Coding Manual of Curated Gen 3/NOS/Omni 2 dataset

Note:

1. This curated dataset contains information of Gen III, NOS, and Omni 2 participants.

2. There are 4608 unique FHS participants within this dataset*, with a total of 624 variables.

3. Variables are generally grouped based on their origins (i.e., primary FHS dataset)

4. The format of the curated dataset is of wide format, with distinct variable names that allow users to tell the difference for repeated measurements of data of similar nature.

5. For protocol descriptions and annotated forms of the primary datasets, refer to the respective documents of the individual source datasets.

6. Take note of the last verified date for outcome and mortality data:
    a. Dementia – 12/31/2023
    b. CVD/Stroke/AF – 12/31/2022
    c. Cancer – 12/31/2019
    d. Mortality/Last contact – 12/31/2021

7. Refer to Appendix for FHS core exam timeline (all cohorts)

* Depending on the source of the datasets, consent restrictions may affect the overall N.

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Demographics

IDTYPE

Variable name: idtype
Description: Framingham Heart Study cohort identifier

IDTYPE and ID must be used together to form a unique study participant identification number or use variable "framid" instead

Code or Value	Description	Count
2	NOS	103
3	Gen III	4095
72	Omni 2	410

ID

Variable name: id
Description: Framingham Heart Study participant identifier <u>within cohort</u>

IDTYPE and ID must be used together to form a unique study participant identification number or use variable "framid" instead

Code or Value	Description
0 – 9999	Range of values

Note: To preserve confidentiality, the exact range for the ID is not reflected in the coding manual.

FRAMID

Variable name: Framid
Description: Framingham ID assigned to each participant

Code or Value	Description
20000 – 29999	NOS
30000 – 39999	Gen III
720000 – 729999	Omni 2

Note: To preserve confidentiality, the exact range for the ID is not reflected in the coding manual.

Demographics

SEX

Variable name: sex
Description: Gender

Code or Value	Description
1	Male
2	Female

RACE_CODE

Variable name: RACE_CODE
Description: RACE and ETHNICITY - Summary code string from combining primary codes given at different exams

Information extracted from "vr_raceall_2008_a_0712"

Code or Value	Description
W	White
B	Black
H	Hispanic or Latino
E	Not Hispanic or Latino
A	Asian
P	Native Hawaiian or Pacific Islander
N	American Indian or Alaskan Native
X	Asian Indian or Pacific Islander
R	Prefer not to answer
O	Other
.	Unknown

Note: RACE_CODE is constructed using primary codes W, B, H etc.
Race at different time points (exams) were combined to form RACE_CODE to indicate all races reported by participant over time.
Example1: RACE_CODE = 'EW' participant reported 'Not Hispanic or Latino' (H701) and 'White' (H702).
Example2: RACE_CODE = 'HH' participant reported 'Hispanic or Latino' (RACEATOMNI1) and 'Hispanic or Latino' (H700).
Example3: RACE_CODE = 'BEB' participant reported 'Black' (RACEATOMNI1), 'Not Hispanic or Latino' (H701) and 'Black' (H703).
Example4: RACE_CODE = 'ER' participant reported 'Not Hispanic or Latino' (H701) and 'Prefer not to answer' (H707).

All Gen 1, 2 and 3 participants with missing race_code information are assumed as Non-Hispanic White

Character variable

RACE

Variable name: Race
Description: Race

Code or Value	Description
1	White
2	Black
3	Asian
4	Asian Indian/ Native Hawaiian/Pacific Islander
5	American Indian/Alaskan Native
6	Others

ETHNICITY

Variable name: Ethnicity
Description: Ethnicity

Code or Value	Description
1	Not Hispanic or Latino
2	Hispanic or Latino

DATE_CORE1 — DATE_CORE3

Variable name: date_core1 — date_core3
Description: Exam date of core exam 1 — 3 (MMDDYYYY)

Note: Date includes month, day and year

AGE_CORE1 — AGE_CORE3

Variable name: Age_core1 — Age_core3
Description: Age at core exam 1 — 3

EDU_CORE1 — EDU_CORE3

Variable name: Edu_core1 — Edu_core3

Demographics

Description: Education at core exam 1 — 3 (If currently enrolled, the highest grade completed or degree received.)

Code or Value	Description
0	No schooling
1	Grades 1 – 8
2	Grades 9 – 11
3	Completed high school (12th grade) or GED
4	Some college, but no degree
5	Technical school certificate
6	Associate degree (Junior college AA, AS)
7	Bachelor's degree (BA, AB, BS)
8	Graduate or professional degree (Master's, Doctorate, MD, etc.)
.	Prefer not to answer/Unknown

Note:
- For edu_core2 only, "Prefer not to answer" was coded as "9" and Unknown was coded as ".".
- Education information is also collected during NP testing. Refer to variable "education_B1", "education_B2" and "educg"

EDU_ALL

Variable name: edu_all
Description: Highest education level attained

Code or Value	Description
0	High school did not graduate
1	High school graduate
2	Some college
3	College graduate
.	Unknown

Note:
This variable is derived from core exams, neuropsychological exams, and psychosocial questionnaires. Education level was determined by cohort based on available data, with the following priority order.

- Original cohort:
    1. Exam 1

- 2. Psychosocial
- 3. NP wave 2
- 4. NP wave 1
- Offspring cohort
  - 1. NP wave 2
  - 2. NP wave 1
  - 3. Exam 2
  - 4. Psychosocial
- Omni 1 cohort
  - 1. NP wave 2
  - 2. NP wave 1
  - 3. Exam 3
- Generation 3, NOS, and Omni 2 cohorts
  - 1. Exam 2
  - 2. Exam 1
  - 3. NP wave 1
  - 4. Exam 3 **(additional check on top the harmonized education protocol)**

HEIGHT_CORE1 — HEIGHT_CORE3

Variable name: Height_core1 — Height_core3
Description: Height at Core Exam 1 — 3 (inches, to next lower 1/4 inch)

WEIGHT_CORE1 — WEIGHT_CORE3

Variable name: Weight_core1 — Weight_core3
Description: Weight at Core Exam 1 — 3 (pounds)

BMI_CORE1 — BMI_CORE3

Variable name: BMI_core1 — BMI_core3
Description: Body mass index at Core Exam 1 — 3 (kg/m²)

HIP_CORE2 — HIP_CORE3

Variable name: Hip_core2 — Hip_core3
Description: Hip girth at Exam 2 — 3 (inches, to next lower 1/4 inch)

Note: Hip girth was not measured for Core Exam 1.

WAIST_CORE1 — WAIST_CORE3

Variable name: Waist_core1 — Waist_core3
Description: Waist girth at Core Exam 1 — 3 (inches, to next lower 1/4 inch)

SMOKING_CORE1 — SMOKING_CORE3

Variable name: Smoking_core1 — Smoking_core3
Description: Current smoking status, Exam 1 — 3

Code or Value	Description
0	Not a current smoker
1	Current Smoker
.	Unknown

SMOKING_EVER_CORE2 — SMOKING_EVER_CORE3

Variable name: Smoking_ever_core2 — Smoking_ever_core3
Description: History of smoking status at exam 2 — 3

Code or Value	Description
0	Non-smoker
1	Current Smoker
2	Ex-smoker
.	Unknown

CPD_CORE1 — CPD_CORE3

Variable name: CPD_core1 — CPD_core3
Description: Number of cigarettes smoked per day, Exam 1 — 3

SBP_CORE1 — SBP_CORE3

Variable name: SBP_core1 — SBP_core3
Description: Average systolic blood pressure, Exam 1 — 3 (mmHg)

DBP_CORE1 — DBP_CORE3

Variable name: DBP_core1 — DBP_core3
Description: Average diastolic blood pressure, Exam 1 — 3 (mmHg)

VENT_RT_ CORE1 — VENT_RT_CORE3

Variable name: Vent_rt_core1 — Vent_rt_core3
Description: Ventricular rate per minute by ECG, Exam 1 — 3

DLVH_CORE1 — DLVH_CORE3

Variable name: DLVH_core1 — DLVH_core3
Description: Definite left ventricular hypertrophy, Exam 1 — 3

Code or Value	Description
0	No
1	Yes
.	Unknown

HRX_CORE1 — HRX_CORE3

Variable name: HRX_core1 — HRX_core3
Description: Treated for hypertension, Exam 1 — 3

Code or Value	Description
0	No
1	Yes
.	Unknown

BG_CORE1 — BG_CORE3

Variable name: BG_core1 — BG_core3
Description: Blood glucose (includes fasting and non-fasting), Exam 1 — 3 (mg/dL)

FASTING_BG_CORE3 — FASTING_BG_CORE3

Variable name: Fasting_BG_core1 — Fasting_BG_core3
Description: Fasting (≥ 8 hours) blood glucose, Exam 1 — 3 (mg/dL)

DMRX_CORE1 — DMRX_CORE3

Variable name: DMRX_core1 — DMRX_core3
Description: Treated for diabetes, Exam 1 — 3

Code or Value	Description
0	No
1	Yes
.	Unknown

CURR_DM_CORE1 — CURR_DM_CORE3

Variable name: Curr_dm_core1 — Curr_dm_core3
Description: Current Diabetes status, Exam 1 — 3

Code or Value	Description
0	No
1	Yes
.	Unknown or did not attend Exam 1 — 3

HX_DM_CORE1 — HX_DM_CORE3

Variable name: Hx_dm_core1 — Hx_dm_core3
Description: History of diabetes, Exam 1 — 3

Code or Value	Description
0	No
1	Yes
.	Unknown or did not attend Exam 1 — 3

TC_CORE1 — TC_CORE3

Variable name: TC_core1 — TC_core3
Description: Total cholesterol, Exam 1 — 3 (mg/dL)

TRIGLYCERIDES_CORE1 — TRIGLYCERIDES_CORE3

Variable name: Triglycerides_core1 — Triglycerides_core3
Description: Triglycerides, Exam 1 — 3 (mg/dL)

CALC_LDL_CORE1 — CALC_LDL_CORE3

Variable name: Calc_LDL_core1 — Calc_LDL_core3
Description: Calculated LDL cholesterol, Exam 1 — 3 (mg/dL)

HDL_CORE1 — HDL_CORE3

Variable name: HDL_core1 — HDL_core3
Description: HDL-Cholesterol, Exam 1 — 3 (mg/dL)

LIPRX_CORE1 — LIPRX_CORE9

Variable name: LIPRX_core1 — LIPRX_core9
Description: Treated for lipids, Exam 1 — 3

Code or Value	Description
0	No
1	Yes
.	Unknown

CREATININE_CORE1 — CREATININE_CORE3

Variable name: Creatinine_core1 — Creatinine_core3
Description: Creatinine, Exam 1 — 3 (mg/dL)

BEERPERWEEK_CORE1 - BEERPERWEEK_CORE3

Variable name: beerperweek_core1 - beerperweek_core3
Description: Number of beers per week at exam 1 – 3

Code or Value	Description
0 – 9999	Range of values

WHITEPERWEEK_CORE1

Variable name: whiteperweek_core1
Description: Number of white wines per week at exam 1

Code or Value	Description
0 – 9999	Range of values

Note: This variable is only available for exams 6 and 7.

REDPERWEEK_CORE1

Variable name: redperweek_core1
Description: Number of red wines per week at exam 1

Code or Value	Description
0 – 9999	Range of values

Note: This variable is only available for exam 1

WINEPERWEEK_CORE2 - WINEPERWEEK_CORE3

Variable name: wineperweek_core2 - wineperweek_core3
Description: Number of wines per week at exam 2 – 3

Code or Value	Description

Code or Value	Description
0 – 9999	Range of values

Note: For exam 1, this variable is split into white and red wine.

LIQUORPERWEEK_CORE1 - LIQUORPERWEEK_CORE3

Variable name: liquorperweek_core1 - liquorperweek_core3
Description: Number of liquor drinks per week at exam 1 – 3

Code or Value	Description
0 – 9999	Range of values

DRINKSPERWEEK_CORE1 - DRINKSPERWEEK_CORE3

Variable name: drinksperweek_core1 - drinksperweek_core3
Description: Number of alcoholic drinks per week at exam 1 – 3

Code or Value	Description
0 – 9999	Range of values

GRAMSPERDAY_CORE1 - GRAMSPERDAY_CORE3

Variable name: gramsperday_core1 - gramsperday_core3
Description: Daily alcohol consumption, g/d at exam 1 – 3

Code or Value	Description
0 – 9999	Range of values

CURRDRINK_CORE1 - CURRDRINK_CORE3

Variable name: currdrink_core1 - currdrink_core3
Description: Current drinking status at exam 1 – 3

Code or Value	Description
0	Non-drinker currently
1	Drinker currently

	Unknown/Did not attend exam
.	Unknown/Did not attend exam

DRINKING_EVER_CORE2 - DRINKING_EVER_CORE3

Variable name: drinking_ever_core2 - drinking_ever_core3
Description: History of drinking at exam 2 – 3

Code or Value	Description
0	Never drinker
1	Current drinker
2	Previous drinker
.	Unknown/Did not attend exam

ALCCAT_CORE1 - ALCCAT_CORE3

Variable name: alccat_core1 - alccat_core3
Description: Alcohol consumption categories at exam 1 – 3

Code or Value	Description
0	Non-drinker
1	Moderate drinkers • 0.1–28 g/d in men • 0.1–14 g/d in women
2	At-risk drinkers • 28.1–42 g/d in men • 14.1–28 g/d in women
3	Heavy drinkers • >42 g/d in men • >28 g/d in women
.	Unknown/Did not attend exam

EXAMDATE_NP1 — EXAMDATE_NP4

Variable name: examdate_NP1 — exam_NP4
Description: Date of the first — fourth NP exam (MMDDYYYY)

AGE_NP1 — AGE_NP4

Variable name: age_NP1 — age_NP4
Description: Age of participant at first — fourth NP exam

BATTERY_NP1 — BATTERY_NP4

Variable name: battery_NP1 — battery_NP4
Description: Form of the battery used for first — fourth NP exam

Code or Value	Description
1	Short form
2	Long form
.	Unknown

MARITAL_NP1 — MARITAL_NP4

Variable name: marital_NP1 — marital_NP4
Description: Current marital status for first — fourth NP exam

Code or Value	Description
1	Single
2	Married
3	Widowed
4	Divorced
5	Separated
6	Other
.	Unknown/Missing

HANDEDNESS_NP1 — HANDEDNESS_NP4

Variable name: handedness_NP1 — handedness_NP4
Description: Subject's handedness, NP Exam 1 — 4 (self-reporting)

Code or Value	Description

1	Right
2	Left
3	Ambidextrous
.	Unknown/Missing

EMPLOYMENT_NP1 — EMPLOYMENT_NP4

Variable name: employment_NP1 — employment_NP4
Description: Employment status, NP exam 1 — 4

Code or Value   **Description**

0	Works full time
1	Works part-time
2	Not working due to disability
3	Retired, no longer works
4	Unemployed (expects to return to work)
5	Never worked for pay outside home
6	Volunteer
7	Other
10	Full-time student
11	Homemaker, expects to return to work
.	Unknown/Missing

EDUCATION_B1_NP1 — EDUCATION_B1_NP4

Variable name: education_b1_NP1 — education_b1_NP4
Description: Highest Education Level Completed (Collected from NP battery1), NP Exam 1 — 4

Code or Value   **Description**

0	None
1	4th grade or less
2	5th, 6th, or 7th grades
3	Grade school graduate; no high school
4	High school, did not graduate
5	High school diploma
6	College, did not graduate
7	College graduate
8	Postgraduate school
10	High school and business college, nursing school, music school, or art school only

.	Unknown

EDUCATION_B2_NP1 — EDUCATION_B2_NP4

Variable name: education_b2_NP1 — education_b2_NP4
Description: Highest Education Level Completed (Collected from NP battery2), NP Exam 1 — 4

Code or Value	Description
0	None
1	4th grade or less
2	5th, 6th, or 7th grades
3	Grade school graduate; no high school
4	High school, did not graduate
5	High school diploma
6	GED
7	Some college course-work for credit (no certificate or degree)
8	Junior college – earned certificate or degree (e.g., AD)
9	Business college, nursing school, music school, art school
10	Technical School (post-HS) – earned certificate
11	Four Year College, partial
12	Four Year College, graduate
13	Graduate School, partial (no Masters degree)
14	Graduate School (Masters)
15	Graduate School (Doctorate)
.	Unknown

EDUCG_NP1 — EDUCG_NP4

Variable name: educg_NP1 — educg_NP4
Description: Education group (derived variable), NP Exam 1 — 4

Code or Value	Description
0	High school did not graduate
1	High school graduate
2	Some college

3	College graduate
.	Unknown/Missing

OCCUP_B1_NP1 — OCCUP_B1_NP4

Variable name: occup_b1_NP1 — occup_b1_NP4
Description: Occupation from NP battery1, NP Exam 1 — 4

Code or Value	**Description**
1	Major professionals
2	Business managers
3	Administrative personnel
4	Clerical and sales workers
5	Skilled manual employees
6	Semi-skilled employees
7	Unskilled employed
8	Never employed

OCCUP_B2_NP1 — OCCUP_B2_NP4

Variable name: occup_b2_NP1 — occup_b2_NP4
Description: Occupation from NP battery2, NP Exam 1 — 4

Code or Value	**Description**
1	Professional, Technical and Related Occupations
2	Executive, Administrative, and Managerial Occupations
3	Sales Occupations
4	Administrative Support Occupations, Including Clerical
5	Precision Production, Craft, and Repair Occupations
6	Machine Operators, Assemblers, and Inspectors
7	Transportation and Material Moving Occupations
8	Handlers, Equipment Cleaners, Helpers, and Laborers
9	Service Occupations, Except Private Household

10	Never employed for pay (e.g., homemaker)
.	Unknown

LMI_NP1 — LMI_NP4

Variable name: lmi_NP1 — lmi_NP4
Description: Total number correct verbatim and paraphrases from "Logical Memories – Immediate Recall", NP Exam 1 — 4 (Range: 0 – 23)

LMD_NP1 — LMD_NP4

Variable name: lmd_NP1 — lmd_NP4
Description: Total number correct verbatim and paraphrases from "Logical Memories – Delayed Recall", NP Exam 1 — 4 (Range: 0 – 23)

LMR_NP1 — LMR_NP4

Variable name: lmr_NP1 — lmr_NP4
Description: Logical Memories – Recognition, NP Exam 1 — 4 (Range: 0 – 11)

LMI_JOE_NP1 — LMI_JOE_NP4

Variable name: lmi_joe_NP1 — lmi_joe_NP4
Description: Total number of correct verbatim and paraphrases from WMS-III "Logical Memory – Immediate Recall" (only for Joe Garcia), NP Exam 1 — 4 (Range: 0 – 23)

LMD_JOE_NP1 — LMD_JOE_NP4

Variable name: lmd_joe_NP1 — lmd_joe_NP4
Description: Total number of correct verbatim and paraphrases from WMS -III "Logical Memory – Delayed Recall" (only for Joe Garcia), NP Exam 1 — 4 (Range: 0 – 23)

LMR_JOE_NP1 — LMR_JOE_NP4

Variable name: lmr_joe_NP1 — lmr_joe_NP4
Description: Total number of correct verbatim and paraphrases from WMS-III "Logical Memory – Recognition" (only for Joe Garcia), NP Exam 1 — 4 (Range: 0 – 11)

LM_STORY_NP1 — LM_STORY_NP4

Variable name: LM_story_NP1 — LM_story_NP4

Description: Which logical memory story was administered? (NP Exam 1 — 4)

Code or Value	Description
1	Anna Thompson ONLY
2	Joe Garcia ONLY
3	Anna Thompson AND Joe Garcia
.	Neither story

VRI_NP1 — VRI_NP4

Variable name: vri_NP1 — vri_NP4
Description: Total points scored from "Visual Reproductions – Immediate Recall", NP Exam 1 — 4 (Range: 0 – 14)

VRD_NP1 — VRD_NP4

Variable name: vrd_NP1 — vrd_NP4
Description: Total points scored from "Visual Reproductions – Delayed Recall", NP Exam 1 — 4 (Range: 0 – 14)

VRR_NP1 — VRR_NP4

Variable name: vrr_NP1 — vrr_NP4
Description: Total points scored from "Visual Reproductions – Recognition", NP Exam 1 — 4 (Range: 0 – 4)

PASI_NP1 — PASI_NP4

Variable name: pasi_NP1 — pasi_NP4
Description: Total Score from "Paired Associate Learning – Immediate Recall", NP Exam 1 — 4 (Range 0 – 21)

PASI_E_NP1 — PASI_E1_NP4

Variable name: pasi_e_NP1 — pasi_e_NP4
Description: Easy Score from "Paired Associate Learning – Immediate Recall", NP Exam 1 — 4 (Range: 0 – 18)

PASI_H_NP1 — PASI_H_NP4

Variable name: pasi_h_NP1 — pasi_h_NP4

Description: Hard Score from "Paired Associate Learning – Immediate Recall", NP
Exam 1 — 4 (Range: 0 – 12)

PASD_NP1 — PASD_NP4

Variable name: pasd_NP1 — pasd_NP4
Description: Total Score from "Paired Associate Learning – Delayed Recall", NP Exam 1
— 4 (Range: 0 – 10)

PASD_E_NP1 — PASD_E_NP4

Variable name: pasd_e_NP1 — pasd_e_NP4
Description: Easy Score from "Paired Associate Learning – Delayed Recall", NP Exam 1
— 4 (Range: 0 – 6)

PASD_H_NP1 — PASD_H_NP4

Variable name: pasd_h_NP1 — pasd_h_NP4
Description: Hard Score from "Paired Associate Learning – Delayed Recall", NP Exam 1
— 4 (Range: 0 – 4)

PASR_NP1 — PASR_NP4

Variable name: pasr_NP1 — pasr_NP4
Description: Total Score from "Paired Associate Learning - Recognition", NP Exam 1 —
4 (Range: 0 – 10)

DSF_NP1 — DSF_NP4

Variable name: dsf_NP1 — dsf_NP4
Description: Highest string from "Digits Forward Span", NP Exam 1 — 4 (Range: 0 – 9)

DSB_NP1 — DSB_NP4

Variable name: dsb_NP1 — dsb_NP4
Description: Highest string from "Digits Backward Span", NP Exam 1 — 4 (Range: 0 –
8)

TRAILSA_NP1 — TRAILSA_NP4

Variable name: trailsA_NP1 — trailsA_NP4
Description: Time in minutes to finish "Trail A", NP Exam 1 — 4 – capped at 7 minutes
(Range: 0.10 –7.0)

TRAILSB_NP1 — TRAILSB_NP4

Variable name: trailsB_NP1 — trailsB_NP4
Description: Time in minutes to finish "Trail B", NP Exam 1 — 4 – capped at 10 minutes (Range: 0.32 – 10.0)

SIM_NP1 — SIM_NP4

Variable name: sim_NP1 — sim_NP4
Description: Total raw score from "Similarities Test", NP Exam 1 — 4 (Range: 0 – 26)

HVOT_NP1 — HVOT_NP4

Variable name: hvot_NP1 — hvot_NP4
Description: Total score from "Hooper Visual Organization Test", NP Exam 1 — 4 (Range: 0 – 30)

BNT10_NP1 — BNT10_NP4

Variable name: bnt10_NP1 — bnt10_NP4
Description: Correct score without cue from 10 items of "Boston Naming Test", NP Exam 1 — 4 (Range: 0 – 10)

BNT10_SEMANTIC_NP1 — BNT10_SEMANTIC_NP4

Variable name: bnt10_semantic_NP1 — bnt10_semantic_NP4
Description: Correct score with semantic cue from 10 items of "Boston Naming Test", NP Exam 1 — 4 (Range: 0 – 10)

BNT10_PHONEMIC_NP1 — BNT10_PHONEMIC_NP4

Variable name: bnt10_phonemic_NP1 — bnt10_phonemic_NP4
Description: Correct score with phonemic cue from 10 items of "Boston Naming Test", NP Exam 1 — 4 (Range: 0 – 10)

BNT30_NP1 — BNT30_NP4

Variable name: bnt30_NP1 — bnt30_NP4
Description: Correct score without cue from 30 items of "Boston Naming Test", NP Exam 1 — 4 (Range: 0 – 30)

BNT30_SEMANTIC_NP1 — BNT30_SEMANTIC_NP4

Variable name: bnt30_semantic_NP1 — bnt30_semantic_NP4

Description:	Correct score with semantic cue from 30 items of "Boston Naming Test", NP Exam 1 — 4 (Range: 0 – 30)

BNT30_PHONEMIC_NP1 — BNT30_PHONEMIC_NP4

Variable name:	bnt30_phonemic_NP1 — bnt30_phonemic_NP4
Description:	Correct score with phonemic cue from 30 items of "Boston Naming Test", NP Exam 1 — 4 (Range: 0 – 30)

BNT36_NP1 — BNT36_NP4

Variable name:	bnt36_NP1 — bnt36_NP4
Description:	Correct score without cue from 36 items of "Boston Naming Test", NP Exam 1 — 4 (Range: 0 – 36)

BNT36_SEMANTIC_NP1 — BNT36_SEMANTIC_NP4

Variable name:	bnt36_semantic_NP1 — bnt36_semantic_NP4
Description:	Correct score with semantic cue from 36 items of "Boston Naming Test", NP Exam 1 — 4 (Range: 0 – 36)

BNT36_PHONEMIC_NP1 — BNT36_PHONEMIC_NP4

Variable name:	bnt36_phonemic_NP1 — bnt36_phonemic_NP4
Description:	Correct score with phonemic cue from 36 items of "Boston Naming Test", NP Exam 1 — 4 (Range: 0 – 36)

FINGTAPR_NP1 — FINGTAPR_NP4

Variable name:	FingTapR_NP1 — FingTapR_NP4
Description:	Mean of five trials of "Finger-tapping" of right hand, NP Exam 1 — 4

FINGTAPL_NP1 — FINGTAPL_NP4

Variable name:	FingTapL_NP1 — FingTapL_NP4
Description:	Mean of five trials of "Finger-tapping" of left hand, NP Exam 1 — 4

WRAT_NP1 — WRAT_NP4

Variable name:	wrat_NP1 — wrat_NP4
Description:	Raw Score from "Wide Range Achievement Test –Reading", NP Exam 1 — 4 (Range: 15 – 57)

FAS_NP1 — FAS_NP4

Variable name: fas_NP1 — fas_NP4
Description: The total words (not including the animal part) from the Controlled Oral Word Association Test, NP Exam 1 — 4

FAS_ANIMAL_NP1 — FAS_ANIMAL_NP4

Variable name: fas_animal_NP1 — fas_animal_NP4
Description: The total words from the animal part of the Category Naming Test, NP Exam 1 — 4

Note: This variable only available on "NP battery2"

BD_NP1 — BD_NP4

Variable name: bd_NP1 — bd_NP4
Description: Total Score from "Block Design", NP Exam 1 — 4 (Range: 0 – 26)

WAIS_NP1 — WAIS_NP4

Variable name: wais_NP1 — wais_NP4
Description: Total correct answers from "WAIS test", NP Exam 1 — 4 (Range: 0 – 29)

CODING_CORRECT_NP1 — CODING_CORRECT_NP4

Variable name: coding_correct_NP1 — coding_correct_NP4
Description: Total correct from WAIS-IV Coding, NP Exam 1 — 4

CODING_INCORRECT_NP1 — CODING_INCORRECT_NP4

Variable name: coding_incorrect_NP1 — coding_incorrect_NP4
Description: Total incorrect from WAIS-IV Coding, NP Exam 1 — 4

INCIDENTAL_PAIRED_NP1 — INCIDENTAL_PAIRED_NP4

Variable name: Incidental_paired_NP1 — Incidental_paired_NP4
Description: Total correct from Paired Incidental Learning (Given the number from Coding, the participant had to draw the appropriate symbol associated with that number; each number is presented twice), NP Exam 1 — 4

INCIDENTAL_FREE_NP1 —INCIDENTAL_FREE_NP4

Variable name: Incidental_free_NP1 — Incidental_free_NP4

Description: Total correct from Free Recall Incidental Learning (The participant was asked to draw all the symbols they remember from the Coding task, without having to identify which number accompanied the symbol), NP Exam 1 — 4

MATH_CORRECT_NP1 — MATH_CORRECT_NP4

Variable name: Math_correct_NP1 — Math_correct_NP4
Description: Total correct responses for Math Fluency, NP Exam 1 — 4

MATH_INCORRECT_ADD_NP1 — MATH_INCORRECT_ADD_NP4

Variable name: Math_incorrect_add_NP1 — Math_incorrect_add_NP4
Description: Incorrect responses for addition problems, NP Exam 1 — 4

MATH_INCORRECT_SUB_NP1 — MATH_INCORRECT_SUB_NP4

Variable name: Math_incorrect_sub_NP1 — Math_incorrect_sub_NP4
Description: Incorrect responses for subtraction problems, NP Exam 1 — 4

MATH_INCORRECT_MUL_NP1 — MATH_INCORRECT_MUL_NP4

Variable name: Math_incorrect_mul_NP1 — Math_incorrect_mul_NP4
Description: Incorrect responses for multiplication problems, NP Exam 1 — 4

RIGHT_OPEN_NP1 — RIGHT_OPEN_NP4

Variable name: right_open_NP1 — right_open_NP4
Description: Seconds from balance test on right leg with eyes open (maximum time is set at 30 seconds), NP Exam 1 — 4

LEFT_OPEN_NP1 — LEFT_OPEN_NP4

Variable name: left_open_NP1 — left_open_NP4
Description: Seconds from balance test on left leg with eyes open (maximum time is set at 30 seconds), NP Exam 1 — 4

RIGHT_CLOSE_NP1 — RIGHT_CLOSE_NP4

Variable name: right_close_NP1 — right_close_NP4
Description: Seconds from balance test on right leg with eyes closed (maximum time is set at 30 seconds), NP Exam 1 — 4

LEFT_CLOSE_NP1 — LEFT_CLOSE_NP4

Variable name: left_close_NP1 — left_close_NP4
Description: Seconds from balance test on left leg with eyes closed (maximum time is set at 30 seconds), NP Exam 1 — 4

MRI352_NP1 — MRI352_NP4

Variable name: mri352_NP1 — mri352_NP4
Description: *Tester's impression of participant's dementia status (Not verified)*, NP Exam 1 — 4

Code or Value   **Description**

Code or Value	Description
0	Not demented
0.25	Not demented/MCI
0.5	Mild Cognitive Impairment
1	Mildly Demented
1.5	Mild – Moderately Demented
2	Moderately Demented
2.5	Moderately – Severely Demented
3	Severely Demented
5	Non-progressive impairment
.	Unknown

TEST_LANGUAGE_NP1 — TEST_LANGUAGE_NP4

Variable name: test_language_NP1 — test_language_NP4
Description: Language used during NP Exam 1 — 4

Code or Value   **Description**

Code or Value	Description
1	English
2	Spanish
.	Unknown/Missing

NP_CLOSEST_EXAM_DATE1 — NP_CLOSEST_EXAM_DATE5

Variable name: np_closest_exam_date1 — np_closest_exam_date5
Description: FHS core exam date that was closest to the first — fifth NP test

NP_DAYS_APART1 — NP_DAYS_APART5

Variable name: np_days_apart1 — np_days_5
Description: The number of days between the FHS core exam date that was closest to the first — fifth NP test date.

Note: A negative value means that the FHS core exam that was closest to the NP test occurred prior to the NP test, while a positive value means that the closest FHS core exam occurred after the NP test.

NP_EXAM_CYCLE1 — NP_EXAM_CYCLE5

Variable name: np_exam_cycle1 — np_exam_cycle5
Description: FHS core exam cycle that was closest to the first — fifth NP test

Code or Value   **Description**

Code or Value	Description
1	Core Exam 1
2	Core Exam 2
3	Core Exam 3
.	Unknown

NORMAL_DATE

Variable name: normal_date
Description: Last date documented to be cognitively intact

Note: In event that the day and/or month of onset are uncertain, the day is default to 15 and the month is default to 6. The year of onset is always certain for all non-missing values.

IMPAIRMENT_DATE

Variable name: impairment_date
Description: Date of cognitive impairment onset

Note: In event that the day and/or month of onset are uncertain, the day is default to 15 and the month is default to 6. The year of onset is always certain for all non-missing values.

MILD_DATE

Variable name: mild_date
Description: Date of diagnosis of mild dementia

Note: In event that the day and/or month of onset are uncertain, the day is default to 15 and the month is default to 6. The year of onset is always certain for all non-missing values.

MODERATE_DATE

Variable name: moderate_date
Description: Date of diagnosis of moderate dementia

Note: In event that the day and/or month of onset are uncertain, the day is default to 15 and the month is default to 6. The year of onset is always certain for all non-missing values.

SEVERE_DATE

Variable name: severe_date
Description: Date of diagnosis of severe dementia

Note: In event that the day and/or month of onset are uncertain, the day is default to 15 and the month is default to 6. The year of onset is always certain for all non-missing values.

EDDD

Variable name: eddd
Description: Earliest documented date of Dementia

Note: This date variable is an estimated onset date for dementia using the earliest dates of various supporting resources and/or derived from earliest documented date variables of "mild_date", "moderate_date" and "severe_dates". In certain situations, the "EDDD" may precede those derived using "mild_date", "moderate_date" and "severe_dates".

DEMRV046

Variable name: demrv046
Description: Probable Dementia present

Code or Value   **Description**

Code or Value	Description
0	No
1	Yes
.	Unknown

Note: This variable refers to all-cause dementia.

DEMRV103

Variable name: demrv103
Description: Dementia subtype

Code or Value   **Description**

Code or Value	Description
0	None
1	Alzheimer's disease without stroke
2	Alzheimer's disease with stroke
3	Vascular dementia without Alzheimer's disease
4	Mixed dementia type (Alzheimer's disease + vascular dementia)
5	Frontotemporal dementia
6	Dementia with Lewy bodies
7	Dementia that does not fit any other Category (progressive)
8	Dementia that does not fit any other category (non-progressive)

9	Cognitive Impairment – No Dementia
10	Dementia – Uncertain
.	Unknown

Note: Value "9" refers to Cognitive impairment without Dementia. These subjects are verified to have mild cognitive impairment (MCI). However, it is also possible that participants, who had not yet been screened by the dementia consensus panel, may also suffer from mild cognitive impairment. Hence, if the research outcome of interest is mild cognitive impairment, it is advisable to also consider the psychometric results of the study population as part of the outcome evaluation.

FIRST_CHD_DATE

Variable name: first_chd_date
Description: Date of first Coronary Heart Disease (CHD) Event

Note: This variable is derived from the Sequence of Event (SoE) dataset, using the following values in (1, 2, 3, 4, 5, 6, 7, 8, 21, 22, 23, 24) for the variable "EVENT"

Event Values in SoE Dataset   Description

Event Values in SoE Dataset	Description
1	MI recognized, with diagnostic ECG
2	MI recognized, without diagnostic ECG, with enzymes and history
3	MI recognized, without diagnostic ECG, with autopsy evidence, new event (see also code 9)
4	MI unrecognized, silent
5	MI unrecognized, not silent
6	AP, first episode only
7	CI, definite by both history and ECG
8	Questionable MI at exam 1
21	Death, CHD sudden, within 1 hour
22	Death, CHD, 1 - 23 hours, nonsudden
23	Death, CHD, 24-47 hours, non sudden
24	Death, CHD, 48 hours or more, non sudden
.	No record in SoE dataset

Abbreviations:
        MI – Myocardial Infarction
        ECG – Electrocardiogram
        AP – Angina Pectoris
        CI – Coronary Insufficiency

FIRST_STROKE_DATE

Variable name: first_stroke_date
Description: Date of first Stroke (CVA) Event

Note: This variable is derived from the Sequence of Event (SoE) dataset, using the following values in (10, 11, 13, 14, 15, 16, 17, 19) for the variable "EVENT"

Event Values in SoE Dataset | **Description**

Event Values in SoE Dataset	Description
10	Definite CVA at exam 1, but questionable type
11	ABI (Atherothrombotic Infarction of brain)
13	Cerebral embolism
14	Intracerebral hemorrhage
15	Subarachnoid hemorrhage
16	Other CVA
17	CVA, definite CVA, type unknown
19	Questionable CVA at exam 1
.	No record in SoE dataset

Abbreviations:
    CVA – Cerebrovascular Accident
    ABI – Atherothrombotic Infarction of Brain

FIRST_AF_DATE

Variable name: first_af_date
Description: Date for first Atrial Fibrillation (AF) Event

Note: This variable is derived from the verified Atrial Fibrillation (AF) dataset, using the values in (1, 2, 3) for the variable "RHYTHM"

Rhythm Values in AF Dataset   **Description**

1	Atrial fibrillation
2	Atrial flutter
3	Atrial fibrillation / atrial flutter
.	No record in AF dataset

FIRST_CANCER_DATE

Variable name: first_cancer_date
Description: First diagnosis date of tumor or cancer

Note: This variable is derived from the verified Cancer dataset, using the variable "D_DATE"

TOPO_CANCER

Variable name: topo_cancer
Description: Topography - describes site - corresponds to first three digits of topography code WHO ICD-O

Note: This variable is derived from the verified Cancer dataset, using the variable "TOPO"

Rhythm Values in AF Dataset	Description
140	Lip
141	Tongue
142	Major salivary gland
143	Gum
144	Floor of mouth
145	Other and unspecified parts of mouth
146	Oropharynx
147	Nasopharynx
148	Hypopharynx
149	Pharynx and ill-defined sites in lip, oral cavity and pharynx
150	Esophagus
151	Stomach
152	Small intestine
153	Colon
154	Rectum, rectosigmoid junction, anal canal and anus, not otherwise specified
155	Liver and intrahepatic bile ducts
156	Gallbladder and extrahepatic bile ducts
157	Pancreas
158	Retroperitoneum and peritoneum
159	Other and ill-defined sites within digestive organs and peritoneum
160	Nasal cavities, accessory sinuses, middle ear and inner ear
161	Larynx
162	Trachea bronchus, and lung
163	Pleura

164	Thymus, heart and mediastinum
165	Other and ill-defined sites within respiratory system and intrathoracic organs
169	Hematopoietic and reticuloendothelial systems
170	Bones, joints and articular cartilage
171	Connective, subcutaneous and other soft tissues
173	Skin (excludes skin of labia majora, skin of vulva, skin of penis and skin of scrotum)
174	Female breast (excludes skin of breast)
175	Male breast (excludes skin of breast)
179	Uterus, not otherwise specified
180	Cervix uteri
181	Placenta
182	Corpus uteri or endometrium
183	Ovary, fallopian tube and broad ligament
184	Other and unspecified female genital organs
185	Prostate gland
186	Testis
187	Penis and other male genital organs
188	Urinary bladder
189	Kidney and other urinary organs
190	Eye and lacrimal gland
191	Brain
192	Other and unspecified parts of the nervous system (excludes 4 peripheral nerves, sympathetic and parasympathetic nerves and ganglia)
193	Thyroid gland
194	Other endocrine glands
195	Other ill-defined sites
196	Lymph nodes
199	Unknown primary site
.	No record in Cancer dataset

LOCATION_CANCER

Variable name: location_cancer
Description: Location - describes subdivision of site - corresponds to fourth digit of topography code WHO ICD-O

Note: This variable is derived from the verified Cancer dataset, using the variable "LOCATION"

Code or Value	Description

0 – 9	Range of values

HIST_CANCER

Variable name: hist_cancer
Description: Histology or morphology - describes cell histopathology - corresponds to four digit morphology code WHO ICD-O

Note: This variable is derived from the verified Cancer dataset, using the variable "HIST"

Code or Value	Description
8000 – 9990	Range of values

LAST_CONTACT_DATE

Variable name: Last_contact_date
Description: Date of last contact (This is the last time the participant was known to be alive

Note: This date is censored to be the last day of 2020 if the last contact date was after the last day of 2020.

DEATH_DATE

Variable name: Death_date
Description: Date of death

PREVALENT_CHD_CORE1 – PREVALENT_CHD_CORE3

Variable name: prevalent_chd_core1 – prevalent_chd_core3
Description: History of CHD present at core exam 1 – 3

Code or Value   **Description**

0	No
1	Yes
.	Did not attend core exam

Note: This variable is derived using the variable "first_chd_date" and the respective FHS core exam date variables "date_core".

PREVALENT_STROKE_CORE1 – PREVALENT_STROKE_CORE3

Variable name: prevalent_stroke_core1 – prevalent_stroke_core3
Description: History of stroke present at core exam 1 – 3

Code or Value   **Description**

0	No
1	Yes
.	Did not attend core exam

Note: This variable is derived using the variable "first_stroke_date" and the respective FHS core exam date variables "date_core".

PREVALENT_AF_CORE1 – PREVALENT_AF_CORE3

Variable name: prevalent_af_core1 – prevalent_af_core3
Description: History of AF present at core exam 1 – 3

Code or Value   **Description**

0	No
1	Yes
.	Did not attend core exam

Note: This variable is derived using the variable "first_af_date" and the respective FHS core exam date variables "date_core".

PREVALENT_DEMENTIA_CORE1 – PREVALENT_DEMENTIA_CORE3

Variable name: prevalent_dementia_core1 – prevalent_dementia_core3
Description: History of dementia present at core exam 1 – 3

Code or Value	Description
0	No
1	Yes
.	Did not attend core exam

Note: This variable is derived using the variable "eddd" and the respective FHS core exam date variables "date_core".

PREVALENT_CANCER_CORE1 – PREVALENT_CANCER_CORE3

Variable name: prevalent_cancer_core1 – prevalent_cancer_core3
Description: History of cancer present at core exam 1 – 3

Code or Value	Description
0	No
1	Yes
.	Did not attend core exam

Note: This variable is derived using the variable "first_cancer_date" and the respective FHS core exam date variables "date_core".

PREVALENT_CHD_NP1 – PREVALENT_CHD_NP5

Variable name: prevalent_chd_np1 – prevalent_chd_np5
Description: History of CHD present at NP test 1 – 5

Code or Value	Description
0	No
1	Yes
.	Did not attend NP test

Note: This variable is derived using the variable "first_chd_date" and the respective NP test date variables "examdate_np".

PREVALENT_STROKE_NP1 – PREVALENT_STROKE_NP5

Variable name: prevalent_stroke_np1 – prevalent_stroke_np5
Description: History of stroke present at NP test 1 – 5

Code or Value	Description
0	No
1	Yes
.	Did not attend NP test

Note: This variable is derived using the variable "first_stroke_date" and the respective NP test date variables "examdate_np".

PREVALENT_AF_NP1 – PREVALENT_AF_NP5

Variable name: prevalent_af_np1 – prevalent_af_np5
Description: History of AF present at NP test 1 – 5

Code or Value	Description
0	No
1	Yes
.	Did not attend NP test

Note: This variable is derived using the variable "first_af_date" and the respective NP test date variables "examdate_np".

PREVALENT_DEMENTIA_NP1 – PREVALENT_DEMENTIA_NP5

Variable name: prevalent_dementia_np1 – prevalent_dementia_np5
Description: History of dementia present at NP test 1 – 5

Code or Value	Description
0	No
1	Yes
.	Did not attend NP test

Note: This variable is derived using the variable "eddd" and the respective NP test date variables "examdate_np".

PREVALENT_CANCER_NP1 – PREVALENT_CANCER_NP5

Variable name: prevalent_cancer_np1 – prevalent_cancer_np5
Description: History of cancer present at NP test 1 – 5

Code or Value	Description
0	No
1	Yes
.	Did not attend NP test

Note: This variable is derived using the variable "first_cancer_date" and the respective NP test date variables "examdate_np".

Refer to publication: D'Agostino Sr, R. B., Vasan, R. S., Pencina, M. J., Wolf, P. A., Cobain, M., Massaro, J. M., & Kannel, W. B. (2008). General cardiovascular risk profile for use in primary care: the Framingham Heart Study. *Circulation*, *117*(6), 743-753.

AGE_FHSCVD_CORE1 – AGE_FHSCVD_CORE3

Variable name: age_fhscvd_core1 – age_fhscvd_core3
Description: Age component for FHS CVD risk score at exam 1 – 3

Code or Value	Description
0 – 15	Range of values
.	Did not attend core exam or out of bounds

HDL_FHSCVD_CORE1 – HDL_FHSCVD_CORE3

Variable name: hdl_fhscvd_core1 – hdl_fhscvd_core3
Description: HDL component for FHS CVD risk score at exam 1 – 3

Code or Value	Description
-2 – 2	Range of values
.	Did not attend core exam or out of bounds

TC_FHSCVD_CORE1 – TC_FHSCVD_CORE3

Variable name: tc_fhscvd_core1 – tc_fhscvd_core3
Description: TC (Total Cholesterol) component for FHS CVD risk score at exam 1 – 3

Code or Value	Description
0 – 5	Range of values
.	Did not attend core exam or out of bounds

SMOKING_FHSCVD_CORE1 – SMOKING_FHSCVD_CORE3

Variable name: smoking_fhscvd_core1 – smoking_fhscvd_core3
Description: Current smoker component for FHS CVD risk score at exam 1 – 3

Code or Value   Description

Code or Value	Description
0	No
3	Yes (Female)
4	Yes (Male)
.	Did not attend core exam or out of bounds

DM_FHSCVD_CORE1 – DM_FHSCVD_CORE3

Variable name: dm_fhscvd_core1 – dm_fhscvd_core3
Description: History of diabetes component for FHS CVD risk score at exam 1 – 3

Code or Value   Description

Code or Value	Description
0	No
3	Yes (Male)
4	Yes (Female)
.	Did not attend core exam or out of bounds

SBP_FHSCVD_CORE1 – SBP_FHSCVD_CORE3

Variable name: sbp_fhscvd_core1 – sbp_fhscvd_core3
Description: Systolic blood pressure component for FHS CVD risk score at exam 1 – 3

Code or Value   Description

Code or Value	Description
-3 – 7	Range of values
.	Did not attend core exam or out of bounds

FHSCVD_CORE1 –FHSCVD_CORE3

Variable name: fhscvd_core1 – fhscvd_core3
Description: FHS CVD risk score at exam 1 – 3

$$fhscvd\_core = age\_fhscvd\_core + hdl\_fhscvd\_core + tc\_fhscvd\_core + smoking\_fhscvd\_core + dm\_fhscvd\_core + sbp\_fhscvd\_core$$

Code or Value	Description
-5 – 36	Range of values
.	Did not attend core exam or out of bounds

Note: This derived variable is only available if all components of the FHS CVD risk score are available. Refer to publication for more information

Refer to publications:

Wolf, P. A., D'Agostino, R. B., Belanger, A. J., & Kannel, W. B. (1991). Probability of stroke: a risk profile from the Framingham Study. *Stroke*, *22*(3), 312-318.

Dufouil, C., Beiser, A., McLure, L. A., Wolf, P. A., Tzourio, C., Howard, V. J., ... & Seshadri, S. (2017). Revised Framingham stroke risk profile to reflect temporal trends. *Circulation*, *135*(12), 1145-149.

AGE_FSRP_CORE1 – AGE_FSRP_CORE3

Variable name: age_fsrp_core1 – age_fsrp_core3
Description: Age component for FSRP at exam 1 – 3

Code or Value	Description
0 – 10	Range of values
.	Did not attend core exam or out of bounds

SBP_FSRP_CORE1 – SBP_FSRP_CORE3

Variable name: sbp_fsrp_core1 – sbp_fsrp_core3
Description: Systolic blood pressure component for FSRP at exam 1 – 3

Code or Value	Description
0 – 10	Range of values
.	Did not attend core exam or out of bounds

HRX_FSRP_CORE1 – HRX_FSRP_CORE3

Variable name: hrx_fsrp_core1 – hrx_fsrp_core3
Description: Anti-hypertensive medications usage component for FSRP at exam 1 – 3

Code or Value	Description
0	No
2	Yes (Male)
0 – 6	Yes (Female)
.	Did not attend core exam or out of bounds

DM_FSRP_CORE1 – DM_FSRP_CORE3

Variable name: dm_fsrp_core1 – dm_fsrp_core3
Description: History of diabetes component for FSRP at exam 1 – 3

Code or Value	Description
0	No
2	Yes (Male)
3	Yes (Female)
.	Did not attend core exam or out of bounds

SMOKING_FSRP_CORE1 – SMOKING_FSRP_CORE3

Variable name: smoking_fsrp_core1 – smoking_fsrp_core3
Description: Current smoker component for FSRP at exam 1 – 3

Code or Value	Description
0	No
3	Yes
.	Did not attend core exam or out of bounds

PRECVD_FSRP_CORE1 – PRECVD_FSRP_CORE3

Variable name: precvd_fsrp_core1 – precvd_fsrp_core3
Description: History of CVD component for FSRP at exam 1 – 3

Code or Value	Description
0	No
2	Yes (Feale)
3	Yes (Male)
.	Did not attend core exam or out of bounds

Note:

> *The definition of CVD is not the same as that of the variable "first_chd_date".*
>
> *This variable includes the following conditions:*
> - *Myocardial Infarction*
> - *Angina Pectoris*
> - *Coronary Heart Disease*

- ***Cardiovascular Disease***
- ***Coronary Insufficiency***
- ***Intermittent Claudication***
- ***Congestive Heart Failure***

This aligns with the code values of (1, 2, 3, 4, 5, 6, 7, 8, 9, 21, 22, 23, 24, 26, 30, 39, 40, 41, 49) for variable "event" in the verified Sequence of Events (SOE) Cardiovascular Endpoints dataset.

Refer to publication for more information

PREAF_FSRP_CORE1 – PREAF_FSRP_CORE3

Variable name: preaf_fsrp_core1 – preaf_fsrp_core3
Description: History of AF component for FSRP at exam 1 – 3

Code or Value	Description
0	No
4	Yes (Male)
6	Yes (Female)
.	Did not attend core exam or out of bounds

DLVH_FSRP_CORE1 – DLVH_FSRP_CORE3

Variable name: dlvh_fsrp_core1 – dlvh_fsrp_core3
Description: Ventricular hypertrophy component for FSRP at exam 1 – 3

Code or Value	Description
0	No
4	Yes (Female)
6	Yes (Male)
.	Did not attend core exam or out of bounds

FSRP_CORE1 – FSRP_CORE3

Variable name: fsrp_core1 – fsrp_core3
Description: FSRP at exam 1 – 3

$$fsrp\_core = age\_fsrp\_core + sbp\_fsrp\_core + hrx\_fsrp\_core + dm\_fsrp\_core + smoking\_fsrp\_core + precvd\_fsrp\_core + preaf\_fsrp\_core + dlvh\_fsrp\_core$$

Code or Value	Description
0 – 44	Range of values
.	Did not attend core exam or out of bounds

Note: This derived variable is only available when all components of the FSRP are available. Refer to publication for more information

REVISED_FSRP_CORE1 – REVISED_FSRP_CORE3

Variable name: revised_fsrp_core1 – revised_fsrp_core3
Description: Revised FSRP at exam 1 – 3

$$revised\_fsrp\_core = age\_fsrp\_core + sbp\_fsrp\_core + hrx\_fsrp\_core + dm\_fsrp\_core + smoking\_fsrp\_core + precvd\_fsrp\_core + preaf\_fsrp\_core$$

Code or Value	Description
0 – 44	Range of values
.	Did not attend core exam or out of bounds

Note: This derived variable is only available when all components of the FSRP are available. Refer to publication for more information

CESD_CORE1_1 — CESD_CORE3_1

Variable name: CESD_core1_1 — CESD_core3_1
Description: CESD: I was bothered by things that usually don't bother me (at exam 1 — 3)

Code or Value	Description
0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_2 — CESD_CORE3_2

Variable name: CESD_core1_2 — CESD_core3_2
Description: CESD: I did not feel like eating: my appetite was poor (at exam 1 — 3)

Code or Value	Description
0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_3 — CESD_CORE3_3

Variable name: CESD_core1_3 — CESD_core3_3
Description: CESD: I felt that I could not shake off the blues, even with the help of family and friends (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_4 — CESD_CORE3_4

Variable name: CESD_core1_4 — CESD_core3_4
Description: CESD: I felt that I was just as good as other people (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_5 — CESD_CORE3_5

Variable name: CESD_core1_5 — CESD_core3_4
Description: CESD: I had trouble keeping my mind on what I was doing (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_6 — CESD_CORE3_6

Variable name: CESD_core1_6 — CESD_core3_6
Description: CESD: I felt depressed (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_7 — CESD_CORE3_7

Variable name: CESD_core1_7 — CESD_core3_7
Description: CESD: I felt that everything I did was an effort (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_8 — CESD_CORE3_8

Variable name: CESD_core1_8 — CESD_core3_8
Description: CESD: I felt hopeful about the future (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_9 — CESD_CORE3_9

Variable name: CESD_core1_9 — CESD_core3_9
Description: CESD: I thought my life had been a failure (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_10 — CESD_CORE3_10

Variable name: CESD_core1_10 — CESD_core3_10
Description: CESD: I felt fearful (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_11 — CESD_CORE3_11

Variable name: CESD_core1_11 — CESD_core3_11
Description: CESD: My sleep was restless (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days

.	Unknown

CESD_CORE1_12 — CESD_CORE3_12

Variable name: CESD_core1_12 — CESD_core3_12
Description: CESD: I was happy (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_13 — CESD_CORE3_13

Variable name: CESD_core1_13 — CESD_core3_13
Description: CESD: I talked less than usual (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_14 — CESD_CORE3_14

Variable name: CESD_core1_14 — CESD_core3_14
Description: CESD: I felt lonely (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_15 — CESD_CORE3_15

Variable name: CESD_core1_15 — CESD_core3_15
Description: CESD: People were unfriendly (at exam 1 — 3)

0	<1 day

1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_16 — CESD_CORE3_16

Variable name: CESD_core1_16 — CESD_core3_16
Description: CESD: I enjoyed life (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_17 — CESD_CORE3_17

Variable name: CESD_core1_17 — CESD_core3_17
Description: CESD: I had crying spells (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_18 — CESD_CORE3_18

Variable name: CESD_core1_18 — CESD_core3_18
Description: CESD: I felt sad (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_19 — CESD_CORE3_19

Variable name: CESD_core1_19 — CESD_core3_19

Description: CESD: I felt that people disliked me (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_CORE1_20 — CESD_CORE3_20

Variable name: CESD_core1_20 — CESD_core3_20
Description: CESD: I could not "get going" (at exam 1 — 3)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

CESD_TOTAL_CORE1 — CESD_TOTAL_CORE3

Variable name: CESD_total_core1 — CESD_total_core3
Description: CESD total score at exam 1 — 3

Note: The total CES-D scores are calculated for participants who _answered all 20 questions_.

NEUROPATH_AVAIL

Variable name: neuropath_avail
Description: Availability of brain autopsy data

Code or Value	Description
0	No
1	Yes

NPBRAAK_NEUROPATH

Variable name: NPBRAAK_NEUROPATH
Description: Braak stage for neurofibrillary degeneration (B score). Use standard blocks to assign phase.

Code or Value	Description
0	Stage 0: AD-type neurofibrillary degeneration not present (B0)
1	Stage I (B1)
2	Stage II (B2)
3	Stage III (B3)
4	Stage IV (B4)
5	Stage V (B5)
6	Stage VI (B6)
.	Missing

NIA_REAGAN_NEUROPATH

Variable name: NIA_REAGAN_NEUROPATH
Description: Derived NIA-Reagan Criteria

Code or Value	Description
1	High likelihood dementia due to AD
2	Intermediate likelihood dementia due to AD
3	Low likelihood dementia due to AD
4	Criteria not met
.	Missing

AD_NEUROPATH

Variable name: AD_NEUROPATH
Description: Neuropathological presence of Alzheimer's disease

Code or Value	Description
0	No
1	Yes
.	Missing

RELATAUO_NEUROPATH

Variable name: RELATAUO_NEUROPATH
Description: Primary age-related tauopathy (PART; requires NFTs present with Braak stage <= IV, usually III or lower)

Code or Value	Description
0	Not present
1	Yes (Crary et al., 2014)
.	Missing

LBD_NEUROPATH

Variable name: LBD_NEUROPATH
Description: Neuropathological presence of Lewy body disease

Code or Value	Description
0	Not present
1	LBD Brainstem predominant
2	LBD limbic/neocortical
.	Missing

MND_NEUROPATH

Variable name: MND_NEUROPATH
Description: Neuropathological presence of ALS/Motor neuron disease

Code or Value	Description
0	Not present
1	Yes, with TDP-43 inclusions in motor neurons
2	Yes, with FUS inclusions in motor neurons
3	Yes, with SOD1 inclusions in motor neurons
4	Yes, with other inclusions
5	Yes, with no specific inclusions
8	Not assessed
.	Missing

Appendix

Generation 3 Cohort (idtype =3)				
Exam #	Exam Date Range	Age Range	Mean Age	Total # of Participants
1	2002-2005	19-71	40	4095
2	2008-2011	24-78	47	3411
3	2016-2019	32-84	54	3171

New Offspring Spouse Cohort (idtype=2)				
Exam #	Exam Date Range	Age Range	Mean Age	Total # of Participants
1	2002-2005	47-85	65	103
2	2008-2011	53-90	70	68
3	2016-2019	60-93	75	56

Omni 2 Cohort (idtype=72)				
Exam #	Exam Date Range	Age Range	Mean Age	Total # of Participants
1	2003-2005	20-80	43	410
2	2009-2011	25-85	48	321
3	2016-2019	32-89	54	294

Revisions	
08/03/2018	Original Draft ● Coding Manual of Master_Dataset_2372_080318 ● Dataset: Master_Dataset_2372_080318
08/13/2018	Revision of 08/03/2018 draft ● Minor typo/grammatical/format corrections ● Addition of "Derived Variables" section with SAS code embedded ● Added information to cover page of manual ● Amended date of "Last Updated" ● Added user advice to "Neuropsychological Test", "Digital Clock Drawing Test" and "MRI Brain Scans" sections ● Added user advice to the variable Last_Contacted_Date under "Verified Survival Status (Alive/Dead)" ● Coding manual has been renamed as "Coding Manual of Master_Dataset_2372_081318" ● Dataset has been renamed as "Master_Dataset_2372_081318"
08/21/2018	Revision of 08/13/2018 draft ● Minor typo/grammatical/format corrections ● Coding manual has been renamed as "Coding Manual of Master_Dataset_2372_082118" ● Dataset has been renamed as "Master_Dataset_2372_082118"
08/30/2018	Revision of 08/21/2018 draft ● Added information regarding interpretation of the range values of the "Neuropsychological Test" section in the introductory summary ● Minor typo/grammatical/format corrections ● Coding manual has been renamed as "Coding Manual of Master_Dataset_2372_082118 (Last Updated 083018)" ● No change to dataset or dataset name
Feb 2021	Revision of 08/30/2018 draft ● Added variables "idtype" and "id"

	• Dataset has been renamed as "Curated_cohort2372_022021" • Available in both SAS and csv files
Nov 2021	Revision of Feb 2021 • Added selected variables from FHS core exam 3 • Added dementia review data • Updated neuropsychological summary scores and date-related variables up to year 2019 • Dataset has been renamed as "curated2372_11_2021" • Available in both SAS and csv files
Feb 2023	Revision of Nov 2021 draft • Included data up to year 2022 • Simplify coding manual format to reduce the length • Renamed all NP test related variables using suffix "_NP" for clearer annotation • Added more clinical outcomes and related variables • Added neuropath section • Removed selected medications and biomarker data till harmonized variables are created • Typo/grammatical/format corrections • Provided SAS code to include list of requested datasets to generate similar curated dataset format
March 2023	Revision of Feb 2023 draft • Updated neuropath section • Typo/grammatical/format corrections
April 2023	Revision of March 2023 draft • Included prevalence variables • Typo/grammatical/format corrections

May 2023	Revision of April 2023 draft
	• Included FHS CVD Risk Score FSRP
	• Updated the following section:
	    ○ NP summary scores
	    ○ Matching NP dates with core exam dates
	    ○ Dementia Review
	    ○ Sequence of event (CHD, Stroke)
	    ○ Atrial Fibrillation

	○ Prevalence ○ Survival Information • Typo/grammatical/format corrections
July 2023	Revision of May 2023 draft • Correction of date format and missing EDDD values
Feb 2024	Revision of July 2023 draft • Major update to outcome and mortality data ○ Sequence of event (CHD, Stroke) ○ Atrial Fibrillation ○ Survival Information • Added derived variable for Race • Added derived variable for Education • Added history of smoking derived variable • Typo/grammatical/format corrections
March 2024	Revision of Feb 2024 draft • Format correction to neuropath variables • Update of neuropath variables to include data up to 2023 • Typo/grammatical/format corrections of manual
April 2024	Revision of March 2024 draft • Update of dementia review variables to include data up to 2023
May 2024	Revision of April 2024 draft • Added information regarding consent restrictions in the foreword • Update of NP summary score variables to include data up to 2023
Sept 2024	Revision of May 2024 draft • Update of "edu_all" variable for participants with more education information • Correction of missing value for "educg_np1" variable
Oct 2024	Revision of Sept 2024 draft • Addition of alcohol consumption variables • Adjustment to race variables • Typo correction in SAS code

	• Exam 2 dataset in SAS code updated to e_exam_ex02_3b_0017_v2