

**README file for Public Update  
MIDUS Refresher Biomarker Project (P4)  
April 2024**

**\*\*\* It is important to read through this document carefully \*\*\*  
\*\*\* prior to using the data and documentation. \*\*\***

This document outlines a number of revisions, improvements, and updates that have been made to the MIDUS Refresher 1 Project 4 (MR1P4) Biomarker data since the original version published in 2017.

Note: The revised data and documentation are intended to REPLACE all the files associated with previous releases of the MR1P4 data and documentation.

## **1. What Data Files Are Available?**

- a. The MIDUS Refresher 1 Biomarker (P4) dataset:  
***MR1\_BIO\_AGGREGATED\_N863\_20240405.sav***
- b. An additional dataset accompanies this release. Please note this is a ***stacked*** file. That is, there is one row per medication reported, thus the ‘N’ indicates the total number of medications, not the number of cases:  
***MR1\_BIO\_MEDICATION\_STACKED\_N5118\_20240404.sav***

## **2. Revision in the Updated MR1P4 Datasets**

- a. For assay data, soluble urokinase plasminogen activator receptor (suPAR) is added as an inflammatory biomarker. Three new urine assay measures, albumin, Albumin-Creatinine ratio (uACR), and Cystatin C are added as indicators for kidney function.
- b. For diet and nutrition in medical history, a new composite index variable B4HMHEI (MIDUS Healthy Eating Index) is added.
- c. For why a medication is being taken, an ICD-10 code is added to each medication, in addition to the ICD-9 code previously available.
- d. Text responses to open-ended questions or ‘other specify’ questions in the medical history, bone questionnaire, physical exam, PSQ, and sleep diary are coded into categorical variables. Either new categorical variables are created or extant codes for a related variable are expanded. About 160 variables are added to the larger aggregated dataset. Detail information can be found in the Documentation for Coded Text Responses.
- e. Fixed decimal placement error in Catecholamine values. The updates include original catecholamine variables RA4BNOREP RA4BEPIN RA4BDOPA, as well as urine creatinine adjusted variables RA4BNOCRE RA4BEPCRE RA4BDOCRE.
- f. Updated variable labels for high frequency (HF) heart rate variability variables in Psychophysiology Data, narrowing the HF band range, lowering the upper limit from 0.5 to 0.4 Hz.
- g. For lunar femur scan data, when data for both sides were available, we previously computed a set of combined values using the lowest score (either left or right). In this

update release, we included data from the both sides, and removed the computed one side data.

- h. Re-named BIS (BioImpedance Spectroscopy) variable RA4IMFFMP to RA4IMFMP and updated the variable label. Please note that this variable is about Fat Mass, not Fat Free Mass. This update corrected the error in previous data.
- i. To be consistent with MIDUS naming convention, the variable RA4ZRA1CLG was renamed to RA4ZRA3CLG, as RA3 representing Refresher Cognitive project.
- j. Variable labels and value labels of all variables have been reviewed and updated as needed, including correcting typographic errors and expanding text that had been previously abbreviated due to software limitations.

### **3. What is the structure of the MIDUS Refresher Biomarker Dataset?**

The aggregated file is a SPSS dataset comprised of survey data (self-administered questionnaires, staff administered interviews), as well as physical exam, medication, functional, physiological and assay data. The file contains 3,469 variables for 863 cases from the MIDUS Refresher MainRDD and Milwaukee African American samples.

The data set has been cleaned, meaning that value ranges and skip patterns have been checked, and data entry errors corrected. Variables have been named according to the MIDUS Refresher naming conventions. All variables include labels to aid interpretation. Value labels have been applied where appropriate and discrete missing values have been defined. The following documents provide additional information about the data:

***MR\_M3\_Naming and Coding Conventions:*** is posted with the MIDUS Refresher Survey (Project 1) data and describes conventions for naming and coding variables. It is included included with the MR1 Survey Project documentation in the MIDUS Portal or at ICPSR.

***MR1\_P4\_AGGREGATED\_CODEBOOK.pdf:*** provides additional details about each variable (e.g. question text, notes, frequency distributions etc.). The codebook was created according to DDI (Data Documentation Initiative) standards for linking data and metadata. A PDF of the codebook is available at ICPSR. An interactive version is available through the Colectica Portal (<https://midus.colectica.org/>).

The *stacked* medication file is a SPSS dataset comprised of data about medications taken by MIDUS Refresher Biomarker cases. The file contains data about 5,118 medications. Details about the MIDUS Refresher *stacked* medication data can be found here:

***MR1\_P4\_MEDICATION\_STACKED\_CODEBOOK*** – provides additional details about each variable (e.g. question text, notes, frequency distributions, etc.). The codebook was created according to DDI (Data Documentation Initiative) standards for linking data and metadata

### **4. Instruments, Protocols, and Documentation Files**

This section provides an overview of the Documentation files and Instruments that are linked to

the Refresher Biomarker data.

### *Decoding Documentation File Names*

The documentation files described below are available as PDF files through the Colectica Portal and at ICPSR. The Portal supports the naming system below, but unfortunately, the file management system in place at ICPSR renames the files into the following format:

Documentation.pdf (*shortfilename*)

The *shortfilename* is based on the file names of the documents we submit (see below), thus, the name of this readme file at ICPSR is something like “Documentation.pdf (readme)”. To find documents of interest on the ICPSR site it is recommended that you review the following descriptions and then look for key words from these file names in the parenthetical *shortfilenames*. After downloading the files, it may be helpful to rename them according to the conventions below for future reference.

### General Documents:

***MIDUS\_Citation Acknowledgement:*** specifies funding acknowledgement text for all the MIDUS projects that should be included in all publications.

***MR1 P4 Biomarker Project Summary:*** Overview of the Biomarker project including descriptions of the sample, recruitment process and the clinic visit. General descriptions of the psychosocial and biomarker assessments (physiological measures, tissue samples, experimental procedures etc.) comprising the protocol are also provided along with references to documents containing more detailed information as appropriate.

***MR1 P4 Biomarker Project DataFile Notes:*** Contains details about the data that users should be aware of prior to beginning analysis, including administrative variables, procedures for handling missing data and other issues that arose during data collection and cleaning.

Survey Instruments. The Biomarker project includes a Medical History Interview and a Self-Administered Questionnaire. Copies of these instruments with variable names included are available as standalone files.

***MR1\_P4\_Biomarker SAQ V2***

***MR1\_Biomarker Medical History Interview***

Composite Documentation Files. The following additional documents about biomarker protocols are also available. If reporting forms or other instruments were used in these assessments copies are included in the documents. For example, a copy of the Physical Exam form is included in the Physical Exam documentation file below.

- Constructed scales and Composite variables. A variety of psycho-social scales and

constructed variables are included in the dataset. These variables are comparable to MIDUS 2 constructed scales and composites. Details about their construction and background are documented in the following file:

#### ***MR1 P4 Documentation for Psychosocial Constructs and Composite Variables***

- Coded Text Responses. Text responses to open-ended questions or requests to ‘Please Specify’ or ‘Please Describe’ were coded into numeric categories, either new categorical variables are created or extant codes for a related variable are expanded. Details are documented in the following file:

#### ***MR1 P4 Documentation for Coded Text Responses***

- Gait. An assessment of gait was added to the biomarker protocol for the Refresher. This assessment is only completed at UW. Details about the protocol and available measures can be found in the following file:

#### ***MR1 P4 Gait Data Documentation***

- Medication. Detailed information about prescription, over-the-counter, and alternative medications used by participants is obtained during the clinic visit. Details about the protocol, a copy of the Medication Chart, and available measures including therapeutic and pharmacologic classifications can be found in the following files:

#### ***MR1 P4 Medication Data Documentation***

- Musculoskeletal Health. The protocol includes multiple assessments of bone health (DXA scans, blood assay, self-report), body composition (muscle, fat) measured via DXA and body impedance, and muscle function (jump, balance). These assessments are described in:

#### ***MR1 P4 Musculoskeletal Health Data Documentation***

- Physical Exam. A short physical exam is performed during the clinic visit. Details about the protocol and available measures can be found in the following file along with a copy of the physical exam form:

#### ***MR1 P4 Physical Exam Data Documentation***

- Ankle Brachial Index (ABI). An assessment of Ankle Brachial Index was added to the Biomarker protocol for the Refresher. This assessment was completed only at UCLA. Details about the protocol and available measures can be found in the following file:

#### ***MR1 P4 Ankle Brachial Index Documentation***

- Psychophysiology. The biomarker project includes an experimental psychophysiology

protocol measuring heart rate variability, beat-to-beat blood pressure and respiration along with saliva cortisol levels. Details about the protocol and available measures can be found in the following file:

***MR1 P4 Psychophysiology Protocol Documentation***

- Sleep. Sleep is assessed via self-administered questionnaire and Actigraphy (UW only). Details about these assessments and copies of the instruments can be found in the following file:

***MR1 P4 Sleep Data Documentation***

- Tissue Samples. Details about collection, processing, and assay of blood, urine, and saliva samples obtained during the clinic visit can be found in the following file:

***MR1 P4 Blood-Urine-Saliva Data Documentation***

## **5. ID Systems**

Respondent IDs. We have developed a separate 5-digit respondent identification variable for MIDUS Refresher cases called MRID. This ID system is implemented to help maintain confidentiality of respondents. It is used throughout the publicly available MIDUS Refresher datasets. It can be used to link the Project 4 Biomarker dataset to the other Refresher datasets.

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Please report any errors or inconsistencies you find in the data or documentation to  
[midus\\_help@aging.wisc.edu](mailto:midus_help@aging.wisc.edu)

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