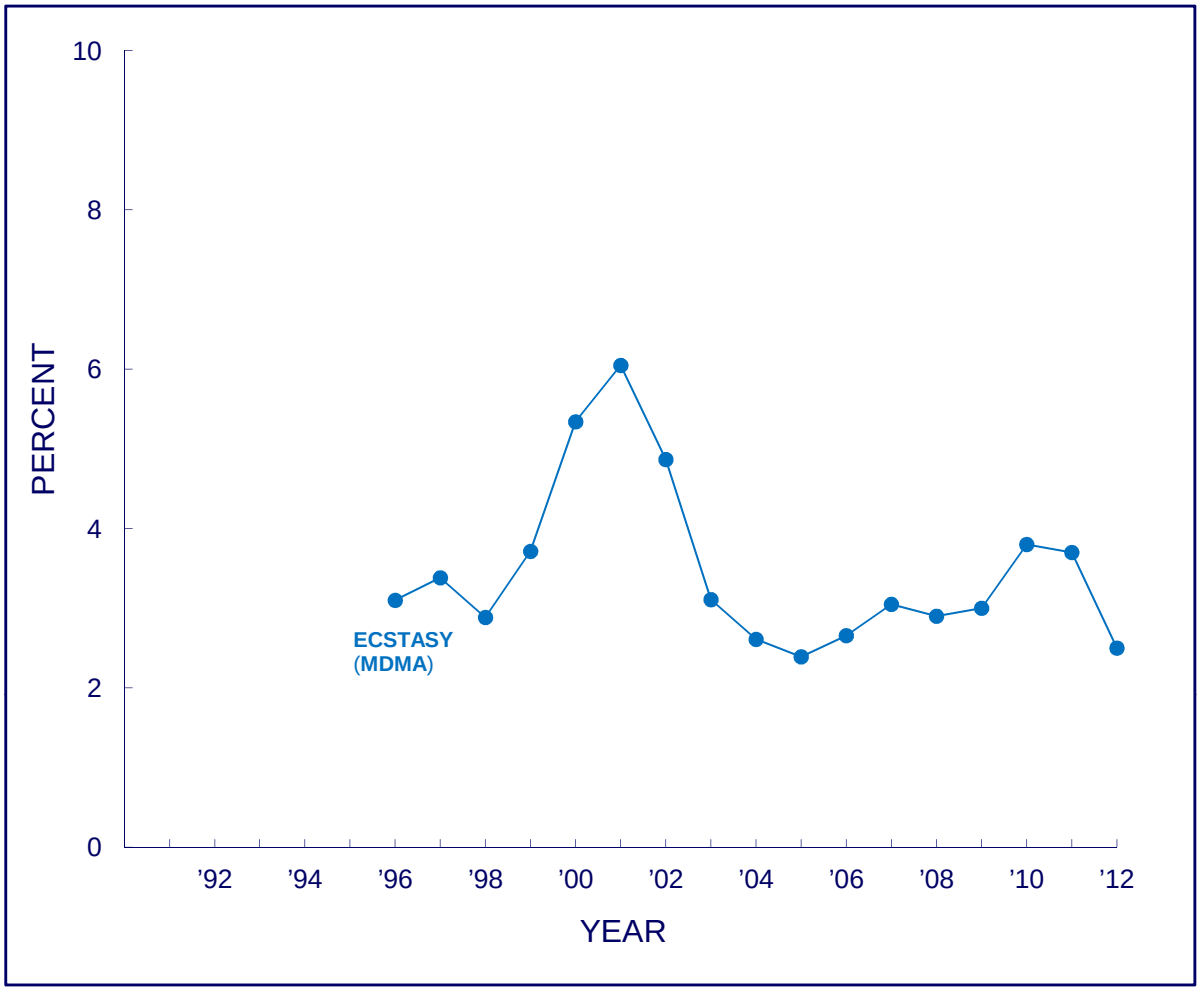
FIGURE F-2
HALLUCINOGENS
Trends in Annual Prevalence for Grades 8, 10, and 12 Combined



Source. The Monitoring the Future study, the University of Michigan.

Notes. A dashed line indicates a change in the question text between the years it connects. Beginning in 2001, a revised set of questions on other hallucinogens was introduced in which shrooms was added to the list of examples. Data for hallucinogens were also affected by this change. From 2001 on, data points are based on the revised questions.

FIGURE F-3
ECSTASY (MDMA)
Trends in Annual Prevalence for Grades 8, 10, and 12 Combined

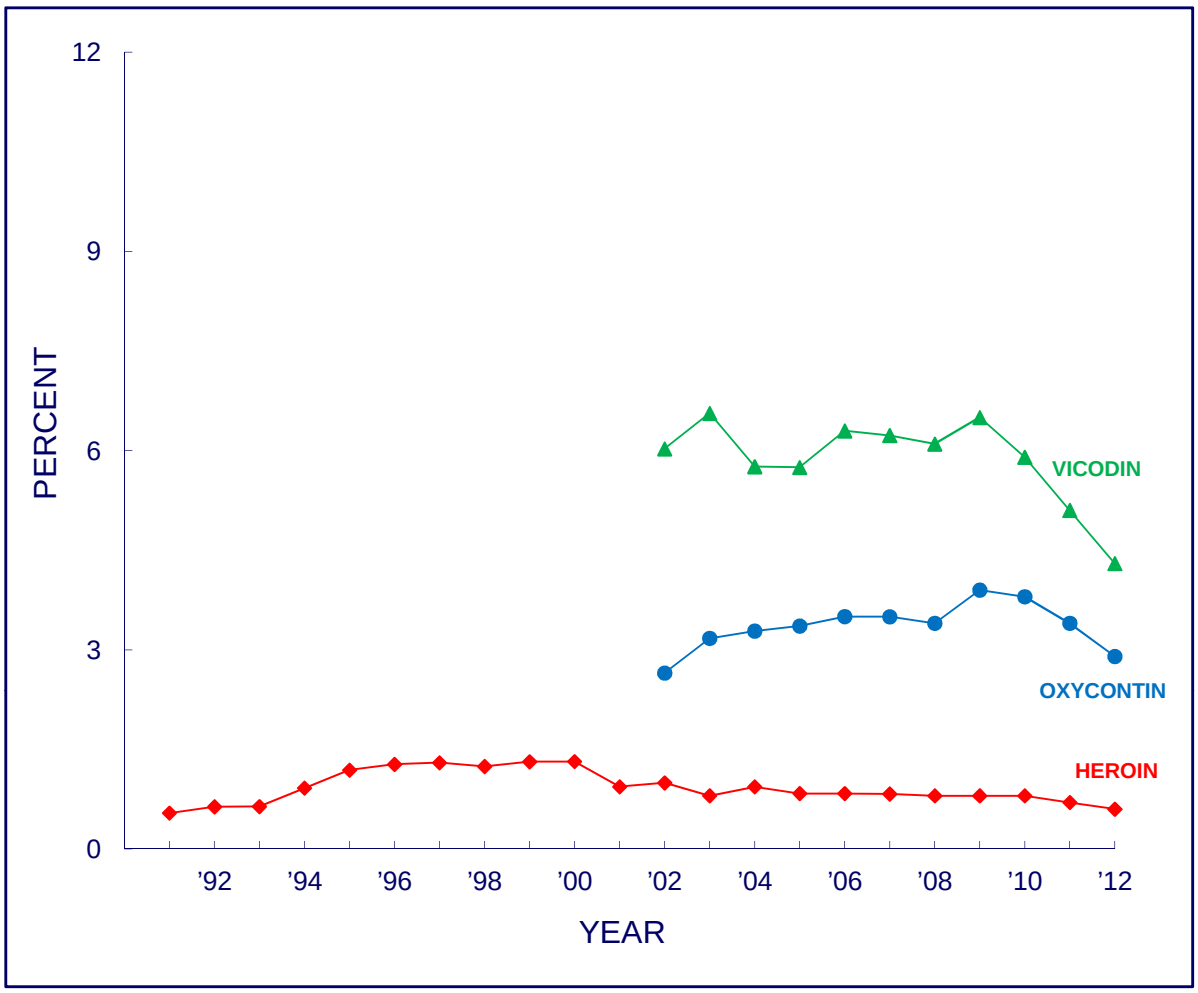


Source. The Monitoring the Future study, the University of Michigan.

FIGURE F-4
COCAINE AND CRACK
Trends in Annual Prevalence for Grades 8, 10, and 12 Combined

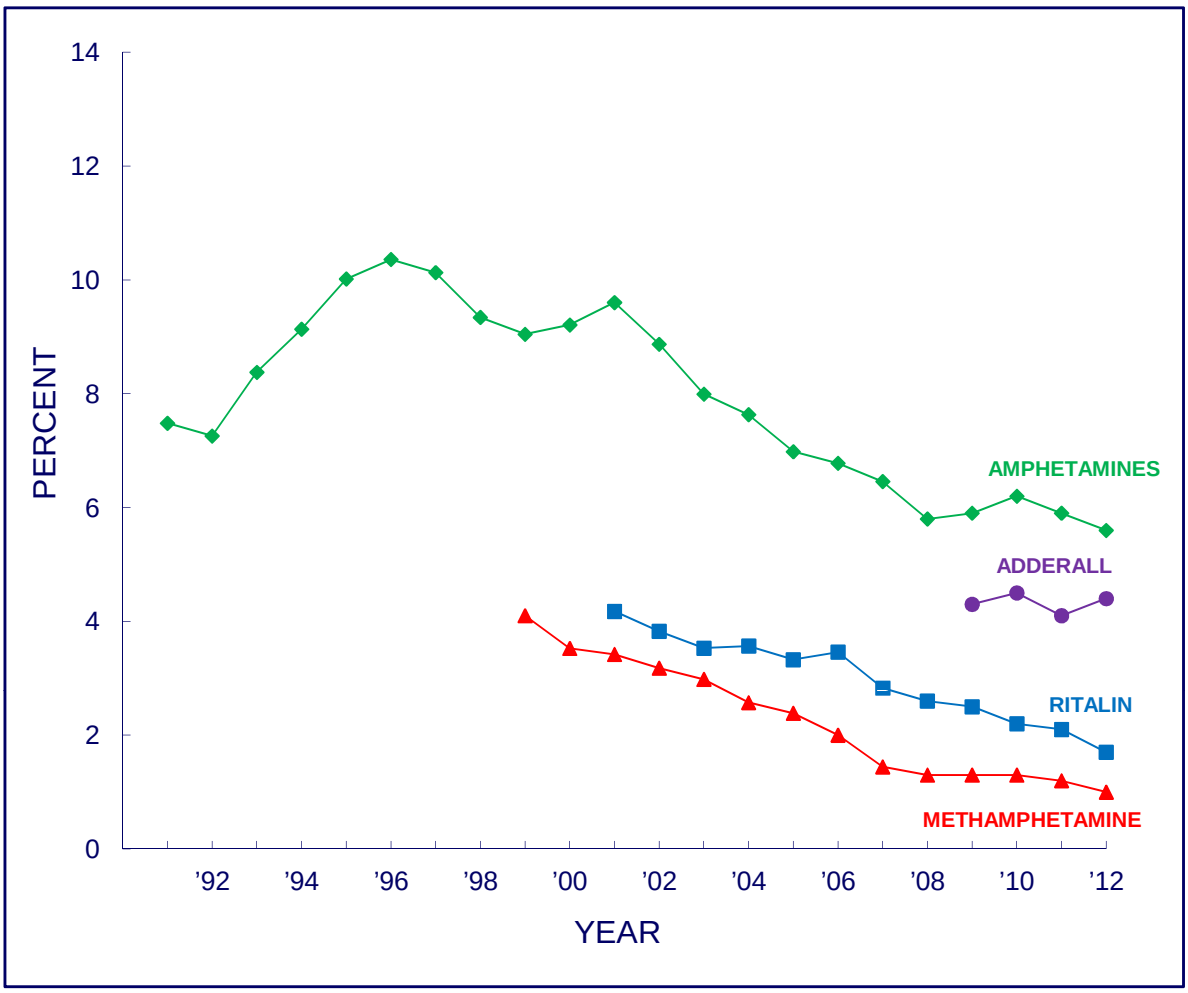
Source. The Monitoring the Future study, the University of Michigan.

FIGURE F-5
HEROIN AND NARCOTICS OTHER THAN HEROIN
Trends in Annual Prevalence for Grades 8, 10, and 12 Combined



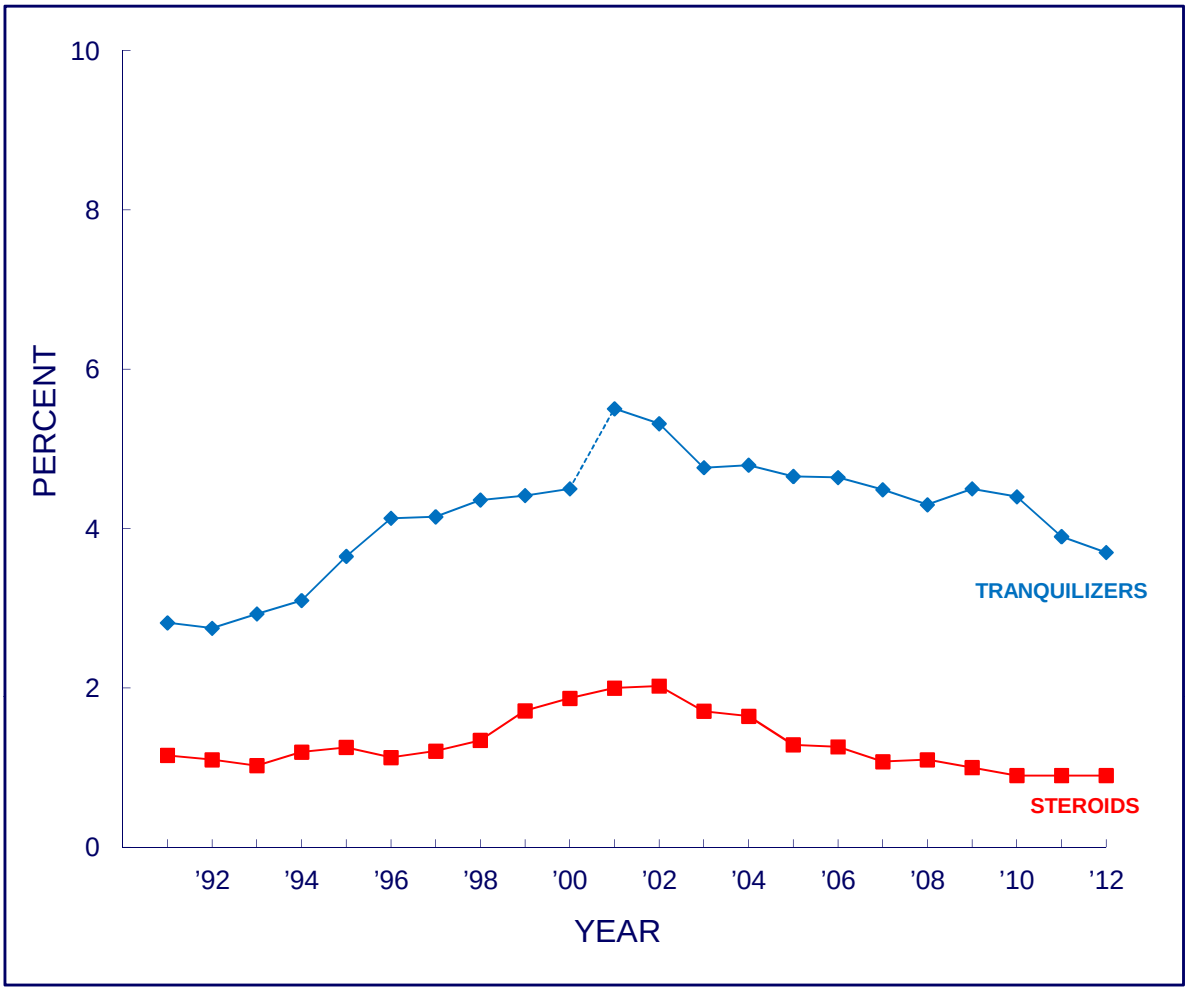
Source. The Monitoring the Future study, the University of Michigan.

FIGURE F-6
STIMULANT DRUGS
Trends in Annual Prevalence for Grades 8, 10, and 12 Combined



Source. The Monitoring the Future study, the University of Michigan.

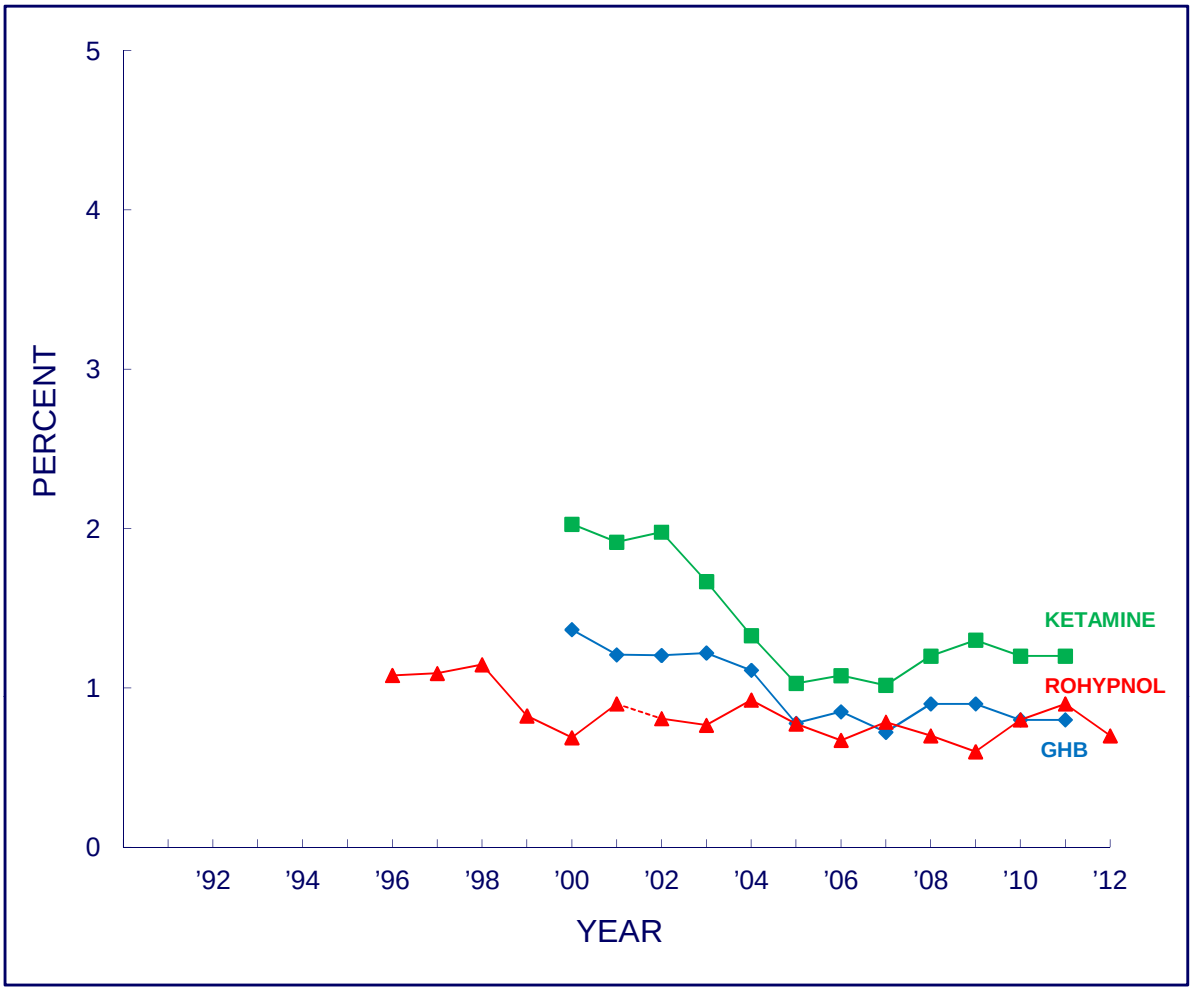
FIGURE F-7
TRANQUILIZERS AND STEROIDS
Trends in Annual Prevalence for Grades 8, 10, and 12 Combined



Source. The Monitoring the Future study, the University of Michigan.

Notes. A dashed line indicates a change in the question text between the years it connects. Beginning in 2001, a revised set of questions on use of tranquilizers was introduced in which Xanax replaced Miltown in the list of examples. From 2001 on, data points are based on the revised questions.

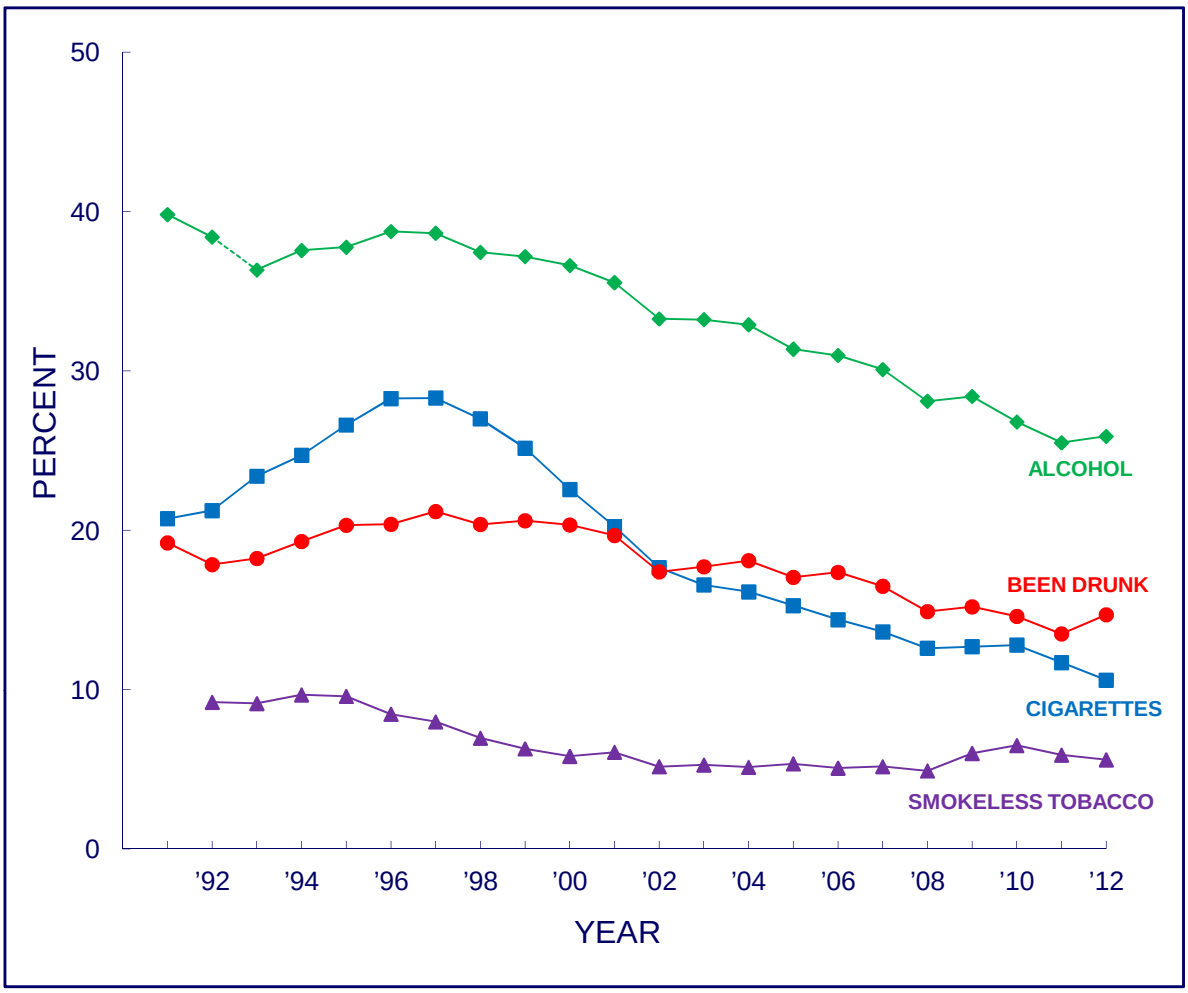
FIGURE F-8
CLUB DRUGS
Trends in Annual Prevalence for Grades 8, 10, and 12 Combined



Source. The Monitoring the Future study, the University of Michigan.

Notes. A dashed line indicates a change in the question text between the years it connects. Beginning in 2002, for 12th graders only, the lifetime and 30-day questions on Rohypnol were eliminated from the questionnaire. As a result, the 2001 and 2002 data are not entirely comparable because of the change in context of the question about annual use. Questions on use of GHB and Ketamine were discontinued in 2012.

FIGURE F-9
ALCOHOL AND TOBACCO
Trends in 30-Day Prevalence for Grades 8, 10, and 12 Combined



Source. The Monitoring the Future study, the University of Michigan.

Notes. A dashed line indicates a change in the question text between the years it connects. Beginning in 1993, a revised set of questions on use of alcohol was introduced in which a drink was defined as more than just a few sips. From 1993 on, data points are based on the revised questions.

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