MIDUS REFRESHER 1 PROJECT 5
NEUROSCIENCE DATA README

February 2026

A. Changes to the Dataset and Documents

This February 2026 update contains the revised MR1P5 dataset with 138 cases and 2187 variables. The prior version of this dataset, MR1_P5_DATA_N138_20241015, contained 2161 variables and was updated in October 2024.

February 2026 dataset update includes:
- New variables:
  - Computed measures from a new brain-based rate of aging algorithm: the Dunedin Pace of Aging Calculated from NeuroImaging (DunedinPACNI) **[RA5EBD]**.
  - Additional CANTAB Intra-Extra Dimensional Shift (IED) variables to help interpret scores for subjects who failed the test before completing all stages. Including variables for stage errors **[RA5NISE…]**, stage trials **[RA5NIST…]**, and 4 computed variables adjusting for test terminating early due to too many incorrect responses **[RA5NIC05 – RA5NIC08]**
  - Added data quality filter for startle eyeblink data **[RA5BF]**
  - Added new data quality filter variables for HRV **[RA5K1FV]** & **[RA5K2FV]**
- Corrections/updates to variables previously shared
  - Variables previously listed as HRV 'filter variables' **[RA5K1AT]** & **[RA5K2AT]** were corrected to indicate they represent CMetX artifact threshold (in milliseconds)
  - Updated missing values for CANTAB **[RA5N…]** to differentiate missing data (i.e., never collected) as opposed to inapplicable data (e.g., failing the task early, no incorrect responses, etc.)
  - Corrected several CANTAB – Cambridge Gambling Task (CGT) variables that had decimal point incorrectly moved, specifically **RA5NGA** (14 incorrect), **RA5NGPA** (2 incorrect), **RA5NGJ** (4 incorrect), **RA5NGJA** (1 incorrect), **RA5NGJD** (12 incorrect), **RA5NGRA** (3 incorrect)

  February 2026 update also includes a reorganization and renaming of documentation to make the documentation more user friendly. A description of these documents is outlined in section D.

B. What Data Files Are Available?

The MIDUS Refresher 1 (MR1) Project 5 (P5) Neuroscience dataset is an SPSS file containing 138 cases from the Main and Milwaukee samples.

- *MR1_P5_DATA_N138_20260206*

This file is comprised of:
- self-report measures of emotion, emotion regulation, anxiety, and empathy
- psychophysiological measures including corrugator and zygomatic facial electromyography and eyeblink startle magnitude of emotional reactivity and recovery in response to the presentation of negative, neutral, and positive pictures
- heart rate variability measures collected both in and out of the MRI scanner
- reaction time and accuracy measures obtained during the psychophysiology Emotional Response Task

- cognitive data obtained via pen-and-paper tasks and from CANTAB (http://www.cambridgecognition.com/) cognitive research software
- atlas-based extracted brain measures derived from BRAVO T1-weighted magnetic resonance imaging (MRI) scans, including measures of brain structure (volume, cortical thickness, cortical curvature, and cortical surface area) calculated using FreeSurfer software (v5.3.0), hippocampal subfield and amygdala nuclei segmentations calculated using FreeSurfer's hippocampal module (v6.0.0) and
- brain-based aging algorithms derived from BRAVO T1-weighted magnetic resonance imaging (MRI) scans and calculated using multiple publicly shared algorithms and deep learning models
- atlas-based extracted brain measures of white-matter microstructure derived from diffusion-weighted imaging (DWI) scans

C. What is the Structure of the P5 Dataset?

Variables have been named according to MIDUS variable naming and coding conventions. All variables include labels to aide interpretation. Value labels have been applied where appropriate.

Variable naming conventions are described in: *MR1_P5_VARIABLE_NAMES_20260206*

The fourth character of the variable name is a letter that identifies the type, or name, of the instrument used to collect the data:

- S = Self-reports
- B = Startle Eyeblink
- C = Corrugator EMG
- L = Zygomaticus EMG
- K = Heart Rate Variability (QRSTool and CMetX – used in MR1 only)
- R = Psychophysiology Emotional Response Task - Response Times
- A = Psychophysiology Emotional Response Task - Response Accuracy
- N = CANTAB Cognitive measures
- D = Cube & Paper Test
- F = Free Recall
- T = Picture Ratings
- P = Participant Characteristics
- H = Handedness
- O = Hearing Test
- I = General MRI Information
- E = Extracted Structural Brain Measurements
- W = Extracted Diffusion Weighted Imaging Measurements

Remaining characters differ to build discrete variables, but all within the given measure type set by character 4.

D. What Additional Documentation Files Are Available?

*MR1P4 Overview (*MIDUS Refresher 1 Biomarker Project documentation)
> Participation in the Neuroscience Project was contingent upon also participating in the Biomarker Project - see the MIDUS Refresher 1 Biomarker Project documentation for basic information about the sample and recruitment

MR1_P5_DOCUMENTATION_OF_PROCEDURES_20260206

An overview of our data collection protocol and the timing of measures collected during the psychophysiology visit and neuroimaging visit..

Note: this document is NEW for the MR1 P5 February 2026 data sharing update.

MR1_P5_DOCUMENTATION_OF_BEHAVIORAL_COGNITIVE_20260206
Information regarding behavioral and cognitive assessments collected during the psychophysiology visit and neuroimaging visit

Note: this document is NEW for the MR1 P5 February 2026 data sharing update.

MR1_P5_DOCUMENTATION_OF_BRAIN_MEASURES_20260206
Information regarding MRI neuroimaging procedures and the processing of T1-weighted and diffusion-weighted scans. As well as information about the atlas-based extracted measures and brain-based aging algorithms

MR1_P5_DOCUMENTATION_OF_CANTAB_20260206
Information about the CANTAB cognitive assessments

MR1_P5_DOCUMENTATION_OF_PSYCHOPHYSIOLOGY_20260206
Information regarding psychophysiological methods for data collection during the psychophysiology and neuroimaging visits, and subsequent data processing

MR1_P5_DOCUMENTATION_OF_SCALES_20260206
Documentation of self-report/questionnaire measures

MR1_P5_RESTRICTED_ACCESS_20260106
Overview of additional data available through restricted access procedures

Note: this document is NEW for the MR1 P5 February 2026 data sharing update.

MR1_P5_ACKNOWLEDGEMENT_TEXT_20171214
A sample acknowledgment text to be included in publications utilizing this data is available

E. Where Can I Access the Restricted Raw Imaging, Psychophysiological, and Behavioral Data?

Access to the MIDUS Refresher 1 raw MRI data (structural, task functional, resting state functional, diffusion-weighted imaging, and resting arterial spin labeling perfusion) as well as the raw and trial-by-trial psychophysiological and behavioral data.

For an overview of what data is available see *MR1_P5_RESTRICTED_ACCESS_20260106* and https://midus.wisc.edu/midus-neuroscience-repository/ for instructions on how to access.

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Please report any errors or inconsistencies you find in the data or documentation to
Stacey.Schaefer@wisc.edu
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