

# Mandatory Drug Testing of Dental Students: To Test or Not to Test

## ***Viewpoint 1: Drug Testing of Dental Students Should Be Mandatory for the Benefit of Students, Institutions, Patients, and the Profession***

Tanya Marie Gibson, Maria A. Loza-Herrero, Juan F. Yepes

## ***Viewpoint 2: Mandatory Drug Testing of Dental Students Carries Costs and Risks for Institutions and Students and Has Unproven Benefits***

Hera Kim-Berman, Deborah A. Dilbone, Herminio Perez

*Abstract:* An educational institution's decision to test or not test its students for drug use is controversial and complex. Although negative consequences of substance use disorder are well known, the consumption of prohibited substances continues to increase in young adults. Given the awareness of increasing drug use on college campuses and the potential impact on future health care professionals, issues associated with mandatory drug testing of dental students warrant investigation. The purpose of this Point/Counterpoint article is to present opposing viewpoints on whether mandatory student drug testing (MSDT) should be implemented for dental students. Viewpoint 1 affirms that MSDT is legal, ensures public safety, is recognized as a need in health care education, promotes professional and ethical responsibility, and is cost-effective. Viewpoint 2 asserts that MSDT has not been proven to be an effective deterrent for student drug use and it poses risks and costs for both institutions and students, ranging from potential violation of students' civil liberties to the consequences of false positive tests. This article's presentation of the recent literature on both sides of this issue provides dental educators with pertinent information for considering implementation of MSDT in their institutions.

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**T**he 2016 National Survey on Drug Use and Health found that illicit drug use in college students and adults increased from 34% to 43% over the ten-year span from 2006 to 2016.<sup>1</sup> Other reports have noted that nonmedical use of drugs among medical and dental students and early career physicians has increased since the mid-1960s.<sup>2-7</sup> In

one survey, dental students self-reported that 71.7% used alcohol and 15% used medications to increase their focus while studying.<sup>8</sup> According to Bell et al., many state legislatures have decriminalized, legalized, or medically sanctioned the use of cannabis.<sup>9</sup> In doing so, the lines have become blurred concerning the acceptability of drug use in the workplace and in

society. To add to the complexity of this issue, each institution must consider both federal and state laws when considering which drugs to include in a drug-testing panel and how the legalization of once-illicit drugs, such as cannabis, and prescribed opioids would factor into the decision. Institutions of higher education are also mandated by the Drug-Free Schools and Communities Act (DFSCA) of 1986 and its 1989 amendments to examine methods for preventing illegal use of alcohol and other drugs on their campuses.<sup>10-12</sup>

The decision to test students for illicit drug use, made by educators responsible for training future health care professionals, can be influenced by the increased prevalence of drug use by young adults and changing societal views in conjunction with federal and state mandates. Although some health professions schools have opted to implement some type of student drug testing program,<sup>13-15</sup> we are not aware of any current national consensus on drug testing students in the health professions. Given the awareness of increased use of drugs on college campuses and the potential impact on future health professionals, the ethical, legal, medical, public safety, and practical issues associated with mandatory drug testing of dental students should be considered.<sup>1,16-19</sup>

The purpose of this Point/Counterpoint article is to present opposing viewpoints on whether mandatory student drug testing should be implemented for dental students. The scope of the discussion focuses mainly on non-medical use of prescription medication, illicit drugs, and cannabis even though we acknowledge that alcohol, albeit legal, is the most frequently abused substance among young adults.

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## ***Viewpoint 1: Drug Testing of Dental Students Should Be Mandatory for the Benefit of Students, Institutions, Patients, and the Profession***

With increased illicit drug use and misuse of prescription drugs, many employers and some professional schools have instituted mandatory student drug testing (MSDT).<sup>13,15,20-23</sup> In its evaluation of drug use among health professions students, a study published in 2006 reported that 3.6% of dental students,

3.3% of allied health students, 2.2% of medical students, 3.9% of nursing students, and 1.6% of pharmacy students self-reported performing patient care while under the influence.<sup>20</sup> A review of alcohol and drug use among second-year medical students at the University of Leeds in the UK published in 2000 reported that 33.1% used illicit drugs.<sup>6</sup> A survey in 2011 found that more than 20% of students admitted to the McWhorter School of Pharmacy in Birmingham, AL, self-reported current or past use of illegal substances.<sup>21</sup> In a preliminary survey of dental students regarding health issues, 71.7% reported the use of alcohol, and 15% reported using medications to increase focus while studying.<sup>8</sup> This self-reported data by dental and other health professions students show that a portion of our students are engaging in the use of alcohol or drugs. Since dental students provide health care to patients, schools and hospitals must take the necessary steps to protect the public. As educators, we have a professional and ethical obligation to ensure that dental care is provided in a safe environment, which includes care by unimpaired individuals who do not use illicit drugs or have substance use disorder (SUD). A diagnosis of SUD is based on evidence of impaired control, social impairment, risky use, and pharmacological criteria.<sup>24</sup> There is cause for concern since SUD in the U.S. affects approximately 10% of the general population, and this percentage was similar for one group of dentists.<sup>1,25</sup> There is also evidence that, for some, SUD may have emerged during medical school and residency training.<sup>9</sup>

The self-reported survey data on health professions students and drug use along with the increased prevalence of drug use warrant strong consideration of implementing MSDT in dental schools. This viewpoint argues that MSDT is legal, ensures public safety, is recognized as a need in health care education, promotes professional and ethical responsibility, and is cost-effective.

### **MSDT Is Legal**

In the U.S., if there is a prior agreement in place between the individual being tested and the entity performing the test, drug testing is legal.<sup>19</sup> Controversy only arises when that agreement is not in place and the individual is subjected to drug testing. Based on this premise, dental schools are able to legally impose MSDT. MSDT could be a prerequisite for entering dental school as well as part of the academic program. Some dental schools have already implemented such programs.<sup>13,15</sup>

According to Luna, the U.S. Supreme Court has upheld drug testing for railroad employees.<sup>26</sup> The court found minimal intrusion in privacy, given the nature of the testing procedures. Any privacy concerns were outweighed by the need to prevent railroad employees from being involved in drug use and causing accidents that can be life-threatening. The Supreme Court also made it clear that public schools and universities have a “green-light” to drug test students involved in extracurricular activities. Drug testing of dental students should mirror some variation of programs previously implemented in athletics, aviation, military forces, federal services, and some health care professions.

## Public Safety

The National Institutes of Health (NIH) reported that over two million Americans have opioid use disorder, which may impair the mental and or physical ability required for the performance of potentially hazardous tasks.<sup>27</sup> Health care providers working under the influence of drugs are a threat to public safety because their ability to care for the well-being and safety of their patients is impaired. Ensuring the safety of the public is a primary concern for employers including hospitals, where many dental students enroll in postgraduate residency programs. Many federal agencies, such as the U.S. Department of Transportation, U.S. Department of Defense, and U.S. Nuclear Regulatory Commission’s Fitness for Duty Programs (according to [drugabuse.gov](http://drugabuse.gov)), require a drug-free workplace and conduct drug testing to deter personnel from using illicit drugs and misusing prescription drugs that impact executive functions.

It is also imperative that we remain mindful of the changing culture concerning drug use, especially with the epidemic of SUD involving opioids and the legalization of cannabis. Crean et al. reported in their review of effects of cannabis on executive cognitive functions that, even though deficits in cognitive and motor function resolve after a period of abstinence, the length of time may be 28 days or longer.<sup>28</sup> Those authors also reported on a study that compared decision making and risk-taking in cannabis users and cocaine users after 25 days of abstinence and found similar impairment in both groups, which was significant when compared to non-using controls. The most enduring long-term effect of cannabis use is a deficit in decision making, which has also been found in patients using other drugs such as cocaine and methamphetamines.<sup>29-32</sup> While the number of states

legalizing the use of cannabis has been increasing, the Department of Transportation continues to forbid its pilots, school bus drivers, truck drivers, train engineers, subway operators, aircraft maintenance personnel, transit fire-armed security personnel, ship captains, pipeline emergency response personnel, and others from cannabis use in the interest of public safety.<sup>33</sup>

Dentistry is one of the fields whose practitioners are likely to encounter stress, depression, and SUD.<sup>34</sup> Among the most notable factors are availability of the medication and experimentation in conjunction with induced job stress. One of the most deleterious effects of SUD in health care providers is the potential harm to patients. One study of oral and maxillofacial surgery residents and illicit drug use reported “consistent charting errors, isolated or withdrawn from peers, increased tardiness or absenteeism, increased labile mood with frequent unexplained anger and overreaction to criticism, increased difficulty with authority, dishonesty, and tremors.”<sup>35</sup> If SUD affects 10% of our dental students, it may be inferred that MSDT would protect a certain percentage of our patients from being treated by a dental student who is under the influence.

Another potential benefit of implementing MSDT is that it could identify students who use and abuse drugs and help them get into prevention programs at an early stage in their careers. Similar to high school athletic programs that implement MSDT, if a student is found to have a positive drug test, a number of benchmarks could be met including “mandatory counseling, referral to a drug treatment facility, and passing subsequent drug tests” to facilitate recovery prior to returning to their educational curriculum.<sup>36</sup> Student affairs offices (or the equivalent) can play a critical role in referring dental students with positive test results for appropriate SUD treatment programs. Such prevention programs could reduce the numbers of dental students that use illicit drugs and are at risk for SUD. MSDT combined with a robust substance abuse educational program may prove to be beneficial for not only the individuals battling SUD, but also for those who may indirectly be affected by SUD. This process gives schools not only the ability to help with intervention and prevention for the health of our students but also to promote the safety of our patients. It is time to adjust our practices to adapt to the changing times to ensure the safety of our patients and the potential need for intervention for students and future dentists at risk of developing SUD.

## Recognized Need for Drug Testing

At least two higher education institutions have recently instituted mandatory drug testing for admissions.<sup>13,37</sup> The American Association of Colleges of Pharmacy (AACP) recommends that all U.S. pharmacy schools drug-screen students upon conditional acceptance ([www.aacp.org/resource/drug-screenings](http://www.aacp.org/resource/drug-screenings)). One of the main reasons given for conducting the screenings is to enhance the safety and well-being of patients while increasing the public's trust in the profession. The School of Medicine at Oregon Health and Science University (OHSU) requires all faculty, staff, and students involved in patient care to have a drug-screening test.<sup>37</sup> Entering medical students at OHSU must complete the drug-screening test in the first month of enrollment and can be tested for cause any time during their medical education program. The University of Missouri School of Nursing and the Dietetics, Nuclear Medicine, Radiography, Respiratory Therapy, and Ultrasound programs require a Panel 14 Drug Screen Test, which includes amphetamines, barbiturates, benzodiazepines, cannabinoids, cocaine, ethanol, ketamine, meprobamate, methadone, meperidine, opiates, oxycodone, propoxyphene, and tramadol.<sup>13</sup> Students enrolled in the University of Missouri School of Medicine's Occupational Therapy, Physical Therapy, Child Life, Clinical Lab Sciences, and Athletic Training programs need a Panel 8 Drug Screen, which includes amphetamines, barbiturates, benzodiazepines, cannabinoids, cocaine, ethanol, opiates, and phencyclidine (PCP).

Two studies examined the effects of randomized drug testing in health professions programs.<sup>21,38</sup> The McWhorter School of Pharmacy at Samford University, Birmingham, AL, implemented a mandatory random urine drug-screening program that was integrated into its four-year curriculum.<sup>21</sup> This program was well received among first-year pharmacy students. The Academic Anesthesiology Department in the Cleveland Clinic Anesthesiology Institute approached the process from the perspective of active prevention, including specific mandatory education programs for all department personnel on a recurring basis, strengthened procedures for the detection and prevention of controlled substances, and enhanced skill-building for detection of impairment.<sup>38</sup> Additionally, that department implemented a multifaceted drug testing program, including random and "for cause" urine screens, for prevention and

early detection of abused anesthetic drugs and other substances of abuse. A number of family medicine programs accredited by the Accreditation Council for Graduate Medical Education drug test their residents in training prior to employment.<sup>9</sup> It appears that many professional schools have determined that drug testing has become necessary to improve the education of students and the care of patients.

## Professional and Ethical Responsibility

While the Drug-Free Schools and Communities Act (DFSCA) mandates that institutions of higher education examine methods for preventing illegal use of alcohol and other drugs on their campuses,<sup>11,12</sup> institutions that provide medical and dental care should consider establishing a higher standard. According to the American Dental Association (ADA) Principles of Ethics and Code of Professional Conduct, "The dental profession holds a special position of trust within society. As a consequence, society affords the profession certain privileges that are not available to members of the public-at-large. In return, the profession makes a commitment to society that its members will adhere to high ethical standards of conduct."<sup>39</sup> As dental educators, we have an obligation to uphold, teach, and adhere to the code of conduct of our profession and to convey these core values to our students.

## Drug Testing Is Cost-Effective

Peat estimated in 1995 that the annual cost of a drug-testing program was less than \$50,000.<sup>40</sup> In that analysis, the indirect cost of dealing with the many issues related to illicit drug use by employees and students far outweighed the financial burden associated with direct costs associated with an MSDT program. According to Peat, in a longitudinal study conducted by the United States Postal Service (USPS) in which positive drug-tested employees were compared to negative drug-tested employees for ten years, the USPS had a cost savings of over \$100,000,000 during that ten-year period. These savings were a result of having lower rates of absenteeism, reduction in involuntary turnover, decrease in utilization of the Employee Assistance Programs, decline in the number of medical claims, and decrease in the need to impose disciplinary actions. Although those data are now 24 years old and the costs of all factors are likely

significantly different now, this comparison points to the need for careful analyses of costs of testing versus the costs of having employees (or students) who use or abuse drugs.

According to Fitzsimons et al., when all treatments and follow-up were considered, the savings for prevention far outweighed the cost of drug treatment, which was estimated to be in excess of \$100,000 per practitioner.<sup>41</sup> They reported that the cost for drug treatment programs for one anesthesia resident can be as much as \$9,000 for three to seven days of detoxification and intensive medical and psychiatric care. In-patient treatment for 30 days costs approximately \$25,000, and it is common to have residential treatment for up to 90 days. Outpatient treatment for four to eight weeks approaches \$8,000. These costs are compounded by the fact that it takes approximately six months to return to duty after substance abuse events. The estimated cost of diagnosis, initial management, and lost clinical revenue is more than \$60,000-\$70,000 for a single resident. When the cost of psychiatric care, follow-up through physicians' health services for three to five years, and mandatory drug testing for a physician recovery are considered, the total cost of returning a physician to unrestricted medical practice is thus likely to be in excess of \$100,000. As a result, Fitzsimons et al. concluded that a significant amount of financial resources could be saved by deterring a single physician from illicit drug use.

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## ***Viewpoint 2: Mandatory Drug Testing of Dental Students Carries Costs and Risks for Institutions and Students and Has Unproven Benefits***

In the U.S., MSDT and mandatory random student drug testing (MRSDT) in secondary schools were reported in 2001 and 2002 to have become more widely used, with proponents advocating that it is a method of deterring drug use.<sup>42,43</sup> However, both secondary schools and higher education institutions should use evidence-based practice when developing programs to prevent illicit use of drugs and making recommendations for future prevention efforts. This

evidence-based practice should be used to address the most important and relevant issues for each institution and include assessment of the readiness level of the institution before contemplating implementation of MSDT as a preventive measure.<sup>10</sup> Specific objectives and an accurate plan must be in place by evaluating data on current student drug use and its consequences in order to improve each institution's policy on prevention while maximizing its resources. In other words, there should be some measure of effectiveness.

Four studies in secondary and higher education found limited empirical data to support the effectiveness of MSDT in deterring illicit drug use.<sup>44-47</sup> We found no evidence that MSDT of medical and dental students promotes patient safety. In the absence of evidence on effectiveness, educators and administrators should not implement and subject all dental students, without reasonable cause, to mandatory drug testing. This viewpoint argues that MSDT is not an effective deterrent for student drug use, can violate student civil liberties, inflicts a financial burden that does not maximize an institution's resources, and negatively affects students who receive false positive test results that can impact their future careers as health professionals; in addition, there are significant limitations of drug test panels.

## **Not an Effective Deterrent**

In a study published in 1992 in which researchers evaluated college athletes who were subjected to MRSDT, they found little evidence that the "threat" of a drug test had a significant effect on deterring illicit drug use.<sup>16</sup> Those and other researchers found little difference in use of illicit drugs and alcohol between college student athletes in the National Collegiate Athletic Association and Canadian Interuniversity Athletic Union (who were subject to random drug testing) and general college students.<sup>16,48,49</sup>

Research on drug use by dental students and its negative consequences is minimal. In a recent study on dental students' health issues presented as a poster at the 2017 American Dental Education Association (ADEA) Annual Session & Exhibition, 71.7% of responding students self-reported using alcohol, and 15% reported using medications to increase focus while studying.<sup>8</sup> This study is available only as an abstract with limited information. Types of drugs used and whether students provided clinical care or attended class while under the influence were not reported.

In 2006, the U.S. Department of Education's Institute of Education Sciences performed a comprehensive investigation of students in secondary schools with MRSDT and control schools that did not use MRSDT.<sup>46</sup> According to its results, there was no difference in self-reported use of alcohol, tobacco, and other illicit substances between students in the two types of schools. Students also had similar participation rates in extracurricular activities, there was no impact on the extent to which students reported feeling connected with their school, there were no spillover effects on students as they observed and were influenced by the actions of their peers, and there was no impact on school-reported disciplinary incidents.<sup>46,50</sup> In 2002, another study evaluated effectiveness of MSDT among middle and high school students.<sup>44,45</sup> Those investigators found that drug-testing policies had only a negligible difference on marijuana and other illicit drug use and determined that drug testing had failed to deter drug use.

## Potential Student Civil Liberty Violations

According to Bickel and Lake, court rulings have made it clear that colleges and universities must have offerings that meet minimum standards of care and take steps to deal with dangerous situations on campus; however, those institutions cannot expect to control student conduct.<sup>51</sup> Institutions must also ensure that enforcement of sanctions is consistent among all identified students, documenting that similarly situated offenders are treated in a similar manner.

The U.S. Supreme Court ruled that requiring employees to produce urine samples constituted a "search" based on the Fourth Amendment of the U.S. Constitution, which protects citizens against unreasonable search and seizure.<sup>26,52</sup> From this judicial interpretation, we can argue that mandatory drug testing of dental students must meet the "reasonableness" requirement of search and seizure under the Fourth Amendment. The "reasonableness" of a urine test must be based on the needs of each institution, such as the concern for patient safety that must be demonstrated by the institution and balanced against individual privacy rights to avoid a Fourth Amendment violation and potential litigation based on encroachment of civil liberties.

Another constitutional issue of MSDT involves the Fifth Amendment, which prohibits denial of life, liberty, or property without "due process."<sup>52</sup> Denying students the right to continue their dental education

based on drug test results may invoke "due process" considerations. Students should be given the opportunity to challenge the validity of test results and exercise the right to respond to those results prior to any repercussions or mandated treatment programs. Also, people have a fundamental right to privacy of their person and property under the Fifth Amendment. Although drug testing has been deemed legal, it may be challenged if testing results are divulged indiscriminately, if procedures for obtaining personal specimens encroach on privacy rights of the individual, or if testing is imposed unnecessarily or excessively.<sup>36</sup>

Drug testing is legal; but just because something is legal does not make it ethical.<sup>26</sup> Withholding a person's right to pursue education, a career, or a means of livelihood based on a clinical illness such as SUD may not be ethical. The ethics of implementing such punitive actions as expulsion, loss of employment, and denial of advanced/graduate education, along with involvement of law enforcement based on a student's chemical dependence and SUD, should be examined carefully. According to Swani and Miller, the British Medical Association and Royal College of Nursing do not support random drug testing because of major implications with regard to civil liberties.<sup>53</sup> The ADA House of Delegates has recognized the need for research on substance abuse disorders among dentists, dental team members, and dental and dental hygiene students.<sup>54</sup> However, the ADA currently does not have a policy or stance on mandatory drug testing for dentists and students.

## Financial Burden

According to Roach in 2005, the cost of MSDT programs is significant, ranging between \$15 and \$50 for each standard drug screening.<sup>55</sup> From 1987 to 1991, the average direct cost per test incurred by federal agencies was \$74.<sup>56</sup> The same report noted that, during this time period, the Department of Justice litigated 68 drug test-related cases, at a cost of \$725,000. In medical education, the academic anesthesiology program at the Cleveland Clinic Anesthesiology Institute that included both pre-employment and random drug testing estimated its cost to be \$50,000 per year.<sup>38</sup>

The cost of testing is not limited to the test.<sup>57</sup> Support personnel with appropriate training are required to discuss test results, make appropriate referrals, impose disciplinary actions, monitor participation in treatment and counseling, track follow-up testing, and mandate intervention when necessary.

Meticulous documentation imposes yet another cost. Furthermore, in the litigious society in which we live, institutions will also incur the cost of legal counsel when they design and implement testing programs. In addition, there must be consistent efforts to examine prevention programs in order to identify gaps and measure outcomes and effectiveness.

Overall, the cost of drug testing simply may not outweigh the benefits when test results show a small percentage of positive results, as found in Lewy's study of drug testing of physicians in a large urban hospital published in 1991.<sup>58</sup> In 2015, Bell et al. reported program policies and practices of incoming residents and medical students in family medicine training in the U.S.<sup>9</sup> The majority of these programs (68.9%) required drug testing of incoming residents and had only 6.5% positive drug tests. Most of these programs did not require testing of medical students. In Lewy's study, pre-employment urine toxicology examinations of 791 physicians between 1987 and 1990 who were beginning graduate medical education only resulted in two individuals (0.25% of the total) with confirmed, positive results for illegal drugs.<sup>58</sup> In secondary education, Florida's statewide MRSDDT program to test for steroids in school athletes was eliminated in 2009 after only one year, partly due to cost.<sup>59</sup> During the first year of statewide implementation, New Jersey tested 150 student-athletes in 2007, and Illinois tested 264 student-athletes in its MSRDDT program in 2009—both resulting in no positive tests.<sup>60,61</sup>

When the costs and resources needed to implement mandatory drug testing of all dental students are considered, the expense may not justify the outcomes.

State and federal funds should not be used to subsidize a drug-testing program that cannot substantiate its effectiveness. Limited resources of institutions should be spent on programs that are evidence-based.

## Drug Test Limitations and False Positives

Limitations in MSDT and the subsequent lack of effectiveness of drug tests to deter drug use are linked to the cycle of drug use. Drug user behavior is complex. Primarily, the use of the drug can be influenced by the preference of the user, based on effects and sensation, and, secondly, by the drug "in fashion" and the willingness of the consumer to use it. As Stuart noted, drug testing using standard panels is limited due to the use of novel or new drugs that may not be included in the drug test.<sup>62</sup> The range of drugs to be tested in an eight- or 14-drug panel test is limited, excluding other drugs of choice. Those who are aware of the upcoming drug test may choose to temporarily abstain from using illicit drugs, which may lead to inaccurate results and may not properly identify regular drug users. The half-life of the drug in the system and the time of testing, combined with advance notification or pattern in execution of the test, may dictate how a student consumes or alters the dose prior to testing. There is substantial information on the Internet on how to "pass a drug test," providing information to the population on how to beat a drug test and not get caught. Table 1 shows a drug panel test including alcohol that we compiled from three websites that provide information on drug detection times.

**Table 1. Typical drug panel test including alcohol and drug detection time in urine, blood, saliva, and hair**

Drug	Drug Detection Time			
	In Urine	In Blood	In Saliva	In Hair
Alcohol	3-5 days	10-12 hours	1-5 days	Up to 90 days
Amphetamines	1-3 days	12 hours	1-5 days	Up to 90 days
Barbiturates	2-4 days	1-2 days	1-10 days	Up to 90 days
Benzodiazepines	3-6 weeks	2-3 days	1-10 days	Up to 90 days
Cannabis	7-30 days	Up to 2 weeks	1-10 days	Up to 90 days
Cocaine	3-4 days	1-2 days	1-10 days	Up to 90 days
Heroin	3-4 days	12 hours	1-4 days	Up to 90 days
LSD	1-3 days	2-3 hours	1-2 days	Up to 90 days
MDMA (Ecstasy)	3-4 days	1-2 days	1-5 days	Up to 90 days
Methamphetamines (crystal meth)	3-6 days	24-72 hours	1-4 days	Up to 90 days
Methadone	3-4 days	24-36 hours	1-10 days	Up to 90 days
Morphine	2-3 days	6-8 hours	1-4 days	Up to 90 days
Propoxyphene (opiate)	1-2 days	Up to 2 days	1-2 days	Up to 90 days

Source: Data compiled from [www.drugs.ie/drugs\\_info/about\\_drugs/how\\_long\\_do\\_drugs\\_stay\\_in\\_your\\_system/](http://www.drugs.ie/drugs_info/about_drugs/how_long_do_drugs_stay_in_your_system/), [www.passyourdrugtest.com/timetable.htm](http://www.passyourdrugtest.com/timetable.htm), and [alwaysstestclean.com/drug-detection-times-chart/](http://alwaysstestclean.com/drug-detection-times-chart/).

The issue of false-positive test results is one that has caught the attention of researchers and media, as reported by DuPont et al.<sup>63</sup> Although the purpose of implementing MSDT is to deter illicit drug use, the reality is that it can adversely affect the professional development of those identified. Illegal use of drugs is subject to the institution's sanctions as well as to criminal sanctions provided by federal, state, and local laws.<sup>1</sup> The identified students in one dental school may face punitive programs with academic consequences that range from expulsion to mandated enrollment in a program that involves law enforcement.<sup>15</sup> In addition, institutions with mandatory drug testing may have policies that require students who have tested positive to be responsible for any cost related to retests even though the possibility of false positive tests may exist, as at the University of Missouri.<sup>13</sup> There have also been cases of students who tested positive for banned substances that were used legally for medical reasons.<sup>36</sup> Furthermore, if the possession of an illicit drug is reported to law enforcement, the record of drug use may follow that student even after leaving school. A national survey of drug prevention coordinators in secondary schools reported in 2009 the presence of punitive practices that contradicted the federal guidelines regarding non-punitive consequences on students who tested positive.<sup>64</sup> Reports of incidents in which law enforcement is involved are available through a criminal background check (CBC). In the U.S., Rutgers School of Dental Medicine conditionally admits students based on results of a CBC.<sup>65</sup>

In health-related professions that require permits or licensure, we have found that questions in the application process require disclosure of the use of any illicit drug or controlled substances. We have observed that the same applies, in some instances, in centralized health professions school applications, in which the applicant must disclose any past history in violation of student conduct or illegal activity. Other consequences associated with the impact of false positives in an academic setting may be related to interpersonal relationship stressors with peers, teachers, and academic administrators involved in the case, as found in Levy and Schizer's study of adolescent drug testing in schools.<sup>66</sup> MSDT can lead to a negative educational environment among students, faculty, and staff that can include trust issues, stress, stigma, and biases that may be detrimental to the professional development of students.

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***Response by Drs. Gibson, Loza-Herrero, and Yepes to Viewpoint 2:***

We agree with Viewpoint 2 that higher education institutions cannot expect to control student conduct; after all, students are adults whose rights and privileges are protected under the U.S. Constitution. However, institutions that train future professionals who provide medical and dental care to patients must consider establishing a higher standard. As dental educators, we have an obligation to uphold, teach, and adhere to the code of conduct of our profession and to convey these core values to our students. Certainly, many professional schools have determined that drug testing has become necessary to improve the education of students and the care of patients. The ADA House of Delegates recognized the need for research on substance abuse disorders among dentists, dental team members, and dental and dental hygiene students because, as leaders in the dental community, the delegates understand that health care providers working under the influence of drugs are a threat to public safety. Many schools of medicine, pharmacy, nursing, dentistry, and residency programs perform mandatory drug testing and implement multifaceted drug testing programs, including random and "for cause" urine screens, for prevention and early detection of SUD, for the well-being of patients, and to increase the public's trust.

As the authors of Viewpoint 2 confirmed, in the U.S., as long as there is adherence to the Fourth and the Fifth Amendments, the Supreme Court has ruled in favor of MSDT, alleviating any concerns regarding violation of student civil liberties. Where we vehemently disagree with Viewpoint 2 is that the financial burden associated with MSDT is too significant to implement. We reiterate our position that the indirect cost of dealing with the many issues related to illicit drug use in students far outweighs the financial burden associated with direct costs associated with implementing an MSDT program.

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***Response by Drs. Kim-Berman, Dilbone, and Perez to Viewpoint 1:***

Although we agree with the authors of Viewpoint 1 that instilling professional and ethical conduct in students to ensure public safety and assisting students at risk for substance use disorder should be a focus of dental educators, a decision by educational institutions to engage in mandatory drug testing of students is not based on any currently available evidence. Given the review of the many issues of MSDT



and the viewpoints expressed, we continue to assert that there is no advantage of implementing MSDT in dental schools for all students in the absence of empirical data supporting its effectiveness. Although MSDT is legal and there are hospitals and medical and dental schools that are currently drug-testing students and residents, evidence of universal MSDT that has resulted in increased patient safety, improved student well-being, and prevention and deterrence of substance use is not yet available. Prevention systems must be designed based on a thorough needs assessment of the objective data, establishment of metrics to measure objectives, and implementation of prevention activities that research has shown to be effective. The results of the prevention program should be continually refined to improve the program's objectives. Additionally, success of a drug-testing program depends on widespread cooperation and engagement in the implementation and regular review from all the stakeholders including students, faculty, leadership, and community.

A possible alternative to suspicion-less drug testing of all students may be implementation of suspicion-based testing, which some universities and dental schools have adopted. Drug testing of students under suspicion programs is based on reasonable cause, which may consist of observation of drug possession or use, a pattern of erratic behavior or physical symptoms, or arrest/conviction for a drug-related offense. "For cause" testing may also promote responsible use of valuable and limited resources by the educational institutions without negatively impacting their students since the focus is on those at risk for drug abuse. This kind of testing may also help avoid potential litigation and ensure public safety.

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