



Atherosclerosis Risk in Communities Study

**EXAM 5 NCS Stage 1**

**DERIVED VARIABLE DICTIONARY**

**DERIVE52 SAS DATASET**

**VERSION 52**

**October 2018**

Prepared by the Collaborative Studies Coordinating Center

# ARIC Visit 5 Derived Variable Dictionary

The DERIVE51 dataset has 6,538 records; one for each participant who completed Stage 1 at Visit 5. The purpose of this dataset is to provide ARIC collaborators widely used, verified derived variables, many of which are consistent with variables derived at prior visits.

The dataset naming conventions are as follows: The dataset name retains the retrieval date (ex: DERIVE51\_130901) until the dataset is considered final, frozen. After a dataset is frozen, the retrieval date is dropped from the dataset name (ex: DERIVE51). The first digit in the dataset name refers to the visit number. The second digit in the dataset name is incremented in number when the current dataset undergoes significant changes. The variable naming convention is similar: Across-visit variables have identical names except for the second to last digit in the variable name, which represents the visit number (ex: GENDER41 at Visit 4 vs. GENDER51 at Visit 5). The last digit in the variable name identifies the definition version of a variable.

Most of the variables are derived directly from the data collected at the visit. However, some variables use ARIC cohort surveillance and ARIC follow-up data in their definitions.

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**NEW OR CHANGED FROM DERIVE52 DISTRIBUTION**

This table describes the changes/updates to the previously distributed DERIVE52 datasets.

<b>Modification Date</b>	<b>Variable Name</b>	<b>Reason(s) for Change</b>																				
March 2018	Removed ALL SF12 variables: SF12PF51, SF12RP51, SF12BP51, SF12GH51, SF12VT51, SF12SF51, SF12RE51, SF12MH51, SF12PFZ51, SF12RPZ51, SF12BPZ51, SF12GHZ51, SF12VTZ51, SF12SFZ51, SF12REZ51, SF12MHZ51, SF12PFT51, SF12RPT51, SF12BPT51, SF12GHT51, SF12VTT51, SF12SFT51, SF12RET51, SF12MHT51, SF12AGGPHYS51, SF12AGGMENT51, SF12AGGPHYST51, SF12AGGMENTT51	All SF12 variables were removed from this dataset and should not be used by any investigators. Please refer to ARIC MEMO 074.2017 for additional details.																				
March 2018	Added PREVHF52 (Visit 5 Prevalent Heart Failure (HFRC Recommended Definition as of 2018)), the new Visit 5 Prevalent Heart Failure variable.	The ARIC heart failure research committee (HFRC) has developed this revised dichotomous definition of prevalent heart failure at Visit 5 (February 2018). This new definition integrates the two previous “definite” and “definite or probable” prevalent heart failure definitions and refines them. The HFRC recommends using this definition of prevalent heart failure at Visit 5.																				
October 2018	PREVHF52	<p>Correction made to the variable derivation and data dictionary entry for part 2 and part 4a so that both use “before 2005” rather than “on or before Visit 5 exam date”. Changed BNP to NT-proBNP to clarify that NT-proBNP is used in this derivation.</p> <table border="1"> <thead> <tr> <th></th> <th colspan="3">Corrected Distribution (Oct 2018)</th> </tr> <tr> <th>Original Distribution (Mar 2018)</th> <th>Prev HF</th> <th>No Prev HF</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>PrevHF</td> <td>907</td> <td>73</td> <td>980</td> </tr> <tr> <td>No PrevHF</td> <td>0</td> <td>5558</td> <td>5558</td> </tr> <tr> <td>Total</td> <td>907</td> <td>5631</td> <td>6538</td> </tr> </tbody> </table>		Corrected Distribution (Oct 2018)			Original Distribution (Mar 2018)	Prev HF	No Prev HF	Total	PrevHF	907	73	980	No PrevHF	0	5558	5558	Total	907	5631	6538
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PrevHF	907	73	980																			
No PrevHF	0	5558	5558																			
Total	907	5631	6538																			



## 1. ADMINISTRATIVE

### 1.1 SUBJECTID (Subject ID)

Type: character; length: \$7.

### 1.2 ID (ARIC ID - same as SUBJECTID)

The historical participant identifier from visits 1-4 is ID. The value of ID is the same value as SUBJECTID. Use ID when merging visit 5/NCS stage 1 data with datasets from previous visits necessary for longitudinal analyses.

Type: character; length: \$7.

### 1.3 CENTER (Field Center)

Character variable with four possible values derived from the enrollment site:

F: Forsyth County, North Carolina

J: The city of Jackson, Mississippi

M: Selected northwestern suburbs of Minneapolis, Minnesota

W: Washington County, Maryland

Algorithm: First letter of the subject ID.

Type: character; length: \$1.

### 1.4 V5CENTER (Visit 5 Field Center)

The value of V5CENTER is the same as CENTER unless the ARIC study participant has relocated geographically and moved into another field center at visit 5. In that instance, the value of V5CENTER is the value of the field center where the participant was seen.

### 1.5 V5DATE51 (Visit 5 Date)

SAS date variable which documents the date of the participant's visit 5 exam. It is the earlier of the date from the Anthropometry form (ANT) or the date from the Sitting Blood Pressure form (SBP). In the instance where 1 of those 2 form dates is missing, the other non-missing date is used.

Algorithm:

V5DATE51 = MIN(ANT0a, SBP0a)

Type: numeric, date.

Source variable(s): ANT0a, SBP0a

### 1.6 RES\_OTH (Restrictions on Other Procedures)

The derived informed consent file, ICTDER05, includes information and dates of final consents for ARIC participants. Change in consent status is recorded in ARIC follow-up and visit 5 using the ICT form. RES\_OTH indicates the types of restriction on other

procedures. We request that the investigators exclude appropriate records with partial restrictions prior to data analysis.

Algorithm:

RES\_OTH=RES\_OTH from the ICTDER05 dataset. When a non-permanently-missing ICT is found then update the value of RES\_OTH according to the following:

If ICT3=1 and ICT4=1 then RES\_OTH='Full Consent'  
else if ICT3=1 and ICT4=0 then RES\_OTH='ARIC Only'  
else if ICT3=0 and ICT4=0 then RES\_OTH='No Consent'

Type: character; length: \$130.

Source variable(s): ICT3, ICT4

### **1.7 RES\_DNA (Restrictions on DNA Storage and Use)**

The derived informed consent file, ICTDER05, includes information and dates of final consents for ARIC participants. Change in consent status is recorded in ARIC follow-up and visit 5 using the ICT form. The variable RES\_DNA indicates the type of restriction on DNA use. We request that the investigators exclude appropriate records with partial restrictions prior to data analysis.

Algorithm:

RES\_DNA=RES\_DNA from the ICTDER05 dataset. When a non-permanently-missing ICT is found then update the value of RES\_DNA according to the following:

If ICT5=1 and ICT6=1 and ICT7=1 then RES\_DNA='Full Consent'  
else if ICT5=1 and ICT6=0 and ICT7=0 then RES\_DNA='ARIC Only'  
else if ICT5=0 and ICT6=0 and ICT7=0 then RES\_DNA='No use/storage DNA'  
else if ICT5=1 and ICT6=1 and ICT7=0 then RES\_DNA='Not for Profit'  
else if ICT5=1 and ICT6=0 and ICT7=1 then RES\_DNA='ARIC and Commercial'

Type: character; length: \$130.

Source variable(s): ICT5, ICT6, ICT7

### **1.8 LASTFUINTERVIEW\_DATE51 (Date of last completed follow-up interview)**

SAS date variable which documents the date of the participant's last completed follow-up interview where an actual contact was made, prior to August 30, 2013.

Algorithm:

LASTFUINTERVIEW\_DATE51=the max value of AFUcomp1\_A in the composite follow-up dataset among the records for a single ID where AFUcomp2\_A indicates that the interview was accomplished (AFUcomp2\_A in ('A','C','D')) and the date preceded August 30, 2013.

Type: numeric, date.

Source variable(s): AFUcomp1\_A, AFUcomp2\_A

### **1.9 STAGE\_1\_TYPE (V5 Type of Stage 1 Exam)**

Categorical variable which describes the participant's type of Stage 1 exam. A=Full, B=Abbreviated, C=Home, D=Long Term Care Facility.

Algorithm:

Stage\_1\_type=RTS3

Type: character, length=\$1.

Source variable(s):

## 2. SOCIO-DEMOGRAPHIC

### 2.1 GENDER (Sex)

Categorical variable that describes the participant's gender: M=Male, F=Female.

Algorithm:

Gender = V52

Type: character, length=\$1.

Source variable(s): V52 from V5INFO.

### 2.2 GENDER51 (Corrected Gender (V1CORGE1))

Categorical variable that describes the participant's gender: M=Male, F=Female. Incorrect values for the variable GENDER were identified following the initial data collection on the ARIC cohort. The ARIC Executive Committee has recommended continuing to use the uncorrected variable (GENDER) for Visit 1 and longitudinal analyses. The corrected version could be used for cross-sectional analyses other than Visit 1 and should be decided by the Investigator.

Algorithm:

Gender51 = V1CORGE1

Type: character, length=\$1.

### 2.3 RACEGRP (Race)

Categorical variable which describes the participant's race: A=Asian, B=Black, I=Native American, W=White.

Algorithm:

RACEGRP = V51

Type: character, length=\$1.

Source variable(s): V51 from V5INFO dataset

### 2.4 RACEGRP51 (Corrected Race (V1CORRA1))

Categorical variable which describes the participant's race: A=Asian, B=Black, I=Native American, W=White. Incorrect values for the variable RACEGRP were identified following the initial data collection on the ARIC cohort. The ARIC Executive Committee has recommended continuing to use the uncorrected variable (RACEGRP) for Visit 1 and longitudinal analyses. The corrected version could be used for cross-sectional analyses other than Visit 1 and should be decided by the Investigator.

Algorithm:

RACEGRP51 = V1CORRA1

Type: character, length=\$1.

## **2.5 BIRTHDAT (Date of Birth)**

SAS date variable which documents the originally reported date of birth for the participant.

Type: date

Source variable(s): BIRTHDAT from DERIVE47

## **2.6 BIRTHDAT51 (Corrected Birthdate (V1CORBIR))**

SAS date variable which corrects known errors in the BIRTHDAT variable. Incorrect values for the variable BIRTHDAT were identified following the initial data collection on the ARIC cohort. The ARIC Executive Committee has recommended continuing to use the uncorrected variable (BIRTHDAT) for Visit 1 and longitudinal analyses. The corrected version could be used for cross-sectional analyses other than Visit 1 and instances where appropriate should be decided by the Investigator.

Algorithm:

BIRTHDAT51 = V1CORBIR

Type: date

## **2.7 V5AGE51 (Visit 5 Age)**

Participant's age at the time of the visit 5 exam calculated from the BIRTHDAT variable.

Algorithm:

If V5DATE51>.z and BIRTHDAT>.z

then V5AGE51=floor((intck('month', BIRTHDAT, V5DATE51)-(day(V5DATE51) < day(BIRTHDAT)))/12);

Type: numeric.

Source variable(s): BIRTHDAT (Date of Birth)V5DATE51

## **2.8 V5AGE52 (Corrected Visit 5 Age)**

Participant's age at the time of the visit 5 exam calculated from the BIRTHDAT51 variable. This variable is based on the corrected birthdate. The ARIC Executive Committee has recommended continuing to use the uncorrected variable (V5Age51) for Visit 1 and longitudinal analyses. The corrected version could be used for cross-sectional analyses other than Visit 1 and should be decided by the Investigator.

Algorithm:

If V5DATE51>.z and BIRTHDAT51>.z  
then V5AGE51=floor(((intck('month', BIRTHDAT51,V5DATE51)-(day(V5DATE51) <  
day(BIRTHDAT51))))/12);

Type: numeric.

Source variable(s): BIRTHDAT (Date of Birth), V5DATE51

### 3. ANTHROPOMETRY AND BLOOD PRESSURE

#### 3.1 BMI51 (V5 Body Mass Index in Kg/m2)

Body mass index

Algorithm:

$[\text{Weight (kg)}] / [\text{Height (cm)} / 100]^2$

If missing (ANT3) or missing (ANT4) then BMI51=missing;

Else BMI51= ANT4/(ANT3/100)<sup>2</sup>

Type: numeric.

Source variable(s): ANT3, ANT4

#### 3.2 WSTHPR51 (V5 Waist-to-Hip Ratio)

Ratio of waist girth to hip girth

Algorithm:

If missing (ANT10a) or missing (ANT10b) or ANT10b=0 then WSTHPR51=missing;

Else WSTHPR51= (ANT10a/ANT10b)

Type: numeric.

Source variable(s): ANT10a, ANT10b

#### 3.3 SYSTOLIC51 (V5 Mean Systolic BP of 2nd and 3rd Measurements)

Mean of 2<sup>nd</sup> and 3<sup>rd</sup> systolic blood pressure measurements, consistent with V1 through V4

Algorithm:

SYSTOLIC51=mean of SBP8 and SBP11

If SYSTOLIC51=. then SYSTOLIC51=SBP14

Type: numeric.

Source variable(s): SBP8, SBP11

#### 3.4 DIASTOLIC51 (V5 Mean Diastolic BP of 2nd and 3rd Measurements)

Mean of 2<sup>nd</sup> and 3<sup>rd</sup> diastolic blood pressure measurements, consistent with V1 through V4

Algorithm:

DIASTOLIC51=mean of SBP9 and SBP12

If DIASTOLIC51=. then DIASTOLIC51=SBP15

Type: numeric.

Source variable(s): SBP9, SBP12

**3.5 PULSE51 (V5 Mean Pulse of 2nd and 3rd Measurements)**

Mean of 2<sup>nd</sup> and 3<sup>rd</sup> pulse measurements, consistent with V1 through V4

Algorithm:

PULSE51=mean of SBP10 and SBP13

If PULSE51=. then PULSE51=SBP16

Type: numeric.

Source variable(s): SBP10, SBP13



## 4. ALCOHOL USE

### 4.1 DRNKR51 (V5 Drinker Status)

Format:

- 1=Current Drinker
- 2=Former Drinker
- 3=Never Drinker
- 4=Unknown

Algorithm:

Use the 1<sup>st</sup> not-permanently missing occurrence of ALC form if more than one.

If ALC2 in ('Y', missing) and ALC3='Y' then DRNKR51=1;  
Else if (ALC2='Y' and ALC3='N') then DRNKR51=2;  
Else if (ALC2='N' and ALC3 in ('N', missing) ) then DRNKR51=3;  
Else if (ALC2=missing and ALC3='N') or (ALC2='Y' and ALC3=missing) then DRNKR51=4;  
Else DRNKR51=missing.

### 4.2 ETHANL51 (V5 Usual Ethanol Intake (g/wk))

Format: continuous numeric variable

Algorithm:

Use the 1<sup>st</sup> not-permanently missing occurrence of ALC form if more than one.

If (DRNKR51 in (2,3) or ALC3='N') then ETHANL51=0;  
Else if (DRNKR51 in (4, missing) or missing(ALC5) or missing(ALC6) or missing(ALC7) ) then ETHANL51=missing;  
Else ETHANL51=(ALC5 x 10.8) + (ALC6 x 13.2)+(ALC7 x 15.1).

### 4.3 CURDRK51 (V5 Current Drinker)

Format: 0=No,

1=Yes,

.T=missing (keeping .T for historical purposes).

Algorithm:

Use the 1<sup>st</sup> not-permanently missing occurrence of ALC form if more than one.

If (ALC2 in ('Y', missing) and ALC3='Y') then CURDRK51=1;  
Else if ALC3='N' or (ALC2='N' and ALC3=missing) then CURDRK51=0;  
Else CURDRK51=.T

### 4.4 FORDRK51 (V5 Former Drinker)

Format: 0=No,

1=Yes,

.T=missing.

Algorithm:

Use the 1st not-permanently missing occurrence of ALC form if more than one.

If (ALC2='Y' and ALC3='N') then FORDRK51=1;

Else if (ALC2 in ('Y', missing) and ALC3='Y') or (ALC2='N' and ALC3 in ('N', missing) )  
then FORDRK51=0;

Else FORDRK51=.T

#### **4.5 EVRDRK51 (V5 Ever Drinker)**

Format: 0=No,

1=Yes,

.T=missing.

Algorithm:

Use the 1st not-permanently missing occurrence of ALC form if more than one.

If ALC2='Y' or (ALC2=missing and ALC3='Y') then EVRDRK51=1;

Else if (ALC2='N' and ALC3 in ('N', missing) ) then EVRDRK51=0;

Else EVRDRK51=.T

## 5. SMOKING

The following definitions are temporary variables used in the algorithms of the smoking derived variables and not found on the DERIVE51\_yymmdd.sas7bdat dataset.

**CURRENT\_SMOKER** – derived from V5 Smoking and Alcohol Use Form:

=1 if ALC1='Y'

=0 if ALC1='N'

=missing if ALC1 is missing

**V4V5smokecig** – derived from composite (AFU) dataset:

=1 if any AFUcomp30\_G='Y' and AFUcomp1\_A is between v4date41 (located in derive47.sas7bdat) and min(ANT0a,SBP0a)

=0 if no AFUcomp30\_G='Y' and at least one AFUcomp30\_G='N' and AFUcomp1\_A is between v4date41 (located in derive47.sas7bdat) and min(ANT0a,SBP0a)

=missing if all AFUcomp30\_G is missing or if v4date41 and/or v5date51 is missing

### 5.1 CIGT52 (V5 Cigarette Smoking Status)

The cigarette smoking variables combine responses from the ALC form and ARIC follow-up data.

Format:

1=Current smoker,

2=Former smoker,

3=Never smoker,

4=Unknown, but one of the above categories may be ruled out

. =missing.

Algorithm:

Definition:

If CURRENT\_SMOKER=1 then CIGT52=1

Else if CURRENT\_SMOKER=0 and (CIGT41=1 OR CIGT41=2 OR V4V5SMOKECIG=1) then CIGT52=2

Else if CURRENT\_SMOKER=0 and CIGT41=3 AND V4V5SMOKECIG=0 then CIGT52=3

Else if (CURRENT\_SMOKER=. and (CIGT41=1 OR CIGT41=2 OR V4V5SMOKECIG=1) OR

(CURRENT\_SMOKER=0 and CIGT41 is missing and V4V5SMOKECIG is missing) then CIGT52=4

Else if ALL variables CURRENT\_SMOKER, CIGT41, AND V4V5SMOKECIG are missing then CIGT52=.

## 5.2 CURSMK52 (V5 Current cigarette smoker)

Same as CURRENT\_SMOKER.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

=1 if ALC1='Y'

=0 if ALC1='N'

=missing if ALC1 is missing

## 5.3 FORSMK52 (V5 Former cigarette smoker)

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

If CURRENT\_SMOKER=0 and (CIGT41=1 OR CIGT41=2 OR V4V5SMOKECIG=1) then  
FORSMK52=1

Else if CURRENT\_SMOKER=1

OR

CURRENT\_SMOKER=0 and CIGT41=3 AND V4V5SMOKECIG=0 then FORSMK52=0

Else if CURRENT\_SMOKER is missing and (CIGT41=1 OR CIGT41=2 OR  
V4V5SMOKECIG=1)

OR

(CURRENT\_SMOKER=0 and CIGT41 is missing and V4V5SMOKECIG is missing) then  
FORSMK52=.T

Else if ALL variables CURRENT\_SMOKER, CIGT41, AND V4V5SMOKECIG are missing  
then FORSMK52=.

## 5.4 EVRSMK52 (Ever smoked cigarettes)

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

If (CURRENT\_SMOKER=1 or CIGT41=1 or CIGT41=2 OR V4V5SMOKECIG=1) then  
EVRSMK52=1

Else if (CURRENT\_SMOKER=0 and CIGT41=3 and V4V5SMOKECIG=0) then  
EVRSMK52=0

Else if (CURRENT\_SMOKER=0 AND CIGT41 NE 1 AND 2 and V4V5SMOKECIG is  
missing)

OR

(CURRENT\_SMOKER=0 AND CIGT41 is missing and V4V5SMOKECIG NE 1)

OR

(CURRENT\_SMOKER =. and CIGT41=. and V4V5SMOKECIG=0)

OR

(CURRENT\_SMOKER =. and CIGT41=3 and V4V5SMOKECIG NE 1) then  
EVRSMK52=.T;

Else if ALL variables CURRENT\_SMOKER, CIGT41, AND V4V5SMOKECIG are missing  
then EVRSMK52=.

## 6. LABORATORY ANALYTES

### 6.1 FAST0851 (V5 8 Hours or More of Fasting Time)

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

1. Create 2 intermediate variables:  
eat\_time – time when a ppts last ate, from BIO7a and BIO7b;  
draw\_time – time of the blood draw, from BIO8a and BIO8b.  
Use the last non-permanently missing occurrence of BIO, when more than one.
2. Compute the fasting\_time = time elapsed between eat\_time and draw\_time. Since we do not have the date when a ppt last ate, we'll have to make some assumptions:
  - a) The first event was always the eat\_time, the second – always the draw-time, so the fasting\_time should always be positive;
  - b) If both eat\_time and draw\_time are AM, or both are PM, and eat\_time is less than draw\_time, then we assume that both events happened on the same day and the fasting time is within 12 hours:
  - c) If both eat\_time and draw\_time are AM, or both are PM, but the eat\_time is greater than the draw\_time, then we assume that the eat\_time was the day before than the draw\_time, and the fasting time is more than 12 hours but less than 24 hours;
  - d) If the eat\_time is AM and the draw\_time is PM, then we assume that a ppt ate in the AM, and then had a blood draw in the PM of the same calendar day;
  - e) If the eat\_time is PM and the draw\_time is AM, then we assume that a ppt ate in the PM of the previous day, and then had a blood draw in the AM of the visit day.
3. If fasting\_time = missing, then FAST0851=.T;  
Else if .z<fasting\_time<8 hours then FAST0851=0;  
Else FAST0851=1.

### 6.2 FAST1251 (V5 12 Hours or more of Fasting Time)

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

Use fasting\_time defined for FAST0851 variable.

- If fasting\_time = missing, then FAST1251=.T;  
Else if .z<fasting\_time<12 hours then FAST1251=0;  
Else FAST1251=1.

### **6.3 TGLEFH51 (V5 Triglycerides less than or equal to 400 mg/dL)**

Format:

0=No,  
1=Yes,  
. =missing.

Algorithm:

If  $.<LIP8 \leq 400$  then TGLEFH51 = 1;  
Else if  $LIP8 > 400$  then TGLEFH51=0;  
Else if  $LIP8 = .$  then TGLEFH51=.;

### **6.4 TCHSIU51 (V5 Total Cholesterol in SI Units)**

Format: numeric continuous variable.

Algorithm:

Create intermediate variables for use in SI unit changes.  
 $CF\_chol = 0.02586$ ;

$TCHSIU51 = LIP3 * CF\_chol$ .

### **6.5 HDLSIU51 (V5 HDL Cholesterol in SI Units)**

Format: numeric continuous variable.

Algorithm:

Create intermediate variables for use in SI unit changes.  
 $CF\_chol = 0.02586$ ;

$HDLSIU51 = LIP13 * CF\_chol$

### **6.6 LDLSIU51 (V5 LDL Cholesterol in SI Units)**

Format: numeric continuous variable.

Algorithm:

Create intermediate variables for use in SI unit changes.  
 $CF\_chol = 0.02586$ ;

$LDLSIU51 = LIP18 * CF\_chol$

### **6.7 TRGSIU51 (V5 Triglycerides in SI Units)**

Format: numeric continuous variable.

Algorithm:

Create intermediate variables for use in SI unit changes.  
 $CF\_trig = 0.01129$ ;

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TRGSIU51=LIP8\*CF\_trig

### **6.8 GLUSIU51 (V5 Fasting Glucose in SI Units)**

Format: numeric continuous variable.

Algorithm:

Create intermediate variables for use in SI unit changes.

CF\_gluc=0.05551;

GLUSIU51=LIP23\*CF\_gluc

### **6.9 LDL51 (V5 Recalculated LDL Cholesterol)**

Format: continuous numeric variable

Algorithm:

If (any of LIP3, LIP8, LIP13 is missing OR LIP8>400) then LDL51=missing;

Else LDL51=LIP3-LIP13-(LIP8/5)

If .z<LDL51<0 then LDL51=0 (set negative values to zero).



## 7. DISEASE PREVALENCE

There are a number of variables in the Disease Prevalence section that utilize cohort surveillance information, through event year 2013, to derive disease prevalence.

### Diabetes Prevalence Variables

A temporary variable was created for use in the algorithms of the diabetes derived variables. MDDX\_DIAB=1 if a participant reported being diagnosed during ARIC Follow-Up interviews with diabetes prior to the visit 5 data (V5DATE51). The composite dataset variables considered are AFUCOMP1\_A, AFUCOMP7D\_G, and AFUCOMP15\_M.

#### **7.1 DIABTS53 (V5 Diabetes - Lower Cutpoint 140 mg/dL)**

Diabetes variable defined as present if glucose value $\geq$ 140 or non-fasting glucose value $\geq$ 200 or using medication for diabetes or self-report diagnosis of diabetes.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

DIABTS53=1 if ( lowercase(strip(LIP25))^='not fasting' and LIP23 $\geq$ 140) or  
( lowercase(strip(LIP25)) ='not fasting' and LIP23 $\geq$ 200 ) or ( MSRF2 ne 'T' and  
MSRF33c = 'Y') or MDDX\_DIAB=1

else DIABTS53=0 if (.z<LIP23< 140) and not MDDX\_DIAB and MSRF33c ne 'Y'

else DIABTS53=.T.

#### **7.2 DIABTS54 (V5 Diabetes - Lower Cutpoint 126 mg/dL)**

Diabetes variable defined as present if glucose value $\geq$ 126 or non-fasting glucose value $\geq$ 200 or using medication for diabetes or self-report diagnosis of diabetes.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

DIABTS54=1 if ( lowercase(strip(LIP25))^='not fasting' and LIP23 $\geq$ 126) or  
( lowercase(strip(LIP25)) ='not fasting' and LIP23 $\geq$ 200 ) or ( MSRF2 ne 'T' and  
MSRF33c = 'Y') or MDDX\_DIAB=1

else DIABTS54=0 if (.z<LIP23< 126) and not MDDX\_DIAB and MSRF33c ne 'Y'

else DIABTS54=.T.

### 7.3 **DIABTS55 (V5 Diabetes - Lab and Meds Only, Cutpoint 126 mg/dL)**

Diabetes variable defined as present if glucose value $\geq$ 126 or non-fasting glucose value $\geq$ 200 or using medication for diabetes.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

DIABTS55=1 if (lowercase(strip(LIP25)) $\neq$ 'not fasting' and LIP23 $\geq$ 126) or  
(lowercase(strip(LIP25)) = 'not fasting' and LIP23 $\geq$ 200 ) or (MSRF2 ne 'T' and  
MSRF33c = 'Y')

else DIABTS55=0 if (.z<LIP23< 126) and MSRF33c ne 'Y'

else DIABTS55=.T.

### 7.4 **DIABTS56 (V5 Diabetes - Hemoglobin A1C, Cutpoint 6.5%)**

Diabetes variable defined as present if hemoglobin A1C value $\geq$ 6.5 % or using medication for diabetes or self-report diagnosis of diabetes.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

DIABTS56=1 if (CHM15 $\geq$ 6.5) or (MSRF2 ne 'T' and MSRF33c = 'Y') or MDDX\_DIAB=1

Else if (.z<chm15<6.5) and not MDDX\_DIAB and MSRF33c ne 'Y'

else DIABTS56=.T.

### 7.5 **DIABTS57 (V5 Diabetes (DM medications or DM reported on AFU))**

Diabetes variable defined as present if participant is using medication for diabetes or self-report diagnosis of diabetes.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

DIABTS57=1 if (MSRF2 ne 'T' and MSRF33c='Y') or INCSELFREPDM51=1 or  
DIABMDCODE51=1

Else DIABTS57=0 if not INCSELFREPDM51 and MSRF33c ne 'Y' and not  
DIABMDCODE51 then

Else DIABTS57=.

Source data: MSR, STATUS51, DERIVE51 (DIABMDCODE51)

### **ECG QWAVE Variables**

Create temporary variables for use in the algorithms of QWAVE derived variables.

ECGPRESNT: If ECG is present, ECGPRESENT=1;  
Else ECGPRESENT=0.

### **7.6 QWAVE54A (V5 Diagnostic Q-wave present from Adjudicated ECG Data)**

Format:

0=No,  
1=Yes,  
.T=missing,  
. =missing.

Algorithm:

If ECGPRESENT=1 and (ECG62

IN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7','1.1.8','1.1.9','1.2.0','1.2.1','1.2.2','1.  
2.3','1.2.4','1.2.5','1.2.7') or ECG63

IN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7','1.1.8','1.1.9','1.2.0','1.2.1','1.2.2','1.  
2.3','1.2.4','1.2.5','1.2.7') or ECG64

IN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7','1.1.8','1.1.9','1.2.0','1.2.1','1.2.2','1.  
2.3','1.2.4','1.2.5','1.2.7')) then QWAVE54A=1;

Else if ECGPRESENT=1 and ECG62>missing and ECG62

NOTIN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7','1.1.8','1.1.9','1.2.0','1.2.1','1.2.  
2','1.2.3','1.2.4','1.2.5','1.2.7') and ECG63 >" and ECG63

NOTIN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7','1.1.8','1.1.9','1.2.0','1.2.1','1.2.  
2','1.2.3','1.2.4','1.2.5','1.2.7') and ECG64>missing and ECG64

NOTIN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7','1.1.8','1.1.9','1.2.0','1.2.1','1.2.  
2','1.2.3','1.2.4','1.2.5','1.2.7')) then QWAVE54A=0;

Else ECGPRESENT=0 then QWAVE54A=.M;

Else QWAVE54A=.

**7.7 QWAVE57A (V5 Major Q-Wave present with no 7-1-1, 7-1-2, or 7-4, from Adjudicated ECG Records)**

Format:

0=No,  
1=Yes,  
.T=missing,  
.M=missing,  
. =missing.

Algorithm:

If ECGPRESENT=1 and (ECG79>" and ECG79 NOT IN ('7.1','7.4')) and (ECG62 IN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7') or ECG63 IN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7') or ECG64 IN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7')) then QWAVE57A=1;

Else ECGPRESENT=1 and ECG62>" and ECG62 NOTIN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7') and ECG63 >" and ECG63 NOTIN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7') and ECG64>" and ECG64 NOTIN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7') then QWAVE57A=0;

Else if ECGPRESENT=1 and (ECG79=" or ECG79 IN ('7.1','7.4')) and (ECG62 IN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7') or ECG63 IN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7') or ECG64 IN('1.1.1','1.1.2','1.1.3','1.1.4','1.1.5','1.1.6','1.1.7')) then QWAVE57A=.T;

Else if ECGPRESENT=0 then QWAVE57A=.M;

Else QWAVE57A=.;

Note: The V4 data dictionary states that a value of (7).1 for this variable corresponds to Minnesota codes 7-1-1 or 7-1-2. A value of (7).4 corresponds to Minnesota code 7-4.

**7.8 QWAVE58B (V5 Minor Q-Wave present with ST or T codes and no 7-1-1, 7-1-2, or 7-4 codes, from Adjudicated ECG Records)**

Format:

0=No,  
1=Yes,  
.T=missing  
.M=missing,  
. =missing.

Algorithm:

If ECGPRESENT=1 and (ECG62

IN('1.2.1','1.2.2','1.2.3','1.2.4','1.2.5','1.2.7', '1.2.8') or ECG63  
IN('1.2.1','1.2.2','1.2.3','1.2.4','1.2.5','1.2.7', '1.2.8') or ECG64  
IN('1.2.1','1.2.2','1.2.3','1.2.4','1.2.5','1.2.7', '1.2.8') ) and (ECG67 IN('4.2',  
'4.1.1','4.1.2') or ECG68 IN('4.2', '4.1.1','4.1.2') or ECG69 IN('4.2','4.1.1','4.1.2') or  
ECG70 IN ('5.1','5.2 ') or ECG71 IN('5.1','5.2 ') or ECG72 IN('5.1','5.2 ') and  
ECG79>" and ECG79 NOTIN('7.1','7.4') then QWAVE58B =1;

Else if ECGPRESENT=1 and ((ECG62>" and ECG63>" and ECG64 >" and ECG62  
NOTIN('1.2.1','1.2.2','1.2.3','1.2.4','1.2.5','1.2.7', '1.2.8') and ECG63  
NOTIN('1.2.1','1.2.2','1.2.3','1.2.4','1.2.5','1.2.7', '1.2.8') and ECG64  
NOTIN('1.2.1','1.2.2','1.2.3','1.2.4','1.2.5','1.2.7', '1.2.8'))  
OR  
(ECG67>" and ECG68>" and ECG69>" and ECG70>" and ECG71>" and  
ECG72>" and ECG67 NOTIN('4.2', '4.1.1','4.1.2') and ECG68 NOTIN('4.2',  
'4.1.1','4.1.2') and ECG69 NOTIN('4.2','4.1.1','4.1.2') and ECG70 NOTIN ('5.1','5.2 ')  
and ECG71 NOTIN('5.1','5.2 ') and ECG72 NOTIN('5.1','5.2 ') then QWAVE58B =0;

Else if ECGPRESENT=1 and (ECG62 IN('1.2.1','1.2.2','1.2.3','1.2.4','1.2.5','1.2.7', '1.2.8') or  
ECG63 IN('1.2.1','1.2.2','1.2.3','1.2.4','1.2.5','1.2.7', '1.2.8') or ECG64  
IN('1.2.1','1.2.2','1.2.3','1.2.4','1.2.5','1.2.7', '1.2.8') ) and (ECG67 IN('4.2',  
'4.1.1','4.1.2') or ECG68 IN('4.2', '4.1.1','4.1.2') or ECG69 IN('4.2','4.1.1','4.1.2') or  
ECG70 IN ('5.1','5.2 ') or ECG71 IN('5.1','5.2 ') or ECG72 IN('5.1','5.2 ') and  
(ECG79 IN(", '7.1','7.4')) then QWAVE58B =.T;

Else if ECGPRESENT=0 then QWAVE58B =.M;

Else QWAVE58B =.;

### **Myocardial Infarction (MI) Prevalence Variables**

#### **7.9 ECGMI51 (Prevalent Myocardial Infarction from Adjudicated Electrocardiograms)**

Format:

0=No,  
1=Yes,  
.T=missing  
.M=missing  
. =missing.

Algorithm:

If QWAVE57A=1 or QWAVE58B=1 then ECGMI51=1;

Else if QWAVE57A=0 and QWAVE58B=0 then ECGMI51=0;

Else if (QWAVE57A=. and QWAVE58B NE 1) OR (QWAVE57A NE 1 and QWAVE58B=.)  
then ECGMI51=.T;

Else if ECGPRESENT=0 then ECGMI51 =.M;

Else ECGMI51 =.;

### **7.10 MDDXMI52 (V5 MD Diagnosed Myocardial Infarction)**

This variable is derived from ARIC Follow-Up questions that ask if the participant was told by a doctor whether or not they'd had a heart attack between visit 4 and visit 5.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

MDDXMI52=1 if any one (AFUCOMP7a\_G=Y OR AFUCOMP11a\_M=Y) AND AFU DATE (AFUCOMP1\_A) falls between visit 4 date and visit 5 date

Else MDDXMI52=.T if all values of (AFUCOMP7a\_G, AFUCOMP11a\_M) for records between visit 4 date and visit 5 date are one of the following combinations (",U), (","), (U,")

Else MDDXMI52=0

### **7.11 HXOFMI52 (V5 History of Myocardial Infarction)**

This variable is derived from ARIC Follow-Up questions that ask if the participant was told by a doctor whether or not they'd had a heart attack as well as questions asking the participant if they'd been hospitalized for heart attack. The follow-up records from the ARIC Follow-Up composite dataset (uc623201\_compafu\_safu\_cy2\_cy23.sas7bdat) considered for this variable were collected before the end of V5 data collection (30AUG2013).

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

HXOFMI52=1 if MDDXMI52=1 or (AFUcomp7\_V1='Y') or (AFUcomp30\_deceased\_A='Y') or (AFUcomp30non\_deceased\_A='Y')

else HXOFMI52=.T if over all records for a single ID the following value combinations are found for (MDDXMI52,AFUcomp7\_V1, AFUcomp30\_deceased\_A,AFUcomp30non\_deceased\_A):  
(.T,"",""), (.T,"','U','"), (.T,"','','U')

else HXOFMI52=0

## **Coronary Heart Disease (CHD) Prevalence Variables**

### **7.12 PRVCHD51 (V5 Prevalent CHD before Visit 5)**

This variable is derived from the baseline status of CHD (PRVCHD05) and the closed event years of ARIC Cohort Surveillance data through 2013, where the event occurred prior to the participant's Visit 5.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

PRVCHD51 = 1 if PRVCHD05=1 or (C7\_IN\_13SP=1 and missing<C7DATEISP<v5date51)  
or (C7\_IN\_13SP=1 and V5DATE51=. and C7DATEISP <="01JUN2011"d)

PRVCHD51 = 0 if PRVCHD05=0 and ((C7\_IN\_13SP=0 or  
C7DATEISP>=V5date51>missing) or (V5DATE51=. And  
C7DATEISP>"01JUN2011"d))

Else PRVCHD51 = . (missing)

### **7.13 PRVCHD53 (V5 Prevalent CHD by end of Visit 5)**

This variable is derived from the baseline status of CHD (PRVCHD05) and the closed event years of ARIC Cohort Surveillance data through 2013, where the event occurred prior to 30AUG2013.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

PRVCHD53 = 1 if PRVCHD05=1 or (C7\_IN\_13SP=1 and missing < C7DATEISP  
<="30AUG2013"d)

PRVCHD53 = 0 if PRVCHD05=0 and (C7\_IN\_13SP=0 or C7DATEISP>"30AUG2013"d)

Else PRVCHD53 = . (missing)

#### **7.14 PRVCHD54 (V5 Prevalent CHD-unverified)**

This variable is derived from ECG data and self-reported ARIC Follow-Up data including questions on doctor told participant about heart attack, coronary bypass, and coronary angioplasty on records collected up through 30AUG2013.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

PRVCHD54=1 if ECGMI51=1 or MDDXMI52=1 or (AFUcomp13a\_G='Y') or  
(AFUcomp15a\_G='Y')

else PRVCHD54=. if over all records for a single ID the following value combinations are found for (ECGMI51,MDDXMI52,AFUcomp13a\_G, AFUcomp15a\_G):(.T, (.M or .), (" or 'U'), (" or 'U'))

else PRVCHD54=0

#### **Heart Failure (HF) Prevalence Variables**

The heart failure (HF) variables included in this derived variable dictionary define HF prevalence at Visit 5. When conducting analyses of incident HF, it is important to note that the incident variable is available in the ARIC Cohort Surveillance dataset. The variable C7\_INCHFxx uses V1 as the baseline and considers an event as a hospitalization with an ICD-9 discharge diagnosis code of 428.x in any position.

#### **7.15 PREVHF52 (Visit 5 Prevalent Heart Failure (HFRC Recommended Definition as of 2018))**

The ARIC heart failure research committee (HFRC) has developed this revised dichotomous definition of prevalent heart failure at Visit 5 (February 2018). This new definition integrates the two previous “definite” and “definite or possible” prevalent heart failure definitions and refines them. The HFRC recommends using this definition of prevalent heart failure at Visit 5.

Format:

0=No,  
1=Yes.

Algorithm:

PREVHF52=1, if at least one of the following are true:

1. Any adjudicated HF event (Category A/B/C)



2. Any first position ICD code of 428.x before 2005
3. Any physician report of HF is Yes on or prior to Visit 5 exam date (PHF1 or PHFA1="Y")
4. Only using data collected AFTER the most current physician report is "No" HF, or using all data if no physician report has ever been completed:
  - a. A non-1st position ICD code of 428.x before 2005
  - b. An initial instance of self-reported HF or self-reported HF meds AND at least one subsequent self-report of HF or self-report of HF meds on or before Visit 5 exam date, but after the first self-report date
  - c. An initial instance of self-reported HF or self-reported HF meds reported on or before Visit 5 exam date AND an elevated NT-proBNP value >125 from Visit 4 OR Visit 5

PREVHF52=0, otherwise

Type: Numeric

Source variable(s): This definition utilizes data from cohort surveillance, follow-up, and visit data collection components.

#### **7.16 PREVDEFHF51 (V5 Prevalent Definite Heart Failure for Closed Event Years)**

Format:

- 0=No,
- 1=Yes,
- . =missing.

Algorithm:

1. Prior hospitalization (01/01/2005 onward but before V5 visit) classified as Definite (A), Probable (B), or Chronic (C) HF
2. Physician Heart Failure (PHF) Survey with HF onset date prior to V5 (from those with self-reported HF) in which the physician answers YES to "has this patient ever had HF or CM?"
3. Hospitalization with an ICD code 428.x in first position (before 01/01/2005)

#### **7.17 PREVDEFPOSSH51 (V5 Prevalent Definite OR Possible Heart Failure for Closed Event Years)**

Format:

0=No,  
1=Yes,  
. =missing.

Algorithm:

1. Prior hospitalization (01/01/2005 onward but before V5 visit) classified as Definite (A), Probable (B), or Chronic (C) HF
2. Physician Heart Failure Survey with HF onset date prior to V5 (from those with self-reported HF) in which the physician answers YES to "has this patient ever had HF or CM?"
3. Hospitalization with an ICD code 428.x in first position (before 01/01/2005)
4. Hospitalization with an ICD code 428.x in any position other than the first position (any time before 01/01/2005)
5. Self-report of HF at AFU prior to V5 or at visits 3-4\*, not refuted by the physicians health survey (temporal association will need to be considered)
6. Self-report of treatment for HF from any study visit or AFU prior to V5

\*Self-reported HF at V1, V2 and V5 not asked

### **Stroke Prevalence Variables**

#### **7.18 PRVSTR51 (Prevalent Stroke at Visit 5)**

This variable is derived from the baseline status of stroke (HOM10D) and the closed event years of ARIC Surveillance data on the cohort.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

PRVSTR51= 1 if HOM10D='Y' or (C7\_IN13DP=1 and missing<C7\_ED13DP<=V5DATE51)  
or (C7\_IN13DP=1 and V5DATE51=. and C7\_ED13DP<="30AUG2013"d).

PRVSTR51= 0 if HOM10D='N' and ((C7\_IN13DP=0 or C7\_ED13DP>V5DATE51>missing)  
or (V5DATE51=. and C7\_ED13DP>"30AUG2013"d))

Else PRVSTR51=. (missing)

### **7.19 PRVSTR52 (V5 Prevalent Stroke-unverified)**

This variable is derived from self-reported ARIC Follow-Up data including questions that doctor told participant about stroke or TIA or participant hospitalized for stroke on records collected up through 30AUG2013.

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

PRVSTR52=1 if any record within a single ID has a Y value is found either AFUcomp29\_A or AFUcomp8b\_K

else PRVSTR52=missing if over all records within a single ID the following value combinations are found for (AFUcomp29\_A, AFUcomp8b\_K): (","), ("U"), (U,"),

else PRVSTR52=0

### **Atrial Fibrillation/Flutter (AF) Prevalence Variables**

#### **7.20 PRVAF51 (Prevalent Atrial Fibrillation/Flutter before V5)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

If (AFINCBY11=1 and (missing<DATEAFINC<="01JUN2011"d)) OR (AFLINCBY11=1 and (missing<DATEAFLINC<="01JUN2011"d)) then PRVAF51= 1;

Else if (AFINCBY11=0 and AFLINCBY11=0) OR (DATEAFLINC=. AND (DATEAFINC>"01JUN2011"d)) OR (DATEAFINC=missing AND (DATEAFLINC>"01JUN2011"d)) OR ((DATEAFINC>"01JUN2011"d) AND (DATEAFLINC>"01JUN2011"d)) then PRVAF51= 0;

Else PRVAF51=.;

#### **7.21 PRVAF52 (Prevalent Atrial Fibrillation/Flutter by end of V5)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

If (AFINCBY11=1 and (missing<DATEAFINC<="30AUG2013"d)) OR (AFLINCBY11=1 and (missing<DATEAFLINC<="30AUG2013"d)) then PRVAF52= 1;

Else if (AFINCBY11=0 and AFLINCBY11=0) OR (DATEAFLINC=missing AND (DATEAFINC>"30AUG2013"d)) OR (DATEAFINC=. AND (DATEAFLINC>"30AUG2013"d)) OR ((DATEAFINC>"30AUG2013"d) and (DATEAFLINC>"30AUG2013"d)) then PRVAF52= 0;

Else PRVAF52=. (missing)

### **Hypertension Prevalence Variables**

#### **7.22 HYPERT54 (V5 Hypertension, definition 4 (DIASTOLIC51 ge 90 or HTN med))**

Hypertension definition defined as diastolic blood pressure (mean of 2<sup>nd</sup> and 3<sup>rd</sup> measures) >=90 or medication is being taken for high blood pressure.

Format:

0=No,  
1=Yes,  
.=missing.

Algorithm:

If (DIASTOLIC51 >= 90) or (MSRF2 ne 'T' and MSRF33d='Y') then HYPERT54=1;

Else if (0<DIASTOLIC51<90) and (MSRF33d='N' or (MSRF33d=missing and MSRF2='T')) then HYPERT54=0;

Else HYPERT54=. (missing)

#### **7.23 HYPERT55 (V5 Hypertension, definition 5 (SYSTOLIC51 GE 140 or DIASTOLIC51 GE 90 or HTN medication))**

Hypertension is defined as systolic blood pressure (mean of 2<sup>nd</sup> and 3<sup>rd</sup> measures) >=140 or diastolic blood pressure (mean of 2<sup>nd</sup> and 3<sup>rd</sup> measures) >=90 or medication is being taken for high blood pressure.

Format:

0=No,  
1=Yes,  
.=missing.

Algorithm:

If (DIASTOLIC51 >= 90) or (SYSTOLIC51>=140) or (MSRF2 ne 'T' and MSRF33d='Y')  
then HYPERT55=1;

Else if (0<DIASTOLIC51<90) and (0<SYSTOLIC51<140) and (MSRF33d='N' or  
(MSRF33d=missing and MSRF2='T')) then HYPERT55=0;

Else HYPERT55=. (missing)

#### **7.24 HYPERT56 (V5 Hypertension, definition 6 (SYSTOLIC51 GE 160 or DIASTOLIC51 GE 95 or HTN medication))**

Hypertension is defined as systolic blood pressure (mean of 2<sup>nd</sup> and 3<sup>rd</sup> measures) >=160  
or diastolic blood pressure (mean of 2<sup>nd</sup> and 3<sup>rd</sup> measures) >=95 or medication is being  
taken for high blood pressure.

Format:

0=No,  
1=Yes,  
.=missing.

Algorithm:

If (DIASTOLIC51 >= 95) or (SYSTOLIC51>=160) or (MSRF2 ne 'T' and MSRF33d='Y')  
then HYPERT56=1;

Else if (0<DIASTOLIC51<95) and (0<SYSTOLIC51<160) and (MSRF33d='N' or  
(MSRF33d=missing and MSRF2='T')) then HYPERT56=0;

Else HYPERT56=. (missing)

#### **7.25 HYPERT57 (V5 Hypertension, definition 7 (SYSTOLIC51 GE 150 or DIASTOLIC51 GE 90 or HTN medication))**

Hypertension is defined as systolic blood pressure (mean of 2<sup>nd</sup> and 3<sup>rd</sup> measures) >=150  
or diastolic blood pressure (mean of 2<sup>nd</sup> and 3<sup>rd</sup> measures) >=90 or medication is being  
taken for high blood pressure.

Format:

0=No,  
1=Yes,  
.=missing.

Algorithm:

If (DIASTOLIC51 >= 90) or (SYSTOLIC51>=150) or (MSRF2 ne 'T' and MSRF33d='Y')  
then HYPERT57=1;

Else if (0<DIASTOLIC51<90) and (0<SYSTOLIC51<100) and (MSRF33d='N' or  
(MSRF33d=missing and MSRF2='T')) then HYPERT57=0;

Else HYPERT57=. (missing)

## 8. CORNELL VOLTAGE LVH

### 8.1 LVHSCR51 (V5 Cornell Voltage In UV (S In V3+r In AVL))

Format: continuous; min 100

Algorithm:

$LVHSCR51 = ABS(EGC357) + ECG281$

If  $ABS(EGC357) + ECG281 < 100$  then  $LVHSCR51 = .$

### 8.2 NLVHSC51 (V5 Cornell Voltage In mm)

Format: continuous; min 1

Algorithm:

$NLVHSC51 = LVHSCR51 / 100$

### 8.3 CLVH51 (V5 LVH Present By Cornell Definition)

Format:

0=No,

1=Yes,

. =missing.

Algorithm:

If (GENDER='M' and  $NLVHSC5 > 28$ ) or (GENDER='F' and  $NLVHSC5 > 22$ )  
then  $CLVH51 = 1$

Else if (GENDER='M' and  $. < NLVHSC5 \leq 28$ ) or (GENDER='F' and  $. < NLVHSC5 \leq 22$ )  
then  $CLVH51 = 0$

Else  $CLVH51 = .$

## 9. MEDICATION USE

The following definitions are temporary variables for use in the algorithms of the medication use derived variables. Most are not included in DERIVE52\_yymmdd, except for MSRF#a2\_sub6 (# goes from 5 to 29).

### **ALLMISS:**

Do over MSRF#a2 where # = 5 to 29:

If any MSRF#a2>" then ALLMISS=0, else ALLMISS=1

### **MSRF#a2\_sub10:**

Do over MSRF#a2 where # = 5 to 29:

MSRF#a2\_sub10=substr(MSRF#a,1,10)

### **MSRF#a2\_sub6:**

Do over MSRF#a2 where # = 5 to 29:

MSRF#a2\_sub6=substr(MSRF#a,1,6)

### **MSRF#a2\_sub4:**

Do over MSRF#a2 where # = 5 to 29:

MSRF#a2\_sub4=substr(MSRF#a,1,4)

### **MSRF#a2\_sub2:**

Do over MSRF#a2 where # = 5 to 29:

MSRF#a2\_sub2=substr(MSRF#a,1,2)

### **FOUNDCHOL51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:

If MSRF#a2\_sub6 in (771030,390000-399999) then FOUNDCHOL51=1, else  
FOUNDCHOL51=0.

### **FOUNDCHOL52:**

Do over MSRF#a2\_sub6 where # = 5 to 29:

If MSRF#a2\_sub6 in

(331000,332000,340000,363000,369920,372000,376000,379900,379910) then  
FOUNDCHOL52=1, else FOUNDCHOL52=0.

### **FOUNDHYP51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:

If MSRF#a2\_sub6 in (330000-339999 or 340000-349999 or 360000-369999 or  
370000-379999) or (MSRF33d = 'Y') then FOUNDHYP51=1, else  
FOUNDHYP51=0.

### **FOUNDSTAT51:**

Do over MSRF#a2\_sub4 where # = 5 to 29:

If MSRF#a2\_sub4 equal 3940 then FOUNDSTAT51=1, else FOUNDSTAT51=0.



**FOUNDACOAG51:**

Do over MSRF#a2\_sub2 where # = 5 to 29:

If MSRF#a2\_sub2 equal 83 then FOUNDACOAG51=1, else FOUNDACOAG51=0.

**FOUNDASP51:**

Do over MSRF#a2\_sub4 where # = 5 to 29:

If MSRF#a2\_sub4 IN (6410, 6499, 6599, 6420) then FOUNDASP51=1, else FOUNDASP51=0.

**FOUNDANTIANX51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:

If MSRF#a2\_sub6 in (570000, 571000, 571020, 572000) then FOUNDANTIANX51=1, else FOUNDANTIANX51=0.

**FOUNDANTIPSYCH51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:

If MSRF#a2\_sub6 in (590000, 590700, 591000, 591500, 592000, 593000, 594000, 595000) then FOUNDANTIPSYCH51=1, FOUNDANTIPSYCH51=0.

**FOUNDHYPNOT51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:

If MSRF#a2\_sub6 in (600000, 601000, 602000, 602010, 602040, 603000, 603099, 609900) then FOUNDHYPNOT51=1, FOUNDHYPNOT51=0.

**FOUNDANTICONV51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:

If MSRF#a2\_sub6 in (720000, 721000, 721200) then FOUNDANTICONV51=1, FOUNDANTICONV51=0.

**FOUNDANTIDEM51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:

If MSRF#a2\_sub6 in (620000, 620500, 620510, 620540) then FOUNDANTIDEM51=1, FOUNDANTIDEM51=0.

**FOUND CNSALT51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:

If MSRF#a2\_sub6 in (571000, 932000, 590000, 590700, 591000, 591500, 592000, 593000, 594000, 595000, 601000, 602000, 602010) then FOUND CNSALT 51=1, FOUND CNSALT 51=0.

**FOUND DIAB51:**

Do over MSRF#a2\_sub2 where # = 5 to 29:

If MSRF#a2\_sub2=27 then FOUND DIAB51=1, FOUND DIAB51=0.

**FOUND BETA51:**

Do over MSRF#a2\_sub2 and MSRF#a2 where # = 5 to 29:  
If MSRF\_a2\_sub2{i}=33 AND MSRF\_a2\_sub10{i}^=3310005010 then  
FOUNDBETA51=1, else FOUNDBETA51=0.

**FOUNDANGINH51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:  
If MSRF\_a2\_sub6{i}=361000 then FOUNDANGINH51=1; else FOUNDANGINH51=0.

**FOUNDANGIANT51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:  
If MSRF\_a2\_sub6{i}=361500 then FOUNDANGIANT51=1; else  
FOUNDANGIANT51=0.

**FOUNDALDANT51:**

Do over MSRF#a2 where # = 5 to 29:  
If MSRF\_a2{i} IN (3625000000, 3750002000, 3799000220) then  
FOUNDALDANT51=1; else FOUNDALDANT51=0.

**FOUNDLOOPDIU51:**

Do over MSRF#a2\_sub6 where # = 5 to 29:  
If MSRF\_a2\_sub6{i}=372000 then FOUNDLOOPDIU51=1; else  
FOUNDLOOPDIU51=0.

**FOUNDDIG51:**

Do over MSRF#a2 where # = 5 to 29:  
If MSRF\_a2{i}=3120001000 then FOUNDDIG51=1; else FOUNDDIG51=0.

**9.1 CHOLMDCODE51 (V5 Cholesterol Lowering Medication in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4735 – V4)

If FOUNDCHOL51=1 then CHOLMDCODE51=1

Else if FOUNDCHOL51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then CHOLMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then CHOLMDCODE51=.T

Else CHOLMDCODE51=.

**9.2 CHOLMDCODE52 (V5 Medications Which Secondarily Affect Cholesterol in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4735 – V4)

If FOUNDCHOL52=1 then CHOLMDCODE52=1

Else if FOUNDCHOL52=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then CHOLMDCODE52=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then CHOLMDCODE52=.T

Else CHOLMDCODE52=.

**9.3 HYPTMD51 (V5 Hypertension Medications in Past 4 Weeks: Self-reported)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

If (MSRF2 NE 'T') and (MSRF33D='Y') then HYPTMD51=1;

Else if (MSRF2='T' and MSRF33D='') OR MSRF33D='N' then HYPTMD51 = 0;

Else If ((MSRF2 NE 'T') and (MSRF33D='U' or MSRF33D = '')) or  
((MSRF2='T') and (MSRF33D = 'Y' or MSRF33D='U')) then HYPTMD51=.T;

#### **9.4 HYPTMDCODE51 (V5 Hypertension Lowering Medication in Past 4 weeks - Using 2004 med code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4688 – V4)

If FOUNDHYP51=1 OR (MSRF2 NE 'T') and (MSRF33D='Y') then HYPTMDCODE51=1

Else if FOUNDHYP51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0) OR  
(MSRF2='T' and MSRF33D='') OR (MSRF33D='N')) then HYPTMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then HYPTMDCODE51=.T

Else HYPTMDCODE51=.

#### **9.5 STATINCODE51 (V5 Statin Use in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4892 – V4)

If FOUNDSTAT51=1 then STATINCODE51=1

Else if FOUNDSTAT51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then  
STATINCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then STATINCODE51=.T

Else STATINCODE51=.

#### **9.6 ANTICOAGCODE51 (V5 Anticoagulant Use in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4892 – V4)

If FOUNDACOAG51=1 then ANTICOAGCODE51=1

Else if FOUNDACOAG51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then ANTICOAGCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ANTICOAGCODE51=.T

Else ANTICOAGCODE51=.

### **9.7 ASPIRINCODE51 (V5 Aspirin Use in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4892 – V4)

If FOUNDASP51=1 then ASPIRINCODE51=1

Else if FOUNDASP51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then ASPIRINCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ASPIRINCODE51=.T

Else ASPIRINCODE51=.

### **9.8 ANTIANXMDCODE51 (V5 Antianxiety Medication in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4735 – V4)

If FOUNDANTIANX51=1 then ANTIANXMDCODE51=1

Else if FOUNDANTIANX51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then ANTIANXMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ANTIANXMDCODE51=.T

Else ANTIANXMDCODE51=.

### **9.9 ANTIPSYCHMDCODE51 (V5 Antipsychotic Medication in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4735 – V4)

If FOUNDANTIPSYCH51=1 then ANTIPSYCHMDCODE51=1

Else if FOUNDANTIPSYCH51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0))  
then ANTIPSYCHMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ANTIPSYCHMDCODE51=.T

Else ANTIPSYCHMDCODE51=.

#### **9.10 HYPNOTMDCODE51 (V5 Hypnotic/Sedative Medication in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4735 – V4)

If FOUNDHYPNOT51=1 then HYPNOTMDCODE51=1

Else if FOUNDHYPNOT51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0))  
then HYPNOTMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then HYPNOTMDCODE51=.T

Else HYPNOTMDCODE51=.

#### **9.11 ANTICONVMDCODE51 (V5 Anticonvulsant Medication in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4735 – V4)

If FOUNDANTICONV51=1 then ANTICONVMDCODE51=1

Else if FOUNDANTICONV51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0))  
then ANTICONVMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ANTICONVMDCODE51=.T

Else ANTICONVMDCODE51=.

**9.12 ANTIDEMMDCODE51 (V5 Antidementia/Nootropic Medication in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4735 – V4)

If FOUNDANTIDEM51=1 then ANTIDEMMDCODE51=1

Else if FOUNDANTIDEM51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0))  
then ANTIDEMMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ANTIDEMMDCODE51=.T

Else ANTIDEMMDCODE51=.

**9.13 CNSALTMDCODE51 (V5 CNS Altering Medication in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm: (From UC4735 – V4)

If FOUNDCNSATL51=1 then CNSALTMDCODE51=1

Else if FOUNDCNSATL51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then  
CNSALTMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then CNSALTMDCODE51=.T

Else CNSALTMDCODE51=.

**9.14 DIABMDCODE51 (V5 Diabetic Medications in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

If FOUNDDIAB51=1 then DIABMDCODE51=1

Else if FOUNDDIAB51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then  
DIABMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then DIABMDCODE51=.T

Else DIABMDCODE51=.

**9.15 BETAMDCODE51 (V5 Beta-Blocker in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

If FOUNDBETA51=1 then BETAMDCODE51=1

Else if FOUNDBETA51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then  
BETAMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then BETAMDCODE51=.T

Else BETAMDCODE51=.

**9.16 ANGINHMDCODE51 (V5 Angiotensin converting enzyme inhibitor in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

If FOUNDANGINH51=1 then ANGINHMDCODE51=1

Else if FOUNDANGINH51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then  
ANGINHMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ANGINHMDCODE51=.T

Else ANGINHMDCODE51=.

**9.17 ANGIANTMDCODE51 (V5 Angiotensin II receptor antagonists in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,  
1=Yes,



.T=missing.

If FOUNDANGANT51=1 then ANGANTMDCODE51=1

Else if FOUNDANGANT51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0))  
then ANGANTMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ANGANTMDCODE51=.T

Else ANGANTMDCODE51=.

**9.18 ALDANTMDCODE51 (V5 Aldosterone Antagonist in past 4 weeks - Using 2004 Med Code- Using 2004 Med Code)**

Format:

0=No,  
1=Yes,  
.T=missing.

If FOUNDALDANT51=1 then ALDANTMDCODE51=1

Else if FOUNDALDANT51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then  
ALDANTMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ALDANTMDCODE51=.T

Else ALDANTMDCODE51=.

**9.19 LOOPDIUMDCODE51 (V5 Loop Diuretic in past 4 weeks - Using 2004 Med)**

Format:

0=No,  
1=Yes,  
.T=missing.

If FOUNDLOOPDIU51=1 then LOOPDIUMDCODE51=1

Else if FOUNDLOOPDIU51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0))  
then LOOPDIUMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then LOOPDIUMDCODE51=.T

Else LOOPDIUMDCODE51=.

**9.20 DIGMDCODE51 (V5 Digoxin in past 4 weeks - Using 2004 Med Code)**

Format:

0=No,

1=Yes,  
.T=missing.

If FOUNDDIG51=1 then DIGMDCODE51=1

Else if FOUNDDIG51=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then  
DIGMDCODE51=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then DIGMDCODE51=.T

Else DIGMDCODE51=.

### **9.21 MORISKY51 (V5 Medication Adherence, Morisky Score)**

Format: numeric integer variable; (range: 0-4)

Algorithm: This is the Morisky score of medication adherence that is based on questions Q40-Q43 from the MSR form which was administered at Visit 5. The Morisky score of medication adherence is based on dichotomous responses to 4 questions (all 4 questions NONMISSING).

When (MSRF40>'') AND (MSRF41>'') AND (MSRF42>'') AND (MSRF43>'')  
Then MORISKY51=SUM (OF (MSRF40='Y'),(MSRF41='Y'),(MSRF42='Y'),(MSRF43='Y'))

### **9.22 MEDAD51 (V5 Medication Adherence, Morisky Scale)**

Format: numeric integer variable; (range: 1-3)

1 = 'high'  
2 = 'intermediate'  
3 = 'low';

Algorithm: Medication adherence is based on the Morisky scale and can be classified into the following categories: "low", "intermediate", and "high". If the person only responds to three questions but they clearly have low adherence, then MEDAD51 = "low".

If MORISKY51=0 then MEDAD51=1

If 1<=MORISKY51<=2 then MEDAD51=2

If 3<=MORISKY51<=4 then MEDAD51=3

If ((MSRF40>'')+(MSRF41>'')+(MSRF42>'')+(MSRF43>''))=3 AND  
SUM (OF (MSRF40='Y'),(MSRF41='Y'),(MSRF42='Y'),(MSRF43='Y'))=3 THEN  
MEDAD51=3

## 10. PHYSICAL ACTIVITY

### 10.1 SPRT\_I51 (V5 Sport during Leisure Time)

This index is a composite score of sport during leisure time.

Format: Continuous variable between 1 and 5

- Create temporary variables I2\_1, I2\_2, I2\_3, I2\_4 (sport score corresponding to each of the 4 recorded sports or exercises reported by the participant)

		PAC variables being used in temporary variable			
	Sport Count	Activity	Time	Proportion	Remark
I2_1	1	PAC2	PAC3	PAC4	
I2_2	2	PAC6	PAC7	PAC8	0 if PAC5='N'
I2_3	3	PAC10	PAC11	PAC12	0 if PAC9='N'
I2_4	4	PAC14	PAC15	PAC16	0 if PAC13='N'

- An intensity level is assigned to each of the activity codes

Intensity	Activity Codes (PAC2, PAC6, PAC10, PAC14)
Light	1,31,43,55,60,61,73,76,79,97,121,125,136,142,154,169,178,208,229,244,286,304,322,328,403,412,415,418,421,448,499
Moderate	2,3,4,7,10,16,25,28,37,40,49,52,70,82,94,100,118,124,130,139,145,146,148,160,163,175,181,187,190,193,199,205,211,217,232,235,238,247,249,350,333,498,259,262,265,271,289,292,295,301,310,313,319,325,331,340,352,355,358,364,376,385,388,391,397,400,404,406,409,427,430,436,451
Heavy	13,19,22,46,58,67,85,88,91,109,112,115,127,133,151,157,166,172,184,196,202,214,220,223,226,241,250,253,268,274,277,280,283,298,316,334,337,343,346,349,361,367,370,373,379,382,394,424,433,437,439,442

- Calculate sport score for each activity using the following formula, intensity(X)\*hours\_weeks(Y)\*months\_year(Z) where X, Y, and Z are assigned values according to the following:

Intensity	X
Light	0.76
Moderate	1.26
Heavy	1.76

Hours (per week)	Variable value	Y
Less than one hour	A	.5
At least 1 but not quite 2	B	1.5

At least 2 but not quite 3	C	2.5
At least 3 but not quite 4	D	3.5
4 or more	E	4.5

Months (per year)	Variable value	Z
Less than 1	A	0.04
At least 1 but not quite 4	B	0.17
At least 4 but not quite 7	C	0.42
At least 7 but not quite 10	D	0.67
10 or more	E	0.92

### I2 Summary sports score

- Calculate  $I_2 = I_{2\_1} + I_{2\_2} + I_{2\_3} + I_{2\_4}$ : sum of four simple sports scores.

Note:

If PAC5='N' then  $I_{2\_2} = 0$

If PAC9='N' then  $I_{2\_3} = 0$

If PAC13='N' then  $I_{2\_4} = 0$

This sum score is then recoded to a score of 1 to 5 based on the following criteria:

If PAC1='N' then  $I_2 = 1$  else

If  $0 \leq I_2 < 0.01$  then  $I_2 = 1$

If  $0.01 \leq I_2 < 4$  then  $I_2 = 2$

If  $4 \leq I_2 < 8$  then  $I_2 = 3$

If  $8 \leq I_2 < 12$  then  $I_2 = 4$

If  $12 \leq I_2$  then  $I_2 = 5$

### I3 Leisure sport exercise activity versus peers, recoded

- PAC19 was recoded as follows:

Format	PAC19 value	Recoded value for algorithm
Much less	A	1
Less	B	2
The same	C	3
More	D	4
Much more	E	5

### I4 Sweat during leisure time, recoded

- PAC20 was recoded as follows:

Format	PAC20 value	Recoded value for algorithm
Never	A	1

Seldom	B	2
Sometimes	C	3
Often	D	4
Very often	E	5

### I5 Sports/exercise during leisure activity, recoded

- PAC18 was recoded as follows:

Format	PAC18 value	Recoded value for algorithm
Never	A	1
Seldom	B	2
Sometimes	C	3
Often	D	4
Very often	E	5

$SPRT\_I51 = (I2+I3+I4+I5)/4$

If I2 or I3 or I4 or I5 is missing then  $SPRT\_I51 = .T$

### 10.2 LISR\_I52 (V5 Physical Activity during Leisure Time Excluding Sport)

This index is a composite score of leisure time activity that includes frequency of TV viewing, frequency of walking, and frequency of bicycling. The question about the number of minutes walked or bicycled per day to and from work or shopping was not included in the battery so the variable is not exactly defined as was in previous visits

Format: Continuous variable between 1 and 5

### I6 Leisure time television watching, recoded

- PAC21 was recoded as follows:

Format	PAC21 value	Recoded value for algorithm
Never	A	5
Seldom	B	4
Sometimes	C	3
Often	D	2
Very often	E	1

### I7 Leisure time walking frequency, recoded

- PAC22 was recoded as follows:

Format	PAC22	Recoded value for algorithm
Never	A	1
Seldom	B	2
Sometimes	C	3
Often	D	4
Very often	E	5

### 18 Leisure time cycling frequency, recoded

- PAC23 was recoded as follows:

Format	PAC23 value	Recoded value for algorithm
Never	A	1
Seldom	B	2
Sometimes	C	3
Often	D	4
Very often	E	5

$LISR\_I52 = (I6 + I7 + I8 + ((I7 + I8) / 2)) / 4$

If I6 or I7 or I8 is missing then  $LISR\_I52 = .T$

## 11. PHYSICAL FUNCTION

### 11.1 SPPBCS51 (V5 Physical Function Chair Stand)

Format: numeric integer variable; (0-4 possible points)

Algorithm:

If (PFX1 in (2,3,4)) OR (PFX2 in (2,3)) OR (PFX2b\_DER ≥ 60) then SPPBCS51=0;  
Else if (16.70 ≤ PFX2b\_DER < 60) then SPPBCS51=1;  
Else if (13.70 ≤ PFX2b\_DER < 16.70) then SPPBCS51=2;  
Else if (11.20 ≤ PFX2b\_DER < 13.70) then SPPBCS51=3;  
Else if (. < PFX2b\_DER < 11.20) then SPPBCS51=4;  
Else SPPBCS51=.;

### 11.2 SPPBST51 (V5 Physical Function Semi Tandem Stand)

Format: numeric integer variable

Algorithm:

If (PFX3 in (2,3,4)) then SPPBST51=0;  
Else if (PFX3=5) then SPPBST51=1;  
Else SPPBST51=.;

### 11.3 SPPBSBS51 (V5 Physical Function Side-by-Side Stand)

Format: numeric integer variable

Algorithm:

If (PFX4 in (2,3,4)) then SPPBSBS51=0;  
Else if (PFX3=5 OR PFX4=5) then SPPBSBS51=1;  
Else SPPBSBS51=.;

### 11.4 SPPBTS51 (V5 Physical Function Tandem Stand)

Format: numeric integer variable

Algorithm:

If max(PFX5,PFX6) in (2,3,4) then SPPBTS51=0;  
else if 3 ≤ max(PFX5a\_DER,PFX6a\_DER) < 10 then SPPBTS51=1;  
else if max(PFX5,PFX6) in (5) then SPPBTS51 = 2;  
else SPPBTS51=.;

### 11.5 SPPBBAL51 (V5 Physical Function Summary Balance Score)

Format: numeric integer variable

Algorithm:

SPPBBAL51=sum(of SPPBST51,SPPBSBS51,SPPBTS51);

### **11.6 WALKAID51 (V5 Physical Function 4 Meter Walk: Used Walking Aid)**

Format:

0=No,  
1=Yes,  
.T=missing,  
. =missing.

Algorithm: This indicator variable will be set to 1 when a patient used a walking aid during the 4 meter walk. The walk is performed twice and in the instance where a patient uses an aid in one trial, but not in the other, this variable will be set according to the presence or absence of a walking aid that goes with the fastest time of the 2 trials.

If WALK4M51>.T then WALKAID51 = (WALK4M51 IN (PFX7a\_der,PFX8a\_der));  
Else WALKAID51=.T;

### **11.7 WALK4M51 (V5 Physical Function 4 Meter Walk, Fastest Time of 2 Trials)**

Format: numeric continuous variable (f4.2.)

Algorithm: The better of (1) PFX7a and PFX8a if walking aid is used OR the better of (2) PFX7b and PFX8b if no walking aid is used. There are some instances where a walking aid is used in one trial and not in the other trial. The variable will be the fastest time walked regardless of using the aid or not. All participants at the clinic visits should have a timed walk. Any who did not do the test due to ""not attempted/unable" will have a missing value for this variable. If only one trial completed, use the results from that trial.

If .<max(pfx7,pfx8)<=2 then WALK4M51=.T;  
WALK4M51=min(PFX7a\_der,PFX7b\_der,PFX8a\_der,PFX8b\_der);

### **11.8 WALKAID52 (V5 Physical Function 4 Meter Walk: Used Walking Aid in both trials (USE WITH WALK4M52))**

Format:

0=No,  
1=Yes,  
.T=missing.

Algorithm:

if WALK4M52>. Then WALKAID52=((PFX7=3) OR (PFX8=3))  
else WALKAID52=.T

### **11.9 WALK4M52 (V5 Physical Function 4 Meter Walk, Average Time of 2 Trials (BOTH TRIAL WITH AID OR BOTH TRIALS WITHOUT AID))**

Format: numeric continuous variable (f4.2.)

Algorithm:

WALK4M52=MAX((PFX7A\_DER+PFX8A\_DER)/2,(PFX7B\_DER+PFX8B\_DER)/2)



### **11.10 SPPB4M51 (V5 Physical Function 4 Meter Walk Score)**

Format: numeric integer variable

Algorithm:

If  $\max(\text{PFX7}, \text{PFX8}) = 2$  then  $\text{SPPB4M51} = 0$ ;  
Else if  $(\text{WALK4M51} > 8.70)$   $\text{SPPB4M51} = 1$ ;  
else if  $(6.21 \leq \text{WALK4M51} \leq 8.70)$  then  $\text{SPPB4M51} = 2$ ;  
else if  $(4.82 \leq \text{WALK4M51} < 6.21)$  then  $\text{SPPB4M51} = 3$ ;  
else if  $(.z < \text{WALK4M51} < 4.82)$  then  $\text{SPPB4M51} = 4$ ;  
else  $\text{SPPB4M51} = .T$  ;

### **11.11 SPPB51 (V5 Short Physical Performance Summary Battery Score)**

Format: numeric integer variable

Algorithm:  $\text{SPPB51} = \text{sum}(\text{of SPPBCS51}, \text{SPPBBAL51}, \text{SPPB4M51})$ ;

### **11.12 GRIPBEST51 (V5 Physical Function Grip, Best of 2 Trials)**

Format: numeric continuous variable; (0-99)

Algorithm: Max of PFX11b and PFX11c. Only participants who respond "Both" to PFX10a should be excluded (i.e. surgery on both hands). Less than 2% are missing grip strength as of May 2012, likely to have little impact on inferences. Standard approaches to missing data such as sensitivity analyses with multiple imputations can be employed if inappropriate to ignore missingness.

If PFX10a NE . and PFX10a NE 'B' then  $\text{GRIPBEST51} = \max(\text{PFX11b}, \text{PFX11c})$ ;

### **11.13 GRIPMEAN51 (V5 Physical Function Grip, Mean of 2 Trials)**

Format: numeric continuous variable; (0-99)

Algorithm: Mean of PFX11b and PFX11c. Only participants who respond "Both" to PFX10a should be excluded (i.e. surgery on both hands). The variable will be missing if less than 2 trials are completed. Less than 2% are missing grip strength as of May 2012, likely to have little impact on inferences. Standard approaches to missing data such as sensitivity analyses with multiple imputations can be employed if inappropriate to ignore missingness.

If PFX10a NE . and PFX10a NE 'B' then  $\text{GRIPMEAN51} = (\text{PFX11b} + \text{PFX11c}) / 2$ ;

**11.14 EXHAUSTCOMP (Responded 2 or 3 on CES3 or CES11 (CESD) – frailty exhaustion component)**

The EXHAUSTCOMP variable is being used in determining the PPT's frailty level.

Algorithm: If the PPT responded 2 or 3 to CES3 or CES11 then EXHAUSTCOMP=1, or if the PPT responded otherwise to CES3 and CES11 then EXHAUSTCOMP=0, otherwise EXHAUSTCOMP=missing.

Type: numeric, valid values: 1, 0, missing

Source: CES3, CES11

**11.15 GRIPCOMP (Frailty Component: Grip Strength)**

Format: numeric

Algorithm:

Type:

Source:

**11.16 PACCOMP20 (Frailty Component: Physical Activity)**

Format: numeric

Algorithm:

Type:

Source:

**11.17 V4V5WTDELTA51 (% of V4 weight change from V4 to V5 (neg val means loss) – frailty weight loss component)**

The change in weight from visit 4 to visit 5 is calculated and presented as the % of visit 4 weight.

Algorithm:  $(ant4 - (antd2/2.2)/(antd2/2.2)*100$

Type: numeric

Source: ANT4, ANTD2

**11.18 WALKCOMP (Frailty Component: Walking Speed)**

Format: numeric

Algorithm:

Type:

Source:

### 11.19 WALKSPEED15FT51 (Time in seconds used to walk 15ft – frailty slowness component)

The physical function form collects data on times to walk 4 meters. The WALKSPEED15FT51 variable uses the 4m walk rate to calculate the time in seconds needed to walk 15ft.

Algorithm:

$WALKSPEED15FT51 = \text{MIN}((15/3.28084) * (\text{pfx7a\_der}/4), (15/3.28084) * (\text{pfx7b\_der}/4), (15/3.28084) * (\text{pfx8a\_der}/4), (15/3.28084) * (\text{pfx8b\_der}/4))$

Type: numeric

Source: PFX7A\_DER, PFX7B\_DER, PFX8A\_DER, PFX8B\_DER

### 11.20 WTLOSSCOMP10 (Frailty Component: Weight Loss)

Format: numeric

Algorithm:

Type:

Source:

### 11.21 FRAILTY51 (ARIC Physical Function WG Frailty Definition 1)

5 components are considered in deriving the frailty variable: weight loss, exhaustion, low energy expenditure, slowness, and weakness. Indicators for these components are defined below. If 3 or more of the components are present then frailty51=1 (frail). If 1 or 2 of the components are present then frailty51=2 (prefrail). If none of the components are present then frailty51=3 (robust) and there is data for each component (no component has a missing value). Reference values for slowness and weakness come from the Cardiovascular Health Study (**CHS**).

- Weight loss: If PPT lost more than 10% of their Visit 4 weight then criterion is met (V4V5WTDELTA51) OR if non-missing BMI51 <18.5.
- Exhaustion: If PPT felt weak or couldn't get going the criterion is met (EXHAUSTCOMP).

- Low energy expenditure: if sprt\_i51 < 1.70 AND gender='F' OR if sprt\_i51<2.00 AND gender='M'. Variables sprt\_i51, gender are found in DERIVE51
- Slowness: If walking speed (15ft) was higher than the specified times adjusted for PPT height and gender then the criterion is met: Female: >=7 secs for heights <=159cm or >=6 for heights >159cm; Male: >=7 secs for heights <=173cm or >=6 for heights >173cm (WALKSPEED15FT51, ANT3).
- Weakness: If grip strength was lower than the specified cutpoints (shown in table) adjusted for gender and BMI then the criterion is met (GENDER, BMI51, PFX11B, PFX11C).

GENDER	BMI	GRIP STRENGTH	GENDER	BMI	GRIP STRENGTH
male	<=24	<=29	female	<=23	<=17
male	24<BMI<=26	<=30	female	23<BMI<=26	<=17.3
male	26<BMI<=28	<=30	female	26<BMI<=29	<=18
male	BMI>28	<=32	female	BMI>29	<=21

### 11.22 FRAILTY52 (ARIC Physical Function WG Frailty Definition 2)

5 components are considered in deriving the frailty variable: weight loss, exhaustion, low energy expenditure, slowness, and weakness. Indicators for these components are defined below. If 3 or more of the components are present then frailty51=1 (frail). If 1 or 2 of the components are present then frailty51=2 (prefrail). If none of the components are present then frailty52=3 (robust) and there is data for each component (no component has a missing value). Reference values for slowness and weakness come from the **ARIC** cohort.

- Weight loss: If PPT lost more than 10% of their Visit 4 weight then criterion is met (V4V5WTDELTA51) OR if non-missing BMI51 <18.5.
- Exhaustion: If PPT felt weak or couldn't get going the criterion is met (EXHAUSTCOMP).
- Low energy expenditure: if .<sprt\_i51 < 1.75 AND gender='F' OR if .<sprt\_i51<2.00 AND gender='M'. Variables sprt\_i51, gender are found in DERIVE51
- Slowness: If walking speed (15ft) was higher than the specified times adjusted for PPT height and gender then the criterion is met: Female: >=6.5 secs for heights <=160cm or >=6 for heights >160cm; Male: >=6 secs for heights <=174cm or >=5.5 for heights >174cm (WALKSPEED15FT51, ANT3).
- Weakness: If grip strength was lower than the specified cutpoints (shown in table) adjusted for gender and BMI then the criterion is met (GENDER, BMI51, PFX11B, PFX11C).

GENDER	BMI	GRIP STRENGTH	GENDER	BMI	GRIP STRENGTH
male	<=25.3	<=30	female	<=24.5	<=18
male	25.3<BMI<=28	<=30	female	24.5<BMI<=28	<=18
male	28<BMI<=31.2	<=30	female	28<BMI<=32.1	<=18

male	BMI>31.2	<=30	female	BMI>32.1	<=19
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**11.23 V5CANCER51 (Reported a cancer site during an ARIC follow-up interview in the time from 06-01-2011 to the V5date51 (V5 visit date))**

Indicator used as proxy measure for having cancer at V5.

Algorithm: The V5CANCER51 is a proxy measure derived from ARIC follow-up data. If a PPT reported a cancer site during their follow-up interview that occurred anytime between June 2011 and the PPT visit date then the variable was set to 1. If the PPT was interviewed for ARIC follow-up during that time and did not report a cancer site then the variable was set to 0, otherwise the variable was set to missing.

Type: numeric, valid values: 1, 0, missing

## 12. SPIROMETRY

### 12.1 FVCL51 (V5 Forced vital capacity, liters)

Format: Continuous Numeric Variable

Algorithm:  $FVCL51 = \text{pulp27}/1000$

### 12.2 FEV1L51 (V5 Forced expiratory volume in 1 second, liters)

Format: Continuous Numeric Variable

Algorithm:  $FEV1L51 = \text{pulp31}/1000$

### 12.3 FEV1FVC51 (V5 Forced expiratory ratio FEV1/FVC %)

Format: Continuous Numeric Variable Percentage (0-100%)

Algorithm:  $FEV1FVC51 = (\text{pulp31}/\text{pulp27}) * 100$

### 12.4 PPFVC51 (V5 % Predicted forced vital capacity)

Format: Continuous Numeric Variable Percentage (0-100%)

Algorithm:  $PPFVC51 = (\text{pulp27}/\text{pulp38}) * 100$

### 12.5 PPFEV151 (V5 % Predicted forced expiratory volume in 1 second)

Format: Continuous Numeric Variable Percentage (0-100%)

Algorithm:  $PPFEV151 = (\text{pulp31}/\text{pulp39}) * 100$

### 12.6 PPFEV1FVC51 (V5 % Predicted forced expiratory ratio FEV1/FVC)

Format: Continuous Numeric Variable Percentage (0-100%)

Algorithm:  $PPFEV1FVC51 = ((\text{pulp31}/\text{pulp27}) / (\text{pulp41}/100)) * 100$

### 12.7 PBDFVC51 (V5 Post-bronchodilator forced vital capacity, liters)

Format: Continuous Numeric Variable

Algorithm:  $PBDFVC51 = \text{pulb27}/1000$

### 12.8 PBDFEV151 (V5 Post-bronchodilator forced expiratory volume in 1 second, liters)

Format: Continuous Numeric Variable

Algorithm:  $PBDFEV151 = \text{pulb31}/1000$

**12.9 PBD FEV1/FVC51 (V5 Post-bronchodilator forced expiratory ratio FEV1/FVC %)**

Format: Continuous Numeric Variable Percentage (0-100%)

Algorithm:  $PBD FEV1/FVC51 = (pulb31/pulb27)*100$

**12.10 PDPBDFVC51 (V5 % Change Post-bronchodilator forced vital capacity)**

Format: Continuous Numeric Variable Percentage (0-100%)

Algorithm:  $PDPBDFVC51 = ((pulb27-pulp27)/pulp27)*100$

**12.11 PDPBDFEV151 (V5 % Change Post-bronchodilator forced expiratory volume in 1 second)**

Format: Continuous Numeric Variable Percentage (0-100%)

Algorithm:  $PDPBDFEV151 = (pulb31-pulp31)/pulp31)*100$

## 13. NEUROCOGNITIVE STUDY

### 13.1 SELECTED\_STAGE\_2 (NCS Selected to Stage 2)

Pages 5 through 7 in ARIC Manual 17 details the selection process for stage 2 and stage 3 participants. The ARIC data management system runs an algorithm that tells if a PPT has been selected to stage 2 following the stage 1 neurocognitive testing.

In addition there were 57 cases reviewed by the Dementia Classification Committee that were not selected to stage 2 automatically. When the Committee provided a diagnosis for the PPT, that PPT became selected to stage 2.

Type: numeric; valid values: 1, 0, missing

Source variables: NSS12, NSS13, stage\_2\_complete

### 13.2 SELECTED\_STAGE\_3 (NCS Selected to Stage 3)

All PPTs who were selected to stage 2 were automatically selected to stage 3.

Type: numeric; valid values: 1, 0, missing

Source variables: NSS12, NSS13, stage\_3\_complete

### 13.3 CESD51 (V5 CES-Depression Scale)

Format: Continuous Numeric Variable

Algorithm: If there are 10 non-missing items among CES1 through CES11 then CESD51=sum of CES1 through CES11; otherwise missing.

### 13.4 NEUROCOG\_STATUS\_V2 (Neurocognitive Status Ver.2 Matches Stage 2 Selection Criteria)

Categorical variable for neurocognitive status. This is the second version and matches Stage 2 selection criteria. A=Atypical T=Typical.

Type: character, length=\$1.

Source variable(s): NCS18, NSS6, NSS11

Algorithm:

If NCS18='Yes' or (NSS6  $\geq$  1 AND NSS11  $\geq$  1) then Neurocog\_status\_v2='A';  
Else if both NCS and NSS form are present and not permanently missing then Neurocog\_status\_v2='T';  
Otherwise Neurocog\_status\_v2=' ' (missing).



**13.5 FAQ51 (Functional Activities Questionnaire)**

Numeric variable for score on the Functional Activities Questionnaire. The FAQ is not calculated when some of the items have a NULL response.

Type: numeric

Source variable(s): CDI17, CDI18, CDI22, CDI25, CDI26, CDI31, CDI35, CDI36, CDI37

Algorithm: when all items are answered,  
 $FAQ51 = CDI25 + CDI26 + CDI31 + 2(CDI35) + CDI36 + CDI37 + CDI18 + CDI17 + CDI22$

**13.6 PRORATEDMMS51 (Pro-rated MMSE score)**

Numeric variable calculated from the Mini-Mental State Exam.

Type: numeric

Source variable(s): MME31, MME32

Algorithm:  
 $PRORATEDMMS51 = 30 * MME31 / (30 - MME32)$

**13.7 REVISEDSYNDDIAG51 (Computer algorithm syndromic dx)**

Categorical variable for the computer-determined MCI/dementia syndromic diagnosis where 0=normal, 1=probably normal, 2=uncertain, 3=probably mci, 4=probably dementia, 5=mild cognitive impairment, 6=dementia. The table for these diagnoses is based on Table 1 below, which is Table 6.1 on p. 16 of MOP: 17 ARIC Neurocognitive Exam (Stages 2 and 3).

Type: numeric

Source variables(s): NSS6, NSS11, CDS7, FAQ51, PRORATEDMMS51, RACEGRP

**Table 1 : Computer Algorithm Determination of REVISEDSYNDDIAG51**

Row	Decline <sup>1</sup> (NSS11>=1)	Fail domain <sup>2</sup> (revised NSS6 <sup>3</sup> )	CDRsb (CDS7)	FAQ (FAQ51)	REVISEDSY NDDIAG	Dx (formatted value of REVISEDSY NDDIAG)
0	PRORATEDMMSE51 score less than 21 for white participants or PRORATEDMMSE51 score less than 19 for black participants				4	Prob Dem
1	N	0	0, missing	≤5, missing	0	NL
2	N	0	0	>5	1	Prob NL
3	N	0	>0 but ≤3	≤5, missing	1	Prob NL
4	N	0	>0 but ≤3	>5	2	Uncert, rvu

Row	Decline <sup>1</sup> (NSS11>=1)	Fail domain <sup>2</sup> (revised NSS6 <sup>3</sup> )	CDRsb (CDS7)	FAQ (FAQ51)	REVISED SY NDDIAG	Dx (formatted value of REVISED SY NDDIAG)
5	N	0	>3	≤5, missing	2	Uncert, rvu
6	N	0	>3	>5	2	Uncert, rvu
7	N	1	0, missing	≤5, missing	1	Prob NL
8	N	1	0	>5	3	Prob MCI
9	N	1	>0 but ≤3	≤5, missing	3	Prob MCI
10	N	1	>0 but ≤3	>5	3	Prob MCI
11	N	1	>3	≤5, missing	4	Prob Dem
12	N	1	>3	>5	4	Prob Dem
13	N	>1	0, missing	≤5, missing	1	Prob NL
14	N	>1	0	>5	3	Prob MCI
15	N	>1	>0 but ≤3	≤5, missing	3	Prob MCI
16	N	>1	>0 but ≤3	>5	3	Prob MCI
17	N	>1	>3	≤5	4	Prob Dem
18	N	>1	>3	>5, missing	4	Prob Dem
19	y	0	0, missing	≤5, missing	0	NL
20	y	0	0	>5	2	Uncert, rvu
21	y	0	>0 but ≤3	≤5, missing	1	Prob NL
22	y	0	>0 but ≤3	>5	1	Prob NL
23	y	0	>3	≤5, missing	2	Uncert, rvu
24	y	0	>3	>5	2	Uncert, rvu
25	y	1	0, missing	≤5, missing	5	MCI
26	y	1	0	>5	3	Prob MCI
27	y	1	>0 but ≤3	≤5, missing	5	MCI
28	y	1	>0 but ≤3	>5	3	Prob MCI
29	y	1	>3	≤5	4	Prob Dem
30	y	1	>3	>5, missing	4	Prob Dem
31	y	>1	0, missing	≤5, missing	5	MCI
32	y	>1	0	>5	3	Prob MCI
33	y	>1	>0 but ≤3	≤5	5	MCI
34	y	>1	>0 but ≤3	>5, missing	3	Prob MCI
35	y	>1	>3	≤5	4	Prob Dem
36	y	>1	>3	>5, missing	6	Dem

1 Documented decline on DWRT (NCS3B), DSST (NCS2B), or WFT (NCS5E) defined as 10th percentile on 1 test or ≤ 20th percentile on 2 or more tests.

2 Number of failed domains (memory, executive, visuospatial, language, and attention) defined as age/race/education-adjusted z-score less than -1.5.

3 Revised NSS6 is defined as follows: if non-missing ZSCORE\_LANGUAGE is less than -1.5 and ZSCORE\_LANGUAGE\_V2 is greater than/equal to -1.5 and NSS2 is “Yes”, set REVISEDNSS6=NSS6 – 1 otherwise set REVISEDNSS6 to the value of NSS6.

**13.8 REVISEDROW51 (Row from syndromic dx)**

Categorical variable equal to the value in the 'ROW' column in Table 1 above.

Type: numeric

Source variables(s): NSS6, NSS11, CDS7, FAQ51, PRORATEDMMS51, RACEGRP

**13.9 COGDIAG51 (V5 NCS Cognitive Status Diagnosis)**

Categorical variable that combines the information from the reviewer's cognitive diagnosis and the computer-determined MCI/dementia syndromic diagnosis.

Valid values:

N (normal), U (unknown/uncertain), M (mild cognitive impairment), and D (dementia)

Type: character

Source variables(s): DERIVE\_NCS51[REVIEWERSYND51] and DERIVE51[REVISEDYNDIAG51]

**13.10 STRATAC51 (V5 NCS Sampling Strata (char))**

Categorical variable for V5 NCS sampling strata.

Algorithm: The variable value is comprised of a string of single letter mnemonics where each letter identifies which group the PPT belongs. The first character indicates age group </>= 80 years old (L,G); the second character indicates ARIC center (F,J,M,W); the third indicates PPT participated in BrainMRI study (Y,N); and the final character indicates neurocognitive status (A,T). For example, an 80 year old PPT from Forsyth who participated in the BrainMRI study and has typical neurocognitive status will have a value of 'GFYT' for the variable.

Type: character, length=\$4.

**13.11 STRATAN51 (V5 NCS Sampling Strata (num))**

Numerical variable for V5 NCS sampling strata.

Algorithm: The variable value is a number between 1 and 24 that aligns to the character variable. The table shows the numeric value (STRATAN51) and its character counterpart (STRATAC51).

1	GFNA	7	GJYA	13	LFNA	19	LJYA
2	GFNT	8	GJYT	14	LFNT	20	LJYT
3	GFYA	9	GMNA	15	LFYA	21	LMNA
4	GFYT	10	GMNT	16	LFYT	22	LMNT
5	GJNA	11	GWNA	17	LJNA	23	LWNA
6	GJNT	12	GWNT	18	LJNT	24	LWNT

Type: numeric, valid values: 1-24