

Documentation for all Data Sets
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HEALTH ABC DATA ANALYSIS FILE

The following SAS datasets are now posted on the Health ABC website under Datasets&Documentation/Current Datasets. To use the data, please contact the PI at your site.

SAS Datasets

Y1Screen	Screening and Baseline Questionnaire data
Y1ClnVis	Year 1 Clinic Visit and Return Visit data
SixMoVis	6-month Follow-up Contact data
MissVis	Missed Follow-up Contact data
Y1Read	Year 1 Reading Center data
Y1Cytok	Cytokine assay data for all enrolled participants with available stored samples
Y1LabAnc	Laboratory assays of baseline specimens from Ancillary studies (excluding cytokines, see above)
BMDNotes	Explanatory notes for BMD QC code variables (under the link Y1BMDNotes)
Y1MIF	Year 1 Medication Inventory Forms data
Y1MIFCOD	Year 1 MIF data with 1 record per ingredient/participant pair
Y1RxCalc	Calculated medication use variables based on Year 1 MIF data
Y1Calc	Year 1 calculated (derived) variables
Y1PrevDz	Prevalent disease algorithm variables for disease present at baseline
Unenrolled Data	File folder containing screening data for non-enrolled Health ABC screenees: NoScreen: data who had no telephone screen Screen: data for those who had at least a telephone screening or home visit

In addition the following files, not specific to any year but updated each time data are released, can be found at the top of the Current Datasets listing:

PH	Participant History File
Formats	SAS Format Library

PARTICIPANT HISTORY FILE (PH)

1. General description

The PH file contains general information about the participants enrolled in the study. Variables included are:

CV1AGE	Age at Year 1 Clinic Visit
CV1DATE	Year 1 Clinic Visit Date
DOB	Date of Birth
DOD	Date of Death
GENDER	Gender (1=Male; 2=Female)
HABCID	Health ABC Enrollment ID# without the 2-letter prefix
HCFAID	HCFA Screening ID (as assigned by the Coordinating Center)
RACE	Race (1=White; 2=Black)
SITE	Clinic Site (1=Memphis, 2=Pittsburgh)
SV06AGE	Age at 6-Month Contact
SV06DATE	6-Month Contact Date
VERSIONPH	Participant History File Release Date
VStatus	Vital Status (1=Alive, 2=Dead) as of PH file release date

The birthdate, race, and gender data come from the edited HCFA data. The Year 1 clinic visit date was taken from the corrected final participant list provided by the each clinic. SV06DATE was taken from the 6-Month Follow-up Contact form; participants who missed that visit have no SV06DATE. Age is a calculated variable based on birthdate and contact date.

There are 3075 observations in the PH file. The demographic breakdown of participants in this dataset is as follows:

African-American Female	729
African-American Male	552
White Female	855
White Male	939
Memphis Participants	1548
Pittsburgh Participants	1527

2. Cross reference of dataset names with exact source

A complete list of variable names can be found in under the “Proc Contents for All Datasets” link (search under PH) or by searching the Datadict file (sort by form or database).

3. Dataset structure and contents

The PH file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
HCFAID	HCFA ID (as assigned by the Coordinating Center)

4. Condition of data

a. Known data errors: None at this time. The data have been edited. Editing will, however, be ongoing (iterative), so use of the most recent dataset is always advised.

b. Strength and weaknesses of dataset items: If a death has been reported on a Missed Visit Form, an Event Form, or the Report of Death, the participant is listed as deceased in the vital status variable (VStatus) variable. Note VStatus is vital status **as of the release date of the participant history file**, not as of any particular visit. Vital status as of the date of each participant's expected twice yearly contacts can be found in the Hospitalization dataset (see Outcomes datasets).

The date of death (DOD) variable represents the best available information about the date of death for deceased participants **as of the creation date of participant history file (PH)**^{*}. If a Report of Death form has been entered for the participant, the date of death from that adjudication form is used. If there is no Report of Death form yet, this information is taken from the Event Form dataset, and is therefore an un-confirmed, un-adjudicated date of death.

c. Missing Value Conventions: See Special Missing Value Codes on page 11 for special missing value codes applied

5. Dataset index formulation and key variable mapping

The PH file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

^{*} Run proc contents in SAS to see creation date of the PH file.

YEAR 1 SCREENING DATA (Y1Screen)

1. General description

The Y1Screen file contains information about the participants enrolled in the study gathered from the Telephone Screening Interview, the Final Eligibility Assessment form, the Eligibility Assessment of Others in the Home form, Recruitment Status Form, and the Baseline Questionnaire.

Data for unenrolled screenees can be found in the file folder “Unenrolled Screenees” (NoScreen, and Screen). Documentation for these files can be found later in this document.

There are 3075 observations in the Y1Screen file.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found in under the “Proc Contents for All Datasets” link (search under Y1Screen) or by searching the Datadict file (sort by form or database). Variable names can also be found on the annotated forms. Please note that not all variables on the forms are contained in the dataset. All variables not found in the dataset are listed in Dropped Variables and Alternates (Appendix I). Alternate variables to use (if applicable) are also listed. Note that a number of variables dropped from previous versions of the Y1Screen dataset have been added back in to allow easy comparisons with the NoScreen and Screen datasets.

3. Dataset structure and contents

The Y1Screen file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
HCFAID	“HCFA ID” (as assigned by the Coordinating Center)
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*

4. Condition of data

a. Known data errors:

Baseline Questionnaire

1. Question 10. The skip pattern of the questionnaire was wrong, with the variable FPEQ20LB being reached in two ways, either by following the questions in the left column or by following the questions in the right column. The intention was that this question should be answered only by those who answered NO to FPD20LBS. To eliminate the answers that were obtained by the wrong path, FPEZ20LB was set to .E if it was not missing and FPDIF20 was answered NO. This may result in a few deletions of legitimate data if FPDIF20 was incorrectly marked or entered as NO but the right column of questions was answered. This should have been caught during editing, however, since FPEZ20 is required if FPD20LBS is answered NO.
2. Question 71. There were a large number of missing values for this question, apparently because many interviewers stopped asking about types of arthritis after the participant named the one

* Must link to Health ABC participant history file (PH) to add this variable.

they had. For example, if a participant answered that they had rheumatoid arthritis, PQAJARRA was checked YES, but parts b and c (PQAJARDA and PQAJOH) were not answered. Similarly, a participant may have blurted out “osteoarthritis” before the interviewer got a chance to ask even part a. Then part b (PQAJARDA) might be checked YES, but parts a and c were not answered. Since this would create a large number of edits and detect almost no cases where a participant really had two different types of arthritis, the missing variables were recoded as NO if PAQJARTH was marked YES and either PQAJARRA or PAAJARDA was marked YES.

3. Question 72. Between version 1.0 and 1.1a of the questionnaire, a skip pattern error was introduced that directed the examiner to skip to Question 75a if the participant answered Question 72 (PQAJKP30) No, Don’t Know, or Refused. The skip pattern should have directed the examiner to Question 75. In addition, Question 75 had a skip pattern problem that directed the examiner to skip to Question 76 if Question 75 (PQAJLACT) was answered No, Don’t Know, or Refused. The skip pattern should have directed the examiner to go to Question 75a. Finally, some examiners understood the skip pattern problem and asked the question as it was intended, while others diligently followed the skip pattern as written. A check of about 25 charts during the Year 2 site visits indicated that the missing values were virtually always true missings (i.e., not data entry errors) and therefore that editing missing values for PQAJLACT and PQAJKMD would be a waste of data editing time. The decision was made not to edit missing values for these two variables.
4. Question 78. For some reason, examiners frequently skipped part c (PQAJWPSV) of this question, which should only have been skipped if part a (PQAJWR12) was checked No. A check of 25-30 charts during the Year 2 site visits indicated that the missing values were virtually always true missings (i.e., not data entry errors) and therefore that editing missing values for PQAJWPSV would be a waste of data editing time. The decision was made not to edit missing values for PQAJWPSV.
5. Questions 166 & 167. Question 167 should have elicited an answer that was smaller than the answer to Question 166, and larger answers have been edited. However, it appears that participants did not always understand that “these friends” in Question 167 referred to the close friends referred to in Question 166, and therefore really did give an answer that contradicted the intent of the question. These questions were not considered important enough to call participants for clarification, so the anomalies will always remain in the dataset, after editing to eliminate data entry errors.
6. Question 193. Although each potential participant was recruited based on his or her racial group from the HCFA file, the HCFA data were not always accurate. Question 193 (LPRACE) elicited information about the race the participant considered him or herself to be and included categories such as Asian/Pacific Islander and Latino/Hispanic. The race recorded by the PFT examiner, the DXA examiner, HCFA, and LPRACE were compared and discrepancies edited before creating the current analysis dataset. When the examiners and HCFA agreed on a racial category and Asian/Pacific islander, Latino/Hispanic, or Other were chosen for LPRACE, the black/white category from HCFA was accepted. Similarly, if the examiners and LPRACE agreed with each other but disagreed with HCFA, the HCFA race was changed to reflect self-report (LPRACE). When LPRACE was missing or conflicted with the examiners’ categorization, LPRACE was edited, including calling participants in problematic cases. The edited self-report (LPRACE) was then used as the deciding evidence, and the cleaned variable RACE was put in the participant history file. LPRACE was left out of the dataset to ensure that analyses all used the cleaned variable RACE.

7. Question 197. Version 1.0 of the questionnaire had the wrong set of response options for Question 197 (Yes, No, Don't Know, Refused instead of Own, Rent, Some other arrangement, Don't Know, Refused). Therefore the responses to this question for the 389 participants who were administered version 1.0 cannot be used. For these participants LPFIAPT, LPFIA50, LPFIA100, and LPFIA200 have been recoded to .E (see page 11 for missing value conventions).
8. Question 10. FPD1OAMT was incorrectly named with the letter “O” rather than a zero. To avoid confusion, an additional variable, FPD10AMT has been added to the dataset. Both variables are identical.

b. Strength and weaknesses of dataset items: Participants should have either a Telephone Screening Interview and a Final Eligibility Assessment or a Final Eligibility of Others form (which includes data analogous to both the Telephone Screening Interview and the Final Eligibility Assessment). A number of participants were missing some of these forms as of version 1.31. Additional Telephone Screening Interviews been found and added to the dataset. Some participants are still missing all of these forms (n=29), just a Telephone Screening Interview (n=60) or just a Final Eligibility Assessment (N=76). It is now unlikely that any more of these missing forms will be found.

c. Missing Value Conventions: See Special Missing Value Codes on page 11 for special missing value codes applied

5. Dataset index formulation and key variable mapping

The Y1Screen file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

YEAR 1 CLINIC VISIT DATA (Y1ClnVis)

1. General description

The Y1ClnVis file contains information about the participants enrolled in the study gathered from the Baseline Clinic Visit Workbook and the Return Visit forms, including Section A of the Medication Inventory Form. Data collected in Section B of the Medication Inventory Form can be found in Y1MIF (see MIF documentation).

There are 3075 observations in the Y1ClnVis file.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found in under the “Proc Contents for All Datasets” link (search under Y1ClnVis) or by searching the Datadict file (sort by form or database). Variable names can also be found on the annotated forms. Please note that not all variables on the forms are contained in the dataset. All variables not found in the dataset are listed in Dropped Variables and Alternates (Appendix I, page 15). Alternate variables to use (if applicable) are also listed.

3. Dataset structure and contents

The Y1ClnVis file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
HCFAID	HCFA ID (as assigned by the Coordinating Center)
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*

4. Condition of data

a. Known data errors:

1. P1 Table. Several variables in the P1 table (P1TIME1, P1TIME2, P1VTM, P1GLTM, P1GTBD, P1GLBD, and P1TIME, pages 1 through 6 of the Baseline Clinic Visit Workbook) had initial problems that resulted in large numbers of missing values. Fortunately, most of these variables were not critical to analysis, as the information was either for bookkeeping purposes (P1TIME2 and P1TIME2) or was used independent of the data system to calculate the variable of interest (P1VTM, P1BLDRTM, and P1TIME, which allow LCBR to compute excessive venipuncture and processing times for the QC report; and P1VTM and P1LMD which are used to calculate P1FAST). The two exceptions are P1GLTM and P1GTBD, which could be used to check that the OGTT blood draws were done within the specified period of time. The number of blood draw errors (presumably rare) that would be caught was considered to be less important than avoiding a very large number of edits. Therefore, missing values for these problematic variables were not edited.
2. Side to measure assessment (page 16). The variables P2KNRP and P2HIP were set up as allowing only one answer, right or left or no, whereas a participant may have answered “both.” A both option (=3) has been added during editing.

* Must link to Health ABC participant history file (PH) to add this variable.

3. Long-Distance Corridor Walk eligibility assessment (page 27). Examiners were inconsistent in filling out this assessment. Some asked the questions only until an exclusion was encountered, while others asked all eligibility questions regardless of whether the participant had already been excluded by an earlier question. A calculated variable (EXCLUDE1) has been created to help with this determination, and can be found in Y1Calc (see Y1Calc documentation).

b. Strength and weaknesses of dataset items: None.

c. Missing Value Conventions: See Special Missing Value Codes page 11 for special missing value codes applied

5. Dataset index formulation and key variable mapping

The Y1ClnVis file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

6-MONTH FOLLOW-UP CONTACT DATA (SixMoVis)

1. General description

The SixMoVis file contains information about the participants enrolled in the study gathered from the 6-Month Follow-up Contact forms. If a participant did not receive a 6-month follow-up telephone call, they should have a Missed Follow-up Contact form that explains why. These data can be found the dataset MissVis (see page 10). All participants are accounted for in this dataset (n=3075) by including one variable from the Missed Visit file: the reason the visit was missed MISSREAS has been appended to allow the analyst to account for all participants, whether or not they had a 6-month follow-up telephone call. For all participants who did not miss the 6-month Follow-up Contact, this variable will be blank.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the “Proc Contents for All Datasets” link (search under SixMoVis) or by searching the Datadict file (sort by form or database). Calculated variable names and descriptions are listed in Appendix II. Variable names can also be found on the annotated forms. Please note that not all variables on the forms are contained in the dataset. All variables not found in the dataset are listed in Dropped Variables and Alternates (Appendix I). Alternate variables to use (if applicable) are also listed.

3. Dataset structure and contents

The SixMoVis file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*

* Must link to Health ABC participant history file (PH) to add this variable.

4. Condition of data

a. Known data errors: None at this time.

b. Strength and weaknesses of dataset items: Calculated variables have now been added (see Appendix II).

c. Missing Value Conventions: See Special Missing Value Codes page 11 for special missing value codes applied.

d. Calculated Variables: Calculated self-reported function variables have now been added. These variables correspond to those already available for baseline and Year 2 datasets, and equivalent variables have also been added to the Semi-Annual Telephone Contact datasets. A complete listing of these variables, along with details of their calculation, can be found in Appendix II.

5. Dataset index formulation and key variable mapping

The SixMoVis file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

MISSED FOLLOW-UP CONTACT DATA (MissVis)

1. General description

The MissVis file contains information about the participants who have missed a follow-up contact (died, refused, lost to follow-up, etc). The current file is restricted to those who missed their 6-month follow-up telephone call. If a participant did not receive a 6-month follow-up telephone call, they should have a Missed Follow-up Contact form that explains why. The number of Missed Follow-up Contact forms related to the 6-month follow-up telephone call is 17.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the “Proc Contents for All Datasets” link (search under MissVis) or by searching the Datadict file (sort by form or database). Variable names can also be found on the annotated forms.

3. Dataset structure and contents

The MissVis file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*
BJID2	Contact missed (always 9 = 6-month in this dataset)

* Must link to Health ABC participant history file (PH) to add this variable

4. Condition of data

a. Known data errors: None.

b. Strength and weaknesses of dataset items: During Year 1, there was no written protocol for the sites to follow for when or how to fill out Missed Follow-up Contact forms. In particular, Missed Follow-up Contact forms were inconsistently filled out for deaths. These data should not be considered to give an accurate accounting of deaths by the 6-month visit. If a participant was found to have both a 6-Month Follow-up Contact form and Missed Follow-up Contact form for the 6-month visit, the Missed Follow-up Contact form data for that participant were deleted from the analysis file.

c. Missing Value Conventions: See Special Missing Value Codes page 11 for special missing value codes applied

5. Dataset index formulation and key variable mapping

The MissVis file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

MEDICATIONS, PREVALENT DISEASE ALGORITHMS, AND CALCULATED VARIABLES

The contents of these files are under separate bookmarks in this same PDF document. Or click in the heading above, which is linked to the relevant sections.

SPECIAL MISSING VALUE CODES

SAS allows for stratification of missing values. The following missing values have been assigned:

. ='Missing Form'
.A='A:Not Applicable'
.E='E:Special Missing'
.L='L:Permanently Lost'
.M='M:Missing'
.N='N:Not Required'
.T='T:Missing Due to Technical Problems' (reading center data only)
.U='Unacceptable' (DXA data only)

Description

. : Missing Form

Used when a value is missing because the entire form has not been entered.

A: Not Applicable

Used when a value is missing but the value is not required (due to simple skip pattern logic)

E: Special Missing

Used to flag that a value was entered originally but should not have been (due to a skip pattern logic error) and that the value has been recoded to missing

L: Permanently Lost

Used to flag a tracking variable (e.g., P1BLDR, P2PWV, P2RL3, P4SPIR, P4THYN, P4ABYN, P4SPYN) when a measurement involving a Reading Center was done, but the data either never made it to the Reading Center, or was lost at the Reading Center. A list of lost measurements, along with a brief description of what happened, can be found in the Reading Center documentation, Appendix II). Every effort was made to track down these data before they were declared "permanently lost" and the flag assigned.

M:Missing

Used to flag missing values when the value is required (i.e., true missing values).

N:Not Required

Used when a value is missing but the value is not required (not due to simple skip pattern logic). For example, for checkbox variables which are "Check all that apply": each one, individually, is not required. In these cases, a summary calculated variable (not included in the datasets) was used to edit missing responses. Some variables whose skip pattern logic is non-standard (i.e., the skip pattern involves several variables and forms) also have .N flags when missing, whether or not a response was required due to the skip pattern.

T:Missing Due to Technical Problems

Used when a value is missing from the Reading Center dataset due to technical difficulties. An explanation of when this value has been assigned can be found under Strengths and weaknesses of dataset items for each Reading Center.

U:Unacceptable

Used when Reading Center data exist but have been reviewed during QC as unacceptable. An explanation of when this value has been assigned can be found under Strengths and weaknesses of dataset items for each Reading Center.

General Strategies for Using Special Missing Values

In SAS, when using special missing values in logical expressions, the missing value is no longer only equal to ‘.’

To express a value equal to missing, the code should be written: `<= .z` or alternately: `le .z`

To express a value not equal to missing, the code should be written `>.z` or alternately: `gt .z`
.Z is the greatest value of missing available in SAS.

DROPPED VARIABLES

A number of variables appear on the annotated forms or in the reading center variable lists but will not be found in the datasets. These variables are listed in Appendix I. There are several reasons why variables were dropped:

1. Participant confidentiality: identifying information such as participant name, address, telephone number, etc. are omitted from the analysis file. All participants are instead identified by the HABC Enrollment ID# (HABCID).
2. Bookkeeping variables: a number of variables were put on the forms or in the reading center data merely for bookkeeping purposes and are extremely unlikely to be useful for analysis. If an investigator notices that such a variable has been dropped and believes it should not have been, s/he should feel free to contact the Coordinating Center (HABCHelp@psg.ucsf.edu) and let us know that it should be included in future datasets.
3. Variables that are not applicable to the group of participants included in the dataset: these include demographic information only collected on ineligible screenees. These data are not included in the datasets because they would all be missing, or if completed in error, they would be redundant with a more reliable variable elsewhere in the dataset.
4. Redundant variables: in many cases the same information was collected numerous times. We have made a special effort to clean up one version of each of these; and to avoid analysis using uncleaned data, the uncleaned version is omitted.

Appendix I lists the omitted variables in alphabetical order. There are two columns; the first, entitled “Variable omitted,” lists the name of the variable not included in the dataset. The second column, entitled “Variable to use,” lists the cleaned variable, for redundant variables, or the reason the variable was not included.

LISTINGS

A PDF listing of the SAS proc contents printout for all SAS datasets can be found under the “Proc Contents for All Datasets” link.

A text file, Formats.lst, showing all formats and value descriptions (e.g.: 1=White, 2=Black) contained in the SAS Format Library can also be downloaded. Click on FormatsList under the List of Current Datasets on the Health ABC website.

The following files are zipped together in a self-extracting document also available on the Health ABC website under the Current Datasets listing

Datadict.xls Microsoft Excel 4.0 spreadsheet containing information about all variables included in the SAS datasets

Datadict.dat Tab-delimited text file containing the same information as above.

MIFLegend.xls Microsoft Excel 4.0 spreadsheet containing formatted MIF legend, showing all medication ingredients used by participants, grouped by IDIS code hierarchy, and including frequencies for each ingredient (see MIF documentation)

MIFLegend.dat Tab-delimited text file containing the same information as above.

DATA DICTIONARY (datadict.xls, datadict.dat)

General description

This is a searchable/sortable file that contains all the variables included in the SAS datasets. The following fields are included:

Variable	Variable Name
Label	Description of the variable
Form	Form or reading center origin of the variable
Page	Page number (not applicable for reading center or PH data)
Database	Database location of the variable
Variable Types	Type of variable (text, categorical (numeric), continuous (numeric), date, time, etc.)
Possible Values	Range of possible values associated with the variable (used for range edits)
SAS Format	SAS format assigned to the variable
Page Order	Variable order on the data collection forms (useful for sorting)

General Strategies for Use

The data dictionary is provided in two formats: Excel 4.0 and tab-delimited text. They contain exactly the same information. The tab-delimited file was generated to provide easy access to those who do not have Excel version 4.0 or higher.

The file is currently sorted by page order, form, page. It can be used to search for details on a particular variable, to group by database or form, or to find a variable location on a form. It is a little more user friendly than the standard SAS proc contents, as it can be sorted, easily searched, and it provides additional details such as page number and form.

Appendix I

DROPPED VARIABLES AND ALTERNATES

Variable omitted	Variable to use
BJACROS	N/A (confidentiality)
BJID	HABCID
BJREASON	MISSREAS
BJVISIT	BJID2
BJCONTAC	BJID2
BQACROS	N/A (confidentiality)
BQID	HCFAID
BQLINK	N/A (bookkeeping)
EAACROS	N/A (confidentiality)
EAARTH	N/A for enrolled ppts
EADIABET	N/A for enrolled ppts
EAFI	N/A for enrolled ppts
EAHCFAID	HCFAID
EAHEART	N/A for enrolled ppts
EAINCH	N/A for enrolled ppts
EALBS	N/A for enrolled ppts
EALINK	N/A (bookkeeping)
EANOWISH	N/A for enrolled ppts
EASCHOOL	N/A for enrolled ppts
EOACLEUK	N/A
EOACROS	N/A (confidentiality)
EOADD1	N/A (confidentiality)
EOADD2	N/A (confidentiality)
EOADD3	N/A (confidentiality)
EOADD4	N/A (confidentiality)
EOADD5	N/A (confidentiality)
EOAGE	CV1AGE
EOARTH	N/A for enrolled ppts
EOBDATE	DOB
EOBETTER	N/A (bookkeeping)
EODIABET	N/A for enrolled ppts
EOFIRSTN	N/A (confidentiality)
EOFT	N/A for enrolled ppts
EOHCFAID	HCFAID
EOHEART	N/A for enrolled ppts
EOINCH	N/A for enrolled ppts
EOLASTN	N/A (confidentiality)
EOLBS	N/A for enrolled ppts
EOLINK	N/A (bookkeeping)
EOMIDN	N/A (confidentiality)
EONOWISH	N/A for enrolled ppts

Variable omitted	Variable to use
EOSCHOOL	N/A for enrolled ppts
F1ACROS	N/A (confidentiality)
F1ID	HABCID
F1REF9A	N/A (bookkeeping)
F1REF9B	N/A (bookkeeping)
F1REF9C	N/A (bookkeeping)
F1REF10A	N/A (bookkeeping)
F1REF10B	N/A (bookkeeping)
F1REF10C	N/A (bookkeeping)
F1REF11A	N/A (bookkeeping)
F1REF11B	N/A (bookkeeping)
F1REF11C	N/A (bookkeeping)
F1REF12A	N/A (bookkeeping)
F1REF12B	N/A (bookkeeping)
F1REF12C	N/A (bookkeeping)
F1REF13A	N/A (bookkeeping)
F1REF13B	N/A (bookkeeping)
F1REF13C	N/A (bookkeeping)
F1REF14A	N/A (bookkeeping)
F1REF14B	N/A (bookkeeping)
F1REF14C	N/A (bookkeeping)
F1REF14D	N/A (bookkeeping)
F1REF14E	N/A (bookkeeping)
F1REF14F	N/A (bookkeeping)
F1REF15A	N/A (bookkeeping)
F1REF15B	N/A (erroneous variable)
F1REF15C	N/A (erroneous variable)
F1REF15D	N/A (erroneous variable)
F1REF15E	N/A (erroneous variable)
F1REF15I	N/A (erroneous variable)
F1REF15II	N/A (erroneous variable)
F1REF153	N/A (erroneous variable)
FPACHRS	FPACTIME
FPACMINS	FPACTIME
FPACROS	N/A (confidentiality)
FPACROS2	N/A (confidentiality)
FPC1PHON	N/A (confidentiality)
FPC2PHON	N/A (confidentiality)
FPCITELE	N/A (confidentiality)
FPEWHRS	FPEWTIM
FPEWMINS	FPEWTIM
FPHCFA2	HCFAID
FPHCFAID	HCFAID
FPHCHRS	FPHCTIME
FPHCMINS	FPHCTIME

Variable omitted	Variable to use
FPHIA1HR	FPH1TIME
FPHIA1MN	FPH1TIME
FPHIA2HR	FPH2TIME
FPHIA2MN	FPH2TIME
FPHIA3HR	FPH3TIME
FPHIA3MN	FPH3TIME
FPHIA4HR	FPH4TIME
FPHIA4MN	FPH4TIME
FPLINK	N/A (bookkeeping)
FPLWHR	FPLWTIME
FPLWMIN	FPLWTIME
FPMIA1HR	FPM1TIME
FPMIA1MN	FPM1TIME
FPMIA2HR	FPM2TIME
FPMIA2MN	FPM2TIME
FPMIA3HR	FPM3TIME
FPMIA3MN	FPM3TIME
FPMIA4HR	FPM4TIME
FPMIA4MN	FPM4TIME
FPOWHR	FPOWTIM
FPOWMIN	FPOWTIM
FPPAHR	FPPATIME
FPPAMIN	FPPATIME
FPTRHR	FPTRTIME
FPTRMIN	FPTRTIME
HQACROS	N/A (confidentiality)
HQID	HCFAID
HQLINK	N/A (bookkeeping)
HQMEDNUM	N/A (confidentiality)
HQSSN	N/A (confidentiality)
LBACROS	N/A (confidentiality)
LBID	HCFAID
LBLINK	N/A (bookkeeping)
LPACROS	N/A (confidentiality)
LPID	HCFAID
LPLINK	N/A (bookkeeping)
LPRACE	RACE
MHACROS	N/A (confidentiality)
MHID	HCFAID
MHLINK	N/A (bookkeeping)
OMACROS	N/A (confidentiality)
OMID	HCFAID
OMLINK	N/A (bookkeeping)
P1AAP	P2AAPR
P1AB	N/A (bookkeeping)

Variable omitted	Variable to use
P1ACROS	N/A (confidentiality)
P1AMPM2	P1VTM24
P1AMPM3	P1BDTM24
P1APW	P2PWV
P1BAL	N/A (bookkeeping)
P1BLDRTM	P1BDTM24
P1BP	N/A (bookkeeping)
P1CH	P3SCS, P3RCS
P1CT	P4ABYN, P4SPYN
P1CTRL	P4HLEN
P1DATE	CV1DATE
P1DIAB	LBSGDIAB
P1DIG	N/A (bookkeeping)
P1DOC	N/A (bookkeeping)
P1DXA	P2WB, P2WB2, P2HIP2
P1DXARL	P2RLHIP
P1ECG	P1OBT
P1GRIP	N/A (bookkeeping)
P1ID	HABCID
P1INOH	LBSGINSU, LBSGMED
P1ISO	P2RL3
P1ISORL	P2RL3
P1LAB	N/A (bookkeeping)
P1LD	N/A (bookkeeping)
P1LINK	N/A (bookkeeping)
P1LMAPM	P1MHM24
P1MHM	P1MHM24
P1MI	N/A (bookkeeping)
P1OGTT	P1GLU
P1PHL	P1BLDR
P1PUL	P4SPIR
P1SB	P3STS, P3TS1, P3TR1
P1SD	N/A (bookkeeping)
P1SH	N/A (bookkeeping)
P1SIT	N/A (bookkeeping)
P1SM	N/A (bookkeeping)
P1STFID2	N/A (bookkeeping)
P1TAP	P4SIDE
P1TENG	N/A (bookkeeping)
P1THI	N/A (bookkeeping)
P1THIRL	P3THRL
P1VTM	P1VTM24
P1WT	N/A (bookkeeping)
P2ACROS	N/A (confidentiality)
P2AVTORQ	KCTMEAN (Reading center data)

Variable omitted	Variable to use
P2DATE	CV1DATE
P2ID	HABCID
P2JR2	P2KNRP, P2HPFR
P2LINK	N/A (bookkeeping)
P2PKTORQ	KCTMAX (Reading center data)
P2SCAN1	WBSCANID, WBMODE
P2SCAN2	WBSCANID, WBMODE
P2SCAN3	HIPSCNID
P3ACROS	N/A (confidentiality)
P3DATE	CV1DATE
P3DIAB2	P2DIA3
P3ID	HABCID
P3LINK	N/A (bookkeeping)
P3SYB2	P2SY3
P4ACROS	N/A (confidentiality)
P4FEVBST	BES FEV1
P4FEVPR	PPFEV1 (Reading center data)
P4FEVPR2	PPFEV1/PPFVC (Reading center data)
P4FVCBST	BES FVC
P4FVCPR	PPFVC (Reading center data)
P4ID	HABCID
P4LINK	N/A (bookkeeping)
PQACROS	N/A (confidentiality)
PQID	HCFAID
PQLINK	N/A (bookkeeping)
RSCVDATE	CV1DATE
RSHVDATE	FPFORMC
RSID	HCFAID
RSINTID	FPSTAFID
RSSTATUS	N/A for enrolled ppts
RSTSDATE	TSDATE
RT1ACROS	N/A (confidentiality)
RT2ACROS	N/A (confidentiality)
RT2DIAB	LBSGDIAB
RT2ID	HABCID
RT2INOH	LBSGINSU, LBSGMED
RT3ACROS	N/A (confidentiality)
RT3ID	HABCID
RTID	HABCID
TSACLEUK	N/A
TSACROS	N/A (confidentiality)
TSADD1	N/A (confidentiality)
TSADD2	N/A (confidentiality)
TSADD3	N/A (confidentiality)
TSADD4	N/A (confidentiality)

Variable omitted	Variable to use
TSADD5	N/A (confidentiality)
TSAGE	CV1AGE
TSARTH	N/A for enrolled ppts
TSBDATE	DOB
TSBESTNO	N/A (bookkeeping)
TSBETTER	N/A (bookkeeping)
TSCBAMPM	N/A (bookkeeping)
TSCBDATE	N/A (bookkeeping)
TSCBTIME	N/A (bookkeeping)
TSDIABET	N/A for enrolled ppts
TSFIRSTN	N/A (confidentiality)
TSFT	N/A for enrolled ppts
TSHEART	N/A for enrolled ppts
TSHMAMPM	N/A (bookkeeping)
TSHMDATE	N/A (bookkeeping)
TSHOMESH	N/A (bookkeeping)
TSID	HABCID
TSINCH	N/A for enrolled ppts
TSLASTN	N/A (confidentiality)
TSLBS	N/A for enrolled ppts
TSMIDN	N/A (confidentiality)
TSNOWISH	N/A for enrolled ppts
TSRADDR	N/A (bookkeeping)
TSRPHONE	N/A (bookkeeping)
TSRSNAME	N/A (bookkeeping)
TSSCHOOL	N/A for enrolled ppts
TSSHTIME	N/A (bookkeeping)
TSTELE	N/A (confidentiality)
TSWHYNOT	N/A (bookkeeping)

Appendix II

6-MONTH CALCULATED VARIABLES

Variable	Variable Description	Grouping	Page
CSAINDEX	Climbing stairs ability index	Self-Reported Function Calculated Vars.	23
EASE1F	Ease climbing 1 flight	Self-Reported Function Calculated Vars.	23
EASE1M	Ease walking 1 mile	Self-Reported Function Calculated Vars.	22
EASE2F	Ease climbing 2 flights	Self-Reported Function Calculated Vars.	23
EASEQM	Ease walking 1/4 mile	Self-Reported Function Calculated Vars.	22
WKAINDEX	Walking ability index	Self-Reported Function Calculated Vars.	22

Self-Reported Function Calculated Variables

Investigator Name: Eleanor Simonsick

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
EASEQM	Ease walking 1/4 mile	Recode of F1DWQMEZ where 3 is easiest; imputations applied for missing F1DWQMEZ	If F1DWQMYN in (0,7,8) then EASEQM=7-F1DWQMEZ If F1DWQMYN=1 then EASEQM=4-F1DWQMDF	If F1DWQMEZ=8 and F1DWQMYN ≠8 then F1DWQMEZ=2; If F1DWQMDF=8 and F1DWQMYN≠8 then F1DWQMDF=2; If (F1DWQMYN=0 and F1DWQMEZ<0) then EASEQM=7-F1DW1MEZ; if (F1DWQMYN=0 and F1DWQMEZ<0) and F1DW1MEZ<0 and (F1DW1MYN=1 or F1DW1MYN=8 or F1DW1MYN≤.Z) then EASEQM=4; if (F1DWQMYN=0 and F1DWQMEZ<0) and (F1DW1MYN=0 and F1DW1MEZ≤.Z) then EASEQM=5 if F1DWQMYN=1 and F1DWQNDF<0 and F1DWQMEZ<0 then EASEQM=2; if F1DWQMYN<0 and F1DWQMDF>0 then EASEQM=4-F1DWQMDF; if F1DWQMYN<0 and F1DWQMEZ>0 then EASEQM=7-F1DWQMEZ; if F1DWQMYN=8 and F1D2QMEZ=8 then EASEQM=4; if F1DWQMYN=9 and (F1MNRS>0 or F1MNRS4<0 or F1MNRS4=8) then EASEQM=.	6=very easy 5=somewhat easy 4=not that easy 3=a little difficult 2=somewhat difficult 1=very difficult 0=unable to do
EASE1M	Ease walking 1 mile	Recode of F1DW1MEZ where 3 is easiest; imputations applied for missing F1DW1MEZ	If F1DW1MYN=1 then EASE1M=0; if F1DW1MEZ=3 then EASE1M=1; if F1DW1MEZ=2 then EASE1M=2; if F1DW1MEZ=1 then EASE1M=3	If F1DW1MYN=8 and (F1DW1MEZ<0 or F1DW1MEZ=8) then EASE1M=1; If (F1DW1MYN=0 or F1DW1MYN<0) and F1DW1MEZ<0 then EASE1M=EASEQM-4; if F1DWQMYN=1 then EASE1M=0; If EASEQM > 0 then EASE1M=0; If (EASEQM-3 < EASE1M) and EASEQM ≤3 then EASE1M=0, else If (EASEQM-3<EASE1M) then EASE1M=EASEQM-3	3=very easy 2=somewhat easy 1=not that easy 0=difficult
WKAINDEX	Walking ability index	Summary measure of self-reported walking ability.	WKAINDEX=EASEQM + EASE1M	Imputed version of component variables used	This scale ranges from 0 (unable) to 9 (very easy)

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
EASE1F	Ease climbing 1 flight	Recode of F1DW10EZ where 6 is easiest; imputations applied for missing F1DW10EZ	EASE1F=7-F1DW10EZ; If F1DW10YN=1 then EASE1F=4-F1DIF	If F1DW10EZ=8 then F1DW10EZ=2; If F1DIF=8 then F1DIF=2; If F1DW10EZ<0 then EASE1F=7-F1DW20EZ; If F1DW10YN=1 and (F1DIF=8 or F1DIF<0) then EASE1F=2; If F1DW10YN=0 and F1DW10EZ<0 and F1DW10EZ<0 then EASE1F=4; if EASE1F=, and F1DW10YN≠9 and (F1DW20YN=1 or F1DW20YN=8 or F1DW20YN≤.Z) THEN EASE1F=4; if EASE1F=, and F1DW20YN=0 and F1DW20EZ≤.Z then EASE1F=5	6=very easy 5=somewhat easy 4=not that easy 3=a little difficult 2=somewhat difficult 1=very difficult 0=unable to do
EASE2F	Ease climbing 2 flights	Recode of F1DW20EZ where 3 is easiest; imputations applied for missing F1DW20EZ	If F1DW20YN=1 then EASE2F=0, else if F1DW20EZ=3 then EASE2F=1; if F1DW20EZ=2 then EASE2F=2; if F1DW20EZ=1 then EASE2F=3	If (F1DW20YN=8 or F1DW20YN<0) and (F1DW20EZ<0 or F1DW20EZ=8) and EASE1F>0 then EASE2F=1; if F1DW20YN≤.Z and F1DW20EZ≤.Z then EASE2F=EASE1F-4; if F1DW20YN=0 and (F1DW20EZ≤.Z or F1DW20EZ=8) and EASE1F>0 then EASE2F=EASE1F-4; if F1DW10YN=1 then EASE2F=0; If EASE1F-3 < EASE2F and EASE1F≤3 then EASE2F=0, else If EASE1F-3<EASE2F then EASE2F=EASE1F-3	3=very easy 2=somewhat easy 1=not that easy 0=difficult
CSAINDEX	Climbing stairs ability index	Summary measure of self-reported walking ability.	CSAINDEX=EASE1F + EASE2F	Imputed version of component variables used	This scale ranges from 0 (unable) to 9 (very easy)

```

*****;
**  SRFCN_6MO.SAS **
** **
**  HABC 6MO VISIT SELF-REPORT FUNCTION CALC VAR CODE **
** **
**  Creates the following variables for 6mo visit: **
**    EASEQM:  ease of walking 1/4 mile **
**    EASE1M:  ease of walking 1 mile **
**    EASE1F:  ease of climbing 1 flight **
**    EASE2F:  ease of climbing 2 flights **
**    CSAINDEX: climbing stairs ability index **
**    WKAINDEX: walking ability index **
** **
**  Adapted from Fran Harris Y2 code: srfcn_y2.sas **
** **
**  Laura Akin      10/25/2001 **
** **
*****;
title2 'Program: SRFCN_6MO.SAS';
OPTIONS PAGESIZE=50 LINESIZE=116 NOFMterr nocenter;
*SELF-REPORT FUNCTION PROGRAM CODE;
%include 'i:\habc_sas\programs\init.sas';
libname calc v6 'i:\habc_sas\calculated variables\datasets\semiannual';

data calc.srfcn_6m(keep=habcid easeqm ease1m ease1f ease2f csaindex wkaindex)
      SRFCN_6M;  ***six month visit table***;
  set habc1.f1(keep=habcid fldwqmyn fldwqmdf fldswqmt1 fldwqml1 flmnr4 flmnr5
fldwqmez
                                fldwqmt2 fldwqml2 fldwl1myn fldwl1mez fldwl10yn fldif
fldwl10wr
                                fldwwrlo flmnr2 flmnr3 fldwl10ez fldwl10wx fldl10lo
fldw20yn
                                fldw20ez);
  *EASEQM: CODE FOR EASE OF WALKING 1/4 MILE
  IF EASE LEVEL MISSING, EASE LEVEL WALKING 1 MILE WAS ASSIGNED. IF NO EASE LEVEL
  FOR WALKING
  1M WAS CODED AND F1DW1MYN WAS YES, DONT KNOW, OR MISSING THEN NOT THAT EASY WAS
  ASSIGNED. IF NO
  EASE LEVEL FOR WALKING 1M WAS CODED AND F1DW1MYN WAS NO AND F1DW1MEZ WAS MISSING
  THEN SOMEWHAT
  EASY WAS ASSIGNED.  THE 4 CASES WHO REPORTED DIFFICULTY WERE RECODED TO NOT THAT
  EASY FOR QM
  AND DIFFICULTY FOR 1M;

  IF F1DWQMEZ=8 and F1dwqmyn ne 8 THEN F1DWQMEZ=2;
  IF F1DWQMDF=8 and F1dwqmyn ne 8 THEN F1DWQMDF=2;
  IF F1DWQMYN IN (0,7,8) THEN EASEQM=7-F1DWQMEZ;
  IF (F1DWQMYN=0 AND F1DWQMEZ<0) THEN EASEQM=7-F1DW1MEZ;
  IF (F1DWQMYN=0 AND F1DWQMEZ<0) AND F1DW1MEZ<0 AND (F1DW1MYN=1 OR F1DW1MYN=8
  OR F1DW1MYN<=.z) THEN EASEQM=4;
  IF (F1DWQMYN=0 AND F1DWQMEZ<0) AND (F1DW1MYN=0 AND F1DW1MEZ<=.z)
  THEN EASEQM=5;
  IF F1DWQMYN=1 THEN EASEQM=4-F1DWQMDF;

  IF F1DWQMYN=1 AND F1DWQMDF<0 THEN EASEQM=7-F1DWQMEZ;
  IF F1DWQMYN=1 AND F1DWQMDF<0 AND F1DWQMEZ<0 THEN EASEQM=2;
  IF F1DWQMYN<0 AND F1DWQMDF>0 THEN EASEQM=4-F1DWQMDF;
  IF F1DWQMYN<0 AND F1DWQMEZ>0 THEN EASEQM=7-F1DWQMEZ;

```

```

if F1dwqmyrn=8 and F1dwqmez=8 then easeqm=4;
IF F1DWQMYN=9 AND F1MNR<0 AND (F1MNR4<0 OR F1MNR4=8) THEN EASEQM=.;

*EASE1M: CODE FOR EASE OF WALKING 1 MILE. AS SELF-REPORTED WALKING ABILITY IS A
KEY DEPENDENT
MEASURE IN HEALTH ABC, MISSING VALUES WERE RECODED TO NON-MISSING WHENEVER A
REASON
GUESS COULD BE MADE BASED ON OTHER AVAILABLE INFORMATION. SEE BELOW FOR CODE AND
RECODING RULES FOR MISSING VALUES;

IF F1DW1MYN=1 THEN EASE1M=0;
ELSE IF F1DW1MEZ=3 THEN EASE1M=1;
ELSE IF F1DW1MEZ=2 THEN EASE1M=2;
ELSE IF F1DW1MEZ=1 THEN EASE1M=3;

*MISSING VALUE RECODES;
IF F1DW1MYN=8 AND (F1DW1MEZ<0 OR F1DW1MEZ=8) THEN EASE1M=1;
IF F1DW1MYN<=.z AND F1DW1MEZ<=.z AND EASEQM=4 THEN EASE1M=0;
IF F1DW1MYN<=.z AND F1DW1MEZ<=.z AND EASEQM=5 THEN EASE1M=1;
IF F1DW1MYN<=.z AND F1DW1MEZ<=.z AND EASEQM=6 THEN EASE1M=2;
IF F1DW1MYN=0 AND F1DW1MEZ<=.z AND EASEQM=4 THEN EASE1M=0;
IF F1DW1MYN=0 AND F1DW1MEZ<=.z AND EASEQM=5 THEN EASE1M=1;
IF F1DW1MYN=0 AND F1DW1MEZ<=.z AND EASEQM=6 THEN EASE1M=2;
IF F1DWQMYN=1 THEN EASE1M=0;

*IN SOME CASES THE AMOUNT OF EASE REPORTED FOR WALKING 1 MILE WAS GREATER THAN
THE AMOUNT OF EASE REPORTED FOR 1/4 MILE. THE CODE BELOW DOWNGRADES THE EASE
LEVEL REPORTED FOR 1M TO THAT REPORTED FOR 1/4M;
IF EASEQM GT 0 AND ((EASEQM-3) LT EASE1M) THEN DO;
IF EASEQM LE 3 THEN EASE1M=0; ELSE
EASE1M=EASEQM-3;
END;
if F1dwlmyrn=8 and F1dwlmez in (1,2,3) then easelm=4-F1dwlmez;
if F1dwlmyrn=0 and F1dwlmez=8 then easelm=easeqm-4;

*CODE TO CREATE A SUMMARY MEASURE OF SELF-REPORTED WALKING ABILITY. THIS
SCALE WILL ULTIMATELY RANGE FROM 0 TO 9, BUT AT BASELINE IT RANGES FROM
4-9, AS NO ONE HAS DIFFICULTY. THIS SCALE CAN BE CREATED IN TWO WAYS: 1) KEYING
OFF THE RESPONSE TO EASE1M AND ONLY LOOKING AT EASEQM WHEN DIFFICULTY IS
REPORTED FOR 1M OR 2) SUMMING THE RESPONSES TO THE TWO QUESTIONS. I
DID IT BOTH WAYS AND FOUND THE LATTER APPROACH SUPERIOR;

WKAINDEX=EASEQM + EASE1M;

***TIREDQM;
/*IF F1DWQMT2<0 THEN TIREDQM=.;
IF F1DWQMT2=8 OR F1DWQMT2=9 OR F1SWQMT1=8 OR F1SWQMT1=9 THEN TIREDQM=1;
IF F1DWQMT2=0 OR F1SWQMT1=0 THEN TIREDQM=0;
IF F1DWQMT2=1 OR F1SWQMT1=1 THEN TIREDQM=1; */

*CODE FOR EASE OF CLIMBING STAIRS;

*EASE1F;
IF F1DW10EZ=8 THEN F1DW10EZ=2;
IF F1DIF=8 THEN F1DIF=2;
EASE1F=7-F1DW10EZ;
IF F1DW10EZ<0 THEN EASE1F=7-F1DW20EZ;

```

```

IF F1DW10YN=1 THEN EASE1F=4-F1DIF;
IF F1DW10YN=1 AND (F1DIF=8 OR F1DIF<0) THEN EASE1F=2;
IF F1DW10YN=0 AND F1DW10EZ<0 AND F1DW10EZ<0 THEN EASE1F=4;

IF EASE1F=. AND F1DW10YN NE 9 AND F1DW10YN>0 AND
  (F1DW20YN=1 OR F1DW20YN=8 OR F1DW20YN<=.z OR F1DW20YN<=.z)
  THEN EASE1F=4;
IF EASE1F=. AND F1DW20YN=0 AND F1DW20EZ<=.z THEN EASE1F=5;

*EASE2F;
IF F1DW20YN=1 THEN EASE2F=0;
  ELSE IF F1DW20EZ=3 THEN EASE2F=1;
  ELSE IF F1DW20EZ=2 THEN EASE2F=2;
  ELSE IF F1DW20EZ=1 THEN EASE2F=3;
IF (F1DW20YN=8 OR F1DW20YN<0)AND (F1DW20EZ<0 OR F1DW20EZ=8) AND EASE1F>0 THEN
EASE2F=1;
IF F1DW20YN<=.z AND F1DW20EZ<=.z AND EASE1F=4 THEN EASE2F=0;
IF F1DW20YN<=.z AND F1DW20EZ<=.z AND EASE1F=5 THEN EASE2F=1;
IF F1DW20YN<=.z AND F1DW20EZ<=.z AND EASE1F=6 THEN EASE2F=2;
IF F1DW20YN=0 AND (F1DW20EZ<=.z OR F1DW20EZ=8) AND EASE1F>0 THEN EASE2F=EASE1F-
4;
IF F1DW10YN=1 THEN EASE2F=0;

IF .z<EASE1F<=3 THEN EASE2F=0; ELSE
IF (EASE1F-3) LT EASE2F THEN EASE2F=EASE1F-3;

*CODE TO CREATE A SUMMARY MEASURE OF SELF-REPORTED STAIR CLIMBING ABILITY. THIS
SCALE WILL
RANGE FROM 0 TO 9, BUT AT BASELINE IT RANGES FROM 4-9;
CSAINDEX=EASE1F + EASE2F;

/*IF F1DW10WX=8 OR F1DW10WX=9 OR F1DW10WR=8 OR F1DW10WR=9 THEN TIRED1F=1;
IF F1DW10WX=0 OR F1DW10WR=0 THEN TIRED1F=0;
IF F1DW10WX=1 OR F1DW10WR=1 THEN TIRED1F=1;*/

LABEL
EASEQM='EASE WALKING 1/4 MILE, 6=VERY EASY'
EASE1M='EASE WALKING 1 MILE, 3=VERY EASY'
WKAINDEX='WALKING ABILITY INDEX, 9=BEST'
/*TIREDQM='GETS TIRED WALKING 1/4 MILE, 1=YES'*/
EASE1F='EASE CLIMBING 1 FLIGHT, 6=VERY EASY'
EASE2F='EASE CLIMBING 2 FLIGHTS, 3=VERY EASY'
CSAINDEX='CLIMBING STAIRS ABILITY INDEX, 9=BEST'
/*TIRED1F='GETS TIRED CLIMBING 1 FLIGHT, 1=YES'*/;

FORMAT EASE1F EASE2F EASEQM EASE1M CSAINDEX WKAINDEX SPMISS.
  /*TIRED1F TIREDQM YNDK.*//;
RUN;

```

Documentation for Year 1 Medication Inventory Form Data
(Y1MIF, Y1MIFCOD, and Y1RxCalc)

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YEAR 1 MEDICATION INVENTORY FORM DATA

(Y1MIF, Y1MIFCOD, and Y1RxCalc)

1. General description

The following SAS datasets related to medication use are included in this data release:

Y1MIF	Year 1 Medication Inventory Forms data
Y1MIFCOD	Year 1 MIF data with 1 record per ingredient/participant pair
Y1RxCalc	Calculated medication use variables based on Year 1 MIF data

The Y1MIF file contains information about the participants enrolled in the study gathered from Section B of the Medication Inventory Form. This file contains 17,275 records and has multiple records per participant. The Y1MIFCOD file maps each individual ingredient each participant is taking to the participants (i.e., one record per participant per drug/ingredient pair). This file contains 20,754 observations and has multiple records per participant.

The Y1RxCalc file contains 56 indicator and categorical variables created by Health ABC investigators to indicate baseline usage of a wide variety of medication categories plus a new variable Y1RxTOT that totals the number of different prescription medications reported by the participant at the baseline visit. Documentation showing how these variables were created can be found in Appendix III. These variables were corrected and updated as of version 1.43.

The analyst is cautioned to read the documentation in Appendix III to be sure the medications captured by the variable are really what's needed for their analysis before using these variables. Some variables, (e.g. Y1OSTDRG) have names that may imply a reason for use, but in most cases actually refer to a class or classes of drugs often used for that reason, without regard to the reason the medication was prescribed for that particular participant. Participants frequently give an obviously erroneous reason for use or simply state they they do not know why they are taking the medication, so in most cases MIFREAS cannot be taken into account. For a few variables, notably Y1DEPDRG, Y1ALPHBK, and Y1PRSDRG, reason for use was taken into account because drugs in these categories are frequently used for other reasons. Y1DEPDRG was created primarily to determine baseline prevalent depression, so it was important to limit it to reasons for use indicative of depression. The separate antidepressant drug class variables (e.g. Y1SSRI, Y1MAOINH) are not limited by reason for use. Among men, terazosin, doxazosin, and prazosin were approximately equally often prescribed as an antihypertensive as for BPH, so the reason for use was taken into account in dividing these meds between Y1ALPHBK and Y1PRSDRG. Women were assumed always to be taking these for hypertension.

2. Cross reference of dataset names with exact source

A complete list of variable names for the MIF datasets can be found under the “Proc Contents for All Datasets” link (search under Y1MIF or Y1MIFCOD) or by searching the Datadict file (sort by form or database). Variable names can also be found on the annotated forms. Please

note that not all variables on the forms are contained in the datasets. All variables not found in the dataset are listed in Dropped Variables and Alternates (Appendix I). Alternate variables to use (if applicable) are also listed.

3. Dataset structure and contents

The Y1MIF and Y1MIFCOD files contain multiple observations per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*

4. Condition of data

a. Known data errors: MIFDATE, a previously unused field has now been populated from MADATE (in Y1ClnVis). Although the WHAS dictionary contains a STRENGTH variable, and the MIF form has a separate variable for strength (MIFSTREN), neither is usable for analysis, and both have been dropped. Dose-response analysis should key on the strength-specific medication name and code. For example, medications with different strengths will have different codes for each.

b. Strengths and weaknesses of dataset items: There are a few medication records that could not be coded except in general catch-all categories because information from the participants was incomplete on the Medication Inventory Form, and could not be retrieved during editing.

Due to the way RxCalc variables were originally created, two slightly counter-intuitive groupings exist: Y1THIAZ, the thiazide diuretics, does not include indapamide, which is instead represented by its own calculated variable Y1INDAPA. In addition, the variable Y1ASAPLT (platelet aggregation inhibitors including aspirin) does not include ticopidine, which is instead grouped under other anti-platelet medications. These anomalies were not corrected so that existing algorithms would not be thrown off.

MIF collection in Health ABC, while very complete, has the disadvantage that the medication dictionary does not contain all brands of multivitamins, and MIF coders are allowed to code any multivitamin (containing 3 or more ingredients) as simply “multivitamin.” The vast majority of multivitamins in Health ABC are coded in this way, thus hampering any analysis that wishes to look at supplementation of specific vitamins.

As in previous versions of the dataset, a merged dataset (Y1MIFCOD) has been created for the analysts' convenience. This file has one record per participant/ingredient pair.

In addition, a MIF Legend (and frequencies for the Year 1 MIF data) has been created (Y1MIFLegend.xls in the Listings file). This legend can be very helpful for identifying

* Must link to Health ABC participant history file (PH) to add this variable.

participants taking certain classes of medication. It is also reproduced in Appendix II. The % Tot Ppts column now uses 3065, rather than 3075, as the denominator because 10 participants did not have usable medication inventory data.

The following comments about corrections and continuing anomalies in the Y1MIFCOD can best be understood by referring to this hierarchical legend.

Ingredients are mapped to medications through use of the IDIS dictionary for consistency with the WHAS data. From time to time, IDIS re-maps ingredients from one code to another, as well as adding new medications and new ingredients to their dictionary. Every effort has been made to update these codes throughout the dataset; in particular to eliminate duplicate codes for single ingredients. However, some ingredients still have more than one ingredient code because of the way IDIS has structured its hierarchy. For example, calcium appears both under “calcium supplements” (third level hierarchy 40121200) and under “antacids and adsorbents” (second level hierarchy 56040000), depending on its reason for use. In addition, some ingredients may be used for two very different formulations. Most notably, “conjugated estrogens” (INGCODE= 68160007) is used both for oral and topical estrogen. The analyst should make use of the variable MIFORM to ensure that the data are subsetted to the desired group of medications.

As mentioned in Memo #1244, IDIS has several non-standard third-level hierarchy codes, which cannot be changed unless IDIS changes them. The analyst is reminded to be careful with how these are specified in any algorithm used to pull out particular medications. These non-standard codes are listed below:

1. The third-level heading “antifungals-imidazoles” has the non-standard code of 8120501. The third level of the hierarchy usually ends in a double zero. In addition, the previous third-level heading is “antibiotics-antifungals” (81204xx), which obviously should include imidazole antifungals. Therefore, to search for the general class of antifungal medications, including both imidazole and non-imidazole antifungals, you should search for both 81204xx and 81205xx.
2. The third-level heading “antibiotics-other” (81228xx) contains more than 100 fourth-level ingredients, so to search for the general class of “other antibiotics” you should include both 81228xx and 81229xx. Fortunately, you would normally only include “other antibiotics” along with all antibiotics, by using the second-level heading “antibiotics” (812xxxx).
3. The third-level heading “NSAID” (280804xx) contains more than 100 fourth-level ingredients, so you should include both 280804xx and 280805xx in your search for NSAIDs.
4. IDIS appears to be in the process of creating a COX2 inhibitor hierarchy, but has not yet created the third-level heading for it. Therefore, the single COX2 inhibitor used by Health ABC participants in Year 1 (Celecoxib) appears with a non-standard third-level heading “Celecoxib” (28080601)

5. The third-level heading “salicylates” has the non-standard code of 28080750, and it includes ingredients coded as 2808076x and 2808077x.
6. The first-level heading “enzymes” (44xxxxxx) also includes Enzyme Inhibitors, and so might more clearly be headed “Enzymes and Enzyme Inhibitors.” Enzymes alone are a second-level category also called “enzymes.” For “enzymes” you should search for 4400xxxx, while for “enzyme inhibitors” you should search for 4410xxxx.
7. There is a third-level heading “vitamins” (880000xx) which contains only one fourth-level ingredient found in the Year 1 database, Levo-carnitine (88000003), but does not include Vitamin A Derivatives (88040000), Vitamin B Complex (88080000), etc. To get all vitamins, you should search for the first-level heading 88xxxxxx.
8. The catch-all category “unclassified therapeutic agents” is another heading that contains more than 100 fourth-level ingredients. Any ingredient between 9200xxxx and 9250xxxx falls under the general third-level heading “unclassified therapeutic agents.” Another third-level subheading of “unclassified therapeutic agents” is “herbal medicines” (92510000). The bisphosphonate alendronate has now been moved to a separate bisphosphonate category (926001xx).

Investigators finding anomalies in the medication dataset are urged to report these anomalies to the Coordinating Center (HABCHelp@psg.ucsf.edu).

c. Missing Value Conventions: See Special Missing Value Codes (below) for special missing value codes applied.

5. Dataset index formulation and key variable mapping

The Y1MIF file is sorted by HABCID, which is a unique identifier for each participant. The variable MIFDRCOD is a text field. A numeric version of this variable is DRCODE, which can be used to merge with the MIF dictionaries.

6. General strategies for manipulating and merging the data

The MIF file and WHAS are merged by DRCODE (drug code); WHAS contains DRGCODENS (non-specific drug code) which links to IDIS; IDIS contains INGCODE (ingredients code) which links to DRVOC, which contains the description of the ingredients (INGDESC). The file Y1MIFCOD has one record per participant/medication/ingredient triad using this linkage. Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging subsets of either Y1MIF or Y1MIFCOD with other datasets, taking care to avoid one-to-many merge problems.

7. Special missing value codes

SAS allows for stratification of missing values. The following missing values have been assigned:

```
. = 'Missing Form'  
.A = 'A:Not Applicable'  
.M = 'M:Missing'  
.N = 'N:Not Required'
```

Description

. : Missing Form

Used when a value is missing because the entire form has not been entered.

A: Not Applicable

Used when a value is missing but the value is not required (due to simple skip pattern logic)

M:Missing

Used to flag missing values when the value is required (i.e., true missing values).

N:Not Required

Used when a value is missing but the value is not required (not due to simple skip pattern logic). For example, for checkbox variables which are “Check all that apply”: each one, individually, is not required. In these cases, a summary calculated variable (not included on the CD ROM) was used to edit missing responses. Some variables whose skip pattern logic is non-standard (i.e., the skip pattern involves several variables and forms) also have .N flags when missing, whether or not a response was required due to the skip pattern.

Appendix I

DROPPED VARIABLES AND ALTERNATES

Variable omitted	Variable to use
MAID	HABCID
MAACROS	N/A (confidentiality)
MIFID	HABCID
MIFSTREN	use strength-specific medication names and codes
STRENGTH	use strength-specific medication names and codes

Appendix II
Year 1 MIF Legend and Frequencies for Y1MIFCOD

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# Ppts	% Tot Ppts
2000000	ANTIGOUT AGENTS	90	0.43	78	2.54
2000000	ANTIGOUT AGENTS	90	0.43	78	2.54
2000000	ANTIGOUT AGENTS	22	0.11	22	0.72
2000002	COLCHICINE	22	0.11	22	0.72
2000200	ANTIGOUT AGENTS-URICOSURIC	9	0.04	9	0.29
2000203	PROBENECID	8	0.04	8	0.26
2000204	SULFINPYRAZONE	1	0.00	1	0.03
2000400	ANTIGOUT-XANTH OXIDASE INHIB	59	0.28	59	1.92
2000401	ALLOPURINOL	59	0.28	59	1.92
4000000	ANTIHIISTAMINES	394	1.90	343	11.19
4000000	ANTIHIISTAMINES	394	1.90	343	11.19
4000000	ANTIHIISTAMINES	394	1.90	343	11.19
4000000	ANTIHIISTAMINES	16	0.08	15	0.49
4000003	CHLORPHENIRAMINE	67	0.32	67	2.19
4000006	DIPHENHYDRAMINE	136	0.66	133	4.34
4000010	PROMETHAZINE	7	0.03	7	0.23
4000012	CYPROHEPTADINE	4	0.02	4	0.13
4000013	TRIPLENNAMINE	3	0.01	3	0.10
4000014	ACRIVASTINE	1	0.00	1	0.03
4000016	FEXOFENADINE	16	0.08	15	0.49
4000018	AZATADINE	1	0.00	1	0.03
4000022	ASTEMIZOLE	1	0.00	1	0.03
4000025	TERFENADINE	2	0.01	2	0.07
4000027	AZELASTINE	2	0.01	2	0.07
4000029	LORATADINE	56	0.27	56	1.83
4000030	LEVOCABASTINE	2	0.01	2	0.07
4000031	CETIRIZINE	8	0.04	8	0.26
4000054	CLEMASTINE	17	0.08	17	0.55
4000057	PYRILAMINE	8	0.04	8	0.26
4000061	PHENYLTOLOXAMINE	6	0.03	6	0.20
4000068	DOXYLAMINE	13	0.06	13	0.42
4000078	BROMPHENIRAMINE	8	0.04	8	0.26
4000083	DEXBROMPHENIRAMINE	2	0.01	2	0.07
4000084	DEXCHLORPHENIRAMINE	1	0.00	1	0.03
4000092	PHENIRAMINE	13	0.06	13	0.42
4000099	TRIPROLIDINE	4	0.02	4	0.13

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# Ppts	% Tot Ppts
8000000	ANTIINFECTIVES	518	2.50	354	11.55
8080000	ANTHELMINTICS	3	0.01	3	0.10
8080000	ANTHELMINTICS	3	0.01	3	0.10
8080001	PIPERAZINE	1	0.00	1	0.03
8080096	HEXYLRESORCINOL	2	0.01	2	0.07
8120000	ANTIBIOTICS	377	1.82	265	8.65
8120000	ANTIBIOTICS	1	0.00	1	0.03
8120000	ANTIBIOTICS	1	0.00	1	0.03
8120200	ANTIBIOTICS-AMINOGLYCOSIDES	60	0.29	58	1.89
8120201	TOBRAMYCIN	4	0.02	4	0.13
8120203	NEOMYCIN	49	0.24	48	1.57
8120209	GENTAMICIN	7	0.03	7	0.23
8120400	ANTIBIOTICS-ANTIFUNGAL	30	0.14	29	0.95
8120401	AMPHOTERICIN B	1	0.00	1	0.03
8120403	GRISEOFULVIN	1	0.00	1	0.03
8120405	NYSTATIN	11	0.05	11	0.36
8120415	CICLOPIROX	7	0.03	7	0.23
8120417	TERBINAFINE	10	0.05	10	0.33
8120501	ANTIFUNGALS-IMIDAZOLES	57	0.27	55	1.79
8120502	CLOTRIMAZOLE	32	0.15	30	0.98
8120505	SULCONAZOLE	1	0.00	1	0.03
8120509	ITRACONAZOLE	3	0.01	3	0.10
8120511	MICONAZOLE	3	0.01	3	0.10
8120512	KETOCONAZOLE	14	0.07	14	0.46
8120513	ECONAZOLE	3	0.01	3	0.10
8120514	FLUCONAZOLE	1	0.00	1	0.03
8120600	ANTIBIOTICS-CEPHALOSPORINS	17	0.08	17	0.55
8120601	CEPHALEXIN	15	0.07	15	0.49
8120616	CEFUROXIME	1	0.00	1	0.03
8120623	CEFACLOR	1	0.00	1	0.03
8121200	ANTIBIOTICS-MACROLIDES	31	0.15	30	0.98
8121201	ERYTHROMYCIN	14	0.07	14	0.46
8121217	AZITHROMYCIN	6	0.03	6	0.20
8121218	CLARITHROMYCIN	11	0.05	11	0.36
8121600	ANTIBIOTICS-PENICILLINS	36	0.17	34	1.11
8121601	AMPICILLIN	2	0.01	2	0.07
8121607	PENICILLIN G	1	0.00	1	0.03
8121609	PENICILLIN V	4	0.02	4	0.13
8121690	AMOXICILLIN	29	0.14	27	0.88
8122000	ANTIBIOTICS-QUINOLONES	23	0.11	22	0.72
8122001	ENOXACIN	1	0.00	1	0.03
8122003	NORFLOXACIN	2	0.01	2	0.07

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
8122004	CIPROFLOXACIN	14	0.07	14	0.46
8122007	OFLOXACIN	3	0.01	3	0.10
8122020	LEVOFLOXACIN	2	0.01	2	0.07
8122024	TROVAFLOXACIN	1	0.00	1	0.03
8122400	ANTIBIOTICS-TETRACYCLINES	22	0.11	22	0.72
8122404	TETRACYCLINE	5	0.02	5	0.16
8122489	MINOCYCLINE	2	0.01	2	0.07
8122491	DOXYCYCLINE	15	0.07	15	0.49
8122800	ANTIBIOTICS-OTHER	100	0.48	62	2.02
8122801	BACITRACIN	38	0.18	37	1.21
8122811	POLYMYXIN B	46	0.22	44	1.44
8122861	CLINDAMYCIN	6	0.03	6	0.20
8122889	COLISTIN	1	0.00	1	0.03
8122909	MUPIROCIN	8	0.04	8	0.26
8122927	LORACARBEF	1	0.00	1	0.03
8160000	ANTITUBERCULARS	3	0.01	1	0.03
8160000	ANTITUBERCULARS	3	0.01	1	0.03
8160001	CLOFAZIMINE	1	0.00	1	0.03
8160088	ETHAMBUTOL	2	0.01	1	0.03
8180000	ANTIVIRALS	8	0.04	8	0.26
8180000	ANTIVIRALS	8	0.04	8	0.26
8180001	AMANTADINE	3	0.01	3	0.10
8180010	ACYCLOVIR	4	0.02	4	0.13
8180071	VALACYCLOVIR	1	0.00	1	0.03
8200000	PLASMODICIDES (ANTIMALARIALS)	41	0.20	41	1.34
8200000	PLASMODICIDES (ANTIMALARIALS)	41	0.20	41	1.34
8200002	QUININE	35	0.17	35	1.14
8200095	HYDROXYCHLOROQUINE	6	0.03	6	0.20
8240000	SULFONAMIDES	39	0.19	38	1.24
8240000	SULFONAMIDES	39	0.19	38	1.24
8240002	SULFASALAZINE	9	0.04	9	0.29
8240006	SULFAMETHOXAZOLE	23	0.11	23	0.75
8240086	SULFACETAMIDE	7	0.03	7	0.23
8320000	TRICHOMONACIDES	22	0.11	22	0.72
8320000	TRICHOMONACIDES	22	0.11	22	0.72
8320004	METRONIDAZOLE	22	0.11	22	0.72
8360000	URINARY GERMICIDES	6	0.03	6	0.20
8360000	URINARY GERMICIDES	6	0.03	6	0.20
8360001	METHENAMINE	3	0.01	3	0.10
8360003	NITROFURANTOIN	3	0.01	3	0.10

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
8400000	ANTIINFECTIVES-OTHER	19	0.09	19	0.62
8400000	ANTIINFECTIVES-OTHER	19	0.09	19	0.62
8400071	TRIMETHOPRIM	19	0.09	19	0.62
10000000	ANTINEOPLASTIC AGENTS	85	0.41	84	2.74
10040000	ANTINEOPLASTICS-ALKYLATING	1	0.00	1	0.03
10040400	NITROGEN MUSTARDS	1	0.00	1	0.03
10040402	CHLORAMBUCIL	1	0.00	1	0.03
10080000	ANTIMETABOLITES	21	0.10	21	0.69
10080400	ANTIMETABOLITES-PYRIMIDINE	5	0.02	5	0.16
10080425	FLUOROURACIL	5	0.02	5	0.16
10080800	ANTIMETABOLITES-PURINE	1	0.00	1	0.03
10080806	AZATHIOPRINE	1	0.00	1	0.03
10081200	ANTIMETABOLITES-FOLIC ACID	15	0.07	15	0.49
10081255	METHOTREXATE	15	0.07	15	0.49
10100000	ANTINEOPLASTICS-HORMONAL	17	0.08	17	0.55
10100000	ANTINEOPLASTICS-HORMONAL	17	0.08	17	0.55
10100047	MEGESTROL	1	0.00	1	0.03
10100085	TAMOXIFEN	16	0.08	16	0.52
10120000	ANTINEOPLASTICS-OTHER	46	0.22	46	1.50
10120000	ANTINEOPLASTICS-OTHER	46	0.22	46	1.50
10120019	HYDROXYUREA	2	0.01	2	0.07
10120054	LEUPROLIDE	2	0.01	2	0.07
10120081	FINASTERIDE	42	0.20	42	1.37
12000000	AUTONOMIC AGENTS	1381	6.66	1077	35.14
12040000	PARASYMPATHOMIMETIC AGENTS	52	0.25	50	1.63
12040000	PARASYMPATHOMIMETIC AGENTS	52	0.25	50	1.63
12040002	BETHANECHOL	6	0.03	6	0.20
12040099	PILOCARPINE	46	0.22	44	1.44
12080000	PARASYMPATHOLYTIC AGENTS	127	0.61	110	3.59
12080000	PARASYMPATHOLYTIC AGENTS	121	0.58	105	3.43
12080001	ATROPINE	16	0.08	16	0.52
12080002	BELLADONNA	2	0.01	2	0.07
12080005	DICYCLOMINE	11	0.05	11	0.36
12080007	METHSCOPOLAMINE	1	0.00	1	0.03
12080008	PROPANTHELINE	2	0.01	2	0.07
12080009	SCOPOLAMINE	5	0.02	5	0.16
12080028	IPRATROPIUM BROMIDE	51	0.25	49	1.60
12080039	FLAVOXATE	3	0.01	3	0.10
12080047	CLIDINIUM	4	0.02	4	0.13
12080069	CARAMIPHEN	1	0.00	1	0.03
12080079	HYOSCYAMINE	25	0.12	25	0.82

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
12080800	ANTIPARKINSONIAN AGENTS	6	0.03	6	0.20
12080802	TRIHXYPHENIDYL	1	0.00	1	0.03
12080804	ORPHENADRINE	3	0.01	3	0.10
12080806	BENZTROPINE	2	0.01	2	0.07
12120000	SYMPATHOMIMETIC AGENTS	290	1.40	255	8.32
12120000	SYMPATHOMIMETIC AGENTS	290	1.40	255	8.32
12120000	SYMPATHOMIMETIC AGENTS	27	0.13	24	0.78
12120001	EPHEDRINE	2	0.01	2	0.07
12120002	EPINEPHRINE	2	0.01	2	0.07
12120009	PHENYLEPHRINE	24	0.12	24	0.78
12120029	PIRBUTEROL	5	0.02	5	0.16
12120030	BITOLTEROL	1	0.00	1	0.03
12120047	SALMETEROL	20	0.10	20	0.65
12120066	ALBUTEROL	85	0.41	80	2.61
12120087	ISOMETHEPTENE	2	0.01	2	0.07
12120094	TERBUTALINE	2	0.01	2	0.07
12120095	METAPROTERENOL	2	0.01	2	0.07
12120096	PHENYLPROPANOLAMINE	51	0.25	50	1.63
12120098	PSEUDOEPHEDRINE	67	0.32	65	2.12
12160000	SYMPATHOLYTIC AGENTS	884	4.26	796	25.97
12160000	SYMPATHOLYTIC AGENTS	4	0.02	2	0.07
12160003	ERGOTAMINE	1	0.00	1	0.03
12160091	DIHYDROERGOCORNINE	1	0.00	1	0.03
12160092	DIHYDROERGOCRYPTINE	1	0.00	1	0.03
12160093	DIHYDROERGOCRISTINE	1	0.00	1	0.03
12160100	BETA-ADRENERGIC BLOCKERS	602	2.90	580	18.92
12160107	LABETALOL	16	0.08	16	0.52
12160109	CARTEOLOL	18	0.09	18	0.59
12160112	METIPRANOLOL	46	0.22	46	1.50
12160114	BETAXOLOL	26	0.13	26	0.85
12160115	TIMOLOL	73	0.35	73	2.38
12160123	BISOPROLOL	18	0.09	18	0.59
12160137	ATENOLOL	157	0.76	157	5.12
12160145	METOPROLOL	128	0.62	127	4.14
12160146	NADOLOL	13	0.06	13	0.42
12160150	PROPRANOLOL	66	0.32	64	2.09
12160153	CARVEDILOL	3	0.01	3	0.10
12160167	PINDOLOL	1	0.00	1	0.03
12160169	ACEBUTOLOL	3	0.01	3	0.10
12160178	SOTALOL	6	0.03	6	0.20
12160189	LEVOBUNOLOL	28	0.13	28	0.91

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
12160400	ALPHA-ADRENERGIC BLOCKERS	278	1.34	271	8.84
12160401	TERAZOSIN	122	0.59	121	3.95
12160404	PRAZOSIN	37	0.18	36	1.17
12160411	TAMSULOSIN	1	0.00	1	0.03
12160419	DOXAZOSIN	118	0.57	116	3.78
12200000	SKELETAL MUSCLE RELAXANTS	28	0.13	28	0.91
12200000	SKELETAL MUSCLE RELAXANTS	28	0.13	28	0.91
12200001	CARISOPRODOL	3	0.01	3	0.10
12200005	METHOCARBAMOL	6	0.03	6	0.20
12200009	CYCLOBENZAPRINE	17	0.08	17	0.55
12200091	CHLORZOXAZONE	1	0.00	1	0.03
12200097	METAXALONE	1	0.00	1	0.03
20000000	BLOOD FORMATION & COAGULATION	612	2.95	569	18.56
20040000	ANTIANEMIA AGENTS	474	2.28	454	14.81
20040000	ANTIANEMIA AGENTS	3	0.01	3	0.10
20040002	EPOETIN	3	0.01	3	0.10
20040400	IRON PREPARATIONS	471	2.27	453	14.78
20040400	IRON PREPARATIONS	12	0.06	12	0.39
20040404	FERROUS GLUCONATE	1	0.00	1	0.03
20040405	FERROUS FUMARATE	4	0.02	4	0.13
20040406	FERROUS SULFATE	36	0.17	36	1.17
20040409	IRON POLYSACCHARIDE COMPLEX	1	0.00	1	0.03
20040492	IRON	417	2.01	407	13.28
20120000	COAGULANTS AND ANTICOAGULANTS	132	0.64	125	4.08
20120200	ANTICOAGULANTS-COUMARIN DERIV	120	0.58	113	3.69
20120208	WARFARIN	120	0.58	113	3.69
20120400	ANTICOAGULANTS-OTHER	11	0.05	11	0.36
20120408	TICLOPIDINE	11	0.05	11	0.36
20120600	PLATELET AGGREGAT INHIBITORS	1	0.00	1	0.03
20120645	CLOPIDOGREL	1	0.00	1	0.03
20400000	THROMBOLYTIC AGENTS	6	0.03	6	0.20
20400000	THROMBOLYTIC AGENTS	6	0.03	6	0.20
20400004	EICOSAPENTAENOIC ACID	6	0.03	6	0.20
24000000	CARDIOVASCULAR AGENTS	2406	11.59	1493	48.71
24040000	CARDIAC AGENTS	252	1.21	230	7.50
24040000	CARDIAC AGENTS	36	0.17	36	1.17
24040007	PROCAINAMIDE	4	0.02	4	0.13
24040008	QUINIDINE	12	0.06	12	0.39
24040011	TAURINE	2	0.01	2	0.07
24040021	MEXILETINE	4	0.02	4	0.13
24040023	MORICIZINE	3	0.01	3	0.10
24040024	DISOPYRAMIDE	4	0.02	4	0.13

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
24040034	PROPAFENONE	5	0.02	5	0.16
24040099	FLECAINIDE	2	0.01	2	0.07
24040100	CARDIAC GLYCOSIDES	216	1.04	213	6.95
24040104	DIGOXIN	209	1.01	207	6.75
24040220	AMIODARONE	7	0.03	7	0.23
24060000	ANTILIPEMIC AGENTS	446	2.15	433	14.13
24060000	ANTILIPEMIC AGENTS	11	0.05	11	0.36
24060009	CHOLESTYRAMINE RESIN	7	0.03	7	0.23
24060095	COLESTIPOL	4	0.02	4	0.13
24060200	ANTILIPEMIC AGENTS-HMG COA REDUC	400	1.93	395	12.89
24060202	ATORVASTATIN	61	0.29	61	1.99
24060204	LOVASTATIN	56	0.27	56	1.83
24060205	SIMVASTATIN	169	0.81	168	5.48
24060207	PRAVASTATIN	69	0.33	67	2.19
24060208	FLUVASTATIN	45	0.22	45	1.47
24060400	ANTILIPEMIC AGENTS-FIBRIC ACID	35	0.17	35	1.14
24060403	GEMFIBROZIL	35	0.17	35	1.14
24080000	HYPOTENSIVE AGENTS	708	3.41	654	21.34
24080000	HYPOTENSIVE AGENTS	167	0.80	155	5.06
24080003	GUANETHIDINE	17	0.08	17	0.55
24080006	METHYLDOPA	25	0.12	25	0.82
24080010	RESERPINE	46	0.22	45	1.47
24080014	GUANADREL	1	0.00	1	0.03
24080028	BRIMONIDINE	28	0.13	28	0.91
24080037	MINOXIDIL	3	0.01	3	0.10
24080063	GUANFACINE	8	0.04	8	0.26
24080064	CLONIDINE	37	0.18	35	1.14
24080084	GUANABENZ	2	0.01	2	0.07
24080200	HYPOTENSIVE AGENTS-ACE INHIB	471	2.27	465	15.17
24080202	QUINAPRIL	76	0.37	76	2.48
24080203	CAPTOPRIL	36	0.17	36	1.17
24080208	ENALAPRIL	123	0.59	122	3.98
24080213	LISINOPRIL	126	0.61	124	4.05
24080214	RAMIPRIL	16	0.08	16	0.52
24080216	BENAZEPRIL	70	0.34	70	2.28
24080218	FOSINOPRIL	21	0.10	21	0.69
24080223	TRANDOLAPRIL	2	0.01	2	0.07
24080232	MOEXIPRIL	1	0.00	1	0.03
24080400	HYPOTENSIVE AGENTS-ANGIOTEN II	70	0.34	70	2.28
24080401	LOSARTAN	56	0.27	56	1.83
24080403	VALSARTAN	12	0.06	12	0.39
24080405	IRBESARTAN	2	0.01	2	0.07

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
24120000	VASODILATING AGENTS	1000	4.82	840	27.41
24120000	VASODILATING AGENTS	88	0.42	84	2.74
24120021	PENTOXIFYLLINE	29	0.14	29	0.95
24120091	DIPYRIDAMOLE	20	0.10	20	0.65
24120094	HYDRALAZINE	33	0.16	33	1.08
24120096	ISOXSUPRINE	2	0.01	2	0.07
24120101	SILDENAFIL	4	0.02	4	0.13
24120200	VASODILATORS-NITRATES	194	0.93	176	5.74
24120205	NITROGLYCERIN	99	0.48	95	3.10
24120207	ISOSORBIDE DINITRATE	45	0.22	44	1.44
24120212	ISOSORBIDE MONONITRATE	50	0.24	49	1.60
24120400	VASODILATORS-CA CHANNEL BLOCK	718	3.46	705	23.00
24120406	NISOLDIPINE	10	0.05	10	0.33
24120410	DILTIAZEM	190	0.92	187	6.10
24120413	ISRADIPINE	10	0.05	10	0.33
24120415	NICARDIPINE	6	0.03	6	0.20
24120416	NIFEDIPINE	185	0.89	182	5.94
24120421	VERAPAMIL	134	0.65	133	4.34
24120422	AMLODIPINE	147	0.71	147	4.80
24120439	MIBEFRADIL	2	0.01	2	0.07
24120449	FELODIPINE	34	0.16	33	1.08
28000000	CENTRAL NERVOUS SYSTEM AGENTS	3368	16.23	2030	66.23
28080000	ANALGESICS & ANTIPYRETICS	2736	13.18	1900	61.99
28080400	NSAID	714	3.44	667	21.76
28080412	MECLOFENAMATE SODIUM	1	0.00	1	0.03
28080420	TOLMETIN	3	0.01	3	0.10
28080422	DICLOFENAC SODIUM	44	0.21	44	1.44
28080428	SULINDAC	14	0.07	14	0.46
28080437	PIROXICAM	5	0.02	5	0.16
28080455	ETODOLAC	32	0.15	32	1.04
28080459	NABUMETONE	61	0.29	61	1.99
28080463	INDOMETHACIN	15	0.07	15	0.49
28080466	OXAPROZIN	30	0.14	30	0.98
28080506	FENOPROFEN	2	0.01	2	0.07
28080507	FLURBIPROFEN	9	0.04	9	0.29
28080509	IBUPROFEN	346	1.67	339	11.06
28080512	KETOPROFEN	25	0.12	25	0.82
28080513	NAPROXEN	127	0.61	127	4.14
28080601	CELECOXIB	1	0.00	1	0.03
28080601	CELECOXIB	1	0.00	1	0.03

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
28080750	SALICYLATES	1240	5.98	1178	38.43
28080751	ASPIRIN	1180	5.69	1153	37.62
28080752	CHOLINE SALICYLATE	5	0.02	5	0.16
28080756	MAGNESIUM SALICYLATE	9	0.04	9	0.29
28080759	SALICYLAMIDE	12	0.06	11	0.36
28080761	PHENYL SALICYLATE	2	0.01	2	0.07
28080764	SALSALATE	8	0.04	8	0.26
28080768	DIFLUNISAL	1	0.00	1	0.03
28080770	TROLAMINE SALICYLATE	23	0.11	23	0.75
28080800	ANALGESICS-OPIOID	85	0.41	85	2.77
28080818	METHADONE	1	0.00	1	0.03
28080819	MORPHINE	1	0.00	1	0.03
28080840	PROPOXYPHENE	60	0.29	60	1.96
28080854	TRAMADOL	14	0.07	14	0.46
28080881	OPIUM	1	0.00	1	0.03
28080883	OXYCODONE	8	0.04	8	0.26
28081200	ANALGESICS & ANTIPYRET-OTHER	696	3.35	613	20.00
28081200	ANALGESICS & ANTIPYRET-OTHER	1	0.00	1	0.03
28081219	KETOROLAC	3	0.01	3	0.10
28081221	ACETAMINOPHEN	641	3.09	585	19.09
28081222	BROMFENAC	3	0.01	3	0.10
28081230	ANTIPYRINE	1	0.00	1	0.03
28081231	ALCOHOL	47	0.23	45	1.47
28120000	ANTICONSULSANTS	70	0.34	60	1.96
28120400	ANTICONSULS-BARBITURATES	26	0.13	25	0.82
28120405	PHENOBARBITAL	16	0.08	16	0.52
28120407	PRIMIDONE	10	0.05	9	0.29
28120800	ANTICONSULS-HYDANTOINS	24	0.12	23	0.75
28120805	PHENYTOIN	24	0.12	23	0.75
28122000	ANTICONSULS-OTHER	20	0.10	20	0.65
28122007	CARBAMAZEPINE	5	0.02	5	0.16
28122010	MAGNESIUM SULFATE	1	0.00	1	0.03
28122015	VALPROIC ACID	8	0.04	8	0.26
28122020	GABAPENTIN	6	0.03	6	0.20
28160000	PSYCHOTHERAPEUTIC AGENTS	258	1.24	227	7.41
28160400	ANTIDEPRESSANTS-OTHER	30	0.14	28	0.91
28160415	TRAZODONE	22	0.11	22	0.72
28160434	BUPROPION	5	0.02	5	0.16
28160458	VENLAFAXINE	3	0.01	3	0.10

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
28160500	ANTIDEPRESSANTS-MAO INHIB	7	0.03	7	0.23
28160505	PHENELZINE	1	0.00	1	0.03
28160520	SELEGILINE	5	0.02	5	0.16
28160599	TRANLYCYPROMINE	1	0.00	1	0.03
28160600	ANTIDEPRESSANTS-TRI/TETRACYC	88	0.42	86	2.81
28160601	AMITRIPTYLINE	54	0.26	53	1.73
28160602	IMIPRAMINE	5	0.02	5	0.16
28160650	TRIMIPRAMINE	1	0.00	1	0.03
28160681	DOXEPIN	10	0.05	10	0.33
28160688	CLOMIPRAMINE	1	0.00	1	0.03
28160689	DESIPRAMINE	2	0.01	2	0.07
28160695	NORTRIPTYLINE	15	0.07	15	0.49
28160700	ANTIDEPRESSANTS-SSRIS	85	0.41	85	2.77
28160701	FLUOXETINE	22	0.11	22	0.72
28160702	PAROXETINE	32	0.15	32	1.04
28160703	SERTRALINE	30	0.14	30	0.98
28160704	FLUVOXAMINE	1	0.00	1	0.03
28160800	ANTIPSYCHOTICS-OTHER	27	0.13	27	0.88
28160807	HYDROXYZINE	22	0.11	22	0.72
28160822	RISPERIDONE	2	0.01	2	0.07
28160836	OLANZAPINE	2	0.01	2	0.07
28160858	LOXAPINE	1	0.00	1	0.03
28160900	ANTIPSYCHOTICS-PHENOTHIAZINES	15	0.07	15	0.49
28160906	FLUPHENAZINE	1	0.00	1	0.03
28160909	PERPHENAZINE	6	0.03	6	0.20
28160912	THIORIDAZINE	2	0.01	2	0.07
28160913	TRIFLUOPERAZINE	5	0.02	5	0.16
28160996	TRIFLUPROMAZINE	1	0.00	1	0.03
28161000	ANTIPSYCHOTICS-BUTYROPHENONES	4	0.02	4	0.13
28161014	HALOPERIDOL	4	0.02	4	0.13
28161200	PSYCHOTHERAPEUTIC AGENTS-OTHE	2	0.01	2	0.07
28161204	LITHIUM	2	0.01	2	0.07
28200000	RESPIRATORY & CEREBRAL STIM	71	0.34	68	2.22
28200000	RESPIRATORY & CEREBRAL STIM	71	0.34	68	2.22
28200008	METHAMPHETAMINE	1	0.00	1	0.03
28200009	METHYLPHENIDATE	2	0.01	1	0.03
28200039	DONEPEZIL	18	0.09	18	0.59
28200040	DEXFENFLURAMINE	1	0.00	1	0.03
28200080	CAFFEINE	48	0.23	46	1.50
28200096	PHENTERMINE	1	0.00	1	0.03

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
28240000	ANXIOLYTICS	219	1.06	203	6.62
28240200	ANXIOLYTICS-BENZODIAZEPINES	165	0.80	159	5.19
28240202	CHLORDIAZEPOXIDE	10	0.05	10	0.33
28240205	DIAZEPAM	29	0.14	29	0.95
28240206	FLURAZEPAM	8	0.04	8	0.26
28240212	CLONAZEPAM	12	0.06	12	0.39
28240215	OXAZEPAM	2	0.01	2	0.07
28240216	ESTAZOLAM	4	0.02	4	0.13
28240222	TRIAZOLAM	4	0.02	4	0.13
28240228	CLORAZEPATE	8	0.04	8	0.26
28240231	TEMAZEPAM	12	0.06	12	0.39
28240232	ALPRAZOLAM	39	0.19	38	1.24
28240276	LORAZEPAM	37	0.18	37	1.21
28240400	ANXIOLYTICS-BARBITURATES	6	0.03	5	0.16
28240405	HEXOBARBITAL	1	0.00	1	0.03
28240413	BUTALBITAL	5	0.02	4	0.13
28240800	ANXIOLYTICS-OTHER	48	0.23	48	1.57
28240820	MEPROBAMATE	7	0.03	7	0.23
28240828	DICHLORALPHENAZONE	2	0.01	2	0.07
28240834	ZOLPIDEM	29	0.14	29	0.95
28240837	BUSPIRONE	10	0.05	10	0.33
28280000	DOPAMINERGICS	14	0.07	12	0.39
28280000	DOPAMINERGICS	14	0.07	12	0.39
28280002	LEVODOPA	11	0.05	11	0.36
28280011	ROPINIROLE	1	0.00	1	0.03
28280013	PRAMIPEXOLE	2	0.01	2	0.07
34000000	DENTAL AGENTS	4	0.02	4	0.13
34000000	DENTAL AGENTS	4	0.02	4	0.13
34000000	DENTAL AGENTS	4	0.02	4	0.13
34000002	STANNOUS FLUORIDE	3	0.01	3	0.10
34000004	SODIUM FLUORIDE	1	0.00	1	0.03
40000000	ELECTROLYTE SOLUTIONS	2937	14.15	1610	52.53
40040000	ACIDIFYING AGENTS	1	0.00	1	0.03
40040000	ACIDIFYING AGENTS	1	0.00	1	0.03
40040001	AMMONIUM CHLORIDE	1	0.00	1	0.03
40080000	ALKALINIZING AGENTS	39	0.19	33	1.08
40080000	ALKALINIZING AGENTS	39	0.19	33	1.08
40080001	SODIUM BICARBONATE	27	0.13	27	0.88
40080095	POTASSIUM CITRATE	4	0.02	4	0.13
40080096	SODIUM ACETATE	1	0.00	1	0.03
40080097	SODIUM CITRATE	7	0.03	6	0.20

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
40100000	AMMONIA DETOXICANTS	8	0.04	8	0.26
40100000	AMMONIA DETOXICANTS	8	0.04	8	0.26
40100003	LACTULOSE	8	0.04	8	0.26
40120000	REPLACEMENT SOLUTIONS	1706	8.22	1171	38.21
40120000	REPLACEMENT SOLUTIONS	435	2.10	381	12.43
40120001	DEXTRAN 70	10	0.05	10	0.33
40120003	POTASSIUM CHLORIDE	225	1.08	222	7.24
40120004	POTASSIUM GLUCONATE	12	0.06	12	0.39
40120006	SODIUM CHLORIDE	82	0.40	77	2.51
40120008	POTASSIUM SALTS	42	0.20	42	1.37
40120010	MAGNESIUM SALTS	61	0.29	60	1.96
40120011	DEXTRANS	2	0.01	2	0.07
40120095	MAGNESIUM CHLORIDE	1	0.00	1	0.03
40120400	TRACE ELEMENTS	798	3.85	699	22.81
40120400	TRACE ELEMENTS	605	2.92	586	19.12
40120401	MANGANESE	1	0.00	1	0.03
40120402	SELENIUM	56	0.27	56	1.83
40120403	COPPER	2	0.01	2	0.07
40120404	ZINC	113	0.54	110	3.59
40120406	CHROMIUM	21	0.10	21	0.69
40121200	CALCIUM SUPPLEMENTS	473	2.28	449	14.65
40121200	CALCIUM SUPPLEMENTS	7	0.03	7	0.23
40121201	CALCIUM CITRATE	17	0.08	16	0.52
40121204	CALCIUM LACTATE	4	0.02	4	0.13
40121206	CALCIUM GLUCONATE	1	0.00	1	0.03
40121209	CALCIUM CHLORIDE	1	0.00	1	0.03
40121211	CALCIUM	442	2.13	421	13.74
40121212	HYDROXYAPATITE	1	0.00	1	0.03
40180000	RESINS-POTASSIUM-REMOVING	1	0.00	1	0.03
40180000	RESINS-POTASSIUM-REMOVING	1	0.00	1	0.03
40180099	POLYSTYRENE SULFONATE SALTS	1	0.00	1	0.03
40200000	CALORIC (& NUTRIENT) AGENTS	99	0.48	82	2.68
40200000	CALORIC (& NUTRIENT) AGENTS	83	0.40	70	2.28
40200000	CALORIC (& NUTRIENT) AGENTS	69	0.33	59	1.92
40200003	DEXTROSE	3	0.01	2	0.07
40200006	SOYBEAN OIL	1	0.00	1	0.03
40200007	FISH OIL	8	0.04	8	0.26
40200097	FRUCTOSE	2	0.01	1	0.03
40200400	AMINO ACIDS	16	0.08	16	0.52
40200400	AMINO ACIDS	4	0.02	4	0.13
40200403	LYSINE	11	0.05	11	0.36
40200412	PROTEIN HYDROLYSATES	1	0.00	1	0.03

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
40280000	DIURETICS	1073	5.17	787	25.68
40280000	DIURETICS	314	1.51	312	10.18
40280013	SPIRONOLACTONE	19	0.09	19	0.62
40280016	TRIAMTERENE	236	1.14	235	7.67
40280025	INDAPAMIDE	47	0.23	47	1.53
40280062	AMILORIDE	12	0.06	12	0.39
40280100	DIURETICS-THIAZIDE	564	2.72	554	18.08
40280101	CHLORTHALIDONE	16	0.08	16	0.52
40280106	CHLOROTHIAZIDE	6	0.03	6	0.20
40280108	HYDROCHLOROTHIAZIDE	532	2.56	526	17.16
40280110	METOLAZONE	9	0.04	9	0.29
40280184	METHYCLOTHIAZIDE	1	0.00	1	0.03
40280400	DIURETICS-LOOP	195	0.94	192	6.26
40280401	FUROSEMIDE	167	0.80	166	5.42
40280402	BUMETANIDE	15	0.07	15	0.49
40280404	ETHACRYNIC ACID	1	0.00	1	0.03
40280405	TORSEMIDE	12	0.06	12	0.39
40360000	IRRIGATING SOLUTIONS	10	0.05	10	0.33
40360000	IRRIGATING SOLUTIONS	10	0.05	10	0.33
40360094	ACETIC ACID	3	0.01	3	0.10
40360095	GLYCINE	7	0.03	7	0.23
44000000	ENZYMES	50	0.24	48	1.57
44000000	ENZYMES	33	0.16	31	1.01
44000000	ENZYMES	33	0.16	31	1.01
44000021	LACTASE	21	0.10	21	0.69
44000086	AMYLASE	2	0.01	2	0.07
44000088	BROMELAINS	2	0.01	2	0.07
44000090	CELLULASE	2	0.01	2	0.07
44000093	PAPAIN	5	0.02	5	0.16
44000095	PROTEOLYTIC ENZYME	1	0.00	1	0.03
44100000	ENZYME INHIBITORS	17	0.08	17	0.55
44100000	ENZYME INHIBITORS	17	0.08	17	0.55
44100007	CLAVULANIC ACID	6	0.03	6	0.20
44100044	CARBIDOPA	11	0.05	11	0.36
48000000	EXPECTORANTS & ANTITUSSIVES	199	0.96	151	4.93
48000000	EXPECTORANTS & ANTITUSSIVES	199	0.96	151	4.93
48000000	EXPECTORANTS & ANTITUSSIVES	199	0.96	151	4.93
48000000	EXPECTORANTS & ANTITUSSIVES	5	0.02	5	0.16
48000008	GUAIFENESIN	102	0.49	92	3.00
48000054	BENZONATATE	6	0.03	6	0.20
48000063	CODEINE	24	0.12	24	0.78
48000069	DEXTROMETHORPHAN	34	0.16	32	1.04

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
48000072	HYDROCODONE	23	0.11	23	0.75
48000090	NOSCAPINE	4	0.02	4	0.13
48000099	TYLOXAPOL	1	0.00	1	0.03
52000000	EENT AGENTS	294	1.42	250	8.16
52000000	EENT AGENTS	1	0.00	1	0.03
52000000	EENT AGENTS	1	0.00	1	0.03
52000000	EENT AGENTS	1	0.00	1	0.03
52040000	ANTIINFECTIVES (EENT)	18	0.09	18	0.59
52040400	ANTIBIOTICS (EENT)	1	0.00	1	0.03
52040400	ANTIBIOTICS (EENT)	1	0.00	1	0.03
52041200	ANTIINFECTIVES (EENT)-OTHER	17	0.08	17	0.55
52041210	OLOPATADINE	7	0.03	7	0.23
52041211	ZINC SULFATE	3	0.01	3	0.10
52041286	CHLORHEXIDINE	2	0.01	2	0.07
52041297	CARBAMIDE PEROXIDE	1	0.00	1	0.03
52041299	HYDROGEN PEROXIDE	4	0.02	4	0.13
52080000	ANTIINFLAMMATORY AGENTS (EENT)	16	0.08	16	0.52
52080000	ANTIINFLAMMATORY AGENTS (EENT)	16	0.08	16	0.52
52080025	FLUNISOLIDE	16	0.08	16	0.52
52100000	CARB ANHYDRASE INHIB (EENT)	59	0.28	57	1.86
52100000	CARB ANHYDRASE INHIB (EENT)	59	0.28	57	1.86
52100001	ACETAZOLAMIDE	5	0.02	4	0.13
52100004	METHAZOLAMIDE	8	0.04	8	0.26
52100010	DORZOLAMIDE	46	0.22	46	1.50
52240000	MYDRIATICS	17	0.08	16	0.52
52240000	MYDRIATICS	17	0.08	16	0.52
52240004	DIPIVEFRIN	16	0.08	15	0.49
52240008	HOMATROPINE	1	0.00	1	0.03
52320000	VASOCONSTRICTORS (EENT)	60	0.29	56	1.83
52320000	VASOCONSTRICTORS (EENT)	60	0.29	56	1.83
52320004	NAPHAZOLINE	21	0.10	21	0.69
52320006	OXYMETAZOLINE	22	0.11	22	0.72
52320007	TETRAHYDROZOLINE	14	0.07	14	0.46
52320097	PROPYLHEXEDRINE	3	0.01	3	0.10
52360000	EENT AGENTS-OTHER	123	0.59	119	3.88
52360000	EENT AGENTS-OTHER	123	0.59	119	3.88
52360008	HYDROXYETHYL CELLULOSE	1	0.00	1	0.03
52360009	APRACLONIDINE	10	0.05	10	0.33
52360015	HYDROXYPROPYL CELLULOSE	8	0.04	8	0.26
52360016	HYALURONATE	1	0.00	1	0.03
52360025	LATANOPROST	56	0.27	56	1.83
52360095	POLYVINYL ALCOHOL	44	0.21	44	1.44

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
52360096	PHENYLMERCURIC NITRATE	3	0.01	3	0.10
56000000	GASTROINTESTINAL AGENTS	1831	8.82	1043	34.03
56040000	ANTACIDS & ADSORBENTS	640	3.08	434	14.16
56040000	ANTACIDS & ADSORBENTS	640	3.08	434	14.16
56040000	ANTACIDS & ADSORBENTS	32	0.15	31	1.01
56040002	ALUMINUM HYDROXIDE	157	0.76	150	4.89
56040004	CALCIUM CARBONATE	224	1.08	221	7.21
56040006	MAGNESIUM HYDROXIDE	150	0.72	146	4.76
56040009	DIHYDROXY AL SOD CARBONATE	20	0.10	20	0.65
56040077	MAGALDRATE	2	0.01	2	0.07
56040085	CALCIUM PHOSPHATE	1	0.00	1	0.03
56040090	MAGNESIUM CARBONATE	30	0.14	30	0.98
56040092	MAGNESIUM COMPOUNDS	1	0.00	1	0.03
56040094	MAGNESIUM OXIDE	8	0.04	8	0.26
56040096	MAGNESIUM TRISILICATE	15	0.07	15	0.49
56080000	ANTIDIARRHEA AGENTS	65	0.31	62	2.02
56080000	ANTIDIARRHEA AGENTS	65	0.31	62	2.02
56080005	DIPHENOXYLATE	7	0.03	7	0.23
56080006	KAOLIN	1	0.00	1	0.03
56080009	LOPERAMIDE	24	0.12	24	0.78
56080012	BISMUTH SUBSALICYLATE	13	0.06	13	0.42
56080087	ATTAPULGITES	1	0.00	1	0.03
56080092	LACTOBACILLUS ACIDOPHILUS	5	0.02	5	0.16
56080095	PECTIN	3	0.01	3	0.10
56080096	POLYCARBOPHIL	11	0.05	11	0.36
56100000	ANTIFLATULENTS	73	0.35	68	2.22
56100000	ANTIFLATULENTS	73	0.35	68	2.22
56100001	SIMETHICONE	73	0.35	68	2.22
56120000	CATHARTICS	321	1.55	213	6.95
56120000	CATHARTICS	321	1.55	213	6.95
56120000	CATHARTICS	59	0.28	57	1.86
56120001	BISACODYL	11	0.05	11	0.36
56120003	CASTOR OIL	2	0.01	2	0.07
56120005	MAGNESIUM CITRATE	1	0.00	1	0.03
56120006	BRAN	3	0.01	3	0.10
56120007	DOCUSATE SODIUM	87	0.42	84	2.74
56120014	PETROLATUM LIQUID	7	0.03	7	0.23
56120019	SODIUM PHOSPHATE	9	0.04	9	0.29
56120076	CASANTHRANOL	69	0.33	67	2.19
56120078	DOCUSATE CALCIUM	9	0.04	9	0.29
56120079	MAGNESIUM GLUCONATE	1	0.00	1	0.03
56120084	PHENOLPHTHALEIN	38	0.18	37	1.21

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# Ppts	% Tot Ppts
56120085	CASCARA SAGRADA	4	0.02	4	0.13
56120093	SENNA	21	0.10	21	0.69
56160000	DIGESTANTS	16	0.08	16	0.52
56160000	DIGESTANTS	16	0.08	16	0.52
56160000	DIGESTANTS	2	0.01	2	0.07
56160003	GALACTOSIDASE, ALPHA	4	0.02	4	0.13
56160009	PANCRELIPASE	7	0.03	7	0.23
56160092	LIPASE	3	0.01	3	0.10
56220000	ANTIEMETICS	69	0.33	66	2.15
56220000	ANTIEMETICS	69	0.33	66	2.15
56220003	DIMENHYDRINATE	2	0.01	2	0.07
56220005	MECLIZINE	44	0.21	44	1.44
56220006	TRIMETHOBENZAMIDE	2	0.01	2	0.07
56220089	CHLORPROMAZINE	1	0.00	1	0.03
56220096	PROCHLORPERAZINE	2	0.01	2	0.07
56220098	METOCLOPRAMIDE	18	0.09	18	0.59
56240000	LIPOTROPIC AGENTS	2	0.01	2	0.07
56240000	LIPOTROPIC AGENTS	2	0.01	2	0.07
56240099	CHOLINE	2	0.01	2	0.07
56260000	ANTIULCER AGENTS	489	2.36	465	15.17
56260000	ANTIULCER AGENTS	18	0.09	18	0.59
56260011	MISOPROSTOL	9	0.04	9	0.29
56260018	SUCRALFATE	9	0.04	9	0.29
56260400	ANTIULCER-H2 ANTAGONISTS	345	1.66	337	11.00
56260402	CIMETIDINE	97	0.47	97	3.16
56260405	RANITIDINE	118	0.57	117	3.82
56260410	NIZATIDINE	44	0.21	44	1.44
56260411	FAMOTIDINE	86	0.41	86	2.81
56260600	ANTIULCER-PROTON PUMP INHIB	126	0.61	122	3.98
56260602	OMEPRAZOLE	93	0.45	93	3.03
56260603	LANSOPRAZOLE	33	0.16	31	1.01
56400000	GASTROINTESTINAL AGENTS-OTHER	156	0.75	150	4.89
56400000	GASTROINTESTINAL AGENTS-OTHER	156	0.75	150	4.89
56400006	CISAPRIDE	32	0.15	32	1.04
56400007	MESALAMINE	6	0.03	6	0.20
56400008	DIETARY FIBERS	2	0.01	2	0.07
56400013	PSYLLIUM	114	0.55	111	3.62
56400014	OLSALAZINE	2	0.01	2	0.07
60000000	GOLD COMPOUNDS	1	0.00	1	0.03
60000000	GOLD COMPOUNDS	1	0.00	1	0.03
60000000	GOLD COMPOUNDS	1	0.00	1	0.03
60000001	AURANOFIN	1	0.00	1	0.03

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
68000000	HORMONES & SYNTHETIC SUBSTANCE	1629	7.85	1127	36.77
68040000	CORTICOSTEROIDS	328	1.58	292	9.53
68040000	CORTICOSTEROIDS	328	1.58	292	9.53
68040001	CORTISONE	1	0.00	1	0.03
68040003	DEXAMETHASONE	23	0.11	21	0.69
68040004	FLUDROCORTISONE	2	0.01	2	0.07
68040005	HYDROCORTISONE	77	0.37	75	2.45
68040006	METHYLPREDNISOLONE	4	0.02	4	0.13
68040007	PREDNISONE	57	0.27	55	1.79
68040008	TRIAMCINOLONE	77	0.37	74	2.41
68040011	BETAMETHASONE	24	0.12	24	0.78
68040019	RIMEXOLONE	2	0.01	2	0.07
68040092	PREDNISOLONE	22	0.11	22	0.72
68040094	FLUTICASONE	39	0.19	36	1.17
68080000	ANDROGENS	37	0.18	37	1.21
68080000	ANDROGENS	29	0.14	29	0.95
68080001	FLUOXYMESTERONE	1	0.00	1	0.03
68080003	METHYLTESTOSTERONE	10	0.05	10	0.33
68080006	TESTOSTERONE	3	0.01	3	0.10
68080083	PRASTERONE	13	0.06	13	0.42
68080097	DANAZOL	2	0.01	2	0.07
68080400	ANTIANDROGENS	8	0.04	8	0.26
68080404	FLUTAMIDE	4	0.02	4	0.13
68080407	BICALUTAMIDE	4	0.02	4	0.13
68160000	ESTROGENS	383	1.85	375	12.23
68160000	ESTROGENS	383	1.85	375	12.23
68160000	ESTROGENS	8	0.04	8	0.26
68160003	DIENESTROL	2	0.01	2	0.07
68160004	DIETHYLSTILBESTROL	2	0.01	2	0.07
68160005	ESTRADIOL	34	0.16	34	1.11
68160007	ESTROGENS CONJUGATED	314	1.51	308	10.05
68160020	ESTROPIPATE	23	0.11	23	0.75
68200000	INSULINS & ANTIDIABETIC AGTS	485	2.34	385	12.56
68200400	HYPOGLYCEMICS (ORAL)-OTHER	81	0.39	76	2.48
68200401	TROGLITAZONE	13	0.06	13	0.42
68200402	REPAGLINIDE	1	0.00	1	0.03
68200407	METFORMIN	60	0.29	59	1.92
68200411	ACARBOSE	7	0.03	7	0.23
68200600	SULFONYLUREAS	261	1.26	259	8.45
68200601	ACETOHEXAMIDE	1	0.00	1	0.03
68200602	CHLORPROPAMIDE	13	0.06	13	0.42
68200605	TOLAZAMIDE	4	0.02	4	0.13

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
68200609	GLYBURIDE	165	0.80	164	5.35
68200610	GLIMEPIRIDE	9	0.04	9	0.29
68200614	TOLBUTAMIDE	4	0.02	4	0.13
68200637	GLIPIZIDE	65	0.31	65	2.12
68200800	INSULINS	143	0.69	117	3.82
68200801	INSULIN	20	0.10	19	0.62
68200804	INSULIN ZINC	4	0.02	4	0.13
68200805	INSULIN ISOPHANE	17	0.08	17	0.55
68200820	INSULIN HUMAN	98	0.47	88	2.87
68200821	INSULIN LISPRO	2	0.01	2	0.07
68200823	INSULIN PROTAMINE LISPRO	2	0.01	2	0.07
68280000	HORMONES-PITUITARY	1	0.00	1	0.03
68280000	HORMONES-PITUITARY	1	0.00	1	0.03
68280005	DESMOPRESSIN	1	0.00	1	0.03
68320000	PROGESTOGENS	98	0.47	98	3.20
68320000	PROGESTOGENS	98	0.47	98	3.20
68320002	MEDROXYPROGESTERONE	98	0.47	98	3.20
68360000	THYROID & THYROID ANTAGONISTS	297	1.43	290	9.46
68360000	THYROID & THYROID ANTAGONISTS	16	0.08	16	0.52
68360083	CALCITONIN SALMON	16	0.08	16	0.52
68360400	THYROID AGENTS	280	1.35	275	8.97
68360404	THYROID	19	0.09	19	0.62
68360406	LEVOTHYROXINE	261	1.26	256	8.35
68360800	ANTITHYROID AGENTS	1	0.00	1	0.03
68360805	PROPYLTHIOURACIL	1	0.00	1	0.03
72000000	ANESTHETICS (LOCAL)	14	0.07	14	0.46
72000000	ANESTHETICS (LOCAL)	14	0.07	14	0.46
72000000	ANESTHETICS (LOCAL)	14	0.07	14	0.46
72000004	LIDOCAINE	2	0.01	2	0.07
72000010	PHENOL	8	0.04	8	0.26
72000078	DIBUCAINE	4	0.02	4	0.13
78000000	RADIOACTIVE & ANTIRAD AGTS	2	0.01	2	0.07
78040000	RADIOISOTOPES	2	0.01	2	0.07
78040700	RADIOACTIVE AGENTS-PHOSPHORUS	2	0.01	2	0.07
78040701	PHOSPHORUS P 32	2	0.01	2	0.07
80000000	SERUMS, TOXOIDS, & VACCINES	13	0.06	12	0.39
80160000	ALLERGENIC EXTRACTS	13	0.06	12	0.39
80160000	ALLERGENIC EXTRACTS	4	0.02	4	0.13
80160000	ALLERGENIC EXTRACTS	4	0.02	4	0.13
80164400	POLLEN EXTRACTS	9	0.04	8	0.26
80164400	POLLEN EXTRACTS	9	0.04	8	0.26

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
84000000	SKIN & MUCOUS MEMBRANE AGENTS	514	2.48	317	10.34
84040000	ANTIINFECTIVES (TOP)	57	0.27	45	1.47
84040800	ANTIFUNGALS (TOPICAL)	33	0.16	24	0.78
84040800	ANTIFUNGALS (TOPICAL)	6	0.03	6	0.20
84040808	UNDECYLENIC ACID	5	0.02	4	0.13
84040811	NAFTIFINE	4	0.02	4	0.13
84040816	OXICONAZOLE	2	0.01	2	0.07
84040819	BUTENAFINE	2	0.01	2	0.07
84040881	OXYQUINOLINE	1	0.00	1	0.03
84040883	PROPIONIC ACID/SALTS	3	0.01	3	0.10
84040890	UNDECYLENIC ACIDS/SALTS	5	0.02	4	0.13
84040891	THYMOL	1	0.00	1	0.03
84040892	TOLNAFTATE	4	0.02	4	0.13
84041600	ANTIINFECTIVES (TOP)-OTHER	24	0.12	23	0.75
84041607	BENZALKONIUM CHLORIDE	11	0.05	11	0.36
84041608	BORIC ACID	3	0.01	3	0.10
84041610	IODINE	2	0.01	2	0.07
84041619	SELENIUM SULFIDE	2	0.01	2	0.07
84041633	SILVER SULFADIAZINE	1	0.00	1	0.03
84041673	PYRITHIONE	2	0.01	2	0.07
84041682	POVIDONE-IODINE	1	0.00	1	0.03
84041696	CETYLPYRIDINIUM	2	0.01	2	0.07
84060000	ANTIINFLAMMATORY AGENTS (TOP)	120	0.58	108	3.52
84060000	ANTIINFLAMMATORY AGENTS (TOP)	120	0.58	108	3.52
84060002	FLURANDRENOLIDE	2	0.01	2	0.07
84060005	HALCINONIDE	1	0.00	1	0.03
84060006	CLOBETASOL PROPIONATE	9	0.04	9	0.29
84060014	ALCLOMETASONE	5	0.02	5	0.16
84060017	DESOXIMETASONE	4	0.02	4	0.13
84060019	AMCINONIDE	1	0.00	1	0.03
84060020	DIFLORASONE DIACETATE	6	0.03	6	0.20
84060022	BUDESONIDE	7	0.03	7	0.23
84060027	HALOBETASOL	3	0.01	3	0.10
84060076	MOMETASONE	3	0.01	3	0.10
84060078	BECLOMETHASONE	55	0.27	51	1.66
84060086	FLUOCINONIDE	8	0.04	7	0.23
84060089	FLUOCINOLONE	5	0.02	5	0.16
84060090	FLUOROMETHOLONE	5	0.02	5	0.16
84060095	DESONIDE	5	0.02	5	0.16
84060098	HYDROCORTISONE BUTYRATE	1	0.00	1	0.03

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
84080000	ANESTHETICS & ANTIPRURIT (TOP)	197	0.95	144	4.70
84080000	ANESTHETICS & ANTIPRURIT (TOP)	197	0.95	144	4.70
84080001	PHENAZOPYRIDINE	8	0.04	8	0.26
84080003	CAMPHOR	44	0.21	43	1.40
84080011	MENTHOL	104	0.50	99	3.23
84080013	CAPSAICIN	20	0.10	20	0.65
84080024	BENZOCAINE	17	0.08	16	0.52
84080097	PRAMOXINE	4	0.02	4	0.13
84120000	ASTRINGENTS	20	0.10	20	0.65
84120000	ASTRINGENTS	20	0.10	20	0.65
84120005	ALUMINUM CHLORIDE	1	0.00	1	0.03
84120014	WITCH HAZEL	4	0.02	4	0.13
84120094	ALUMINUM SALTS	15	0.07	15	0.49
84240000	EMOLLIENTS, DEMULC & PROTECT	92	0.44	80	2.61
84240000	EMOLLIENTS, DEMULC & PROTECT	1	0.00	1	0.03
84240000	EMOLLIENTS, DEMULC & PROTECT	1	0.00	1	0.03
84240400	BASIC LOTIONS & LINIMENTS	60	0.29	59	1.92
84240400	BASIC LOTIONS & LINIMENTS	3	0.01	3	0.10
84240401	CALAMINE	1	0.00	1	0.03
84240403	TURPENTINE OIL	17	0.08	17	0.55
84240404	METHYL SALICYLATE	39	0.19	39	1.27
84241200	PROTECTANTS & BASIC LINIMENTS	30	0.14	21	0.69
84241201	PERUVIAN BALSAM	2	0.01	2	0.07
84241202	LANOLIN, ANHYDROUS	1	0.00	1	0.03
84241206	LANOLIN	3	0.01	3	0.10
84241211	SHARK LIVER OIL	6	0.03	6	0.20
84241212	PETROLATUM	10	0.05	10	0.33
84241215	SILICONES	1	0.00	1	0.03
84241216	BENZOIN	1	0.00	1	0.03
84241220	ZINC OXIDE	6	0.03	6	0.20
84241600	BASIC POWDERS & DEMULCENTS	1	0.00	1	0.03
84241605	STARCH	1	0.00	1	0.03
84280000	KERATOLYTIC AGENTS	18	0.09	17	0.55
84280000	KERATOLYTIC AGENTS	18	0.09	17	0.55
84280004	TRETINOIN	5	0.02	5	0.16
84280006	BENZOYL PEROXIDE	1	0.00	1	0.03
84280007	RESORCINOL	1	0.00	1	0.03
84280084	SALICYLIC ACID	6	0.03	6	0.20
84280085	ANTHRALIN	1	0.00	1	0.03
84280086	BENZOIC ACID	2	0.01	2	0.07
84280095	SULFUR	2	0.01	2	0.07

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
84360000	SKIN & MUCOUS MEMBRANE-OTHER	8	0.04	8	0.26
84360000	SKIN & MUCOUS MEMBRANE-OTHER	8	0.04	8	0.26
84360028	SODIUM BORATE	2	0.01	2	0.07
84360034	CALCIPOTRIENE	3	0.01	3	0.10
84360036	AZELAIC ACID	1	0.00	1	0.03
84360052	AMMONIUM LACTATE	2	0.01	2	0.07
84500000	PIGMENTING & DEPIGMENTING AGT	1	0.00	1	0.03
84500400	DEPIGMENTING AGENTS	1	0.00	1	0.03
84500444	HYDROQUINONE	1	0.00	1	0.03
84800000	SUNSCREEN AGENTS	1	0.00	1	0.03
84800000	SUNSCREEN AGENTS	1	0.00	1	0.03
84800003	AMINO BENZOIC ACID	1	0.00	1	0.03
86000000	SPASMOLYTIC AGENTS	85	0.41	84	2.74
86000000	SPASMOLYTIC AGENTS	85	0.41	84	2.74
86000000	SPASMOLYTIC AGENTS	85	0.41	84	2.74
86000004	OXYBUTYNYNIN	25	0.12	25	0.82
86000006	LODOXAMIDE	2	0.01	2	0.07
86000007	PAPAVERINE	1	0.00	1	0.03
86000009	THEOPHYLLINE	55	0.27	54	1.76
86000047	TOLTERODINE	2	0.01	2	0.07
88000000	VITAMINS	3110	14.99	1527	49.82
88000000	VITAMINS	6	0.03	6	0.20
88000000	VITAMINS	6	0.03	6	0.20
88000003	CARNITINE, LEVO-	6	0.03	6	0.20
88040000	VITAMIN A DERIVATIVES	110	0.53	102	3.33
88040000	VITAMIN A DERIVATIVES	110	0.53	102	3.33
88040002	BETA CAROTENE	61	0.29	61	1.99
88040005	LYCOPENE	1	0.00	1	0.03
88040098	VITAMIN A	48	0.23	48	1.57
88080000	VITAMIN B COMPLEX	381	1.84	297	9.69
88080000	VITAMIN B COMPLEX	381	1.84	297	9.69
88080000	VITAMIN B COMPLEX	113	0.54	110	3.59
88080002	CYANOCOBALAMIN	96	0.46	95	3.10
88080003	FOLIC ACID	62	0.30	61	1.99
88080004	NIACIN	33	0.16	33	1.08
88080005	NIACINAMIDE	2	0.01	2	0.07
88080006	PYRIDOXINE	39	0.19	39	1.27
88080009	THIAMINE	18	0.09	18	0.59
88080010	BIOTIN	9	0.04	9	0.29
88080087	PANTOTHENATE	1	0.00	1	0.03
88080092	INOSITOL	2	0.01	2	0.07
88080094	PANTOTHENIC ACID	6	0.03	6	0.20

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
88120000	VITAMIN C DERIVATIVES	492	2.37	472	15.40
88120000	VITAMIN C DERIVATIVES	492	2.37	472	15.40
88120000	VITAMIN C DERIVATIVES	20	0.10	20	0.65
88120002	ASCORBIC ACID	472	2.27	456	14.88
88160000	VITAMIN D & DERIVATIVES	267	1.29	260	8.48
88160000	VITAMIN D & DERIVATIVES	267	1.29	260	8.48
88160000	VITAMIN D & DERIVATIVES	261	1.26	256	8.35
88160095	CHOLECALCIFEROL	4	0.02	4	0.13
88160096	CALCITRIOL	2	0.01	2	0.07
88200000	VITAMIN E & DERIVATIVES	675	3.25	672	21.92
88200000	VITAMIN E & DERIVATIVES	675	3.25	672	21.92
88200000	VITAMIN E & DERIVATIVES	674	3.25	672	21.92
88200098	TOCOPHEROL ACETATE, ALPHA	1	0.00	1	0.03
88240000	VITAMIN K & DERIVATIVES	1	0.00	1	0.03
88240000	VITAMIN K & DERIVATIVES	1	0.00	1	0.03
88240000	VITAMIN K & DERIVATIVES	1	0.00	1	0.03
88280000	MULTIVITAMIN PREPARATIONS	1167	5.62	1073	35.01
88280000	MULTIVITAMIN PREPARATIONS	1167	5.62	1073	35.01
88280000	MULTIVITAMIN PREPARATIONS	1121	5.40	1052	34.32
88280004	COD LIVER OIL	46	0.22	46	1.50
88320000	BIOFLAVONOIDS	11	0.05	11	0.36
88320000	BIOFLAVONOIDS	11	0.05	11	0.36
88320000	BIOFLAVONOIDS	10	0.05	10	0.33
88320098	RUTIN	1	0.00	1	0.03
92000000	UNCLASSIFIED THERAPEUTIC AGTS	937	4.52	573	18.69
92000000	UNCLASSIFIED THERAPEUTIC AGTS	189	0.91	159	5.19
92000000	UNCLASSIFIED THERAPEUTIC AGTS	189	0.91	159	5.19
92000018	MELATONIN	17	0.08	17	0.55
92000020	CROMOLYN	8	0.04	7	0.23
92000023	NICOTINE POLACRILEX	1	0.00	1	0.03
92000051	VALSPODAR	1	0.00	1	0.03
92000061	TACROLIMUS	2	0.01	1	0.03
92000134	CYCLOSPORINE	1	0.00	1	0.03
92000170	METHYLENE BLUE	2	0.01	2	0.07
92000192	NEDOCROMIL	2	0.01	2	0.07
92000196	PICOLINIC ACID	19	0.09	19	0.62
92000204	SILYMARIN	2	0.01	2	0.07
92000210	HOMEOPATHIC PREPARATIONS	7	0.03	6	0.20
92000250	UBIDECARENONE	30	0.14	30	0.98
92010105	ZAFIRLUKAST	5	0.02	5	0.16
92010203	ZILEUTON	1	0.00	1	0.03
92200099	YOHIMBINE	18	0.09	18	0.59

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
92300030	THIOCTIC ACID	2	0.01	2	0.07
92352571	LECITHIN	42	0.20	42	1.37
92354062	CITRIC ACID	20	0.10	19	0.62
92354072	LACTIC ACID	9	0.04	9	0.29
92510000	HERBAL MEDICINES	555	2.67	360	11.75
92510000	HERBAL MEDICINES	555	2.67	360	11.75
92510000	HERBAL MEDICINES	104	0.50	91	2.97
92510001	FLAXSEED	10	0.05	10	0.33
92510002	PYGEUM AFRICANUM EXTRACT	2	0.01	2	0.07
92510008	GARLIC	173	0.83	172	5.61
92510009	GINGER	1	0.00	1	0.03
92510010	GINSENG	33	0.16	33	1.08
92510014	CRANBERRY	5	0.02	5	0.16
92510015	CHESTNUT	2	0.01	2	0.07
92510019	ECHINACEA	12	0.06	12	0.39
92510020	SAW PALMETTO	38	0.18	38	1.24
92510026	ST JOHN'S WORT	16	0.08	16	0.52
92510032	RED CLOVER	1	0.00	1	0.03
92510033	ALOE	8	0.04	7	0.23
92510034	GINKGO	92	0.44	92	3.00
92510035	ALFALFA	21	0.10	21	0.69
92510038	EVENING PRIMROSE OIL	4	0.02	4	0.13
92510039	GOLDENSEAL	4	0.02	4	0.13
92510040	HAWTHORN	3	0.01	3	0.10
92510046	PROPOLIS	1	0.00	1	0.03
92510052	GRAPE SEED	8	0.04	8	0.26
92510054	PYCNOGENOL	1	0.00	1	0.03
92510073	CAPSICUM	2	0.01	2	0.07
92510115	VALERIAN	1	0.00	1	0.03
92510131	GREEN TEA	2	0.01	2	0.07
92510142	BILBERRY	11	0.05	11	0.36
92520000	NATURAL PRODUCTS-OTHER	89	0.43	60	1.96
92520000	NATURAL PRODUCTS-OTHER	89	0.43	60	1.96
92520006	CARTILAGE, SHARK	5	0.02	5	0.16
92520008	CHONDROITIN	30	0.14	30	0.98
92520011	GLUCOSAMINE	54	0.26	54	1.76
92600100	BISPHOSPHONATES	104	0.50	104	3.39
92600100	BISPHOSPHONATES	104	0.50	104	3.39
92600101	ALENDRONATE	100	0.48	100	3.26
92600104	ETIDRONATE DISODIUM	4	0.02	4	0.13

IDIS Code	Description	# of Times	% Tot	# Ppts	% Tot
		Med Taken	Meds Taken		Ppts
94000000	NONTHERAPEUTIC/TOXIC SUBST	1	0.00	1	0.03
94000000	NONTHERAPEUTIC/TOXIC SUBST	1	0.00	1	0.03
94000000	NONTHERAPEUTIC/TOXIC SUBST	1	0.00	1	0.03
94000044	NICOTINE	1	0.00	1	0.03
95000000	INVESTIGATIONAL AGENTS	4	0.02	4	0.13
95000000	INVESTIGATIONAL AGENTS	4	0.02	4	0.13
95000000	INVESTIGATIONAL AGENTS	4	0.02	4	0.13
95000036	FATTY ACIDS	4	0.02	4	0.13
96000000	PHARMACEUTICAL AIDS	154	0.74	137	4.47
96000000	PHARMACEUTICAL AIDS	154	0.74	137	4.47
96000000	PHARMACEUTICAL AIDS	3	0.01	3	0.10
96000023	VEGETABLE OILS	3	0.01	3	0.10
96002000	PHARM AIDS-PRESERVATIVES	3	0.01	3	0.10
96002005	PARABENS	1	0.00	1	0.03
96002031	BENZYL ALCOHOL	1	0.00	1	0.03
96002032	CHLOROBUTANOL	1	0.00	1	0.03
96003000	PHARM AIDS-PH ADJUSTMENT	1	0.00	1	0.03
96003034	TROLAMINE	1	0.00	1	0.03
96004000	PHARM AIDS-FLAVORING AGENTS	31	0.15	31	1.01
96004004	EUCALYPTUS OIL	28	0.13	28	0.91
96004006	SORBITOL	2	0.01	2	0.07
96004008	EUCALYPTOL	1	0.00	1	0.03
96005000	PHARM AIDS-SUSP/EMULS/SURFACT	90	0.43	84	2.74
96005002	CARBOMERS	4	0.02	4	0.13
96005003	CARBOXYMETHYLCELLULOSE	43	0.21	41	1.34
96005004	GELATIN	5	0.02	5	0.16
96005005	HYPROMELLOSE	24	0.12	24	0.78
96005006	METHYLCELLULOSE	11	0.05	11	0.36
96005009	POVIDONE	1	0.00	1	0.03
96005036	STEARYL ALCOHOL	1	0.00	1	0.03
96005080	SORBITAN COMPOUNDS	1	0.00	1	0.03
96006000	PHARM AIDS-SOLVENTS/VEHICLES	26	0.13	25	0.82
96006000	PHARM AIDS-SOLVENTS/VEHICLES	3	0.01	3	0.10
96006004	GLYCERIN	16	0.08	16	0.52
96006005	PHOSPHORIC ACID	2	0.01	1	0.03
96006006	PROPYLENE GLYCOL	1	0.00	1	0.03
96006013	COCOA BUTTER	4	0.02	4	0.13
99990089	/BOOK: BIOPHARMACEUTICS	118	0.57	105	3.43
99990089	/BOOK: BIOPHARMACEUTICS	118	0.57	105	3.43
99999999	UNCODABLE INGREDIENT	118	0.57	105	3.43
99999999	UNCODABLE INGREDIENT	118	0.57	105	3.43

Appendix III
MEDICATION USE VARIABLES

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1ACEINH	Y1: ACE inhibitors	Indicator variable for ACE inhibitor in Y1MIFCOD based on IDIS code	ACE inhibitors (24080200 ≤ INGCODE ≤ 24080299)	= .A if no drug information available	0=No 1=Yes
Y1ALPHBK	Y1: Alpha-adrenergic blockers (hypertension)	Indicator variable for alpha-adrenergic blocker in Y1MIFCOD based on IDIS code	Alpha-adrenergic blockers (12160400 ≤ INGCODE ≤ 12160499) and INGCODE ≠ 12160411 (Tamsulosin)	= .A if no drug information available if INGCODE= 12160401 or 12160419 and gender =male, count only if reason for use related to hypertension	0=No 1=Yes
Y1AMILOR	Y1:Diuretic: amiloride	Indicator variable for amiloride in Y1MIFCOD based on IDIS code	Amiloride INGCODE=40280062	= .A if no drug information available	0=No 1=Yes
Y1AMIODR	Y1: Antiarrhythmic: amiodarone	Indicator variable for amiodarone in Y1MIFCOD based on IDIS code	Amiodarone INGCODE=24120098 (New # is 24040220, both codes included)	= .A if no drug information available	0=No 1=Yes
Y1ANDEPO	Y1: Miscellaneous antidepressants	Indicator variable for miscellaneous antidepressant med in Y1MIFCOD based on IDIS code	Trazodone, Bupropion, Venlafaxine, Nefaxodone INGCODE in (28160415,28160434,28160458, 28160486)	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1ANGTN2	Y1: Angiotensin II hypotensive agents	Indicator variable for angiotensin II hypotensive agent in Y1MIFCOD based on IDIS code	Angiotensin II hypotensive agents (24080400 ≤ INGCODE ≤ 24080413)	= .A if no drug information available	0=No 1=Yes
Y1ANLEUC	Y1: Spasmolytics: Antileucotrienes	Indicator variable for antileucotriene spasmolytic in Y1MIFCOD based on IDIS code	=1 if 92010101 ≤ INGCODE ≤ 92010206 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y1ANTANG	Y1:CV Drug #1:Antianginal	Indicator variable for antianginal meds in Y1MIFCOD based on IDIS code	=1 if Y1BETABK=1 or Y1NITRAT=1 or Y1CACHBK=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y1ANTARR	Y1:CV Drug #7: Antiarrhythmic	Indicator variable for antiarrhythmic meds in Y1MIFCOD based on IDIS code	=1 if Y1ARHYT1=1 or Y1CARGLY=1 or Y1DILTZM=1 or Y1BETABK=1 or Y1AMIODR=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y1ANTHYR	Y1: Thyroid antagonist	Indicator variable for thyroid antagonist in Y1MIFCOD based on IDIS code	=1 if 68360800 ≤ INGCODE ≤ 68360805 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y1ANTINF	Y1: Anti-inflammatory	Indicator variable for anti-inflammatory meds in Y1MIFCOD based on IDIS code	=1 if Cox II inhibitor (28080601 ≤ INGCODE ≤ 28080699) or Y1SALIC=1 or Y1NSAID=1 or Y1ORSTER=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1ANTLIP	Y1: CV drug #2: antilipemic (incl. statins)	Indicator variable for any antilipemic med in Y1MIFCOD based on IDIS code	(24060000 ≤ INGCODE ≤ 24060409) or DRCODE in (1295001-5, 4103002-3, 8094004) Note: includes statins and high dose niacin	= .A if no drug information available	0=No 1=Yes
Y1ANTPLT	Y1: CV drug #4: antiplatelet	Indicator variable for any antiplatelet medication in Y1MIFCOD based on IDIS code	=1 if Y1ASAPLT=1 or Y1OTHPLT=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y1ARHYT1	Y1: Type I antiarrhythmic medication	Indicator variable for type I antiarrhythmic in Y1MIFCOD based on IDIS code	=1 if INGCODE in (24040006, 24040007,24040008,24040021, 24040023,24040024,24040028, 24040034,24040035, 24040071, 24040097,24040091,24040099) =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y1ASAPLT	Y1: Anti-platelet including ASA	Indicator variable for aspirin or antiplatelet med in Y1MIFCOD based on IDIS code	Platelet aggregate inhibitors , including aspirin (20120600 ≤ INGCODE ≤ 20120672) Aspirin was in this range, now is 28080751, both codes included. Note : does not include ticlopidine (included under Y1OTHPLT)	= .A if no drug information available	0=No 1=Yes
Y1BETABK	Y1: Beta-adrenergic blockers	Indicator variable for beta-adrenergic blocker in Y1MIFCOD based on IDIS code	Beta-adrenergic blockers (12160100 ≤ INGCODE ≤ 12160199) and not ophthalmic (MIFFRMCODE ≠ 4) and DRUGNAME ≠ 'Timoptic'	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1BRONCH	Y1: Broncho-dilators	Indicator variable for bronchodilator in Y1MIFCOD based on IDIS code	Ipratropium Bromide, Pirbuterol, Salmeterol, Albuterol, Formoterol, Terbutaline, Bitolterol, Levalbuterol INGCODE in (12080028, 12120029, 12120030, 12120046, 12120047, 12120053, 12120066, 12120094) excluding ATROVENT NASAL SPRAY	= .A if no drug information available	0=No 1=Yes
Y1CACHBK	Y1: Calcium channel blockers	Indicator variable for calcium channel blocker in Y1MIFCOD based on IDIS code	Calcium channel blockers ((24120400 ≤ INGCODE ≤ 24120450) <u>and</u> INGCODE ≠ 24120402 (Nimodipine) or 24120412 (Flunarizine))	= .A if no drug information available	0=No 1=Yes
Y1CALCM	Y1: Calcium supplement	Indicator variable for calcium supplement in Y1MIFCOD based on IDIS code	Calcium (40121200 ≤ INGCODE ≤ 40121299) or (INGCODE in (56040004, 56040085) and reason for use includes 'bones', 'calcium', 'supplement' or 'osteo' or 'diet' or (MIFPRN=0 and MIFDWM=1)) and MIFDWM ≠ 3	= .A if no drug information available If taken for a reason other than bones, calcium, supplement, or osteo, <u>and</u> only taken PRN (less than daily) it was not counted. Also not counted were any used on less than a weekly basis (MIFDWM=3)	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1CANDRG	Y1:Any anti-cancer drugs	Indicator variable for anti-cancer med in Y1MIFCOD based on IDIS code	Chlorambucil, Capecetabine, Fluorouracil, Megestrol, Tamoxifen, Hydroxyurea, Letrozole, Anastrozole, Goserelin, Diethylstilbestrol, Mitoxantrone [INGCODE in (10040402, 10080418, 10080425, 10100047, 10100085, 10120019, 10120114, 10120127, 68180014, 68160004, 10030047)] or male (GENDER=1) and Leuprolide, Flutamide, Nilutamide, Bicalutamide, Estramustine [INGCODE in (10120054,68080404,68080406,68080407, 10040404)] excludes estrogen	= .A if no drug information available	0=No 1=Yes
Y1CARGLY	Y1:Antiarrhythmic: Cardiac glycosides	Indicator variable for cardiac glycoside in Y1MIFCOD based on IDIS code	Cardiac glycosides (24040100 ≤ INGCODE ≤ 24040199)	= .A if no drug information available	0=No 1=Yes
Y1CHFDIU	Y1: CV drug #6: diuretics for CHF	Indicator variable for diuretic for CHF in Y1MIFCOD based on IDIS code	=1 if Y1LOOPDI=1 or Y1KSPARE=1 or Y1AMILOR=1 or Y1INDAPA=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y1CHFVAS	Y1: CV drug #5: vasodilator or ACE-I for CHF	Indicator variable for vasodilator or ACE inhibitor for CHF in Y1MIFCOD based on IDIS code	=1 if Y1HYDRLZ=1 or Y1ACEINH=1 or Y1ANGTN2=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1DEPDRG	Y1:Any antidepressant medication used	Indicator variable for use of any antidepressant med in Y1MIFCOD based on IDIS code	Y1MAOINH=1 or (Y1TRICYC=1 and not topical) or Y1ANDEPO=1 and reason refers to depression or if Y1SSRI=1 and reason refers to depression or tiredness	= .A if no drug information available	0=No 1=Yes
Y1DIBDRG	Y1:Any diabetes med (hypoglycem/ insulin)	Indicator variable for diabetes med in Y1MIFCOD based on IDIS code	Insulins and Antidiabetic Agents (68200400 ≤ INGCODE ≤ 68200875) Note: includes insulin and miglitol	= .A if no drug information available	0=No 1=Yes
Y1DILTZM	Y1:Antiarrhythmic: diltiazem	Indicator variable for diltiazem in Y1MIFCOD based on IDIS code	Diltiazem INGCODE=24120410	= .A if no drug information available	0=No 1=Yes
Y1DIURO	Y1: Miscellaneous diuretics	Indicator variable for miscellaneous diuretic in Y1MIFCOD based on IDIS code	Diuretics, excluding: SC-16102, Tizolemid, A-56234, Diapamide, Benzamil, Ibopamine, Lyophilized urea, Sodium ethacrylate, Pamabrom, Amisometradine, Ammonium Citrate, Chlorexolone, Theobromine, MK-463 (40280010 ≤ INGCODE ≤ 40280062) and not (INCODE in 40280020,40280021))	= .A if no drug information available	0=No 1=Yes
Y1HBPDRG	Y1: CV drug #3: HBP med/ antihypertensive	Indicator variable for any antihypertensive agent in Y1MIFCOD based on IDIS code	=1 if any of the following=1: Y1BETABK, Y1ALPHBK, Y1HYPOTN, Y1ACEINH, Y1ANGTN2, Y1HYDRLZ, Y1CACHBK, Y1DIURO, Y1THIAZ, Y1LOOPDI	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1HYDRLZ	Y1: Vasodilator: Hydralazine	Indicator variable for hydralazine in Y1MIFCOD based on IDIS code	Hydralazine INGCODE=24120094	= .A if no drug information available	0=No 1=Yes
Y1HYPGLY	Y1:Oral hypoglycemics	Indicator for oral hypoglycemics in Y1MIFCOD based on IDIS code	Miglitol (INGCODE=68200006) or Sitagliptin (INGCODE=68200002) oral hypoglycemics in (68200400≤INGCODE≤24060700)	=.A if no drug information available	0=No 1=Yes
Y1HYPOTN	Y1: Central hypotensives	Indicator variable for central hypotensive agent in Y1MIFCOD based on IDIS code	Hypotensive agents (24080000 ≤ INGCODE ≤ 24080099) and not topical or ophthalmic (MIFFRMCODE not in (3,4)) ; include 'Clonidine Patch', 'Catapres-TTS' ; exclude 'Minoxidil for Men'	= .A if no drug information available	0=No 1=Yes
Y1INCORT	Y1: Inhaled steroids	Indicator variable for steroid inhaled via mouth in Y1MIFCOD based on IDIS code	Beclomethasone, Budesonide, Dexamethasone, Mometasone, Triamcinolone, Fluticasone, Flunisolide as inhaler MIFFRMCOD=6 and INGCODE in (84060078, 84060022, 68040008, 68040094, 52080025) excluding lotions and nasal preparations	= .A if no drug information available	0=No 1=Yes
Y1INDAPA	Y1: Diuretic: Indapamide	Indicator variable for indapamide in Y1MIFCOD based on IDIS code	Indapamide INGCODE=40280025	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1INSULN	Y1:Insulins	Indicator variable for insulin in Y1MIFCOD based on IDIS code	Insulins (68200800 ≤ INGCODE ≤ 68200876)	= .A if no drug information available	0=No 1=Yes
Y1KSPARE	Y1: K-sparing diuretics	Indicator variable for potassium-sparing diuretic in Y1MIFCOD based on IDIS code;	Potassium-sparing diuretic (INGCODE =40280013, 40280016, 40280050, or 40280062)	= .A if no drug information available	0=No 1=Yes
Y1LOOPDI	Y1: Loop diuretics	Indicator variable for loop diuretic in Y1MIFCOD based on IDIS code	Loop diuretics (40280400 ≤ INGCODE ≤ 40280407)	= .A if no drug information available	0=No 1=Yes
Y1MAOINH	Y1: Anti-depressants: MAO inhibitors	Indicator variable for MAO inhibitor antidepressant in Y1MIFCOD based on IDIS code	MAO inhibitor antidepressant (28160500 ≤ INGCODE ≤ 28160599)	= .A if no drug information available	0=No 1=Yes
Y1MASTCL	Y1: Mast cell stabilizers	Indicator variable for mast cell stabilizer in Y1MIFCOD based on IDIS code	Nedocromil, Cromolyn INGCODE in (92000192,92000020) and MIFNAME ≠ 'Nasalcrom'	= .A if no drug information available	0=No 1=Yes
Y1NITRAT	Y1: Nitrates	Indicator variable for nitrate medications in Y1MIFCOD based on IDIS code	Nitrate Vasodilators (24120200 ≤ INGCODE ≤ 24120299)	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1NSAID	Y1: NSAID	Indicator variable for non-steroidal anti-inflammatory medications in Y1MIFCOD based on IDIS code	Non-steroidal anti-inflammatory (28080400 ≤ INGCODE ≤ 28080699) ; this includes COX-2 inhibitors	= .A if no drug information available	0=No 1=Yes
Y1OREST	Y1: Oral estrogen	Indicator variable for oral estrogen medications in Y1MIFCOD based on IDIS code	Oral estrogen (68160000 ≤ INGCODE ≤ 68160399) and MIFFRMCODE in (1,2)	= .A if no drug information available	0=No 1=Yes
Y1ORSTER	Y1: Oral steroid	Indicator variable for oral steroid medications in Y1MIFCOD based on IDIS code	INGCODE in (68040001 (cortisone), 68040003 (dexamethasone), 68040004 (fludrocortisone), 68040005 (hydrocortisone), 68040006 (methylprednisolone), 68040007 (prednisone), 68040008 (triamcinolone), 68040011 (betamethasone), 68040092 (prednisolone)) and MIFFRMCODE in (1,2)	= .A if no drug information available	0=No 1=Yes
Y1OSTDRG	Y1:Any osteoporosis drugs	Indicator variable for osteoporosis med in Y1MIFCOD based on IDIS code	Fluorides (40120800 ≤ INGCODE ≤ 40120806), Calcitonins (68360083 ≤ INGCODE ≤ 68360088), all bisphosphonates (INGCODE= 92600100-99), raloxifene INGCODE=68160408), includes old code for alendronate (92000234)	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1OTHPLT	Y1: Antiplatelet: Ticlopidine, Anagrelide, Dipyridamole	Indicator variable for other antiplatelet med in Y1MIFCOD based on IDIS code	Ticlopidine, Anagrelide, Dipyridamole: INGCODE in (20120408, 20120412, 24120091)	= .A if no drug information available	0=No 1=Yes
Y1PRSDRG	Y1:Any drugs used for prostate disease	Indicator variable for prostate med in Y1MIFCOD based on IDIS code	Megestrol, Leuprolide, Finasteride (new #10120081), Terazosin, Tamsulosin, Doxazosin, Cyproterone, Flutamide, Chlorotrianisene, Diethylstilbestrol, Nafarelin, Buserelin, Goserelin INGCODE in (10100047, 10120054,10120100,12160401, 12160411,12160419,68080403, 68080404,68160001,68160004, 68180009,68180013,68180014) and GENDER=1	= .A if no drug information available Note: includes GENDER =2 If INGCODE=12160401 or 12160419 and gender=male, count only if reason for use related to BPH	0=No 1=Yes
Y1PULDRG	Y1: Any pulmonary medication (not oral steroids)	Indicator variable for pulmonary med in Y1MIFCOD based on IDIS code	=1 if any of the following = 1: Y1BRONCH, Y1INCORT, Y1THEOPH, Y1ANLEUC, Y1MASTCL Note: excludes oral steroids	= .A if no drug information available	0=No 1=Yes
Y1PULSTR	Y1: Oral steroid (pulmonary)	Indicator for oral steroid (pulmonary) in Y1MIFCOD based on IDIS code	=1 if INGCODE in (68040006,68040007,68040092) and MIFFORM in (1,2,3) =0 otherwise	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1RXTOT	Y1: Total number of Rx meds	Count of <u>prescription</u> medications reported by the participant	Y1MIF is sorted by HABCID and DRCOD and only the last of each ID/DRCOD combination is kept. The variable is incremented by 1 each time MIFRX=1	= .A if no drug information available	Number
Y1SALIC	Y1:Salicylate	Indicator variable for oral salicylates in Y1MIFCOD based on IDIS code	Oral salicylates (28080750 ≤ INGCOD ≤ 28080799) and MIFFRMCOD in (1,2)	= .A if no drug information available	0=No 1=Yes
Y1SSRI	Y1: Anti-depressants: SSRI	Indicator variable for SSRI antidepressant med in Y1MIFCOD based on IDIS code	SSRI antidepressant (28160700 ≤ INGCOD ≤ 28160712)	= .A if no drug information available	0=No 1=Yes
Y1STATIN	Y1: Antilipemic: HMG CoA Reductase inhib. (Statins)	Indicator variable for statin antilipemic in Y1MIFCOD based on IDIS code	Antilipemic Agents (24060000 ≤ INGCOD ≤ 24060299); includes Statins, excludes Fibrates	= .A if no drug information available	0=No 1=Yes
Y1THEOPH	Y1: Spasmolytics: Theophylline and others	Indicator variable for theophylline or related med in Y1MIFCOD based on IDIS code	Theophylline, dyphylline, oxytriphylline, aminophylline INGCOD in (86000009, 86000088, 86000084, 86000094)	= .A if no drug information available	0=No 1=Yes
Y1THIAZ	Y1: Thiazide diuretics	Indicator variable for thiazide diuretic in Y1MIFCOD based on IDIS code	Thiazide diuretics (40280100 ≤ INGCOD ≤ 40280199), does not include indapamide (see Y1INDAPA)	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1THYR	Y1: Thyroid agonist	Indicator variable for thyroid agonists in Y1MIFCOD based on IDIS code	Thyroid agonists (68360400≤INGCODE≤68360499)	= .A if no drug information available	0=No 1=Yes
Y1TRICYC	Y1: Anti-depressants: Tri/tetracyclics	Indicator variable for tri/tetracyclic antidepressant med in Y1MIFCOD based on IDIS code	Tri/tetracyclic antidepressant (28160600 ≤ INGCODE ≤ 28160697) and MIFFRMCODE≠3 (topical)	= .A if no drug information available	0=No 1=Yes
Y1VITD	Y1: Vitamin D Supplement	Indicator variable for calcium supplement in Y1MIFCOD based on IDIS code	Vitamin D (88160000≤INGCODE < 88160100)	= .A if no drug information available	0=No 1=Yes

DOCUMENTATION FOR YEAR 1 CALCULATED VARIABLE DATASET

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YEAR 1 CALCULATED VARIABLE DATASET (Y1Calc)

1. General description

The dataset Y1Calc contains 161 variables derived (calculated) as described in Appendices II through XVIII. The documentation is grouped by the type of data from which the variables are calculated (anthropometry, physical activity, etc.), and the variables are positioned in the dataset in the same groupings.

There are 3075 observations in the Y1Calc file.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the “Proc Contents for All Datasets” link (search under Y1Calc) and in Appendix I.

3. Dataset structure and contents

The Y1Calc file contains a single observation per participant.

Key variables:

HABCID	Health ABC Enrollment ID# without the 2-letter prefix
GENDER	Gender (1=Male; 2=Female)*
RACE	Race (1=White; 2=Black)*
RACEGEN	Race-gender group (1=White male, 2=White female, 3=Black male, 4=Black female)*
SITE	Clinic Site (1=Memphis, 2=Pittsburgh)*

4. Condition of data

a. Strengths and weaknesses of dataset items: As of this release, a thorough comparison across years of heights and weights has been carried out, which allowed us to identify a small number of impossible values. Where these could be traced to incorrectly scanned or edited data, the data were corrected. When it was impossible to know what the correct value was, but it was certain that the recorded value was incorrect (e.g., a participant’s height having changed by 6 inches in one year and then changed back the next time it was measured), the erroneous data were simply blanked out. Thus two values of P2SH, 1 value of P2SI, 2 values of BMI and 1 of BMICAT have changed.

In addition the equation used for predicted PFT values has been updated, changing a large number of LLNFEV1 values, as well as 2 values for all calculated PFT variables for the two participants whose heights were corrected (see above).

* Must link to Health ABC participant history file (PH) to add this variable.

And, finally, in later years it was recognized that examiners often put the same number in both the “number completed” and “number incorrect” boxes for the Digit-Symbol Substitution test. Therefore, wherever these values were the same, we have gone back and asked the clinics to check the scoring of these tests. As a result, 55 values of the variable DSS have changed.

Four new variables have been added: Y1WTK gives the year 1 weight in kg for all participants. In year 1 all participants were weighed in the clinic and so all were weighed in kg, but this variable was added for completeness and ease of comparison to other years. P2H2HH gives the year 1 hip-to-head height, measured by subtracting chair height from sitting height. Another variable, P2LL gives the Year 1 leg length, measured by subtracting hip-to-head height from standing height. This value is thought to be less affected by aging, and therefore to be more useful as a measure of maximum lifetime stature, than standing height. P2H2HH is the complement of P2LL. That is $P2LL + P2H2HH = P2SH$. And, finally, the variable CES_D10, which is created in later years to allow longitudinal comparison of depression even when the short form of the Center for Epidemiologic Studies Depression scale is used, has been added.

An additional three variables have been renamed. Although these variables are identical (except where edited) to previous releases, their analogs are created differently and therefore renamed for subsequent years, so they have been renamed in this dataset for ease of longitudinal analyses. SIXMPACE has been renamed Y1UWPACE, SIXRATIO has been renamed Y1UWRATIO, and UWSCORE has been renamed Y1UWSCR.

The performance calculated variables (see Appendix XI) have been thoroughly examined and corrected. The investigator who designed these variables created them to mimic the way things were done in the EPESE study, so certain recodes were made when calculating them. Most importantly, in EPESE, the full-tandem stand was not supposed to be administered unless the semi-tandem stand was held for 10 seconds. In Health ABC the full-tandem stand was supposed to be administered if the ST stand has held for at least 1 second. Similarly, in EPESE, the one-leg stand was not administered if the full-tandem stand was not held for the full 30 seconds, while in Health ABC this stand was administered if the participant held the full-tandem for at least 1 second. In addition, balance walks variables originally set to 0 when refused or entirely missing are now set to missing. These corrections resulted in a number of changes to these variables, and analysts are advised to rerun any analyses pertaining to these variables using the latest dataset.

For this release an error has been corrected that scored MMMScore (the 3MS score for the Teng Mini-Mental State Exam (MMSE)) one point too low for participants who incorrectly identified the current month by one month within 5 days of the beginning or end of the month. As a result, the score for 44 participants went up by 1 point. An additional 2 participants had their scores dropped by 5 points for other reasons.

The variable MMMScore is calculated for all participants who did not have a completely blank 3MS form. However, many participants had missing subitems or subitems marked “not attempted/disabled.” The documentation in Appendix XVII details

how the "not attempted/disabled" responses were handled. Briefly, many of these were recoded as errors, since the participant had no disability that would preclude responding to that particular question. In cases of true disability, these items were treated as missing. Missing values were pro-rated if less than 20% of the total score was missing (there were no cases at baseline that had more than 20% missing except those who simply did not do the 3MS battery). Thus, the MMMSCORE for disabled participants or participants with missing responses may now be considered fully usable in analyses. A second variable, MMMFLAG, was created to flag participants with missing values, and this variable has been left in the dataset to indicate which participants have pro-rated values. However, there should be no need to exclude participants with MMMFLAG=1.

After all baseline data were collected, it was discovered that examiners had incorrectly scored Question 2 (repeat Shirt/Blue/Honesty) of the Teng Mini-Mental State Exam (MMSE). Although the correct scoring is to mark the individual words as correct or incorrect based on the first trial, many examiners scored the eventual final trial instead. This could be recognized when P4NUM (the number of presentations required for the participant to be able to repeat the entire sequence) was greater than 1, but all three words were scored as correct. This problem has now been corrected programmatically in the Year 1 scoring algorithm by deducting one point for each additional presentation up to 3. In addition, the "spell WORLD backwards" part of the algorithm was scored in too simplistic a manner previously. The correct scoring is to give one point for each letter in the correct relative position for the word WORLD backwards. Code (available from the Coordinating Center on request) was obtained from the WHI-Memory Study (WHIMS) and modified for the rare occasion when it, too, gave an incorrect answer.

Generally, calculated variables that are identical to the parent variable but with missing or apparently erroneous values imputed are renamed with a similar variable name ending in the letter "I" (e.g., P32SPLI, which is a recode of P32SPL), and the variable label clearly identifies them as imputed variables. Not all variable names ending in I are imputed, however (e.g., MINAAI, BMI). For other calculated variables that are more complicated recodes of one or more variables, but that include imputations for missing variables, the method of imputation is **bolded** in the documentation.

A variable SPOUSE has been added that identifies the 345 known spouse pairs in Health ABC. If SPOUSE is missing (.A), then the participant's spouse is not known to be in Health ABC. If SPOUSE is not missing, it is equal to the Health ABC Enrollment ID# (HABCID) of the participant's spouse. Since information regarding whether the spouse was enrolled in Health ABC was not collected, these relationships had to be inferred. The following information was used in this deduction. First, all participants with the same address were examined to determine whether the paired participants were of the same or different gender and whether they shared the same last name. The putative spouse pairs were then examined in light of the variables HQSSOPIH and HQSSPOUS. In most cases, this information all agreed. In cases where it did not, or where three or more participants lived together, the clinics were asked to identify the real spouse pairs. In most, but not all cases, the real spouse pairs have consecutive HABCIDs. This was also used to help identify pairs. Any consecutive pairs with the same last name were also subjected to the same scrutiny and included if their relationship to each other could be

confirmed. Obviously, this approach has several limitations: Lesbian and gay couples are not included; married participants who do not live together are not counted; unmarried heterosexual couples are not counted if they did not identify their partner as their spouse for the purpose of HQSSPOUS; and in some cases, married participants with different last names might have been overlooked.

5. Dataset index formulation and key variable mapping

The Y1Calc file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

Appendix I
Calculated Variable List
(Linked)

Variable	Variable Description	Grouping
AAIL	Ankle-arm index, left leg	Ankle-arm and Sitting BP Calc Vars
AAIR	Ankle-arm index, right leg	Ankle-arm and Sitting BP Calc Vars
DIABP	Avg sitting diastolic BP (mm Hg)	Ankle-arm and Sitting BP Calc Vars
LOWAAI	Lower extremity arterial disease index	Ankle-arm and Sitting BP Calc Vars
MINAAI	Lowest ankle-arm index, right or left	Ankle-arm and Sitting BP Calc Vars
SYSBP	Avg sitting systolic BP (mm Hg)	Ankle-arm and Sitting BP Calc Vars
BMI	Body Mass Index (kg/m ²)	Anthropometric Measures
BMICAT	Body Mass Index Category	Anthropometric Measures
P2H2HH	Hip-to-head height (mm)	Anthropometric Measures
P2LL	Leg length/sub-ischeal height (mm)	Anthropometric Measures
P2SG	Average of the baseline sagittal diameter measurements (cm)	Anthropometric Measures
P2SGI	Imputed sagittal diameter (cm)	Anthropometric Measures
P2SH	Average of the baseline standing height measurements (mm)	Anthropometric Measures
P2SI	Average of the baseline sitting height measurements (mm)	Anthropometric Measures
P3AB	Average of the baseline abdominal circumference measurements (cm)	Anthropometric Measures
P3ABI	Imputed abdominal circumference (cm)	Anthropometric Measures
P3TH	Average of the baseline thigh circumference measurements (cm)	Anthropometric Measures
Y1WTK	Weight (kg)	Anthropometric Measures
CES_D	CES-D Score	CES-D Score
CES_D10	CES_D short form score (clinic visit)	CES-D Score
CTSCANID	CT Scanner Used	CT Calculated Vars.
EST_CORT	Estimated cortical BMD (mg/cc)	CT Calculated Vars.
ABHR	Abnormal heartrate	ECG Derived Variables
ARYHTTYP	Type of arrhythmia code	ECG Derived Variables
AVDEFTYP	Type of atrioventricular conduction defect	ECG Derived Variables
AXISAB	Axis abnormality	ECG Derived Variables
LONGPR	Long P-R interval	ECG Derived Variables
LONGQRS	Long QRS duration	ECG Derived Variables
LONGQT	Long QT duration	ECG Derived Variables
QMI	Q-wave myocardial infarction	ECG Derived Variables
QWVAB	Q-wave myocardial infarction	ECG Derived Variables
STSEGDEP	ST segment depression	ECG Derived Variables
STSEGELV	ST segment elevation	ECG Derived Variables
STWVAB	ST or T wave abnormality	ECG Derived Variables

Variable	Variable Description	Grouping
TECHFLAG	Flag for existence of technical problem interfering with ECG coding	ECG Derived Variables
TWVITMS	T-wave items	ECG Derived Variables
VDEFCOD	Ventricular conduction defect code	ECG Derived Variables
DSS	Number of digit symbol substitutions correctly made	Finger Tap and Digit Symbol Substitution Scores
P4TAP	Average finger tapping score	Finger Tap and Digit Symbol Substitution Scores
Y1KP12MO	Knee pain (either knee) most days past 12 months	Knee pain
Y1KPACT	Knee pain with activity (either knee)	Knee pain
Y1KPSIG	Knee pain case - either knee	Knee pain
Y1LKP12M	Left knee pain most days past 12 months	Knee pain
Y1LKPACT	Left knee pain with activity	Knee pain
Y1LKPSIG	Left knee pain case	Knee pain
Y1LWOMAC	Left knee activity pain - Likert scale	Knee pain
Y1RKP12M	Right knee pain most days past 12 months	Knee pain
Y1RKPACT	Right knee pain with activity	Knee pain
Y1RKPSIG	Right knee pain case	Knee pain
Y1RWOMAC	Right knee activity pain - Likert scale	Knee pain
CURDRNK1	Current drinking consumption at baseline	Lifestyle
DRINKER1	Drinking history at baseline	Lifestyle
PACKYR1	Pack-years exposure to cigarettes	Lifestyle
PM50CUR	Percent (self-reported) weight change from age 50 to baseline	Lifestyle
SMK1	Smoking status at baseline	Lifestyle
DID2MINW	Completed 2 minute walk yes/no	Long Distance Corridor Walk Calculated Vars.
DID400MW	Completed 400m walk yes/no	Long Distance Corridor Walk Calculated Vars.
EXCLUDE1	LDCW exclusion code	Long Distance Corridor Walk Calculated Vars.
MTR20SD	Walking speed (m/sec) over 20m	Long Distance Corridor Walk Calculated Vars.
MTR400SD	Walking speed (m/sec) over 400m	Long Distance Corridor Walk Calculated Vars.
P32SPLI	Imputed 20m split time	Long Distance Corridor Walk Calculated Vars.
P32STPI	Imputed 20m step count	Long Distance Corridor Walk Calculated Vars.
P32SUMI	Imputed 2 minute distance	Long Distance Corridor Walk Calculated Vars.
P34TIMEI	Imputed 400m walk time	Long Distance Corridor Walk Calculated Vars.

Variable	Variable Description	Grouping
P3STOPVI	Imputed reason for stopping walk	Long Distance Corridor Walk Calculated Vars.
TWOMINS	Walking speed (m/sec) over 2 min	Long Distance Corridor Walk Calculated Vars.
V2MINMTR	Meters walked in 2 min - complete only	Long Distance Corridor Walk Calculated Vars.
V400TIME	Time to walk 400m - complete only	Long Distance Corridor Walk Calculated Vars.
WHENSTOP	LDCW completion status	Long Distance Corridor Walk Calculated Vars.
ABLE5CS	Did 5 chair stands	Performance Measure Calculated Vars.
CAT5CS	EPESE score for chair stands	Performance Measure Calculated Vars.
CHR5PACE	Chair stands per second	Performance Measure Calculated Vars.
CSRATIO	Chair stands performance ratio	Performance Measure Calculated Vars.
DID6MNW	Did 6m narrow walk	Performance Measure Calculated Vars.
DID6MUW	Did 6m usual walk	Performance Measure Calculated Vars.
EPESEPPB	EPESE performance battery score 0-12	Performance Measure Calculated Vars.
FSBRATIO	Standing balance performance ratio	Performance Measure Calculated Vars.
FSBTIME	Full standing balance test time 0-90	Performance Measure Calculated Vars.
HABCPPB	Health ABC performance score 0-4	Performance Measure Calculated Vars.
NWPACE	Walking speed for narrow walk 6m	Performance Measure Calculated Vars.
NWRATIO	Narrow walk performance ratio	Performance Measure Calculated Vars.
NWSCORE	EPESE category for narrow walk	Performance Measure Calculated Vars.
NWSCOREQ	% diff btw narrow & usual walks	Performance Measure Calculated Vars.
NWTIME	Time to walk a 20cm wide 6m course	Performance Measure Calculated Vars.
PPB12CAT	Categorical scoring of HABCPPB 0-12	Performance Measure Calculated Vars.
SBSCORE	EPESE score for standing balance	Performance Measure Calculated Vars.
SIXMWTM	Time to walk 6m	Performance Measure Calculated Vars.
Y1UWPACE	Walking speed (m/sec) over 3,4, or 6m	Performance Measure Calculated Vars.
Y1UWRATIO	Usual walk performance ratio	Performance Measure Calculated Vars.
Y1UWSCR	EPESE categories for walking speed	Performance Measure Calculated Vars.
FEV1R	Measured FEV1/FVC	PFT RC Calculated Vars.
FEV1R6	Measured FEV1/FEV6	PFT RC Calculated Vars.
LLFEV1R6	Lower limit of normal for FEV1/FEV6	PFT RC Calculated Vars.
LLNFEV1	Lower limit of normal for FEV1 (mL)	PFT RC Calculated Vars.
LLNFEV1R	Lower limit of normal for FEV1/FVC	PFT RC Calculated Vars.
LLNFEV6	Lower limit of normal for FEV6 (mL)	PFT RC Calculated Vars.
LLNFVC	Lower limit of normal for FVC (mL)	PFT RC Calculated Vars.
LLNMIP	Lower limit of normal for MIP (cm H20)	PFT RC Calculated Vars.
LLNPEF	Lower limit of normal for PEF (mL/sec)	PFT RC Calculated Vars.
PRDFEV1R	Predicted FEV1/FVC	PFT RC Calculated Vars.
PREDFEV1	Predicted FEV1 (mL)	PFT RC Calculated Vars.
PREDFEV6	Predicted FEV6 (mL)	PFT RC Calculated Vars.
PREDFVC	Predicted FVC (mL)	PFT RC Calculated Vars.
PREDMIP	Predicted MIP (cm H20)	PFT RC Calculated Vars.

Variable	Variable Description	Grouping
PREDPEF	Predicted PEF (mL/sec)	PFT RC Calculated Vars.
PRFEV1R6	Predicted FEV1/FEV6	PFT RC Calculated Vars.
BKTWTIME	Minutes walking briskly/week	Physical Activity Calculated Vars
BRISK180	Walks briskly \geq 180 min/week	Physical Activity Calculated Vars
BRISK90	Walks briskly \geq 90 min/week	Physical Activity Calculated Vars
FPCWKKWK	Kcal/kg/week doing child/adult care	Physical Activity Calculated Vars
FPFSSKKWK	Kcal/kg/week climbing stairs	Physical Activity Calculated Vars
EXKKWK	Kcal/kg/week - exercise/recreation	Physical Activity Calculated Vars
FPAKCKWK	Kcal/kg/week doing aerobic dance	Physical Activity Calculated Vars
FPEWKKWK	Kcal/kg/week walking for exercise	Physical Activity Calculated Vars
FPGSKKWK	Kcal/kg/week grocery shopping	Physical Activity Calculated Vars
FPHCKKWK	Kcal/kg/week doing heavy chores	Physical Activity Calculated Vars
FPHIKKWK	Kcal/kg/week high intensity exercise	Physical Activity Calculated Vars
FPLDKKWK	Kcal/kg/week doing laundry	Physical Activity Calculated Vars
FPLWKKWK	Kcal/kg/week doing light housework	Physical Activity Calculated Vars
FPMIKKWK	Kcal/kg/week mod intensity exercise	Physical Activity Calculated Vars
FPOWKKWK	Kcal/kg/week doing other walking	Physical Activity Calculated Vars
FPPAKKWK	Kcal/kg/week doing outdoor chores	Physical Activity Calculated Vars
FPPWKKWK	Kcal/kg/week doing paid work	Physical Activity Calculated Vars
FPTRKKWK	Kcal/kg/week weight training	Physical Activity Calculated Vars
FPVWKKWK	Kcal/kg/week doing volunteer work	Physical Activity Calculated Vars
HACAT	Walking and exercise kcal category	Physical Activity Calculated Vars
HAKCAL	Kcal/week walking and exercise	Physical Activity Calculated Vars
HHKKWK	Kcal/kg/week - household chores	Physical Activity Calculated Vars
HIGHX90	90 min or more high intensity exercise per week	Physical Activity Calculated Vars
HIGHXMIN	Min/week hi intensity exercise	Physical Activity Calculated Vars
TOTKKWK	Kcal/kg/week - total	Physical Activity Calculated Vars
WALKCAT	Minutes walking/week category	Physical Activity Calculated Vars
WALKTIME	Minutes walking/week	Physical Activity Calculated Vars
WSKKWK	Kcal/kg/week - walking + stairs	Physical Activity Calculated Vars
WVCKKWK	Kcal/kg/week - work, vol, caregiving	Physical Activity Calculated Vars
ROSEANG	Rose angina score	Rose scales
ROSEIC	Rose intermittent claudication score	Rose scales
CSAINDEX	Climbing stairs ability index	Self-Reported Function Calculated Vars.
DIFFPP	Difficulty pushing/pulling	Self-Reported Function Calculated Vars.
EASE10P	Ease lift/carry 10 lbs	Self-Reported Function Calculated Vars.
EASE1F	Ease climbing 1 flight	Self-Reported Function Calculated Vars.
EASE1M	Ease walking 1 mile	Self-Reported Function Calculated Vars.
EASE20P	Ease lift/carry 20 lbs	Self-Reported Function Calculated Vars.
EASE2F	Ease climbing 2 flights	Self-Reported Function Calculated Vars.
EASEHHW	Ease doing heavy work	Self-Reported Function Calculated Vars.
EASEQM	Ease walking 1/4 mile	Self-Reported Function Calculated Vars.
EASESCK	Ease stooping	Self-Reported Function Calculated Vars.
EASEUP	Ease rising from chair	Self-Reported Function Calculated Vars.

Variable	Variable Description	Grouping
LCAINDEX	Lift/carry ability index	Self-Reported Function Calculated Vars.
LESSO10P	Lift/carry 10 lbs less often	Self-Reported Function Calculated Vars.
LESSO1F	Climbs stairs less often	Self-Reported Function Calculated Vars.
LESSOHW	Does heavy work less often	Self-Reported Function Calculated Vars.
LESSOQM	Walks 1/4 mile less often	Self-Reported Function Calculated Vars.
TIRED1F	Gets tired climbing 1 flight	Self-Reported Function Calculated Vars.
TIREDQM	Gets tired walking 1/4 mile	Self-Reported Function Calculated Vars.
WKAINDEX	Walking ability index	Self-Reported Function Calculated Vars.
EDUC	Years of ed. category	Socioeconomic Status Calculated Vars.
FAMINC	Family income category	Socioeconomic Status Calculated Vars.
MMMFLAG	Flag for possible invalid 3MS scores	Teng MMMS Score
MMMSCORE	3MS score	Teng MMMS Score
SPOUSE	HABCID of participant's spouse	Health ABC Relationships

Appendix II
Ankle-Arm and Sitting Blood Pressure Calculated Variables

Investigator Name: Mikki Danielson

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
AAIR	Ankle-arm index, right leg	Average of two measurements of ratio between right tibial and right brachial systolic blood pressure	AAI1R=P2AARP1/P2AARB1 AAI2R=P2AARP2/P2AARB2 AAIR=(AAI1R+AAI2R)/2	If P2AAPR = 0 then missing If one trial missing, use single measure for calculation	unitless
AAIL	Ankle-arm index, left leg	Average of two measurements of ratio between left tibial and right brachial systolic blood pressure	AAI1L=P2AALP1/P2AARB1 AAI2L=P2AALP2/P2AARB2 AAIL=(AAI1L+AAI2L)/2	If P2AAPR = 0 then missing If one trial missing, use single measure for calculation	unitless
MINAAI	Lowest ankle-arm index, right or left	Lower of left and right AAI, each measured twice and averaged)	MINAAI=lowest of either AAIR or AAIL	If right or left leg missing, use whichever leg is available	unitless
LOWAAI	Lower extremity arterial disease index	Lower extremity arterial disease group. Participants are categorized according to lowest AAI of either right or left with cutpoint of <0.90	LowAAI = 1 if MinAAI <0.90, 0 if MinAAI >=0.90	If P2AAPR=0 then missing	unitless

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
SYSBP	Avg sitting systolic BP	Avg of two measurements of sitting systolic BP (mmHg)	$SYSBP=(P2SYS+P2SY2)/2$	If only 1 trial, then use that trial as BP	mm Hg
DIABP	Avg sitting diastolic BP	Avg of two measurements of sitting diastolic BP (mmHg)	$DIABP=(P2DIA+PSDIA2)/2$	If only 1 trial, then use that trial as BP; If P2DIA or P2DIA2<30, set them =30 before averaging	mm Hg

```

*****
** Calculated variables requested by Michael Nevett, in email recs      **
** from Emily Kenyon, dated 4/5/00                                     **
**                                                                     **
** Fran Harris                                                         4/6/00  **
** EK deleted skipped code 6/1/09 -- obsolete                         **
*****;
options ls=132 ps=58 formchar='|----+|----+|=|-\<>*' nocenter pageno=1 nofmterr;
title 'HABC calculated variables';
title2 'Program: bp.calcvar.sas';

data p2;
  set habc1.p2(keep=habcid p2aarp1 p2aarp2
               p2aarb1 p2aarb2
               p2aapr
               p2aalp1 p2aalp2
               p2sys p2sy2
               p2dia p2dia2
               p2bpyn);

run;

data bp;
  set p2(in=inp2);
  by habcid;
*Take care of 0 values for failed test EK 6/1/09;
  if P2AARB1 le 0 then P2AARB1=.;
  if P2AARB2 le 0 then P2AARB2=.;
  AAI1R=P2AARP1/P2AARB1;
  AAI2R=P2AARP2/P2AARB2;
  if P2AAPR=0 then do;
    AAI1R=.;
    AAI2R=.;
  END;
  AAIR=(AAI1R+AAI2R)/2;
  if AAI1R=. THEN AAIR=AAI2R; ELSE
  IF AAI2R=. THEN AAIR=AAI1R;

  AAI1L=P2AALP1/P2AARB1;
  AAI2L=P2AALP2/P2AARB2;
  if P2AAPR=0 then do;
    AAI1L=.;
    AAI2L=.;
  END;
  AAIL=(AAI1L+AAI2L)/2;
  if AAI1L=. THEN AAIL=AAI2L; ELSE
  IF AAI2L=. THEN AAIL=AAI1L;

  MINAAI=MIN(AAIR,AAIL);

  if .z<MINAAI<0.90 THEN LOWAAI=1; ELSE
  if MINAAI>=0.90 THEN LOWAAI=0;

  if max(p2sys,p2sy2)>1.2*min(p2sys,p2sy2) then
    put habcid '09'x 'p2sys' '09'x p2sys '09'x 'p2sy2' '09'x p2sy2;
  if max(p2dia,p2dia2)>1.2*min(p2dia,p2dia2) then
    put habcid '09'x 'p2dia' '09'x p2dia '09'x 'p2dia2' '09'x p2dia2;

```

```

if p2dia >.z then p2dia =max(p2dia ,30);
if p2dia2>.z then p2dia2=max(p2dia2,30);
SYSBP=(P2SYS+P2SY2)/2;
DIABP=(P2DIA+P2DIA2)/2;
IF P2SYS<=.z THEN SYSBP=P2SY2; ELSE
IF P2SY2<=.z THEN SYSBP=P2SYS;
IF P2DIA<=.z THEN DIABP=P2DIA2; ELSE
IF P2DIA2<=.z THEN DIABP=P2DIA;
label sysbp='Avg sitting systolic BP, mm Hg'
      diabp='Avg sitting diastolic BP, mm Hg';
RUN;
proc print data=bp(obs=40);
  var AAI1R P2AARP1 P2AARB1 AAI2R P2AARP2 P2AARB2 P2AAPR aair;
run;
proc print data=bp(obs=40);
  var AAI1L P2AALP1 P2AARB1 AAI2L P2AALP2 P2AARB2 P2AAPR aail;
run;
proc print data=bp(obs=40);
  var AAIR AAIL MINAAI LOWAAI;
run;
proc print label data=bp(obs=40);
  var P2BPYN SYSBP P2SYS P2SY2 DIABP P2DIA P2DIA2;
run;
proc format;
  value lowaaif 1='Lowest AAI<0.90' 0='Lowest AAI>=0.90';
run;
data calc.bp(keep=habcid aair aail minaaif lowaaif sysbp diabp);
  set bp;
  label aair='Ankle-arm index, rt leg'
        aail='Ankle-arm index, lt leg'
        minaaif='Lowest ankle-arm index'
        lowaaif='Lower extr arterial dz index'
        sysbp='Avg sitting systolic BP, mm Hg'
        diabp='Avg sitting diastolic BP, mm Hg';
  format lowaaif lowaaif.;
run;
proc univariate data=calc.bp;
  var aair aail minaaif sysbp diabp;
run;
proc sort data=calc.bp out=bp;
  by lowaaif;
run;
proc univariate data=bp;
  by lowaaif;
  var minaaif;
run;
proc contents data=calc.bp;
run;

```

Appendix III
Anthropometric Measures -- Derived Variables

Investigator Name: Emily Kenyon and Susan Rubin

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special	Value labels
P2SH	Average of the baseline standing height measurements	Average of 1-4 baseline standing height measurements	If only 2 standing height measurements were obtained (P2SH1 and P2SH2), take an average of P2SH1 and P2SH2. If all 4 measurements were made, average P2SH3 and P2SH4 only. If for some reason 3 measurements were made -- which is not according to protocol, average all 3 of these measurements. If only one measurement was obtained, use this as the baseline standing height measurement.	If P2SH1, P2SH2, P2SH3, and P2SH4 are all missing, P2SH=.M	mm
P2SI	Average of the baseline sitting height measurements	Average of 1-4 baseline sitting height measurements	If only 2 sitting height measurements were obtained (P2SI1 and P2SI2), take an average of P2SI1 and P2SI2. If all 4 measurements were made, average P2SI3 and P2SI4 only. If 3 measurements were made, average all 3 of these measurements. If only one measurement was obtained, use this as the baseline sitting height measurement.	If P2SI1, P2SI2, P2SI3, and P2SI4 are all missing, P2SI=.M	mm
P2H2HH	Hip-to-head height	Hip-to-head height in mm	Average sitting height minus height of the chair used for sitting height measurement	If sitting height or height of the chair is missing, then P2H2HH is missing	mm
P2LL	Leg length/sub-ischial height	Leg length/sub-ischial height in mm	Average standing height measurement minus the calculated hip-to-head measurement	If standing height or hip-to-head height is missing, then P2LL is missing	mm

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special	Value labels
P2SG	Average of the baseline sagittal diameter measurements	Average of 1-4 baseline sagittal diameter measurements	If only 2 sagittal diameter measurements were obtained (P2SG1 and P2SG2), take an average of P2SG1 and P2SG2. If all 4 measurements were made, average P2SG3 and P2SG4 only. If 3 measurements were made, average all 3 of these measurements. If only one measurement was obtained, use this as the baseline sagittal diameter measurement.	If P2SG1, P2SG2, P2SG3, and P2SG4 are all missing, P2SG=.M	cm
P3TH	Average of the baseline thigh circumference measurements	Average of 1-4 baseline thigh circumference measurements	If only 2 thigh circumference measurements were obtained (P3TH1 and P3TH2), take an average of P3TH1 and P3TH2. If all 4 measurements were made, average P3TH3 and P3TH4 only. If 3 measurements were made, average all 3 of these measurements. If only one measurement was obtained, use this as the baseline thigh circumference measurement.	If P3TH1, P3TH2, P3TH3, and P3TH4 are all missing, P3TH=.M	cm
P3AB	Average of the baseline abdominal circumference measurements	Average of 1-4 baseline abdominal circumference measurements	If only 2 abdominal measurements were obtained (P3AB1 and P3AB2), take an average of P3AB1 and P3AB2. If all 4 measurements were made, average P3AB3 and P3AB4 only. If 3 measurements were made, average all 3 of these measurements. If only one measurement was obtained, use this as the baseline abdominal circumference measurement.	If P3AB1, P3AB2, P3AB3, and P3AB4 are all missing, P3AB=.M	cm

Investigator Name: Jill A. Bennett
Analysis Plan Reference #: AP99-36

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special	Value labels
BMI	Body Mass Index	Weight in kg / height in meters squared	1. Weight in kg = P2WTK 2. Height in meters squared = P2SH divided by 1000 (to change mm to meters) then that number is squared 3. Divide P2WTK by the number derived in step 2	If P2WTK or P2SH is missing, BMI=.M	kg/m2
Y1WTK	Weight	Weight in kg	Y1WTK = P2WTK	n/a	kg

Investigator Name: Michael Nevitt

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special	Value labels
BMICAT	Body Mass Index Category	Body mass categories according to NIH guidelines	BMICAT=1(normal) if BMI<25 BMICAT=2(overweight) if 25≤BMI<30 BMICAT=3(obese) if BMI ge 30	If BMI is missing, BMICAT=.M	unitless

Investigator Name: Tamara Harris

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special	Value labels
P3ABI	Imputed abdominal circumference	Imputed values computed for missing abdominal circumference data	Participants with missing or impossible data were matched first by BMI (sex and race specific), then by height, weight, and total abdominal area from the CT whole body scan. The closest values were averaged. Affects 5 cases.	If no match could be made, P3ABI is missing	cm
P2SGI	Imputed sagittal diameter	Imputed values computed for missing sagittal diameter data	If P2SG is missing but ABSAG_D is not missing, then $P2SGI = ABSAG_D / 10$. Affects 33 cases.	If P2SG and ABSAG_D are both missing, then P2SGI is missing	cm

```

*****
** Calculated variables requested by Michael Nevett, Emily Kenyon, **
** Susan Rubin, and Jill Bennett, in spreadsheet ANTHROPOMETRY.XLS. **
**                                                                 **
** Fran Harris                                                    4/6/00 **
** EK removed skipped portion 6/1/09                            **
** ES added P2H2HH and P2LL 6/26/09                             **
*****;
options ls=132 ps=58 formchar='|----|+|---+=|-\<>*' nocenter pageno=1 nofmterr
mprint macrogen;
title 'HABC calculated variables';
title2 'Program: anthrop.calcvars.sas';

%macro avgmeas(var);
  nmisstot=nmiss(of &var.1-&var.4);
  if nmisstot=0 then do;
    &var=mean(&var.3,&var.4);
    if max(&var.3,&var.4)>min(&var.3,&var.4)*1.2 then
      put habcid '09'x "&var.1" '09'x &var.1 '09'x
        "&var.2" '09'x &var.2 '09'x
        "&var.3" '09'x &var.3 '09'x
        "&var.4" '09'x &var.4 '09'x ;
  end; else
  if nmisstot=1 then do;
    &var=mean(&var.1,&var.2,&var.3,&var.4);
    if max(&var.1,&var.2,&var.3,&var.4)>min(&var.1,&var.2,&var.3,&var.4)*1.2
then
      put habcid '09'x "&var.1" '09'x &var.1 '09'x
        "&var.2" '09'x &var.2 '09'x
        "&var.3" '09'x &var.3 '09'x
        "&var.4" '09'x &var.4 '09'x ;
  end; else
  if nmisstot=2 then do;
    &var=mean(&var.1,&var.2,&var.3,&var.4);
    if max(&var.1,&var.2,&var.3,&var.4)>min(&var.1,&var.2,&var.3,&var.4)*1.2
then
      put habcid '09'x "&var.1" '09'x &var.1 '09'x
        "&var.2" '09'x &var.2 '09'x
        "&var.3" '09'x &var.3 '09'x
        "&var.4" '09'x &var.4 '09'x ;
  end; else
  if nmisstot=3 then &var=max(&var.1,&var.2,&var.3,&var.4);
%mend avgmeas;

data p2;
  set habc1.p2(keep=habcid p2sh1 p2sh2 p2sh3 p2sh4
    p2si1 p2si2 p2si3 p2si4
    p2sg1 p2sg2 p2sg3 p2sg4
    p2wtk p2ben p2st);
run;
data p3;
  set habc1.p3(keep=habcid p3th1 p3th2 p3th3 p3th4
    p3ab1 p3ab2 p3ab3 p3ab4);
run;
data calc;
  merge p2(in=inp2) p3(in=inp3);
  by habcid;

```

```

%avgmeas(P2SH);
%avgmeas(P2SI);
%avgmeas(P2SG);
%avgmeas(P3TH);
%avgmeas(P3AB);
BMI=p2wtk/((p2sh/1000)**2);
if .z< bmi< 25 then BMICAT=1; else
if 25<=bmi< 30 then bmicat=2; else
if bmi>=30 then bmicat=3;
if P2BEN=1 then do;
    P2H2HH=P2SI-635;
end;
else if P2ST>.z then do;
    P2H2HH=P2SI-P2ST;
end;
else do;
    P2H2HH=.M;
end;
P2LL=P2SH-P2H2HH;
run;
proc format;
    value bmicf 1='Under 25' 2='25 to 30' 3='30 +';
data calc.anthro(keep=habcid p2sh p2si p2sg p3th p3ab bmi bmicat Y1WTK P2H2HH
P2LL);
    set calc;
    label p2sh='Avg bl standing hgt (mm)'
        p2si='Avg bl sitting hgt (mm)'
        p2sg='Avg bl sagittal dia (cm)'
        p3th='Avg bl thigh circ (cm)'
        p3ab='Avg bl abdominal circ (cm)'
        bmicat='BMI category'
        bmi='BMI, kg/m2'
        P2H2HH='Hip-to-head height (mm)'
        P2LL='Leg length/sub-ischial height (mm)';
    format bmicat bmicf.;
    rename p2wtk=Y1WTK;
run;
proc contents data=calc.anthro;
run;
proc freq data=calc.anthro;
    tables bmicat;
run;
proc univariate data=calc.anthro;
    var p2sh p2si p2sg p3th p3ab bmi ;
run;

```

```

*****
** ImputedAnthro.sas **
** **
** Imputed Anthropometry Variables **
** for Tammy Harris **
** **
** 04-25-2000 **
*****;
data calc.absg(keep=habcid p3abi p2sgi);
  merge calc.anthro(keep=habcid p2sg p3ab)
        read1.tis_lab(keep=habcid absag_d)
        habc.ph(in=inph keep=habcid);
by habcid;
if inph;

****Create imputed abdominal circumference from ****;
**** Tammy Harris's 1/11/00 e-mail. See the DAF ****;
**** documentation for Tammy's algorithm ****;

if p3ab>.z then P3ABI=p3ab;
  else if habcid=1039 then p3abi=94.2;
  else if habcid=1920 then p3abi=86.6;
  else if habcid=2420 then p3abi=105.4;
  else if habcid=2356 then p3abi=104.3;
  else if habcid=2540 then p3abi=99.3;
  else if habcid=2339 then p3abi=100.9;
  else if habcid=1599 then p3abi=110.6;
  else if habcid=1380 then p3abi=115.3;
  else if habcid=1500 then p3abi=112.8;
  else if habcid=2306 then p3abi=110.7;
  else if habcid=2596 then p3abi=110.7;
  else if habcid=1678 then p3abi=106.3;
  else if habcid=2522 then p3abi=108.5;
  else if habcid=1713 then p3abi=98.8;
  else if habcid=1490 then p3abi=93.4;
  else if habcid=5695 then p3abi=99.0;
  else if habcid=1460 then p3abi=101.8;
  else if habcid=2100 then p3abi=104.6;
  else if habcid=1964 then p3abi=97.1;
  else if habcid=2289 then p3abi=92.3;
  else if habcid=2361 then p3abi=115.2;
  else if habcid=5028 then p3abi=82.3;
  else if habcid=6453 then p3abi=85.0;
  else if habcid=1908 then p3abi=90.1;
  else if habcid=209 then p3abi=99.1;
  else if habcid=2626 then p3abi=114.6;
  else if habcid=1931 then p3abi=117.2;
if p3abi=. then p3abi=.M;

***Create Imputed Sagittal diameter from CT Reading Center ****;
*** variable ABSAG_D where CVW Sagittal Diameter is missing ***;

if p2sg>.z then P2SGI=p2sg;
  else if p2sg<=.z and absag_d>.z then p2sgi=absag_d/10;
  else p2sgi=.M;

label p3abi='Imputed Abdominal Circumference (cm)'
      p2sgi='Imputed Sagittal Diameter (cm)';
run;
proc contents;
run;

```

Appendix IV
CES-D Score

Investigator Name: Ronald Shorr, MD, MS
Analysis Plan Reference Number: AP98-08

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
1. CES_D	CES-D score	CES-D score calculated according to Radloff, L.S. (1977). The CES-D scale: a self report Major Depressive Disorder scale for research in the general population. Applied Psychological Measurement, 1, 385-401.	<ol style="list-style-type: none"> 1. For the following variables, use the following to convert the score: 1(rarely)=3, 2(some of time)=2, 3(much of time)=1, 4(most of time)=0: LPFGOOD, LPFHOPE, LPFHAPPY, LPFENJOY 2. For the remainder of the variables, use the following conversion 1(rarely)=0, 2(some of time)=1, 3(much of time)=2, 4(most of time)=3 3. Sum the score of the 20 items. (max=60, min=0) 	<p>If any item is answered 8(Don't know) or 7 (Refused), set that item to missing.</p> <p>For 1-4* missing items, assign the average score of the answered items to the missing items. If >4* items are missing, CES_D is missing.</p> <p>*This correction (from 5) was instituted with version 1.4</p>	unitless

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
CES_D10	CES_D short form score	CES-D short form score calculated according to Andresen, E.M. and Malmgren, J.A. (1994). Screening for depression in well older adults: evaluation of a short form of the CES-D	<ol style="list-style-type: none"> 1. For LPFHAPPY and LPFHOPE, use the following to convert the score: 1(rarely)=3, 2(some of time)=2, 3(much of time)=1, 4(most of time)=0: 2. For the remainder of the variables, use the following conversion 1(rarely)=0, 2(some of time)=1, 3(much of time)=2, 4(most of time)=3 3. Sum the score of the 10 items. (max=30, min=0) 	<p>If any item is answered 8 (Don't know) or 7 (Refused), set that item to missing.</p> <p>For 1 missing item, assign the average score of the answered items to the missing items. If >2 items are missing, CES_D10 is missing.</p>	unitless

Analyst note: Although the range for the CES_D10 (short form) score is exactly half that of the CES_D (long form) score, there is no general agreement about how the scores compare. That is, there is not general agreement that the former can simply be doubled to make it analogous to the latter.

```

*****
** Sas code received from Ronald Shorr 2/2/2000 **
** Calculates CES-D **
*****;
** Checks, corrections made to calculation of CES-D: **
** - Check that values >4 are set to missing (already done) **
** - Check that 4 vars reversed (LPFGOOD, LPFHOPE, LPFHAPPY, and **
** LPFENJOY) (already done) **
** - Use scale of 0-3 instead of 1-4 (fixed here) **
** - Set CES-D to missing if >4 scores missing (fixed here) **
** - Fill in avg score for missing scores if <= 4 missing (fixed here)**
** (cutoff for missing values already fixed 12/12/02, just this **
** banner still said 5 (EK 12/12/02) **
** Fran Harris 4/4/00 **
**
** Adjusted cutoff to 4 for missing items per Emily **
** Laura Akin 2/7/02 **
** Updated to run off current lib EK 6/8/09 **
**
** - Changed allowable number of missings from 1 to 2 for **
** CES_D10 score **
**
** Emily Scott 06/26/09 **
*****;
options ls=132 ps=58 formchar='|----|+|---+=|-\<>*' nocenter pageno=1 nofmterr;
title 'HABC calculated variables';
title2 'Program: cesd.calcvar.sas';
run;

*****;
** Create CES-D (cesd) Scores **
*****;

data cesd;
  set daf.ylsscreen(keep=habcid lpfbothr lpfeat lpfblues lpfgood
                    lpfmind lpfdown lpfeffrt lpfhope
                    lpffail lpffear lpfsleep lpfhappy
                    lpftalk lpflone lpfunfr lpfenjoy
                    lpfcry lpfsad lpfdisme lpfnogo);

  array c [20] c1-c20;
  array orig [20] lpfbothr lpfeat lpfblues lpfgood
                 lpfmind lpfdown lpfeffrt lpfhope
                 lpffail lpffear lpfsleep lpfhappy
                 lpftalk lpflone lpfunfr lpfenjoy
                 lpfcry lpfsad lpfdisme lpfnogo;

  do i=1 to 20;
    c[i]=orig[i];
    if c[i]>4 then c[i]=.M;
    if i in (4,8,12,16) then c[i]=5-c[i];
    c[i]=c[i]-1;
  end;
  avg_cesd=mean(of c1-c20);
  nmiss=nmiss(of c1--c20);
  if nmiss<=4 then do;
    if nmiss>0 then do i=1 to 20;
      if c[i]=. then c[i]=avg_cesd;
    end;
    CES_D=sum(of c1--c20);
  end;

```

```

end;
else ces_d=.M;
label ces_d='CES-D';
format ces_d 5.2;
run;
proc univariate data=cesd;
var ces_d avg_cesd;
run;
proc freq data=cesd;
tables nmiss
      lpfbothr lpfeat lpfblues lpfgood
      lpfmind lpfdown lpfeffrt lpfhope
      lpffail lpffear lpfsleep lpfhappy
      lpftalk lpflone lpfunfr lpfenjoy
      lpfcry lpfsad lpfdisme lpfngo / list missing;
run;
****Added 1/6/04: Create short version score for comparison to years with CES-
D-short;
data cesd10;
set daf.ylscreen (keep=habcid lpfbothr lpfmind lpfdown lpfeffrt lpfhope
                 lpffear lpfsleep lpfhappy lpflone lpfngo);
array c [10] c1-c10;
array orig [10] lpfbothr lpfmind lpfdown lpfeffrt lpfhope
              lpffear lpfsleep lpfhappy lpflone lpfngo;
do i=1 to 10;
c[i]=orig[i];
if c[i]>4 then c[i]=.M;
if i in (5,8) then c[i]=5-c[i];
c[i]=c[i]-1;
end;
avg_cesd=mean(of c1-c10);
nmiss=nmiss(of c1--c10);
if nmiss<=2 then do;
if nmiss>0 then do i=1 to 10;
if c[i]=. then c[i]=avg_cesd;
end;
CES_D10=sum(of c1--c10);
end;
else ces_d10=.M;
label ces_d10='CES-D 10';
format ces_d10 5.2;
run;
proc univariate data=cesd10;
var ces_d10 avg_cesd;
run;
proc freq data=cesd10;
tables nmiss
      lpfbothr lpfmind lpfdown lpfeffrt lpfhope
      lpffear lpfsleep lpfhappy lpflone lpfngo/ list missing;
run;

data calc.cesd;
merge cesd(keep=habcid ces_d) cesd10(keep=habcid ces_d10);
by habcid;
run;
proc contents data=calc.cesd;
run;

```

Appendix V
CT Calculated Variables

Investigator Name: Tom Lang

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
EST_CORT	Estimated cortical BMD	Estimate of the vertebral cortical BMD. Includes the cortical shell of the vertebral body and the posterior elements. The difference in BMC between the region of interest encompassing the total vertebral mid-slice and the peeled trabecular region is divided by the difference in the volumes of these two regions.	$\text{EST_CORT} = \frac{(\text{INTG_BMD} * \text{INTG_VOL}) - (\text{TRB_BMD} * \text{TRB_VOL})}{(\text{INTG_VOL} - \text{TRB_VOL})}$	Situation should not arise	mg/cc

Investigator Name: Ann Scherzinger

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
CTSCANID	CT Scanner used	Categorical variable showing which scanner was used for CT whole body scans (to allow controlling for scanner variation)	=1 if Pittsburgh participant (Centre Commons scanner) =2 if in St. Josephs list =3 if in UT Bowld list	Situation should not arise	

```

*****
** Calculated variables for CT-spine data      **
**                                           **
** Fran Harris                               4/14/00  **
*****;
options ls=132 ps=58 formchar='|----|+|----+=|-\<>*' nocenter pageno=1 nofmterr;
title 'HABC calculated variables';
title2 'Program: CTspine.calcvars.sas';

data cts;
  set read1.ctsp_lab(keep=habcid intg_bmd intg_vol trb_bmd trb_vol);
run;
data ph;
  set habc.ph(keep=habcid);
run;

data calc.ctspine(keep=habcid est_cort);
  merge cts(in=incts) ph;
  by habcid;

  if incts then do;
    EST_CORT=((INTG_BMD*INTG_VOL)-(TRB_BMD*TRB_VOL)) / (INTG_VOL-TRB_VOL);
    IF EST_CORT=. THEN PUT
      'EST_CORT IS MISSING: ' HABCID= INTG_BMD= INTG_VOL= TRB_BMD= TRB_VOL= ;
  end;
  else est_cort=.;
  label est_cort='Estimated cortical BMD - mg/cc';
run;
proc univariate data=calc.ctspine;
  var est_cort;
run;
proc contents data=calc.ctspine;
run;

```

```

*****
** Create calculated variables to show where CT scan was done: **
**   ctscanid = 1 for Centre Commons (Pittsburgh)           **
**   ctscanid = 2 for St. Josephs (Memphis)                 **
**   ctscanid = 3 for UT Bowld (Memphis)                     **
**                                                           **
** Fran Harris                                             9/21/00 **
*****;
filename stjoe      '\\fu-hsing-c\habc\habc_sas\calculated
variables\programs\year 1\scanids.stjosephs.txt';
filename bowld     '\\fu-hsing-c\habc\habc_sas\calculated
variables\programs\year 1\scanids.UTbowld.txt';

** Scanner ID **;
data tis(keep=habcid);
  set current.ylread(keep=habcid cttvisit);
  if cttvisit=' ' then delete; *Keep only those with tissue lab done*;
run;
proc sort data=tis nodupkey;
  by habcid;
run;
data stjoe;
  infile stjoe delimiter='09'x firstobs=2 missover;
  length habcid6 $6 habcid 8 acrost2 $4 study $4 examdat2 $10;
  input habcid6 acrost2 study examdat2;
  habcid=substr(habcid6,3,4);
run;
data stjoe dups;
  set stjoe;
  by habcid;
  if not(first.habcid and last.habcid) then output dups;
  if first.habcid then output stjoe;
run;
proc print data=dups;
  title4 'Duplicates in StJoe scan IDs - first one is kept';
run;
data bowld;
  infile bowld delimiter='09'x firstobs=2 missover;
  length habcid6 $6 habcid 8 acrost3 $4 study $4 examdat3 $10;
  input habcid6 acrost3 study examdat3;
  habcid=substr(habcid6,3,4);
run;
data bowld dups;
  set bowld;
  by habcid;
  if not(first.habcid and last.habcid) then output dups;
  if first.habcid then output bowld;
run;
proc print data=dups;
  title4 'Duplicates in Bowld scan IDs - first one is kept';
run;
data calc.scanid(drop=habcid6 acrost2 acrost3 study examdat2 examdat3);
  merge tis(in=in1) stjoe(in=in2) bowld(in=in3) daf.ph(in=in4 keep=habcid);
  by habcid;
  if in4;
  if in1 and habcid>=5000 then CTSCANID=1; else
  if in1 and in2           then ctscanid=2; else
  if in1 and in3           then ctscanid=3;
  label          ctscanid = 'CT scanner used';
  format          ctscanid scanidf.;
run;

```

Appendix VI
ECG Derived Variables

Investigator Name: Bernard R. Chaitman

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
TECHFLAG	Flag for existence of technical problem interfering with coding	If TECH_PRB=981 or 984, then flag=1. All others, flag=0	TECHFLAG=1 if TECH=981 or 984 Else, TECHFLAG=0	Missing=0	0=no serious problems 1=technical probs interfere coding
ARYTHTYP	Type of arrhythmia code	Combines ARRHYTH=31 and 32; 33 and 34; keeps 8 and 12 separate, and combines all other ARRHYTH codes	ARYTHTYP =0 if ARRHYTH is missing or 0 =1 if ARRHYTH =31 or 32 =2 if ARRHYTH =33 or 34 =3 if ARRHYTH =8 =4 if ARRHYTH =12 or 23 =5 if ARRHYTH =11, 13, 14, 15, 24, 41, 42, 51, 52, 61, 53, 64, 7, or 9 =6 if ARRHYTH =21 or 22	Missing=0	0=None 1=Persistent atrial fib. or flutter 2=Intermittent atrial fib. or flutter 3=Sinus bradycardia 4=Freq. premature vent. beats 5=Other 6=Persistent ventricular rhythm

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
AVDEFTYP	Type of atrioventricular conduction defect	Combines AV_DEF=41 and 42; 22, 23, and 6. Keeps 1, 21, 3, and 5 separate.	AVDEFTYP =0 if AV_DEF is missing or 0 =1 if AV_DEF=1 =2 if AV_DEF=21 =3 if AV_DEF=3 =4 if AV_DEF=41 or 42 =5 if AV_DEF=5 =6 if AV_DEF=22, 23, or 6 =8 if AV_DEF=8	Missing=0	0=None 1=Complete AV block 2=Mobitz type II 3=Long P-R interval 4=persistent or intermittent WPW 5=short P-R interval 6=other 8=pacemaker
AXISAB	Axis abnormality	Categories for axis < -45 deg, -45≤axis≤120, axis>120 degrees	AXISAB =0 if -45≤AXIS≤120 =1 if AXIS<-45 =2 if AXIS>120	Missing if AXIS is missing	0=None 1=Left axis 2=Right axis
ABHR	Abnormal heartrate	Categories for normal HR, bradycardia (<50 bpm), tachycardia (>100 bpm)	ABHR =0 if 50≤HR≤100 =1 if HR<50 =2 if HR>100	Missing if HR is missing	0=No 1=Bradycardia 2=Tachcardia
LONGPR	Long P-R interval	Indicator variable for P-R interval > 220 msec	LONGPR =0 if PR ≤220 =1 if PR>220	Assign .T (missing due to technical problem) if blank	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
QWVAB	Q-wave myocardial infarction	Major Q or QS abnormality for anterior, posterior, lateral or inferior	<p>MAJQWVAB =0 if Q_ANT, Q_POST, Q_LAT, and Q_INF are all missing or 0 or >39</p> <p>=1 if Q_ANT=11, 12, 16, 17, 21, 22, or 27; or if Q_INF=11, 12, 14, 15, 21, 22, 23, 24, or 25; or if Q_LAT=11, 12, 13, 21, 22, or 23; or if Q_POST=1</p> <p>=2 if Q_ANT=28, 31, or 32; or if Q_INF=26, 31, 34, 35, or 36; or if Q_LAT=28, 31, or 33; or if Q_POST=2</p>	All missing=0	0=None 1=Major 2=Minor
STWVAB	ST or T wave abnormality	Major ST or T wave abnormality for anterior, posterior, lateral or inferior	<p>STWVAB =0 if STD_LAT, STD_INF, STD_ANT, STL_LAT, STL_INF, STL_ANT, T_LAT, T_INF, and T_ANT are all missing or 0</p> <p>=1 if STD_LAT≥11; or if STD_INF≥11; or if STD_ANT≥11; or if STL_LAT≥2; or if STL_INF≥2; or if STL_ANT≥2; or if T_LAT=1 or 2; or if T_INF=1 or 2; or if T_ANT=1, 2, 5 or 6</p> <p>=2 if STD_LAT=2, 3 or 4; or if STD_INF=2,3, or 4; or if STD_ANT=2,3, or 4; or if L_LAT=3 or 4; or if T_INF=3 or 4; or if T_ANT=3 or 4</p>	All missing=0	0=None 1=Major 2=Minor

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
QMI	Q-wave myocardial infarction	Presence of major Q-wave abnormality or minor Q-wave abnormality in the presence of a major ST or T-wave abnormality	QMI =0 if QWVAB=0 and STWVAB=0 =1 if QWVAB=1 or (QWVAB=2 AND STWVAB=1) all others =0	N/A	0=No 1=Yes
LONGQRS	Long QRS duration	QRS duration longer than 120 msec	LONGQRS =0 if QRS≤120 msec =1 if QRS>120 msec	Missing if QRS is missing	0=No 1=Yes
LONGQT	Long QT duration	QT duration longer than 460 msec	LONGQT =0 if QT≤460 =1 if QT>460	Missing if QT is missing	0=No 1=Yes
STSEGDEP	ST segment depression	ST segment depression excluding Q-wave myocardial infarction	STSEGDEP =0 if STD_LAT and STD_INF and STD_ANT are all missing or 0 or if QMI=1 =1 if STD_LAT≥11; or if STD_INF≥11; or if STD_ANT≥11 =2 if STD_LAT=2, 3 or 4; or if STD_INF=2, 3, or 4; or if STD_ANT=2, 3, or 4	All missing=0	0=None 1=Major 2=Minor
STSEGELV	ST segment elevation	ST segment elevation excluding Q-wave myocardial infarction	STSEGELV =0 if STL_LAT, STL_INF, and STL_ANT are all missing or 0 or if QMI=1 =1 if STL_LAT≥2; or if STL_INF≥2; or if STL_ANT≥2	All missing=0	0=None 1=Major

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
TWVITMS	T-wave items	T-wave items excluding Q-wave myocardial infarction	<p>TWVITMS =0 if T_LAT, T_INF and T_ANT are all missing or 0 or if QMI=1</p> <p>=1 if T_LAT=1 or 2; or if T_INF=1 or 2; or if T_ANT=1, 2, 5 or 6</p> <p>=2 if L_LAT=3 or 4; or if T_INF=3 or 4; or if T_ANT=3 or 4</p>	All missing=0	0=None 1=Major 2=Minor
VDEF COD	Ventricular conduction defect code	Combines VENT_DEF=12, 22, 3, 5, and 6; keeps 11, 21, 4, 7 and 8 separate`	<p>VDEF COD =0 if VENT_DEF is missing or 0 =1 if VENT_DEF=11 =2 if VENT_DEF=21 =3 if VENT_DEF=4 =4 if VENT_DEF=7 =5 if VENT_DEF=8 =6 if VENT_DEF=12, 22, 3, 5 or 6</p>	Missing=0	0=None 1=Complete LBBB 2=Complete RBBB 3=Intravent. Block 4=left ant. hemiblock (LAH) 5=LAH with complete or intermittent RBBB 6=Incomplete or intermittent

```

options ls=132 ps=58 formchar='|----|+|----+=|-\<>*' nocenter pageno=1 nofmterr
      mprint macrogen;
title 'HABC calculated variables';
title2 'Program: ECG.calcvar.sas';

*****;
*%include '\\Fu-hsing-c\habc\habc_sas\programs\initV8.sas';

data ph;
  set habc.ph(keep=habcid);
run;
data ecg;
  set read1.ecg_lab(keep=habcid tech_prb arrhyth av_def axis hr pr
                    q_ant q_post q_lat q_inf
                    std_lat std_inf std_ant
                    stl_lat stl_inf stl_ant
                    t_lat t_inf t_ant
                    qrs qt vent_def);

run;

proc format;
  value techf 0='0:No serious problems'
              1='1:Technical problems';
  value arythtf 0='0:None'
                1='1:Persistent afib or flutter'
                2='2:Intermittent afib or flutter'
                3='3:Sinus bradycardia'
                4='4:Freq premature vent beats'
                5='5:Other'
                6='6:Persistent ventricular rhythm';
  value avdeftf 0='0:None'
                1='1:Complete AV block'
                2='2:Mobitz type II'
                3='3:Long P-R interval'
                4='4:Persistent or intermittent WPW'
                5='5:Short P-R interval'
                6='6:Other'
                8='8:Pacemaker';
  value axisabf 0='0:None'
                1='1:Left axis'
                2='2:Right axis';
  value abhrf 0='0:No' 1='1:Bradycardia' 2='2:Tachcardia';
  value waveabf 0='0:None' 1='1:Major' 2='2:Minor';
  value vdefcdf 0='0:None'
                1='1:Complete LBBB'
                2='2:Complete RBBB'
                3='3:Intravent block'
                4='4:Left ant hemiblock'
                5='5:LAH, complete or intermittent RBBB'
                6='6:Incomplete or intermittent';
  value ynfmt 0='0:No' 1='1:Yes' .t='Missing due to technical problem';
run;

data ecg;
  merge ph ecg;
  by habcid;

```

```

if tech_prb in ('981','984') then TECHFLAG=1; else
    techflag=0;

if arrhyth in (' ','0') then ARYHTTYP=0; else
if arrhyth in ('31','32') then arythtyp=1; else
if arrhyth in ('33','34') then arythtyp=2; else
if arrhyth='8' then arythtyp=3; else
if arrhyth in ('12','23') then arythtyp=4; else
if arrhyth in ('11','13','14','15','24','41','42','51','52',
    '61','53','64','7','9') then arythtyp=5; else
if arrhyth in ('21','22') then arythtyp=6;

if av_def in (' ','0') then AVDEFTYP=0; else
if av_def='1' then avdeftyp=1; else
if av_def='21' then avdeftyp=2; else
if av_def='3' then avdeftyp=3; else
if av_def in ('41','42') then avdeftyp=4; else
if av_def='5' then avdeftyp=5; else
if av_def in ('22','23','6') then avdeftyp=6; else
if av_def='8' then avdeftyp=8;

if -45<=axis<=120 then AXISAB=0; else
if .z< axis< -45 then axisab=1; else
if axis> 120 then axisab=2;

if 50<=hr<=100 then ABHR=0; else
if .z< hr< 50 then abhr=1; else
if hr> 100 then abhr=2;

if .z< pr<=220 then LONGPR=0; else
if pr> 220 then longpr=1; else
    longpr=.t;

if (q_ant in (' ','0') or q_ant >'39') and
(q_post in (' ','0') or q_post>'39') and
(q_lat in (' ','0') or q_lat >'39') and
(q_inf in (' ','0') or q_inf >'39') then QWVAB=0; else
if q_ant in ('11','12','16','17','21','22','27') or
q_inf in ('11','12','14','15','21','22','23','24','25') or
q_lat in ('11','12','13','21','22','23') or
q_post='1' then qwvab=1; else
if q_ant in ('28','31','32') or
q_inf in ('26','31','34','35','36') or
q_lat in ('28','31','33') or
q_post='2' then qwvab=2;

if std_lat in (' ','0') and std_inf in (' ','0') and std_ant in (' ','0') and
stl_lat in (' ','0') and stl_inf in (' ','0') and stl_ant in (' ','0') and
t_lat in (' ','0') and t_inf in (' ','0') and t_ant in (' ','0')
then STWVAB=0; else
if std_lat in ('11','12') or
std_inf in ('11','12') or
std_ant in ('11','12','13','14','15','16','17','18','19') or
stl_lat in ('2','21','22','23','24','25','26','27','28','29') or
stl_inf in ('2','21','22','23','24','25','26','27','28','29') or
stl_ant in ('2','21','22','23','24','25','26','27','28','29') or

```

```

t_lat in ('1','2') or
t_inf in ('1','2') or
t_ant in ('1','2','5','6') then stwvab=1; else
if std_lat in ('2','3','4') or
std_inf in ('2','3','4') or
std_ant in ('2','3','4') or
t_lat in ('3','4') or
t_inf in ('3','4') or
t_ant in ('3','4') then stwvab=2;

if qwvab=0 and stwvab=0 then QMI=0; else
if qwvab=1 or (qwvab=2 and stwvab=1) then qmi=1; else
qmi=0;

if .z<=qrs<=120 then LONGQRS=0; else
if qrs> 120 then longqrs=1;

if .z<=qt<=460 then LONGQT=0; else
if qt> 460 then longqt=1;

if (std_lat in (' ','0') and std_inf in (' ','0') and std_ant in (' ','0'))
or qmi=1 then STSEGDEP=0; else
if std_lat in ('11','12') or
std_inf in ('11','12') or
std_ant in ('11','12','13','14','15','16','17','18','19') then stsegdep=1;
else
if std_lat in ('2','3','4') or
std_inf in ('2','3','4') or
std_ant in ('2','3','4') then stsegdep=2;

if (stl_lat in (' ','0') and stl_inf in (' ','0') and stl_ant in (' ','0'))
or qmi=1 then STSEGELV=0; else
if stl_lat in ('2','21','22','23','24','25','26','27','28','29') or
stl_inf in ('2','21','22','23','24','25','26','27','28','29') or
stl_ant in ('2','21','22','23','24','25','26','27','28','29')
then stsegelv=1;

if (t_lat in (' ','0') and t_inf in (' ','0') and t_ant in (' ','0'))
or qmi=1 then TWVITMS=0; else
if t_lat in ('1','2') or
t_inf in ('1','2') or
t_ant in ('1','2','5','6') then twvitms=1; else
if t_lat in ('3','4') or
t_inf in ('3','4') or
t_ant in ('3','4') then twvitms=2;

if vent_def in (' ','0') then VDEF COD=0; else
if vent_def = '11' then vdefcod=1; else
if vent_def = '21' then vdefcod=2; else
if vent_def = '4' then vdefcod=3; else
if vent_def = '7' then vdefcod=4; else
if vent_def = '8' then vdefcod=5; else
if vent_def in ('12','22','3','5','6') then vdefcod=6;

label techflag='Technical problem interfering with coding'
arythtyp='Type of arrhythmia'
avdeftyp='Type of atrioventricular conduction defect'

```

```

axisab='Axis abnormality'
abhr='Abnormal heartrate'
longpr='Long P-R interval'
qwvab='Minnesota Q-wave code'
stwvab='ST or T wave abnormality'
qmi='Q-wave myocardial infarction'
longqrs='Long QRS duration'
longqt='Long QT duration'
stsegdep='ST segment depression'
stsegelv='ST segment elevation'
twvitms='T-wave items'
vdefcod='Ventricular conduction defect code';

format techflag techf. arythtyp arythtf. avdeftyp avdeftf. axisab axisabf.
abhr abhrf. longpr ynfmt. qwvab stwvab waveabf.
qmi longqrs longqt ynfmt. stsegdep stsegelv twvitms waveabf.
vdefcod vdefcdf.;

run;
proc freq data=ecg;
  tables tech_prb*techflag
         arythtyp*arrhyth
         avdeftyp*av_def
         axisab*axis
         abhr*hr
         longpr*pr
         qwvab*q_ant*q_post*q_lat*q_inf

stwvab*std_ant*std_lat*std_inf*stl_ant*stl_lat*stl_inf*t_ant*t_lat*t_inf
qmi*qwvab*stwvab
longqrs*qrs
longqt*qt
stsegdep*std_lat*std_inf*std_ant*qmi
stsegelv*stl_lat*stl_inf*stl_ant*qmi
twvitms*t_lat*t_inf*t_ant*qmi
vdefcod*vent_def / list missing;

run;
data calc.ecg(keep=HABCID TECHFLAG ARYTHTYP AVDEFTYP AXISAB ABHR LONGPR QWVAB
STWVAB
                                QMI LONGQRS LONGQT STSEGDEP STSEGELV TWVITMS VDEFCD);

  set ecg;
run;
proc contents data=calc.ecg;
run;
proc freq data=calc.ecg;
  tables techflag arythtyp avdeftyp axisab abhr longpr qwvab stwvab
         qmi longqrs longqt stsegdep stsegelv twvitms vdefcod / missing;
run;

```

Appendix VII
Finger Tap and Digit Symbol Substitution Scores

Investigator Name: Ronald Shorr, MD, MS
Analysis Plan Reference Number: AP98-08

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
1. P4TAP	Mean of P4TAP1 and P4TAP2	Mean of P4TAP1 and P4TAP2 P4NC P4NI	Mean of P4TAP1 AND P4TAP2	If P4TAP1>0 and P4TAP2<0, then P4TAP=P4TAP1 If P4TAP1<0 and P4TAP2>0, then P4TAP=P4TAP2	taps
2. DSS	Number of digit symbol substitutions correctly made	Number of digit symbol substitutions correctly made	P4NC-P4NI	If P4NC and P4NI are missing, DSS= P4NC	substitutions

```

*****
** Sas code received from Ronald Shorr 2/2/2000 **
** Calculates finger-tapping **
** digit symbol **
*****;
**
** Fran Harris 4/4/00 **
** EK removed skipped code -- obsolete 6/1/09 **
** ES updated special missing value code **
** assignments for Digit Symbol and Finger-Tapping Scores 7/28/09 **
*****;

options ls=132 ps=58 formchar='|---|+|---+=|-\<>*' nocenter pageno=1 nofmterr;
title 'HABC calculated variables';
title2 'Program: DSSFT.calcvar.sas';
run;

*****;
** Create Digit Symbol (dss) and Finger-Tapping (p4tap) Scores **;
*****;

data dssft;
*change to use raw data because neither daf nor current includes corrections;
set /*daf.y1clnvis current.y1clnvis*/ habc1.p4(keep=habcid p4nc p4ni p4tap1
p4tap2);

DSS=sum(p4nc-p4ni);
*Fixed next line per email with Ron Shorr 2/13/03 0s shld not be changed to
missing;
if dss lt 0 then dss = min (p4nc,p4ni);
label dss='Digit symbol score';

P4TAP=mean(p4tap1,p4tap2);
if p4tap le 0 then p4tap = p4tap1;
label p4tap='Avg finger tapping score';
run;
proc univariate data=dssft;
var dss p4nc p4ni p4tap p4tap1 p4tap2;
run;

data calc.dssft;
set dssft(keep=HABCID DSS P4TAP);
by habcid;
run;
proc contents data=calc.dssft;
run;

```

Appendix VIII
Knee Pain Indicator Variables

Investigator Name: Michael Nevitt

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1KP12MO	Knee pain (either knee) most days past 12 months	Knee pain in either knee lasting at least a month during last 12 months	Knee pain lasting at least a month during last 12 months (PQAJKP12=1)	Missing or Refused is treated as No	0=No 1=Yes
Y1LKP12M	Left knee pain most days past 12 months	Left knee pain most days past 12 months	Knee pain lasting at least a month in left knee during last 12 months (PQAJKP12=1 and PQAJKPK=1 or 3)	Missing, Don't know treated as No	0=No 1=Yes
Y1RKP12M	Right knee pain most days past 12 months	Right knee pain most days past 12 months	Knee pain lasting at least a month in right knee during last 12 months (PQAJKP12=1 and PQAJKPK=2 or 3)	Missing, Don't know treated as No	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1LKPACT	Left knee pain with activity	Moderate or worse left knee pain in past 30 days on one or more activities in WOMAC scale	If any of the following are marked moderate, severe, or extreme (2, 3, or 4): pain in left knee during last 30 days when: walking on flat surface (PQAJLKFS), going up or down stairs (PQAJLKST), at night in bed (PQAJLKBD), standing upright (PQAJLKUP), getting in/out of chair (PQAJLKCH), getting in/out of car (PQAJLKIN)	If >2 of variables are missing, then Y1LKPACT is set to missing	0=No 1=Yes
Y1LWOMAC*	Left knee activity pain - Likert scale	Sum of left knee activity pain scores for 6 activities in WOMAC	sum of (PQAJLKFS, PQAJLKST, PQAJLKBD, PQAJLKUP, PQAJLKCH, PQAJLKIN)	If >2 of variables are missing, then Y1LWOMAC is set to Missing, otherwise Missing or Don't know set to 0 (No) before summing, then score is pro-rated and rounded up to the next integer	

* Note: Only the participants who have had knee pain in the past 12 months lasting at least one month go on to answer the activity pain items in Year 1. In later years, the criteria for who goes on to answer the activity pain items are loosened and a larger group of participants have a WOMAC score for each knee.

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1RKPACT	Right knee pain with activity	Moderate or worse right knee pain in past 30 days on one or more activities in WOMAC scale	If any of the following are marked moderate, severe, or extreme (2, 3, or 4): pain in left knee during last 30 days when: walking on flat surface (PQAJRKFS), going up or down stairs (PQAJRKST), at night in bed (PQAJRKBD), standing upright (PQAJKRUP), getting in/out of chair (PQAJRKCH), getting in/out of car (PQAJRKIN)	If >2 of variables are missing, then Y1RKPACT is set to missing	0=No 1=Yes
Y1RWOMAC*	Right knee activity pain - Likert scale	Sum of right knee activity pain scores for 6 activities in WOMAC	sum of (PQAJRKFS, PQAJRKST, PQAJRKBD, PQAJKRUP, PQAJRKCH, PQAJRKIN)	If >2 of variables are missing, then Y1RWOMAC is set to Missing, otherwise Missing or Don't know set to 0 (No) before summing, then score is pro-rated and rounded up to the next integer	
Y1KPACT	Knee pain with activity (either knee)	Moderate or worse pain with activity in either knee	=1 if Y1LKPACT=1 or Y1RKPACT=1 =0 if Y1LKPACT=0 or Y1RKPACT=0	If either Y1LKPACT or Y1RKPACT is missing, Y1KPACT is missing	0=No 1=Yes

* Note: Only the participants who have had knee pain in the past 12 months lasting at least one month go on to answer the activity pain items in Year 1. In later years, the criteria for who goes on to answer the activity pain items are loosened and a larger group of participants have a WOMAC score for each knee.

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y1LKPSIG	Left knee pain case	Indicator variable for knee pain case definition (left knee)	If any of the following are marked moderate, severe, or extreme (2, 3, or 4): pain in left knee during last 30 days when: walking on flat surface (PQAJLKFS), going up or down stairs (PQAJLKST), at night in bed PQAJLKBD), standing upright (PQAJLKUP), getting in/out of chair (PQAJLKCH), getting in/out of car (PQAJLKIN) or left knee pain lasting ≥ 1 month in past 12 months (PQAJKPK in (1,3)	Missing, Don't know treated as No	0=No 1=Yes
Y1RKPSIG	Right knee pain case	Indicator variable for knee pain case definition (right knee)	If any of the following are marked moderate, severe, or extreme (2, 3, or 4): pain in left knee during last 30 days when: walking on flat surface (PQAJRKFS), going up or down stairs (PQAJRKST), at night in bed (PQAJRKBD), standing upright (PQAJKRUP), getting in/out of chair (PQAJRKCH), getting in/out of car (PQAJRKIN) or left knee pain lasting ≥ 1 month in past 12 months (PQAJKPK in (2,3)	Missing, Don't know treated as No	0=No 1=Yes
Y1KPSIG	Knee pain case - either knee	Either knee meets case definition	=1 if Y1LKPSIG=1 or Y1RKPSIG=1 =0 otherwise	Missing is treated as No	0=No 1=Yes

```

* remove the next few lines (to A) to run as part of CleanupYxCalc.sas;
/*%let CAVALLO=10.1.0.37 ;
OPTIONS COMAMID=TCP remote=CAVALLO;
SIGNON userid='' password='' noscript;
RSUBMIT ;
run ;
*CALC: Temporary place for test datasets*;
libname calc 'e:\lakin\habc_sas\programs\fran';
%include      'e:\lakin\habc_sas\programs\initr.sas';

OPTIONS PAGESIZE=60 LINESIZE=94 nocenter formchar='|----|+|----+=|-\<>*'
NOFMterr;
TITLE 'Project: Health ABC';
TITLE2 'Program: Kneepain_y1.sas';

*A;
*/
***** Create flags for knee pain *****;
data y1knpain;
  set current.y1screen(keep=habcid PQAJKP12
                      pqajkpk pqajlkfs pqajlkst pqajlkbd pqajlkup pqajlkch
pqajlkin
                      pqajkpk pqajrkfs pqajrkst pqajrkbd pqajkrup pqajrkch
pqajrkin );

  if pqajkpk in (1,3) or
     pqajlkfs in (2,3,4) or
     pqajlkst in (2,3,4) or
     pqajlkbd in (2,3,4) or
     pqajlkup in (2,3,4) or
     pqajlkch in (2,3,4) or
     pqajlkin in (2,3,4)
     then Y1LKPSIG=1;
  else y1lkpsig=0;

  if pqajkpk in (2,3) or
     pqajrkfs in (2,3,4) or
     pqajrkst in (2,3,4) or
     pqajrkbd in (2,3,4) or
     pqajkrup in (2,3,4) or
     pqajrkch in (2,3,4) or
     pqajrkin in (2,3,4)
     then Y1RKPSIG=1;
  else y1rkpsig=0;

  if y1lkpsig=1 or y1rkpsig=1 then Y1KPSIG=1;
  else y1kpsig=0;

***** Create flags for activity pain *****;

  if pqajkp12=1 then Y1KP12MO=1;
  else y1kp12mo=0;
  if y1kp12mo=1 then do;
    if pqajkpk=1 then do;
      Y1RKP12M=0;
      Y1LKP12M=1;

```

```

end; else
if pqajkpk=2 then do;
  ylrkp12m=1;
  yllkp12m=0;
end; else
if pqajkpk=3 then do;
  ylrkp12m=1;
  yllkp12m=1;
end;
end;

else do;
  ylrkp12m=0;
  yllkp12m=0;
end;
*** Added lines of code after CD was cut - ***;
*** individual knees should be set to 0 if ***;
*** main var is 0 ***;

*** Count # of missings in activity pain scores before setting to 0 ***;
nmissr=nmiss(pqajrkfs,pqajrkst,pqajrkbd,pqajkrup,pqajrkch,pqajrkin);
nmissl=nmiss(pqajlkfs,pqajlkst,pqajlkbd,pqajlkup,pqajlkch,pqajlkin);

if pqajrkfs in (2,3,4) or
  pqajrkst in (2,3,4) or
  pqajrkbd in (2,3,4) or
  pqajkrup in (2,3,4) or
  pqajrkch in (2,3,4) or
  pqajrkin in (2,3,4)
then Y1RKPACK=1; else Y1RKPACK=0;
if pqajlkin in (2,3,4) or
  pqajlkfs in (2,3,4) or
  pqajlkst in (2,3,4) or
  pqajlkbd in (2,3,4) or
  pqajlkup in (2,3,4) or
  pqajlkch in (2,3,4)
then Y1LKPACK=1; else Y1LKPACK=0;
if nmissr>2 then ylrkpact=.;
if nmissl>2 then yllkpact=.;
if ylrkpact=1 or yllkpact=1 then Y1KPACT=1; else
if ylrkpact=0 and yllkpact=0 then ylkpact=0; else
  ylkpact=.;

***** Change missing and don't knows to 0 per M.Nevitt *****;
if pqajrkfs not in (0,1,2,3,4) then pqajrkfs=0;
if pqajrkst not in (0,1,2,3,4) then pqajrkst=0;
if pqajrkbd not in (0,1,2,3,4) then pqajrkbd=0;
if pqajkrup not in (0,1,2,3,4) then pqajkrup=0;
if pqajrkch not in (0,1,2,3,4) then pqajrkch=0;
if pqajrkin not in (0,1,2,3,4) then pqajrkin=0;
if pqajlkfs not in (0,1,2,3,4) then pqajlkfs=0;
if pqajlkst not in (0,1,2,3,4) then pqajlkst=0;
if pqajlkbd not in (0,1,2,3,4) then pqajlkbd=0;
if pqajlkup not in (0,1,2,3,4) then pqajlkup=0;
if pqajlkch not in (0,1,2,3,4) then pqajlkch=0;
if pqajlkin not in (0,1,2,3,4) then pqajlkin=0;

```

```

***** Create summary scores for activities *****;
YLRWOMAC=sum(pqajrkfs,pqajrkst,pqajrkbd,pqajkrup,pqajrkch,pqajrkin);
YLLWOMAC=sum(pqajlkfs,pqajlkst,pqajlkbd,pqajlkup,pqajlkch,pqajlkin);

if nmissr>2 then ylrwomac=.; else
if nmissr in (1,2) then ylrwomac=(ylrwomac/(6-nmissr))*6;
if nmissl>2 then yllwomac=.; else
if nmissl in (1,2) then yllwomac=(yllwomac/(6-nmissl))*6;
run;

data calc.ylknpain;
merge ylknpain current.ph(keep=habcid);
by habcid;

yllwomac=ceil(yllwomac);
ylrwomac=ceil(ylrwomac);

label  ylkpsig = 'Knee pain case - either knee'
       ylrkpsig = 'Right knee pain case'
       yllkpsig = 'Left knee pain case'
       ylkp12mo = 'Knee pain (either) most days past 12 mo'
       ylrkp12m = 'Right knee pain most days past 12 mo'
       yllkp12m = 'Left knee pain most days past 12 mo'
       ylkpact  = 'Knee pain with activity - either knee'
       ylrkpact = 'Right knee pain with activity'
       yllkpact = 'Left knee pain with activity'
       yllwomac = 'L knee activity pain, Likert '
       ylrwomac = 'R knee activity pain, Likert ';
format ylkpsig ylrkpsig yllkpsig ylkp12mo ylrkp12m yllkp12m
       ylkpact ylrkpact yllkpact yndk.;

drop PQAJKP12 pqajkpk pqajlkfs pqajlkst pqajlkbd pqajlkup pqajlkch pqajlkin
      pqajkpk pqajrkfs pqajrkst pqajrkbd pqajkrup pqajrkch pqajrkin
      nmissr nmissl;
run;

```

Appendix IX
Lifestyle Calculated Variables

Investigator Name: Stephen Kritchevsky

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
CURDRNK1	Current Drinking Consumption at Baseline	1=no consumption in the past year. 2 = less than once per week 3 = 1-7 times per week 4 = more than 1 per day	If BQDA12MO=1 then CURDRINK = 1; If BQDA12MO=2 then CURDRINK = 2; If BQDA12MO = 3 or 4 then CURDRINK = 3; If BQDA12MO = 5,6,9,or 10 then CURDRINK = 4;		1=No consumption in past year 2=Less than once per week 3=1-7 times per day 4=More than 1 per day
DRINKER1	Drinking History at Baseline	Those reporting any alcohol consumption at baseline are Current Drinkers, those reporting no consumption at baseline but some consumption in the past are former drinkers, those reporting neither are non-drinkers	If BQDA12MO = 2,3,4,5,6,9, or 10 then DRINKER1 = 1; If BQDA12MO = 1 AND BQMORE = 1 then DRINKER1 = 2; If BQDA12MO = 1 AND BQMORE = 0 then DRINKER=3; ALL OTHER COMBINATIONS ARE MISSING.		0=Never 1=Current 2=Former

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
PACKYR1	Pack-years exposure to cigarettes	<p>Pack years is the average number of packs of cigarettes smoked per day (20 cigarettes/pack) times the number of years smoking.</p> <p>This variable is best used as a categorical variable especially in light of the imputations that are used to reduce the amount of missing data among those who report they never really smoked regularly.</p>	<p>All non-smokers are set to 0 by definition.</p> <p>Years smoked for current smokers is given by current age minus age started smoking.</p> <p>Years smoked for former smokers is given by age-quit minus age started smoking.</p> <p>Pack-years is the years smoked x average amount smoked / 20.</p> <ol style="list-style-type: none"> 1. A few participants had starting ages under the age of 10. These are reset to 10 because this is a more credible age. 2. Several current smokers gave no average amount smoked, but did have a current amount smoked per day. Use the latter in this case. 3. A number of quitters reported never having started smoking regularly, so age at initiation is not available. In two cases an imputation of the age starting is made. In these specific instances even rather erroneous assumptions would not markedly bias the response. Case 1. average number of cigs smoke day is < 5 Case 2. quitters who quit by age 30. 	<p>In a few cases, the number of cigs/day is given as 0. Assuming this means fewer than 1 cig/day, pack years is calculated assuming a 1/2 cig per day average consumption.</p> <p>Remaining cases: missing values on key variables or age of quitting is younger than the age of initiation are set to missing.</p>	pack-years

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
PM50CUR	Percent weight change from age 50	Current measured weight – self-reported weight at age 50 quantity divided by self-reported weight at age 50. Multiply by 100 to give percent.	$((\text{Weight in pounds [p2wtk} * 2.2] - \text{weight at age 50 [BQWT50]}) / \text{BQWT50}) * 100$	If BQWT50 or P2WTK are missing set to missing. If P2wtk >179.9 set to missing. If weight at age 50 is more than 100 pounds different from current weight this is an outlier.	Percent change from age 50 (- means lower now)
SMK1	Smoking Status at Baseline	0 is never smoker; 1 is current smoker; 2 is former smoker	If BQSC100 = 0 then SMK1 = 0; If BQSC100 = 1 and BQSCSNOW=1 then SMK1=1; If BQSC100=1 and BQSCSNOW=0 then SMK1=2;	All other combinations of these variables should be set to missing	0=Never 1=Current 2=Former

The SMK1 documentation was updated on 8/14/07. Now, it consistently reports SMK1=1 as a current smoker and SMK1=2 as a former smoker.

```

*****
*****
*****
** Create calculated variables requested by SKritchevsky for: **
**   SMK1      Smoking status at baseline                **
**   PACKYR1   Pack year exposure to cigarettes          **
**   DRINKER1  Drinker status at baseline               **
**   CURDRNK1  Current drinking status                 **
**   PM50CUR   Percent weight change from age 50        **
*****;

*Pack-Year Calculation;
data bq;
  set current.ylsscreen(keep=bqsc100 bqscageb bqscnsm bqsccgav bqscsnow bqscages
                        bqscgno BQDA12MO BQMORE BQWT50 habcid);
run;
data p2;
  set current.Y1CLNVIS(keep=P2WTK habcid);
run;
data ph;
  set current.ph(keep=habcid cvlage );
run;

data smoke;
  merge bq ph p2;
  by habcid;

  *** Smoking status at baseline ***;
  If BQSC100=0 then SMK1=0; else
  If BQSC100=1 and BQSCSNOW=1 then SMK1=1; else
  If BQSC100=1 and BQSCSNOW=0 then SMK1=2; else
  SMK1=.;
  ** 0=never, 1=current, 2=former **;

  *** Pack Years of Cigarette Use ***;
  PACKYR1=.M;

  if bqsc100=0 then packyr1=0;
  ***If nonsmoker then packyr1 is 0;
  ***Those missing or refusing 100 cigs in life question are set to missing;

  **begin packyear calculations for current/former smokers;
  else if bqsc100 = 1 then do;
    **reset age beginning for those under the age of 10 to 10;
    if 2 < bqscageb < 10 then bqscageb = 10;

    **Case 1: Current smoker, with all present data;
    If bqscsnow =1 then YRSSMOKE= cvlage - bqscageb;
    if yrssmoke > 0 then do;
      if bqscsnow = 1 and bqsccgav > 0 then packyr1 =
ceil(bqsccgav*yrssmoke/20);
      **Case 1b: current smoker missing average amount smoked;
      if bqscsnow = 1 and bqsccgav le 0 and bqscgno > 0 then packyr1=
ceil(bqscgno*yrssmoke/20);
    end;
  end;

```

```

If bqscsnow=0 then do;
  **Case 2: Former smoker, all present and consistent data;
  if bqscages > bqscageb and bqscageb ge 10 then yrssmoke=bqscages-
bqscageb;
  **if started and stopped in the same year set yrssmoke to 1;
  if bqscages > 0 and bqscages = bqscageb then yrssmoke = 1;
  if yrssmoke > 0 and bqscgav > 0 then
packyr1=ceil(bqscgav*yrssmoke/20);
  ** Case 2b: Quitters who never started regularly but never smoked more
than 5 cig/day
  will impute start smoking age of 10 - even if wrong the number
of packyears
  will not be much affected ;
  if bqscnsm = -1 and bqscages > 10 then yrssmoke = bqscages - 10;
  if bqscnsm = -1 and bqscages > 10 and 0 < bqscgav < 5 then packyr1 =
ceil (bqscgav*yrssmoke/20);
  ** Case 2b1: Quitters who never started regularly but quit before the
age of 30
  will impute start smoking age of 10 - even if wrong the number
of packyears
  will not be much affected ;
  if bqscnsm = -1 and 10 < bqscages < 30 then yrssmoke = bqscages - 10;
  if bqscnsm = -1 and 10 < bqscages < 30 and 0 < bqscgav then packyr1 =
ceil (bqscgav*yrssmoke/20);
  ** Case 2c: Quitters who never started regularly and report an average
consumption of 0 cigs/day
  will impute start smoking age of 10 & average consumption of 0.5
cigs/day
  - even if wrong the number of pack years will not be much
affected ;
  if bqscnsm = -1 and bqscages > 10 then yrssmoke = bqscages - 10;
  if bqscnsm = -1 and bqscages > 10 and 0= bqscgav then packyr1 = ceil
(.5*yrssmoke/20);
  end;
end;

*** Drinking status at baseline ***;
IF BQDA12MO=1 AND BQMORE=0 THEN DRINKER1=0; else
IF BQDA12MO in (2,3,4,5,6,9,10) THEN DRINKER1=1; else
IF BQDA12MO=1 AND BQMORE=1 THEN DRINKER1=2; else
DRINKER1=.;
** 0=never, 1=current, 2=former **;

*** Current drinking status ***;
IF BQDA12MO=1 THEN CURDRNK1=1; else
IF BQDA12MO=2 THEN curdrnk1=2; else
IF BQDA12MO in (3,4) THEN curdrnk1=3; else
IF BQDA12MO in (5,6,9,10) THEN curdrnk1=4; else
curdrnk1=.;

*** Percent weight change from age 50 ***;
PM50CUR = (((p2wtk*2.2)-BQWT50)/BQWT50)*100;
if p2wtk>160 or ((p2wtk*2.2)-BQWT50)>100 then PM50CUR=.;
run;
data calc.smoke;
set smoke (keep=HABCID DRINKER1 SMK1 PM50CUR CURDRNK1 PACKYR1);

```

```
label      smk1 = 'Smoking status at baseline'
           packyr1 = 'Pack-years exposure to cigarettes'
           drinker1 = 'Drinking history at baseline'
           curdrnk1 = 'Current drinking consumption at baseline'
           pm50cur = 'Percent wt change from age 50 to baseline';
format     smk1 drinker1 ncffmt.
           curdrnk1 curdrnkf.;
run;
```

Appendix X
Long Distance Corridor Walk Calculated Variables

Investigator Name: Eleanor Simonsick

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
EXCLUDE1	LDCW exclusion code	Variable to capture who was excluded from all walks and why. Note: the first exclusion met is the one that is coded in EXCLUDE1. The code to exclude those with no ECG was placed at the end because some w/no ECG met other exclusions.	if P3SYSYN=1 or P3SYDIYN=1 then HIBP=1; if P3SYSYN=0 and P3SYDIYN=0 then HIBP=0; if P3HA=1 or P3ANG=1 or P3HS=1 then HRTSURG=1; ELSE HRTSURG=0; if P3CP=1 or P3SB=1 or P3FA=1 or P3ANGI=1 then HRTSYMP=1; ELSE HRTSYMP=0; EXCLUDE1=0; if P3MARQ=1 then EXCLUDE1=1; ELSE if HIBP=1 then EXCLUDE1=2; ELSE if HRTSURG=1 then EXCLUDE1=3; ELSE if HRTSYMP=1 then EXCLUDE1=4; ELSE if P3B2PL=1 then EXCLUDE1=5; ELSE if (P3MARQ=.M or P3MARQ=.) and P32STP < 0 then EXCLUDE1=6; ELSE if EXCLUDE1=0 and P32STP < 0 then EXCLUDE1=7	A few participants who were not excluded from but did not complete the 20m split due to elevated heart rate or other reason were given a code 0 for EXCLUDE1 (affects 10 ppts). Some ppts who met exclusion criteria, but were tested anyway had EXCLUDE1 recoded to 0 (unexcluded) (affects 12 ppts)	0=not excluded 1=ECG abnormality 2=elevated standing bp 3=cardiac surgery 4=worsening cardiac symptoms 5=elevated heart rate 6=missing ECG reading 7=no data, reason unknown

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
WHENSTOP	LDCW completion status	Variable to capture who stopped when	It appears that several cases completed the 2 minute walk, but did not go on to the 400m walk because of various symptoms. Distinguishing those who completed the 2 minute from those who did not is unfortunately somewhat arbitrary. In general, if the distance recorded in P32SUM is reasonable given the 20 meter split time (within 75% of the time estimated from the 20m split), I assumed the participant walked the full two minutes. Ten cases were given a code of 3, but were really too close to call and could be considered a 2. There are 31 cases who completed the 2 minute walk and did not have a high ending heart rate, but have no time for the 400m and no evidence of starting the 400m walk. These were coded as 3 for WHENSTOP. If P34LAP \neq 10 then WHENSTOP=4 - started but did not complete the 400 meter walk. Twelve cases have a lap value of 9, not required for P34MTR and P3STOPV, and a value for P34TIME indicative of completing the 400m walk. I assumed they completed the 400m walk and gave them a code of 5 for WHENSTOP.		5=all walks completed 4=400 meter walk only was not completed 3=2 minute walk was completed but 400 meter was not attempted 2=2 minute walk was not completed 1=20 meters of the 2 minute walk were not completed 0=exclusion criteria met, that is EXCLUDE1 > 0
P32SPLI	imputed 20m split time	Imputed version of split time.	Recode 20 m split times that had a value in the minute column (affects 4 ppts). Recode missing or too fast (<0.67 of estimate from 2 minute distance) 20 meter walk. Recoded times based on 2 minute distance and logical errors (affects 7 ppts). Recode questionable 20 m split times - suspect 7 in second column was read as a 1 (affects 1 ppt). Recode 20 m split times that are too slow (>1.33 of estimate from 2 minute distance) double-checked against 400m time (affects 7 ppts)	If P32SPL is missing, then P32SPLI is missing	
P32STPI	imputed 20m step count	Imputed version of 20 meter step count	P32STPI=P32STP; For HABCID=6132, P32STP=3, which is impossible. The split time would suggest 23 steps. if HABCID=6132 then P32STPI=23;	If P32SUM is missing, then P32SUMI is missing	

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
P32SUMI	imputed 2 minute distance	Imputed version of 2 minute walk total distance (40xlaps + meters)	Recodes improbable values, usually miscounted lap in 2 minute walk (some out-of-range), identified from comparing P32SPL, P32SUM, and P34TIME among those completing the 400 meter walk (these cases had a 2 minute distance that was either <0.75 or >1.25 times the distance estimated from the 20 m split and was slower or faster, respectively than the estimate based on 400 m time. Typically 40 meters was added to (or subtracted from) the recorded value, but only if the new sum was between the two estimates or substantially closer to them (affects 109 ppts). Also recodes unlikely values - missing lap count, too short or too far based on P32SPL and P34TIME using the equation P32SUMIX= 285.9961 - 6.0547*P32SPLI - 0.9677*P32STPI - 0.4877*GENDER - 2.6989*RACE - 0.1769*CV1AGE + 5.2544*SITE (R2=.7758) (affects 4 ppts)	If P32STP is missing, then P32STPI is missing	
DID2MINW	completed 2 minute walk yes/no	Dichotomous variable for completing 2 min walk	if WHENSTOP ≥ 3 then DID2MINW=1; ELSE DID2MINW=0	If WHENSTOP is missing, then DID2MINW is missing	0=No 1=Yes
V2MINMTR	meters walked in 2 min - complete only	Number of meters walked for those who completed the 2 min walk only	if WHENSTOP ≥ 3 then V2MINMTR=P32SUMI; ELSE V2MINMTR=.	If WHENSTOP<3, then V2MINMTR is missing, uses imputed version of meters	meters
P34TIMEI	imputed 400m walk time		Recodes were done for the following reasons: (1) Probable 5,6, or 7 misread as a 0 or 1 in the minutes column (affects 6 ppts), (2) time is an order of magnitude too fast based on 2 minute distance (< 0.8 times), possibly a misread minutes column (affects 4 ppts), (3) time is an order of magnitude too slow based on 2 minute distance (> 1.4 times), possibly a misread minutes column (affects 8 ppts)	If P34TIME is missing, then P34TIMEI is missing	sec
DID400MW	completed 400m walk yes/no	Dichotomous variable for completing 400 m walk	if WHENSTOP=5 then DID400MW=1; ELSE DID400MW=0	If WHENSTOP<5, then DID400MW = 0	0=No 1=Yes

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
V400TIME	time to walk 400m - complete only	Time to walk 400 m for only those who completed the 400 meter walk	if WHENSTOP=5 then V400TIME=P34TIMEI; ELSE V400TIME=.	If WHENSTOP<5, then V400TIME is missing, uses imputed version of time	sec
P3STOPVI	imputed reason for stopping walk	Imputed version of stop value (reason for stopping walk)	<p>Recode participant who had no value for p3stopv, but had an elevated HR (affects 1 ppt)</p> <p>Recode to '1' cases that had a code 6 for p3stopv, but had an elevated HR (affects 2 pts)</p> <p>Recode to '.N:not required' cases that met exclusion criteria, had no walk data, but a value for P3STOPV. For most, the exclusion and reason for stopping were consistent (affects 8 pts)</p> <p>*Sixteen cases did not complete the 400 m walk, but have .N for P3STOPV.</p> <p>Three cases did not start the 400 m walk and .N for P3STOPV; I believe I recoded these to 7 - unknown</p> <p>*Several cases had a code '1' for P32PLSI, but a .A for P3STOPVI. These cases have P3STOPVI recoded to '1'. Some cases had a '6:Other' FOR P3STOPVI. These have been left as is.</p> <p>If WHENSTOP=3 and P32PLSI=1 and P3STOPVI < 0 then P3STOPVI=1;</p>	<p>If 0 < P34LAP < 10 and P34BPM > 135 and P3STOPV=.M then P3STOPVI=1;</p> <p>If 0 < P34LAP < 10 and P34BPM > 135 and P3STOPV=.N then P3STOPVI=1;</p>	<p>1=HR>135 bpm</p> <p>2=chest pain</p> <p>3=shortness of breath</p> <p>4=felt faint</p> <p>5=leg pain</p> <p>6=other</p>
MTR20SD	walking speed (m/sec) over 20m	Walking speed over 2 minutes for only those who completed 2 minute walk	if WHENSTOP ≥ 2 then MTR20SD=ROUND(20/P32SPLI, .01); ELSE MTR20SD=.	If WHENSTOP<2, then MTR20SD is missing, uses imputed version of split time	m/sec
TWOMINS	walking speed (m/sec) over 2 min	Walking speed over 2 minutes for only those who completed 2 minutes	if WHENSTOP ≥ 3 then TWOMINS=ROUND(P32SUMI/120, .01); ELSE TWOMINS=.	If WHENSTOP<3, then TWOMINS is missing, uses imputed version of time	m/sec
MTR400SD	walking speed (m/sec) over 400m	Walking speed over 400 meters for only those who completed 400 meters	if WHENSTOP=5 then MTR400SD=ROUND(400/P34TIMEI, .01); ELSE MTR400SD=.	If WHENSTOP<5, then MTR400SD is missing, uses imputed version of distance	m/sec

```

*****
*****
*****
*****
**   Code to create LDCW and 2-minute walk variables
**
**   Created by Eleanor Simonsick
**
**
**   EXCLUDE1='LDCW EXCLUSION CODE'
**
**   WHENSTOP='LDCW COMPLETION STATUS'
**
**   P32SPLI='CORRECTED 20M SPLIT TIME'
**
**   P32STPI='CORRECTED 20M STEP COUNT'
**
**   P32SUMI='CORRECTED 2 MINUTE DISTANCE'
**
**   DID2MINW='COMPLETED 2 MINUTE WALK YES/NO'
**
**   V2MINMTR='METERS WALKED IN 2 MIN - COMPLETE ONLY'
**
**   P34TIMEI='CORRECTED 400M WALK TIME'
**
**   DID400MW='COMPLETED 400M WALK YES/NO'
**
**   V400TIME='TIME TO WALK 400M - COMPLETE ONLY'
**
**   P3STOPVI='CORRECTED REASON FOR STOPPING WALK'
**
**   MTR20SD='WALKING SPEED (M/SEC) OVER 20M'
**
**   TWOMINS='WALKING SPEED (M/SEC) OVER 2 MIN'
**
**   MTR400SD='WALKING SPEED (M/SEC) OVER 400M'
**
*****
*****
*****
*****;
DATA A;
  merge current.y1clnvis daf.ph;
  by habcid;

*LDCW PROGRAM CODE;
*EXCLUSION RECODES;
IF P3SYSYN=1 OR P3SYDIYN=1 THEN HIBP=1;
IF P3SYSYN=0 AND P3SYDIYN=0 THEN HIBP=0;
IF P3HA=1 OR P3ANG=1 OR P3HS=1 THEN HRYSURG=1;
ELSE HRYSURG=0;
IF P3CP=1 OR P3SB=1 OR P3FA=1 OR P3ANGI=1 THEN
HRYSYMP=1; ELSE HRYSYMP=0;

*CREATION OF A SINGLE VARIABLE TO CAPTURE WHO WAS EXCLUDED FROM ALL WALKS AND
WHY;

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EXCLUDE1=0;

*EXCLUDE1 CODES
0=NOT EXCLUDED
1=ECG ABNORMALITY
2=ELEVATED STANDING BP
3=CARDIAC SURGERY
4=WORSENING CARDIAC SYMPTOMS
5=ELEVATED HEART RATE
6=MISSING ECG READING
7=NO DATA, REASON UNKNOWN;

IF P3MARQ=1 THEN EXCLUDE1=1;
ELSE IF HIBP=1 THEN EXCLUDE1=2;
ELSE IF HRYSURG=1 THEN EXCLUDE1=3;
ELSE IF HRYSYMP=1 THEN EXCLUDE1=4;
ELSE IF P3B2PL=1 THEN EXCLUDE1=5;
*CODE TO EXCLUDE THOSE WITH NO ECG. IT'S PLACED HERE B/C SOME W/NO ECG MET OTHER
EXCLUSIONS;
ELSE IF (P3MARQ=.M OR P3MARQ=.) AND P32STP LT 0 THEN EXCLUDE1=6;
*NO DATA, REASON UNKNOWN;
ELSE IF EXCLUDE1=0 AND P32STP LT 0 THEN EXCLUDE1=7;

*PARTICIPANT(S) WHO WERE NOT EXCLUDED FROM BUT DID NOT COMPLETE 20M DUE TO
ELEVATED HR OR
OTHER REASON;
IF HABCID=1355 OR HABCID=1545
OR HABCID=2058 OR HABCID=2085 OR HABCID=2563 OR HABCID=5484
OR HABCID=5722 OR HABCID=6045 OR HABCID=6125 OR HABCID=6266 THEN EXCLUDE1=0;

*CODE TO CHANGE PERSONS WHO MET EXCLUSION CRITERIA, BUT
WERE TESTED ANYWAY TO UNEXCLUDED;
IF HABCID=1000 OR HABCID=1109 OR HABCID=1196 OR HABCID=1283 OR HABCID=1312
OR HABCID=1335 OR HABCID=1389 OR HABCID=1403 OR HABCID=2108 OR HABCID=2524
OR HABCID=5106 OR HABCID=5929 THEN EXCLUDE1=0;

*RECODES FOR 20 METER WALK DATA. VARIABLE LABEL ENDING IN I INDICATES
THE IMPUTED VERSION;
P32SPLI=P32SPL;
P32STPI=P32STP;
*RECODES OF 20 M SPLIT TIMES THAT HAD A VALUE IN THE MINUTE COLUMN;
IF HABCID=1597 THEN P32SPLI='0:00:12.04'T;
IF HABCID=1990 THEN P32SPLI='0:00:09.37'T;
IF HABCID=2091 THEN P32SPLI='0:00:18.14'T;
IF HABCID=6511 THEN P32SPLI='0:00:20.95'T;
IF HABCID=6132 THEN P32STPI=23;
*MISSING OR TOO FAST (LT .67 OF ESTIMATE FROM 2 MINUTE DISTANCE)
20 METER WALK RECODES - TIMES BASED ON 2 MINUTE DISTANCE AND LOGICAL
ERRORS;
IF HABCID=1000 THEN P32SPLI='0:00:12.83'T;
IF HABCID=1715 THEN P32SPLI='0:00:13.26'T;
IF HABCID=1902 THEN P32SPLI='0:00:12.44'T;
IF HABCID=1966 THEN P32SPLI='0:00:17.14'T;
IF HABCID=5147 THEN P32SPLI='0:00:12.90'T;
IF HABCID=5432 THEN P32SPLI='0:00:16.11'T;
IF HABCID=5983 THEN P32SPLI='0:00:14.52'T;
*RECODES OF QUESTIONABLE 20 M SPLIT TIMES - SUSPECT 7 IN SECOND

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COLUMN WAS READ AS A 1;
IF HABCID=1896 THEN P32SPLI='0:00:17.74'T;
*RECODES OF 20 M SPLIT TIMES THAT ARE TOO SLOW (GT 1.33 OF ESTIMATE FROM
2 MINUTE DISTANCE) DOUBLE-CHECKED AGAINST 400M TIME;
IF HABCID=1218 THEN P32SPLI='0:00:25.16'T;
IF HABCID=1508 THEN P32SPLI='0:00:24.52'T;
IF HABCID=2598 THEN P32SPLI='0:00:24.20'T;
IF HABCID=5083 THEN P32SPLI='0:00:20.89'T;
IF HABCID=5176 THEN P32SPLI='0:00:14.90'T;
IF HABCID=5506 THEN P32SPLI='0:00:20.98'T;
IF HABCID=6482 THEN P32SPLI='0:00:20.78'T;

*RECODES FOR THE 2 MIN WALK;
P3STOPVI=P3STOPV;
P32SUMI=P32SUM;
*NOTE - THE FOLLOWING CASES HAD NO VALUE FOR P3STOPV, BUT HAD AN ELEVATED HR;
IF HABCID=1982 THEN P3STOPVI=1;
*NOTE THESE CASES HAD A CODE 6 FOR P3STOPV, BUT SINCE THEY HAD AN ELEVATED
HR THEY HAVE BEEN RECODED TO 1;
IF HABCID=1002 OR HABCID=2169 THEN P3STOPVI=1;
*NOTE - THESE CASES MET EXCLUSION CRITERIA, HAD NO WALK DATA, BUT A VALUE
FOR P3STOPV. FOR MOST, THE EXCLUSION AND REASON FOR STOPPING WERE CONSISTENT;
IF HABCID=1536 OR HABCID=1627 OR HABCID=1663 OR HABCID=2010
OR HABCID=2020 OR HABCID=2034 OR HABCID=2287 OR HABCID=6483 THEN P3STOPVI=.N;

*RECODES OF IMPROBABLE VALUES, USUALLY MISCOUNTED LAP IN 2 MINUTE
WALK (SOME OUT-OF-RANGE), IDENTIFIED
FROM COMPARING P32SPL, P32SUM, AND P34TIME AMONG THOSE COMPLETING THE
400 METER WALK (THESE CASES HAD A 2 MINUTE DISTANCE THAT WAS EITHER
LT .75 OR GT 1.25 TIMES THE DISTANCE ESTIMATED FROM THE 20 M SPLIT AND
WAS SLOWER OR FASTER, RESPECTIVELY THAN THE ESTIMATE BASED ON 400 M TIME.
TYPICALLY 40 METERS WAS ADDED TO (OR SUBTRACTED FROM)
THE RECORDED VALUE, BUT ONLY IF THE NEW
SUM WAS BETWEEN THE TWO ESTIMATES OR SUBSTANTIALLY CLOSER TO THEM;
IF HABCID=1007 THEN P32SUMI=185;
IF HABCID=1026 THEN P32SUMI=105;
IF HABCID=1060 THEN P32SUMI=171;
IF HABCID=1069 THEN P32SUMI=143;
IF HABCID=1074 THEN P32SUMI=172;
IF HABCID=1082 THEN P32SUMI=179;
IF HABCID=1144 THEN P32SUMI=193;
IF HABCID=1153 THEN P32SUMI=201;
IF HABCID=1195 THEN P32SUMI=162;
IF HABCID=1196 THEN P32SUMI=171;
IF HABCID=1197 THEN P32SUMI=167;
IF HABCID=1210 THEN P32SUMI=196;
IF HABCID=1222 THEN P32SUMI=170;
IF HABCID=1264 THEN P32SUMI=150;
IF HABCID=1274 THEN P32SUMI=203;
IF HABCID=1306 THEN P32SUMI=140;
IF HABCID=1479 THEN P32SUMI=140;
IF HABCID=1485 THEN P32SUMI=169;
IF HABCID=1573 THEN P32SUMI=163;
IF HABCID=1574 THEN P32SUMI=129;
IF HABCID=1612 THEN P32SUMI=143;
IF HABCID=1617 THEN P32SUMI=182;
IF HABCID=1626 THEN P32SUMI=140;

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IF HABCID=1643 THEN P32SUMI=122;
IF HABCID=1664 THEN P32SUMI=141;
IF HABCID=1679 THEN P32SUMI=122;
IF HABCID=1681 THEN P32SUMI=164;
IF HABCID=1686 THEN P32SUMI=138;
IF HABCID=1699 THEN P32SUMI=124;
IF HABCID=1730 THEN P32SUMI=148;
IF HABCID=1737 THEN P32SUMI=140;
IF HABCID=1741 THEN P32SUMI=144;
IF HABCID=1751 THEN P32SUMI=147;
IF HABCID=1819 THEN P32SUMI=146;
IF HABCID=1896 THEN P32SUMI=174;
IF HABCID=1916 THEN P32SUMI=157;
IF HABCID=2024 THEN P32SUMI=161;
IF HABCID=2032 THEN P32SUMI=162;
IF HABCID=2040 THEN P32SUMI=130;
IF HABCID=2068 THEN P32SUMI=159;
IF HABCID=2275 THEN P32SUMI=184;
IF HABCID=2338 THEN P32SUMI=193;
IF HABCID=2416 THEN P32SUMI=212;
IF HABCID=2494 THEN P32SUMI=148;
IF HABCID=2497 THEN P32SUMI=139;
IF HABCID=2515 THEN P32SUMI=191;
IF HABCID=2586 THEN P32SUMI=152;
IF HABCID=2618 THEN P32SUMI=155;
IF HABCID=2637 THEN P32SUMI=122;
IF HABCID=5013 THEN P32SUMI=147;
IF HABCID=5017 THEN P32SUMI=198;
IF HABCID=5043 THEN P32SUMI=142;
IF HABCID=5059 THEN P32SUMI=155;
IF HABCID=5064 THEN P32SUMI=114;
IF HABCID=5068 THEN P32SUMI=184;
IF HABCID=5069 THEN P32SUMI=155;
IF HABCID=5075 THEN P32SUMI=80;
IF HABCID=5078 THEN P32SUMI=129;
IF HABCID=5088 THEN P32SUMI=123;
IF HABCID=5094 THEN P32SUMI=231;
IF HABCID=5097 THEN P32SUMI=107;
IF HABCID=5113 THEN P32SUMI=124;
IF HABCID=5114 THEN P32SUMI=178;
IF HABCID=5145 THEN P32SUMI=165;
IF HABCID=5147 THEN P32SUMI=146;
IF HABCID=5176 THEN P32SUMI=120;
IF HABCID=5181 THEN P32SUMI=166;
IF HABCID=5206 THEN P32SUMI=140;
IF HABCID=5208 THEN P32SUMI=126;
IF HABCID=5229 THEN P32SUMI=126;
IF HABCID=5230 THEN P32SUMI=147;
IF HABCID=5233 THEN P32SUMI=169;
IF HABCID=5238 THEN P32SUMI=147;
IF HABCID=5248 THEN P32SUMI=139;
IF HABCID=5278 THEN P32SUMI=167;
IF HABCID=5295 THEN P32SUMI=195;
IF HABCID=5348 THEN P32SUMI=128;
IF HABCID=5363 THEN P32SUMI=149;
IF HABCID=5397 THEN P32SUMI=175;
IF HABCID=5420 THEN P32SUMI=114;
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IF HABCID=5435 THEN P32SUMI=161;
IF HABCID=5466 THEN P32SUMI=160;
IF HABCID=5589 THEN P32SUMI=116;
IF HABCID=5642 THEN P32SUMI=183;
IF HABCID=5653 THEN P32SUMI=207;
IF HABCID=5715 THEN P32SUMI=196;
IF HABCID=5831 THEN P32SUMI=160;
IF HABCID=5852 THEN P32SUMI=237;
IF HABCID=5882 THEN P32SUMI=160;
IF HABCID=5895 THEN P32SUMI=110;
IF HABCID=5909 THEN P32SUMI=145;
IF HABCID=5911 THEN P32SUMI=159;
IF HABCID=5919 THEN P32SUMI=134;
IF HABCID=5945 THEN P32SUMI=157;
IF HABCID=6031 THEN P32SUMI=200;
IF HABCID=6074 THEN P32SUMI=120;
IF HABCID=6151 THEN P32SUMI=160;
IF HABCID=6204 THEN P32SUMI=141;
IF HABCID=6205 THEN P32SUMI=167;
IF HABCID=6206 THEN P32SUMI=122;
IF HABCID=6264 THEN P32SUMI=181;
IF HABCID=6305 THEN P32SUMI=210;
IF HABCID=6356 THEN P32SUMI=135;
IF HABCID=6379 THEN P32SUMI=170;
IF HABCID=6403 THEN P32SUMI=147;
IF HABCID=6412 THEN P32SUMI=122;
IF HABCID=6449 THEN P32SUMI=162;
IF HABCID=6472 THEN P32SUMI=156;
IF HABCID=6537 THEN P32SUMI=192;

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*IMPUTATION OF UNLIKELY VALUES - MISSING LAP COUNT, TOO SHORT OR TOO FAR BASED ON

P32SPL AND P34TIME;

IF HABCID=1120 OR HABCID=1277

OR HABCID=6049 OR HABCID=6126

THEN DO;

P32SUMIX= 285.9961 - 6.0547*P32SPLI - 0.9677*P32STPI - 0.4877*GENDER
- 2.6989*RACE - 0.1769*CVIAGE + 5.2544*SITE;

P32SUMI=ROUND(P32SUMIX, 1); END;

*NOTE - THE R-SQUARE FOR THE ABOVE REGRESSION EQUATION IS .7758 AND ALL
VARIABLES EXCEPT GENDER (P=.412) AND CVIAGE (P=.051) ARE SIGNIFICANT AT P <
.0001. TO DERIVE THE

ESTIMATING EQUATION, P32SUMI WAS SET TO MISSING FOR THE ABOVE IDS;

*POST 2 MINUTE WALK RECODES;

P32PLSI=P32PLS;

IF HABCID=5217 OR HABCID=5881 THEN P32PLSI=0;

*NOTE - SOME CASES THAT HAD P32PLSI=1 HAD AN ENDING BP BELOW 135;

IF HABCID=5123 OR HABCID=5174 OR HABCID=5295 THEN P32PLSI=0;

*NOTE - THESE CASES HAD AN ENDING BP ABOVE 135 BUT STARTED THE 400M ANYWAY;

*400 METER WALK RECODES;

P34MTRI=P34MTR;

P34TIMEI=P34TIME;

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IF HABCID=2431 THEN P34LAP=10;
IF 0 < P34LAP < 10 AND P34MTRI=.N THEN P34MTRI=0;
*NOTE - THIS CODE ELIMINATES SOME BUT NOT ALL THE .N FOR THOSE WHO
STOPPED THE 400M WALK - THESE CASES STILL SHOW NOT REQUIRED AND HAVE
BEEN SET TO 7=UNKNOWN BELOW - 1260 2610 2627 2630 5057 5109 5219
5252 5277 5342 5592 6011 6205 6222 6534 6558;
IF 0 < P34LAP < 10 AND P34BPM GE 135 AND P3STOPV=.M THEN P3STOPVI=1;
IF 0 < P34LAP < 10 AND P34BPM GE 135 AND P3STOPV=.N THEN P3STOPVI=1;

*NOTE - THESE CASES DID THE 2 MINUTE WALK, BUT HAVE NO VALUE FOR P3STOPV,
P34LAP, P34MTR, OR
P34TIME, BUT HAVE A VALUE FOR P34BPM WHICH IS WELL BELOW 135 - 1257 1352 5001. I
HAVE
ASSUMED THEY STARTED THE 400M WALK BUT DID NOT COMPLETE IT.;

*NOTE THE FOLLOWING CASES APPEAR TO HAVE COMPLETED THE 400M WALK, BUT HAVE
NO TIME 1000 1041 1090 1183 1360 2204 2496 5309 5440 6441. ANOTHER SUBSET
PROBABLY
HAD A 5,6, OR 7 MISREAD AS A 0 OR 1 IN THE MINUTES COLUMN - 1017 1072 1850
1862 5487 5489;

IF HABCID=1017 THEN P34TIMEI='0:06:05.48'T;
IF HABCID=1072 THEN P34TIMEI='0:05:05.13'T;
IF HABCID=1850 THEN P34TIMEI='0:04:51.84'T;
IF HABCID=1862 THEN P34TIMEI='0:05:05.81'T;
IF HABCID=5487 THEN P34TIMEI='0:06:05.15'T;
IF HABCID=5489 THEN P34TIMEI='0:06:04.35'T;

*FOR THESE CASES THE TIMES ARE AN ORDER OF MAGNITUDE TOO FAST BASED ON
2 MINUTE DISTANCE (< .8 TIMES), POSSIBLY A MISREAD MINUTES COLUMN;
IF HABCID=1246 THEN P34TIMEI='0:05:51.84'T;
IF HABCID=2497 THEN P34TIMEI='0:06:41.00'T;
IF HABCID=6013 THEN P34TIMEI='0:07:08.38'T;
IF HABCID=6219 THEN P34TIMEI='0:06:16.88'T;

*FOR THESE CASES THE TIMES ARE AN ORDER OF MAGNITUDE TOO SLOW BASED ON
2 MINUTE DISTANCE (> 1.4 TIMES), POSSIBLY A MISREAD MINUTES COLUMN;
IF HABCID=1110 THEN P34TIMEI='0:04:42.19'T;
IF HABCID=1882 THEN P34TIMEI='0:05:11.19'T;
IF HABCID=2069 THEN P34TIMEI='0:06:30.03'T;
IF HABCID=2550 THEN P34TIMEI='0:06:56.04'T;
IF HABCID=5284 THEN P34TIMEI='0:05:48.15'T;
IF HABCID=5929 THEN P34TIMEI='0:07:09.24'T;
IF HABCID=6231 THEN P34TIMEI='0:06:15.94'T;
IF HABCID=6368 THEN P34TIMEI='0:06:21.87'T;

*ESTIMATED 20M SPLIT BASED ON 2 MINUTE DISTANCE;
P32SPLE=2400/P32SUM; P32SPLEI=2400/P32SUMI;
*ESTIMATED 400M TIME BASED ON 2 MINUTE DISTANCE;
P34TIMEE=48000/P32SUMI;
P34TIME8=.8*P34TIMEE;

*CREATION OF A SINGLE VARIABLE THAT CAPTURES WHO STOPPED WHEN.
WHENSTOP=5 IF ALL WALKS COMPLETED
WHENSTOP=4 IF 400 METER WALK ONLY WAS NOT COMPLETED
WHENSTOP=3 IF 2 MINUTE WALK WAS COMPLETED BUT 400 METER WAS NOT ATTEMPTED
WHENSTOP=2 IF 2 MINUTE WALK WAS NOT COMPLETED

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WHENSTOP=1 IF 20 METERS OF THE 2 MINUTE WALK WERE NOT COMPLETED
WHENSTOP=0 IF EXCLUSION CRITERIA MET, THAT IS EXCLUDE1 GT 0;

WHENSTOP=5;
IF EXCLUDE1 GT 0 THEN WHENSTOP=0;

ELSE IF HABCID=1355 OR HABCID=1545
OR HABCID=2058 OR HABCID=2085 OR HABCID=2227 OR HABCID=2563 OR HABCID=5484
OR HABCID=5722 OR HABCID=6045 OR HABCID=6125 OR HABCID=6266 THEN WHENSTOP=1;

ELSE IF P32SUMI LT 0 AND P3STOPVI GE 1 THEN WHENSTOP=2;
ELSE IF P32PLS2=1 AND P3STOPVI=1 THEN WHENSTOP=2;
ELSE IF HABCID=1068 OR HABCID=1951 OR HABCID=1982 OR HABCID=2169
OR HABCID=2170
OR HABCID=5526 OR HABCID=5655 OR HABCID=6068 OR HABCID=6272
OR HABCID=6280
THEN WHENSTOP=2;

*NOTE - IT APPEARS THAT SEVERAL CASES COMPLETED THE 2 MINUTE WALK, BUT DID NOT GO ON TO THE 400M WALK BECAUSE OF VARIOUS SYMPTOMS. DISTINGUISHING THOSE WHO COMPLETED THE 2 MINUTE FROM THOSE WHO DID NOT IS UNFORTUNATELY SOMEWHAT ARBITRARY. IN GENERAL, IF THE DISTANCE RECORDED IN P32SUM IS REASONABLE GIVEN THE 20 METER SPLIT TIME (WITHIN 75% OF THE TIME ESTIMATED FROM THE 20M SPLIT), I ASSUMED THE PARTICIPANT WALKED THE FULL TWO MINUTES. THE FOLLOWING CASES WERE GIVEN A CODE OF 3, BUT WERE REALLY TOO CLOSE TO CALL AND COULD BE CONSIDERED A 2 - 1091 1922 5401 5445 5526 6006 6111 6158 6172 6342;

ELSE IF P32PLSI=1 THEN WHENSTOP=3;
ELSE IF HABCID=1001 OR HABCID=1003
OR HABCID=1339 OR HABCID=1466 OR HABCID=1603
OR HABCID=1951 OR HABCID=1972 OR HABCID=1995
OR HABCID=2039 OR HABCID=2057 OR HABCID=2151 OR HABCID=2271 OR HABCID=2436
OR HABCID=2439 OR HABCID=2498 OR HABCID=2599
OR HABCID=5216 OR HABCID=5239 OR HABCID=5401
OR HABCID=5425 OR HABCID=5485
OR HABCID=5566 OR HABCID=5921
OR HABCID=6008 OR HABCID=6087 OR HABCID=6117
OR HABCID=6172 OR HABCID=6341 OR HABCID=6342
OR HABCID=6443 OR HABCID=6535
OR HABCID=6540 OR HABCID=6563 THEN WHENSTOP=3;

*NOTE - OF THOSE WHO COMPLETED THE 2 MINUTE WALK AND DID NOT HAVE A HIGH ENDING HEART RATE, BUT HAVE NO TIME FOR THE 400M, THE ABOVE CASES HAVE NO EVIDENCE OF STARTING THE 400M WALK;

ELSE IF P34LAP NE 10 THEN WHENSTOP=4;

*NOTE THE FOLLOWING CASES HAVE A LAP VALUE OF 9, NOT REQUIRED FOR P34MTR AND P3STOPV AND A VALUE FOR P34TIME INDICATIVE OF COMPLETING THE 400M;

IF HABCID=1006 OR HABCID=1012 OR HABCID=1013 OR HABCID=1015 OR HABCID=1018
OR HABCID=1147 OR HABCID=1176 OR HABCID=1329 OR HABCID=1351 OR HABCID=1354
OR HABCID=1361 OR HABCID=2485 THEN WHENSTOP=5;

*SEE ABOVE NOTE;

IF HABCID=1922 OR HABCID=5003 OR HABCID=5400 OR HABCID=6006
OR HABCID=6111 OR HABCID=6158 THEN WHENSTOP=3;

*NOTE THESE CASES HAD A LAP VALUE OF 10 BUT HAD A VALUE OF 1 FOR P3STOPV,
BUT APPEAR TO HAVE COMPLETED THE 400M NEVERTHELESS AS THEIR RECORDED TIME
IS THE SAME OR SLOWER THAN THEIR PREDICTED TIME
1097 1172 1207 5132 5332 5662 5694 5695 5916. FOR THESE CASES P3STOPVI IS
SET TO N:NOT REQUIRED;
IF HABCID=1097 OR HABCID=1172 OR HABCID=1207 OR HABCID=5132 OR HABCID=5332
OR HABCID=5662 OR HABCID=5694 OR HABCID=5695 OR HABCID=5916 THEN P3STOPVI=.N;

*THE FOLLOWING CASES COMPLETED AT LEAST 320 METERS, BUT WERE STOPPED BECAUSE
OF AN ELEVATED HR. IN LIGHT OF THE CHANGES INSTITUTED FOR Y4 AND TO
MAXIMIZE SAMPLE SIZES, THESE CASES ARE TREATED AS IF THEY COMPLETED THE 400M
AND AN ESTIMATED TIME IS COMPUTED;

IF HABCID=1262 THEN P34TIMEI=(400/399)*P34TIME;
IF HABCID=1563 THEN P34TIMEI=(400/369)*P34TIME;
IF HABCID=1571 THEN P34TIMEI=(400/320)*P34TIME;
IF HABCID=1666 THEN P34TIMEI=(400/340)*P34TIME;
IF HABCID=1721 THEN P34TIMEI=(400/320)*P34TIME;
IF HABCID=1730 THEN P34TIMEI=(400/329)*P34TIME;
IF HABCID=1920 THEN P34TIMEI=(400/321)*P34TIME;
IF HABCID=2063 THEN P34TIMEI=(400/359)*P34TIME;
IF HABCID=2131 THEN P34TIMEI=P34TIMEE;
IF HABCID=2136 THEN P34TIMEI=(400/368)*P34TIME;
IF HABCID=2354 THEN P34TIMEI=(400/382)*P34TIME;
IF HABCID=5412 THEN P34TIMEI=(400/381)*P34TIME;
IF HABCID=5618 THEN P34TIMEI=(400/352)*P34TIME;
IF HABCID=5723 THEN P34TIMEI=(400/351)*P34TIME;
IF HABCID=5828 THEN P34TIMEI=(400/332)*P34TIME;
IF HABCID=5840 THEN P34TIMEI=(400/344)*P34TIME;
IF HABCID=5951 THEN P34TIMEI=(400/322)*P34TIME;
IF HABCID=5969 THEN P34TIMEI=(400/372)*P34TIME;
IF HABCID=6137 THEN P34TIMEI=(400/339)*P34TIME;
IF HABCID=6152 THEN P34TIMEI=(400/344)*P34TIME;
IF HABCID=6160 THEN P34TIMEI=(400/360)*P34TIME;

IF HABCID=1262 OR HABCID=1535 OR HABCID=1571 OR HABCID=1666 OR HABCID=1721
OR HABCID=1730 OR HABCID=1920 OR HABCID=2063 OR HABCID=2131 OR HABCID=2136
OR HABCID=2354 OR HABCID=5412 OR HABCID=5618 OR HABCID=5723 OR HABCID=5828
OR HABCID=5840 OR HABCID=5951 OR HABCID=5969 OR HABCID=6137 OR HABCID=6152
OR HABCID=6160 THEN WHENSTOP=5;

*THE FOLLOWING DID NOT COMPLETE THE 400M WALK, BUT HAVE .N FOR P3STOPV
1260 2610 2627 2630 5057 5109 5178 5219 5252
5277 5342 5592 6011 6222 6534 6558. THESE CASES DID NOT START THE 400M
AND HAVE .N FOR P3STOPV 1001 2057 5216;

*SEVERAL CASES HAD A CODE 1 FOR P32PLSI, BUT AN A FOR P3STOPVI. THESE CASES
HAVE P3STOPVI RECODED TO 1 BELOW. SOME CASES HAD A 6, OTHER FOR P3STOPVI.
THESE HAVE BEEN LEFT AS IS;
IF WHENSTOP=3 AND P32PLSI=1 AND P3STOPVI LT 0 THEN P3STOPVI=1;

IF WHENSTOP GE 2 THEN MTR20SD=ROUND(20/P32SPLI, .01); ELSE MTR20SD=.;
IF WHENSTOP GE 3 THEN TWOMINS=ROUND(P32SUMI/120, .01); ELSE TWOMINS=.;
IF WHENSTOP=5 THEN MTR400SD=ROUND(400/P34TIMEI, .01); ELSE MTR400SD=.;

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IF WHENSTOP GE 3 THEN DID2MINW=1; ELSE DID2MINW=0;
IF WHENSTOP GE 3 THEN V2MINMTR=P32SUMI; ELSE V2MINMTR=.;
IF WHENSTOP=5 THEN DID400MW=1; ELSE DID400MW=0;
IF WHENSTOP=5 THEN V400TIME=P34TIMEI; ELSE V400TIME=.;
*CREATES UNKNOWN CODE FOR REASON FOR STOPPING;
IF 0 < WHENSTOP < 5 AND P3STOPVI LT 0 THEN P3STOPVI=7;

*CODE TO CREATE A FOUR CATEGORY VARIABLE OF SEX AND RACE WHERE WM=0, BM=1,
WF=2, AND BF=3;
IF GENDER=1 AND RACE=1 THEN RACESEX=0; IF GENDER=1 AND RACE=2
THEN RACESEX=1; IF GENDER=2 AND RACE=1 THEN RACESEX=2; IF GENDER=2
AND RACE=2 THEN RACESEX=3;

FORMAT P32SPLI P34TIMEI P34TIMEE TIME11.2;
IF SIXMPACE=0 THEN SIXMPACE=.;
IF NWPACE=0 THEN NWPACE=.;

LABEL
EXCLUDE1='LDCW EXCLUSION CODE'
WHENSTOP='LDCW COMPLETION STATUS'
P32SPLI='CORRECTED 20M SPLIT TIME'
P32STPI='CORRECTED 20M STEP COUNT'
P32SUMI='CORRECTED 2 MINUTE DISTANCE'
DID2MINW='COMPLETED 2 MINUTE WALK YES/NO'
V2MINMTR='METERS WALKED IN 2 MIN - COMPLETE ONLY'
P34TIMEI='CORRECTED 400M WALK TIME'
DID400MW='COMPLETED 400M WALK YES/NO'
V400TIME='TIME TO WALK 400M - COMPLETE ONLY'
P3STOPVI='CORRECTED REASON FOR STOPPING WALK'
MTR20SD='WALKING SPEED (M/SEC) OVER 20M'
TWOMINS='WALKING SPEED (M/SEC) OVER 2 MIN'
MTR400SD='WALKING SPEED (M/SEC) OVER 400M';

IF V400TIME LE 240 THEN V400CAT=0;
IF 240 LT V400TIME LE 270 THEN V400CAT=1;
IF 270 LT V400TIME LE 300 THEN V400CAT=2;
IF 300 LT V400TIME LE 330 THEN V400CAT=3;
IF 330 LT V400TIME LE 360 THEN V400CAT=4;
IF V400TIME GT 360 THEN V400CAT=5;

P32SUME=(120/P32SPL)*20;
P32SUME8=.8*P32SUME;
P32SUM67=.67*P32SUME;
P32SUM33=1.33*P32SUME;
P32SUME2=120*(400/P34TIME);

RUN;

DATA calc.LDCW_V2;

SET A(KEEP=HABCID EXCLUDE1 WHENSTOP P32SPLI P32STPI
MTR20SD P32SUMI P3STOPVI TWOMINS MTR400SD DID2MINW V2MINMTR
DID400MW P34TIMEI V400TIME);
format DID2MINW DID400MW yndk. EXCLUDE1 excluded. WHENSTOP stop. P3STOPVI
walk6X.;
RUN;

```

Appendix XI
Performance Measure Calculated Variables

Investigator Name: Eleanor Simonsick

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
ABLE5CS	Did 5 chair stands	Indicator variable for able to do 5 chair stands. The scoring algorithm sets ABLE5CS to 0 if repeated stands were completed, but single chair stand coded as “rises using arms”	If single chair stand missing or refused and repeated stands are also missing, or if no suitable chair was available, or participant refused the single chair stand, then ABLE5CS is missing. If single chair is not attempted/unable, attempted and unable, or rises using arms, then ABLE5CS=0. If complete single stand, but not attempted/unable, refused, or unable to complete 5 stands, then ABLE5CS=0. If able to complete both single stand and 5 repeated stands, then ABLE5CS=1.		0=No 1=Yes
CHR5PACE	Chair stands per second	Chair stands per second	CHR5PACE=5 divided by the time to do 5 stands (in seconds) rounded to 1 decimal	If ABLE5CS=0 then CHR5PACE=0	sec ⁻¹
CAT5CS	EPESE score for chair stands		Round time for 5 stands to nearest decimal if ABLE5CS=0 then CAT5CS=0; if ABLE5CS=1 then: if time ≥16.7 then CAT5CS=1; if 13.7 ≤ time ≤ 16.6 then CAT5CS=2; if 11.2 ≤ time ≤ 13.6 then CAT5CS=3; if time ≤ 11.1 then CAT5CS=4	If ABLE5CS=1 and time <0 then CAT5CS=.	Scale from 0 (worst performance) to 4 (best performance)

Performance Measure Calculated Variables

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
SBSCORE	EPESE score for standing balance	<p>EPESE categorical score for summary of standing balance results.</p> <p>The scoring algorithm reflects the EPESE administration procedure in which those who could not hold the semi-tandem stand for 10 seconds should not have moved on to the full tandem stand (even if they did have data for that test)</p>	<p>If refused or attempted/unable to do semi-tandem stand, or unable to hold for at least 1 second, then STSCORE=0.</p> <p>If holds for 1 to <10 seconds, then STSCORE=1.</p> <p>If at least 10 seconds, then STSCORE=2.</p> <p>Better of two tandem-stand trials is used.</p> <p>If refused or attempted/unable to do tandem stand, or unable to hold for at least 3 second then FTSCORE=0.</p> <p>If holds for 3 to <10 seconds, then FTSCORE=1.</p> <p>If at least 10 seconds then FTSCORE=2.</p> <p>If STSCORE in (0,1) then FTSCORE=0.</p> <p>SBSCORE=STSCORE + FTSCORE</p>	<p>If semi-tandem marked as holds for less than 30 seconds, but time is missing, assume held less than 10 seconds (STSCORE=1).</p> <p>If STSCORE is missing and tandem stand held for at least 10 seconds, then assume semi-tandem held for 30 (STSCORE=2)</p> <p>If semi-tandem is refused or unable then STSCORE=0</p> <p>If tandem is refused or unable then FTSCORE=0</p>	sec

Performance Measure Calculated Variables

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FSBTIME	Full standing balance test time 0-90	Total time of all stands. Those who could not hold the full tandem stand for 30 seconds were not supposed to be administered the one-leg stand so they were assigned 0 seconds for one-leg stand.	If STSCORE=0 then STTIME=0 If P3STS=3 then STTIME=30 If P3STS=2 then STTIME=P3STSTM If STSCORE=0 then FTTIME=0 If P3TS1=3 or P3TS2=3, then FTTIME=30, otherwise FTTIME =max(P3TSTM , P3TS2TM). Otherwise if FTSCORE=0 then FTTIME=0. If semi-tandem scored as “Holds position between 1 and 29 seconds” and semi-tandem time is missing, use tandem time for semi-tandem time. If P3TR1=3 or P3TR2=3 then OLTIME=30. Otherwise, OLTIME=max(P3TR1TM, P3TR2TM). Otherwise OLTIME=0. If 0 < FTTIME < 30.00 then OLTIME=0. if STTIME=0 or FTTIME=0 then OLTIME=0. Round each balance time to two decimals FSBTIME=STTIME + FTTIME + OLTIME	If one-leg stand is refused or unable then OLTIME=0	sec
DID6MUW	Did 6-meter usual walk	Indicator variable for 6-meter usual walk (clinic visit only).	If steps or time is non-missing for the usual pace walk, then DID6MUW=1. Otherwise, if the walk was not attempted/ unable or attempted and unable to complete, then DID6MUW=0.	If home or proxy visit (no 6-meter walk component), DID6MUW=. If walk is missing or refused, then DID6MUW=.	0=No 1=Yes

Performance Measure Calculated Variables

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
SIXMWTM	Time to walk 6m	The fastest of the two trials for the usual walk	SIXMWTM=minimum of non-missing usual walk times from two trials (for home and proxy home visits, a temporary variable, not kept, called Y1UWTM is created in the same way for the 3- or 4-meter walk)	If DID6MUW=0 or missing, SIXMWTM is missing	sec
Y1UWPACE	Walking speed (m/sec) over 3, 4 or 6m	Walking speed (m/sec) over 3,4 or 6m, using fastest trial	Divide SIXMWTM (or Y1UWTM) by number of meters walked (3, 4, or 6) and round to 2 decimals	If usual pace walk attempted/unable or attempted and unable to complete then Y1UWPACE=0	m/sec
Y1UWSCR	EPESE categories for walking speed	EPESE categories for usual walking speed, using fastest trial	If SIXMWTM (or Y1UWTM)=0 then Y1UWSCR=0; if $0 < Y1UWPACE \leq .46$ then Y1UWSCR=1; if $.47 \leq Y1UWPACE \leq .64$ then Y1UWSCR=2; if $.65 \leq Y1UWPACE \leq .82$ then Y1UWSCR=3; if $Y1UWPACE \geq .83$ then Y1UWSCR=4		Scale from 0 (worst performance) to 4 (best performance)
EPESEPPB	EPESE performance battery score 0-12	EPESE performance battery score 0-12*	EPESEPPB=Y1UWSCR+ CAT5CS + SBSCORE	If any of the component scales is missing, then EPESEPPB is missing	Scale from 0 (worst) to 12 (best performance)
DID6MNW	Did 6m narrow walk	Indicator variable for 6m narrow walk.	If DID6MUW=. then DID6MNW=. if DID6MUW=0 then DID6MNW=0; If attempted / unable to do the narrow walk then DID6MNW=0 If all attempted trials strayed outside the lines, then DID6MNW=0. if any of three trials stayed within bounds, then DID6MNW=1.	If a participant did the usual 6 meter walk, but did not attempt or refused the narrow (7), they were coded as unable (0)	0=No 1=Yes

*The scoring algorithm reflects the EPESE administration procedure in which those who could not hold the semi-tandem stand for 10 seconds did not move on to the full tandem stand. This is not how the examiners were instructed to administer the exam, however, so a number of participants had full-tandem stand data who did not hold the semi-tandem stand for 10 seconds

Performance Measure Calculated Variables

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
NWTIME	Time to walk a 20cm wide 6m course	Time to walk a 20cm wide 6m course. Uses the fastest of three trials	NWTIME = minimum time from acceptable trial(s)	If DID6MNW=0 or missing, NWTIME is missing	Sec
NWPACE	Walking speed for narrow 6m walk	Walking speed (m/sec) over 6m narrow walk, using fastest trial	NWPACE = 6/NWTIME rounded to 2 decimals	If DID6MNW=0 then NWPACE=0	m/sec
NWSCORE	EPESE category for narrow walk	EPESE categories for narrow walk, using fastest trial	If DID6MNW=0 then NWSCORE=0; if $0 < NWPACE \leq .46$ then NWSCORE=1; if $.47 \leq NWPACE \leq .64$ then NWSCORE=2; if $.65 \leq NWPACE \leq .82$ then NWSCORE=3; if $NWPACE \geq .83$ then NWSCORE=4		Scale from 0 (worst performance) to 4 (best performance)
NWSCOREQ	% difference between narrow pace & usual walk pace	Categories based on percent difference between Y1UWPACE and NWPACE	PACEDIFF=Y1UWPACE-NWPACE; PCPACEDF=round(100*PACEDIFF/Y1UWPACE, .01); if PCPACEDF > 15 then NWSCOREQ=1; if $15 \geq PCPACEDF > 5$ then NWSCOREQ=2; if $5 \geq PCPACEDF \geq -5$ then NWSCOREQ=3; if $.z < PCPACEDF < -5$ then NWSCOREQ=4;	If DID6MNW=. then NWSCOREQ=. if DID6MNW=0 then NWSCOREQ=. if DID6MUW=0 and DID6MNW=0 then NWSCORE=.	%

Performance Measure Calculated Variables

Note all performances except for the standing balance measures were converted to pace (meters/sec or chair stands/sec) to allow those unable to do a test to be coded 0. It was difficult to determine whether the 7:Not attempted/refused were not administered a test or if they refused or did not attempt a test because of a physical problem.

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
CSRATIO	Chair stands performance ratio using a modification of the MacArthur approach**	A summary scale of chair stand performance. 1 chair stand per second was used for the denominator	$CSRATIO = \text{round}(CHR5PACE/1, .01)$; if $CSRATIO > 1$ then $CSRATIO = 1$	Chair stand performances was converted to pace - chair stands/sec - to allow those unable to do a test to be coded 0;	unitless
FSBRATIO	Standing balance performance ratio using a modification of the MacArthur approach**	A summary scale of standing balance performance. 90 seconds (total time for all three stands) was used for the denominator	$FSBRATIO = FSBTIME/90$ rounded to 2 decimals	If FSBTIME is missing, then FSBRATIO is missing	unitless
Y1UWRATIO	Usual walk performance ratio using a modification of the MacArthur approach **	A summary scale of usual walk performance. 2 m/sec was used for the denominator	$Y1UWRATIO = \text{round}(Y1UWPACE/2, .01)$ if $Y1UWRATIO > 1$ then $Y1UWRATIO = 1$	Usual walk performances was converted to pace - meters/sec - to allow those unable to do a test to be coded 0;	unitless
NWRATIO	Narrow walk performance ratio using a modification of the MacArthur approach **	A summary scale of 6 meter narrow walk performance. 2 m/sec was used for the denominator	$NWRATIO = \text{round}(NWPACE/2, .01)$; if $NWRATIO > 1$ then $NWRATIO = 1$	Narrow walk performances was converted to pace - meters/sec - to allow those unable to do a test to be coded 0;	unitless

**Seeman et al. J Gerontol Med Sci 1994(49)M97-M108). With the MacArthur data, the 99th percentile was used as the denominator and scores above the 99th percentile were set to equal the 99th percentile. Here, the maximum attainable performance within an older cohort as used as the denominator.

Performance Measure Calculated Variables

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
HABCPPB	Health ABC performance score 0-4	Summary measure combining usual walk, narrow walk, chair stand, and standing balance performance ratios	$HABCPPB = FSBRATIO + CSRATIO + Y1UWRATIO + NWRATIO$	If any of the component scales is missing, then HABCPPB is missing	Scale from 0 (worst) to 4 (best performance)
PPB12CAT ***NOT FOR USE OTHER THAN FOR COMPARISON TO EPESEPPB (use EPESEPPB or HABCPPB)	Categorical scoring of HABCPPB 0-12	Categories of HABCPPB (summary measure combining usual walk, narrow walk, chair stand, and standing balance performance ratios)	If $HABCPPB > 3.66$ then $PPB12CAT=12$; If $3.33 < HABCPPB < 3.66$ then $PPB12CAT=11$; If $3.0 < HABCPPB \leq 3.33$ then $PPB12CAT=10$; If $2.66 < HABCPPB \leq 3.0$ then $PPB12CAT=9$; If $2.33 < HABCPPB \leq 2.66$ then $PPB12CAT=8$; If $2.0 < HABCPPB \leq 2.33$ then $PPB12CAT=7$; If $1.66 < HABCPPB \leq 2.0$ then $PPB12CAT=6$; If $1.33 < HABCPPB \leq 1.66$ then $PPB12CAT=5$; If $1.0 < HABCPPB \leq 1.33$ then $PPB12CAT=4$; If $0.66 < HABCPPB \leq 1.0$ then $PPB12CAT=3$; If $0.33 < HABCPPB \leq 0.66$ then $PPB12CAT=2$; If $0.0 < HABCPPB \leq 0.33$ then $PPB12CAT=1$; If $HABCPPB = 0$ then $PPB12CAT=0$;	If HABCPPB is missing, then PPB12CAT is missing	Scale from 0 (worst performance) to 12 (best performance)

```

/*****
*****
* Program Name:   Perform_Y1.sas
* Saved as:      \\Fu-hsing-c\habc\habc_sas\Calculated Variables\Programs\Year
4\Perform_Y1.sas
* Study:         HABC
* Purpose:       Creates calculated variables for Year 4 for
*               Standing Balance, Balance Walks, and Chair Stand
* Input:         Y1ClnVis
* Output:        Perfm_Y1
* Programmer:    Ase Sewall (in coordination with Emily Kenyon)
* Date:          July 10, 2009
* Comments:      Consolidate and reconciled differences in various sets of code
*               (Consultation from Eleanor Simonsick)
*****
*****/;

*Set macro variable to use perfm_macros.sas;
%let Y=Y1;
%let pre=p3;
*****----- Standardize variable names for all years-----*****;

data Y1clnvis (keep=habcid scs rcs sec
               sts ststm ts2 ts1 ts2tm tstm
               tr1 tr2 tr1tm tr2tm
               p3uptm1 p3up1 p3upru1 p3uptm2 p3up2 p3upru2
               p320cna p320tr1 p320ct1 p320tr2 p320ct2 p320tr3 p320ct3);
  set current.Y1clnvis (rename=(p3scs=scs p3rcs=rcs
                                p3sts=sts p3ststm=ststm p3ts1=ts1 p3tstm=tstm p3ts2=ts2 p3ts2tm=ts2tm
                                p3tr1=tr1 p3tr1tm=tr1tm p3tr2=tr2 p3tr2tm=tr2tm p3sec=sec));
run;

*****----- Create Performance Variables -----
-----*****;

data visit;
  set Y1clnvis ;
*Fix a few impossible value by setting them to missing, so other value used;
  if .z<p3uptm1<3 then p3uptm1=.;
  if .z<p3uptm2<3 then p3uptm2=.;
  if .z<p320ct1<2 then p320ct1=.;
  if .z<p320ct2<2 then p320ct2=.;
  if .z<p320ct3<2 then p320ct3=.;
  Source="V";
run;

%include "&_prospath\Calculated Variables\Programs\perfm_macros.sas";

```

```

%macro perfm;
data Perf_&Y;
  set visit;

  ***** Standing Balance *****;

  *--- (1) Semi-tandem score;
  if STS in (7,9) then STSCORE=0; *Refused attempted/unable;
  else if STS<0 and STSTM<0 then STSCORE=.;
  else if (STS<0 and 0<STSTM < 1) or STS=1 then STSCORE=0; *Holds position
for less than one second;
  else if (STS=2 and STSTM<0 and (TS1=3 or TS2=3 or TSTM>0 or TS2TM>0))
then do;*Assumes ST time at least as good as FT;
  if TS1=3 or TS2=3 then STSTM=30;
  else STSTM=max(TSTM,TS2TM);
  end;
  if (STS=2 or STS<0) and 0<STSTM<10 then STSCORE=1; *Holds position for less
than 10 seconds;
  else if STS=2 and STSTM<0 then STSCORE=1; *If less than 30 sec and time
missing, assume less than 10 sec;
  else if STS=3 or ((STS=2 or STS<0)and STSTM ge 10) then STSCORE=2; *Holds
position for at least 10 seconds;

  *--- (2) Full-tandem score (1st attempt);
  if TS1 in (7,9) then FT1=0; *Refused attempted/unable;
  else if TS1<0 and TSTM<0 then FT1=.;
  else if (TS1<0 and 0<TSTM<1) or TS1=1 then FT1=0; *Holds position for less
than one second;
  else if (TS1=2 or TS1<0) and TSTM<10 then FT1=1; *Holds position for less
than 10 seconds (assumes missing time means less than 10 sec);
  else if TS1=3 or ((TS1=2 or TS1<0) and TSTM ge 10) then FT1=2; *Holds
position for at least 10 seconds;
  if (ts1=1 or (ts1=2 and 0 le tstm lt 3)) then FT1=0;*Full-tandem < 3
seconds;
  *--- (3) Full-tandem score (2nd attempt);
  if TS2 in (7,9)then FT2=0; *Refused attempted/unable;
  else if TS2<0 and TS2TM<0 then FT2=.;
  else if (TS2<0 and 0<TS2TM<1) or TS2=1 then FT2=0; *Holds position for
less than one second;
  else if (TS2=2 or TS2<0) and TS2TM<10 then FT2=1; *Holds position for less
than 10 seconds (assumes missing time means less than 10 sec);
  else if TS2=3 or ((TS2=2 or TS2<0) and TS2TM ge 10) then FT2=2; *Holds
position for at least 10 seconds;
  if (ts2=1 or (ts2=2 and 0 le ts2tm lt 3)) then FT2=0;
  FTSCORE=max(FT1,FT2); *Full-tandem score is better of two tries;

  *--- (4) Combined standing balance scores;
  if STSCORE in (0,1) then FTSCORE=0; *Should not go on to full-tandem if
unable to hold semi-tandem for 10 seconds;
  if STSCORE=. and FTSCORE>0 then STSCORE=2 ;*If semi-tandem test missing and
full-tandem exists, then assume completed at least 10 seconds on semi-tandem

  *--- (5) Final standing balance score;
  label SBSCORE ="EPESE SCORE FOR STANDING BALANCE";
  SBSCORE=STSCORE+FTSCORE;

```

```

*--- (6) For debug print only;
if 0 lt ststm lt 10 then STimelt10="<10";

***** Chair stands *****;

label ABLE5CS  ="DID 5 CHAIR STANDS YES=1";
IF (SCS=.M AND RCS=.A) OR (SCS=7 AND (RCS=.A OR RCS=.E)) THEN ABLE5CS=.;
  else IF SCS=1 THEN ABLE5CS=0;
  else IF SCS=2 AND (RCS=1 OR RCS=7 or RCS=9) THEN ABLE5CS=0;
  else IF SCS=9 THEN ABLE5CS=0;
  else IF SCS=3 THEN ABLE5CS=.;
  else IF SCS=0 THEN ABLE5CS=0;
  else IF SCS NE 1 AND RCS=2 THEN ABLE5CS=1;
  else IF SCS=7 THEN ABLE5CS=.;
  else IF SCS=2 AND RCS=2 THEN ABLE5CS=1;

label CAT5CS  ="EPESE SCORE FOR CHAIR STANDS";
RSEC=ROUND(SEC, .1);
IF ABLE5CS=0 THEN CAT5CS=0;
else IF ABLE5CS=1 then do;
  IF RSEC GE 16.7 THEN CAT5CS=1;
  IF 13.7 LE RSEC LE 16.6 THEN CAT5CS=2;
  IF 11.2 LE RSEC LE 13.6 THEN CAT5CS=3;
  IF 0<RSEC LE 11.1 THEN CAT5CS=4;
  else if RSEC lt 0 then CAT5CS=.;
end;

label CHR5PACE ="CHAIR STANDS PER SECOND";
CHR5PACE=ROUND(5/SEC, .01);
IF ABLE5CS=0 THEN CHR5PACE=0;

label CSRATIO  ="CHAIR STANDS PERFORMANCE RATIO";
CSRATIO=ROUND(CHR5PACE/1, .01); IF CSRATIO GT 1 THEN CSRATIO=1;

**Total seconds to examine full standing balance assessment and create a
score
  from 0 to 90 - total time of all stands;

*--- (1) semi-tandem time;
IF STSCORE=0 THEN STTIME=0;
else do;
  IF STS=3 THEN STTIME=30;
  IF STS=2 THEN STTIME=STSTM;
  IF (STS=2 AND STSTM=.M) AND TS1=2 THEN STTIME=TSTM;
  IF (STS=2 AND STSTM=.M) AND (TS1=3 OR TS2=3) THEN STTIME=30;
end;
STTIME=ROUND(STTIME, .01);

*--- (2) full-tandem time;
if STSCORE in (0,1) then FTTIME=0;
  else IF TS1=3 OR TS2=3 THEN FTTIME=30;
  else IF TS1=2 or TS2=2 THEN FTTIME=MAX(TSTM, TS2TM);
  else if FTSCORE=0 then FTTIME=0;
*New code to try to be more consistent;
  if FTSCORE>0 and STTIME<0 then STTIME=FTTIME;

```

```

*--- (3) one-leg stand;
if tr1=3 or tr2=3 then OLTIME=30;
  else OLTIME=MAX(Tr1TM, Tr2TM);
  if FTTIME<0 and OLTIME>0 then FTTIME=OLTIME;
  if OLTIME<0 and (tr1 in (7,9) or (tr1=1 and tr2 in (7,9,1,.M))) then
OLTIME=0;*new;
if STTIME=0 or FTTIME=0 then OLTIME=0;
if 0 lt FTTIME lt 30 then OLTIME=0;

*--- (4) combined time for all three stands;
label FSBTIME  ="Standing Balance Test Time (0-90)"
  FSBRATIO ="Standing Balance Time Ratio";
FSBTIME=STTIME + FTTIME + OLTIME;
FSBRATIO=round(FSBTIME/90, .01);

%if (&Y=Y1 or &Y=Y4 or &Y=Y6 or &Y=Y10 or &Y=Y11) %then %do;
***** Balance walks *****;

**Balance walk (6 Meter and Narrow);
/* Code to compute EPESE categorical score for the measured walk. It
is difficult to determine whether the 7s were not administered a test
of if they refused/did not attempt a test b/c a physical problem.
The INYN variable used in Y1 is not avail in other years*/;

*--- (Usual walk);

***DID6MUW (Did usual walk);
LABEL DID6MUW  ="DID 6M USUAL WALK YES=1";
if Source="V" then do;
  IF &pre.UP1>0 or &pre.uptm1 gt .Z then DID&Y.UW=1;
  else IF &pre.UPRU1<=.z THEN DID&Y.UW=.;
  else if &pre.UPRU1=9 THEN DID&Y.UW=0;
  else IF &pre.UPRU1=7 THEN DID&Y.UW=.;
  DID6MUW=DID&Y.UW;
end;
%if (&Y ne Y1) %then %do;
if Source="H" then do;
  if (&hpre.4mwtm1 ge 0 and &hpre.4mwtm2 ge 0) then DID&Y.UW=1;
  else if &hpre.4mwl=9 or &hpre.4mwl=1 then DID&Y.UW=0;
end;
%end;
  %if (&Y=Y2 or &Y=Y3 or &Y=Y4 or &Y=Y5 or &Y=Y6 or &Y=Y8) %then %do;
  if Source="P" then do;
  if (yc4mwtm1 ge 0 and yc4mwtm2 ge 0) then DID&Y.UW=1;
  else if yc4mwl=9 or yc4mwl=1 then DID&Y.UW=0;
end;
%end;

***SIXMWTM (Time for 6m usual walk);

if Source="V" then do;
  IF &pre.UPTM1 > 0 AND &pre.UPTM2 > 0 THEN &Y.UWTM=MIN(&pre.UPTM1,
&pre.UPTM2);
  else if &pre.uptm1 lt 0 and &pre.uptm2 ge 0 then &Y.UWTM=&pre.uptm2;
  else if &pre.uptm1 ge 0 and &pre.uptm2 lt 0 then &Y.UWTM=&pre.uptm1;
  SIXMWTM=&Y.UWTM;
label SIXMWTM  ="TIME TO WALK 6M";
end;

```

```

    %if (&Y ne Y1) %then %do;
if Source="H" then do;
    if (&hpre.4mwtm1 ge 0 and &hpre.4mwtm2 ge 0) then
&Y.UWTM=min(&hpre.4mwtm1, &hpre.4mwtm2);
    else if &hpre.4mwtm1 lt 0 and &hpre.4mwtm2 ge 0 then &Y.UWTM=&hpre.4mwtm2;
    else if &hpre.4mwtm1 ge 0 and &hpre.4mwtm2 lt 0 then &Y.UWTM=&hpre.4mwtm1;
end;
    %end;
    %if (&Y=Y2 or &Y=Y3 or &Y=Y4 or &Y=Y5 or &Y=Y6 or &Y=Y8) %then %do;
else if Source="P" then do;
    if (yc4mwtm1 ge 0 and yc4mwtm2 ge 0) then &Y.UWTM=min(yc4mwtm1, yc4mwtm2);
    else if yc4mwtm1 lt 0 and yc4mwtm2 ge 0 then &Y.UWTM=yc4mwtm2;
    else if yc4mwtm1 ge 0 and yc4mwtm2 lt 0 then &Y.UWTM=yc4mwtm1;
end;
    %end;
***&Y.UWPACE (pace for usual walk);
label &Y.UWPACE ="WALKING SPEED (M/SEC) OVER 3,4, or 6M";
    if Source="V" then do;
&Y.UWPACE=ROUND(6/&Y.UWTM, .01);
    IF DID&Y.UW=0 THEN &Y.UWPACE=0;
    end;
    %if (&Y ne Y1) %then %do;
if Source="H" then do;
    if &hpre.4mw=1 then &Y.UWPACE=round(4/&Y.UWTM, .01);
    if &hpre.4mw=2 then &Y.UWPACE=round(3/&Y.UWTM, .01);
end;
    %end;
    %if (&Y=Y2 or &Y=Y3 or &Y=Y4 or &Y=Y5 or &Y=Y6 or &Y=Y8) %then %do;
else if Source="P" then do;
    if yc4mw=1 then &Y.UWPACE=round(4/&Y.UWTM, .01);
    if yc4mw=2 then &Y.UWPACE=round(3/&Y.UWTM, .01);
end;
    %end;
***&Y.UWSCR (Score for usual walk);
label &Y.UWSCR ="EPESE SCORE FOR WALKING SPEED";
IF DID&Y.UW=0 THEN &Y.UWSCR=0;
    else IF 0 LT &Y.UWPACE LE .46 THEN &Y.UWSCR=1;
    else IF .47 LE &Y.UWPACE LE .64 THEN &Y.UWSCR=2;
    else IF .65 LE &Y.UWPACE LE .82 THEN &Y.UWSCR=3;
    else IF &Y.UWPACE GE .83 THEN &Y.UWSCR=4;

***&Y.UWRATIO (Ratio usual walk);
label &Y.UWRATIO ="USUAL WALK PERFORMANCE RATIO";
&Y.UWRATIO=ROUND(&Y.UWPACE/2, .01);*2 m/sec is considered fastest attainable
pace in this age group;
IF &Y.UWRATIO GT 1 THEN &Y.UWRATIO=1;

*--- (20cm narrow walk);

***DID6MNW (Did 20cm narrow walk);
label DID6MNW ="DID 6M NARROW WALK YES=1";
IF DID&Y.UW=. THEN DID6MNW=.;
else if DID6MUW=0 THEN DID6MNW=0;

else IF &pre.20TR1=0 AND &pre.20TR2=0 AND &pre.20TR3 < 1 THEN DID6MNW=0;
    IF &pre.20CNA in (0,9) THEN DID6MNW=0;*One version of the form coded not
attempted/unable as 0;

```

```

else IF DID6MUW=1 AND &pre.20CNA=7 THEN DID6MNW=0;
else IF &pre.20TR1=1 OR &pre.20TR2=1 OR &pre.20TR3=1 THEN DID6MNW=1;

***NWTIME***;
label NWTIME ="TIME TO WALK A 20CM WIDE 6M COURSE";
IF (&pre.20TR1=1 AND &pre.20CT1>0) THEN VT1T=1;
ELSE VT1T=0;
IF (&pre.20TR2=1 AND &pre.20CT2>0) THEN VT2T=1;
ELSE VT2T=0;
IF &pre.20TR3=1 AND &pre.20CT3>0 THEN VT3T=1;
ELSE VT3T=0;
IF DID6MNW=1 THEN DO;
IF VT1T=1 AND VT2T=0 AND VT3T=0 THEN NWTIME=&pre.20CT1;
else IF VT1T=0 AND VT2T=1 AND VT3T=0 THEN NWTIME=&pre.20CT2;
else IF VT1T=0 AND VT2T=0 AND VT3T=1 THEN NWTIME=&pre.20CT3;
else IF VT1T=1 AND VT2T=1 AND VT3T=0 THEN NWTIME=MIN(&pre.20CT1,
&pre.20CT2);
else IF VT1T=1 AND VT2T=0 AND VT3T=1 THEN NWTIME=MIN(&pre.20CT1,
&pre.20CT3);
else IF VT1T=0 AND VT2T=1 AND VT3T=1 THEN NWTIME=MIN(&pre.20CT2,
&pre.20CT3);
else IF VT1T=1 AND VT2T=1 AND VT3T=1 THEN NWTIME=MIN(&pre.20CT1,
&pre.20CT2, &pre.20CT3);
END;

***NWPACE***;
label NWPACE="WALKING SPEED FOR NARROW WALK 6M";
NWPACE=ROUND(6/NWTIME, .01);
IF DID6MNW=0 THEN NWPACE=0;

***NWSCORE***;
label NWSCORE ="EPESE CATEGORY FOR NARROW WALK";
IF DID6MNW=0 THEN NWSCORE=0;
else IF 0 LT NWPACE LE .46 THEN NWSCORE=1;
else IF .47 LE NWPACE LE .64 THEN NWSCORE=2;
else IF .65 LE NWPACE LE .82 THEN NWSCORE=3;
else IF NWPACE GE .83 THEN NWSCORE=4;

***NWRATIO***;
label NWRATIO ="NARROW WALK PERFORMANCE RATIO";
NWRATIO=ROUND(NWPACE/2, .01);
IF NWRATIO GT 1 THEN NWRATIO=1;

*--- (Comparison between 6M Usual walk 20cm Narrow walk);

if &Y.UWPACE gt 0 and nwpace gt 0 then do; /* Added by Ase,
changed to ge by Emily */
***Pace Difference;
PACEDIFF=&Y.UWPACE-NWPACE;
PCPACEDF=ROUND(100*PACEDIFF/&Y.UWPACE, .01);

***NWSCOREQ (Categories based on percent difference in pace);
label NWSCOREQ ="% DIFF BTW NARROW & USUAL WALKS";
IF PCPACEDF GT 15 THEN NWSCOREQ=1;
else IF 15 GE PCPACEDF GT 5 THEN NWSCOREQ=2;
else IF 5 GE PCPACEDF GE -5 THEN NWSCOREQ=3;
else IF .Z <PCPACEDF LT -5 THEN NWSCOREQ=4; /* Corrected by Ase */

```

```

        else IF DID6MNW=0 THEN NWSCOREQ=0;
        else IF DID6MNW=. THEN NWSCOREQ=.;
    end;

***** Summary Performance Scores *****;

*--- EPESEPPB;
label EPESEPPB="EPESE performance battery score 0-12";
EPESEPPB=&Y.UWSCR + CAT5CS + SBSCORE;

*---HABCPPB;
label HABCPPB="Health ABC performance score 0-4";
HABCPPB=FSBRATIO + CSRATIO + &Y.UWRATIO + NWRATIO;

*---PPB12CAT;
*THIS CODE CREATES 12 CATEGORIES OF THE CONTINUOUS HABCPPB SCORE;
label PPB12CAT="Categorical scoring of HABCPPB 0-12";
IF HABCPPB GT 3.66 THEN PPB12CAT=12;
IF 3.33 LT HABCPPB LE 3.66 THEN PPB12CAT=11;
IF 3.0 LT HABCPPB LE 3.33 THEN PPB12CAT=10;
IF 2.66 LT HABCPPB LE 3.0 THEN PPB12CAT=9;
IF 2.33 LT HABCPPB LE 2.66 THEN PPB12CAT=8;
IF 2.0 LT HABCPPB LE 2.33 THEN PPB12CAT=7;
IF 1.66 LT HABCPPB LE 2.0 THEN PPB12CAT=6;
IF 1.33 LT HABCPPB LE 1.66 THEN PPB12CAT=5;
IF 1.0 LT HABCPPB LE 1.33 THEN PPB12CAT=4;
IF 0.66 LT HABCPPB LE 1.0 THEN PPB12CAT=3;
IF 0.33 LT HABCPPB LE 0.66 THEN PPB12CAT=2;
IF 0.0 LT HABCPPB LE 0.33 THEN PPB12CAT=1;
IF HABCPPB = 0 THEN PPB12CAT=0;
%end;
format _all_;

run;
*This is all just QC code;
*****----- Formats -----
*****;
** standing balance score formats;
proc format;
    value result
        .M = "M"
        .N = "N"
        .A = "A"
        7 = "7=ref"
        9 = "9=una"
        1 = "1=<1"
        2 = "2=1-<30"
        3 = "3=30+";
    value sec_a
        .M = "M"
        .N = "N"
        .A = "A"
        1-<3 = "< 3"
        3-<10 = "3-<10"
        10-<30 = "10-<30";

```

```

value sec_b
  .M = "M"
  .N = "N"
  .A = "A"
  0 = "0"
  1-<10 = "<10"
  10-<30 = "10-<30";
value sec_e
  0 = "0"
  1-<30 = "<30"
  30 = "30";
value sec_f
  0 = "0"
  1-30 = "1-30"
  30<-60 = "31-60"
  60<-90 = "61-90";
value ratio
  0.0 = "0.0"
  .01-.33 = ".01-.33"
  .34-.67 = ".34-.67"
  .68-.99 = ".68-.99"
  1.00 = "1.00";
run;
%macro skip;
** chair stand formats;
proc format;
  value sec_c
    1-11.1 = "1-11.1"
    11.2-13.6 = "11.2-13.6"
    13.7-16.6 = "13.7-16.6"
    16.7-35 = "16.7-35"
    35<-high = ">35";
  value sec_d
    1-high = "1+";
  value pace
    0 = "0"
    0<-high = ">0";
run;

** Walking formats;
proc format;
  value walk_sec
    1.0-50.0 = "1.0-50.0";
  value walk_pace
    0 = "0"
    0<-0.46 = "<0.46"
    .47-.64 = "0.47-0.64"
    .65-.82 = "0.65-0.82"
    .83-high= "0.83+";
  value walk_pacex
    0 = "0"
    0<-high = ">0";
  value walk_steps
    1-30 = "1-30";
  value walk_ratio
    0 = "0"
    0<-0.23 = "<0.23"

```

```

        .24-.32 = "0.24-0.32"
        .33-.41 = "0.33-0.41"
        .42-high= "0.42+";
value pace_diff
    low-<0   = "<0"
           0 = "0"
    0<--<100 = ">0 - <100"
    100     = "100";
value pcpace_diff
    15<-high = "> 15"
    5<-15    = ">5 to 15"
    -5-5     = ">-5 to 5"
    low<-5   = "<-5";
value pace_ratio
    0 = "0"
    0<--<1 = ">0 to <1.0"
    1 = "1.0";
run;

** Performance formats;
proc format;
    value perf_ratio
        0 = "0"
        0<-1 = ">0";
    value HABCPPB
        0 = "0"
        0.00<-0.33 = "> 0.00 to 0.33"
        0.33<-0.66 = "> 0.33 to 0.66"
        0.66<-1.00 = "> 0.66 to 1.00"
        1.00<-1.33 = "> 1.00 to 1.33"
        1.33<-1.66 = "> 1.33 to 1.66"
        1.66<-2.00 = "> 1.66 to 2.00"
        2.00<-2.33 = "> 2.00 to 2.33"
        2.33<-2.66 = "> 2.33 to 2.66"
        2.66<-3.00 = "> 2.66 to 3.00"
        3.00<-3.33 = "> 3.00 to 3.33"
        3.33<-3.66 = "> 3.33 to 3.66"
        3.66<-high = "> 3.66 ";
run;

*****----- Frequencies and prints -----
-----*****;

proc freq data=perf_&Y;
    table sttime*stscore*sts*ststm*ts1*ts2*tstm / list missing nocum nopercent;
    table ftttime*ftscore*ts1*ts2*tstm*ts2tm*stscore / list missing nocum
nopercent;
    table oltime*fttime*tr1*tr2*tr1tm*tr2tm / list missing nocum nopercent;
    format sttime ftttime oltime ststm tstm ts2tm tr1tm tr2tm sec_b.;
    title2 "Standing balance - Times";
run;
proc freq data=perf_&Y;
    table fsbtime*FSBRATIO*sttime*fttime*oltime / list missing nocum nopercent;
    format sttime ftttime oltime fsbtime sec_f. FSBRATIO ratio.;
    title2 "Standing balance - Summary time";
run;

```

```

/*
proc print data=perf_&Y;
  where 0 < ftime < 30 and
    (tr1=3 or 0 < tr1tm < 30 or tr2=3 or 0 < tr2tm < 30);
  id habcid;
  var source oltime ftime tr1 tr2 tr1tm tr2tm;
  title2 "One-leg stand time - Cases with tandem stand < 30 forcing one-leg
stand to be 0";
run;
*/

proc freq data=perf_&Y;
  table FTSCORE*STSCORE*sts*ststm / list missing;
  format sts result. ststm sec_a.;
  title2 "Standing Balance - Semi-tandem score";
run;

proc freq data=perf_&Y ;
  table FTSCORE*STIMElt10*ts1*tstm*ts2*ts2tm / list missing;
  table FTSCORE*STIMElt10*FT1*FT2 / missing list;
  format ts1 ts2 result. tstm ts2tm sec_b.;
  title2 "Standing Balance - Full-tandem score";
run;

proc freq data=perf_&Y;
  title2 "Standing Balance - Tandem Score";
  table SBSCORE*STSCORE*FTSCORE / list missing;
run;

proc print data=perf_&Y;
  where FTSCORE=0 and (ts1 in(2,3) or ts2 in(2,3)) and (tstm>3 or ts2tm>3);
  id Habcid;
  var source sts ststm ts1 tstm ts2 ts2tm;
  title2 "Standing Balance - Cases with Full balance set to zero because Semi
balance time < 10 sec";
run;

proc freq data=perf_&Y;
  table ABLE5CS*scs*rscs
    CAT5CS*CHR5PACE*ABLE5CS*rsec / list missing nopercnt nocum;
  format scs chair3x. rcs chair4x. CHR5PACE pace. rsec sec_c.;
  title2 "Chair Stands";
run;

*****----- Save Performance File -----
*****;
%if (&Y=Y4 or &Y=Y6 or &Y=Y11) %then %do;
proc freq data=Perf_&Y;
  where source="H";
  table DID6MUW*&hpre.4mwtm1*&hpre.4mw1*&hpre.4mwtm2 / list missing nocum
nopercnt;
  format SIXMWTM &pre.UPTM1 &pre.UPTM2 walk_sec. &Y.UWPACE walk_pace. &pre.up1
&pre.up2 walk_steps. &Y.UWRATIO walk_ratio.;
  format &hpre.4mwtm1 &hpre.4mwtm2 walk_sec.;
  title2 "6M Usual walk - Home Visits";
run;

proc freq data=Perf_&Y;
  where source="P";
  table DID6MUW*yc4mwtm1*yc4mw1*yc4mwtm2 / list missing nocum nopercnt;

```

```

format &Y.UWTM &pre.UPTM1 &pre.UPTM2 walk_sec. &Y.UWPACE walk_pace. &pre.up1
&pre.up2 walk_steps. &Y.UWRATIO walk_ratio.;
format yc4mwtm1 yc4mwtm2 walk_sec.;
title2 "6M Usual walk - Proxy";
run;
%end;
%mend skip;
%if (&Y=Y1 or &Y=Y4 or &Y=Y6 or &Y=Y10 or &Y=Y11) %then %do;
data calc.Perfm_&Y (keep = habcid
    DID6MUW SIXMWTM &Y.UWPACE &Y.UWSCR &Y.UWRATIO DID6MNW NWTIME NWPACE
    NWSCORE NWSCOREQ NWRATIO ABLE5CS CHR5PACE CAT5CS CSRATIO SBSCORE
    FSBTIME FSBRATIO EPESEPPB HABCPPB PPB12CAT);
set perf_&Y;
run;
/*proc freq data=Perf_&Y;
where source="V";
table DID&Y.UW*&pre.up1*&pre.uptm1*&pre.upr1*&pre.up2
&Y.UWTM*DID&Y.UW*&pre.uptm1*&pre.uptm2
&Y.UWSCR*&Y.UWPACE*DID&Y.UW*&Y.UWTM
&Y.UWRATIO*DID&Y.UW*&Y.UWPACE / list missing nocum nopercent;
format &Y.UWTM &pre.UPTM1 &pre.UPTM2 walk_sec. &Y.UWPACE walk_pace. &pre.up1
&pre.up2 walk_steps. &Y.UWRATIO walk_ratio.;
title2 "6M Usual walk - Clinic Visits";
run;

proc freq data=Perf_&Y;
table did6mnw*&pre.20tr1*&pre.20tr2*&pre.20tr3*&pre.20cna*DID&Y.UW
nwttime*did6mnw*&pre.20tr1*&pre.20ct1*&pre.20tr2*&pre.20ct2*&pre.20tr3*&pre.20ct3
nwscore*nwpace*did6mnw*nwttime
nwratio*nwpace
/ list missing nocum nopercent;
format nwttime &pre.20ct1 &pre.20ct2 &pre.20ct3 walk_sec. nwpace walk_pace.
nwratio pace_ratio.;
title2 "20cm narrow walk";
run;

proc freq data=Perf_&Y;
table nwscoreq*pcpacedf*DID&Y.UW*&Y.UWPACE*did6mnw*nwpace
/ list missing nocum nopercent;
format &Y.UWPACE nwpace walk_pacex. pcpacedf pcpacediff. pacediff pace_diff.;
title2 "Comparison between 6M Walk and 20cm narrow walk";
run;

proc freq data=Perf_&Y;
table EPESEPPB*&Y.UWSCR*CAT5CS*SBSCORE
HABCPPB*FSBRATIO*CSRATIO*&Y.UWRATIO*NWRATIO
PPB12CAT*HABCPPB
/ list missing nocum nopercent;
format HABCPPB HABCPPB. FSBRATIO CSRATIO &Y.UWRATIO NWRATIO perf_ratio.;
title2 "Summary Performance Scores";
run;*/
%end;

%else %do;
data calc.Perfm_&Y (keep = habcid
    ABLE5CS CHR5PACE CAT5CS CSRATIO SBSCORE

```

```
        FSBTIME FSBRATIO);
    set perf_&Y;
run;
%end;
/*proc contents data=calc.Perfm_&Y varnum;
    title2 "Perf_&Y File";
run;

proc means data=calc.Perfm_&Y n nmiss min mean max;
run;*/

%mend perfm;
%perfm;
```

Appendix XII
PFT Reading Center Calculated Variables

Investigator Name: Robert Crapo and Robert Jensen

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
PREFVC	Predicted FVC	Vital capacity predicted from equations based on healthy subject, published in Hankinson, et al. (1999) Am J Respir Crit Care Med, 159:179-187.	Use each participant's height, age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If height, age, gender, or race is missing, set to missing	liters
LLNFVC	Lower limit of normal for FVC	Lower limit of normal FVC based on reference range published in Hankinson (ibid). Can be used to designate which values of FVC fall below the reference range.	Use each participant's height, age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If height, age, gender, or race is missing, set to missing	liters
PREFEV1	Predicted FEV1	FEV1 (forced expiratory volume in one second) predicted from equations based on healthy subjects, published in Hankinson (ibid).	Use each participant's height, age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If height, age, gender, or race is missing, set to missing	liters

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
LLNFEV1	Lower limit of normal for FEV1	Lower limit of normal FEV1 based on reference range published in Hankinson (ibid). Can be used to designate which values of FVC fall below the reference range.	Use each participant's height, age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If height, age, gender, or race is missing, set to missing	liters
FEV1R	Measured FEV1/FVC	FEV1/FVC ratio, the most commonly used index of airway obstruction	For FEV1, select the largest of three possible FEV1 values (BES_FEV1, SCN_FEV1, TRD_FEV1). For FVC, select the largest of three possible FVC values (BES_FVC, SCN_FVC, TRD_FVC). Divide FEV1 by FVC and multiply by 100 to record it as a percent.	If there are no measured FEV1 or FVC values, set FEV1R to missing.	unitless
PRDFEV1R	Predicted FEV1/FVC	FEV1/FVC ratio predicted from equations based on healthy subjects, published in Hankinson (ibid).	Use each participant's age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If age, gender, or race is missing, set to missing	unitless
LLNFEV1R	Lower limit of normal for FEV1/FVC	Lower limit of normal FEV1/FVC based on reference range published in Hankinson (ibid). Can be used to designate which values of FEV1R fall below the reference range.	Use each participant's age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If age, gender, or race is missing, set to missing	unitless

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
PREDFEV6	Predicted FEV6	FEV6 (forced expiratory volume in six seconds) predicted from equations based on healthy subjects, published in Hankinson (ibid).	Use each participant's height, age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If height, age, gender, or race is missing, set to missing	liters
LLNFEV6	Lower limit of normal for FEV6	Lower limit of normal FEV6 based on reference range published in Hankinson (ibid). Can be used to designate which values of FVC fall below the reference range.	Use each participant's height, age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If height, age, gender, or race is missing, set to missing	liters
FEV1R6	Measured FEV1/FEV6	FEV1/FEV6 ratio, a new index that may have value in determining airway obstruction. Its potential advantage over FEV1R (FEV1/FVC) is that it may be less variable because it is not dependent on expiratory time (does not change as exhalation time increases)	For FEV1, select the largest of three possible FEV1 values (BES_FEV1, SCN_FEV1, TRD_FEV1). For FEV6, select the largest of three possible FEV6 values (BES_FEV6, SCN_FEV6, TRD_FEV6). Divide FEV1 by FEV6 and multiply by 100 to record it as a percent.	If there are no measured FEV1 or FEV6 values, set FEV1R6 to missing.	unitless
PRFEV1R6	Predicted FEV1/FEV6	FEV1/FEV6 ratio predicted from equations based on healthy subjects, published in Hankinson (ibid).	Use each participant's age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If age, gender, or race is missing, set to missing	unitless

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
LLFEV1R6	Lower limit of normal for FEV1/FEV6	Lower limit of normal FEV1/FEV6 based on reference range published in Hankinson (ibid). Can be used to designate which values of FEV1R6 fall below the reference range.	Use each participant's age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If age, gender, or race is missing, set to missing	unitless
PREDPEF	Predicted PEF	PEF (peak expiratory flow) predicted from equations based on healthy subjects, published in Hankinson (ibid).	Use each participant's height, age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If height, age, gender, or race is missing, set to missing	liters/sec
LLNPEF	Lower limit of normal for PEF	Lower limit of normal PEF based on reference range published in Hankinson (ibid). Can be used to designate which values of PEF fall below the reference range.	Use each participant's height, age, gender, and race and coefficients from Dr. Hankinson's manuscript.	If height, age, gender, or race is missing, set to missing	liters/sec
PREDMIP	Predicted MIP	MIP (maximum inspiratory pressure) predicted from equations based on healthy subjects, published in the Baltimore Longitudinal Study of Aging (Harik-Khan, et al. (1998) Am J Respir Crit Care Med, 158:1459-1464.)	Use each participant's height, weight, and age and coefficients from Baltimore Longitudinal Study of Aging	If height, weight, or age is missing, set to missing	cm H2O

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
LLNMIP	Lower limit of normal for MIP	Lower limit of normal MIP based on reference range published in Hankinson (ibid). Can be used to designate which values of PEF fall below the reference range.	Subtract 37 from PREDMIP for men, subtract 32 from PREDMIP for women	If PREDMIP is missing, set to missing	cm H20

```

options ls=132 ps=58 formchar='|----|+|----+|=|-\<>*' nocenter pageno=1 nofmterr
      mprint macrogen;
title 'HABC calculated variables';
title2 'Program: PFT.calcvar.sas';

%macro convert(var);
  **Convert predicted values from liters to milliliters**;
  &var=1000*&var;
%mend convert;

data ph;
  set habc.ph(keep=habcid hcrace hcgender cvlage);
run;
data hgt;
  set calc.anthro(keep=habcid p2sh);
run;
data wgt;
  set habc1.p2(keep=habcid p2wtk);
run;
data pft(keep=habcid fev1r fev1r6);
  set read1.pft_lab(keep=habcid bes_fev1 scn_fev1 trd_fev1
                    bes_fvc scn_fvc trd_fvc
                    bes_fev6 scn_fev6 trd_fev6);
  MAXFEV1= MAX(BES_FEV1, SCN_FEV1, TRD_FEV1);
  MAXFVC = MAX(BES_FVC, SCN_FVC, TRD_FVC);
  FEV1R  =(MAXFEV1/MAXFVC)*100;

  MAXFEV6= MAX(BES_FEV6, SCN_FEV6, TRD_FEV6);
  FEV1R6 =(MAXFEV1/MAXFEV6)*100;
run;
data eq;
  infile '\\Fu-hsing-c\habc\habc_sas\calculated variables\programs\year
1\PFT.equations.updated.dat'
      firstobs=2 missover delimiter='09'x;
  length temp $8 var $10 ;
  input temp var hcrace hcgender b0 b1 b2 b3 b4;
  if temp='xxx' then delete;
  drop temp;
run;
proc print data=eq;
  run;

data calc;
  merge ph hgt wgt;
  by habcid;
  length var $10;
  var='FEV1'; output;
  var='FEV6'; output;
  var='FVC'; output;
  var='PEF'; output;
  var='FEV1/FVC'; output;
  var='FEV1/FEV6'; output;
  var='MIP'; output;
run;
proc sort data=calc;
  by hcgender hcrace var;

```

```

run;
proc sort data=eq;
  by hcgender hcrace var;
run;
data FVC (KEEP=HABCID PREDFVC LLNFVC)
  FEV1 (KEEP=HABCID PREDFEV1 LLNFEV1)
  FEV6 (KEEP=HABCID PREDFEV6 LLNFEV6)
  PEF (KEEP=HABCID PREDPEF LLNPEF)
  FEV1FVC (KEEP=HABCID PRDFEV1R LLNFEV1R)
  FEV1FEV6(KEEP=HABCID PRFEV1R6 LLFEV1R6)
  MIP (KEEP=HABCID PREDMIP LLNMIP);
merge calc eq;
by hcgender hcrace var;

if var='FVC' then do;
  PREDFVC = b0+ b1*cvlage + b2*(cvlage**2) + b3*((p2sh/10)**2);
  LLNFVC = b0+ b1*cvlage + b2*(cvlage**2) + b4*((p2sh/10)**2);
  output fvc;
end; else
if var='FEV1' then do;
  PREDFEV1 = b0+ b1*cvlage + b2*(cvlage**2) + b3*((p2sh/10)**2);
  LLNFEV1 = b0+ b1*cvlage + b2*(cvlage**2) + b4*((p2sh/10)**2);
  output fev1;
end; else
if var='FEV1/FVC' then do;
  PRDFEV1R = b0+ b1*cvlage;
  LLNFEV1R = b2+ b1*cvlage;
  output fev1fvc;
end; else
if var='FEV1/FEV6' then do;
  PRFEV1R6 = b0+ b1*cvlage;
  LLFEV1R6 = b2+ b1*cvlage;
  output fev1fev6;
end; else
if var='FEV6' then do;
  PREDFEV6 = b0+ b1*cvlage + b2*(cvlage**2) + b3*((p2sh/10)**2);
  LLNFEV6 = b0+ b1*cvlage + b2*(cvlage**2) + b4*((p2sh/10)**2);
  output fev6;
end; else
if var='PEF' then do;
  PREDPEF = b0+ b1*cvlage + b2*(cvlage**2) + b3*((p2sh/10)**2);
  LLNPEF = b0+ b1*cvlage + b2*(cvlage**2) + b4*((p2sh/10)**2);
  output pef;
end; else
if var='MIP' then do;
  PREDMIP = b0+ b1*cvlage + b2*(p2wtk) + b3*(p2sh/10);
  LLNMIP = b0+ b1*cvlage + b2*(p2wtk) + b3*(p2sh/10) + b4;
  output mip;
end;
run;
proc sort data=fev1;
  by habcid;
proc sort data=fvc;
  by habcid;
proc sort data=fev6;
  by habcid;
proc sort data=pef;

```

```

    by habcid;
proc sort data=fevlfvc;
    by habcid;
proc sort data=fevlf6;
    by habcid;
proc sort data=mip;
    by habcid;
run;

data calc.pft;
    merge fvc fev1 fev6 pef fevlfvc fevlf6 mip pft;
    by habcid;
    %convert(predfvc);
    %convert(llnfvc);
    %convert(predfev1);
    %convert(llnfev1);
    %convert(predfev6);
    %convert(llnfev6);
    %convert(predpef);
    %convert(llnpef);
    label predfvc='Predicted FVC, ml'
        llnfvc='Lower limit of normal FVC, ml'
        predfev1='Predicted FEV1, ml'
        llnfev1='Lower limit of normal FEV1, ml'
        predfev6='Predicted FEV6, ml'
        llnfev6='Lower limit of normal FEV6, ml'
        predpef='Predicted PEF, ml/sec'
        llnpef='Lower limit of normal PEF, ml/sec'
        prdfevlr='Predicted FEV1/FVC'
        llnfevlr='Lower limit of normal FEV1/FVC'
        prfevlr6='Predicted FEV1/FEV6'
        llfevlr6='Lower limit of normal FEV1/FEV6'
        predmip='Predicted MIP, cm H2O'
        llnmip='Lower limit of normal MIP, cm H2O'
        fevlr='Measured FEV1/FVC'
        fevlr6='Measured FEV1/FEV6';
run;
proc contents data=calc.pft;
run;
proc univariate data=calc.pft;
    var predfvc llnfvc predfev1 llnfev1 predfev6 llnfev6
        predpef llnpef prdfevlr llnfevlr prfevlr6 llfevlr6
        predmip llnmip fevlr fevlr6;
run;

```

Appendix XIII
Physical Activity Calculated Variables

Investigator Name: Eleanor Simonsick

Step 1: assign met estimates to each activity

Met estimates derive from Ainsworth BE, Haskell WL, Leon AS, Jacobs DR, Montoye HJ, Sallis JF, Paffenbarger RS. Compendium of

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FPPAKKWK	kcal/kg/week doing outdoor chores	Assigns 3.5 kcal/kg/hour doing outdoor chores (B/L Qaire, page 10, Q16)	3.5 x FPPATIME/60	If FPPA12MO=.M and FPPA7DAY=.A then FPPAKKWK=.M; if (FPPA12MO=0 or FPPA12MO=8) and (FPPA7DAY=.A or FPPA7DAY=0) then FPPAKKWK=0; if FPPA7DAY=0 then FPPAKKWK=0; if FPPA12MO=1 and FPPA7DAY=.M then FPPAKKWK=0; if FPPAKKWK<0 then do: if FPPA12MO=1 and FPPA7DAY=1 and FPPATIME=.M then FPPATIME=150 (median value for non-missings; affects 24 cases)	kkcal/kg/week
FPHCKKWK	kcal/kg/week doing heavy chores	Assigns 3.5 kcal/kg/hour doing heavy chores (B/L Qaire, page 10, Q17)	3.5 x FPHCTIME/60	If FPHC12MO=.M and FPHC7DAY=.A then FPHCKKWK=.M; if (FPHC12MO=0 or FPHC12MO=8) and (FPHC7DAY=.A or FPHC7DAY=0) then FPHCKKWK=0; if FPHC7DAY=0 then FPHCKKWK=0; if FPHC12MO=1 and FPHC7DAY=.M then FPHCKKWK=0; if FPHCKKWK<0 then do: if FPHC12MO=1 and FPHC7DAY=1 and FPHCTIME=.M then FPHCTIME=120 (median value for non-missings; affects 22 cases)	kkcal/kg/week

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FPLWKKWK	kcal/kg/week doing light housework	Assigns 2.5 kcal/kg/hour doing light housework (B/L Qaire, page 11, Q18)	2.5 x FPLWTIME/60	If FPLW12MO=.M and FPLW7DAY=.A then FPLWKKWK=.M; if (FPLW12MO=0 or FPLW12MO=8) and (FPLW7DAY=.A or FPLW7DAY=0) then FPLWKKWK=0; if FPLW7DAY=0 then FPLWKKWK=0; if FPLW12MO=1 and FPLW7DAY=.M then FPLWKKWK=0; if FPLWKKWK<0 then do: if FPLW12MO=1 and FPLW7DAY=1 and FPLWTIME=.M then FPLWTIME=420 (median value for non-missings; affects 80 cases)	kcal/kg/week

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FPGSKKWK	kcal/kg/week grocery shopping	Assigns 3.5 kcal/kg/hour per doing grocery shopping (B/L Qaire, page 11, Q19). Assumes that it takes one hour to shop for 4 bags of groceries. Assigns 1.25 kcal/kg to each bag carried or unloaded per week.	3.5 x FPGSNBAG/4 +1.25 x FPGSBAGC + 1.25 x FPGSBAGU	If FPGS12MO=.M and FPGS7DAY=.A then FPGSKKWK=.M; if (FPGS12MO=0 or FPGS12MO=8) and (FPGS7DAY=.A or FPGS7DAY=0) then FPGSKKWK=0; if FPGS7DAY=0 then FPGSKKWK=0; if FPGS12MO=1 and FPGS7DAY=.M then FPGSKKWK=0; if FPGSKKWK<0 then do: if FPGSNBAG=.A and FPGSBAGC=.A and FPGSBAGU=.A then FPGSKKWK=0; if FPGSNBAG=.M and FPGSBAGC=.M and FPGSBAGU=.M then FPGSKKWK=6.5 (median value for non-missings, affects 25 cases); if FPGSNBAG=1 and FPGSBAGC=.M and FPGSBAGU=.M then FPGSKKWK=1.25 (median value for non-missings, affects 1 case); if FPGSNBAG=8 and FPGSBAGC=8 and FPGSBAGU=.M then FPGSKKWK=12 (affects 1 case); if FPGSNBAG=15 and FPGSBAGC=15 and FPGSBAGU=.M then FPGSKKWK=22.5 (affects 1 case); if FPGSNBAG=20 and FPGSBAGC=20 and FPGSBAGU=.M then FPGSKKWK=30 (affects 1 case); if FPGSNBAG=.M and FPGSBAGC=0 then FPGSKKWK=1.75 (affects 2 cases)	kkcal/kg/week

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FPLDKKWK	kcal/kg/week doing laundry	Assigns 2.0 - 4.4 kcal/kg/hour doing laundry. Assumes it takes 15 minutes of work per load gathering/washing and 15 minutes per load folding/putting away. (B/L Qaire, page 12, Q20).)	0.5 x FPLDLOAD + 0.6 x FPLDFOLD.	If FPLD12MO=.M and FPLD7DAY=.A then FPLDKKWK=.M; if (FPLD12MO=0 or FPLD12MO=8) and (FPLD7DAY=.A or FPLD7DAY=.M) then FPLDKKWK=0; if FPLD7DAY=0 then FPLDKKWK=0; if FPLD12MO=1 and FPLD7DAY=.M then FPLDKKWK=0; if FPLDKKWK<0 then do: if FPLDLOAD=.A and FPLDFOLD=.A then FPLDKKWK=.M; if FPLDLOAD=.M and FPLDFOLD=.M then FPLDKKWK=2.2 (median value for non-missings, affects 16 cases); if FPLDLOAD=1 and FPLDFOLD=.M then FPLDKKWK=1.1 (affects 2 cases); if FPLDLOAD=2 and FPLDFOLD=.M then FPLDKKWK=2.2 (affects 3 cases); if FPLDLOAD=3 and FPLDFOLD=.M then FPLDKKWK=3.3 (affects 4 cases); if FPLDLOAD=5 and FPLDFOLD=.M then FPLDKKWK=5.5 (affects 1 case)	kkcal/kg/week
FPFSKKWK	kcal/kg/week climbing stairs	Assigns 4.0 kcal/kg/hour of stair climbing plus an additional 1.0 kcal/kg/hour carrying a load (B/L Qaire, page 12, Q21). (Assumes 1 flight up/down takes 30 seconds.)	4.0 x FPFSNUM/120 +1.0 x FPFSLOAD/120	If FPFS12MO=.M and FPS7DAY=.A then FPFSKKWK=.M; if (FPFS12MO=0 or FPFS12MO=8) and (FPS7DAY=.A or FPS7DAY=.M or FPS7DAY=.ME) then FPFSKKWK=0; if FPS7DAY=0 then FPFSKKWK=0; if FPFS12MO=1 and FPS7DAY=.M then FPFSKKWK=0; if FPFSKKWK<0 then do: if FPS7DAY=1 and FPFSNUM > 0 and FPFSLOAD=.M then FPFSLOAD=0; if FPS7DAY=1 and FPFSNUM=.M and FPFSLOAD > 0 then FPFSNUM=FPFSLOAD	kkcal/kg/week

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FPEWKKWK	kcal/kg/week walking for exercise	Assigns 4.0 kcal/kg/hour walking briskly, 3.0 to walking at moderate pace, and 2.0 to strolling (B/L Qaire, page 13, Q22 - walking for exercise)	4.0 x FPEWTIME*FPEW TIM/60 if FPEWPACE=1, 3.0 x FPEWTIME*FPEW TIM/60 if FPEWPACE=2, and 2.0 x FPEWTIME*FPEW TIM/60 if FPEWPACE=3	If FPEW12MO=.M and FPEW7DAY=.A then FPEWKKWK=.M; if (FPEW12MO=0 or FPEW12MO=8) and (FPEW7DAY=.A or FPEW7DAY=.M) then FPEWKKWK=0; if FPEW7DAY=0 then FPEWKKWK=0; if FPEW12MO=1 and FPEW7DAY=.M then FPEWKKWK=0; if FPEWKKWK<0 then do: if FPEWTIME > 0 and FPEWTIM > 0 and FPEWPACE=.M then FPEWKKWK=3.0 x FPEWTIME*FPEWTIM/60 (median value, affects 4 cases); if FPEWTIME > 0 and FPEWTIM=.M then FPEWTIM=35 (median value, affects 11 cases); if FPEWTIME=.M and FPEWTIM > 0 then FPEWTIME=4 (median value, affects 1 case)	kkcal/kg/ week

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FPOWKKWK	kcal/kg/week doing other walking	Assigns 4.0 kcal/kg/hour walking briskly, 3.0 to walking at moderate pace, and 2.0 to strolling (B/L Qaire, page 14, Q23 - other walking)	4.0 x FPOWTIME*FPOWTIM/60 if FPOWPACE=1, 3.0 x FPOWTIME*FPOWTIM/60 if FPOWPACE=2, and 2.0 x FPOWTIME*FPOWTIM/60 if FPOWPACE=3	If FPOW12MO=.M and FPOW7DAY=.A then FPOWKKWK=.M; if (FPOW12MO=0 or FPOW12MO=8) and (FPOW7DAY=.A or FPOW7DAY=.M) then FPOWKKWK=0; if FPOW7DAY=0 then FPOWKKWK=0; if FPOW12MO=1 and FPOW7DAY=.M then FPOWKKWK=0; if FPOWKKWK<0 then do: if FPOWTIME > 0 and FPOWTIM > 0 and FPOWPACE=.M then FPOWKKWK=3.0 x FPOWTIME*FPOWTIM/60 (affects 6 records) if FPOWTIME > 0 and FPOWTIM=.M and FPOWPACE ≥ 1 then FPOWTIM=25 (median value for non-missings, affects 18 cases); if FPOWTIME > 0 and FPOWTIM=.M and FPOWPACE=1.5 then FPOWTIM=25 (median value for non-missings, affects 18 cases);	kkcal/kg/week
FPACKKWK	kcal/kg/week doing aerobic dance	Assigns 5.0 kcal/kg/hour doing aerobics (B/L Qaire, page 15, Q24)	5.0 x FPACTIME/60	If FPAC12MO=.M and FPAC7DAY=.A then FPACKKWK=.M; if (FPAC12MO=0 or FPAC12MO=8) and (FPAC7DAY=.A or FPAC7DAY=.M) then FPACKKWK=0; if FPAC7DAY=0 then FPACKKWK=0; if FPAC12MO=1 and FPAC7DAY=.M then FPACKKWK=0; if FPACKKWK<0 then do: if FPAC7DAY=1 and FPACTIME=.M then FPACKKWK=6.67 (median value for non-missings, affects 4 cases)	kkcal/kg/week

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FPTRKKWK	kcal/kg/week weight training	Assigns 6.0 kcal/kg/hour doing weight training (B/L Qaire, page 15, Q25)	6.0 x FPTRTIME/60	if FPTR12MO=.M and FPTR7DAY=.A then FPTRKKWK=.M; if (FPTR12MO=0 or FPTR12MO=8) and (FPTR7DAY=.A or FPTR7DAY=.M) then FPTRKKWK=0; if FPTR7DAY=0 then FPTRKKWK=0; if FPTR12MO=1 and FPTR7DAY=.M then FPTRKKWK=0; if FPTRKKWK<0 then do: if FPTR7DAY=1 and FPTRTIME=.M then FPTRKKWK=6.00 (median value for non-missings, affects 3 cases)	kkcal/kg/week
FPHIKKWK	kcal/kg/week high intensity exercise	Assigns 4.0 kcal/kg/hour doing high intensity exercise if light effort, 6.0 if moderate, and 8.0 if vigorous (B/L Qaire, pages 16-17, Q26)	Sum(1-x) of 4.0 x FPHxTIME/60 if FPHIAxEF=1, 6.0 x FPHxTIME/60 if FPHIAxEF=2, 8.0 x FPHxTIME/60 if FPHIAxEF=3, where x=1,2,3, or 4	if FPHI12MO=.M and FPHI7DAY=.A then FPHIKKWK=.M; if (FPHI12MO=0 or FPHI12MO=8) and (FPHI7DAY=.A or FPHI7DAY=.M) then FPHIKKWK=0; if FPHI7DAY=0 then FPHIKKWK=0; if FPHI12MO=1 and FPHI7DAY=.M then FPHIKKWK=0; if FPHIKKWK<0 then do: if FPHI7DAY=1 and FPH1TIME=.M then FPH1TIME=60; if FPHI7DAY=1 and FPH2TIME=.M then FPH2TIME=60; if FPHI7DAY=1 and FPH3TIME=.M then FPH3TIME=40; if FPHI7DAY=1 and FPH1TIME=.M then FPH1TIME=30; if FPHI7DAY=1 and FPHxTIME > 0 and FPHIA1EF=.M then FPHIAxEF=2 (affects 32 cases)	kkcal/kg/week

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FPMIKKWK	kcal/kg/week mod intensity exercise	Assigns 3.0 kcal/kg/hour doing moderate intensity exercise, regardless of effort level (B/L Qaire, pages 18-19, Q27)	Sum(1-4) of 3.0 x FPMxTIME/60, where x=1,2,3, or 4	If FPMI12MO=.M and FPMI7DAY=.A then FPMIKKWK=.M; if (FPMI12MO=0 or FPMI12MO=8) and (FPMI7DAY=.A or FPMI7DAY=.M) then FPMIKKWK=0; if FPMI7DAY=0 then FPMIKKWK=0; if FPMI12MO=1 and FPMI7DAY=.M then FPMIKKWK=0; if FPMxKKWK<0 then do: if FPMI7DAY=1 and FPMI1TIME=.M then FPMI1TIME=180 (median value for non-missings, affects 7 cases); if FPMI7DAY=1 and FPM2TIME=.M then FPM2TIME=150; if FPMI7DAY=1 and FPM3TIME=.M then FPM3TIME=120	kkcal/kg/week
FPPWKKWK	kcal/kg/week doing paid work	Assigns 1.5 kcal/kg/hour doing paid work if activity level is mainly sitting, 2.0 if sitting, some standing, 2.5 if mostly standing/walking, 3.0 if mostly walking/lifting (B/L Qaire, page 20, Q28). Adjusts for months/year worked by multiplying result by FPVWMOW/12	1.5 x FPVWAHWR x FPVWMOW/12 if FPVWWACT=1, 2.0 x FPVWAHWR x FPVWMOW/12 if FPVWWACT=2, 2.5 x FPVWAHWR x FPVWMOW/12 if FPVWWACT=3, 3.0 x FPVWAHWR x FPVWMOW/12 if FPVWWACT=4	If FPVWCURJ=0 or FPVWCURJ=8 then FPPWKKWK=0; if FPPWKKWK<0 then do: if FPVWCURJ=1 and FPVWAHWR > 0 and FPVWWACT=.M then FPVWWACT=2 (affects 2 cases); if FPVWCURJ=1 and FPVWAHWR > 0 and FPVWMOW<0 then FPVWMOW=12 (affects 6 cases); if FPVWCURJ=1 and FPVWAHWR=.M and FPVWMOW > 0 then FPVWAHWR=20 (median value for non-missings, affects 13 cases)	kkcal/kg/week

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FPVWKKWK	kcal/kg/week doing volunteer work	Assigns 1.5 kcal/kg/hour doing volunteer work if activity level is mainly sitting, 2.0 if sitting, some standing, 2.5 if mostly standing/walking, 3.0 if mostly walking/lifting (B/L Qaire, page 20-21, Q29). Adjusts for months/year worked by multiplying result by FPVWMOV/12	1.5 x FPVWAHVW x FPVWMOV/12 if FPVWVACT=1, 2.0 x FPVWAHVW x FPVWMOV/12 if FPVWVACT=2, 2.5 x FPVWAHVW x FPVWMOV/12 if FPVWVACT=3, 3.0 x FPVWAHVW x FPVWMOV/12 if FPVWVACT=4	if FPVWCURV=0 or FPVWCURV=8 then FPVWKKWK=0; <i>if FPVWKKWK<0 then do: if FPVWCURV=1 and FPVWAHVW > 0 and FPVWVACT=.M then FPVWACT=2 (affects 25 cases); if FPVWCURV=1 and FPVWAHVW > 0 and FPVWMOV<0 then FPVWMOV=12 (affect 45 cases); if FPVWCURV=1 and FPVWAHVW=.M and FPVWMOV > 0 then FPVWAHVW=4 (median value for non-missings, affects 40 cases)</i>	kkcal/kg/ week
FPCWKKWK	kcal/kg/week doing child/adult care	Assigns 2.5 kcal/kg/hour doing child/adult care (B/L Qaire, page 21, Q30)	2.5 x FPVWAHAW	if FPVWCURA=0 or FPVWCURA=8 then FPCWKKWK=0; <i>if FPCWKKWK<0 then do: if FPVWCURA=1 and FPVWAHAW=.M then FPCWKKWK=30 (median value for non-missings, affects 69 cases)</i>	kkcal/kg/ week

Step 2: create composite variables

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
HHKKWK	kcal/kg/week - household chores	Sum of outdoor chores, heavy chores, light housework, grocery shopping, and laundry variables	FPPAKKWK + FPHCKKWK + FPLWKKWK + FPGSKKWK + FPLDKKWK	Imputed version of component variables used	kkcal/kg/week
WSKKWK	kcal/kg/week - walking + stairs	Sum of exercise walking, other walking, and stair climbing variables	FPEWKKWK + FPOWKKWK + FPFSSKKWK	Imputed version of component variables used	kkcal/kg/week
EXKKWK	kcal/kg/week - exercise/recreation	Sum of aerobic dance, weight training, high and medium intensity activity variables	FPACKKWK + FPTRKKWK + FPHIKKWK + FPMIKKWK	Imputed version of component variables used	kkcal/kg/week
WVCKKWK	kcal/kg/week - work, vol, caregiving	Sum of paid work, volunteer work, and caregiving variables	FPPWKKWK + FPVWKKWK + FPCWKKWK	Imputed version of component variables used	kkcal/kg/week
TOTKKWK	kcal/kg/week - total	Total of all activity variables	HHKKWK + WSKKWK + EXKKWK + WVCKKWK	Imputed version of component variables used	kkcal/kg/week
HAKCAL	kcal/week walking and exercise	Similar to Paffenberger's Harvard alumni studies: multiplies kcal/kg/week for all types of walking and exercise/recreation by weight in kg	(WSKKWK + EXKKWK) * P1WTK	Imputed version of component variables used	kkcal/week
WALKTIME	minutes walking/week	Adds minutes exercise walking and other walking in past week	WALKTIME=(FPEWTIME*FPEWTIM) + (FPOWTIME*FPOWTIM)	If FPEWKKWK=0 and FPOWKKWK=0 then WALKTIME=0; if FPEWKKWK>0 and FPOWKKWK=0 then WALKTIME=FPEWTIME*FPEWTIM; if FPEWKKWK=0 and FPOWKKWK>0 then	min

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
BKTWTIME	minutes walking briskly/week	Sum of minutes brisk exercise walking plus minutes brisk other walking	If FPEWPACE=1 then BKEWTIME=FPEWTIME*FPEWTIME; If FPEWPACE>1 then BKEWTIME=0 If FPOWPACE=1 then BKOWTIME=FPOWTIME*FPOWTIME; If FPOWPACE>1 then BKOWTIME=0 BKTWTIME=BKEWTIME + BKOWTIME	N/A	min
HIGHXMIN	min/week hi intensity exercise	Sum of minutes per week of aerobic exercise, weight training, and any high intensity activity	HIGHXMIN=FPACTIME + FPTRTIME + FPH1TIME + FPH2TIME + FPH3TIME + FPH4TIME	Imputed version of component variables used	min

Step 3: create categorical variables

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
HACAT	walking and exercise kcal category	Categorical Harvard alumni study variable, assigns categories to kcal/week walking and exercise	If HAKCAL=0 then HACAT=0; if $0 < \text{HAKCAL} < 500$ then HACAT=1; if $500 \leq \text{HAKCAL} < 1000$ then HACAT=2; if $1000 \leq \text{HAKCAL} < 1500$ then HACAT=3; if $1500 \leq \text{HAKCAL} < 2000$ then HACAT=4; if $\text{HAKCAL} \geq 2000$ then HACAT=5	Imputed version of component variables used	0=0 kcal/wk 1=1-499 kcal/wk 2=500-999 kcal/wk 3=1000-1499 kcal/wk 4=1500-1999 kcal/wk 5=2000+ kcal/wk

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
HIGHX90	90 min or more high intensity exercise per week	Dichotomous variable for high intensity exercise \geq 90 min/week vs <90 min/week	If HIGHXMIN<90, then HIGHX90=0; if HIGHXMIN \geq 90, then HIGHX90=1	Imputed version of component variables used	0=No 1=Yes
WALKCAT	minutes walking/week category	Categories of time spent on any walking per week	If WALKTIME=0 then WALKCAT=0; if 0<WALKTIME<150 then WALKCAT=1; if WALKTIME \geq 150 then WALKCAT=2	Imputed version of component variables used	0= 0 min/wk 1= between 0 and 150 min/wk 2= more than 150 min/wk
BRISK90	walks briskly \geq 90 min/week	Dichotomous variable for walking briskly \geq 90 min/week vs <90 min/week	If BKTWTIME=0 then BRISK90=0; if 0<BKTWTIME<90 then BRISK90=0; if BKTWTIME \geq 90 then BRISK90=1	Imputed version of component variables used	0=No 1=Yes
BRISK180	walks briskly \geq 180 min/week	Dichotomous variable for walking briskly \geq 180 min/week vs <180 min/week	If BKTWTIME=0 then BRISK180=0; if 0<BKTWTIME<180 then BRISK180=0; if BKTWTIME \geq 180 then BRISK180=1	Imputed version of component variables used	0=No 1=Yes

```

/*****
*****
* Program Name: Phact_v2.sas (SAS 9.1)
* Saved as: \\Fu-hsing-c\habc\habc_sas\Calculated Variables\Programs\Year
1\Phact_v2.sas
* Study: HABC
* Purpose: Creates calculated variables for Year 1 for Physical Activity
and Exercise
* for Chair Stand and Standing Balance data
* Input: habc3.z4 (home visit)
* Output: current.ylclnvis
* Programmer: Pat Spurr
* Date: Existing program modified 8/15/06 by Pat Spurr
*****
*****/
DATA PACTSUM;
merge current.ylscreen
current.ph(keep=habcid race gender)
current.ylclnvis(keep=habcid p2wtk);
by habcid;

* Program code to create summary measures of physical activity
based on caloric expenditure. Met estimates derive from ainsworth be,
haskell wl, leon as, jacobs dr, montoye hj, sallis jf, paffenbarger rs.
Compendium of physical activities: classification of energy costs of
human physical activities. Med sci sports exerc 25(1):71-80;

* Step 1: calculation of kcalories per kilogram of body weight per week
expended in each activity. Assigned met values and assumptions follow.
For ease of computation while the data is still dirty, kcal/kg/wk for
each activity will be calculated directly from minutes activity performed
(or loads washed, bags of groceries, flights of stairs climbed). It will
be assumed that a missing value in these fields indicates non-participation
and a value of zero will be assigned;

* Met assignments and other decision rules:

Q16 - GARDENING/YARDWORK = 3.5 (THIS HAS BEEN DOWNGRADED FROM 4.5)
Q17 - MAJOR CHORES = 3.5 (THIS HAS BEEN DOWNGRADED FROM 4.5)
SINCE THESE ARE COMBINED IN LATER ROUNDS THE SAME MET VALUE WAS ASSIGNED
Q18 - LIGHT HOUSE WORK = 2.5
Q19 - GROCERY SHOPPING = 3.5 FOR 4 BAGS PLUS 1.25 FOR THOSE CARRIED AND
1.25 FOR THOSE UNPACKED
Q20 - LAUNDRY - ASSUMING 30 MINUTES OF WORK PER LOAD THEN 1.0 PER LOAD
WASHED PLUS .5 PER LOAD PUT AWAY
Q21 - STAIRS = 4.0 WITH THE ASSUMPTION 1 FLIGHT UP/DOWN TAKES 30 SECONDS
PLUS 1.0 MET FOR EVERY FLIGHT CLIMBED WITH A LOAD
Q22 - WALKING FOR EXERCISE - 4.0 IF BRISK, 3.0 IF MODERATE, AND 2.0 IF
STROLL (DOWNGRADED TO 3.0 AND 2.0)
Q23 - WALKING FOR OTHER REASONS - 4.0 IF BRISK, 3.0 IF MODERATE, AND 2.0
IF STROLL (DOWNGRADED TO 3.0 AND 2.0)
Q24 - AEROBICS = 5.0
Q25 - WEIGHT TRAINING = 6.0 (DOWNGRADED TO 6)
Q26 - HIGH INTENSITY EXERCISE - 4.0 IF LIGHT, 6.0 IF MODERATE, 8.0 IF
VIGOROUS (DOWNGRADED FROM 7.0 AND 10.0)
Q27 - MODERATE INTENSITY EXERCISE = 3.0 FOR ALL ACTIVITIES AND INTENSITY
LEVELS (DOWNGRADED FROM 4.0)

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Q28 - PAID WORK = 1.5 FOR LEVEL 1, 2.0 FOR LEVEL 2, 2.5 FOR LEVEL 3, AND
3.0 FOR LEVEL 4
Q29 - VOLUNTEER WORK = 1.5 FOR LEVEL 1, 2.0 FOR LEVEL 2, 2.5 FOR LEVEL 3, AND
3.0 FOR LEVEL 4
Q30 - CAREGIVING = 2.5;

*HERE'S THE CODE;

*GARDENING AND YARDWORK;

IF FPPA12MO=.M AND FPPA7DAY=.A THEN FPPAKKWK=.;
IF (FPPA12MO=0 OR FPPA12MO=8) AND (FPPA7DAY=.A OR FPPA7DAY=0) THEN FPPAKKWK=0;
IF FPPA7DAY=0 THEN FPPAKKWK=0;
IF FPPA12MO=1 AND FPPA7DAY=.M THEN FPPAKKWK=0;
IF FPPA7DAY=1 THEN FPPAKKWK=3.5*FPPATIME/60;

*NOTE THE MEDIAN VALUE HAS BEEN ASSIGNED TO THE 24 CASES WHO HAVE
A YES FOR BOTH 12 MOS AND PAST 7 DAYS, BUT ARE
MISSING DATA ON AMOUNT OF TIME SPENT;

IF FPPAKKWK LT 0 THEN DO;
IF FPPA12MO=1 AND FPPA7DAY=1 AND FPPATIME=.M THEN FPPATIME=150;
IF FPPA7DAY=1 THEN FPPAKKWK=3.5*FPPATIME/60; END;

*HEAVY CHORES;

IF FPHC12MO=.M AND FPHC7DAY=.A THEN FPHCKKWK=.;
IF (FPHC12MO=0 OR FPHC12MO=8) AND (FPHC7DAY=.A OR FPHC7DAY=0) THEN FPHCKKWK=0;
IF FPHC7DAY=0 THEN FPHCKKWK=0;
IF FPHC12MO=1 AND FPHC7DAY=.M THEN FPHCKKWK=0;
IF FPHC7DAY=1 THEN FPHCKKWK=3.5*FPHCTIME/60;
*IMPUTED MISSING CODE;
IF FPHCKKWK LT 0 THEN DO;
IF FPHC12MO=1 AND FPHC7DAY=1 AND FPHCTIME=.M THEN FPHCTIME=120;
IF FPHC7DAY=1 THEN FPHCKKWK=3.5*FPHCTIME/60; END;

*LIGHT HOUSEWORK;

IF FPLW12MO=.M AND FPLW7DAY=.A THEN FPLWKKWK=.;
IF (FPLW12MO=0 OR FPLW12MO=8) AND (FPLW7DAY=.A OR FPLW7DAY=0) THEN FPLWKKWK=0;
IF FPLW7DAY=0 THEN FPLWKKWK=0;
IF FPLW12MO=1 AND FPLW7DAY=.M THEN FPLWKKWK=0;
IF FPLW7DAY=1 THEN FPLWKKWK=2.5*FPLWTIME/60;
*IMPUTED MISSING CODE;
IF FPLWKKWK LT 0 THEN DO;
IF FPLW12MO=1 AND FPLW7DAY=1 AND FPLWTIME=.M THEN FPLWTIME=420;
IF FPLW7DAY=1 THEN FPLWKKWK=2.5*FPLWTIME/60; END;

*GROCERY SHOPPING;

*ASSUME IT TAKES ONE HOUR TO SHOP FOR 4 BAGS OF GROCERIES;
IF FPGS12MO=.M AND FPGS7DAY=.A THEN FPGSKKWK=.;
IF (FPGS12MO=0 OR FPGS12MO=8) AND (FPGS7DAY=.A OR FPGS7DAY=0) THEN FPGSKKWK=0;
IF FPGS7DAY=0 THEN FPGSKKWK=0;
IF FPGS12MO=1 AND FPGS7DAY=.M THEN FPGSKKWK=0;

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IF FPGS7DAY=1 THEN FPGSKKWK=(3.5*FPGSNBAG/4) + (1.25*FPGSBAGC/4) +
(1.25*FPGSBAGU/4);

*IMPUTED MISSING CODE;

IF FPGSKKWK LT 0 THEN DO;
IF FPGSNBAG=.A AND FPGSBAGC=.A AND FPGSBAGU=.A THEN FPGSKKWK=0;
IF FPGSNBAG=.M AND FPGSBAGC=.M AND FPGSBAGU=.M THEN FPGSKKWK=6.5;
IF FPGSNBAG=1 AND FPGSBAGC=.M AND FPGSBAGU=.M THEN FPGSKKWK=1.25;
IF FPGSNBAG=8 AND FPGSBAGC=8 AND FPGSBAGU=.M THEN FPGSKKWK=12;
IF FPGSNBAG=15 AND FPGSBAGC=15 AND FPGSBAGU=.M THEN FPGSKKWK=22.5;
IF FPGSNBAG=20 AND FPGSBAGC=20 AND FPGSBAGU=.M THEN FPGSKKWK=30;
IF FPGSNBAG=.M AND FPGSBAGC=0 THEN FPGSKKWK=1.75; END;

*DOING LAUNDRY;

*ASSUME 15 MINUTES OF WORK PER LOAD GATHERING/WASHING AND 15 MINUTES PER
LOAD FOLDING/PUTTING AWAY;
IF FPLD12MO=.M AND FPLD7DAY=.A THEN FPLDKKWK=.;
IF (FPLD12MO=0 OR FPLD12MO=8) AND (FPLD7DAY=.A OR FPLD7DAY=.M) THEN FPLDKKWK=0;
IF FPLD7DAY=0 THEN FPLDKKWK=0;
IF FPLD12MO=1 AND FPLD7DAY=.M THEN FPLDKKWK=0;
IF FPLD7DAY=1 THEN FPLDKKWK=(.5*FPLDLOAD) + (.6*FPLDFOLD);
*IMPUTED MISSING CODE;
IF FPLDKKWK LT 0 THEN DO;
IF FPLDLOAD=.A AND FPLDFOLD=.A THEN FPLDKKWK=.;
IF FPLDLOAD=.M AND FPLDFOLD=.M THEN FPLDKKWK=2.2;
IF FPLDLOAD=1 AND FPLDFOLD=.M THEN FPLDKKWK=1.1;
IF FPLDLOAD=2 AND FPLDFOLD=.M THEN FPLDKKWK=2.2;
IF FPLDLOAD=3 AND FPLDFOLD=.M THEN FPLDKKWK=3.3;
IF FPLDLOAD=5 AND FPLDFOLD=.M THEN FPLDKKWK=5.5; END;

*CLIMBING STAIRS;

*ASSUME UP/DOWN 1 FLIGHT TAKES 30 SECONDS AND ONE ADDITIONAL MET FOR
CARRYING A LOAD;
IF FPFS12MO=.M AND FPS7DAY=.A THEN FPFSKKWK=.;
IF (FPFS12MO=0 OR FPFS12MO=8) AND (FPS7DAY=.A OR FPS7DAY=.M OR FPS7DAY=.E) THEN
FPFSKKWK=0;
IF FPS7DAY=0 THEN FPFSKKWK=0;
IF FPFS12MO=1 AND FPS7DAY=.M THEN FPFSKKWK=0;
IF FPS7DAY=1 THEN FPFSKKWK=(4.0*FPFSNUM/120) + (1.0*FPFSLOAD/120);
*IMPUTED MISSING CODE;
IF FPFSKKWK LT 0 THEN DO;
IF FPS7DAY=1 AND FPFSNUM GT 0 AND FPFSLOAD=.M THEN FPFSLOAD=0;
IF FPS7DAY=1 AND FPFSNUM=.M AND FPFSLOAD GT 0 THEN FPFSNUM=FPFSLOAD;
IF FPS7DAY=1 THEN FPFSKKWK=(4.0*FPFSNUM/120) + (1.0*FPFSLOAD/120); END;

*WALKING FOR EXERCISE;

IF FPEWPACE=1 THEN FPEWMET=4.0;
IF FPEWPACE=2 THEN FPEWMET=3.0;
IF FPEWPACE=3 THEN FPEWMET=2.0;
IF FPEW12MO=.M AND FPEW7DAY=.A THEN FPEWKKWK=.;
IF (FPEW12MO=0 OR FPEW12MO=8) AND (FPEW7DAY=.A OR FPEW7DAY=.M) THEN FPEWKKWK=0;
IF FPEW7DAY=0 THEN FPEWKKWK=0;
IF FPEW12MO=1 AND FPEW7DAY=.M THEN FPEWKKWK=0;

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IF FPEW7DAY=1 THEN FPEWKKWK=FPEWMET*FPEWTIME*FPEWTIM/60;
*IMPUTED MISSING CODE;
IF FPEWKKWK LT 0 THEN DO;
IF FPEWTIME > 0 AND FPEWTIM > 0 AND FPEWPACE=.M THEN FPEWMET=3.0;
IF FPEWTIME > 0 AND FPEWTIM=.M THEN FPEWTIM=35;
IF FPEWTIME=.M AND FPEWTIM > 0 THEN FPEWTIME=4;
IF FPEW7DAY=1 THEN FPEWKKWK=FPEWMET*FPEWTIME*FPEWTIM/60; END;

*WALKING FOR OTHER PURPOSES;

IF FPOWPACE=1 THEN FPOWMET=4.0;
IF FPOWPACE=2 THEN FPOWMET=3.0;
IF FPOWPACE=3 THEN FPOWMET=2.0;
IF FPOW12MO=.M AND FPOW7DAY=.A THEN FPOWKKWK=.;
IF (FPOW12MO=0 OR FPOW12MO=8) AND (FPOW7DAY=.A OR FPOW7DAY=.M) THEN FPOWKKWK=0;
IF FPOW7DAY=0 THEN FPOWKKWK=0;
IF FPOW12MO=1 AND FPOW7DAY=.M THEN FPOWKKWK=0;
IF FPOW7DAY=1 THEN FPOWKKWK=FPOWMET*FPOWTIME*FPOWTIM/60;
*IMPUTED MISSING CODE;
IF FPOWKKWK LT 0 THEN DO;
IF FPOWTIME > 0 AND FPOWTIM > 0 AND FPOWPACE=.M THEN FPOWMET=3.0;
IF FPOWTIME > 0 AND FPOWTIM=.M AND FPOWPACE GE 1 THEN FPOWTIM=25;
IF FPOWTIME > 0 AND FPOWTIM=.M AND FPOWPACE=.M THEN do;
  FPOWTIM=25; FPOWMET=3.0; end;
IF FPOWTIME=.M AND FPOWTIM > 0 THEN FPOWTIME=3;
IF FPOW7DAY=1 THEN FPOWKKWK=FPOWMET*FPOWTIME*FPOWTIM/60; END;

*AEROBICS;

IF FPAC12MO=.M AND FPAC7DAY=.A THEN FPACKKWK=.;
IF (FPAC12MO=0 OR FPAC12MO=8) AND (FPAC7DAY=.A OR FPAC7DAY=.M) THEN FPACKKWK=0;
IF FPAC7DAY=0 THEN FPACKKWK=0;
IF FPAC12MO=1 AND FPAC7DAY=.M THEN FPACKKWK=0;
IF FPAC7DAY=1 THEN FPACKKWK=5.0*FPACTIME/60;
*IMPUTED MISSING CODE;
IF FPACKKWK LT 0 THEN DO;
IF FPAC7DAY=1 AND FPACTIME=.M THEN FPACKKWK=6.67; END;

*WEIGHT TRAINING;

IF FPTR12MO=.M AND FPTR7DAY=.A THEN FPTRKKWK=.;
IF (FPTR12MO=0 OR FPTR12MO=8) AND (FPTR7DAY=.A OR FPTR7DAY=.M) THEN FPTRKKWK=0;
IF FPTR7DAY=0 THEN FPTRKKWK=0;
IF FPTR12MO=1 AND FPTR7DAY=.M THEN FPTRKKWK=0;
IF FPTR7DAY=1 THEN FPTRKKWK=6.0*FPTRTIME/60;
*IMPUTED MISSING CODE;
IF FPTRKKWK LT 0 THEN DO;
IF FPTR7DAY=1 AND FPTRTIME=.M THEN FPTRKKWK=6.00; END;

*HIGH INTENSITY EXERCISE;

IF FPHIA1EF=1 THEN FPH1MET=4.0;
IF FPHIA1EF=2 THEN FPH1MET=6.0;
IF FPHIA1EF=3 THEN FPH1MET=8.0;
IF FPHI12MO=.M AND FPHI7DAY=.A THEN FPH1KKWK=.;
IF (FPHI12MO=0 OR FPHI12MO=8) AND (FPHI7DAY=.A OR FPHI7DAY=.M) THEN FPH1KKWK=0;
IF FPHI7DAY=0 THEN FPH1KKWK=0;

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IF FPHI12MO=1 AND FPHI7DAY=.M THEN FPH1KKWK=0;
IF FPHI7DAY=1 THEN FPH1KKWK=FPH1MET*FPH1TIME/60;
*IMPUTED MISSING CODE;
IF FPH1KKWK LT 0 THEN DO;
IF FPHI7DAY=1 AND FPH1TIME=.M THEN FPH1TIME=60;
IF FPHI7DAY=1 AND FPH1TIME > 0 AND FPHIA1EF=.M THEN FPH1MET=6.0;
IF FPHI7DAY=1 THEN FPH1KKWK=FPH1MET*FPH1TIME/60; END;

IF FPHIA2EF=1 THEN FPH2MET=4.0;
IF FPHIA2EF=2 THEN FPH2MET=6.0;
IF FPHIA2EF=3 THEN FPH2MET=8.0;
FPH2KKWK=FPH2MET*FPH2TIME/60;
IF FPH2TIME=.A THEN FPH2KKWK=0;
*IMPUTED MISSING CODE;
IF FPH2KKWK LT 0 THEN DO;
IF FPHI7DAY=1 AND FPH2TIME=.M THEN FPH2TIME=60;
IF FPHI7DAY=1 AND FPH2TIME > 0 AND FPHIA2EF=.M THEN FPH2MET=6.0;
IF FPHI7DAY=1 THEN FPH2KKWK=FPH2MET*FPH2TIME/60; END;

IF FPHIA3EF=1 THEN FPH3MET=4.0;
IF FPHIA3EF=2 THEN FPH3MET=6.0;
IF FPHIA3EF=3 THEN FPH3MET=8.0;
FPH3KKWK=FPH3MET*FPH3TIME/60;
IF FPH3TIME=.A THEN FPH3KKWK=0;
*IMPUTED MISSING CODE;
IF FPH3KKWK LT 0 THEN DO;
IF FPHI7DAY=1 AND FPH3TIME=.M THEN FPH3TIME=40;
IF FPHI7DAY=1 AND FPH3TIME > 0 AND FPHIA3EF=.M THEN FPH3MET=6.0;
IF FPHI7DAY=1 THEN FPH3KKWK=FPH3MET*FPH3TIME/60; END;

IF FPHIA4EF=1 THEN FPH4MET=4.0;
IF FPHIA4EF=2 THEN FPH4MET=6.0;
IF FPHIA4EF=3 THEN FPH4MET=8.0;
FPH4KKWK=FPH4MET*FPH4TIME/60;
IF FPH4TIME=.A THEN FPH4KKWK=0;
*IMPUTED MISSING CODE;
IF FPH4KKWK LT 0 THEN DO;
IF FPHI7DAY=1 AND FPH4TIME=.M THEN FPH4TIME=30;
IF FPHI7DAY=1 AND FPH4TIME > 0 AND FPHIA4EF=.M THEN FPH4MET=6.0;
IF FPHI7DAY=1 THEN FPH4KKWK=FPH4MET*FPH4TIME/60; END;

FPHIKKWK=SUM(OF FPH1KKWK FPH2KKWK FPH3KKWK FPH4KKWK);

*MODERATE INTENSITY EXERCISE;

IF FPMI12MO=.M AND FPMI7DAY=.A THEN FPM1KKWK=.;
IF (FPMI12MO=0 OR FPMI12MO=8) AND (FPMI7DAY=.A OR FPMI7DAY=.M) THEN FPM1KKWK=0;
IF FPMI7DAY=0 THEN FPM1KKWK=0;
IF FPMI12MO=1 AND FPMI7DAY=.M THEN FPM1KKWK=0;
IF FPMI7DAY=1 THEN FPM1KKWK=3.0*FPM1TIME/60;
*IMPUTED MISSING CODE;
IF FPM1KKWK LT 0 THEN DO;
IF FPMI7DAY=1 AND FPM1TIME=.M THEN FPM1TIME=180;
IF FPMI7DAY=1 THEN FPM1KKWK=3.0*FPM1TIME/60; END;

FPM2KKWK=3.0*FPM2TIME/60;
IF FPM2TIME=.A THEN FPM2KKWK=0;

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*IMPUTED MISSING CODE;
IF FPM2KKWK LT 0 THEN DO;
IF FPMI7DAY=1 AND FPM2TIME=.M THEN FPM2TIME=150;
IF FPHI7DAY=1 THEN FPM2KKWK=3.0*FPM2TIME/60; END;

FPM3KKWK=3.0*FPM3TIME/60;
IF FPM3TIME=.A THEN FPM3KKWK=0;
*IMPUTED MISSING CODE;
IF FPM3KKWK LT 0 THEN DO;
IF FPMI7DAY=1 AND FPM3TIME=.M THEN FPM3TIME=120;
IF FPHI7DAY=1 THEN FPM3KKWK=3.0*FPM3TIME/60; END;

*NO ONE REPORTED A FOURTH MODERATE ACTIVITY;

FPMIKKWK=SUM(OF FPM1KKWK FPM2KKWK FPM3KKWK);

*WORK, VOLUNTEER, AND CAREGIVING;

IF FPVWWACT=1 THEN FPVWWMET=1.5;
IF FPVWWACT=2 THEN FPVWWMET=2.0;
IF FPVWWACT=3 THEN FPVWWMET=2.5;
IF FPVWWACT=4 THEN FPVWWMET=3.0;
IF FPVWCURJ=0 OR FPVWCURJ=8 THEN FPPWKKWK=0;
IF FPVWCURJ=1 THEN FPPWKKWK=FPVWWMET*(FPVWAHWR*FPVWMOW/12);
*IMPUTED MISSING CODE;
IF FPPWKKWK LT 0 THEN DO;
IF FPVWCURJ=1 AND FPVWAHWR > 0 AND FPVWWACT=.M THEN FPVWWMET=2.0;
IF FPVWCURJ=1 AND FPVWAHWR > 0 THEN FPVWMOW=12;
IF FPVWCURJ=1 AND FPVWAHWR=.M AND FPVWMOW > 0 THEN FPVWAHWR=20;
IF FPVWCURJ=1 THEN FPPWKKWK=FPVWWMET*(FPVWAHWR*FPVWMOW/12); END;

IF FPVWVACT=1 THEN FPVWVMET=1.5;
IF FPVWVACT=2 THEN FPVWVMET=2.0;
IF FPVWVACT=3 THEN FPVWVMET=2.5;
IF FPVWVACT=4 THEN FPVWVMET=3.0;
IF FPVWCURV=0 OR FPVWCURV=8 THEN FPPWKKWK=0;
IF FPVWCURV=1 THEN FPPWKKWK=FPVWVMET*(FPVWAHVW*FPVWMOV/12);
*IMPUTED MISSING CODE;
IF FPPWKKWK LT 0 THEN DO;
IF FPVWCURV=1 AND FPVWAHVW > 0 AND FPVWVACT=.M THEN FPVWVMET=2.0;
IF FPVWCURV=1 AND FPVWAHVW > 0 THEN FPVWMOV=12;
IF FPVWCURV=1 AND FPVWAHVW=.M AND FPVWMOV > 0 THEN FPVWAHVW=4;
IF FPVWCURV=1 THEN FPPWKKWK=FPVWVMET*(FPVWAHVW*FPVWMOV/12); END;

IF FPVWCURA=0 OR FPVWCURA=8 THEN FPCWKKWK=0;
IF FPVWCURA=1 THEN FPCWKKWK=2.5*FPVWAHAW;
*IMPUTED MISSING CODE;
IF FPCWKKWK LT 0 THEN DO;
IF FPVWCURA=1 AND FPVWAHAW=.M THEN FPCWKKWK=30; END;

*COMPOSITE MEASURES. SINCE THE SUM FUNCTION ASSIGNS ZERO TO MISSING VALUES,
THE IMPUTED VERSION OF THE COMPONENT VARIABLES WERE USED;

*HOUSEHOLD DUTIES;
HHKKWK=SUM(OF FPPAKKWK FPHCKKWK FPLWKKWK FPGSKKWK FPLDKKWK);

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*WALKING AND STAIRS;
WSKKWK=SUM(OFFPFSKKWK FPEWKKWK FPOWKKWK);
*EXERCISE AND RECREATION;
EXKKWK=SUM(OFFPACKKKWK FPTRKKWK FPHIKKWK FPMIKKWK);
*WORK, VOLUNTEER, CAREGIVING;
WVCKKWK=SUM(OFFPPWKKWK FPVWKKWK FPCWKKWK);
*GRAND TOTAL;
TOTKKWK=SUM(OFFHHKKWK WSKKWK EXKKWK WVCKKWK);

*CODE TO EXAMINE KCALS EXPENDED IN WALKING AND VIGOROUS EXERCISE,
SIMILAR TO PAFFENBARGER;

WSKCAL=P2WTK*WSKKWK;
EXKCAL=P2WTK*EXKKWK;
HAKCAL=SUM(OFFWSKCAL EXKCAL);

*CATEGORICAL HARVARD ALUM VARIABLE;

IF HAKCAL=0 THEN HACAT=0;
IF 0 < HAKCAL < 500 THEN HACAT=1;
IF 500 LE HAKCAL < 1000 THEN HACAT=2;
IF 1000 LE HAKCAL < 1500 THEN HACAT=3;
IF 1500 LE HAKCAL < 2000 THEN HACAT=4;
IF HAKCAL GE 2000 THEN HACAT=5;

*CODE TO CALCULATE AMOUNT OF WALKING
IN MINUTES, AMOUNT OF BRISK WALKING IN MINUTES, AND ENGAGEMENT IN
INTENSE EXERCISE;

IF FPEWKKWK=0 AND FPOWKKWK=0 THEN WALKTIME=0;
ELSE IF FPEWKKWK>0 AND FPOWKKWK=0 THEN WALKTIME=FPEWTIME*FPEWTIM;
ELSE IF FPEWKKWK=0 AND FPOWKKWK>0 THEN WALKTIME=FPOWTIME*FPOWTIM;
ELSE WALKTIME=(FPEWTIME*FPEWTIM) + (FPOWTIME*FPOWTIM);

IF WALKTIME=0 THEN WALKCAT=0;
IF 0<WALKTIME<150 THEN WALKCAT=1;
IF WALKTIME GE 150 THEN WALKCAT=2;

IF FPEWPACE=1 THEN BKEWTIME=FPEWTIME*FPEWTIM; IF FPEWPACE>1 THEN BKEWTIME=0;
IF FPEWKKWK=0 THEN BKEWTIME=0;
IF FPOWPACE=1 THEN BKOWTIME=FPOWTIME*FPOWTIM; IF FPOWPACE>1 THEN BKOWTIME=0;
IF FPOWKKWK=0 THEN BKOWTIME=0;
BKTWTIME=SUM(OFFBKEWTIME BKOWTIME);

IF BKTWTIME=0 THEN BRISK90=0;
IF 0<BKTWTIME<90 THEN BRISK90=0;
IF BKTWTIME GE 90 THEN BRISK90=1;

IF BKTWTIME=0 THEN BRISK180=0;
IF 0<BKTWTIME<180 THEN BRISK180=0;
IF BKTWTIME GE 180 THEN BRISK180=1;

*CODE FOR MINUTES OF HIGH INTENSITY EXERCISE. INCLUDES AEROBICS
AND WEIGHT/CIRCUIT TRAINING AND ANY HIGH INTENSITY EXERCISE;

HIGHXMIN=SUM(OFFFPACTIME FPTRTIME FPH1TIME FPH2TIME FPH3TIME FPH4TIME);

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IF FPACKKWK=0 AND FPTRKKWK=0 AND FPH1KKWK=0 THEN HIGHXMIN=0;
IF HIGHXMIN=0 THEN HIGHX90=0;
IF 0<HIGHXMIN<90 THEN HIGHX90=0;
IF HIGHXMIN GE 90 THEN HIGHX90=1;

IF FPHIKKWK=0 THEN HIGHEX=0;
IF FPHIKKWK>0 THEN HIGHEX=1;

*DEMOGRAPHIC RECODES;

IF SITE=1 THEN MEMPHIS=1;
IF SITE=2 THEN MEMPHIS=0;
IF RACE=2 THEN BLACK=1;
IF RACE=1 THEN BLACK=0;
IF GENDER=2 THEN MALE=0;
IF GENDER=1 THEN MALE=1;

LABEL
FPPAKKWK='KCAL/KG/WEEK DOING OUTDOOR CHORES'
FPHCKKWK='KCAL/KG/WEEK DOING HEAVY CHORES'
FPLWKKWK='KCAL/KG/WEEK DOING LIGHT HOUSEWORK'
FPGSKKWK='KCAL/KG/WEEK GROCERY SHOPPING'
FPLDKKWK='KCAL/KG/WEEK DOING LAUNDRY'
FPFSKKWK='KCAL/KG/WEEK CLIMBING STAIRS'
FPEWKKWK='KCAL/KG/WEEK WALKING FOR EXERCISE'
FPOWKKWK='KCAL/KG/WEEK DOING OTHER WALKING'
FPACKKWK='KCAL/KG/WEEK DOING AEROBIC DANCE'
FPTRKKWK='KCAL/KG/WEEK WEIGHT TRAINING'
FPHIKKWK='KCAL/KG/WEEK HIGH INTENSITY EXERCISE'
FPMIKKWK='KCAL/KG/WEEK MOD INTENSITY EXERCISE'
FPPWKKWK='KCAL/KG/WEEK DOING PAID WORK'
FPVWKKWK='KCAL/KG/WEEK DOING VOLUNTEER WORK'
FPCWKKWK='KCAL/KG/WEEK DOING CHILD/ADULT CARE'
HHKKWK='KCAL/KG/WEEK - HOUSEHOLD CHORES'
WSKKWK='KCAL/KG/WEEK - WALKING + STAIRS'
EXKKWK='KCAL/KG/WEEK - EXERCISE/RECREATION'
WVCKKWK='KCAL/KG/WEEK - WORK, VOL, CAREGIVING'
TOTKKWK='KCAL/KG/WEEK - TOTAL'
HAKCAL='KCAL/WEEK WALKING AND EXERCISE'
HACAT='WALKING AND EXERCISE KCAL CATEGORY'
WALKTIME='MINUTES WALKING/WEEK'
WALKCAT='MINUTES WALKING/WEEK CATEGORY'
BKTWTIME='MINUTES WALKING BRISKLY/WEEK'
BRISK90='WALKS BRISKLY >= 90 MIN/WEEK'
BRISK180='WALKS BRISKLY >= 180 MIN/WEEK'
HIGHXMIN='MIN/WEEK HI INTENSITY EXERCISE'
HIGHX90='INTENSE EXERCISE >= 90 MIN/WEEK';

DATA calc.PHACT_V2;
  SET PACTSUM(KEEP=HABCID FPPAKKWK FPHCKKWK FPLWKKWK FPGSKKWK
              FPLDKKWK FPFSKKWK FPEWKKWK FPOWKKWK FPACKKWK FPTRKKWK
              FPHIKKWK FPMIKKWK
              FPPWKKWK FPVWKKWK FPCWKKWK HHKKWK WSKKWK EXKKWK WVCKKWK
              TOTKKWK HAKCAL
              HACAT WALKTIME WALKCAT BKTWTIME BRISK90 BRISK180 HIGHXMIN
              HIGHX90);
format brisk180 brisk90 highx90 yndk. walkcat walk9x. HACAT ACTIV2X.;
RUN;

```

Appendix XIV
Rose Scales

Investigator Name: Catherine Carlson and Anne Newman

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
ROSEANG	Rose Angina	Summary variable from a standard questionnaire on chest pain and intermittent claudication created by Geoffrey Rose et al.	Based on questions 95-100 in the baseline questionnaire. See attached SAS code. definite: yes to pain or discomfort in the chest (MHCSCHPN=1) and meets all of the following: (yes to gets it when walking up hill or hurrying (MHCSCPUP=1) or yes to gets it when walking at an ordinary pace (MHCSPLS=1), stops or slows down or takes nitroglycerine if gets pain while walking (MHCSWALK=1), pain is relieved after standing still (MHCSSTIL=1), pain is relieved in 10 minutes or less (MHCSREL=2), pain occurs in the sternum (upper, middle, or lower) or left anterior chest (MHCSPLC=2 or 3). possible: yes to pain or discomfort in the chest, but does not meet all or some of the remaining criteria or has missing data for the remaining criteria. none: no to pain or discomfort in the chest (MHCSCHPN=0).	= Missing if MHCSCHPN is missing Don't Know, or Refused For all other component questions, missing , Don't know, and Refused are treated as No.	0= None 1= Definite 2= Possible

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
ROSEIC	Rose Intermittent Claudication	Summary variable from a standard questionnaire on chest pain and intermittent claudication created by Geoffrey Rose et al.	Based on question 102 from the baseline questionnaire: see attached SAS code. definite – yes to pain in legs while walking (MHCSLGPNand meets all of the following: no to pain beginning while standing still (MHCSLPSS=0), yes to getting it while walking uphill or hurrying (MHCSLPUP) or yes to getting it when walking at an ordinary pace on a level surface (MHCSLPLS=1), usually disappears in 10 minutes or less after standing still (MHCSSTST=2), and yes to pain in calf (MHCSLPCV=1). possible : yes to pain or discomfort in legs while walking, but either does not meet all or some of the remaining criteria or has missing data in the remaining criteria none : no to pain or discomfort in the legs while walking (MHCSLGPN=0)	= Missing if MHCSLGPN is missing Don't Know, or Refused For all other component questions, missing , Don't know, and Refused are treated as No.	0= None 1= Definite 2= Possible

```

*Creation of Rose-Angina Variables *
*Created by Cathy Carlson *
*October 10, 2000 *
*****
* Updated to run on our datasets FHarris 10/12/00 *
*****;

data calc.rose(keep=habcid ROSEIC ROSEANG);
set current.ylscreen(keep=habcid mhcslpup mhcslpls mhcslgpn mhcslpss mhcsstst
                    mhcslpcv mhcscpup mhcsclpls mhcschpn mhcswalk mhcsstil
                    mhcsrel mhcsplc );

if ((mhcslpup eq 1) or (mhcslpls eq 1)) then walkpn1=1;

if (mhcslgpn eq 0) then ROSEIC=0;
*None;
if ((mhcslgpn eq 1) and (mhcslpss eq 0) and (walkpn1 eq 1)
    and (mhcsstst eq 2) and (mhcslpcv eq 1)) then roseic=1;
*Definite;
if ((mhcslgpn eq 1) and (roseic ne 1)) then roseic=2;
*Possible;

if ((mhcscpup eq 1) or (mhcsclpls eq 1)) then walkpn2=1;
if (mhcschpn eq 0) then ROSEANG=0;
*None;
if ((mhcschpn eq 1) and (walkpn2 eq 1) and (mhcswalk eq 1) and (mhcsstil eq 1)
    and (mhcsrel eq 1) and ((mhcsplc eq 1) or (mhcsplc eq 2) or
(mhcsplc eq 3)))
    then roseang=1;
*Definite;
if ((mhcschpn eq 1) and (roseang ne 1)) then roseang=2;
*Possible;
label    roseic = 'Rose intermittent claudication score'
        roseang = 'Rose angina score';
format roseic roseang prevdzf.;
run;

```

Appendix XV
Self-Reported Function Calculated Variables

Investigator Name: Eleanor Simonsick

Note: All variables from Eligibility Assessment of Others in the Home were renamed to match those from Final Eligibility Assessment for the purposes of these recodes. Final Eligibility Forms are missing for 106 cases.

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
EASEQM	Ease walking 1/4 mile	Recode of EADWQMEZ where 3 is easiest; imputations applied for missing EADWQMEZ	If EADWQMYN=0 then EASEQM=7-EADWQMEZ If EADWQMYN=1 then EASEQM=4 to reflect study eligibility criteria	If (EADWQMYN=0 and EADWQMEZ=.M) then EASEQM=7-EADW1MEZ; if (EADWQMYN=0 and EADWQMEZ=.M) and EADW1MEZ<0 and (EADW1MYN=1 or EADW1MYN=8 or EADW1MYN=.M) then EASEQM=4; if (EADWQMYN=0 and EADWQMEZ=.M) and (EADW1MYN=0 and EADW1MEZ=.M) then EASEQM=5	6=very easy 5=somewhat easy 4=not that easy
EASE1M	Ease walking 1 mile	Recode of EADW1MEZ where 3 is easiest; imputations applied for missing EADW1MEZ	If EADW1MYN=1 then EASE1M=0; if EADW1MEZ=3 then EASE1M=1; if EADW1MEZ=2 then EASE1M=2; if EADW1MEZ=1 then EASE1M=3	If EADW1MYN=8 and EADW1MEZ=.A then EASE1M=1; if EADW1MYN=.M and EADW1MEZ=.A and EASEQM=4 then EASE1M=0; if EADW1MYN=.M and EADW1MEZ=.A and EASEQM=5 then EASE1M=1; if EADW1MYN=.M and EADW1MEZ=.A and EASEQM=6 then EASE1M=2; if EADW1MYN=0 and EADW1MEZ=.M and EASEQM=4 then EASE1M=0; if EADW1MYN=0 and EADW1MEZ=.M and EASEQM=5 then EASE1M=1; if EADW1MYN=0 and EADW1MEZ=.M and EASEQM=6 then EASE1M=2; if EADWQMYN=1 then EASE1M=0; if EASEQM > 0 and (EASEQM-3 < EASE1M) then EASE1M=EASEQM-3 (affects 19 cases)	3=very easy 2=somewhat easy 1=not that easy 0=difficult

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
WKAINDEX	Walking ability index	Summary measure of self-reported walking ability.	WKAINDEX=EASEQM + EASE1M	Imputed version of component variables used	This scale will ultimately range from 0 (unable) to 9 (very easy), but at baseline it ranges from 4-9, as no one has difficulty.
TIREDDQM	Gets tired walking 1/4 mile	Recode of EASWQMT1 and EASWQMT2 into a single variable; don't do and don't know recoded as yes	If EADWQMT2=8 or EADWQMT2=9 or EASWQMT1=8 or EASWQMT1=9 then TIREDDQM=1; if EADWQMT2=0 or EASWQMT1=0 then TIREDDQM=0; if EADWQMT2=1 or EASWQMT1=1 then TIREDDQM=1	If EADWQMT1 and 2 are both missing, then TIREDDQM is missing	0=No 1=Yes
LESSOQM	Walks 1/4 mile less often	Recode of EASWQML1 and EASWQML2 into a single variable; don't do and don't know recoded as yes	If EADWQML2=8 or EADWQML2=9 or EADWQML1=8 or EADWQML1=9 then LESSOQM=1; if EADWQML2=0 or EADWQML1=0 then LESSOQM=0; if EADWQML2=1 or EADWQML1=1 then LESSOQM=1;	If EADWQML1 and 2 are both missing, then TIREDDQM is missing.	0=No 1=Yes
EASE1F	Ease climbing 1 flight	Recode of EADW10EZ where 6 is easiest; imputations applied for missing EADW10EZ	EASE1F=7-EADW10EZ; If EADW10YN=1 then EASE1F=1 to reflect study eligibility criteria	If EADW10EZ<0 then EASE1F=7-EADW20EZ; if EASE1F=. and (EADW20YN=1 or EADW20YN=8 or EADW20YN=.M or EADW20YN=.A)THEN EASE1F=4; if EASE1F=. and EADW20YN=0 and EADW20EZ=.M then EASE1F=5	6=very easy 5=somewhat easy 4=not that easy

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
EASE2F	Ease climbing 2 flights	Recode of EADW20EZ where 3 is easiest; imputations applied for missing EADW20EZ	If EADW20YN=1 then EASE2F=0; if EADW20EZ=3 then EASE2F=1; if EADW20EZ=2 then EASE2F=2; if EADW20EZ=1 then EASE2F=3	If EADW20YN=8 and EADW20EZ=.A then EASE2F=1; if EADW20YN=.M and EADW20EZ=.A and EASE1F=4 then EASE2F=0; if EADW20YN=.M and EADW20EZ=.A and EASE1F=5 then EASE2F=1; if EADW20YN=.M and EADW20EZ=.A and EASE1F=6 then EASE2F=2; if EADW20YN=0 and (EADW20EZ=.M or EADW20EZ=0 or EADW20EZ=8) and EASE1F=5 then EASE2F=1; if EADW20YN=0 and (EADW20EZ=.M or EADW20EZ=0) and EASE1F=6 then EASE2F=2; if EADW10YN=1 then EASE2F=0; if EASE1F-3 < EASE2F then EASE2F=EASE1F-3 (affects 34 cases)	3=very easy 2=somewhat easy 1=not that easy 0=difficult
CSAINDEX	Climbing stairs ability index	Summary measure of self-reported walking ability.	CSAINDEX=EASE1F + EASE2F	Imputed version of component variables used	This scale will ultimately range from 0 (unable) to 9 (very easy), but at baseline it ranges from 4-9, as no one has difficulty.
TIRE1F	Gets tired climbing 1 flight	Recode of EADW10WX and EADW10WR into a single variable; don't do and don't know recoded as yes	If EADW10WX=8 or EADW10WX=9 or EADW10WR=8 or EADW10WR=9 then TIRE1F=1; if EADW10WX=0 or EADW10WR=0 then TIRE1F=0; if EADW10WX=1 or EADW10WR=1 then TIRE1F=1	If EADWDWLO and EAD10LO, then LESSO1F is missing	0=No 1=Yes
LESSO1F	Climbs stairs less often	Recode of EADWWRLO and EAD10LO into a single variable; don't do and don't know recoded as yes	If EAD10LO=8 or EAD10LO=9 or EADWWRLO=8 or EADWWRLO=9 then LESSO1F=1; if EAD10LO=0 or EADWWRLO=0 then LESSO1F=0; if EAD10LO=1 or EADWWRLO=1 then LESSO1F=1	If EADW10WX and EADW10WR are both missing, then TIRE1F is missing	0=No 1=Yes

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
EASE10P	Ease lift/carry 10 lbs	Recode of FPEZ10LB where 6 is easiest; imputations applied for missing	If FPDIF10=0 then EASE10P=7-FPEZ10LB; If FPDIF10=1 then EASE10P=4-FPD1OAMT	If FPDIF10=.M and FPD1OAMT>0 and FPEZ10LB=.A then EASE10P=4-FPD1OAMT; If FPDIF10=.M and FPD1OAMT=.A and FPEZ10LB>0 then EASE10P=7-FPEZ10LB; if EASE10P=. and FPD20LBS ≠ 1 then EASE10P=7-FPEZ20LB; if EASE10P=. and FPD20LBS=0 and FPEZ20LB < 0 then EASE10P=6; if EASE10P=. and FPDIF10=0 and FPD20LBS=1 then EASE10P=4; if EASE10P=. and FPDIF10=8 and FPD20LBS=1 then EASE10P=4; if EASE10P=. and FPDIF10=8 and FPD20LBS<0 and FPEZ20LB<0 then EASE10P=4; if EASE10P=. and FPDIF10=0 and FPD20LBS<0 and FPEZ20LB<0 then EASE10P=4; if EASE10P=. and FPDIF10=0 and FPEZ10LB=.M and FPD1OAMT>0 then EASE10P=4-FPD1OAMT	6=very easy 5=somewhat easy 4=not that easy 3=a little difficult 2=somewhat difficult 1=very difficult 0=unable to do
EASE20P	Ease lift/carry 20 lbs	Recode of FPEZ20LB where 3 is easiest; imputations applied for missing FPEZ20LB	EASE20P=4-FPEZ20LB; if FPD20LBS=1 then EASE20P=0; if 0 le EASE10P le 3 then EASE20P=0	If (FPD20LBS=.A or FPD20LBS=.M) and (FPEZ20LB=.M or FPEZ20LB=.A) and EASE10P=4 then EASE20P=0; if (FPD20LBS=0 or FPD20LBS=8 or FPD20LBS=.M or FPD20LBS=.A) and (FPEZ20LB=.M or FPEZ20LB=.A) and EASE10P=6 then EASE20P=2; if (FPD20LBS=0 or FPD20LBS=8 or FPD20LBS=.M or FPD20LBS=.A) and (FPEZ20LB=.M or FPEZ20LB=.A) and EASE10P=5 then EASE20P=1; if EASE10P-3 < EASE20P then EASE20P=EASE10P-3 (affects 149 cases)	3=very easy 2=somewhat easy 1=not that easy 0=difficult
LCAINDEX	Lift/carry ability index	Summary measure of self-reported lifting/carrying ability.	LCAINDEX=EASE10P + EASE20P	Imputed version of component variables used	Ranges from 0 (unable) to 9 (very easy)

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
LESSO10P	Lift/carry 10 lbs less often	Recode of FPD10AMT, FPLS12MO, and FPLESS10 into a single variable; don't do and don't know recoded as yes	If FPD10AMT=4 then LESSO10P=1; if FPLS12MO=8 or FPLS12MO=9 or FPLESS10=8 or FPLESS10=9 then LESSO10P=1; if FPLS12MO=0 or FPLESS10=0 then LESSO10P=0; if FPLS12MO=1 or FPLESS10=1 then LESSO10P=1	If FPD10AMT ≠ 4 and FPLESS10 and FPLS12MO are both missing, then LESSO10P is missing	0=No 1=Yes
EASEUP	Ease rising from chair	Recode of FPDIFSTA, FPEZSTA, and FPDSTAMT into a single variable, 6 is easiest	If FPDIFSTA=0 then EASEUP=7 - FPEZSTA; if FPDIFSTA=1 then EASEUP=4 - FPDSTAMT	If FPDIFSTA=.M and FPDSTAMT>0 and FPEZSTA=.A then EASEUP=4 - FPDSTAMT; if FPDIFSTA=8 and FPEZSTA=.A and FPDSTAMT=.A then EASEUP=4; if FPDIFSTA=0 and FPEZSTA=.M then EASEUP=5; if FPDIFSTA=0 and FPEZSTA=.M and FPDSTAMT >0 then EASEUP=4 - FPDSTAMT	Ranges from 0 (least easy) to 6 (easiest)
EASESCK	Ease stooping	Recode of FPDIFSCK, FPEZSCK, and FPDSKAMT into a single variable, 6 is easiest	If FPDIFSCK=0 then EASESCK=7 - FPEZSCK; if FPDIFSCK=1 then EASESCK=4 - FPDSKAMT	If FPDIFSCK=.M and FPDSCKAM > 0 and FPEZSCK=.A then EASESCK=4 - FPDSCKAM; if FPDIFSCK=8 and FPDSCKAM=.A and FPEZSCK=.A then EASESCK=4; if FPDIFSCK=0 and FPEZSCK=.M then EASESCK=5; if FPDIFSCK=0 and FPEZSCK=.M and FPDSCKAM >0 then EASESCK=4 - FPDSCKAM	Ranges from 0 (least easy) to 6 (easiest)
EASEHHW	Ease doing heavy work	Recode of FPDIFHW, FPEZHW, and FPDHWAMT into a single variable, 6 is easiest	If FPDIFHW=0 then EASEHHW=7 - FPEZHW; if FPDIFHW=1 then EASEHHW=4 - FPDHWAMT	If FPDIFHW=.M and FPDHWAMT > 0 and FPEZHW=.A then EASEHHW=4 - FPDHWAMT; if FPDIFHW=8 and FPDHWAMT=.A and FPEZHW=.A then EASEHHW=4; if FPDIFHW=0 and FPEZHW=.M then EASEHHW=5; if FPDIFHW=0 and FPEZHW=.M and FPDHWAMT > 0 then EASEHHW=4 - FPDHWAMT	Ranges from 0 (least easy) to 6 (easiest)
LESSOHW	Does heavy work less often	Recode of FPDHWAMT and FPHW10MO into a single variable; don't do and don't know recoded as yes	If FPDHWAMT=4 then LESSOHW=1; if FPHW12MO=1 or FPHW12MO=8 or FPHW12MO=9 then LESSOHW=1; if FPHW12MO=0 then LESSOHW=0	If FPHW12MO is missing, then LESSOHW='.M' Note: There are over 400 missing for FPHW12MO and therefore LESSOHW. The missings appear to be randomly distributed across yes, no, and don't know for FPDIFHW;	0=No 1=Yes

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
DIFFPP	Difficulty pushing/pulling	Recode of FPDIFPP into a dichotomous variable; don't know is recoded as yes, refused as missing	DIFFPP=FPDIFPP	If FPDIFPP=7 then DIFFPP=.; if FPDIFPP=8 then DIFFPP=1; if FPDIFPP=.M and FPDIFPAM > 0 then DIFFPP=1	0=No 1=Yes

```

*****;
* Updated by L.Akin 11/16/2001 *;
* *;
* Fixed logic errors for EASE1M,EASE2F,EASEHHW *;
* *;
* 11/29/01 Fixed EASE2F when EASE1F=6 from 3 to 2 L Akin *;
* *;
*****;

```

```

OPTIONS PAGESIZE=50 LINESIZE=125 NODATE NONUMBER NOFMterr;

```

```

DATA A; SET current.ylscreen;

```

```

*SELF-REPORT FUNCTION PROGRAM CODE;
*NOTE: FINAL ELIGIBILITY FORMS ARE MISSING FOR 106 CASES;
*CODE TO RENAME OTHERS IN THE HOME VARIABLES TO THE SAME NAME AS FINAL
ELIGIBILITY ASSESSMENT;
IF EADWQMYN=. THEN ELIGHOME=1; ELSE ELIGHOME=0;
ARRAY MAIN EADWQMYN EADWQMEZ EADWQ MDF EADWQMT2 EADWQML2 EASWQMT1 EADWQML1
EADW1MYN EADW1MEZ
EADW10YN EADIF EADW10EZ EADW10WX EAD10LO EADW10WR EADWWRLO EADW20YN EADW20EZ;
ARRAY HOME EODWQMYN EODWQMEZ EODWQ MDF EODWQMT2 EODWQML2 EOSWQMT1 EODWQML1
EODW1MYN EODW1MEZ
EODW10YN EODIF EODW10EZ EODW10WX EOD10LO EODW10WR EODWWRLO EODW20YN EODW20EZ;
DO OVER MAIN; IF ELIGHOME=1 THEN MAIN=HOME; END;

*CODE FOR EASE OF WALKING 1/4 MILE. IF EASE LEVEL MISSING, EASE LEVEL
WALKING 1 MILE WAS ASSIGNED. IF NO EASE LEVEL FOR WALKING 1M WAS CODED
AND EADW1MYN WAS YES, DON'T
KNOW, OR MISSING THEN NOT THAT EASY WAS ASSIGNED. IF NO EASE LEVEL FOR
WALKING 1M WAS CODED AND EADW1MYN WAS NO AND EADW1MEZ WAS MISSING THEN
SOMEWHAT EASY WAS ASSIGNED. THE 4 CASES WHO REPORTED DIFFICULTY WERE
RECODED TO NOT THAT EASY FOR QM AND DIFFICULTY FOR 1M;
IF EADWQMYN=0 THEN EASEQM=7-EADWQMEZ;
IF (EADWQMYN=0 AND EADWQMEZ=.M) THEN EASEQM=7-EADW1MEZ;
IF (EADWQMYN=0 AND EADWQMEZ=.M) AND EADW1MEZ<0 AND (EADW1MYN=1 OR EADW1MYN=8
OR EADW1MYN=.M) THEN EASEQM=4;
IF (EADWQMYN=0 AND EADWQMEZ=.M) AND (EADW1MYN=0 AND EADW1MEZ=.M)
THEN EASEQM=5;
IF EADWQMYN=1 THEN EASEQM=4;
*THE ABOVE RECODE IS TO BE USED FOR BASELINE ONLY (SEE BELOW);
*CODE FOR EASE OF WALKING 1 MILE. AS SELF-REPORTED WALKING ABILITY IS A KEY
DEPENDENT
MEASURE IN HEALTH ABC, MISSING VALUES WERE RECODED TO NON-MISSING WHENEVER A
REASON
GUESS COULD BE MADE BASED ON OTHER AVAILABLE INFORMATION. SEE BELOW FOR CODE AND
RECODING RULES FOR MISSING VALUES;
IF EADW1MYN=1 THEN EASE1M=0;
ELSE IF EADW1MEZ=3 THEN EASE1M=1;
ELSE IF EADW1MEZ=2 THEN EASE1M=2;
ELSE IF EADW1MEZ=1 THEN EASE1M=3;
*MISSING VALUE RECODES;
IF EADW1MYN=8 AND EADW1MEZ=.A THEN EASE1M=1;
IF EADW1MYN=.M AND EADW1MEZ=.A AND EASEQM=4 THEN EASE1M=0;
IF EADW1MYN=.M AND EADW1MEZ=.A AND EASEQM=5 THEN EASE1M=1;

```

```

IF EADW1MYN=.M AND EADW1MEZ=.A AND EASEQM=6 THEN EASE1M=2;
IF EADW1MYN=0 AND EADW1MEZ=.M AND EASEQM=4 THEN EASE1M=0;
IF EADW1MYN=0 AND EADW1MEZ=.M AND EASEQM=5 THEN EASE1M=1;
IF EADW1MYN=0 AND EADW1MEZ=.M AND EASEQM=6 THEN EASE1M=2;
IF EADWQMYN=1 THEN EASE1M=0;

```

```

*IN 19 CASES THE AMOUNT OF EASE REPORTED FOR WALKING 1 MILE WAS GREATER THAN
THE AMOUNT OF EASE REPORTED FOR 1/4 MILE. THE CODE BELOW DOWNGRADES THE EASE
LEVEL REPORTED FOR 1M TO THAT REPORTED FOR 1/4M;
IF EASEQM GT 0 AND ((EASEQM-3) LT EASE1M) THEN DO;
EASE1M=EASEQM-3; END;

```

```

*CODE TO CREATE A SUMMARY MEASURE OF SELF-REPORTED WALKING ABILITY. THIS
SCALE WILL ULTIMATELY RANGE FROM 0 TO 9, BUT AT BASELINE IT RANGES FROM
4-9, AS NO ONE HAS DIFFICULTY. THIS SCALE CAN BE CREATED IN TWO WAYS: 1) KEYING
OFF THE RESPONSE TO EASE1M AND ONLY LOOKING AT EASEQM WHEN DIFFICULTY IS
REPORTED FOR 1M OR 2) SUMMING THE RESPONSES TO THE TWO QUESTIONS. I
DID IT BOTH WAYS AND FOUND THE LATTER APPROACH SUPERIOR;

```

```

WKAINDEX=EASEQM + EASE1M;

```

```

IF EADWQMT2=8 OR EADWQMT2=9 OR EASWQMT1=8 OR EASWQMT1=9 THEN TIREDQM=1;
IF EADWQMT2=0 OR EASWQMT1=0 THEN TIREDQM=0;
IF EADWQMT2=1 OR EASWQMT1=1 THEN TIREDQM=1;
IF EADWQML2=8 OR EADWQML2=9 OR EADWQML1=8 OR EADWQML1=9 THEN LESSOQM=1;
IF EADWQML2=0 OR EADWQML1=0 THEN LESSOQM=0;
IF EADWQML2=1 OR EADWQML1=1 THEN LESSOQM=1;

```

```

*CODE FOR EASE OF CLIMBING STAIRS;
EASE1F=7-EADW10EZ; IF EADW10EZ<0 THEN EASE1F=7-EADW20EZ;
IF EADW10YN=1 THEN EASE1F=4;
IF EASE1F=. AND (EADW20YN=1 OR EADW20YN=8 OR EADW20YN=.M OR EADW20YN=.A)
THEN EASE1F=4;
IF EASE1F=. AND EADW20YN=0 AND EADW20EZ=.M THEN EASE1F=5;

```

```

IF EADW20YN=1 THEN EASE2F=0;
ELSE IF EADW20EZ=3 THEN EASE2F=1;
ELSE IF EADW20EZ=2 THEN EASE2F=2;
ELSE IF EADW20EZ=1 THEN EASE2F=3;
IF EADW20YN=8 AND EADW20EZ=.A THEN EASE2F=1;
IF EADW20YN=.M AND EADW20EZ=.A AND EASE1F=4 THEN EASE2F=0;
IF EADW20YN=.M AND EADW20EZ=.A AND EASE1F=5 THEN EASE2F=1;
IF EADW20YN=.M AND EADW20EZ=.A AND EASE1F=6 THEN EASE2F=2;
IF EADW20YN=0 AND (EADW20EZ=.M OR EADW20EZ=0 OR EADW20EZ=8) AND
EASE1F=5 THEN EASE2F=2;
IF EADW20YN=0 AND (EADW20EZ=.M OR EADW20EZ=0) AND EASE1F=6 THEN EASE2F=2;
IF EADW10YN=1 THEN EASE2F=0;

```

```

IF (EASE1F-3) LT EASE2F THEN DO;
EASE2F=EASE1F-3; END;

```

```

*CODE TO CREATE A SUMMARY MEASURE OF SELF-REPORTED STAIR CLIMBING ABILITY. THIS
SCALE WILL
RANGE FROM 0 TO 9, BUT AT BASELINE IT RANGES FROM 4-9;
CSAINDEX=EASE1F + EASE2F;

```

*CODE TO CREATE A SUMMARY MOBILITY MEASURE THAT COMBINES THE WALK AND STAIR INDICIES. AS THE TWO INDICIES HAD A CORRELATION OF .61 AND ONLY 33% HAD 9'S ON BOTH VERSUS 46% ON THE WALK

INDEX ALONE;

MOBINDEX=CSAINDEX + WKAINDEX;

*THIS CODE COMBINES CATEGORIES OF MOBINDEX TO HAVE A REASONABLE NUMBER OF CASES AT EACH LEVEL;

IF MOBINDEX=8 OR MOBINDEX=9 OR MOBINDEX=10 THEN MOBINDEX2=0;

IF MOBINDEX=11 OR MOBINDEX=12 THEN MOBINDEX2=1;

IF MOBINDEX=13 OR MOBINDEX=14 THEN MOBINDEX2=2;

IF MOBINDEX=15 OR MOBINDEX=16 THEN MOBINDEX2=3;

IF MOBINDEX=17 THEN MOBINDEX2=4;

IF MOBINDEX=18 THEN MOBINDEX2=5;

IF EADW10WX=8 OR EADW10WX=9 OR EADW10WR=8 OR EADW10WR=9 THEN TIRED1F=1;

IF EADW10WX=0 OR EADW10WR=0 THEN TIRED1F=0;

IF EADW10WX=1 OR EADW10WR=1 THEN TIRED1F=1;

IF EAD10LO=8 OR EAD10LO=9 OR EADWWRLO=8 OR EADWWRLO=9 THEN LESSO1F=1;

IF EAD10LO=0 OR EADWWRLO=0 THEN LESSO1F=0;

IF EAD10LO=1 OR EADWWRLO=1 THEN LESSO1F=1;

*CODE FOR LIFTING/CARRYING;

IF FPDIF10=0 THEN EASE10P=7-FPEZ10LB;

IF FPDIF10=1 THEN EASE10P=4 - FPD1OAMT;

IF FPDIF10=.M AND FPD1OAMT>0 AND FPEZ10LB=.A THEN EASE10P=4 - FPD1OAMT;

IF FPDIF10=.M AND FPD1OAMT=.A AND FPEZ10LB>0 THEN EASE10P=7 - FPEZ10LB;

IF EASE10P=. AND FPD20LBS NE 1 THEN EASE10P=7-FPEZ20LB;

IF EASE10P=. AND FPD20LBS=0 AND FPEZ20LB LT 0 THEN EASE10P=6;

IF EASE10P=. AND FPDIF10=0 AND FPD20LBS=1 THEN EASE10P=4;

IF EASE10P=. AND FPDIF10=8 AND FPD20LBS=1 THEN EASE10P=4;

IF EASE10P=. AND FPDIF10=8 AND FPD20LBS<0 AND FPEZ20LB<0 THEN EASE10P=4;

IF EASE10P=. AND FPDIF10=0 AND FPD20LBS<0 AND FPEZ20LB<0 THEN EASE10P=4;

IF EASE10P=. AND FPDIF10=0 AND FPEZ10LB=.M AND FPD1OAMT>0

THEN EASE10P=4 - FPD1OAMT;

EASE20P=4-FPEZ20LB;

IF FPD20LBS=1 THEN EASE20P=0;

IF (0 LE EASE10P LE 3) THEN EASE20P=0;

IF (FPD20LBS=.A OR FPD20LBS=.M) AND (FPEZ20LB=.M OR FPEZ20LB=.A) AND EASE10P=4 THEN EASE20P=0;

IF (FPD20LBS=0 OR FPD20LBS=8 OR FPD20LBS=.M OR FPD20LBS=.A) AND (FPEZ20LB=.M OR FPEZ20LB=.A)

AND EASE10P=6 THEN EASE20P=2;

IF (FPD20LBS=0 OR FPD20LBS=8 OR FPD20LBS=.M OR FPD20LBS=.A) AND (FPEZ20LB=.M OR FPEZ20LB=.A)

AND EASE10P=5 THEN EASE20P=1;

IF (EASE10P-3) LT EASE20P THEN DO;

EASE20P=EASE10P-3; IF EASE20P<0 THEN EASE20P=0; END;

*CODE FOR SUMMARY INDEX;

LCAINDEX=EASE10P + EASE20P;

IF FPD1OAMT=4 THEN LESSO10P=1;

```
IF FPLS12M0=8 OR FPLS12M0=9 OR FPLESS10=8 OR FPLESS10=9 THEN LESSO10P=1;
IF FPLS12M0=0 OR FPLESS10=0 THEN LESSO10P=0;
IF FPLS12M0=1 OR FPLESS10=1 THEN LESSO10P=1;
```

```
*OTHER FUNCTION MEASURES;
```

```
IF FPDIFSTA=0 THEN EASEUP=7 - FPEZSTA;
IF FPDIFSTA=1 THEN EASEUP=4 - FPDSTAMT;
IF FPDIFSTA=.M AND FPDSTAMT>0 AND FPEZSTA=.A
THEN EASEUP=4 - FPDSTAMT;
IF FPDIFSTA=8 AND FPEZSTA=.A AND FPDSTAMT=.A THEN EASEUP=4;
IF FPDIFSTA=0 AND FPEZSTA=.M THEN EASEUP=5;
IF FPDIFSTA=0 AND FPEZSTA=.M AND FPDSTAMT >0
THEN EASEUP=4 - FPDSTAMT;
```

```
IF FPDIFSCK=0 THEN EASESCK=7 - FPEZSCK;
IF FPDIFSCK=1 THEN EASESCK=4 - FPDSCKAM;
IF FPDIFSCK=.M AND FPDSCKAM GT 0 AND FPEZSCK=.A
THEN EASESCK=4 - FPDSCKAM;
IF FPDIFSCK=8 AND FPDSCKAM=.A AND FPEZSCK=.A THEN EASESCK=4;
IF FPDIFSCK=0 AND FPEZSCK=.M THEN EASESCK=5;
IF FPDIFSCK=0 AND FPEZSCK=.M AND FPDSCKAM >0
THEN EASESCK=4 - FPDSCKAM;
```

```
IF FPDIFHW=0 THEN EASEHHW=7 - FPEZHW;
IF FPDIFHW=1 AND FPDHWAMT<0 THEN EASEHHW=2;
ELSE IF FPDIFHW=1 THEN EASEHHW=4 - FPDHWAMT;
IF FPDIFHW=.M AND FPDHWAMT GT 0 AND FPEZHW=.A
THEN EASEHHW=4 - FPDHWAMT;
IF FPDIFHW=8 AND FPDHWAMT=.A AND FPEZHW=.A THEN EASEHHW=4;
IF FPDIFHW=0 AND FPEZHW=.M THEN EASEHHW=5;
IF FPDIFHW=0 AND FPEZHW=.M AND FPDHWAMT GT 0
THEN EASEHHW=4 - FPDHWAMT;
```

```
IF FPDHWAMT=4 THEN LESSOHW=1;
IF FPHW12MO=1 OR FPHW12MO=8 OR FPHW12MO=9 THEN LESSOHW=1;
IF FPHW12MO=0 THEN LESSOHW=0;
```

```
*NOTE - THERE ARE OVER 400 MISSING FOR FPHW12MO AND THEREFORE LESSOHW.
THE MISSING APPEAR TO BE RANDOMLY DISTRIBUTED ACROSS YES, NO, AND DON'T
KNOW FOR FPDIFHW;
```

```
DIFFPP=FPDIFPP;
IF FPDIFPP=7 THEN DIFFPP=. ;
IF FPDIFPP=8 THEN DIFFPP=1;
IF FPDIFPP=.M AND FPDIFPAM > 0 THEN DIFFPP=1;
```

```
LABEL
```

```
EASEQM='EASE WALKING 1/4 MILE, 6=VERY EASY'
EASE1M='EASE WALKING 1 MILE, 3=VERY EASY'
WKAINDEX='WALKING ABILITY INDEX, 9=BEST'
TIREDQM='GETS TIRED WALKING 1/4 MILE, 1=YES'
LESSOQM='WALKS 1/4 MILE LESS OFTEN, 1=YES'
EASE1F='EASE CLIMBING 1 FLIGHT, 6=VERY EASY'
EASE2F='EASE CLIMBING 2 FLIGHTS, 3=VERY EASY'
CSAINDEX='CLIMBING STAIRS ABILITY INDEX, 9=BEST'
```

```

TIRE1F='GETS TIRED CLIMBING 1 FLIGHT, 1=YES'
LESSO1F='CLIMBS STAIRS LESS OFTEN, 1=YES'
EASE10P='EASE LIFT/CARRY 10 LBS, 6=VERY EASY'
EASE20P='EASE LIFT/CARRY 20 LBS, 3=VERY EASY'
LCAINDEX='LIFT/CARRY ABILITY INDEX, 9=BEST'
LESSO10P='LIFT/CARRY 10 LBS LESS OFTEN, 1=YES'
EASEUP='EASE RISING FROM CHAIR, 6=VERY EASY'
EASESCK='EASE STOOPING, 6=VERY EASY'
EASEHHW='EASE DOING HEAVY WORK, 6=VERY EASY'
LESSOHW='DOES HEAVY WORK LESS OFTEN, 1=YES'
DIFFPP='DIFFICULTY PUSHING/PULLING, 1=YES';

RUN;

proc freq data=a;
  tables
    EASEQM*EADWQMYN*EADWQMEZ*EADWQMDF*EADW1MYN*EADW1MEZ
    EASE1M*EADW1MYN*EADW1MEZ*EASEQM*EADWQMYN
    WKAINDEX*EASEQM*EASE1M
    TIRE1F*EADWQMT2
    EASE1F*EADW10YN*EADW10EZ*EADW20YN*EADW20EZ*EADIF
    EASE2F*EADW20YN*EADW20EZ*EASE1F
    CSAINDEX*EASE1F*EASE2F
    TIRE1F*EADW10WX
    EASE10P*FPDIF10*FPEZ10LB*FPD10AMT*FPD20LBS*FPEZ20LB
    EASE20P*FPEZ20LB*FPD20LBS*EASE10P
    LCAINDEX*EASE10P*EASE20P
    EASEHHW*FPDIFHW*FPEZHW*FPDHWAMT
  / MISSING LIST;
  format EASEQM EADWQMYN EADWQMEZ EADWQMDF EADW1MYN EADW1MEZ
    EASE1M WKAINDEX EADWQMT2
    EASE1F EADW10YN EADW10EZ EADW20YN EADW20EZ EADIF
    EASE2F CSAINDEX TIRE1F EADW10WX
    EASE10P FPDIF10 FPEZ10LB FPD10AMT FPD20LBS FPEZ20LB
    EASE20P LCAINDEX
    EASEHHW FPDIFHW FPEZHW FPDHWAMT;
  title4 'clinic visits';
run;

DATA CALC.SRFNC_V2; SET A(KEEP=HABCID EASEQM EASE1M WKAINDEX TIRE1F
LESSO1F EASE1F EASE2F CSAINDEX TIRE1F LESSO1F EASE10P EASE20P
LCAINDEX LESSO10P EASEUP EASESCK EASEHHW LESSOHW DIFFPP);
FORMAT EASE10P EASE1F EASE20P EASE2F EASEHHW EASEQM EASESCK EASEUP EASE1M
CSAINDEX LCAINDEX SPMISS.
      DIFFPP LESSO10P LESSO1F LESSOHW LESSOQM TIRE1F TIRE1F YNDK. ;
RUN;

PROC CONTENTS; RUN;

PROC FREQ; TABLES EASEQM EASE1M EASE1F EASE2F EASE10P EASE20P/missing; RUN;

```

Appendix XVI
Socioeconomic Status Calculated Variables

Investigator Name: Ronica Rooks, PhD

Analysis Plan Reference Number: AP99-47

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
EDUC	Years of ed. category	Recode of LPSCHOOL variable to 3 categories of education completed	If LPSCHOOL=13 or LPSCHOOL ≤11, then EDUC=1 If LPSCHOOL=12 or 14, then EDUC=2 If LPSCHOOL≥15, then EDUC=3	If LPSCHOOL=77, then EDUC='.' If LPSCHOOL<0, then EDUC='.'	1=less than HS 2=HS grad 3=postsecondary
FAMINC	Family income category	Recode of LPFIIN10-50 to 4 categories of income	If LPFIIN25 in (0,7,8) and LPFIIN10=0(No), then FAMINC=1 If LPFIIN25 in (0,7,8) and LPFIIN10=1(Yes), then FAMINC=2 If LPFIIN25=1(yes) and LPFIIN50 in (0,7,8), then FAMINC=3 If LPFIINC50=1 then FAMINC=4	If LPFIIN10 in (7,8), then FAMINC='.' If LPFIIN25<0, then FAMINC='.'	1= less than 10K 2=10K to 25K 3=> 25K up to <50K 4=≥ 50K

```

*****
** Calculate socioeconomic status variables for family income and education **
**                                                                                   **
** Fran Harris                                                                                   4/12/00 **
*****;

options ls=132 ps=58 formchar='|----|+|----+=|-\<>*' nocenter pageno=1 nofmterr;
title 'HABC calculated variables';
title2 'Program: socio.calcvar.sas';

data socio;
  set habc1.lp(keep=habcid lpschool lpfiin25 lpfiin10 lpfiin50 lpfiinc);

* Completed Years of Education;

  EDUC=lpschool;
  if lpschool=13 then educ=11;
  if lpschool=14 then educ=12;
  if lpschool=77 then educ=.;

  if 0 le educ le 11 then educ3=1; /*lt hs*/
  if educ=12 then educ3=2; /*hs grad*/
  if 15 le educ le 18 then educ3=3; /*postsecondary*/
  if educ=. then educ3=.;

* Family Income;

  if lpfiin25 in (0,7,8) and lpfiin10=0 then faminc=1;          /*lt 10k*/
  else if lpfiin10 in (7,8) then faminc=.;
  if lpfiin25 in (0,7,8) and lpfiin10=1 then faminc=2;        /*10k up to =25k*/
  if lpfiin25=1 and lpfiin50 in (0,7,8) then faminc=3;        /*gt 25k up to lt
50k*/
  if lpfiin25=1 and lpfiin50=1 and lpfiinc in (0,7,8)
      then faminc=4;                                           /*ge 50k up to lt
100k*/
  if lpfiin25=1 and lpfiin50=1 and lpfiinc=1 then faminc=5; /*ge 100k*/

  faminc2=faminc;
  if faminc=1 then faminc2=1;          /*lt 10k*/
  if faminc=2 then faminc2=2;          /*10_25k*/
  if faminc=3 then faminc2=3;          /*gt 25k up to lt 50k*/
  if faminc in (4,5) then faminc2=4; /*ge 50k*/
run;
proc format library=library;
  value educf 1='1:Less than HS' 2='2:HS grad' 3='3:Postsecondary';
  value famincf 1='1:Less than 10K' 2='2:10K to 25K' 3='3:25K to 50K' 4='4:50K
+';
run;
proc freq data=socio;
  tables educ3*lpschool faminc2*lpfiin10*lpfiin25*lpfiin50 / list missing;
  format educ3 educf. faminc2 famincf.;
run;
data socio;
  set socio(keep=habcid faminc2 educ3);
run;
data calc.socio;

```

```
set socio(rename=(educ3=EDUC faminc2=FAMINC));
label educ = 'Completed years of education'
      faminc = 'Family income';
format educ educf. faminc famincf.;
run;
proc contents data=calc.socio;
run;
proc freq data=calc.socio;
  tables educ faminc / missing;
run;
```

Appendix XVII
Teng Modified Mini-Mental State Score

Investigator Name: Ronald Shorr, MD, MS
Analysis Plan Reference Number: AP98-08

Variable	General Description	Detailed Description	How variable is calculated
MMMFLAG	Flag for possible invalid 3MS scores	Flag showing that one or more items were missing or marked "not att/disabled" with a disability marked in Q19. Investigators are cautioned to examine the component variables to determine whether to include ppt in analysis.	If any of the following variables is missing or marked "not att/disabled", MMMFLAG=1: P4BORNM, P4BORND, P4BORNY, P4SHRT, P4BLU, P4HON, P4CNTBK, P4SPWLD, P4SHRM, P4BLRM, P4HNRM, P42DAY, P4DAYWK, P4SEAS, P4STAT, P4CNTY, P4CITN, P4WHRE, P4FRHD, P4CHN, P4SHLD, P4ELB, P4KNK, P4SCR, P4ARLG, P4LCRY, P4ETSL, P4RPT, P4IF, P4AND, P4BUT, P4CRD1, P4WLD, P4LKE, P4TO, P4GO, P4OUT, P4PENT1, P4PENT2, P4INT, P4PCOR, P4PFLD, P4PHND, P4SH2, P4BLU2, P4HON2 Otherwise MMMFLAG=0

Variable: MMMSCORE

Value label: points

NOTE: All missings are kept as missing (sub-score is not calculated) except as detailed below

General and Detailed Description	Variables Involved	Specific Instructions	How to handle missing or special values
<p>3MS score</p> <p>3MS score on a 100-point scale using the method outlined in Teng (J Clin Psychiatry, 1987: 48: 314-318) and made to match CHS scoring as much as possible</p>	P4BORN-- P4BORN	<p><u>Date/Place of Birth</u>: Use data DOB as correct birthdate. One point each for B4BORN, P4BORND, P4BORN. Other responses score 0.</p>	99/99/99 is scored as missing
	P4SHRT-- P4HON	<p><u>Register 3 words</u>: Score 1 point for each correct response.* *see documentation for correction for mis-scoring</p>	'7(error/refused)' or '3(not att/disabled)' score 0.
	P4CNT-- P4CNTBK	<p><u>Mental Reversal</u>:</p> <p>Counting backwards. If participant cannot count forward (P4CNT=2) then score 0. If all correct (P4CNTBACK= 54321) then score 2. If one or 2 digits out of place, score 1. Else score 0.</p>	N/A
	P4SPL-- P2SPWLD	<p>Spelling backwards. If participant unable to spell WORLD (P4SPL=2) then score 0. 1 point for each letter in DLROW that is in the correct relative order (uses WHI-MS algorithm) (maximum of 5, minimum 0)</p>	N/A
	P4SHRM-- P4HNRM	<p><u>First Recall</u>: 1(spontaneous recall)=3 points, 2(correct word/incorrect form)=3 points, 3(after 1st prompting)= 2 points, 4(after 2nd prompting)= 1 point 7=0 points. Not attempted/disabled (6) scores 0.; Note: Teng does not have score for correct word/incorrect form</p>	Not attempted/disabled (6) scores 0
P4DAYWK— P4SEAS	<p><u>Temporal Orientation</u>: P4SEAS 1=1 point, 7=0 points, 3(not attempted/disabled)=0 points. P4DAYWK 1=1point 7=0 points, 3=0 points <i>Note: TENG allows 1 point for season within 1 month, but this was not recorded.</i></p>	'7(error/refused)' or '3(not att/disabled)' score 0.	

	<p>P4ARLG— P4ETSL</p> <p>P4RPT</p> <p>P4IF—P4BUT</p> <p>P4CRD1</p> <p>P4WLD— P4OUT</p>	<p><u>Similarities:</u> Correct answer (1) scores 2 points, lesser correct (2) scores 1 point, error/refused (7) scores 0 points, not attempted/disabled (3 or 4) scores 0</p> <p><u>Repetition:</u> Correct (1) scores 2 points Miss 1 or 2 (2) scores 1 point. Incorrect (7) scores 0 point. Not attempted/ disabled (4) scores 0</p> <p>Correct (1) scores 1 point Error/refused (7) scores 0 point Not attempted/disabled (3) scores 0</p> <p><u>Read and obey:</u> Correct (1) scores 3 points After Prompting (2) scores 2 points Reads, does not close eyes (3) scores 1 point Incorrect (7) scores 0 points Not attempted/disabled (5) scores 0</p> <p><u>Sentence writing:</u> For each correct response (1) scores 1 point Error/refused (7) scores 0 Disabled/not attempted (3) scores 0</p>	<p>'7(error/refused)' or '3(not att/disabled)' score 0.</p> <p>7(error/refused)' or '4(not att/disabled)' score 0.</p> <p>'7(error/refused)' or '3(not att/disabled)' score 0.</p> <p>If P4CRD1=5 and P4VIS=-1 then P4CRD1=.; *n=16; otherwise '7(error/refused)' or '5(not att/disabled)' score 0.</p> <p>If (P4WLD=3 and P4LKE=3 and P4TO=3 and P4GO=3 and P4OUT=3) and (P4WRITE=-1 OR P4CRD1=5) then keep as not att/disabled; otherwise '7(error/refused)' or '3(not att/disabled)' score 0.</p>
--	--	---	--

	<p>P4PENT1— P4PENT2</p> <p>P4INT</p> <p>P4PCOR— P4PHND</p> <p>P4SH2— P4HON2</p> <p>P4CITY2, P4STE2</p>	<p><u>Figure Drawing:</u> For each:</p> <table border="0"> <thead> <tr> <th><u>Value</u></th> <th><u>Score (points)</u></th> </tr> </thead> <tbody> <tr> <td>1 (5 approx equal sides)</td> <td>4</td> </tr> <tr> <td>2 (longest/shortest>2:1)</td> <td>3</td> </tr> <tr> <td>3 (nonpentagon figure)</td> <td>2</td> </tr> <tr> <td>4 (not enclosed figure)</td> <td>1</td> </tr> <tr> <td>7 (less than 2 lines/refused)</td> <td>0</td> </tr> <tr> <td>6 (not attempted/disabled)</td> <td>0</td> </tr> </tbody> </table> <table border="0"> <thead> <tr> <th><u>Value</u></th> <th><u>Score (points)</u></th> </tr> </thead> <tbody> <tr> <td>1 (4-cornered)</td> <td>2</td> </tr> <tr> <td>2 (not 4-cornered)</td> <td>1</td> </tr> <tr> <td>4 (not attempted/disabled)</td> <td>0</td> </tr> <tr> <td>7 (no enclosure/refused)</td> <td>0</td> </tr> </tbody> </table> <p><u>Three step command:</u> For each of P4PCOR and P4PFLD:</p> <table border="0"> <thead> <tr> <th><u>Value</u></th> <th><u>Score (points)</u></th> </tr> </thead> <tbody> <tr> <td>1 (Correct)</td> <td>2</td> </tr> <tr> <td>3 (Not att/disabled)</td> <td>0</td> </tr> <tr> <td>7 (Error/refused)</td> <td>0</td> </tr> </tbody> </table> <p>(For P4PHND there is an anomalous value label: Error/refused is '2' not '7')</p> <p><u>Second Recall:</u> 1(spontaneous recall)=3 points, 2(correct word/incorrect form)=3 points, 3(after 1st prompting)= 2 points, 4(after 2nd prompting)= 1 point 7(unable/refused)=0 points. Not attempted/disabled (6) scores 0. <i>Note: Teng does not have score for correct word/incorrect form; CHS also gave full credit.</i></p> <p>1 point each if 1(matches), 0 if 7(does not match/refused) or 3(not att/disabled)</p>	<u>Value</u>	<u>Score (points)</u>	1 (5 approx equal sides)	4	2 (longest/shortest>2:1)	3	3 (nonpentagon figure)	2	4 (not enclosed figure)	1	7 (less than 2 lines/refused)	0	6 (not attempted/disabled)	0	<u>Value</u>	<u>Score (points)</u>	1 (4-cornered)	2	2 (not 4-cornered)	1	4 (not attempted/disabled)	0	7 (no enclosure/refused)	0	<u>Value</u>	<u>Score (points)</u>	1 (Correct)	2	3 (Not att/disabled)	0	7 (Error/refused)	0	<p>If P4PENT1=6 and P4PENT2=6 and P4INT=4 and (P4WLD=3 and P4LKE=3 and P4TO=3 and P4GO=3 and P4OUT=3) then keep P4PENT1, P4PENT2, and P4INT as disabled; otherwise '7(error/refused)' or '6(not att/disabled)' score 0.</p> <p>If P4PCOR=3 and P4PFLD=1 and P4PHND=1 then P4COR=1; *n=2; otherwise '7(error/refused)' or '4(not att/disabled)' score 0.</p> <p>'7(error/refused)' or '3(not att/disabled)' or '2(not att/disabled)' score 0</p> <p>'7(error/refused)' or '3(not att/disabled)'</p>
<u>Value</u>	<u>Score (points)</u>																																		
1 (5 approx equal sides)	4																																		
2 (longest/shortest>2:1)	3																																		
3 (nonpentagon figure)	2																																		
4 (not enclosed figure)	1																																		
7 (less than 2 lines/refused)	0																																		
6 (not attempted/disabled)	0																																		
<u>Value</u>	<u>Score (points)</u>																																		
1 (4-cornered)	2																																		
2 (not 4-cornered)	1																																		
4 (not attempted/disabled)	0																																		
7 (no enclosure/refused)	0																																		
<u>Value</u>	<u>Score (points)</u>																																		
1 (Correct)	2																																		
3 (Not att/disabled)	0																																		
7 (Error/refused)	0																																		

MMMScore		<p>Sum of all subscores (maximum 100). If any subscores missing or marked disabled, prorate score and round to nearest integer</p> <p>If subscores totalling more than 20 points are missing or disabled, set MMMScore to .E</p>	<p>Check MMMFLAG for scores that have been prorated or set to missing</p>
----------	--	--	--

```

*****;
%include '\\fu-hsing-c\habc\habc_sas\macros\WORLD.sas';
*data teng(keep=habcid mmmmscore mmmflag);
data calc.ylteng (keep=HABCID MMMSCORE MMMFLAG);
*changing over to use CURRENT instead of HABC2;
  merge current.ylclnvis /*daf.ylclnvis*/(keep=habcid p42day p4bornm p4bornd
p4borny p4city p4ste
                                p4shrt p4blu p4hon p4num p4cnt p4cntbk p4spwld
p4shrm
                                p4blrm p4hnrn p4seas p4stat p4cnty p4daywk
                                p4citn p4whre p4frhd p4chn p4shld p4elb p4knk
                                p4scr p4arlg p4lcry p4etsl p4rpt p4if p4and
                                p4but p4crd1 p4wld p4lke p4to p4go p4out
                                p4pent1 p4pent2 p4int p4pcor p4pfld p4phnd
                                p4sh2 p4blu2 p4hon2 p4date
                                P4PENC P4WTCH P4CITY2 P4STE2
                                P4VIS P4HEAR P4WRITE P4ILLIT P4LANG P4OTH)
  current.ph(keep=habcid dob cvldate);
by habcid;

*Recode items on the 3MS administered in Year 1. In most every case,
not attempted/disabled are set to error/refused;
*MOVED THE FOLLOWING CODE FROM A WHERE IT COULD NEVER BE TRUE;
IF P4PENC=3 AND P4WTCH=3 AND P4FRHD=3 AND P4CHN=3 AND
  P4SHLD=3 AND P4ELB=3 AND P4KNK=3 THEN DO;
  P4PENC=.; P4WTCH=.; P4FRHD=.; P4CHN=.;
  P4SHLD=.; P4ELB=.; P4KNK=.;
END;
ELSE DO;
IF P4HNRM=6 THEN P4HNRM=7;
IF P4DAYWK=3 THEN P4DAYWK=7;
IF P4SEAS=3 THEN P4SEAS=7;
IF P4CNTY=3 THEN P4CNTY=7;
IF P4CITN=3 THEN P4CITN=7;
IF P4PENC=3 THEN P4PENC=7;
IF P4WTCH=3 THEN P4WTCH=7;
IF P4FRHD=3 THEN P4FRHD=7;
IF P4CHN=3 THEN P4CHN=7;
IF P4SHLD=3 THEN P4SHLD=7;
IF P4ELB=3 THEN P4ELB=7;
IF P4KNK=3 THEN P4KNK=7; END;
*A;
IF P4ARLG=4 THEN P4ARLG=7;
IF P4LCRY=3 THEN P4LCRY=7;
IF P4ETSL=3 THEN P4ETSL=7;
IF P4CRD1=5 and P4VIS=-1 THEN P4CRD1=.; ELSE
IF P4CRD1=5 THEN P4CRD1=7; *n=16;
IF (P4WLD=3 AND P4LKE=3 AND P4TO=3 AND P4GO=3 AND P4OUT=3) AND
  (P4WRITE=-1 OR P4CRD1=5) THEN;
ELSE DO;
  IF P4WLD=3 THEN P4WLD=7;
  IF P4LKE=3 THEN P4LKE=7;
  IF P4TO=3 THEN P4TO=7;
  IF P4GO=3 THEN P4GO=7;
  IF P4OUT=3 THEN P4OUT=7;
END;
IF P4PENT1=6 AND P4PENT2=6 AND P4INT=4 AND

```

```

(P4WLD=3 AND P4LKE=3 AND P4TO=3 AND P4GO=3 AND P4OUT=3) THEN;
ELSE DO;
  IF P4PENT1=6 THEN P4PENT1=7;
  IF P4PENT2=6 THEN P4PENT2=7;
  IF P4INT=4 THEN P4INT=7;
END;
IF P4PCOR=3 AND P4PFLD=1 AND P4PHND=1 THEN P4PCOR=1; *n=2;

/* Count number either missing or not attempted due to legitimate disability */

counter=0;
if P4BORNM<=.z then counter+1;
if P4BORND<=.z then counter+1;
if P4BORNY<=.z then counter+1;
if (P4CITY2=3) or P4CITY2<=.z then counter+1;
if (P4STE2=3) or P4STE2<=.z then counter+1;
if (P4SHRT=3) or P4SHRT<=.z then counter+1;
if (P4BLU=3) or P4BLU<=.z then counter+1;
if (P4HON=3) or P4HON<=.z then counter+1;
if P4CNTBK<=.z then counter+2;
if P4SPWLD=' ' then counter+5;
if (P4SHRM=6) or P4SHRM<=.z then counter+3;
if (P4BLRM=6) or P4BLRM<=.z then counter+3;
if (P4HNRM=6) or P4HNRM<=.z then counter+3;
if P42DAY=' / / ' then counter+13;
if (P4DAYWK=3) or P4DAYWK<=.z then counter+1;
if (P4SEAS=3) or P4SEAS<=.z then counter+1;
if (P4STAT=3) or P4STAT<=.z then counter+2;
if (P4CNTY=3) or P4CNTY<=.z then counter+1;
if (P4CITN=3) or P4CITN<=.z then counter+1;
if (P4WHRE=3) or P4WHRE<=.z then counter+1;
if (P4FRHD=3) or P4FRHD<=.z then counter+1;
if (P4CHN=3) or P4CHN<=.z then counter+1;
if (P4SHLD=3) or P4SHLD<=.z then counter+1;
if (P4ELB=3) or P4ELB<=.z then counter+1;
if (P4KNK=3) or P4KNK<=.z then counter+1;
if P4SCR<=.z then counter+10;
if (P4ARLG=4) or P4ARLG<=.z then counter+2;
if (P4LCRY=3) or P4LCRY<=.z then counter+2;
if (P4ETSL=3) or P4ETSL<=.z then counter+2;
if (P4RPT=4) or P4RPT<=.z then counter+2;
if (P4IF=3) or P4IF<=.z then counter+1;
if (P4AND=3) or P4AND<=.z then counter+1;
if (P4BUT=3) or P4BUT<=.z then counter+1;
if (P4CRD1=5) or P4CRD1<=.z then counter+3;
if (P4WLD=3) or P4WLD<=.z then counter+1;
if (P4LKE=3) or P4LKE<=.z then counter+1;
if (P4TO=3) or P4TO<=.z then counter+1;
if (P4GO=3) or P4GO<=.z then counter+1;
if (P4OUT=3) or P4OUT<=.z then counter+1;
if (P4PENT1=6) or P4PENT1<=.z then counter+4;
if (P4PENT2=6) or P4PENT2<=.z then counter+4;
if (P4INT=4) or P4INT<=.z then counter+2;
if (P4PCOR=3) or P4PCOR<=.z then counter+1;
if (P4PFLD=3) or P4PFLD<=.z then counter+1;
if (P4PHND=3) or P4PHND<=.z then counter+1;
if (P4SH2=6) or P4SH2<=.z then counter+3;

```

```

if (P4BLU2=6) or P4BLU2<=.z then counter+3;
if (P4HON2=6) or P4HON2<=.z then counter+3;

/* MMMFLAG=1 if any are missing or not attempted due to disability */
if counter>0 then MMMFLAG=1;
    else          mmmflag=0;

/* Calculate score */

/*date and place of birth*/
    mm=month(dob);
    dd=day(dob);
    yy=year(dob)-1900;
    if mm=p4bornm then n1=1; else n1=0;
    if dd=p4bornd then n2=1; else n2=0;
    if yy=p4borny then n3=1; else n3=0;
    p2=sum(n1,n2,n3);

    p3=1;
        if p4city2 = 7 then p3=0;
        if p4city2 = 3 then p3 =.;
        if p4city2 < 0 then p3 =.;
    p4=1;
        if p4ste2 = 7 then p4=0;
        if p4ste2 = 3 then p4 =.;
        if p4ste2 < 0 then p4 =.;

/*register 3 words*/
    p5=1;
        if p4shrt = 7 then p5=0;
        if p4shrt = 3 then p5 =.;
        if p4shrt < 0 then p5 =.;
    p6=1;
        if p4blu = 7 then p6=0;
        if p4blu = 3 then p6 =.;
        if p4blu lt 0 then p6 =.;
    p7=1;
        if p4hon = 7 then p7=0;
        if p4hon = 3 then p7 =.;
        if p4hon lt 0 then p7 =.;

/*reversal*/
/*partial credit*/
    length tempch $5;
    tempch=left(trim(p4cntbk));
*this next line appears to cause everyone after the first person to get p8=1
because count never goes back to 0;
*    retain count 0;
*instead add in the following;
count=0;
    if substr(tempch,1,1)='5' then count+1;
    if substr(tempch,2,1)='4' then count+1;
    if substr(tempch,3,1)='3' then count+1;
    if substr(tempch,4,1)='2' then count+1;
    if substr(tempch,5,1)='1' then count+1;
    if p4cnt=2 then p8=0;
        else if p4cntbk = 54321 then p8=2;

```

```

        else if p4cntbk lt 0 then p8=.;
        else if count>=3 then p8=1;
        else p8=0;

*****SUBSTITUTE NEW MACRO TO CALCULATE WORLD CORRECTLY*****;
%macro skip;
    sp1=substr(p4spwld,5,1);
    sp2=substr(p4spwld,4,1);
    sp3=substr(p4spwld,3,1);
    sp4=substr(p4spwld,2,1);
    sp5=substr(P4SPWLD,1,1);
    if sp1='W' then p9=1; else p9=0;
    if sp2='O' then p10=1; else p10=0;
    if sp3='R' then p11=1; else p11=0;
    if sp4='L' then p12=1; else p12=0;
    if sp5='D' then p13=1; else p13=0;
    drop sp1--sp5;

    p14=.; /*holds place*/
%mend skip;
%world(p4spwld);

    p14=s4p2;

/*first 3 word memory--full credit to incorrect form*/
    p15 = .;
        if p4shrm = 1 then p15 = 3;
        else if p4shrm = 2 then p15 = 3;
        else if p4shrm = 3 then p15 = 2;
        else if p4shrm = 4 then p15 = 1;
        else if p4shrm = 7 then p15 = 0;
        else if p4shrm lt 0 then p15 = .;

    p16 = .;
        if p4blrm = 1 then p16 = 3;
        else if p4blrm = 2 then p16 = 3;
        else if p4blrm = 3 then p16 = 2;
        else if p4blrm = 4 then p16 = 1;
        else if p4blrm = 7 then p16 = 0;
        else if p4blrm lt 0 then p16 =.;

    p17 = .;
        if p4hnrnrm = 1 then p17 = 3;
        else if p4hnrnrm = 2 then p17 = 3;
        else if p4hnrnrm = 3 then p17 = 2;
        else if p4hnrnrm = 4 then p17 = 1;
        else if p4hnrnrm = 7 then p17 = 0;
        else if p4hnrnrm lt 0 then p17=.;

/*Temporal orientation*/
    seas= 1;
        if p4seas =7 then seas=0;
        if p4seas=3 then seas=.;
        if p4seas lt 0 then seas=.;
    dywk=1;
        if p4daywk=7 then dywk=0;
        if p4daywk=3 then dywk=.;

```

```

        if p4daywk lt 0 then dywk=.;
    p18=sum(seas,dywk);

*****Fixes to correct p42day data*****;
    if p42day='5//1//8' then p42day='05/01/98';
    if p42day='12/11/XX' then p42day='12/11/  ';
    if p42day='9//0//7' then p42day='09/10/97';
    if p42day='9//1//7' then p42day='09/11/97';
    if p42day='1 /05/97' then p42day='01/05/97';
    if p42day='1 /10/97' then p42day='01/10/97';
/*EK added the following 2/22/03;
    if p42day='02/29/98' then p42day='03/01/98';
    if p42day='04/31/98' then p42day='05/01/98';*/
*EK changed this to mimic later years 6/1/09;
    if p42day='02/29/98' then p42day=.;
    if p42day='04/31/98' then p42day=.;
*****;
    length m d y 4;
    m=substr(p42day,1,2);
    d=substr(p42day,4,2);
    y=substr(p42day,7,2);
    if 1<=m<=12 and 1<=d<=31 and 0<=y<=99 then
p42date=input(p42day,mmddy8.);
    else p42date=.;

    mm=month(p4date);
    dd=day(p4date);
    yy=year(p4date)-1900;

    mmm=month(cv1date);
    ddd=day(cv1date);
    yyy=year(cv1date)-1900;

    d1=abs(m-mm);
    d2=abs(d-dd);
    d3=abs(y-yy);
    d1a=abs(m-mmm);
    d2a=abs(d-ddd);
    d3a=abs(y-yyy);

*Year;
    if d3=0 then y1=8;
    else if d3=. then y1=.;
    else if d3 = 1 then y1= 4;
    else if d3 in (2,3,4,5) then y1= 2;
    else y1=0;

*Month;
    if d1=0 then y2=2;
    else if d1=. then y2=.;
    else if d1=1 then do;
        if (mm=month(p42date-5) or mm=month(p42date+5))
then y2=2;
        else y2=1;
    end;
    else y2=0;

*Day;
    if d2=0 then y3=3;

```

```

        else if d2=. then y3=.;
        else if d2 le 2 then y3=2;
        else if d2 le 5 then y3=1;
        else y3=0;
*Year;
if d3a=0 then y1a=8;
    else if d3a=. then y1a=.;
    else if d3a = 1 then y1a= 4;
    else if d3a in (2,3,4,5) then y1a= 2;
    else y1a=0;
*Month;
if d1a=0 then y2a=2;
    else if d1a=. then y2a=.;
    else if d1a=1 then do;
        if(mmm=month(p42date-5) or mmm=month(p42date+5)) then
y2a=2;
            else y2a=1;
        end;
    else y2a=0;
*Day;
if d2a=0 then y3a=3;
    else if d2a=. then y3a=.;
    else if d2a le 2 then y3a=2;
    else if d2a le 5 then y3a=1;
    else y3a=0;
*Hand code two ppts whose dates are impossible and so dont work in code above;
*HABCID 2250 said 4/31/98, correct was 3/31/98. This fits into w/in 5 days
of change of month rule, so full credit;
if HABCID=2250 then do;
    y1=8;
    y1a=8;
    y2=2;
    y2a=2;
    y3=3;
    y3a=3;
end;
*HABCID 6143 said 2/29/98, correct was 2/20/98. So month and year were
right,
    day was off by 9;
    if HABCID=6143 then do;
        y1=8;
        y1a=8;
        y2=2;
        y2a=2;
        y3=0;
        y3a=0;
    end;
if p42day='99/99/99' then p19=.;
    else do;
        p19=sum(y1,y2,y3);
        p19a=sum(y1a,y2a,y3a);
        p19=max(p19,p19a);
    end;
/* Spatial orientation */
p20 = 2;
    if p4stat = 7 then p20 = 0;
    if p4stat = 3 then p20=0;

```

```

        if p4stat lt 0 then p20 =.;
p21 = 1;
        if p4cnty = 7 then p21 = 0;
        if p4cnty = 3 then p21=0;
        if p4cnty lt 0 then p21 =.;
p22 = 1;
        if p4citn = 7 then p22 = 0;
        if p4citn = 3 then p22=0;
        if p4citn lt 0 then p22 =.;
p23 = 1;
        if p4whre = 7 then p23 = 0;
        if p4whre = 3 then p23=0;
        if p4whre lt 0 then p23=.;

/* Naming */
p24 = 1;
        if p4frhd = 7 then p24 = 0;
        if p4frhd = 3 then p24=.;
        if p4frhd lt 0 then p24=.;
p25 = 1;
        if p4chn = 7 then p25 = 0;
        if p4chn = 3 then p25=.;
        if p4chn lt 0 then p25=.;
p26 = 1;
        if p4shld = 7 then p26 = 0;
        if p4shld = 3 then p26=.;
        if p4shld lt 0 then p26=.;
p27 = 1;
        if p4elb = 7 then p27 = 0;
        if p4elb = 3 then p27=.;
        if p4elb lt 0 then p27=.;
p28 = 1;
        if p4knk = 7 then p28 = 0;
        if p4knk = 3 then p28=.;
        if p4knk lt 0 then p28=.;

/* naming animals*/
        if p4scr lt 0 then p29 =.;
        else p29 = min(10,p4scr);

p30=2;
        if p4arlg=2 then p30=1;
        if p4arlg=7 then p30=0;
        if p4arlg=4 then p30=0;
        if p4arlg lt 0 then p30=.;

p31=2;
        if p4lcry=2 then p31=1;
        if p4lcry=7 then p31=0;
        if p4lcry=3 then p31=0;
        if p4lcry lt 0 then p31=.;
p32=2;
        if p4etsl=2 then p32=1;
        if p4etsl=7 then p32=0;
        if p4etsl=3 then p32=0;
        if p4etsl lt 0 then p32=.;

```

```

/* Repeat*/

p33=2;
  if p4rpt=2 then p33=1;
  if p4rpt=7 then p33=0;
  if p4rpt=4 then p33=0;
  if p4rpt lt 0 then p33=.;

p34=1;
  if p4if=7 then p34=0;
  if p4if=3 then p34=0;
  if p4if lt 0 then p34=.;

p35=1;
  if p4and=7 then p35=0;
  if p4and=3 then p35=0;
  if p4and lt 0 then p35=.;

p36=1;
  if p4but=7 then p36=0;
  if p4but=3 then p36=0;
  if p4but lt 0 then p36=.;

/*card read*/
p37=3;
  if p4crd1=2 then p37=2;
  if p4crd1=3 then p37=1;
  if p4crd1=7 then p37=0;
  if p4crd1=5 then p37=.;
  if p4crd1 lt 0 then p37=.;

/* Sentence Writing*/
p38=1;
  if p4wld=7 then p38=0;
  if p4wld=3 then p38=0;
  if p4wld lt 0 then p38=.;
p39=1;
  if p4lke=7 then p39=0;
  if p4lke=3 then p39=0;
  if p4lke lt 0 then p39=.;
p40=1;
  if p4to=7 then p40=0;
  if p4to=3 then p40=0;
  if p4to lt 0 then p40=.;
p41=1;
  if p4go=7 then p41=0;
  if p4go=3 then p41=0;
  if p4go lt 0 then p41=.;
p42=1;
  if p4out=7 then p42=0;
  if p4out=3 then p42=0;
  if p4out lt 0 then p42=.;

/* Pentagon */
*****
* LH 1/16/07 - Modified code below
* from - if p4pent1=5 then p43=0 (5 is not a valid answer here)

```

```

* to - if p4pent1=6 then p43=0
***** ;
p43=4;
  if p4pent1=2 then p43=3;
  if p4pent1=3 then p43=2;
  if p4pent1=4 then p43=1;
  if p4pent1=7 then p43=0;
  if p4pent1=6 then p43=0;
  if p4pent1 lt 0 then p43=.;

p44=4;
  if p4pent2=2 then p44=3;
  if p4pent2=3 then p44=2;
  if p4pent2=4 then p44=1;
  if p4pent2=7 then p44=0;
  if p4pent2=6 then p44=0;
  if p4pent2 lt 0 then p44=.;

/* Intersection */
p45=2;
  if p4int=2 then p45=1;
  if p4int=7 then p45=0;
  if p4int=4 then p45=0;
  if p4int lt 0 then p45=.;

/* Three-step command*/
p46=1;
  if p4pcor=7 then p46=0;
  if p4pcor=3 then p46=0;
  if p4pcor lt 0 then p46=.;
p47=1;
  if p4pfld=7 then p47=0;
  if p4pfld=3 then p47=0;
  if p4pfld lt 0 then p47=.;
p48=1;
  if p4phnd=7 then p48=0;
  if p4phnd=3 then p48=0;
  if p4phnd lt 0 then p48=.;

/* Second recall--gives full credit to incorrect form*/
p49=3;
  if p4sh2=2 then p49=3;
  if p4sh2=3 then p49=2;
  if p4sh2=4 then p49=1;
  if p4sh2=7 then p49=0;
  if p4sh2=6 then p49=0;
  if p4sh2 lt 0 then p49=.;
p50=3;
  if p4blu2=2 then p50=3;
  if p4blu2=3 then p50=2;
  if p4blu2=4 then p50=1;
  if p4blu2=7 then p50=0;
  if p4blu2=6 then p50=0;
  if p4blu2 lt 0 then p50=.;
p51=3;
  if p4hon2=2 then p51=3;
  if p4hon2=3 then p51=2;

```

```

    if p4hon2=4 then p51=1;
    if p4hon2=7 then p51=0;
    if p4hon2=6 then p51=0;
    if p4hon2 lt 0 then p51=.;

*****
* EK 6/23/09 - Modified statement below to exclude p9-p13
* variables that are no longer being created.
***** ;

    mmmtemp = sum (of p2-p8, of p14-p51);
*    mmmtemp = sum (of p2-p51);

/*Correction for shirt/blue/honesty recall*/
    if p4shrt=1 and p4blu=1 and p4hon=1 and p4num>1 then do;
        if p4num=2 then mmmtemp=mmmtemp-1; else
        if p4num=3 then mmmtemp=mmmtemp-2; else
        if p4num>=4 then mmmtemp=mmmtemp-3;
    end;

    if mmmtemp le 0 then mmmtemp =.;

    if 0<counter<=20 then do;
        MMMSCORE=round(100*mmmtemp/(100-counter));
    end;
    else if 20<counter<100 then do;
        mmmmscore=.E;
    end;
    else if counter=0 or counter=100 then do;
        mmmmscore=mmmtemp;
    end;
    if mmmtemp lt 0 then do;
        mmmmscore=.;
        mmmflag=.;end;

    label mmmmscore = 'Teng 3MS'
        mmmflag = 'Teng 3MS prorated or set to .E';

    FORMAT MMMFLAG YNDK.;
run;

```

Appendix XVIII
Health ABC Relationships

Investigator Name: Steve Kritchevsky and Emily Kenyon

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
SPOUSE	Health ABC ID# of participant's spouse	Health ABC ID# of participant's spouse, if enrolled in Health ABC	A spreadsheet of 345 known spouse pairs was generated by looking at participants with the same address, same last name, and/or consecutive Health ABC ID#, and comparing them with the information about who they live with (HQSSOPIH, HQSSPOUS). If there was doubt about a spouse pair, the Field Center was asked to investigate	Participants without a spouse in Health ABC are assigned SPOUSE=.	N/A

```

PROC IMPORT OUT= WORK.marpairs
      DATAFILE= "&_prospath\Calculated Variables\Programs\Year
1\finalmaritalpairs.xls"
      DBMS=EXCEL2000 REPLACE;
      GETNAMES=YES;
RUN;
data temp;
      set marpairs;
      format habcid SPOUSE 4.;
      habcid=substr(husband,3,4);
      SPOUSE=substr(wife,3,4);
run;

data tempw;
      set marpairs;
      format habcid SPOUSE 4.;
      habcid=substr(wife,3,4);
      SPOUSE=substr(husband,3,4);
run;

data tempb;
      set temp tempw;
run;
proc sort data=tempb;
      by habcid;
run;

data calc.marpairs;
      merge daf.ph (keep=habcid)
            tempb (in=intemp);
      by habcid;
      if not intemp then spouse=.A;
      drop husband wife;
      label SPOUSE = 'HABC ID# of participants spouse';
run;

```

Documentation for all Unenrolled Screening Data

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UNENROLLED DATA (NoScreen and Screen)

Two datasets contain all available data for potential Health ABC participants who were not eventually enrolled in the study:

NoScreen: data for those who had no telephone screening or home visit

Screen: data for those who had at least a telephone screening or home visit

1. General description

The NoScreen file contains information about potential participants who were in a screening "batch" and had either a Recruitment Status Form or a Recruitment Status Addendum, or both, completed and entered into the data system. In principle, all participants in any batch that was created should have had a Recruitment Status Form completed and entered, but a severe data entry backlog accumulated and this may not be true. That is, although there should be a Recruitment Status Form for every person who was screened for Health ABC (whether actually enrolled or not), this may not be the case. In addition, the Recruitment Status Addendum wasn't created until 7/7/97, about 3 months into recruitment. Participants who could not be contacted, or refused a telephone screening had no further data and can be found in this dataset. There are 15,795 observations in the NoScreen file.

The Screen file contains information about potential participants who had at least an eligibility interview (done either over the telephone or in the participant's home), and possibly a home visit or even a clinic visit, but ended up refusing or ineligible to participate in the study. These potential participants should have a Recruitment Status Form and either a Telephone Screening Interview or an Eligibility Assessment of Others in the Home form (completed in lieu of the Telephone Screening Interview and Final Eligibility Assessment form when another potential participant was found in the home of a batch screenee at the time of the Home Visit), but some of these may never have been data entered. In addition, those who had a Telephone Screening Interview may have a Final Eligibility Assessment form if they were visited in the home. Again, some of these may have been completed but never data entered. There are 4129 observations in the Screen file.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the "Proc Contents for All Datasets" link (search under NoScreen or Screen, respectively) or by searching the Datadict file (sort by form or database). Variable names can also be found on the annotated forms. Please note that not all variables on the forms are contained in the dataset. All variables not found in the dataset are listed in Dropped Variables and Alternates (Appendix I). Alternate variables to use (if applicable) are also listed. (Note that a number of variables dropped from previous versions of the Y1Screen dataset have been added back in to allow easy comparisons with the NoScreen and Screen datasets).

3. Dataset structure and contents

The NoScreen and Screen files each contain a single observation per participant.

Key variables:

HCFAID*	“HCFA ID” (as assigned by the Coordinating Center)
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh ⁺

*The variable name "HCFAID" is misleading, since it is really a number assigned by the Coordinating Center for identifying screenees before enrollment and is not a Medicare number or any other identifier assigned by or meaningful to the Health Care Financing Administration. Memphis screenees has odd HCFAIDs and Pittsburgh screenees have even. **Analysts are cautioned not to attempt to merge these data with any data requested from HCFA.**

4. Condition of data

a. Known data errors:

Baseline Questionnaire

Only a very non-representative sample of 80 Baseline Questionnaires (13 not completely entered) for unenrolled screenees were data entered before the data entry backlog forced the Field Centers to stop entering them. The data from these questionnaires is not included in the Screen dataset.

b. Strength and weaknesses of dataset items:

These data have not been edited, and no special missing value codes have been applied. Where available, acrostics have been compared across forms to check the merge, and the results were remarkably clean, mostly plausible mistranscriptions of the acrostic. However, the Recruitment Status Form and Recruitment Status Addendum did not have a second identifier, so the accuracy of the merge could not be checked.

Theoretically, a potential participant who could not be contacted (RSSTATUS=1-5) or refused a telephone screening (RSSTATUS=6) should have no other data than a Recruitment Status Form and a Recruitment Status Addendum, if this form had been created at the time of their consideration for the study. However, 77 potential participants had Recruitment Status forms marked with RSSTATUS between 1 and 6, but have Telephone Screening Interview, Final Eligibility Assessment, or Eligibility of Others in the Home data. These may either be mis-merged data due to ID errors, or true screenees whose recruitment status variable (RSSTATUS) is mis-marked. In addition, 741 potential participants have RSSTATUS missing, but have Telephone Screening Interview, Final Eligibility Assessment, or Eligibility of Others in the Home data. A further 21 participants have a Recruitment Status Addendum, although their RSSTATUS is 7 (ineligible on telephone screen), 8 (refused home visit), or missing and they have a Telephone Screening Interview. All of these individuals have been put in the Screen dataset.

Screenees who had an in-home visit should have either a Telephone Screening Interview and a Final Eligibility Assessment or they should have an Eligibility of Others in the Home form. However, one person had both a Telephone Screening Interview and a Eligibility Assessment of Others in the Home form. Participants found ineligible or refusing to participate after a Telephone Screening Interview will have no Final Eligibility Assessment or Eligibility of Others in the Home form.

⁺ Must link to Health ABC participant history file (PH) to add this variable.

A flag for existence of data for the screenee from the Recruitment Status Form (RSFLAG), Recruitment Status Addendum (RAFLAG), Final Eligibility Assessment form (EAFLAG), Telephone Screening Interview (TSFLAG) and Eligibility Assessment of Others in the Home (EOFLAG) have been included for the convenience of analysts wishing to exclude records with odd combinations of forms, which may represent mis-merged records.

5. Dataset index formulation and key variable mapping

Both the NoScreen and the Screen file are sorted by HCFAID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

The individuals in the NoScreen and Screen datasets represent unique groups that do not overlap with each other or any other dataset. The two may be concatenated with each other and with Y1Screen for analyses of the recruitment process in Health ABC. In addition, the variables from the Final Eligibility of Others in the Home form (EO variables) represent nearly identical questions to those asked on the Telephone Screening Interview (TS variables) and the Final Eligibility Assessment (EA variables). Because many of the questions differed slightly between forms, however, no attempt was made to rename and combine these variables. **Analysts attempting to do so are strongly advised to compare the exact wording of the questions on the different instruments** (see Year 1 B/L annotated data collection forms).

DROPPED VARIABLES

A number of variables appear on the annotated forms but will not be found in the datasets released. These variables are listed in Appendix I. There are several reasons why variables were dropped:

1. Participant confidentiality: identifying information such as participant name, address, telephone number, etc. are omitted from the analysis file. All participants are instead identified by the HCFAID.
2. Bookkeeping variables: a number of variables were put on the forms merely for bookkeeping purposes and are extremely unlikely to be useful for analysis. If an investigator notices that such a variable has been dropped and believes it should not have been, s/he should feel free to contact the Coordinating Center (HABCHelp@psg.ucsf.edu) and let us know that it should be included in future datasets.

Appendix I lists the omitted variables in alphabetical order. There are two columns; the first, entitled "Variable omitted," lists the name of the variable not included in the dataset. The second column, entitled "Variable to use," lists the cleaned variable, for redundant variables, or the reason the variable was not included.

Appendix I

DROPPED VARIABLES AND ALTERNATES

Variable omitted	Variable to use
EAHCFAID	HCFAID
EALINK	N/A (bookkeeping)
EOADD1	N/A (confidentiality)
EOADD2	N/A (confidentiality)
EOADD3	N/A (confidentiality)
EOADD4	N/A (confidentiality)
EOADD5	N/A (confidentiality)
EOBDATE	DOB
EOBETTER	N/A (bookkeeping)
EOFIRSTN	N/A (confidentiality)
EOHCFAID	HCFAID
EOLASTN	N/A (confidentiality)
EOLINK	N/A (bookkeeping)
EOMIDN	N/A (confidentiality)
RSID	HCFAID
TSADD1	N/A (confidentiality)
TSADD2	N/A (confidentiality)
TSADD3	N/A (confidentiality)
TSADD4	N/A (confidentiality)
TSADD5	N/A (confidentiality)
TSBESTNO	N/A (bookkeeping)
TSBETTER	N/A (bookkeeping)
TSCBAMPM	N/A (bookkeeping)
TSCBDATE	N/A (bookkeeping)
TSCBTIME	N/A (bookkeeping)
TSFIRSTN	N/A (confidentiality)
TSHMAMPM	N/A (bookkeeping)
TSHMDATE	N/A (bookkeeping)
TSID	HCFAID
TSLASTN	N/A (confidentiality)
TSMIDN	N/A (confidentiality)
TSRADDR	N/A (bookkeeping)
TSRPHONE	N/A (bookkeeping)
TSRSNAME	N/A (bookkeeping)
TSSHTIME	N/A (bookkeeping)
TSTELE	N/A (confidentiality)

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 READING CENTER VARIABLE LISTS	
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Computed Tomography (Soft Tissue)	
Computed Tomography (Spine)	
Computed Tomography - Mid-Thigh BMD	
DXA Hip BMD	
DXA Whole Body BMD	
Resting ECG	
Isokinetic Strength (KinCom)	
Pulmonary Function Test	
Pulse Wave Velocity	

YEAR 1 READING CENTER DATA (Y1READ, BMDNotes)

1. General description

The year 1 reading center file (Y1Read) contains reading center results (non-form data) of enrolled participants. Each data record contains results from the following Reading centers:

Reading Center	N
Computed tomography (Soft tissue)	3026
Computed tomography (Spine)	1489 (Pittsburgh only)
Computed tomography (Paraspinous muscles)	1508 (Pittsburgh only)
Computed tomography volumetric mid-thigh BMD	812
DXA whole body BMD	3058
DXA hip BMD	3047
Isokinetic strength (KinCom)	2684
Resting ECG	3074
Pulmonary function test	2863
Pulse wave velocity	2721

Please refer to the Health ABC reading center variable lists for detailed descriptions of the variables included.

Data from Health ABC biospecimen analyses has now been moved to the BIOSPECIMENS dataset, which contains data for all years.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the “Proc Contents for All Datasets” link (search under Y1READ) or by searching the Datadict file (by database). Variable names can also be found on the Reading Center Variable Lists. For analyst convenience, Coordinating Center-generated calculated variables found in the Y1Calc dataset but pertaining to Reading Center data are also listed in the respective Reading Center Variable Lists (see bookmarks). NOTE: SOME READING CENTERS USE THE SAME VARIABLE NAMES EVERY YEAR. THE ANALYST IS REMINDED TO RENAME VARIABLES BEFORE MERGING WITH OTHER YEARS AS NECESSARY.

3. Dataset structure and contents

The Y1READ file contains a single observation per participant.

Key variables:

HABCID HABC Enrollment ID without the 2-letter prefix
SITE HABC Clinic site: 1=Memphis; 2=Pittsburgh*

* Must link to Health ABC participant history file (PH) to add this variable.

4. Condition of data

Flag variables for each Reading Center (flag=1 if the participant has data from that Reading Center) have been renamed for consistency with datasets from other visit years. The new flag variables are:

<u>Variable Name</u>	<u>Reading Center</u>
FLAGCTS	CT (Spine)
FLAGCTT	CT (Soft tissue)
FLAGCTP	CT (Paraspinous muscles)
FLAGCTV	CT (volumetric mid-thigh BMD)
FLAGDXA	DXA whole body
FLAGDXAH	DXA hip
FLAGKC	KinCom
FLAGECG	ECG
FLAGPFT	PFT
FLAGPWV	PWV

CT Soft Tissue Data

In previous releases (before 1.42) about 100 participants had data that had been partially scrambled with data from other participants. In addition, data for HA2459 was labeled with the HABCID 2126. Both of these errors have been corrected as of version 1.42. In addition, three ID errors have been fixed as of version 1.42 (HA1487 and HA1488 were switched, and HA2459 was previously mis-identified as HA2126).

Some scans have values of .T for some of the measures. This value is used when artifacts, image contrast problems, small field of view, or other problems prevented an accurate measurement from being made:

1. Abdominal measures: The muscles with areas coded '.T' are primarily the right and left rectus muscles when QCBREPRB = 2. In these cases, the breathing was so pronounced that an accurate border or location for these muscles could not be determined. In five cases (HA2603, HB6186, HA1201, HB5501 and HB5325), the breathing was so pronounced that the lateral abdominals were also affected. In one case (HB1680) there was such a strong artifact from an implant in the back that the psoas muscle could not be visualized.

In a number of cases (not specified by the Reading Center) the subcutaneous fat was coded '.T' because it was either cut off or contained a significant artifact. Another case (HB5342) had such poor contrast that all of the abdominal area values were listed as '.T.'

2. Thigh measures: In two cases (HB5980 and HB6349), no thigh image was received by the Reading Center, so all thigh measures are set to '.M.' Two images (HB6347, left thigh; HB5377, right thigh) had too many streak artifacts to be usable. One case (HA2508) used such a small field of view that both thighs were not in the image, and the only area fully visible was the bone. The rest of the thigh measures for this participant were coded '.T.' Finally, half the left thigh of participant HB6276 was cut off of the

image, and the image was very noisy, so no areas were calculated for the left thigh. All left thigh areas for this participant were coded '.T.'

CT Spine Data

No known problems.

DXA Whole Body and Hip Data

A minor change has been made to the correction factor for fat-free mass variables as of version 1.42. Rather than multiplying by 0.964, the correction has been changed to 0.946 to match the value currently being used by NHANES. DXA data for all years were recalculated and re-released simultaneously in October 2005.

- A. The Memphis whole body array BMD variables for both the total body and subregions have been corrected due to a shift in the whole body phantom. The correction was first applied to the 12-15-00 dataset in an additive manner to only total body BMD. The correction is being changed to multiplicative to allow application to subregions and to correspond to the correction to BMC detailed in section B below.

The correction has been applied to all Memphis whole body scans performed from 03-04-1999 through 06-15-2000, inclusive. All whole body BMD variables (total and subregion) were multiplied by 1.023.

- B. The Memphis whole body array BMC variables for both the total body and subregions have been corrected due to a shift in the whole body phantom. This corrected BMC was used to calculate the FFM minus BMC (the CTOTLEAN variable) in the corrections noted in sections C and D below.

The correction has been applied to all Memphis whole body scans performed from 03-04-1999 through 06-15-2000, inclusive. All whole body BMC variables (total and subregion) were multiplied by 1.023.

- C. It has been determined that the Pittsburgh DXA machine overestimates total mass relative to mass measured by a scale. The following correction has been applied to this dataset. It is an updated version of the correction in Memo #1542 dated 11-29-2000.

The correction was applied as follows:

1. The correction has two time intervals with multiplicative corrections to TOTFAT, TOTLEAN, and TOTMASS. In the following equations, "VAR" stands for TOTFAT, TOTLEAN, and TOTMASS:
From 4-28-97 through 10-12-98: adjusted VAR = 0.983 * VAR
From 10-13-98 through 7-5-00: adjusted VAR = 0.979 * VAR
2. The CTOTLEAN correction was calculated as follows:
adjusted CTOTLEAN = adjusted TOTLEAN - WTOTBMC

3. The corrections in 1 and 2 were also applied to the corresponding variables in all subregions.
- D. It has been determined that for both Memphis and Pittsburgh, DXA overestimates fat-free mass compared to criterion methods. Consequently DXA also underestimates fat mass and percent fat. The following correction has been applied to this dataset. It is an updated version of the correction in Memo #1542 dated 11-29-2000.

After the above corrections in A, B, and C were applied, the following lean mass correction was applied:

1. Multiply all fat-free mass variables by 0.946:
New fat-free mass = 0.946 x fat-free mass
New TOTLEAN = 0.946 x TOTLEAN
(This is the correction that was changed in version 1.42)
 2. Recalculate all fat mass variables by subtracting the fat-free mass from the total mass of the region of interest:
New fat mass = total mass – new fat-free mass
New TOTFAT = TOTMASS – new TOTLEAN
 3. Recalculate all lean soft tissue mass variables by subtracting the BMC from the new fat-free mass:
New lean soft tissue mass = new fat-free mass – BMC
New CTOTLEAN = New TOTLEAN – WTOTBMC
 4. Recalculate all percent fat variables by dividing the new fat mass by the total mass:
New percent fat = (new fat mass / total mass) x 100
New TOTPF = (new TOTFAT / TOTMASS) x 100
 5. The DXA scan subregions (e.g., left leg, trunk), were corrected by applying the same steps 1-4
- E. Read Appendix II: Whole Body Subregions: Artifacts, Exclusions and Substituted Values. **The whole body artifact corrections have already been applied to this dataset release by the CC.**
- F. One scan is listed with a WBFINAL=P:Pending. The scan review has since been finalized and rated A:Acceptable.

DXA Hip Data

The following Total Hip BMD correction factors have been determined from the Hologic hip phantom results. Only Total Hip is corrected because this Region Of Interest is deemed most reliable from the hip phantom. **The following corrections have already been applied to this dataset release by the CC.**

A. **Memphis correction:** three time intervals; the first has no correction, the next 2 have additive corrections.

From 4-7-97 through 8-1-97: No correction.

From 8-2-97 through 3-15-99: Subtracted 0.0087 from the original TOTHIP BMD.

From 3-16-99 through 6-15-00: Subtracted 0.0039 from the original TOTHIP BMD.

B. **Pittsburgh correction:** two time intervals; the first has no correction, the second has additive correction.

From 4-7-97 through 5-4-99: No correction.

From 5-5-99 through 7-5-00: Subtracted 0.0036 from the original TOTHIP BMD.

ECG Data

One participant (HA1799) did not have ECG, but was previously listed as FLAGECG=1. This has been corrected as of version 1.42.

KinCom Data

Three participants (HA1399, HB5162, and HB5602) had invalid lever arm lengths entered for the baseline KinCom measurement, resulting in impossibly low torque values. Lever arm lengths from later years were used to correct these measures in version 1.42.

Also as of version 1.42, the KinCom data for 38 participants whose data were completely identical to their Year 2 data have been set to missing (.M, see Special Missing Value Codes below). Although the data for these measurements was stored for almost all of these participants, the Year 2 data were inadvertently substituted during processing, and there were no backup form data. These participants have been added to Appendix I (Permanently Missing Reading Center Data). A further 17 did have form data, so KCTMAX, KCTMEAN, KCSIDE, TRIAL, and KCSTID could be recovered from the paper backup. All other KinCom data for these 17 have been set to .M. Note that the algorithm used to process the electronic data is a little different from the algorithm used by the KinCom software (tails of the curve are removed before calculating forces and torques), so KCTMEAN will tend to be a little higher from the form data than from the electronic data.

An additional 4 participants (HA1415, HA2325, HA2487, and HA2613) had isokinetic strength testing but their electronic data were lost (see Appendix I: Permanently Missing Reading Center Files). For one participant (HA2487), there were form data backing up the electronic data (the form did not include a place to record these values until partway through baseline). As of version 1.43, these values have been substituted for KCTMAX, KCTMEAN, KCSIDE, TRIAL, and KCSTID. All other KinCom data for this participant have been set to .M. Note that the algorithm used to process the electronic data is a little different from the algorithm used by the KinCom software (tails of the curve are removed before calculating forces and torques), so KCTMEAN will tend to be a little higher from the form data than from the electronic data.

PFT Data

Some participants have missing data (coded as .T) for the percent predicted variables PPFEF50 and PPFEV6 because their data were hand entered from the printout after it was discovered they were missing from the PFT database. The printout does not contain all of the information necessary to calculate all of the percent predicted variables. Where available, the electronic file has been retrieved and transmitted to the Reading Center so these variables could be calculated. Those remaining could not be found in electronic form.

PWV Data

Due to machine malfunctions and data transfer problems between Field Centers and the Reading Center, a sizeable number of participants who apparently had PWV measurements did not turn up in the final dataset. All PWV machines were returned to the Reading Center and all remaining files examined to retrieve as many of these as possible. The remaining participants whose PWV results are permanently missing are listed in Appendix I.

5. Dataset index formulation and key variable mapping

The Y1READ file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

7. Permanently lost Reading Center data

Every effort was made to reconcile the Reading Center databases with the clinic visit workbook data, to ensure that all measurements made on Health ABC participants that should have been sent to and analyzed by a Reading Center did reach them and became part of that Reading Center's database. As Clinic Visit Workbook data were edited, the tracking variables for Reading Center measurements were cleaned up, and multiple iterations of the reconciliation between Reading Center databases and the clinic visit data were made. Where holes in the Reading Center databases were found, the clinics were queried to try to locate the electronic or even paper version of missing measurements. Despite all of these efforts, some measurements remain irretrievable, either because they were not successfully stored by the instruments at the Field Centers, or they were not successfully transferred to the Reading Centers, or they were unrecognizable or lost at the Reading Center level. A list of participants with lost data, and the affected Reading Center database can be found in Appendix I. These participants have had the respective tracking variable values changed to .L to reflect this (see below).

8. Special Missing Value Codes

SAS allows for stratification of missing values. The following missing values have been assigned:

. ='Missing Form'
.A='A:Not Applicable'
.B='B:Below Assay Range'
.H='H:Above Assay Range'
.L='L:Permanently Lost'
.M='M:Missing'
.N='N:Not Required'
.T='T:Missing Due to Technical Problems' (reading center data only)
.U='Unacceptable'

Description

. : Missing Form

Used when a value is missing because the entire form has not been entered.

A: Not Applicable

Used when a value is missing but the value is not required (due to simple skip pattern logic)

L: Permanently Lost

Used to flag a tracking variable (e.g., P1BLDR, P2PWV, P2RL3, P4SPIR, P4THYN, P4ABYN, P4SPYN) when a measurement involving a Reading Center was done, but the data either never made it to the Reading Center, or was lost at the Reading Center. A list of lost measurements, along with a brief description of what happened, can be found in the Reading Center documentation, Appendix I). Every effort was made to track down these data before they were declared "permanently lost" and the flag assigned.

M:Missing

Used to flag missing values when the value is required (i.e., true missing values).

N:Not Required

Used when a value is missing but the value is not required (not due to simple skip pattern logic). For example, for checkbox variables which are "Check all that apply": each one, individually, is not required. In these cases, a summary calculated variable (not included in the dataset) was used to edit missing responses. Some variables whose skip pattern logic is non-standard (i.e., the skip pattern involves several variables and forms) also have .N flags when missing, whether or not a response was required due to the skip pattern.

T:Missing Due to Technical Problems

Used when a value is missing from the Reading Center dataset due to technical difficulties. An explanation of when this value has been assigned can be found under Strengths and weaknesses of dataset items for each Reading Center (see above).

U:Unacceptable

Used when Reading Center data exist but have been reviewed during QC as unacceptable. An explanation of when this value has been assigned can be found under Strengths and weaknesses of dataset items for each Reading Center.

General Strategies for Using Special Missing Values

In SAS, when using special missing values in logical expressions, the missing value is no longer only equal to '.'

To express a value equal to missing, the code should be written: `<= .z` or alternately: `le .z`

To express a value not equal to missing, the code should be written `>.z` or alternately: `gt .z`

.Z is the greatest value of missing available in SAS.

9. Reading Center Methods And Re-Read Analyses

Each Year 1 Reading Center was asked to document their methods and to re-read approximately 5% of their data in a blinded fashion. Information about both the Reading Center methodology and the re-read analyses can be found on the Health ABC website under the Datasets & Documentation link (click the sublink Reliability and Reproducibility studies/ RC methods). Please note that this link is a work in progress; not all sublinks are populated. Additional information will be added as the Coordinating Center is able to collect, analyze, and document it.

Appendix I

PERMANENTLY MISSING READING CENTER FILES

HABC Enrollment ID#	Reading Center Database	Problem
HB5029	CT spine	only whole body scan done
HB5232	CT spine	spine scan could not be retrieved
HB5320	CT spine	spine scan could not be retrieved
HB5465	CT spine	could not be analyzed
HB5534	CT spine	scan lost (archived over)
HB5707	CT spine	scan lost (archived over)
HB5817	CT spine	spine scan could not be retrieved
HB5850	CT spine	scan lost (archived over)
HB5851	CT spine	scan lost (archived over)
HB5852	CT spine	scan lost (archived over)
HB5853	CT spine	Scan lost
HB5863	CT spine	spine scan could not be retrieved
HB5952	CT spine	scan lost (archived over)
HB5954	CT spine	Scan lost
HB5983	CT spine	spine scan could not be retrieved
HB6047	CT spine	spine scan could not be retrieved
HB6068	CT spine	spine scan could not be retrieved
HB6071	CT spine	spine scan could not be retrieved
HB6120	CT spine	scan lost (archived over)
HB6143	CT spine	spine scan could not be retrieved
HB6216	CT spine	scan lost (archived over)
HB6279	CT spine	scan lost (archived over)
HB6416	CT spine	spine scan could not be retrieved
HA1040	CT tissue	Scan lost
HA1946	CT tissue	Scan lost
HA1963	CT tissue	Scan lost
HA1973	CT tissue	Scan lost
HA2011	CT tissue	Scan lost
HA2278	CT tissue	Scan lost
HA2468	CT tissue	scan lost
HA2558	CT tissue	scan lost
HA2616	CT tissue	Scan lost
HA2622	CT tissue	scan lost
HB5534	CT tissue	scan lost (archived over)
HB5850	CT tissue	scan lost (archived over)
HB5851	CT tissue	scan lost (archived over)

HABC Enrollment ID#	Reading Center Database	Problem
HB5852	CT tissue	scan lost (archived over)
HB5853	CT tissue	scan lost
HB5952	CT tissue	scan lost (archived over)
HB5954	CT tissue	scan lost
HB6120	CT tissue	scan lost (archived over)
HB6224	CT tissue	scan lost (archived over)
HB6253	CT tissue	scan lost
HA1219	DXA	too heavy for machine
HA1430	DXA	whole body not done
HA1478	DXA	too heavy for machine
HA1678	DXA	put off until B visit, then too ill to return
HA1841	DXA	put off until B visit, did not return
HA2209	DXA	put off until B visit, did not return
HB5306	DXA	7/25/97 scans not archived, ppt would not return
HB5307	DXA	7/25/97 scans not archived, ppt would not return
HB5908	DXA	whole body scan aborted
HA1006	KinCom	Lost during processing
HA1009	KinCom	Lost during processing
HA1021	KinCom	Lost during processing
HA1022	KinCom	Lost during processing
HA1033	KinCom	Lost during processing
HA1045	KinCom	Lost during processing
HA1049	KinCom	Lost during processing
HA1055	KinCom	Lost during processing
HA1072	KinCom	Lost during processing
HA1075	KinCom	Lost during processing
HA1077	KinCom	Lost during processing
HA1078	KinCom	Lost during processing
HA1081	KinCom	Lost during processing
HA1082	KinCom	Lost during processing
HA1103	KinCom	Lost during processing
HA1112	KinCom	Lost during processing
HA1138	KinCom	Lost during processing
HA1139	KinCom	Lost during processing
HA1147	KinCom	Lost during processing
HA1149	KinCom	Lost during processing
HA1169	KinCom	Lost during processing
HA1174	KinCom	Lost during processing
HA1177	KinCom	Lost during processing
HA1178	KinCom	Lost during processing
HA1179	KinCom	Lost during processing
HA1194	KinCom	Lost during processing

HABC Enrollment ID#	Reading Center Database	Problem
HA1195	KinCom	Lost during processing
HA1204	KinCom	Lost during processing
HA1206	KinCom	Lost during processing
HA1253	KinCom	Lost during processing
HA1415	KinCom	Yr 1 visit states: KinCom not in system/no report
HA2478	KinCom	Lost during processing
HA2618	KinCom	Apparently done but not saved
HB5034	KinCom	Lost during processing
HB5180	KinCom	Lost during processing
HB5224	KinCom	Lost during processing
HB5474	PFT	not captured by computer
HA1264	PWV	apparently done and not saved
HA1356	PWV	apparently done and not saved
HA1589	PWV	apparently done and not saved
HA1591	PWV	apparently done and not saved
HA1655	PWV	apparently done and not saved
HA1656	PWV	apparently done and not saved
HA1658	PWV	apparently done and not saved
HA1659	PWV	apparently done and not saved
HA1660	PWV	apparently done and not saved
HA1661	PWV	apparently done and not saved
HA1663	PWV	apparently done and not saved
HA1762	PWV	apparently done and not saved
HA1775	PWV	apparently done and not saved
HA1777	PWV	apparently done and not saved
HA1933	PWV	apparently done and not saved
HA2013	PWV	apparently done and not saved
HA2018	PWV	apparently done and not saved
HA2118	PWV	apparently done and not saved
HA2149	PWV	apparently done and not saved
HA2198	PWV	apparently done and not saved
HA2253	PWV	apparently done and not saved
HA2346	PWV	apparently done and not saved
HA2395	PWV	apparently done and not saved
HA2410	PWV	apparently done and not saved
HA2449	PWV	apparently done and not saved
HA2495	PWV	apparently done and not saved
HA2543	PWV	apparently done and not saved
HB5032	PWV	apparently done and lost
HB5240	PWV	apparently done and lost
HB5413	PWV	apparently done and lost
HB5476	PWV	apparently done and lost

HABC Enrollment ID#	Reading Center Database	Problem
HB5984	PWV	apparently done and lost
HB6204	PWV	apparently done and lost
HB6448	PWV	apparently done and not saved
HB6636	PWV	apparently done and lost

Appendix II

DXA WHOLE BODY SUBREGIONS: ARTIFACTS, EXCLUSIONS AND SUBSTITUTED VALUES

From time to time various artifacts will appear in the subregions of the whole body, which can lead to unreliable results for the measurement of bone mineral or soft tissue. In some cases these values will need to be excluded from further analysis or they may be corrected (for example, by substituting the values from the contralateral side). This appendix summarizes some of the situations that can arise and how these exceptions are handled in preparing the DXA Reading Center.

The DXA Whole Body Reading Center dataset contains the whole body variables. See DXA Whole Body Reading Center Variable List for the variable names and labels. All variables starting with the letter “A” contain the tissue and severity codes. There can be up to two artifacts coded for each region of interest (ROI). The tissue and severity codes are provided for documentation only. **All substitutions and recalculations have already been done.** The appropriate variables contain the actual values to be used in analysis (original, substituted, or recalculated) or a missing code.

An additional file called BMDNotes is provided to give a narrative description of each artifact (see Appendix III). See the SAS Contents Procedure listing provided for this file for variable names and labels. The appropriate variables contain the narrative description, tissue code, and severity code for each artifact.

The tissue codes, severity codes, substituted and recalculated values, and missing codes are described below.

Artifacts that make the entire scan unacceptable

This is a special situation, such as motion over the entire scan, that makes it difficult to isolate the artifact to a specific subregion. In this case, there are no tissue or severity codes and all total and subregion variables are coded missing value .U.

Artifacts may affect bone, soft tissue or both

Artifacts are classified by the Reading Center according to whether they affect the bone only (code = T1), soft tissue only (code = T2), or both (code = T3). These assignments are based on empirical evidence where possible. If this is not possible, the assignment is based on theoretical grounds. The variables containing the tissue codes are assigned at the level of the whole body subregion that is affected; not at the level of the total body.

Artifacts may be of varying severity

Artifacts are also classified by the Reading Center according to their severity. The variables containing the severity codes are assigned at the level of the whole body subregion that is affected; not at the level of the total body.

Artifacts may be negligible, having no significant effect (code = S1), in which case the effect of the artifact on the measurement can be ignored.

An artifact may have a significant effect on the values measured for the subregion in which it is found (code = S2). In this case the values for the subregion have been set to missing and replaced with missing value .T.

The artifact may be more severe and have a significant effect on both the subregion and the total ROI whole body result (code = S3). In this case the values for the subregion will be set to missing and replaced with missing value T. The values for the total region of interest will also be set to missing and replaced with missing value .T **unless** the total region of interest result can be recalculated as described in the next section below.

Artifact can be corrected by substituting values from contralateral side

Where possible, unilateral artifacts in the arm, leg, or rib (bone mineral only for rib because soft tissue artifacts in the ribs are part of the trunk ROI and there is no contralateral side to substitute) of severity grade S3 will be corrected by substituting the measurement results for the affected tissue type from the contralateral side. Substitution may be for the bone only (T1 code), soft tissue only (T2 code) or both (T3 code), except for rib as noted above. When contralateral substitution is performed, the results for the total region of interest **may** or **may not** be recalculated. The total ROIs are only recalculated if none of the component subregions are missing; e.g., there may be a leg or arm contralateral substitution, but if the pelvis is also set to .T the total will not be recalculated and will be set to the missing value .T. In practice, the total ROIs usually cannot be recalculated despite contralateral substitution, due to one or more subregions remaining missing.

If contralateral substitution results in all subregions having valid values, the recalculated total ROI values are reported in the reading center dataset. No further adjustment is needed.

Note that contralateral substitutions are only made for the purpose of recalculating the total ROI values. All subregion ROI variables retain the missing values.

An example: Suppose a scan has only one artifact: an amputation of the right leg resulting in the artifact code of T3_S3 for the right leg ROI. The reading center dataset will contain the missing value .T for the right leg ROI (this is the subregion ROI) and recalculated values for the total ROIs, in which the left leg values have been substituted for the right leg values.

Another example: Suppose a scan has only one artifact: a right hip prosthesis resulting in the artifact code of T3_S3 for the pelvis and right leg because the artifact extends into both regions. The reading center dataset will contain the missing value .T for the right leg ROI and pelvis ROI (these are the subregion ROIs) and the missing

value .T for the total ROIs, because there is no contralateral substitution for the pelvis.

Actions for each specific case

Tx_S1: No action is necessary. No changes are made.

T1_S2: The bone (area, BMC, BMD) and Lean+BMC values in the affected subregion(s) are set to missing. The total results are not recalculated; the original total ROI results from the scan are retained.

T2_S2: The Fat, Lean, and Lean+BMC values in the affected subregion(s) are set to missing. The total results are not recalculated; the original total results from the scan are retained.

T3_S2: All values for the affected subregion(s) are set to missing. The total results are not recalculated; the original total results from the scan are retained.

T1_S3: The bone (area, BMC, BMD) and Lean+BMC values in the affected subregion(s) are set to missing. Values from unaffected subregions are retained for subregional analysis. To determine if the total ROIs have been substituted and recalculated or set to missing, see section above entitled “Artifact can be corrected by substituting values from contralateral side.”

T2_S3: The Fat, Lean, Lean+BMC values in the affected subregion(s) are set to missing. Values from unaffected subregions are retained for subregional analysis. To determine if the total ROIs have been substituted and recalculated or set to missing, see section above entitled “Artifact can be corrected by substituting values from contralateral side.”

T3_S3: All values for the affected subregion(s) are set to missing. Values from unaffected subregions are retained for subregional analysis. To determine if the total ROIs have been substituted and recalculated or set to missing, see section above entitled “Artifact can be corrected by substituting values from contralateral side.”

Appendix III

BMDNOTES

General description

The BMDNotes file contains a series of 10 text variables that provide the narrative details, tissue code and severity code for each whole body artifact. This file will be of little general interest to investigators other than the DXA and Body Composition Working Group, so it was not included in Y3Read to save space. However it is available as a separate file (BMDNotes).

To link observations in BMDNotes to the corresponding observations in Y3Read, merge on the variables HABCID, WBDATE, and WBMODE.

Cross reference of dataset names with exact source

A complete list of variable names can be found under the "Proc Contents for All Datasets" link (search under BMDNotes). Variable names can also be found in the DXA Reading Center Variable Lists.

Dataset structure and contents

The BMDNotes file contains a single observation per participant.

**HEALTH ABC READING CENTER VARIABLE LIST
COMPUTED TOMOGRAPHY (PARASPINOUS)**

Variable Name	Variable Description	Variable Label	Value Label
ACROSTIC	Participant's first initial of first name and first three letters of last name.	Acrostic	
AREABFAT	Area of region of visceral fat that appears to be bowel contents in the abdominal image	AREA - BOWEL FAT	cm-sq
AREALSP	Area of region defined as L-Spinalis muscle in the abdominal image	AREA -L SPINALIS	cm-sq
AREARSP	Area of region defined as R-Spinalis muscle in the abdominal image.	AREA -R SPINALIS	cm-sq
BFATDEN	Average CT density of region defined as bowel contents in the visceral fat region of the abdominal image. Units of HU where water is set to 0 as a standard.	BOWEL FAT DENSITY	HU
BFATDNSD	Standard deviation of average CT density of region defined as Bowel contents in the visceral fat region of the abdominal image. Units of HU where water is set to 0 as a standard.	BOWEL FAT DENSITY	HU
HABCID	Health ABC Enrollment ID #	HABC ENROLLMENT ID	
LSPDEN	Average CT density of region defined as L-Spinalis in the abdominal image. Units of HU where water is set to 0 as a standard.	L- SPINALIS DENSITY	HU
LSPDENS	Standard deviation of average CT density of region defined as L-Spinalis in the abdominal image. Units of HU where water is set to 0 as a standard.	L- SPINALIS DENSITY SD	HU
RSPDEN	Average CT density of region defined as R-Spinalis in the abdominal image. Units of HU where water is set to 0 as a standard.	R- SPINALIS DENSITY	HU
RSPDENS	Standard deviation of average CT density of region defined as R-Spinalis in the abdominal image. Units of HU where water is set to 0 as a standard.	R- SPINALIS DENSITY SD	HU
SITE*	Field Center	CLINIC SITE	HA=Memphis HB=Pittsburgh

* Must link to Health ABC participant history file (PH) to add this variable.

**HEALTH ABC READING CENTER VARIABLE LIST
COMPUTED TOMOGRAPHY (SOFT TISSUE)**

Variable Name	Variable Description	Variable Label	Value Label
ABFOV	Abdominal image field of view.	Abdomen field of view (cm)	cm
ABKVP	This is the energy at which the abdominal CT image is acquired (kVp = peak kilovolts). Normally it should be 120 or 140. A much lower energy (less than 100) would affect the quality of the image, introducing more noise, and decrease the accuracy of the calculation.	Abdomen CT Peak Kilovolts (kVp)	kVp
ABLEV	Vertebral level at which the image was acquired. Protocol dictates that this is to be at the L4/L5 disk space.	Vertebral level	text
ABMASS	This is the X-ray tube current (in milliamps) times the exposure time (in seconds) for the acquisition of the abdominal study. This will vary, dependent on the size of the patient. A larger value is required to get a good quality image for larger patients.	Abdomen exposure time (ma/sec)	ma/sec
ABPATH	Abdomen pathology	Abdomen pathology	0 = no reported pathology 1 = reported pathology, some calculated variables may not be available.
ABSAG_D	Maximum sagittal diameter as measured from the abdominal CT image. This is a midline measurement from the posterior skin line, anteriorly to the maximum extension of the anterior skin line.	Maximum sagittal diameter (mm)	mm
ABSFA1	Area of region defined as subcutaneous fat in the abdominal image. First measurement.	Abdomen Subcutaneous Fat Area 1 (cm-sq)	cm ²
ABSFA2	Area of region defined as subcutaneous fat in the abdominal image. Second measurement for participants involved in reproducibility study.	Abdomen Subcutaneous Fat Area2 (cm-sq)	cm ²
ABSFD	Average CT density of region defined as subcutaneous fat in the abdominal image. Units of HU where water is set to 0 as a standard.	Abdomen Subcutaneous Fat Density (HU)	HU
ABSFSD	Standard deviation of average CT density of region defined as subcutaneous fat in the abdominal image. Units of HU where water is set to 0 as a standard.	Abdomen Subcutaneous Fat Density SD (HU)	HU
ABSLC	Thickness of the acquired CT image. According to the protocol it should be 10 mm. Thinner slices will have more noise, and decrease the accuracy of the calculation.	Abdomen Slice thick (mm)	mm
ABTOTA	Area of region defined as total abdominal area.	Abdomen Total Area (cm-sq)	cm ²
ABVFA1	Area of region defined as visceral fat in the abdominal image. First measurement.	Abdomen Visceral Fat Area1 (cm-sq)	cm ²

COMPUTED TOMOGRAPHY (SOFT TISSUE)

Variable Name	Variable Description	Variable Label	Value Label
ABVFA2	Area of region defined as visceral fat in the abdominal image. Second measurement for participants involved in reproducibility study.	Abdomen Visceral Fat Area2 (cm-sq)	cm ²
ABVFD	Average CT density of region defined as visceral fat in the abdominal image. Units of HU where water is set to 0 as a standard.	Abdomen Visceral Fat Density (HU)	HU
ABVFSD	Standard deviation of average CT density of region defined as visceral fat in the abdominal image. Units of HU where water is set to 0 as a standard.	Abdomen Visceral Fat Density SD (HU)	HU
AREABFAT	Area of region of visceral fat that appears to be bowel contents in the abdominal image	AREA - BOWEL FAT	cm ²
AREALSP	Area of region defined as L-Spinalis muscle in the abdominal image	AREA -L SPINALIS	cm ²
AREARSP	Area of region defined as R-Spinalis muscle in the abdominal image.	AREA -R SPINALIS	cm ²
BFATDEN	Average CT density of region defined as bowel contents in the visceral fat region of the abdominal image. Units of HU where water is set to 0 as a standard.	BOWEL FAT DENSITY	HU
BFATDNSD	Standard deviation of average CT density of region defined as Bowel contents in the visceral fat region of the abdominal image. Units of HU where water is set to 0 as a standard.	BOWEL FAT DENSITY	HU
CTSCANID	CT Scanner used (See Y1Calc)	CT Scanner used	1=Centre Commons 2=St. Josephs 3=Bowld
CTTEDATE	Exam date: CT soft tissue	Exam date: CT soft tissue	MM/DD/YY
CTTSTID	Staff ID #: CT soft tissue	Staff ID: CT soft tissue	
CTTVISIT	Exam number	Exam number	1=Baseline
FAILBR	Fail abdominal breathing QC criteria	Fail abd breathing qc	1=fails QC
FAILFV	Fail abdominal field of view QC criteria	Fail abd fov qc	1=fails QC
FAILGE	Fail abdominal general QC criteria	Fail abd general qc	1=fails QC
FAILKV	Fail abdominal kvolts QC criteria	Fail abd kvolts	1=fails QC
FAILLV	Fail abdominal scan level QC criteria	Fail abd level	1=fails QC
FAILME	Fail abdominal metal artifact QC criteria	Fail abd metal qc	1=fails QC
FAILSL	Fail abdominal slice QC criteria	Fail abd slice mm	1=fails QC
FAILTH	Fail thigh general QC criteria	Fail thigh general qc	1=fails QC
HABCID	Health ABC Enrollment ID #	HABC ENROLLMENT ID	
LATAB	Total (R+L) lateral abdominal muscle area (cm-sq)	Total (R+L) lateral abdominal muscle area (cm-sq)	cm ²
LEG	Value indicates the leg on which the scan plane determination was made	Leg, R/L, of CT scan	L=left leg R=right leg

COMPUTED TOMOGRAPHY (SOFT TISSUE)

Variable Name	Variable Description	Variable Label	Value Label
LLATAB	Area of region defined as left lateral abdominal muscles in the abdominal image.	Area - L Lat Abdominal (cm-sq)	cm ²
LLATABD	Average CT density of region defined as left lateral abdominal muscles in the abdominal image. Units of HU where water is set to 0 as a standard.	L Lat Abdominal Density (HU)	HU
LLATABSD	Standard deviation of average CT density of region defined as left lateral abdominal muscles in the abdominal image. Units of HU where water is set to 0 as a standard.	L Lat Abdominal Density SD (HU)	HU
LPSO	Area of region defined as left psoas muscle in the abdominal image.	Area - L Psoas (cm-sq)	cm ²
LPSOD	Average CT density of region defined as left psoas muscle in the abdominal image. Units of HU where water is set to 0 as a standard.	L Psoas Density (HU)	HU
LPSOSD	Standard deviation of average CT density of region defined as left psoas muscle in the abdominal image. Units of HU where water is set to 0 as a standard.	L Psoas Density SD (HU)	HU
LRECA	Area of region defined as left rectus muscle in the abdominal image.	Area - L Rectus (cm-sq)	cm ²
LRECD	Average CT density of region defined as left rectus muscle in the abdominal image. Units of HU where water is set to 0 as a standard. Decrease in density over normal muscle is usually an indication of a fatty muscle.	L Rectus Density (HU)	HU
LRECS	Standard deviation of average CT density of region defined as left rectus muscle in the abdominal image. Units of HU where water is set to 0 as a standard.	L Rectus Density SD (HU)	HU
LSPDEN	Average CT density of region defined as L-Spinalis in the abdominal image. Units of HU where water is set to 0 as a standard.	L- SPINALIS DENSITY	HU
LSPDENSD	Standard deviation of average CT density of region defined as L-Spinalis in the abdominal image. Units of HU where water is set to 0 as a standard.	L- SPINALIS DENSITY SD	HU
LTHBONE	Area of entire region defined as bone and bone marrow in the left thigh on the thigh image.	L Thigh Bone Area (cm-sq)	cm ²
LTHHAM	Area of entire region defined as hamstring muscles in the left thigh on the thigh image. The hamstrings include the Biceps Femoris, Short Head; Biceps Femoris, Long Head; Semitendinosus and Semimembranosus muscles.	L Thigh Hamstrings Area (cm-sq)	cm ²
LTHHAMD	Average CT density of region defined as the hamstring muscles in the left thigh on the thigh image. Units of HU where water is set to 0 as a standard.	L Thigh Hamstrings Density (HU)	HU
LTHHAMSD	Standard deviation of average CT density of region defined as the hamstring muscles in the left thigh on the thigh image. Units of HU where water is set to 0 as a standard.	L Thigh Hamstrings Density SD (HU)	HU
LTHIMF	Area of entire region defined as intermuscular fat in the left thigh on the thigh image. Intermuscular fat is that tissue, with a density of fat, lying interior to the deep fascial plane surrounding the muscles.	L Thigh Intermuscular Fat Area (cm-sq)	cm ²
LTHIMFD	Average CT density of region defined as intermuscular fat in the left thigh on the thigh image. Units of HU where water is set to 0 as a standard.	L Thigh Intermuscular Fat Density (HU)	HU

COMPUTED TOMOGRAPHY (SOFT TISSUE)

Variable Name	Variable Description	Variable Label	Value Label
LTHIMFSD	Standard deviation of average CT density of region defined as intermuscular fat in the left thigh on the thigh image. Units of HU where water is set to 0 as a standard.	L Thigh Intermuscular Fat Dnsity SD (HU)	HU
LTHMUS	Area of all muscle regions in the left thigh on the thigh image.	L Thigh Total Muscle Area (cm-sq)	cm ²
LTHMUSD	Average CT density of all regions defined as muscle in the left thigh on the thigh image. Units of HU where water is set to 0 as a standard.	L Thigh Total Muscle Density (HU)	HU
LTHMUSSD	Standard deviation of average CT density of all regions defined as muscle in the left thigh on the thigh image. Units of HU where water is set to 0 as a standard.	L Thigh Total Muscle Density SD (HU)	HU
LTHQU	Area of entire region defined as the quadriceps muscles in the left thigh on the thigh image. The quadriceps muscles include the Vastus Lateralis, Vastus Intermedius, Vastus Medialis and the Rectus Femoris.	L Thigh Quadriceps Area (cm-sq)	cm ²
LTHQUD	Average CT density of region defined as the quadriceps muscles in the left thigh on the thigh image. Units of HU where water is set to 0 as a standard.	L Thigh Quadriceps Density (HU)	HU
LTHQUSD	Standard deviation of average CT density of region defined as the quadriceps muscles in the left thigh on the thigh image. Units of HU where water is set to 0 as a standard.	L Thigh Quadriceps Density SD (HU)	HU
LTHSFA	Area of entire region defined as subcutaneous fat in the left thigh on the thigh image. This is the fat lying between the skin and the deep fascial plane surrounding the muscles.	L Thigh Subcutaneous Fat Area (cm-sq)	cm ²
LTHSFD	Average CT density of region defined as subcutaneous fat in the left thigh on the thigh image. Units of HU where water is set to 0 as a standard.	L Thigh Subcutaneous Fat Density (HU)	HU
LTHSFSD	Standard deviation of average CT density of region defined as subcutaneous fat in the left thigh on the thigh image. Units of HU where water is set to 0 as a standard.	L Thigh Subcutaneous Fat Density SD (HU)	HU
LTHTA	Area of entire region defined as left thigh in the thigh image. Includes all tissue types (bone, muscle, fat, vascular, skin...)	L Thigh Total Area (cm-sq)	cm ²
PAS	Total (R+L) spinalis muscle area	Total (R+L) spinalis muscle area	cm ²
PSOAS	Total (R+L) psoas muscle area (cm-sq)	Total (R+L) psoas muscle area (cm-sq)	cm ²

COMPUTED TOMOGRAPHY (SOFT TISSUE)

Variable Name	Variable Description	Variable Label	Value Label
QCBREPRB	Quality related to breathing	QC breathing problem	0 = no breathing artifact in image; 1 = minimal breathing artifact; 2 = breathing artifact affecting the calculation, some calculated values may not be available.
QCFOVPRB	Quality related to abdominal field of view	QC abdomen field of view	0 = appropriate FOV; 1 = small amount of subcutaneous fat (SF) cut off on image; 2 = large amount of SF fat cut off - SF result will not be calculated.
QCMETPRB	Quality related to metal artifact	QC abdomen metal problem	0 = No metal artifact in image; 1 = minimal metal artifact; 2 = artifact affecting the calculation, some calculated variables may not be available.
QCPRB	Quality related to abdominal image	QC Abdominal Image	0 = image quality is acceptable; 1 = minimal quality degradation; 2 = poor quality affecting the calculation, some calculated variables may not be available.

COMPUTED TOMOGRAPHY (SOFT TISSUE)

Variable Name	Variable Description	Variable Label	Value Label
QCTHAR	Quality of thigh image	QC Thigh Artifacts	0 = no artifact in image; 1 = minimal artifact; 2 = artifact affecting the calculation, some calculated variables may not be available.
RECA	Total (R+L) rectus muscle area (cm-sq)	Total (R+L) rectus muscle area (cm-sq)	cm ²
RLATAB	Area of region defined as right lateral abdominal muscles in the abdominal image.	Area - R Lat Abdominal (cm-sq)	cm ²
RLATABD	Average CT density of region defined as right lateral abdominal muscles in the abdominal image. Units of HU where water is set to 0 as a standard.	R Lat Abdominal Density (HU)	HU
RLATABSD	Standard deviation of average CT density of region defined as right lateral abdominal muscles in the abdominal image. Units of HU where water is set to 0 as a standard.	R Lat Abdominal Density SD (HU)	HU
RPSO	Area of region defined as right psoas muscle in the abdominal image.	Area - R Psoas (cm-sq)	cm ²
RPSOD	Average CT density of region defined as right psoas muscle in the abdominal image. Units of HU where water is set to 0 as a standard.	R Psoas Density (HU)	HU
RPSOSD	Standard deviation of average CT density of region defined as right psoas muscle in the abdominal image. Units of HU where water is set to 0 as a standard.	R Psoas Density SD (HU)	HU
RRECA	Area of region defined as right rectus muscle in the abdominal image.	Area - R Rectus (cm-sq)	cm ²
RRECD	Average CT density of region defined as right rectus muscle in the abdominal image. Units of HU where water is set to 0 as a standard. Decrease in density over normal muscle is usually an indication of a fatty muscle.	R Rectus Density (HU)	HU
RRECS	Standard deviation of average CT density of region defined as right rectus muscle in the abdominal image. Units of HU where water is set to 0 as a standard.	R Rectus Density SD (HU)	HU
RSPDEN	Average CT density of region defined as R-Spinalis in the abdominal image. Units of HU where water is set to 0 as a standard.	R- SPINALIS DENSITY	HU
RSPDENS	Standard deviation of average CT density of region defined as R-Spinalis in the abdominal image. Units of HU where water is set to 0 as a standard.	R- SPINALIS DENSITY SD	HU
RTHBONE	Area of entire region defined as bone and bone marrow in the right thigh on the thigh image.	R Thigh Bone Area (cm-sq)	cm ²

COMPUTED TOMOGRAPHY (SOFT TISSUE)

Variable Name	Variable Description	Variable Label	Value Label
RTHHAM	Area of entire region defined as hamstring muscles in the right thigh on the thigh image. The hamstrings include the Biceps Femoris, Short Head; Biceps Femoris, Long Head; Semitendinosus and Semimembranosus muscles	R Thigh Hamstrings Area (cm-sq)	cm ²
RTHHAMD	Average CT density of region defined as the hamstring muscles in the right thigh on the thigh image. Units of HU where water is set to 0 as a standard.	R Thigh Hamstrings Density (HU)	HU
RTHHAMSD	Standard deviation of average CT density of region defined as the hamstring muscles in the right thigh on the thigh image. Units of HU where water is set to 0 as a standard.	R Thigh Hamstrings Density SD (HU)	HU
RTHIMF	Area of entire region defined as intermuscular fat in the right thigh on the thigh image. Intermuscular fat is that tissue, with a density of fat, lying interior to the deep fascial plane surrounding the muscles.	R Thigh Intermuscular Fat Area (cm-sq)	cm ²
RTHIMFD	Average CT density of region defined as intermuscular fat in the right thigh on the thigh image. Units of HU where water is set to 0 as a standard.	R Thigh Intermuscular Fat Density (HU)	HU
RTHIMFSD	Standard deviation of average CT density of region defined as intermuscular fat in the right thigh on the thigh image. Units of HU where water is set to 0 as a standard.	R Thigh Intermuscular Fat Dnsity SD (HU)	HU
RTHMUS	Area of all muscle regions in the right thigh on the thigh image.	R Thigh Total Muscle Area (cm-sq)	cm ²
RTHMUSD	Average CT density of all regions defined as muscle in the right thigh on the thigh image. Units of HU where water is set to 0 as a standard.	R Thigh Total Muscle Density (HU)	HU
RTHMUSSD	Standard deviation of average CT density of all regions defined as muscle in the right thigh on the thigh image. Units of HU where water is set to 0 as a standard.	R Thigh Total Muscle Density SD (HU)	HU
RTHQUAD	Area of entire region defined as the quadriceps muscles in the right thigh on the thigh image. The quadriceps muscles include the Vastus Lateralis, Vastus Intermedius, Vastus Medialis and the Rectus Femoris.	R Thigh Quadriceps Area (cm-sq)	cm ²
RTHQUOD	Average CT density of region defined as the quadriceps muscles in the right thigh on the thigh image. Units of HU where water is set to 0 as a standard.	R Thigh Quadriceps Density (HU)	HU
RTHQUUSD	Standard deviation of average CT density of region defined as the quadriceps muscles in the right thigh on the thigh image. Units of HU where water is set to 0 as a standard.	R Thigh Quadriceps Density SD (HU)	HU
RTHSFA	Area of entire region defined as subcutaneous fat in the right thigh on the thigh image. This is the fat lying between the skin and the deep fascial plane surrounding the muscles.	R Thigh Subcutaneous Fat Area (cm-sq)	cm ²
RTHSFD	Average CT density of region defined as subcutaneous fat in the right thigh on the thigh image. Units of HU where water is set to 0 as a standard.	R Thigh Subcutaneous Fat Density (HU)	HU

COMPUTED TOMOGRAPHY (SOFT TISSUE)

Variable Name	Variable Description	Variable Label	Value Label
RTHSFSD	Standard deviation of average CT density of region defined as subcutaneous fat in the right thigh on the thigh image. Units of HU where water is set to 0 as a standard.	R Thigh Subcutaneous Fat Density SD (HU)	HU
RHTA	Area of entire region defined as right thigh in the thigh image. Includes all tissue types (bone, muscle, fat, vascular, skin)	R Thigh Total Area (cm-sq)	cm ²
SITE*	Field Center	CLINIC SITE	1=Memphis 2=Pittsburgh
THFEMLEN	Length of the femur as measured on the CT scout image. Femur length is measured as the distance between the medial edge of the greater trochanter and the intercondyloid fossa. A missing value indicates that the scout did not cover the entire femur and the femur length could not be measured.	Thigh length (mm)	mm
THFOV	Field of view of the thigh image	Thigh Field of View (mm)	mm
THHAM	Total (R+L) hamstrings muscle area (cm-sq)	Total (R+L) hamstrings muscle area (cm-sq)	cm ²
THIMF	Total (R+L) thigh intermuscular fat area (cm-sq)	Total (R+L) thigh intermuscular fat area (cm-sq)	cm ²
THKVP	This is the energy at which the CT thigh image is acquired (kVp = peak kilovolts). Normally it should be 120 or 140. A much lower energy (less than 100) would affect the quality of the image, introducing more noise, and decrease the accuracy of the calculation.	Thigh CT Peak Kilovolts (kVp)	kVp
THMASS	This is the X-ray tube current times the exposure time for the acquisition of the thigh study. This will vary, dependent on the size of the patient. A larger value is required to get a good quality image for larger patients.	Thigh exposure time (milliamperes/sec)	milliamperes/sec
THMUS	Total (R+L) thigh muscle area (cm-sq)	Total (R+L) thigh muscle area (cm-sq)	cm ²
THPATH	Thigh pathology	Thigh pathology	0 = no reported pathology 1 = reported pathology, some calculated variables may not be available.
THQU	Total (R+L) quadriceps muscle area (cm-sq)	Total (R+L) quadriceps muscle area (cm-sq)	cm ²

* Must link to Health ABC participant history file (PH) to add this variable.

COMPUTED TOMOGRAPHY (SOFT TISSUE)

Variable Name	Variable Description	Variable Label	Value Label
THSCLOC	Location of the thigh image plane, measured from the medial edge of the greater trochanter on the CT scout image. According to protocol, the thigh image plane should be at the center of the femur using the femur length measurement above. Therefore, according to protocol, this value should be one-half of the measured femur length above. If the femur length value is missing and this value is present, then the CT scout did not cover the entire femur but did include the medial edge of the greater trochanter and the scan location could be determined. A missing value in this field indicates that the scout did not include the medial edge of the greater trochanter.	Thigh scan location (mm)	mm
THSFA	Total (R+L) thigh subQ fat area (cm-sq)	Total (R+L) thigh subQ fat area (cm-sq)	cm ²
THSLC	Thickness of the acquired CT thigh images. According to protocol, it should be 10 mm. Thinner slices will have more noise.	Thigh slice thick (mm)	mm
THTA	Total (R+L) total thigh area (cm-sq)	Total (R+L) total thigh area (cm-sq)	cm ²

**HEALTH ABC READING CENTER VARIABLE LIST
COMPUTED TOMOGRAPHY (SPINE)**

Variable Name	Variable Description	Variable Label	Value Label
CTSCLN1	1 st problem related to participant vertebral anatomy	Problem related to vertebral anatomy	000: no problems 001: mild osteophyte 002: moderate to severe osteoarthritis 003: hemangioma 004: other: descriptive text entered in QC code field
CTSCLN2	Problems related to participant vertebral anatomy	Problem related to vertebral anatomy	000: no problems 001: mild osteophyte 002: moderate to severe osteoarthritis 003: hemangioma 004: other: descriptive text entered in QC code field
CTSDATE	Exam date: CT spine. Note: This comes out to be 1 day behind the true acquisition date.	Exam date: CT spine	MM/DD/YY
CTSQC1	1 st problem related to imaging	Problem #1 related to imaging	000: no problems 001: image artifact (primarily striping through phantom) 002: phantom mispositioned (off center of patient axis) 003: participant mispositioned (participant is rotated) 004: gap between bolus bag and participant 005: participant has severe bowel gas 006: other: descriptive text entered in QC code field
CTSQC2	2 nd problem related to imaging	Problem #2 related to imaging	000: no problems 001: image artifact (primarily striping through phantom) 002: phantom mispositioned (off center of patient axis) 003: participant mispositioned (participant is rotated) 004: gap between bolus bag and participant 005: participant has severe bowel gas 006: other: descriptive text entered in QC code field
CTSSTID	Staff ID #: CT spine	Staff ID: CT spine	
ELP_BMD	Bone mineral density hydroxyapatite equivalent in the ellipse region. (Note: ellipse region contains trabecular bone.)	BMD ellipse region	mg/cc
ELP_HU	Mean CT number of ellipse region	Mean CT number of ellipse region	

COMPUTED TOMOGRAPHY (SPINE)

Variable Name	Variable Description	Variable Label	Value Label
ELP_HUSD	Standard deviation of the CT number of the ellipse region.	SD CT number ellipse region	
ELP_SD	Standard deviation of mean bone mineral density in ellipse region. (Note: ellipse region contains trabecular bone.)	SD BMD ellipse region	
ELP_VOL	Volume of ellipse region.	Volume of ellipse region (cc)	cc
EST_CORT	Estimate of the vertebral cortical BMD.	Estimated cortical BMD	See Y1Calc
EXP_TIME	Exposure time should always be 2 seconds.	Exposure time	sec
GANTRY	Gantry angle required to correct for L3 lordosis	CT gantry angle	deg
HABCID	Health ABC Enrollment ID #	Enrollment ID	
INTCPT	Intercept of calibration equation.	Intercept of calibration equation	mg/cm3
INTG_BMD	Mean bone mineral density hydroxyapatite equivalent in integral region. (Note: integral region contains trabecular and cortical bone.)	BMD integral region	mg/cc
INTG_HU	Mean CT number of integral region.	Mean CT number of integral region	
INTG_SD	Standard deviation of mean bone mineral density in integral region. (Note: integral region contains trabecular and cortical bone.)	SD BMD integral region	
INTG_VOL	Volume of integral region.	Volume of integral region	cc
INTGHUSD	Standard deviation of mean CT number of integral region.	SD CT integral region	
KVP	This is the energy at which the CT image is acquired (kVp=peak kilovolts). Should always be 80 kilovolts.	Peak kilovolts	kVp
L3	Vertebral level at which the image was acquired. If the vertebral level is L3 then the field is left blank. If the analyzed vertebra is other than L3 the correct level is input (e.g., L2)	Vertebral level	blank=L3 L1=L1 L2=L2 L4=L4, etc.
MA	Milliamperes x-ray tube current (the exposure per second scan time) - should always be 70 mA.	Exposure/sec (mA/sec)	mA
PIX_SIZ	Size of reconstructed pixel.	Size of reconstructed pixel	mm
SEE	RMS error of calibration line.	RMS error of calibration line	mg/cc
SITE*	Field center	Field center	HA = Memphis HB = Pittsburgh
SLI_THI	Thickness of the acquired CT image. According to the protocol it should be 10 mm. Thinner slices will have more noise, and decrease the accuracy of the calculation.	Thickness of slice	mm

* Must link to Health ABC participant history file (PH) to add this variable.

COMPUTED TOMOGRAPHY (SPINE)

Variable Name	Variable Description	Variable Label	Value Label
SLOPE	Ratio equivalent hydroxyapatite density divided by hounsfield units (slope of calibration equation).	Slope of calibration equation	mg/cm ³ -HU
TRB_BMD	Mean bone mineral density hydroxyapatite equivalent in peeled region. (Note: peeled region contains trabecular bone.)	BMD peeled region	mg/cc
TRB_HU	Mean CT number of peeled region.	Mean CT number of peeled region	
TRB_HUSD	Standard deviation of the CT number of peeled region.	SD CT number peeled region	
TRB_SD	Standard deviation of mean bone mineral density in peeled region. (Note: peeled region contains trabecular bone.)	SD BMD peeled region	
TRB_VOL	Volume of peeled region.	Volume of peeled region	cc

**HEALTH ABC READING CENTER VARIABLE LIST
CT VOLUMETRIC MID-THIGH BMD**

Variable Name	Variable Description	Variable Label	Value Label
AREALEFT	Cortical area (cm ²) for left side	Cortical area (cm ²) for left side	cm ²
AREARGHT	Cortical area (cm ²) for right side	Cortical area (cm ²) for right side	cm ²
BMDMGCCCL	BMD in mg/cm ³ , right thigh	BMD in mg/cm ³ , right thigh	mg/cm ³
BMDMGCCR	BMD in mg/cm ³ , right thigh	BMD in mg/cm ³ , right thigh	mg/cm ³
CSMIXLE	Cross sectional moment of inertia (CSMI) of the x axis (Ix), left	Cross sectional moment of inertia (CSMI) of the x axis (Ix), left	cm ²
CSMIXR	Cross sectional moment of inertia (CSMI) of the x axis (Ix)	Cross sectional moment of inertia (CSMI) of the x axis (Ix)	cm ²
CSMIYLE	CSMI of y axis (Iy), left	CSMI of y axis (Iy), left	cm ²
CSMIYR	CSMI of y axis (Iy), right	CSMI of y axis (Iy), right	cm ²
FOVXLEFT	Field of view, x axis, left	Field of view, x axis, left	cm
FOVXRGHT	Field of view, x axis, right	Field of view, x axis, right	cm
FOVYLEFT	Field of view, y axis, left	Field of view, y axis, left	cm
FOVYRGHT	Field of view, y axis, right	Field of view, y axis, right	cm
HULEFT	Hounsfield Units (HU) for left side	Hounsfield Units (HU) for left side	HU
HURIGHT	HU for right side	HU for right side	HU
IPOLARL	Polar cross sectional moment of inertia (J) for left thigh	Polar cross sectional moment of inertia (J) for left thigh	cm ²
IPOLARR	Polar cross sectional moment of inertia (J) for right thigh	Polar cross sectional moment of inertia (J) for right thigh	cm ²
IXIYL	Ratio of Ix/Iy for left thigh	Ratio of Ix/Iy for left thigh	unitless
IXIYR	Ratio of Ix/Iy for left thigh	Ratio of Ix/Iy for left thigh	unitless
MMPIXLEF	Pixel size, mm per pixel, left	Pixel size, mm per pixel, left	mm
MMPIXR	Pixel size, mm per pixel, right	Pixel size, mm per pixel, right	mm
SDHULEFT	Standard deviation of HU, left side	Standard deviation of HU, left side	HU
SDHURGHT	Standard deviation of HU, right side	Standard deviation of HU, right side	HU

Note:

1. Cortical area of the bone was defined as the area between the periosteal and endosteal contours as delineated by the contour-tracking algorithm.
2. BMD was calculated as the mean HU within the cortical area, converted to BMD using the ESP (European Spine Phantom).

CT VOLUMETRIC MID-THIGH BMD

3. CSMI (I_x and I_y) - these are area-weight cross-sectional moments of inertia calculated using the cortical region, along each of the principal axes.
4. Polar cross-sectional moment of inertia (J) defined as the sum of I_x and I_y .
5. The ratio of I_x/I_y was calculated as an index of bone shape, with circular cross-sections having a ratio equal to 1.0.

**HEALTH ABC READING CENTER VARIABLE LIST
DXA HIP BMD DATA**

Variable Name	Variable Description	Variable Label	Value Label
HABCID	Health ABC Enrollment ID # without the site code	Enrollment ID without site code	
DXASTID	Staff ID #: DXA See HABC Web page for list of certified staff	Staff ID: DXA	
HIPDATE	Date of exam	Date of Exam	MMDDYY
HIPMODE	Scan mode (describes the way the scan was performed)	Scan Mode	0 = unknown scan mode 1 = pencil beam 2 = performance mode 3 = high speed performance mode 4 = array slow 5 = array medium 6 = array fast 7 = turbo
HPSCANID	Scan ID on printout (9 character)	Scan ID on printout	
HPSCNPRO	Hip scan protocol	Hip scan protocol	
HTOTAREA	Total area	Hip total Area	cm-sq
HTOTBMC	Total bone mineral content	Hip total BMC	gm
HTOTBMD	Total bone mineral density	Hip total BMD	gm/cm ²
ITAREA	Intertrochanteric area	Inter trochanter area	cm-sq
ITBMC	Intertrochanteric bone mineral content	Inter trochanter BMC	gm
ITBMD	Intertrochanteric bone mineral density	Inter trochanter BMD	gm/cm ²
NAREA	Neck area	Femoral neck area	cm-sq
NBMC	Neck bone mineral content	Femoral neck BMC	gm
NBMD	Neck bone mineral density	Femoral neck BMD	gm/cm ²
QDR_NB	QDR serial number	QDR serial nb	
SIDE	Side scanned for hip	Side scanned for hip	R=right L=left
SITE*	Field center	Field center	1 = Memphis 2= Pittsburgh
TAREA	Trochanter area	Trochanter area	cm-sq
TBMC	Trochanter bone mineral content	Trochanter BMC	gm
TBMD	Trochanter bone mineral density	Trochanter BMD	gm/cm ²
WAREA	Ward's triangle area	Wards triangle area	cm-sq
WBMC	Ward's triangle bone mineral content	Wards triangle BMC	gm
WBMD	Ward's triangle bone mineral density	Wards triangle BMD	gm/cm ²

* Must link to Health ABC participant history file (PH) to add this variable.

**HEALTH ABC READING CENTER VARIABLE LIST
DXA WHOLE BODY BMD DATA**

Variable Name	Variable Description	Variable Label	Value Label
AHEAD1	Head tissue/severity code1	Head T_S code 1	Tx_Sy, where x=1: bone only x=2: soft tissue only x =3: both y=1: negligible y=2: affects subregion only y=2: affects whole scan
AHEAD2	Head tissue/severity code2	Head T_S code 2	
ALARM1	Left arm tissue/severity code1	Left arm T_S code 1	
ALARM2	Left arm tissue/severity code2	Left arm T_S code 2	
ALLEG1	Left leg tissue/severity code1	Left leg T_S code 1	
ALLEG2	Left leg tissue/severity code2	Left leg T_S code 2	
ALRIBS1	Left ribs tissue/severity code1	Left ribs T_S code 1	
ALRIBS2	Left ribs tissue/severity code2	Left ribs T_S code 2	
ALSPINE1	Lumbar spine tissue/severity code1	Lumbar spine T_S code 1	
ALSPINE2	Lumbar spine tissue/severity code2	Lumbar spine T_S code 2	
APELVIS1	Pelvis tissue/severity code1	Pelvis T_S code 1	
APELVIS2	Pelvis tissue/severity code2	Pelvis T_S code 2	
ARARM1	Right arm tissue/severity code1	Right arm T_S code 1	
ARARM2	Right arm tissue/severity code2	Right arm T_S code 2	
ARLEG1	Right leg tissue/severity code1	Right leg T_S code 1	
ARLEG2	Right leg tissue/severity code2	Right leg T_S code 2	
ARRIBS1	Right ribs tissue/severity code1	Right ribs T_S code 1	
ARRIBS2	Right ribs tissue/severity code2	Right ribs T_S code 2	
ATSPINE1	Thoracic spine tissue/severity code1	Thoracic spine T_S code 1	
ATSPINE2	Thoracic spine tissue/severity code2	Thoracic spine T_S code 2	
CHEADLEA	Head lean, without BMC	Head lean	gm
CLARMLEA	Left arm lean, without BMC	Left arm lean	gm
CLLEGLEA	Left leg lean, without BMC	Left leg lean	gm
CRARMLEA	Right arm lean, without BMC	Right arm lean	gm
CRLEGLEA	Right leg lean, without BMC	Right leg lean	gm
CTOTLEAN	Total lean, without BMC	Total lean	gm
CTRNKLEA	Trunk lean, without BMC	Trunk lean	gm
DXASTID	Staff ID #: DXA See HABC Web page for list of certified staff	Staff ID: DXA	
HABCID	Health ABC Enrollment ID # without the site code	Enrollment ID without site code	
HEADAREA	Head area	Head area	cm-sq
HEADBMC	Head bone mineral content	Head BMC	gm
HEADBMD	Head bone mineral density	Head BMD	gm/cm ²
HEADFAT	Head fat	Head fat	gm
HEADLEAN	Head lean, including BMC	Head FFM (gm)	gm
LARMAREA	Left arm area	Left arm area	cm-sq
LARMBMC	Left arm bone mineral content	Left arm BMC	gm
LARMBMD	Left arm bone mineral density	Left arm BMD	gm/cm ²
LARMFAT	Left arm fat	Left arm fat	gm
LARMLEAN	Left arm lean, including BMC	Left arm FFM (gm)	gm
LLEGAREA	Left leg area	Left leg area	cm-sq
LLEGBMC	Left leg bone mineral content	Left leg BMC	gm
LLEGBMD	Left leg bone mineral density	Left leg BMD	gm/cm ²

DXA WHOLE BODY BMD DATA

Variable Name	Variable Description	Variable Label	Value Label
LLEGFAT	Left leg fat	Left leg fat	gm
LLEGLEAN	Left leg lean, including BMC	Left leg FFM (gm)	gm
LRIBAREA	Left rib area	Left rib area	cm-sq
LRIBBMC	Left rib bone mineral content	Left rib BMC	gm
LRIBBMD	Left rib bone mineral density	Left rib BMD	gm/cm ²
LSPIAREA	Lumbar spine area	Lumb spine area	cm-sq
LSPIBMC	Lumbar spine bone mineral content	Lumb spine BMC	gm
LSPIBMD	Lumbar spine bone mineral density	Lumb spine BMD	gm/cm ²
PELVAREA	Pelvic area	Pelvic area	cm-sq
PELVBMC	Pelvic bone mineral content	Pelvic BMC	gm
PELVBMD	Pelvic bone mineral density	Pelvic BMD	gm/cm ²
QDR_NB	QDR serial number	QDR serial nb	
RARMAREA	Right arm area	Right arm area	cm-sq
RARMBMC	Right arm bone mineral content	Right arm BMC	gm
RARMBMD	Right arm bone mineral density	Right arm BMD	gm/cm ²
RARMFAT	Right arm fat	Right arm fat	gm
RARMLEAN	Right arm lean, including BMC	Right arm FFM (gm)	gm
RLEGAREA	Right leg area	Right leg area	cm-sq
RLEGBMC	Right leg bone mineral content	Right leg BMC	gm
RLEGBMD	Right leg bone mineral density	Right leg BMD	gm/cm ²
RLEGFAT	Right leg fat	Right leg fat	gm
RLEGLEAN	Right leg lean, including BMC	Right leg FFM (gm)	gm
RRIBAREA	Right rib area	Right rib area	cm-sq
RRIBBMC	Right rib bone mineral content	Right rib BMC	gm
RRIBBMD	Right rib bone mineral density	Right rib BMD	gm/cm ²
SITE	Health ABC site	Field center	HA = Memphis HB = Pittsburgh
TOTFAT	Total fat	Total fat	gm
TOTLEAN	Total lean, including BMC	Total FFM (gm)	gm
TOTMASS	Total mass	Total mass	gm
TOTPF	Total percent fat	Total %fat	%
TRNKBMC	Trunk BMC	Trunk BMC	gm
TRUNKFAT	Trunk fat	Trunk fat	gm
TRNKLEAN	Trunk lean, including BMC	Trunk FFM (gm)	gm
TSPIAREA	Thoracic spine area	Thor spine area	cm-sq
TSPIBMC	Thoracic spine bone mineral content	Thor spine BMC	gm
TSPIBMD	Thoracic spine bone mineral density	Thor spine BMD	gm/cm ²
WBDATE	Date of exam: whole body DXA	Whole body date of exam	MMDDYY
WBFINAL	Final status: whole body	Whole body final scan status	A = acceptable U = unacceptable
WBMODE	Scan mode (describes the way the scan was performed): whole body	Whole body scan mode	0 = unknown scan mode 1 = pencil beam 2 = performance mode 3 = high speed performance mode 4 = array slow 5 = array medium 6 = array fast 7 = turbo
WBSCANID	Scan ID on printout (9 character): whole body	Whole body scan ID on printout	
WBSCNPRO	Whole body scan protocol	Whole body scan protocol	

* Must link to Health ABC participant history file (PH) to add this variable. Documentation date: 2010-10-01

DXA WHOLE BODY BMD DATA

Variable Name	Variable Description	Variable Label	Value Label
WTOTAREA	Total area: whole body	Whole body total area	cm-sq
WTOTBMC	Total bone mineral content: whole body	Whole body total BMC	gm
WTOTBMD	Total bone mineral density: whole body	Whole body total BMD	gm/cm ²

**HEALTH ABC READING CENTER VARIABLE LIST
RESTING ECG DATA**

Variable Name	Variable Description	Variable Label	Value Label
ABHR	Abnormal heartrate	Categories for normal HR, bradycardia (<50 bpm), tachycardia (>100 bpm)	See Y1Calc
ARRHYTH	Arrhythmia code	Rhythm irregularity	11 = frequent atrial or junctional premature beats 12 = frequent ventricular premature beats 13 = both atrial and/or junctional premature beats and ventricular premature beats 14 = wandering atrial pacemaker 15 =12 and 14 21 = ventricular fibrillation or ventricular asystole 22 = persistent idioventricular rhythm 23 = intermittent ventricular tachycardia 24 = ventricular parasystole 31 = atrial fibrillation (persistent) 32 = atrial flutter (persistent) 33 = intermittent atrial fibrillation 34 = intermittent atrial flutter 41 = supraventricular rhythm persistent. QRS duration < 0.12 sec; and absent P-waves or presence of abnormal P-waves (inverted or flat in aVF); and regular rhythm 42 = Supraventricular tachycardia intermittent. 3 consecutive atrial or junctional premature beats occurring at a rate ≥ 100. 51 = sinoatrial arrest 52 = sinoatrial block 61 = A-V dissociation w/ ventricular pacemaker (w/out capture) 62 = A-V dissociation w/ ventricular pacemaker (w/ capture) 63 = A-V dissociation w/atrial pacemaker (w/out capture) 64 = A-V dissociation w/atrial pacemaker (w/ capture) 7 = sinus tachycardia 8 = sinus bradycardia 9 = other arrhythmias. Heart rate may be recorded as a continuous variable.
ARYTHTYP	Type of arrhythmia code	Combines ARRHYTH=31 and 32; 33 and 34; keeps 8 and 12 separate, and combines all other ARRHYTH codes	See Y1Calc
AV_DEF	Atrioventricular conduction defect	Atrioventricular conduction defect code	1 = complete (third degree) A-V block 21 = Mobitz type II 22 = partial (second degree) A-V block 23 = Wenckebach's phenomenon 3 = long P-R (P-Q) interval ≥ 0.22 sec 41 = Wolff-Parkinson-White pattern (WPW) 42 = WPW pattern, intermittent 5 = short P-R interval, P-R interval < 0.12 sec 6 = intermittent aberrant atrioventricular conduction 8=pacemaker

RESTING ECG DATA

Variable Name	Variable Description	Variable Label	Value Label
AVDEFTYP	Type of atrioventricular conduction defect	Combines AV_DEF=41 and 42; 22, 23, and 6. Keeps 1, 21, 3, and 5 separate.	See Y1Calc
AXIS	QRS axis	QRS axis	+ or – degrees
AXISAB	Axis abnormality	Categories for axis < -45 deg, -45≤axis≤120, axis>120 degrees	See Y1Calc
ECGDATE	ECG date and time	ECG date and time	MM/DD/YY HH:MM
ECGSTID	Staff ID #	Staff ID: ECG	First digit: 1 = Memphis; 2 = Pittsburgh
HABCID	Health ABC Enrollment ID #	Enrollment ID	
HR	Heart rate	Heart rate	beats per minute
LONGPR	Long P-R interval	Indicator variable for P-R interval > 220 msec	See Y1Calc
LONGQRS	Long QRS duration	QRS duration longer than 120 msec	See Y1Calc
LONGQT	Long QT duration	QT duration longer than 460 msec	See Y1Calc
LVH	Left ventricular hypertrophy code	Left ventricular hypertrophy code	1 =Definite LVH by voltage (R amplitude >26 mm in either V5 or V6, or R amplitude >20.0 mm in any of leads I, II, or III, aVF, or R amplitude >12.0 mm in lead aVL measured only on second to last complete normal beat) 3 = Probable LVH by voltage (optional code when 1 is not present: R amplitude >15.0 mm but ≤ 20.0 mm in lead I, or R amplitude in V5 or V6, plus S amplitude in V1 > 35.0 mm)
PR	PR interval	PR interval	msec Note: blank if not assessed

RESTING ECG DATA

Variable Name	Variable Description	Variable Label	Value Label
Q_ANT	Q and QS patterns anterior site (leads VI, V2, V3, V4, V5): To qualify as a Q-wave, the deflection should be at least 1.0 mv (amplitude).	Q and QS patterns anterior site (code)	<p>Major:</p> <p>11 = Q/R amplitude ratio $\geq 1/3$, plus Q duration ≥ 0.03 sec in any of leads V2, V3, V4, V5</p> <p>12 = Q duration ≥ 0.04 sec in any of leads V1, V2, V3, V4, V5</p> <p>16 = QS pattern when initial R-wave is presented in adjacent lead to the right on the chest, in any of leads V2, V3, V4, V5, V6</p> <p>17 = QS pattern in all of leads V1-V4, or V1-V5</p> <p>21 = Q/R amplitude ratio $\geq 1/3$ plus Q duration ≥ 0.02 sec and 0.03 sec, in any of leads V2, V3, V4, V5</p> <p>22 = Q duration ≥ 0.03 sec and < 0.04 sec in any of leads V2, V3, V4, V5</p> <p>27 = QS pattern in all of leads V1, V2, and V3</p> <p>Minor:</p> <p>28 = Initial R amplitude decreasing to 2 mm or less in every beat between any of the leads V2 and V3, V3 and V4, or V4 and V5 (All beats in the lead immediately to the right of the chest must have an initial R amplitude > 2 mm.)</p> <p>31 = Q/R amplitude ratio $\geq 1/5$ and $< 1/3$, plus Q duration ≥ 0.02 sec and < 0.03 sec in any of leads V2, V3, V4, V5</p> <p>32 = QS pattern in lead V1 and V2</p>
Q_INF	Q and QS patterns inferior site (leads II, III, aVF): To qualify as a Q-wave, the deflection should be at least 1.0 mv (amplitude).	Q and QS patterns inferior site (code)	<p>Major:</p> <p>11 = Q/R amplitude ratio $\geq 1/3$, plus Q duration ≥ 0.03 sec in lead II</p> <p>12 = Q duration ≥ 0.04 sec in lead II</p> <p>14 = Q duration ≥ 0.05 sec in lead III, plus Q wave amplitude ≥ 1 mm in the majority of beats in aVF</p> <p>15 = Q duration ≥ 0.05 sec in aVF</p> <p>21 = Q/R amplitude ratio $\geq 1/3$, plus Q duration ≥ 0.02 sec and < 0.03 sec in lead II</p> <p>22 = Q duration ≥ 0.03 sec and < 0.04 sec in lead II</p> <p>23 = QS pattern in lead II</p> <p>24 = Q duration ≥ 0.04 sec and < 0.05 sec in lead III, plus Q-wave ≥ 1.0 mm amplitude in the majority of beats in aVF</p> <p>25 = Q duration ≥ 0.04 sec and < 0.05 sec in lead aVF</p> <p>Minor:</p> <p>26 = Q amplitude ≥ 5.0 mm in leads III or aVF</p> <p>31 = Q/R amplitude ratio $\geq 1/5$ and $< 1/3$, plus Q duration $\geq .02$ sec and < 0.03 sec in lead II</p> <p>34 = Q duration ≥ 0.03 sec and < 0.04 sec in lead III, plus a Q wave ≥ 1.0 mm amplitude in the majority of beats in aVF</p> <p>35 = Q duration ≥ 0.03 sec and < 0.04 sec in lead aVF</p> <p>36 = QS pattern in each of leads III and aVF</p>

RESTING ECG DATA

Variable Variable Name Description Variable Label Value Label

Q_LAT	Q and QS patterns lateral site (leads I, aVL, V6): To qualify as a Q-wave, the deflection should be at least 1.0 mv (amplitude).	Q and QS patterns lateral site	Major: 11 = Q/R amplitude ratio $\geq 1/3$, plus Q duration ≥ 0.03 sec in lead I or V6 12 = Q duration ≥ 0.04 sec in lead I or V6 13 = Q duration ≥ 0.04 sec, plus R amplitude ≥ 3 mm in lead aVL 21 = Q/R amplitude ratio $\geq 1/3$, plus Q duration ≥ 0.02 sec and < 0.03 sec in lead I or V6 22 = Q duration ≥ 0.03 sec and < 0.04 sec in lead I or V6 23 = QS pattern in lead I Minor: 28 = initial R amplitude decreasing to 2 mm or less in every beat between V5 and V6 (all beats in V5 must have an initial R amplitude > 2 mm) 31 = Q/R amplitude ratio $\geq 1/5$ and $< 1/3$, plus Q duration $\geq .02$ sec and < 0.03 sec in I or V6 33 = Q duration ≥ 0.03 sec and < 0.04 sec, plus R amplitude ≥ 3 mm in aVL
Q_POST	Q and QS patterns posterior site	Q and QS patterns posterior site (code)	Major: 1 = R duration in V1 ≥ 40 and (R height V1/S depth V1) > 1 Minor: 2 = R duration in V2 ≥ 40 and (R height V2/S depth V2) > 1
QMI	Q-wave myocardial infarction	Presence of major Q-wave abnormality or minor Q-wave abnormality in the presence of a major ST or T-wave abnormality	See Y1Calc
QRS	QRS duration	QRS duration	msec
QT	QT interval	QT interval	msec
QWVAB	Q-wave myocardial infarction	Major Q or QS abnormality for anterior, posterior, lateral or inferior	See Y1Calc
SITE*	Field Center	Field Center	1 = Memphis; 2 = Pittsburgh

* Must link to Health ABC participant history file (PH) to add this variable.

RESTING ECG DATA

Variable Name	Variable Description	Variable Label	Value Label
STD_ANT	ST junction (J) and segment depression anterior site (leads V1, V2, V3, V4, V5)	STJ & segment depression anterior site	<p>Major:</p> <p>11 = STJ depression \geq 2.0 mm and ST segment horizontal or downward sloping in any of leads V1, V2, V3, V4, V5</p> <p>12 = STJ depression \geq 1.0 mm but $<$ 2.0 mm and ST segment horizontal or downward sloping in any of leads V1, V2, V3, V4, V5</p> <p>13 = STJ depression \geq 3.0 mm and ST segment horizontal downward sloping</p> <p>14 = STJ depression \geq 4.0 mm and ST segment horizontal or downward sloping</p> <p>1X = STJ depression \geq X.0 mm and ST segment horizontal or downward sloping. X must be \geq 5.0 mm</p> <p>Minor:</p> <p>2 = STJ depression \geq 0.5 mm and $<$ 1.0 mm and ST segment horizontal or downward sloping in any of leads V1, V2, V3, V4, V5</p> <p>3 = No STJ depression as much as 0.5 mm, but ST segment downward sloping and segment or T-wave nadir \geq 0.5 mm below P-R baseline, in any of leads V2, V3, V4, V5</p> <p>4 = STJ depression \geq 1.0 mm and ST segment upward sloping or U-shaped, in any of leads V1, V2, V3, V4, V5</p>
STD_INF	ST junction (J) and segment depression inferior site (leads II, III, aVF)	STJ & segment depression inferior site	<p>Major:</p> <p>11 = STJ depression \geq 2.0 mm and ST segment horizontal or downward sloping in lead II or aVF</p> <p>12 = STJ depression \geq 1.0 mm but $<$ 2.0 mm and ST segment horizontal or downward sloping in lead II or aVF</p> <p>Minor:</p> <p>2 = STJ depression \geq 0.5 mm and $<$ 1.0 mm and ST segment horizontal or downward sloping in lead II or aVF</p> <p>3 = No STJ depression as much as 0.5 mm, but ST segment downward sloping and segment or T-wave nadir \geq 0.5 mm below P-R baseline in lead II</p> <p>4 = STJ depression \geq 1.0 mm and ST segment upward sloping, or U-shaped, in lead II</p>

RESTING ECG DATA

Variable Name	Variable Description	Variable Label	Value Label
STD_LAT	ST junction (J) and segment depression lateral site (leads I, aVL, V6)	STJ & segment depression lateral site	<p>Major: 11 = STJ depression ≥ 2.0 mm and ST segment horizontal or downward sloping in any of leads I, aVL, or V6 12 = STJ depression ≥ 1.0 mm and < 2.0 mm and ST segment horizontal or downward sloping in any of leads I, aVL, or V6</p> <p>Minor: 2 = STJ depression ≥ 0.5 mm and < 1.0 mm and ST segment horizontal or downward sloping in any of leads II or aVF 3 = No STJ depression as much as 0.5 mm, but ST segment downward sloping and segment or T-wave nadir ≥ 0.5 mm and below P-R baseline, in any of leads I, aVL, or V6 4 = STJ depression ≥ 1.0 mm and ST segment upward sloping or U-shaped, in any of leads I, aVL, or V6</p>
STL_ANT	ST segment elevation anterior site (leads V1, V2, V3, V4, V5)	ST segment elevation anterior site	<p>Major: 2 = STJ segment elevation ≥ 1.0 mm in lead V5 or ST segment elevation ≥ 2.0 mm in leads V1, V2, V3, V4 21 = STJ segment elevation ≥ 1.5 mm in lead V5 or ST segment elevation ≥ 2.5 mm in leads V1, V2, V3, V4 2X = STJ segment elevation $\geq X.0$ mm in leads V1, V2, V3, V4. X must be ≥ 2.0 mm.</p>
STL_INF	ST segment elevation inferior site (leads II, III, aVF)	ST segment elevation inferior site	<p>Major: 2 = STJ segment elevation ≥ 1.0 mm in leads II, III, aVF 21 = STJ segment elevation ≥ 1.5 mm in leads II, III, aVF 2X = STJ segment elevation $\geq X.0$ mm in leads II, III, aVF. X must be ≥ 2.0 mm.</p>
STL_LAT	ST segment elevation lateral site (leads I, aVL, V6)	ST segment elevation lateral site	<p>Major: 2 = STJ segment elevation ≥ 1.0 mm in leads I, aVL, V6 21 = STJ segment elevation ≥ 1.5 mm in leads II, aVL, V6 2X = STJ segment elevation $\geq X.0$ mm in leads I, aVL, V6. X must be ≥ 1.5 mm.</p>
STSEGDEP	ST segment depression	ST segment depression excluding Q-wave myocardial infarction	See Y1Calc
STSEGELV	ST segment elevation	ST segment elevation excluding Q-wave myocardial infarction	See Y1Calc

RESTING ECG DATA

Variable Name	Variable Description	Variable Label	Value Label
STWVAB	ST or T wave abnormality	Major ST or T wave abnormality for anterior, posterior, lateral or inferior	See Y1Calc
T_ANT	T-wave items anterior site (leads V2, V3, V4, V5)	T-wave items anterior site	<p>Major:</p> <p>1 = T amplitude negative 5.0 mm or more in any of leads V2, V3, V4, V5</p> <p>5 = T amplitude negative (flat) diphasic (negative-positive or positive-negative type) with negative phase at least 1.0 mm in at least three leads V2, V3, V4, V5</p> <p>6 = T amplitude negative 5.0 mm or more in at least three leads V2, V3, V4, and V5</p> <p>Minor:</p> <p>2 = T amplitude negative (flat) or diphasic (positive-negative or negative-positive type) with negative phase at least 1.0 mm but not as deep as 5.0 mm in any leads V2, V3, V4, V5</p> <p>3 = T amplitude zero (flat) or negative, or diphasic (negative-positive type only) with less than 1.0 mm negative phase, in any of leads V3, V4, V5</p> <p>4 = T amplitude positive and T/R amplitude ratio < 1/20 in any of leads V3, V4, V5; R wave amplitude must be ≥ 10.0 mm</p>
T_INF	T-wave items inferior site (leads II, III, aVF)	T-wave items inferior site	<p>Major:</p> <p>1 = T amplitude negative 5.0 mm or more in lead II or in lead aVL when QRS is mainly upright</p> <p>2 = T amplitude negative or diphasic (positive-negative or negative-positive type) with negative phase at least 1.0 mm but not as deep as 5.0 mm in lead II or in lead aVF when QRS is mainly upright</p> <p>Minor:</p> <p>3 = T amplitude zero (flat) or negative, or diphasic (negative-positive type only) with less than 1.0 mm negative phase in lead II; not coded in lead aVF</p> <p>4 = T amplitude positive and T/R amplitude ratio < 1/20 in lead II; R wave amplitude must be ≥ 10.0 mm</p>
T_LAT	T-wave items lateral site (leads I, aVL, V6)	T-wave items lateral site	<p>Major:</p> <p>1 = T amplitude negative 5.0 mm or more in either of leads I, V6, or in lead aVL when R amplitude is ≥ 5.0 mm</p> <p>2 = T amplitude negative or diphasic (positive-negative or negative-positive type) with negative phase at least 1.0 mm but not as deep as 5.0 mm in leads I or V6, or in leads aVL when R amplitude is ≥ 5.0 mm</p> <p>Minor:</p> <p>3 = T amplitude zero (flat) or negative, or diphasic (negative-positive type only) with less than 1.0 mm negative phase in lead I or V6, or in aVL when R amplitude is > 5.0 mm</p> <p>4 = T amplitude positive and T/R amplitude ratio < 1/20 in any of leads I, aVL, V6; R wave amplitude must be ≥ 10.0 mm</p>

RESTING ECG DATA

Variable Name	Variable Description	Variable Label	Value Label
TECH_PRB	ECG technical problem	ECG technical problem	981 = technical problems which interfere with coding 982 = technical problems which do not interfere with coding 983 = photocopy. No technical problems which interfere with coding 984 = photocopy. Technical problems which interfere with coding.
TECHFLAG	Flag for existence of technical problem interfering with coding	If TECH_PRB=981 or 984, then flag=1. All others, flag=0	See Y1Calc
TWVITMS	T-wave items	T-wave items excluding Q-wave myocardial infarction	See Y1Calc
VDEFCOD	Ventricular conduction defect code	Combines VENT_DEF=12, 22, 3, 5, and 6; keeps 11, 21, 4, 7 and 8 separate	See Y1Calc
VENT_DEF	Ventricular conduction defect	Ventricular conduction defect code	11 = complete left bundle branch block (LBBB) 12 = intermittent left bundle branch block 21 = complete right bundle branch block (RBBB) 22 = intermittent right bundle branch block 3 = incomplete right bundle branch block. QRS duration < .12 sec in each of leads I, II, III, aVL, and R'>R in either of leads V1, V2. 4 = intraventricular block 5 = R-R' pattern in either of leads V1, V2 with R' amplitude \geq R 6 = incomplete left bundle branch block 7 = left anterior hemiblock (LAH) 8 = combination of 7 and 21 or 7 and 22

**HEALTH ABC READING CENTER VARIABLE LIST
ISOKINETIC STRENGTH (KINCOM)**

Variable Name	Variable Description	Variable Label	Value Label
HABCID	Health ABC Enrollment ID #	Enrollment ID	
KCARM	Dynamometer arm length	Dyno arm length (cm)	cm
KCEDATE	Exam date: KinCom	KinCom Exam Date	MM/DD/YY
KCFARM	Dynamometer arm - final position	Dyno arm: final angle	°
KCFMAX	Maximum force (moving from 80 to 40 degrees) from averaged curves	Avg maximum force (N): 80-40deg	N
KCFMEAN	Average force (moving from 80 to 40 degrees) from averaged curves	Average force (N): 80-40deg	N
KCFMIN	Minimum force from averaged curves (in 80 to 40 degree range)	Avg min force (N): 80-40 deg	N
KCFSTD	Standard deviation (force) from averaged curves (in 80 to 40 degree range)	Standard deviation (force) (N)	
KCSARM	Dynamometer arm: initial angle	Dyno arm: initial angle	°
KCSIDE	Side measured	KinCom Side Tested	1=Right 2=Left
KCSTID	Staff ID #: KinCom	Staff ID: KinCom	
KCTMAX	Maximum torque (moving from 80 to 40 degrees) from averaged curves	Avg max torque (Nm): 80-40deg	Nm
KCTMEAN	Average torque (moving from 80 to 40 degrees) from averaged curves	Average torque (Nm): 80-40deg	Nm
KCTMIN	Minimum torque from averaged curves (in 80 to 40 degree range)	Average min torque (Nm): 80-40 deg	Nm
KCTSTD	Standard deviation (torque) from averaged curves (in 80 to 40 degree range)	Standard deviation (torque) (Nm)	
SITE	Field center	Site	HA=Memphis HB=Pittsburgh
TRIAL	Number of trials	KinCom # of trials	

* Must link to Health ABC participant history file (PH) to add this variable.

**HEALTH ABC READING CENTER VARIABLE LIST
PULMONARY FUNCTION TEST DATA**

Variable Name	Variable Description	Variable Label	Value Label
BE_FEF50	FEF 50: Flow at 50% of forced vital capacity from best curve (best curve is an acceptable curve that has maximum [FVC + FEV1])	FEF 50:Flow @ 50% of FVC from best curve	milliliters/sec
BES_2575	FEF 25-75 (mid flow) from the best curve (best curve is an acceptable curve that has maximum [FVC + FEV1])	FEF 25-75 (mid flow) from best curve	milliliters
BES_FEV1	Forced expiratory volume in 1 second, FEV1.0, from the best curve (best curve is an acceptable curve that has maximum [FVC + FEV1]).	FEV in 1 sec from best curve	milliliters
BES_FEV3	Forced expiratory volume in 3 seconds, FEV3.0, from best curve (best curve is an acceptable curve that has maximum [FVC + FEV1]).	FEV in 3 sec, from best curve	milliliters
BES_FEV4	Forced expiratory volume in 4 seconds, FEV4.0, from best curve (best curve is an acceptable curve that has maximum [FVC + FEV1]).	FEV in 4 sec, from best curve	milliliters
BES_FEV5	Forced expiratory volume in 5 seconds, FEV5.0, from best curve (best curve is an acceptable curve that has maximum [FVC + FEV1]).	FEV in 5 sec, from best curve	milliliters
BES_FEV6	Forced expiratory volume in 6 seconds, FEV6.0, from best curve (best curve is an acceptable curve that has maximum [FVC + FEV1]).	FEV in 6 sec, from best curve	milliliters
BES_FEV7	Forced expiratory volume in 7 seconds, FEV7.0, from best curve (best curve is an acceptable curve that has maximum [FVC + FEV1]).	FEV in 7 sec, from best curve	milliliters
BES_FVC	Best forced vital capacity from best curve (best curve is an acceptable curve that has maximum [FVC + FEV1])	Best FVC from best curve	milliliters
BES_PEF	Peak expiratory flow from the best curve; measured in milliliters per second.	Peak expiratory flow from best curve	milliliters/sec
BEST_MIP	Lowest maximum inspiratory pressure	Lowest maximum inspiratory pressure	cm H2O
COMPQC_V	Quality control score assigned by computer for volume aspects of curve.	Comp QC score: volume aspects of curve	1=lowest 4=highest
COMPQCFL	Quality control score assigned by computer for flow aspects of curve.	Comp QC score: flow aspects of curve	1=lowest 4=highest
FEV1R	Measured FEV1/FVC	FEV1/FVC ratio, the most commonly used index of airway obstruction	See Y1Calc
FEV1R6	Measured FEV1/FEV6	FEV1/FEV6 ratio, a new index that may have value in determining airway obstruction.	See Y1Calc
HABCID	Health ABC Enrollment ID #	Enrollment ID	

PULMONARY FUNCTION TEST DATA

Variable Name	Variable Description	Variable Label	Value Label
LLFEV1R6	Lower limit of normal for FEV1/FEV6	Lower limit of normal FEV1/FEV6 based on reference range	See Y1Calc
LLNFEV1	Lower limit of normal for FEV1	Lower limit of normal FEV1 based on reference range	See Y1Calc
LLNFEV1R	Lower limit of normal for FEV1/FVC	Lower limit of normal FEV1/FVC based on reference range	See Y1Calc
LLNFEV6	Lower limit of normal for FEV6	Lower limit of normal FEV6 based on reference range	See Y1Calc
LLNFVC	Lower limit of normal for FVC	Lower limit of normal FVC based on reference range	See Y1Calc
LLNMIP	Lower limit of normal for MIP	Lower limit of normal MIP based on reference range	See Y1Calc
LLNPEF	Lower limit of normal for PEF	Lower limit of normal PEF based on reference range published	See Y1Calc
PFEDATE	Exam date: PFT	Exam date: PFT	MM/DD/YY
PFTSTID	Staff ID #: PFT See HABC Web page for list of certified staff	Staff ID: PFT	
PPFEF50	Percent predicted FEF 50: Flow at 50% of forced vital capacity from best curve (best curve is an acceptable curve that has maximum [FVC + FEV1])	Percent predicted FEF50	%
PPFEV1	Percent predicted forced expiratory volume in one second using largest FEV1 from three acceptable quality curves	Percent predicted FEV1	%
PPFEV6	Percent predicted forced expiratory volume in 6 seconds using largest FEV6 from three acceptable quality curves	Percent predicted FEV6	%
PPFVC	Percent predicted forced vital capacity using largest FVC from three acceptable quality curves	Percent predicted FVC	%
PPMMEF	Percent predicted FEF 25-75 (mid flow) using the FEV 25-75 from the best curve (best curve is an acceptable curve that has maximum [FVC +FEV1])	Percent predicted FEF 25-75	%
PPPEF	Percent predicted peak expiratory flow using largest PEF from three acceptable quality curves	Percent predicted PEF	%
PRDFEV1R	Predicted FEV1/FVC	FEV1/FVC ratio predicted from equations based on healthy subjects	See Y1Calc

PULMONARY FUNCTION TEST DATA

Variable Name	Variable Description	Variable Label	Value Label
PREDFEV1	Predicted FEV1	FEV1 (forced expiratory volume in one second) predicted from equations based on healthy subjects	See Y1Calc
PREDFEV6	Predicted FEV6	FEV6 (forced expiratory volume in six seconds) predicted from equations based on healthy subjects	See Y1Calc
PREDFVC	Predicted FVC	Vital capacity predicted from equations based on healthy subject	See Y1Calc
PREDMIP	Predicted MIP	MIP (maximum inspiratory pressure) predicted from equations based on healthy subjects	See Y1Calc
PREDPEF	Predicted PEF	PEF (peak expiratory flow) predicted from equations based on healthy subjects	See Y1Calc
PRFEV1R6	Predicted FEV1/FEV6	FEV1/FEV6 ratio predicted from equations based on healthy subjects	See Y1Calc
QCFEV1	Pulmonary reading center reader quality score for FEV 1.0	Reading Ctr QC score for FEV1.0	1=lowest 4=highest
QCFL	Pulmonary reading center reader quality score for flow aspects of curve	Read Ctr QC score: flow aspects of curve	1=lowest 4=highest
QCFVC	Pulmonary reading center reader quality score for forced vital capacity	Reading Ctr QC score for FVC	1=lowest 4=highest
RACE	PFT participant race	PFT participant race	1=Caucasian; 2=African-American; 3=Asian; 4=Native American; 5=Other; 6=Hispanic
SCN_2575	FEF 25-75 (mid flow) from the second best curve (second best curve is second highest [FVC + FEV1])..	FEF 25-75 (mid flow) from 2nd best curve	milliliters
SCN_F50	FEF 50: flow at 50% of forced vital capacity from second best curve (second best curve is second highest [FVC + FEV1]).	FEF 50:flow@50% FVC from 2nd best curve	milliliters/sec
SCN_FEV1	Forced expiratory volume in 1 second, FEV1.0, from the second best curve (second best curve is second highest [FVC + FEV1]).	FEV in 1 sec, from 2nd best curve	milliliters
SCN_FEV3	Forced expiratory volume in 3 seconds, FEV3.0, from second best curve (second best curve is second highest [FVC + FEV1])..	FEV in 3 sec, from 2nd best curve	milliliters

* Must link to Health ABC participant history file (PH) to add this variable.

PULMONARY FUNCTION TEST DATA

Variable Name	Variable Description	Variable Label	Value Label
SCN_FEV5	Forced expiratory volume in 5 seconds, FEV5.0, from second best curve (second best curve is second highest [FVC + FEV1])..	FEV in 5 sec, from 2nd best curve	milliliters
SCN_FEV6	Forced expiratory volume in 6 seconds, FEV6.0, from second best curve (second best curve is second highest [FVC + FEV1])..	FEV in 6 sec, from 2nd best curve	milliliters
SCN_FEV7	Forced expiratory volume in 7 seconds, FEV7.0, from second best curve (second best curve is second highest [FVC + FEV1])..	FEV in 7 sec, from 2nd best curve	milliliters
SCN_FVC	Best forced vital capacity from second best curve (second best curve is second highest [FVC + FEV1]).	Best FVC from 2nd best curve	milliliters
SCN_PEF	Peak expiratory flow from the second best curve (second best curve is second highest [FVC + FEV1]).; measured in milliliters per second.	Peak expiratory flow from 2nd best curve	milliliters/sec
SCND_MIP	Second lowest maximum inspiratory pressure	Second lowest max inspiratory pressure	cm H2O
GENDER*	Gender	PFT participant gender	1 = Male; 2 = Female
SITE*	Field center	Field Center	HA=Memphis HB=Pittsburgh
THRD_MIP	Third lowest maximum inspiratory pressure	Third lowest max inspiratory pressure	cm H2O
TRD_2575	FEF 25-75 (mid flow) from the third best curve (third best curve is second highest [FVC + FEV1]).	FEF 25-75 (mid flow) from 3rd best curve	milliliters
TRD_F50	FEF 50: flow at 50% of forced vital capacity from third best curve (third best curve is second highest [FVC + FEV1])	FEF 50:flow @ 50% FVC frm 3rd best curve	atmospheres
TRD_FEV1	Forced expiratory volume in 1 second, FEV1.0, from the third best curve (third best curve is second highest [FVC + FEV1]).	FEV in 1 sec, from 3rd best curve	milliliters
TRD_FEV3	Forced expiratory volume in 3 seconds, FEV3.0, from third best curve (third best curve is second highest [FVC + FEV1])	FEV in 3 sec, from 3rd best curve	milliliters
TRD_FEV4	Forced expiratory volume in 4 seconds, FEV4.0, from third best curve (third best curve is second highest [FVC + FEV1])	FEV in 4 sec, from 3rd best curve	milliliters
TRD_FEV5	Forced expiratory volume in 5 seconds, FEV5.0, from third best curve (third best curve is second highest [FVC + FEV1])	FEV in 5 sec, from 3rd best curve	milliliters
TRD_FEV6	Forced expiratory volume in 6 seconds, FEV6.0, from third best curve (third best curve is second highest [FVC + FEV1])	FEV in 6 sec, from 3rd best curve	milliliters
TRD_FEV7	Forced expiratory volume in 7 seconds, FEV7.0, from third best curve (third best curve is second highest [FVC + FEV1])	FEV in 7 sec, from 3rd best curve	milliliters

* Must link to Health ABC participant history file (PH) to add this variable.

PULMONARY FUNCTION TEST DATA

Variable Name	Variable Description	Variable Label	Value Label
TRD_FVC	Best forced vital capacity from third best curve (third best curve is third highest [FVC + FEV1])	Best FVC from 3rd best curve	milliliters
TRD_PEF	Peak expiratory flow from the third best curve (third best curve is second highest [FVC + FEV1])	Peak expiratory flow from 3rd best curve	milliliters/sec

**HEALTH ABC READING CENTER VARIABLE LIST
PULSE WAVE VELOCITY**

Variable Name	Variable Description	Variable Label	Value Label
HABCID	Health ABC Enrollment ID #	Enrollment ID	
PWEDATE	Exam date: PWV	Exam date: PWV	MM/DD/YY
PWV	Velocity at which the blood moves through the body	Pulse wave velocity	cm/sec
PWVQC	Quality code	PWV quality code	0=rejected 1=poor 2=fair 3=good 4=excellent
PWVREAD	Reader at PWV reading center	Reader at PWV reading center	
PWVSTID1	Staff ID # (examiner 1 - administers the test alone or as the primary examiner assisted by examiner 2). See Health ABC Web pages for a list of certified examiners.	Staff ID: PWV (examiner #1)	
PWVSTID2	Staff ID # (examiner 2 - assists the primary examiner [1]). See Health ABC Web pages for a list of certified examiners.	Staff ID: PWV (examiner #2)	
SITE*	Field Center	Field Center	HA=Memphis HB=Pittsburgh

* Must link to Health ABC participant history file (PH) to add this variable. Documentation date: 2010-10-01