

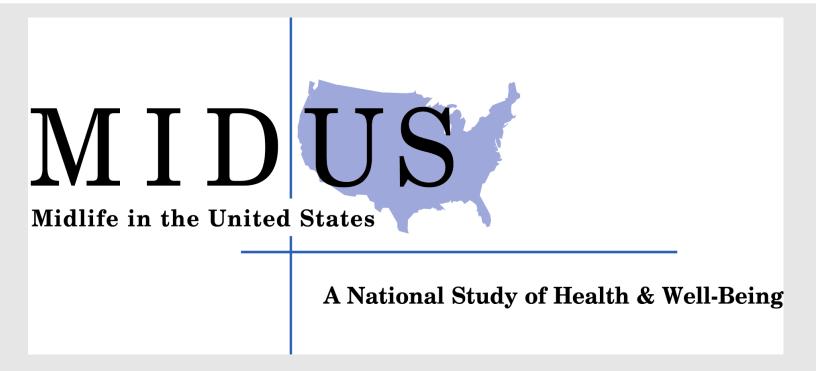
#### **Overview**



- MIDUS background:
  - Study design, unique features, content/measures
- Research data access and documentation
  - Importance of structured metadata
  - Using Data Documentation Initiative (DDI)
  - Facilitating documentation and discovery of longitudinal research data
- Demonstrate MIDUS Portal
  - Metadata standards → find, access, interpret, use







- · Baseline: 1995
  - Harvard University
  - Funded by MacArthur Foundation
  - National sample: N=7,108
  - Ages 25-74



- Unique Features

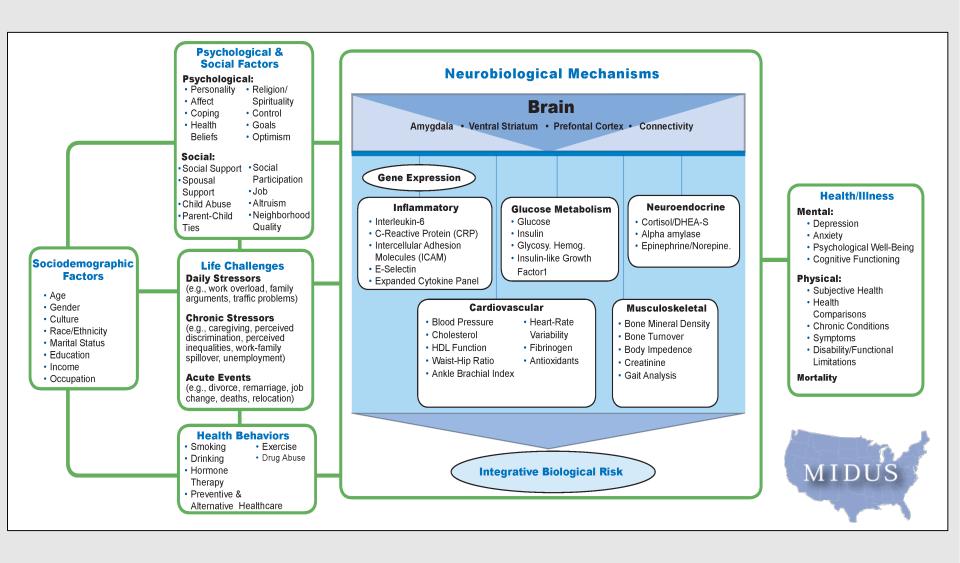


- Multidisciplinary
  - "Bio-psycho-social" approach
  - Extensive assessments and data types



# MIDUS Background -Multi-disciplinary framework





#### **PROJECT 1**

#### (SURVEY OF A NATIONAL SAMPLE)

Assessed a wide array of psychological constructs (e.g., personality, psychological well-being, positive and negative affect, sense of control, goal orientations) and demographic characteristics (e.g., gender, marital status, socioeconomic standing, employment status), along with extensive health measures (mental and physical).

MODE: 30-minute Phone Interview and Two 50-page Self-Administered Questionnaires

#### THE MIDUS II PROJECTS

#### **PROJECT 2**

(Daily Diary Study)

8 days of daily experience obtained via phone interviews.

(e.g., time use, physical health symptoms and substance use, work productivity, psychological distress)

4 days of salivary cortisol

#### **PROJECT 3**

(Cognitive Functioning)

## Phone-based cognitive battery

(e.g., episodic verbal memory, working memory, verbal ability and speed, fluid intelligence/reasoning, speed of processing, episodic verbal memory/forgetting)

Face-to-face assessment of cognitive capacities

#### **PROJECT 4**

(Biomarkers)

2-Day Clinic Visit: Biomarkers—neuroendocrine, cardiovascular, immune, bone

Physical exam

Medical history

Medications

Sleep assessments

Laboratory challenge study—heart-rate variability, blood pressure, cortisol

#### **PROJECT 5**

(Neuroscience)

### Affective reactivity & recovery:

- baseline electroencephalography (EEG)
- task-related EEG
- task-related electromyography (EMG; eyeblink startle response, post auricular startle reflex, corrugator supercilli activity)
- structural MRI of neuroanatomy
- task event-related fMRI

- Unique Features

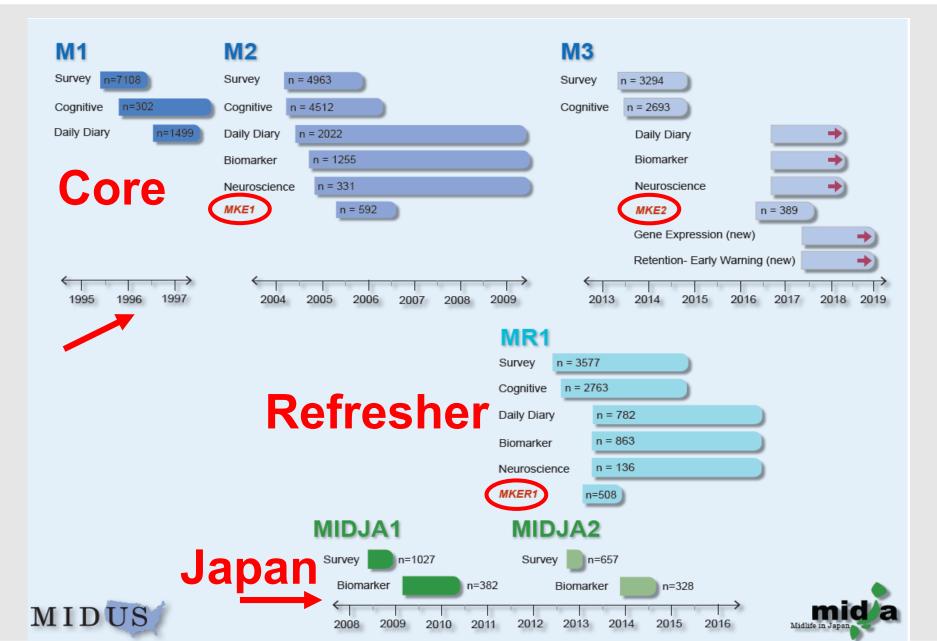


- Multidisciplinary
  - "Bio-psycho-social" approach
  - Extensive assessments and data types
- Longitudinal
  - Repeated assessments over 25 years
- Multiple samples
  - 2 National RDD (Core and Refresher)
    - Sibling, Twins (within Core)
  - 2 Milwaukee African American (Core and Refresher)
  - 1 Japanese



- Longitudinal, multi-disciplinary, multi-sample





- Unique Features



- Multidisciplinary
  - "Bio-psycho-social" approach
  - Extensive assessments and data types
- Longitudinal
  - Repeated assessments over 25 years
- Multiple samples
  - 2 National RDD (Core and Refresher)
    - Sibling, Twins (within Core)
  - 2 Milwaukee African American (Core and Refresher)
  - 1 Japanese
- Rich and integrated data resource



# MIDUS Background - Rich data resource



- 28 primary datasets
  - 37,000 variables
  - N ≈ 13,000
- Open Data philosophy
  - Archived/distributed by NACDA/ICPSR
  - Widespread secondary usage since 1999:
    - 136,000 data downloads
    - 24,000 users
    - 1,500 publications



#### **MIDUS Documentation**

- Metadata standards are critical



- Documentation
  - Independently understandable
- Metadata
  - Maximize usability
    - FAIR (Findable, Accessible, Interoperable, Reproducible)
- Data Documentation Initiative:
  - A machine-actionable metadata standard to describe social science research data
  - DDI used by
    - NACDA/ICPSR
    - MIDUS





#### **MIDUS Documentation**

- Metadata standards are critical



#### MIDUS Portal uses Colectica software

#### Variable Search

- Searches metadata fields such as: variable names, labels, question text, assigned concepts
- Searches across MIDUS project datasets

#### Harmonization

 Clarifies the equivalency and relationship of similar variables across waves or samples

#### Data extract

- Create custom datasets
- Facilitate accurate merges across numerous datasets







#### The MIDUS Colectica Portal



## http://midus.colectica.org



The MIDUS portal is organized around four primary functions:

of variables in different scientific topics.

Homepage: Data and documentation for individual MIDUS Projects can be found below. Users can browse variables, read abstracts, and
download instruments and documentation for each MIDUS Project. Complete Project datasets are also available via links to the official MIDUS
archive at ICPSR.

aging as an integrated bio-psycho-social process. Begun in 1995, MIDUS has grown to include data from over 12,000 individuals, comprising thousands

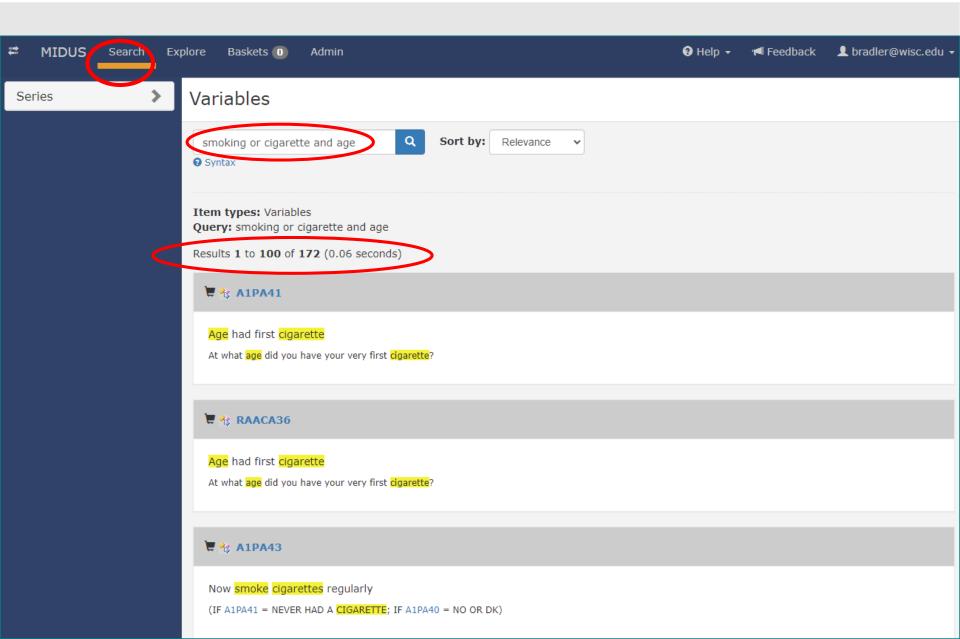
### - Homepage



MIDUS	Search	Explore	Baskets 2	Admin	Help	¶ Feedback	<b>⊥</b> bradler@	⊕wisc.edu 🕶
					•			
		П	MIDUS 1	(Core)				
		P	roject 1 (Survey)	In 1995/96, the MacArthur Midlife Research Network conducted the MIDUS 1 (M1) survion a national sample of over 7,000 Americans aged 25 to 74. This sample included subsamples of Siblings and Twin Pairs.	ey Study Documentat	Browse ion Variables	Download Full ICPSR Dataset	Download PDF Codebook
			Project 1 (Twin Screener)	MIDUS 1 screened a national sample of twin pairs that resulted in the MIDUS Twin sample. The data, instrument, and documentation from that screening effort are available here.	Study Documentat	Browse ion Variables	Download Full ICPSR Dataset	Download PDF Codebook
			roject 2 (Daily biary)	The M1 National Study of Daily Experiences examined the day-to-day livesparticularly the daily stressful experiencesof a subsample of M1 Survey respondents.	Study Documentat	Browse ion Variables	Download Full ICPSR Dataset	Download PDF Codebook
		ı	MIDUS 2	(Core)				
		P	roject 1 (Survey)	In 2004/05, MIDUS 2 (M2) Project 1 provided follow-up on the psychosocial, sociodemographic, and health variables assessed in MIDUS 1.	Study Documentat	Browse ion Variables	Download Full Dataset	Download PDF Codebook
			Project 1 (Disposition Codes)	Final disposition codes for the MIDUS 2 phone interview are available here.	Study Documentat	Browse ion Variables	Download Full Dataset	Download PDF Codebook
			Project 1 (Coded Text)	Responses to open-ended variables for the MIDUS 2 phone interview and SAQ were coded and are available here.	Study Documentat	Browse ion Variables	Download Full Dataset	Download PDF Codebook
			Project 1 (SAQxPhone)	An effort to interview SAQ non-responders via telephone interview resulted in extra SA data for 365 M2 respondents.	Q Study Documentat	Browse ion Variables	Download Full Dataset	Download PDF Codebook

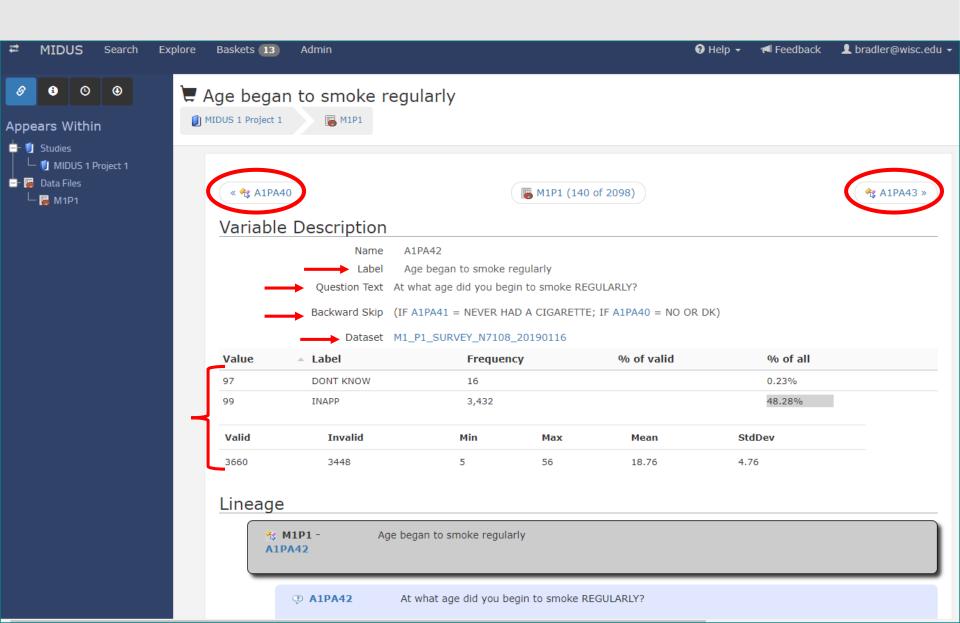
- Search



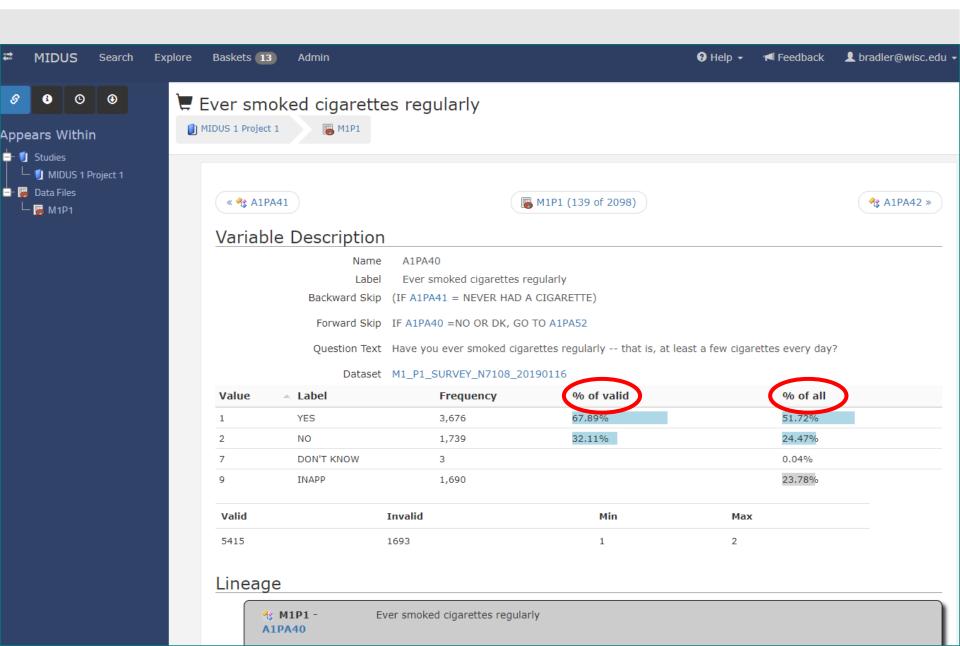


- Search



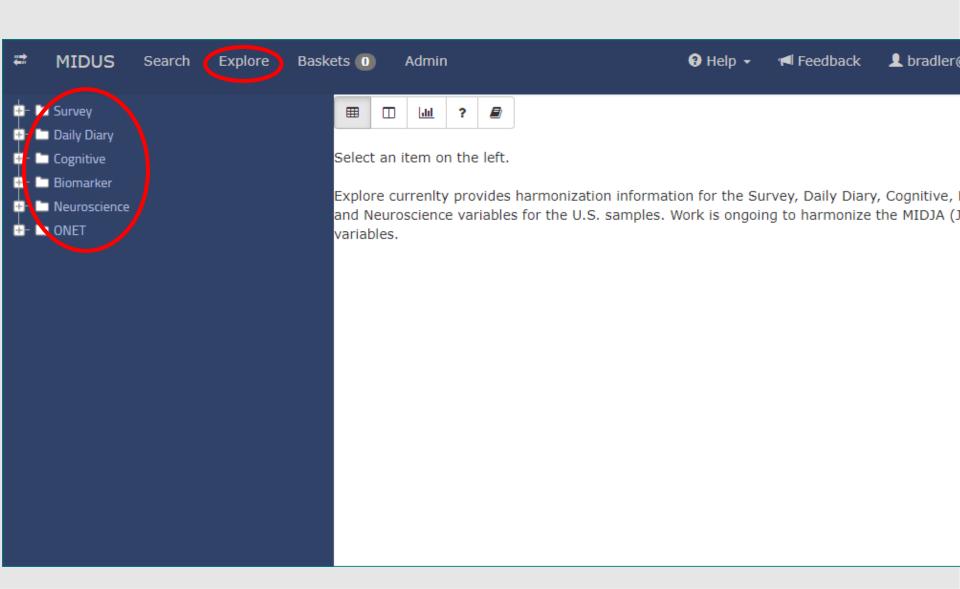












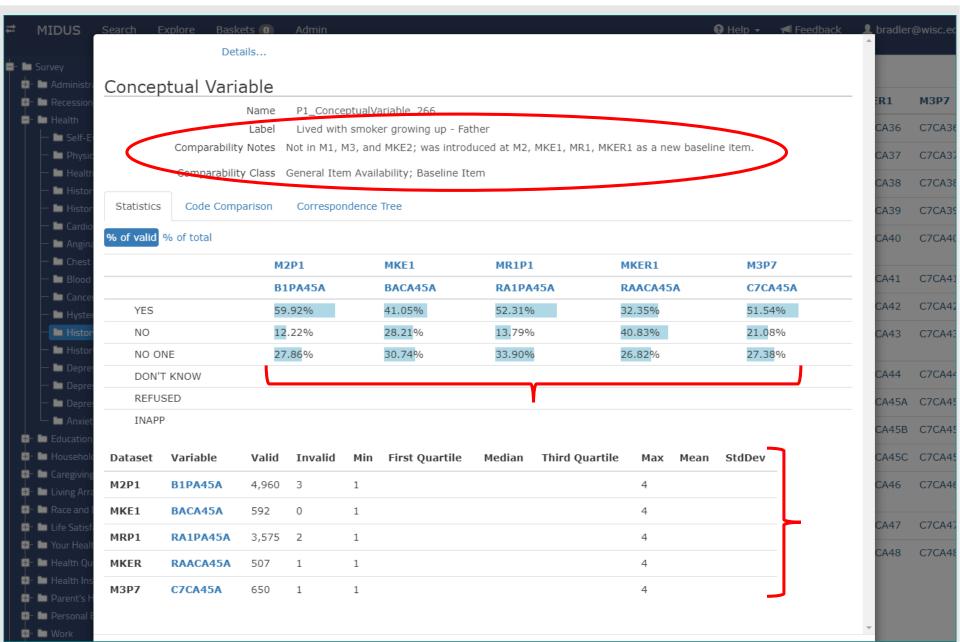
# MIDUS Portal - Explore



M2P1         M3P1           B1PA37         C1PA3           B1PA38A         C1PA3           B1PA38B         C1PA3           B1PA39         C1PA3	BACA36 C	MKE2 MR1P1 CACA36 RA1PA		M3P7
B1PA37 C1PA33 B1PA38A C1PA33 B1PA38B C1PA33	BACA36 C	CACA36 RA1PA		МЗР7
B1PA38A C1PA38			7 RAACA36	
B1PA38B C1PA3	88A BACA37 C			C7CA36
		CACA37 RA1PA	88A RAACA37	C7CA37
B1PA39 C1PA3	88B BACA38 C	CACA38 RA1PA	88B RAACA38	C7CA38
21.705 01170	89 BACA39 C	CACA39 RA1PA	9 RAACA39	C7CA39
B1PA40 C1PA4	0 BACA40 C	CACA40 RA1PA	RAACA40	C7CA40
B1PA41 C1PA4	BACA41 C	CACA41 RA1PA	1 RAACA41	C7CA41
B1PA42 C1PA4	BACA42 C	CACA42 RA1PA	2 RAACA42	C7CA42
B1PA43 C1PA4	BACA43 C	CACA43 RA1PA	RAACA43	C7CA43
B1PA44 C1PA4	4 BACA44 C	CACA44 RA1PA	4 RAACA44	C7CA44
B1PA45A	BACA45A	RA1PA	5A RAACA45A	C7CA45A
B1PA45B	BACA45B	RA1PA	5B RAACA45B	C7CA45B
B1PA45C	BACA45C	RA1PA	5C RAACA45C	C7CA45C
B1PA46 C1PA4	6 BACA46 C	CACA46 RA1PA	6 RAACA46	C7CA46
B1PA47 C1PA4	8 BACA47 C	CACA47 RA1PA	7 RAACA47	C7CA47
B1PA48 C1PA4	7 BACA48 C	CACA48 RA1PA	8 RAACA48	C7CA48
	B1PA48 C1PA4	B1PA48 C1PA47 BACA48 C	B1PA48 C1PA47 BACA48 CACA48 RA1PA4	B1PA48 C1PA47 BACA48 CACA48 RA1PA48 RAACA48

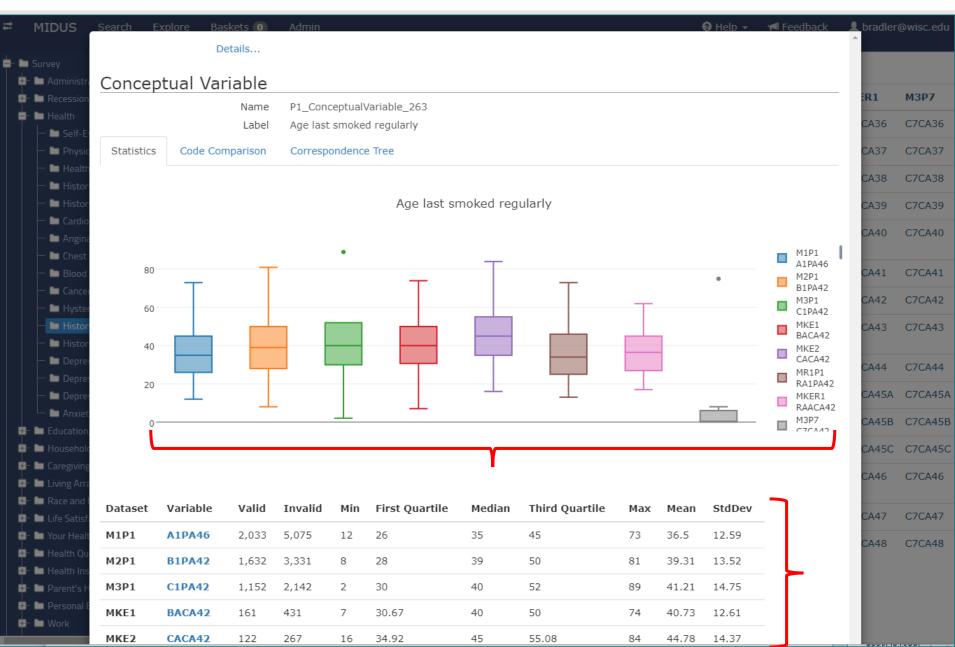
#### - Explore





# MIDUS Portal -Explore





#### - Basket



MIDUS Search Explore Baskets 8	Admin				<b>9</b> H	elp ₹ ¹I	<b>■</b> Feedback	♣ bradler	@wisc.edu
□- <b>□</b> Survey	<u>lılı</u> ? <b>∅</b>								
Administration									
Recession Experience		M1P1	M2P1	M3P1	MKE1	MKE2	MR1P1	MKER1	M3P7
☐ ☐ Health	Age had first cigarette	A1PA41	B1PA37	C1PA37	BACA36	CACA36	RA1PA37	RAACA36	C7CA36
☐ Self-Evaluated Health									
Physical/Mental Health Limits Work	Ever smoked agarettes regularly	A1PA40	B1PA38A	C1PA38A	BACA37	CACA37	RA1PA38A	RAACA37	C7CA37
─ ☐ Health at Age 16 ☐ History of Neurological Disorder	Age began to smoke regularly	A1PA42	B1PA38B	C1PA38B	BACA38	CACA38	RA1PA38B	RAACA38	C7CA38
History of Heart Trouble	Now smoke cigarettes regularly	A1PA43	B1PA39	C1PA39	BACA39	CACA39	RA1PA39	RAACA39	C7CA39
— 🗀 Cardiovascular Health									
Angina 🗮	Cigarettes per day during heaviest year - Current smoker	A1PA44	B1PA40	C1PA40	BACA40	CACA40	RA1PA40	RAACA40	C7CA40
— 🖿 Chest Pain	Current Sillokei								
─ 🖿 Blood Pressure	Ever tried to quit smoking	A1PA45	B1PA41	C1PA41	BACA41	CACA41	RA1PA41	RAACA41	C7CA41
─	Age last smoked regularly	A1PA46	B1PA42	C1PA42	BACA42	CACA42	RA1PA42	RAACA42	C7CA42
History of Smoking History of Drinking	Cigarettes per day during heaviest year - Past smoker	A1PA47	B1PA43	C1PA43	BACA43	CACA43	RA1PA43	RAACA43	C7CA43
— ■ Depression - Depressed Affect	Ever used pipe, cigars, snuff, chew		B1PA44	C1PA44	BACA44	CACA44	RA1PA44	RAACA44	C7CA44
Depression - Anhedonia  Depression - Depressed Affect and Anh	Lived with smoker growing up - Father		B1PA45A		BACA45A		RA1PA45A	RAACA45A	C7CA45A
Anxiety/Worry/Panic	Lived with smoker growing up - Mother		B1PA45B		BACA45B		RA1PA45B	RAACA45B	C7CA45B
Education, Occupation, and Marital Status	Lived with smaller marks and Char		D1D4450		DAGA 450		DA4D4455	DAAC: 455	6764456
Household Roster and Children  Caregiving	Lived with smoker growing up - Other		B1PA45C		BACA45C		KA1PA45C	RAACA45C	C/CA45C
□ Living Arrangements     □ Living Arrangements	In home anyone smoke or use tobacco current		B1PA46	C1PA46	BACA46	CACA46	RA1PA46	RAACA46	C7CA46
Race and Ethnicity	At job anyone smoke or use tobacco ever		B1PA47	C1PA48	BACA47	CACA47	RA1PA47	RAACA47	C7CA47
Life Satisfaction			DII AT/	CIIATO	DACAT/	CACA+/	IVALIAT/	IVANOAT/	C/CAT/
Health Questions for Women	At job anyone smoke or use tobacco		B1PA48	C1PA47	BACA48	CACA48	RA1PA48	RAACA48	C7CA48
- Health Insurance	current								
- Parent's Health									
#- Personal Beliefs									
+- Work									

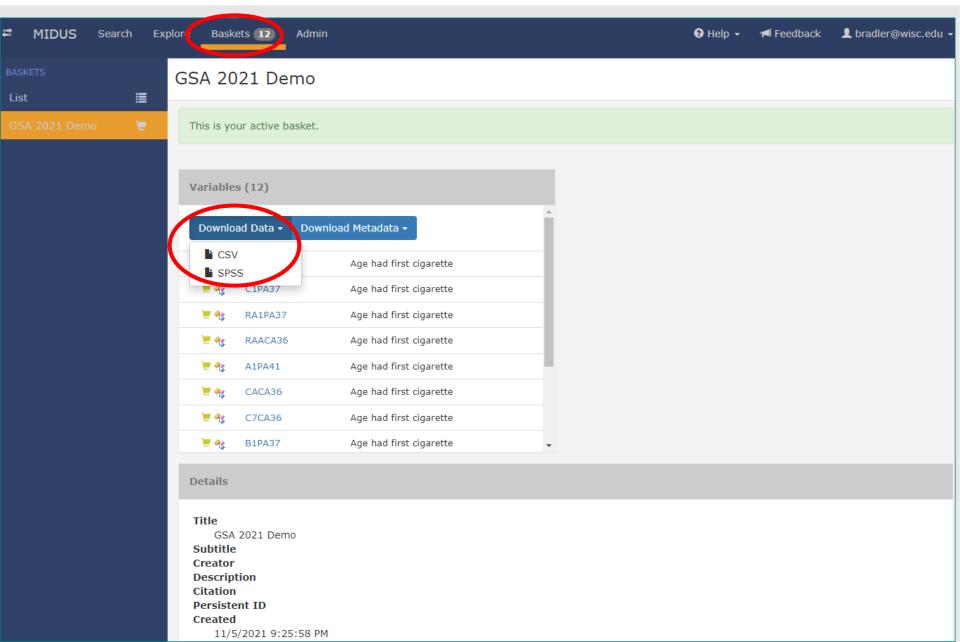
#### - Basket



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+- ► Survey					
+- ■ Daily Diary   +- ■ Cognitive		M2P4 MR	R1P4		
E- ■ Biomarker	₩ Biomarker blood sample status	B4ZBLOOD RA	4ZBLOOD		
+- Administrative	₩ Blood Hemoglobin A1c %	B4BHA1C RA	4BHA1C		
	₩ Blood Total Cholesterol (mg/dL)	B4BCHOL RA	4BCHOL		
+- Musculoskeletal	■ Blood Triglycerides (mg/dL)	B4BTRIGL RA	4BTRIGL		
+- Tait	■ Blood HDL Cholesterol (mg/dL)	B4BHDL RA	4BHDL		
→ Medication Chart	₩ Blood LDL Cholesterol (mg/dL)	B4BLDL RA	4BLDL		
#- Physical Exam	Blood Patic rotal / HDL Cholesterol	B4BKITIDE PA	4BRTHDL		
■ Blood Assay	Blood Creatinine (mg/dL)	B4BSCREA RA	4BSCREA		
Urine Assay	Blood DHEA-S (ug/dL)	B4BDHEAS RA	4BDHEAS	)	
+- Actigraphy	Blood DHEA (ng/me)	S-IBDHEA RA	4BDHEA		
F- Neuroscience	₩ Blood Fasting Glucose levels mg/dL	B4BGLUC RA	4BGLUC		
+- ► ONET	₩ Blood Fasting Insulin levels uIU/mL	B4BINSLN RA	4BINSLN		
	■ Blood Fasting IGF1 (Insulin-like Growth Factor 1) ng/mL)	B4BIGF1 RA	4BIGF1		
	₩ Blood Serum MSD IL6 (pg/mL)	B4BMSDIL6 RA	4BMSDIL6		
	₩ Blood Serum MSD IL8 (pg/mL)	B4BMSDIL8 RA	4BMSDIL8		
	₩ Blood Serum MSD IL10 (pg/mL)	B4BMSDIL10 RA	4BMSDIL10		
	₩ Blood Serum MSD TNF alpha (pg/mL)	B4BMSDTNFa RA	4BMSDTNFa		
	₩ Blood Serum IL6 (pg/mL)	B4BIL6 RA	4BIL6		
	₩ Blood Serum Soluble IL6 Receptor (pg/mL)	B4BSIL6R RA	4BSIL6R		
	Pland Fibringson (mg/dL)	DARECN DA	ARECN		





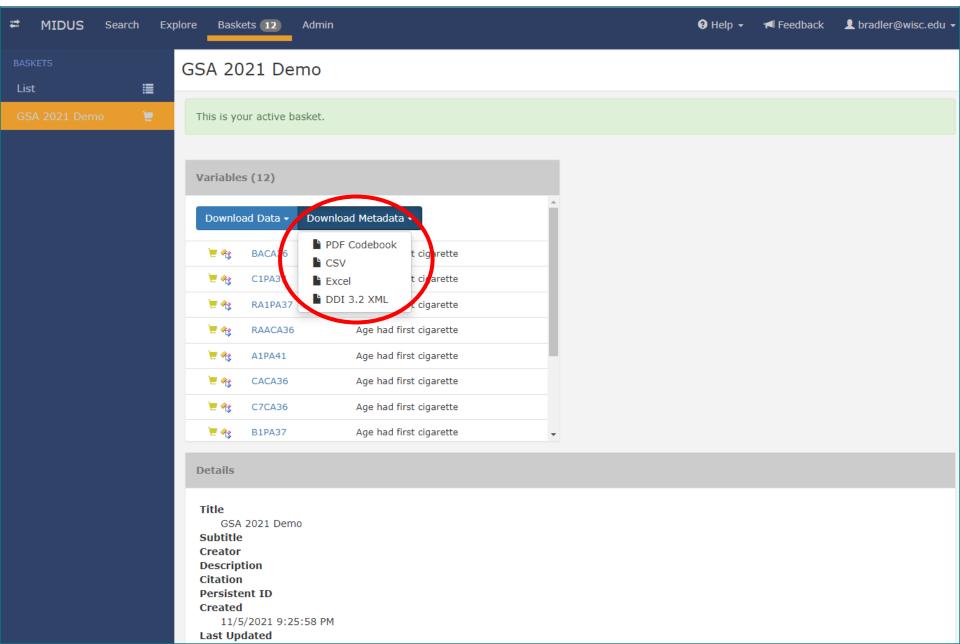


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3	M2II	D	MIDU	S 2 ID num	nber				None				None	Numerio	8	0	8		■ Right
4	MRI	D	MIDU	S Refreshe	er ID number	г			None				None	Numerio	8	0	8		■ Right
5	C1P	A37	Age h	ad first cig	arette				{96, NE	EVER H	HAD A CIGAF	RETTE}	97, 98, 96	Numerio	8	0	8		Right
6	A1P	A41	Age h	ad first cig	arette				{96, NE	EVER H	HAD A CIGAR	RETTE}	97, 98, 99	Numerio	8	0	8		■ Right
7	B1P	A37	Age h	ad first cig	arette				{96, NE	EVER H	HAD A CIGAR	RETTE}	96, 97, 98	Numerio	8	0	8		■ Right
8	B4B	SCREA	Blood	Creatinine	(mg/dL)				{98, MI	ISSING	}		98, 99, 98	Numerio	8	0	8		■ Right
9	B4B	DHEAS	Blood	DHEA-S (	ug/dL)				{998, N	MISSING	G}		998, 999, 9	98 Numerio	8	0	8		■ Right
10	BAC	CA36	Age h	ad first cig	arette				{96, NE	EVER H	HAD A CIGAR	RETTE}	97, 98, 99	Numerio	8	0	8		■ Right
11	CAC	CA36	_	ad first cig							HAD A CIGAR		96, 97, 98	Numerio	8	0	8		■ Right
12	RA1	PA37	_	ad first sia	aratta ID		00 01 11 11 B		toe VIE	EVED L	TVD V CICVE	DETTEL	07 00 07	Numoria	Q	0	Q		III Diaht
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				12	10013		1 1001			-	12	12	-			•		-	
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#### - Basket



Midlife in the United States (MIDUS)

#### GSA 2021 Demo

Generated on Monday, November 8, 2021 11:08 AM

Title

GSA 2021 Demo

#### Data File

Variable Co	unt	18							
MIDUSID - Master ID created by concatenating M2ID, MRID, MIDJA_IDs									
Туре		Numeric (Inte	Numeric (Integer)						
Data File		MIDUSID_SampleID_20160525							
Valid	Invalid	Minimum	Maximum						
13225	0	10001	39999						

🥸 SAMPLMAJ - Major sample	e identification (aka Sample)
Туре	Code
Data File	MIDUSID SampleID 20160525

			Frequency	% of total	% of valid
Valid	1	MAIN RDD	3,487	26.4%	26.4%
	2	SIBLING	952	7.2%	7.2%
	3	TWIN	1,996	15.1%	15.1%
	4	CITY OVERSAMPLE	757	5.7%	5.7%
	13	MILWAUKEE	592	4.5%	4.5%
	14	BOSTON NEW	328	2.5%	2.5%
	20	MIDUS REFRESHER	3,577	27.0%	27.0%
	21	MILWAUKEE REFRESHER	509	3.8%	3.8%
	30	MIDJA	1,027	7.8%	7.8%
		Total	13,225	100.0%	100%

Valid	Invalid	Minimum	Maximum
13225	0	1	30

<b>™</b> M2ID -	MIDUS 2 ID nu	mber				
Туре		Numeric (Inte	Numeric (Integer)			
Data File		MIDUSID_Sai	MIDUSID_SampleID_20160525			
Valid	Invalid	Minimum	Maximum			

#### Midlife in the United States (MIDUS)

1239	16	0.9	685	105.12	77.04			
🦠 RA4BD	HEAS - Blood	DHEA-S (ug/dL)						
Туре		Numeric (In	Numeric (Integer)					
Study		MIDUS Refr	MIDUS Refresher 1 Project 4					
Data File		MR1P4	MR1P4					
Variable Group		MIDUS Refr	MIDUS Refresher Project 4 VariableGroup					
Variable Gr	oup	p Lab Data						

Maximum

			Frequency	% of total	% of valid
Missing	998	MISSING	1	0.1%	
	999	INAPP	10	1.2%	
		Total	11	1.3%	

Blood Assays (RA4ZBLOOD=1)

Variable Group

Backward Skip

Valid	Invalid	Minimum	Maximum	Mean	StdDev
852	11	1		122.54	86.45

#### 

			Frequency	" cotal	% of valid
Missing	99.00	NOT CALCULATED (Non-RDD cases)	2,706	54.5%	
		Total	2,706	54.5%	

General Item Availability

Valid	Invalid	Minimum	Maximum	Mean	StdDev
2257	2706	0.4	3.68	1	0.47

9 of 9

#### **NACDA**

- Source for complete data files



- NACDA is the source for complete (and large) MIDUS Project datasets
  - Different software formats (SPSS, SAS, Stata, R, delimited.)
- All MIDUS datasets can be merged at case level
  - Use key case ID variables within each sample:
    - M2ID: MIDUS Core sample
    - MRID: MIDUS Refresher sample
    - MIDJA\_ID: Japanese sample



# Recap



- MIDUS study design:
  - Longitudinal
  - Multi-disciplinary
  - Multiple cohorts and sub-samples
- MIDUS data:
  - Richly documented diverse data types
  - Available through NACDA or Portal
  - MIDUS Portal:
    - > Searchable
    - > Internally harmonized
    - Custom datasets and documentation download
- Future: cross-study 'harmonization'
  - NSHAP, AddHealth, NHATS, WLS, CLOSER
  - Harmonization of concepts, then measures



# **Questions about MIDUS?**



# midus.wisc.edu









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