MIDUS (Midlife in the U.S.) is a national longitudinal study of how many factors (behavioral, social, psychological, biological, neurological) come together to influence health and well-being as people age from early adulthood into midlife and old age. It was conceived by a multidisciplinary team of scholars interested in understanding aging as an integrative process.

In 1995, MIDUS survey data were collected from a total of 7,108 participants. The baseline sample was comprised of individuals from four subsamples: (1) a national RDD (random digit dialing) sample (n=3,487); (2) oversamples from five metropolitan areas in the U.S. (n=757); (3) siblings of individuals from the RDD sample (n=950); and (4) a national RDD sample of twin pairs (n=1,914). All eligible participants were non-institutionalized, English-speaking adults in the contiguous United States, aged 25 to 74.

All respondents were invited to participate in a phone interview of approximately 30 minutes in length and complete 2 self-administered questionnaires (SAQs), each of approximately 45 pages in length.

In addition, the twin subsample was administered a short screener to assess zygosity and other twin-specific information.

With funding provided by the National Institute on Aging, a longitudinal follow-up of MIDUS I began in 2004. Every attempt was made to contact all original respondents and invite them to participate in a second wave of data collection. Of the 7,108 participants in MIDUS I, 4,963 were successfully contacted to participate in another phone interview of about 30 minutes in length. MIDUS II also included two self-administered questionnaires (SAQs), each of about 55 pages in length, which were mailed to participants. The overall response rate for the SAQs was 81%.
FIG. 1: MIDUS I samples and follow-up (9–10 years) response rates

**Sociodemographic Factors**
- Age
- Gender
- Culture
- Race/Ethnicity
- Marital Status
- Education
- Income
- Occupation

**Health Behaviors**
- Smoking
- Alcohol Consumption
- Physical Activity
- Substance Abuse

**Genetic Factors**
- Siblings
- Twins

**Life Challenges**

**Daily Stressors**
(e.g., work overload, family arguments, traffic problems)

**Chronic Stressors**
(e.g., caregiving, perceived discrimination, perceived inequalities, work-family spillover, childcare difficulties, unemployment)

**Acute Events**
(e.g., divorce, remarriage, job change, deaths, relocation)

**Neuroendocrine**
- Cortisol
- DHEA-S
- Norepinephrine
- Epinephrine

**Cardiovascular**
- Blood Pressure
- Cholesterol
- Fibrinogen
- Glycosyl. Hemog.
- Heart-Rate Var.

**Inflammatory**
- Interleukin-6
- s-IL-6r
- CRP
- ICAM
- E-Selectin

**Neurobiological Mechanisms**

**Brain**
- Cerebral Activation Asymmetry
- Prefrontal Function
- Amygdala Activation

**Psychological and Social Factors**

**Psychological**
- Personality
- Affect
- Coping
- Control
- Goal Orientations
- Optimism
- Religion/Spirituality
- Health Beliefs

**Social**
- Social Support
- Spousal Relations
- Parent-Child Ties
- Childhood Violence
- Social Participation
- Social Responsibility
- Job Characteristics
- Neighborhood Quality

**Health/Illness**

**Mental**
- Depression
- Anxiety
- Psychological Well-Being
- Cognitive Function

**Physical**
- Subjective Health
- Health Comparisons
- Chronic Conditions
- Symptoms
- Disability/Functional Limitations
- Mortality

**Health Behaviors**

**Psychological and Social Factors**

**Health/Illness**

**Neurobiological Mechanisms**

**Original MIDUS I Sample**
(N = 7,108)

**Overall Longitudinal Response Rate (RR) (adjusted for mortality)** 75%

**Main RDD**
(N = 4,244)
71% RR

**Sibling**
(N = 950)
83% RR

**Twins**
(N = 1914)
82% RR

**NEW to MIDUS II**

**Milwaukee**
(African Americans)
(N = 592)
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

The MIDUS study has so far generated over 200 publications in diverse scientific fields.

Educational Distribution of MIDUS Respondents

Education levels at baseline (1995/96) show that MIDUS respondents had slightly higher education levels, but were generally representative of the U.S. population (Current Population Survey, Oct., 1995).
Illustrative MIDUS Questions

Does aging (from early adulthood to old age) bring about change in personality traits, psychological well-being, emotion regulation, sense of control, cognitive performance, daily stress? For whom (e.g., men, women)?

How is health (mental, physical) affected by:
- social inequalities (in education, income, life stress)?
- life transitions (marital, parental, occupational)?
- daily stressors (at work, at home)?
- social relationships (friends, family)?
- chronic stress (caregiving, perceived discrimination)?
- religion and spirituality?
- genetic factors?

What are the biological and neurological mechanisms through which the above factors influence health?

Are some people resilient in the face of life challenges? What factors are protective?

Data and documentation available to the public.

MIDUS related materials are archived at the University of Michigan and can be publicly accessed on the web: [http://www.icpsr.umich.edu](http://www.icpsr.umich.edu)

Datasets are available in a wide array of formats, with accompanying user-friendly codebooks and documentation.

Contact/Questions

For further information, please contact

[http://midus.wisc.edu/helpdesk.php](http://midus.wisc.edu/helpdesk.php) OR Barry T. Radler, PhD

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