

Coding Manual of Curated Gen 1 dataset

Note:

1. This curated dataset contains information of Gen I participants.
2. There are 5209 unique FHS participants (Gen I) within this dataset*, with a total of 2241 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 – 12/31/2024
 - b. CVD/Stroke/AF – 12/31/2023
 - c. Cancer – 12/31/2019
 - d. Mortality/Last contact – 12/31/2022
7. Refer to [Appendix](#) for FHS core exam timeline (all cohorts)
8. The last living FHS Gen 1 participant passed away in 2023. While more variables from existing data will be introduced to this curated dataset in the future, newly acquired variables from recent data collection processes on other FHS cohorts will not be added.

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

Table of Contents

<u>Demographics</u>	3
<u>Anthropometric Measurements</u>	8
<u>Smoking</u>	9
<u>Blood Pressures, Heart Rate, Ventricular Hypertrophy and Antihypertensives</u>	10
<u>Blood glucose, Diabetes and Treatment</u>	11
<u>Lipid Panel and Hyperlipidemia Treatment</u>	12
<u>Creatinine</u>	13
<u>Neuropsychological assessments</u>	14
<u>Matching NP Dates with Core Exam Dates</u>	27
<u>Verified Outcomes</u>	
<u>Dementia and Related Variables</u>	29
<u>First Coronary Heart Disease (CHD) Event</u>	32
<u>First Stroke (CVA) Event</u>	33
<u>First Atrial Fibrillation (AF) Event</u>	34
<u>First Cancer and Related Variables</u>	35
<u>Survival Information</u>	38
<u>Prevalence</u>	39
<u>FHS CVD Risk Score</u>	43
<u>FHS Risk Stroke Profile</u>	46
<u>Mini-Mental State Examination (MMSE)</u>	51
<u>Center for Epidemiologic Studies Depression Scale (CES-D)</u>	52
<u>Neuropath Data and Availability</u>	62
<u>Appendix</u>	65
<u>Revisions</u>	66

Demographics

IDTYPE

Variable name: idtype

Description: Framingham Heart Study cohort identifier

Code or Value	Description
0	Gen 1

ID

Variable name: id

Description: Framingham Heart Study participant identifier within cohort

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
00000 – 99999	Gen 1

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

SEX

Variable name: sex

Description: Gender

Code or Value	Description

Demographics

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 (Character variable)

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

RACE

Variable name: Race

Description: Race (Derived based on variable RACE_CODE)

Demographics

Code or Value	Description
1	White
2	Black
3	Asian
4	Asian Indian/ Native Hawaiian/Pacific Islander
5	American Indian/Alaskan Native
6	Prefer not to answer/Others

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

ETHNICITY

Variable name: Ethnicity

Description: Ethnicity (Derived based on variable RACE_CODE)

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

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

DATE_CORE1 — DATE_CORE32

Variable name: date_core1 — date_core32

Description: Exam date of core exam 1 — 32 (MMDDYYYY)

Note: Date includes month, day and year, however coding manual displays only year to preserve confidentiality.

AGE_CORE1 — AGE_CORE32

Variable name: Age_core1 — Age_core32

Description: Age at exam 1 — 32

EDU_CORE1

Variable name: edu_core1

Description: Education at core exam 1 — 7

Demographics

Code or Value	Description
0000	None
0001	Fourth grade or less
0002	Fifth, sixth or seventh grade
0003	Grade school graduate
0004	High school, not graduate
0005	High school graduate
0010	Business college, Nursing school, Music school, Art school
0006	College, not graduate
0007	College graduate
0008	Post graduate
.	Unknown

Note: 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

Demographics

- 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

Anthropometric Measurements

HEIGHT_CORE1 — HEIGHT_CORE32

Variable name: Height_core1 — Height_core32

Description: Height at exam 1 — 32

Unit: Inches, to next lower 1/4

Note: There is no information for core exams 2, 3, 6, 7, 8 and 9

WEIGHT_CORE1 — WEIGHT_CORE32

Variable name: Weight_core1 — Weight_core32

Description: Weight at exam 1 — 32

Unit: Pounds, to nearest

BMI_CORE1 — BMI_CORE32

Variable name: BMI_core1 — BMI_core32

Description: Body mass index at exam 1 — 32

Unit: kg/m²

Note: There is no information for core exams 2, 3, 6, 7, 8 and 9

HIP_CORE19 — HIP_CORE23

Variable name: Hip_core19 — Hip_core23

Description: Hip girth at Exam 19 — 23

Unit: Inches, to next lower 1/4

WAIST_CORE4 — WAIST_CORE23

Variable name: Waist_core4 — Waist_core23

Description: Waist girth at Exam 4 — 23

Unit: Inches, to next lower 1/4

Note: There is no information for core exams 1 — 3, 6 — 18

Smoking

SMOKING_CORE1 — SMOKING_CORE32

Variable name: Smoking_core1 — Smoking_core32

Description: Current smoking status at exam 1 — 32

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

Note: There is no information for core exams 6 and 16

SMOKING_EVER_CORE2 — SMOKING_EVER_CORE32

Variable name: Smoking_ever_core2 — Smoking_ever_core32

Description: History of smoking status at exam 2 — 32

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

Note: There is no information for core exams 6 and 16

CPD_CORE1 — CPD_CORE32

Variable name: CPD_core1 — CPD_core32

Description: Cigarettes per day at Exam 1 — 32

Note: There is no information for core exams 6 and 16

Blood Pressures, Heart Rate, Ventricular Hypertrophy and Antihypertensives

SBP_CORE1 — SBP_CORE32

Variable name: SBP_core1 — SBP_core32

Description: Systolic blood pressure at exam 1 — 32

Unit: mmHg

DBP_CORE1 — DBP_CORE32

Variable name: DBP_core1 — DBP_core32

Description: Diastolic blood pressure at exam 1 — 32

Unit: mmHg

VENT_RT_CORE1 — VENT_RT_CORE32

Variable name: Vent_rt_core1 — Vent_rt_core32

Description: Ventricular beat by ECG at Exam 1 — 32

Note: There is no information for core exams 2 and 3

DLVH_CORE1 — DLVH_CORE32

Variable name: DLVH_core1 — DLVH_core32

Description: Definite left ventricular hypertrophy, Exam 1 — 32

Code or Value	Description
0	No
1	Yes
.	Unknown

Code or Value	Description
0	No
1	Yes
.	Unknown

Blood Glucose, Diabetes and Treatment

BG_CORE1 — BG_CORE28

Variable name: BG_core1 — BG_core28

Description: Random blood glucose at Exam 1 — 28

Unit: mg/dL

Note: There is no information for core exams 5, 7, 11, 12, 24 and 25

DMRX_CORE1 — DMRX_CORE32

Variable name: DMRX_core1 — DMRX_core32

Description: Treated for diabetes at Exam 1 — 32

Code or Value	Description
0	No
1	Yes
.	Unknown

Code or Value	Description
0	No
1	Yes
.	Unknown or did not attend Exam 1 — 28

Code or Value	Description
0	No
1	Yes
.	Unknown or did not attend Exam 1 — 28

Lipid Panel and Hyperlipidemia Treatment

TC_CORE1 — TC_CORE28

Variable name: TC_core1 — TC_core28

Description: Total cholesterol at Exam 1 — 28

Unit: mg/dL

Note: There is no information for core exams 9, 10, 11, 12, 16, 17, 18, 19 and 21

HDL_CORE15 — HDL_CORE28

Variable name: HDL_core15 — HDL_core28

Description: HDL-Cholesterol at Exam 15 — 28

Unit: mg/dL

Note: There is no information for core exams 16, 17, 18, 19 and 21

TRIGLYCERIDES_CORE7 — TRIGLYCERIDES_CORE28

Variable name: Triglycerides_core7 — Triglycerides_core28

Description: Triglycerides at Exam 7 — 28

Unit: mg/dL

Note: There is no information for core exams 9 – 23

CALC_LDL_CORE24 — CALC_LDL_CORE28

Variable name: Calc_LDL_core24 — Calc_LDL_core28

Description: Calculated LDL-Cholesterol at Exam 24 — 28

Unit: mg/dL

LIPRX_CORE6— LIPRX_CORE32

Variable name: LIPRX_core6 — LIPRX_core32

Description: Treated for lipids at Exam 6 — 32

Code or Value	Description
0	No
1	Yes
.	Unknown

0	No
1	Yes
.	Unknown

Creatinine

CREATININE_CORE14 — CREATININE_CORE28

Variable name: Creatinine_core14 — Creatinine_core28

Description: Serum Creatinine at Exam 14 — 28

Units: mg/dL

Note: Creatinine_core14 and Creatinine_core15 measured to one decimal place. There is no information for core exams 16, 17, 18, 19, 21, 22 and 23

Neuropsychological assessment

EXAMDATE_NP1 — EXAMDATE_NP13

Variable name: examdate_NP1 — exam_NP13
Description: Date of the first — thirteenth NP exam (MMDDYYYY)

Note: Date includes month, day and year, however coding manual displays only year to preserve confidentiality.

AGE_NP1 — AGE_NP13

Variable name: age_NP1 — age_NP13
Description: Age of participant at first — thirteenth NP exam

BATTERY_NP1 — BATTERY_NP13

Variable name: battery_NP1 — battery_NP13
Description: Form of the battery used for first — thirteenth NP exam

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

1	Short form
2	Long form
.	Unknown

MARITAL_NP1 — MARITAL_NP13

Variable name: marital_NP1 — marital_NP13
Description: Current marital status, NP exam 1 — 13

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

HANDEDNESS_NP1 — HANDEDNESS_NP13

Variable name: handedness_NP1 — handedness_NP13
Description: Subject's handedness, NP Exam 1 — 13 (self-reporting)

Neuropsychological assessment

Code or Value	Description
1	Right
2	Left
3	Ambidextrous
.	Unknown

EMPLOYMENT_NP1 — EMPLOYMENT_NP13

Variable name: employment_NP1 — employment_NP13
Description: Employment status at first — thirteenth NP exam

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

EDUCATION_B1_NP1 — EDUCATION_B1_NP13

Variable name: education_b1_NP1 — education_b1_NP13
Description: Highest Education Level Completed (Collected from NP battery1), NP Exam 1 — 13

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

Neuropsychological assessment

10	High school and business college, nursing school, music school, or art school only
.	Unknown

EDUCATION_B2_NP1 — EDUCATION_B2_NP13

Variable name: education_b2_NP1 — education_b2_NP13
Description: Highest Education Level Completed (Collected from NP battery2), NP Exam 1 — 13

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_NP13

Variable name: educg_NP1 — educg_NP13
Description: Education group (derived variable), NP Exam 1 — 13

Code or Value	Description
0	High school did not graduate

Neuropsychological assessment

1	High school graduate
2	Some college
3	College graduate
.	Unknown

OCCUP_B1_NP1 — OCCUP_B1_NP13

Variable name: occup_b1_NP1 — occup_b1_NP13
Description: Occupation from NP battery1, NP Exam 1 — 13

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_NP13

Variable name: occup_b2_NP1 — occup_b2_NP13
Description: Occupation from NP battery2, NP Exam 1 — 13

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

Neuropsychological assessment

9	Service Occupations, Except Private Household
10	Never employed for pay (e.g., homemaker)
.	Unknown

LMI_NP1 — LMI_NP13

Variable name: lmi_NP1 — lmi_NP13

Description: Total number correct verbatim and paraphrases from “Logical Memories – Immediate Recall”, NP Exam 1 — 13 (Range: 0 – 23)

LMD_NP1 — LMD_NP13

Variable name: lmd_NP1 — lmd_NP13

Description: Total number correct verbatim and paraphrases from “Logical Memories – Delayed Recall”, NP Exam 1 — 13 (Range: 0 – 23)

LMR_NP1 — LMR_NP13

Variable name: lmr_NP1 — lmr_NP13

Description: Logical Memories – Recognition, NP Exam 1 — 13 (Range: 0 – 11)

LMI_JOE_NP1 — LMI_JOE_NP13

Variable name: lmi_joe_NP1 — lmi_joe_NP13

Description: Total number of correct verbatim and paraphrases from WMS-III “Logical Memory – Immediate Recall” (only for Joe Garcia), NP Exam 1 — 13 (Range: 0 – 23)

Note: This information is not collected for all Gen 1 participants

LMD_JOE_NP1 — LMD_JOE_NP13

Variable name: lmd_joe_NP1 — lmd_joe_NP13

Description: Total number of correct verbatim and paraphrases from WMS -III “Logical Memory – Delayed Recall” (only for Joe Garcia), NP Exam 1 — 13 (Range: 0 – 23)

Note: This information is not collected for all Gen 1 participants

LMR_JOE_NP1 — LMR_JOE_NP13

Variable name: lmr_joe_NP1 — lmr_joe_NP13

Neuropsychological assessment

Description: Total number of correct verbatim and paraphrases from WMS-III “Logical Memory – Recognition” (only for Joe Garcia), NP Exam 1 — 13 (Range: 0 — 11)

Note: This information is not collected for all Gen 1 participants

LM_STORY_NP1 — LM_STORY_NP13

Variable name: LM_story_NP1 — LM_story_NP13

Description: Which logical memory story was administered? (NP Exam 1 — 13)

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

VRI_NP1 — VRI_NP13

Variable name: vri_NP1 — vri_NP13

Description: Total points scored from “Visual Reproductions – Immediate Recall”, NP Exam 1 — 13 (Range: 0 — 14)

VRD_NP1 — VRD_NP13

Variable name: vrd_NP1 — vrd_NP13

Description: Total points scored from “Visual Reproductions – Delayed Recall”, NP Exam 1 — 13 (Range: 0 — 14)

VRR_NP1 — VRR_NP13

Variable name: vrr_NP1 — vrr_NP13

Description: Total points scored from “Visual Reproductions – Recognition”, NP Exam 1 — 13 (Range: 0 — 4)

PASI_NP1 — PASI_NP13

Variable name: pasi_NP1 — pasi_NP13

Description: Total Score from “Paired Associate Learning – Immediate Recall”, NP Exam 1 — 13 (Range 0 — 21)

PASI_E_NP1 — PASI_E1_NP13

Neuropsychological assessment

Variable name: pasi_e_NP1 — pasi_e_NP13
Description: Easy Score from “Paired Associate Learning – Immediate Recall”, NP Exam 1 — 13 (Range: 0 — 18)

PASI_H_NP1 — PASI_H_NP13

Variable name: pasi_h_NP1 — pasi_h_NP13
Description: Hard Score from “Paired Associate Learning – Immediate Recall”, NP Exam 1 — 13 (Range: 0 — 12)

PASD_NP1 — PASD_NP13

Variable name: pasd_NP1 — pasd_NP13
Description: Total Score from “Paired Associate Learning – Delayed Recall”, NP Exam 1 — 13 (Range: 0 — 10)

PASD_E_NP1 — PASD_E_NP13

Variable name: pasd_e_NP1 — pasd_e_NP13
Description: Easy Score from “Paired Associate Learning – Delayed Recall”, NP Exam 1 — 13 (Range: 0 — 6)

PASD_H_NP1 — PASD_H_NP13

Variable name: pasd_h_NP1 — pasd_h_NP13
Description: Hard Score from “Paired Associate Learning – Delayed Recall”, NP Exam 1 — 13 (Range: 0 — 4)

PASR_NP1 — PASR_NP13

Variable name: pasr_NP1 — pasr_NP13
Description: Total Score from “Paired Associate Learning - Recognition”, NP Exam 1 — 13 (Range: 0 — 10)

DSF_NP1 — DSF_NP13

Variable name: dsf_NP1 — dsf_NP13
Description: Highest string from “Digits Forward Span”, NP Exam 1 — 13 (Range: 0 — 9)

DSB_NP1 — DSB_NP13

Variable name: dsb_NP1 — dsb_NP13

Neuropsychological assessment

Description: Highest string from “Digits Backward Span”, NP Exam 1 — 13 (Range: 0 – 8)

TRAILSA_NP1 — TRAILSA_NP13

Variable name: trailsA_NP1 — trailsA_NP13

Description: Time in minutes to finish “Trail A”, NP Exam 1 — 13 – capped at 7 minutes (Range: 0.10 – 7.0)

TRAILSB_NP1 — TRAILSB_NP13

Variable name: trailsB_NP1 — trailsB_NP13

Description: Time in minutes to finish “Trail B”, NP Exam 1 — 13 – capped at 10 minutes (Range: 0.32 – 10.0)

SIM_NP1 — SIM_NP13

Variable name: sim_NP1 — sim_NP13

Description: Total raw score from “Similarities Test”, NP Exam 1 — 13 (Range: 0 – 26)

HVOT_NP1 — HVOT_NP13

Variable name: hvot_NP1 — hvot_NP13

Description: Total score from “Hooper Visual Organization Test”, NP Exam 1 — 13 (Range: 0 – 30)

BNT10_NP1 — BNT10_NP13

Variable name: bnt10_NP1 — bnt10_NP13

Description: Correct score without cue from 10 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 10)

BNT10_SEMANTIC_NP1 — BNT10_SEMANTIC_NP13

Variable name: bnt10_semantic_NP1 — bnt10_semantic_NP13

Description: Correct score with semantic cue from 10 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 10)

BNT10_PHONEMIC_NP1 — BNT10_PHONEMIC_NP13

Variable name: bnt10_phonemic_NP1 — bnt10_phonemic_NP13

Description: Correct score with phonemic cue from 10 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 10)

Neuropsychological assessment

BNT30_NP1 — BNT30_NP13

Variable name: bnt30_NP1 — bnt30_NP13
Description: Correct score without cue from 30 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 30)

BNT30_SEMANTIC_NP1 — BNT30_SEMANTIC_NP13

Variable name: bnt30_semantic_NP1 — bnt30_semantic_NP13
Description: Correct score with semantic cue from 30 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 30)

BNT30_PHONEMIC_NP1 — BNT30_PHONEMIC_NP13

Variable name: bnt30_phonemic_NP1 — bnt30_phonemic_NP13
Description: Correct score with phonemic cue from 30 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 30)

BNT36_NP1 — BNT36_NP13

Variable name: bnt36_NP1 — bnt36_NP13
Description: Correct score without cue from 36 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 36)

BNT36_SEMANTIC_NP1 — BNT36_SEMANTIC_NP13

Variable name: bnt36_semantic_NP1 — bnt36_semantic_NP13
Description: Correct score with semantic cue from 36 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 36)

BNT36_PHONEMIC_NP1 — BNT36_PHONEMIC_NP13

Variable name: bnt36_phonemic_NP1 — bnt36_phonemic_NP13
Description: Correct score with phonemic cue from 36 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 36)

FINGTAPR_NP1 — FINGTAPR_NP13

Variable name: FingTapR_NP1 — FingTapR_NP13
Description: Mean of five trials of “Finger-tapping” of right hand, NP Exam 1 — 13

FINGTAPL_NP1 — FINGTAPL_NP13

Variable name: FingTapL_NP1 — FingTapL_NP13

Neuropsychological assessment

Description: Mean of five trials of “Finger-tapping” of left hand, NP Exam 1 — 13

WRAT_NP1 — WRAT_NP13

Variable name: wrat_NP1 — wrat_NP13

Description: Raw Score from “Wide Range Achievement Test –Reading”, NP Exam 1 — 13 (Range: 15 — 57)

FAS_NP1 — FAS_NP13

Variable name: fas_NP1 — fas_NP13

Description: The total words from the Controlled Oral Word Association Test, NP Exam 1 — 13

FAS_ANIMAL_NP1 — FAS_ANIMAL_NP13

Variable name: fas_animal_NP1 — fas_animal_NP13

Description: The total words from the animal part of the Category Naming Test, NP Exam 1 — 13

Note: this variable only available on “NP battery2”

BD_NP1 — BD_NP13

Variable name: bd_NP1 — bd_NP13

Description: Total Score from “Block Design”, NP Exam 1 — 13 (Range: 0 — 26)

WAIS_NP1 — WAIS_NP13

Variable name: wais_NP1 — wais_NP13

Description: Total correct answers from “WAIS test”, NP Exam 1 — 13 (Range: 0 — 29)

CODING_CORRECT_NP1 — CODING_CORRECT_NP13

Variable name: coding_correct_NP1 — coding_correct_NP13

Description: Total correct from WAIS-IV Coding, NP Exam 1 — 13

CODING_INCORRECT_NP1 — CODING_INCORRECT_NP13

Variable name: coding_incorrect_NP1 — coding_incorrect_NP13

Description: Total incorrect from WAIS-IV Coding, NP Exam 1 — 13

INCIDENTAL_PAIRED_NP1 — INCIDENTAL_PAIRED_NP13

Neuropsychological assessment

Variable name: Incidental_paired_NP1 — Incidental_paired_NP13
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 — 13

INCIDENTAL_FREE_NP1 — INCIDENTAL_FREE_NP13

Variable name: Incidental_free_NP1 — Incidental_free_NP13
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 — 13

MATH_CORRECT_NP1 — MATH_CORRECT_NP13

Variable name: Math_correct_NP1 — Math_correct_NP13
Description: Total correct responses for Math Fluency, NP Exam 1 — 13

MATH_INCORRECT_ADD_NP1 — MATH_INCORRECT_ADD_NP13

Variable name: Math_incorrect_add_NP1 — Math_incorrect_add_NP13
Description: Incorrect responses for addition problems, NP Exam 1 — 13

MATH_INCORRECT_SUB_NP1 — MATH_INCORRECT_SUB_NP13

Variable name: Math_incorrect_sub_NP1 — Math_incorrect_sub_NP13
Description: Incorrect responses for subtraction problems, NP Exam 1 — 13

MATH_INCORRECT_MUL_NP1 — MATH_INCORRECT_MUL_NP13

Variable name: Math_incorrect_mul_NP1 — Math_incorrect_mul_NP13
Description: Incorrect responses for multiplication problems, NP Exam 1 — 13

RIGHT_OPEN_NP1 — RIGHT_OPEN_NP13

Variable name: right_open_NP1 — right_open_NP13
Description: Seconds from balance test on right leg with eyes open (maximum time is set at 30 seconds), NP Exam 1 — 13

Note: This information is not collected for all Gen 1 participants

LEFT_OPEN_NP1 — LEFT_OPEN_NP13

Variable name: left_open_NP1 — left_open_NP13

Neuropsychological assessment

Description: Seconds from balance test on left leg with eyes open (maximum time is set at 30 seconds), NP Exam 1 — 13

Note: This information is not collected for all Gen 1 participants

RIGHT_CLOSE_NP1 — RIGHT_CLOSE_NP13

Variable name: right_close_NP1 — right_close_NP13

Description: Seconds from balance test on right leg with eyes closed (maximum time is set at 30 seconds), NP Exam 1 — 13

Note: This information is not collected for all Gen 1 participants

LEFT_CLOSE_NP1 — LEFT_CLOSE_NP13

Variable name: left_close_NP1 — left_close_NP13

Description: Seconds from balance test on left leg with eyes closed (maximum time is set at 30 seconds), NP Exam 1 — 13

Note: This information is not collected for all Gen 1 participants

MRI352_NP1 — MRI352_NP13

Variable name: mri352_NP1 — mri352_NP13

Description: Tester's impression of participant's dementia status (Not verified), NP Exam 1 — 13

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_NP13

Variable name: test_language_NP1 — test_language_NP13

Neuropsychological assessment

Description: Language used during NP Exam 1 — 13

Code or Value	Description
1	English
2	Spanish

Matching NP Dates with Core Exam Dates

NP_CLOSEST_EXAM_DATE1 — NP_CLOSEST_EXAM_DATE13

Variable name: np_closest_exam_date1 — np_closest_exam_date13
Description: FHS core exam date that was closest to the first — thirteenth NP test

NP_DAYS_APART1 — NP_DAYS_APART13

Variable name: np_days_apart1 — np_days_13
Description: The number of days between the FHS core exam date that was closest to the first — thirteenth NP test and the first — thirteenth 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_CYCLE13

Variable name: np_exam_cycle1 — np_exam_cycle13
Description: FHS core exam cycle that was closest to the first — thirteenth NP test

Code or Value	Description
1	Core Exam 1
2	Core Exam 2
3	Core Exam 3
4	Core Exam 4
5	Core Exam 5
6	Core Exam 6
7	Core Exam 7
8	Core Exam 8
9	Core Exam 9
10	Core Exam 10
11	Core Exam 11
12	Core Exam 12
13	Core Exam 13
14	Core Exam 14
15	Core Exam 15
16	Core Exam 16
17	Core Exam 17
18	Core Exam 18

Code or Value	Description
1	Core Exam 1
2	Core Exam 2
3	Core Exam 3
4	Core Exam 4
5	Core Exam 5
6	Core Exam 6
7	Core Exam 7
8	Core Exam 8
9	Core Exam 9
10	Core Exam 10
11	Core Exam 11
12	Core Exam 12
13	Core Exam 13
14	Core Exam 14
15	Core Exam 15
16	Core Exam 16
17	Core Exam 17
18	Core Exam 18

Matching NP Dates with Core Exam Dates

19	Core Exam 19
20	Core Exam 20
21	Core Exam 21
22	Core Exam 22
23	Core Exam 23
24	Core Exam 24
25	Core Exam 25
26	Core Exam 26
27	Core Exam 27
28	Core Exam 28
29	Core Exam 29
30	Core Exam 30
31	Core Exam 31
32	Core Exam 32
.	Unknown

Verified Outcomes – Dementia and Related Variables

NORMAL_DATE

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

Note: Date includes month, day and year, however coding manual displays only year to preserve confidentiality. 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: Date includes month, day and year, however coding manual displays only year to preserve confidentiality. 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: Date includes month, day and year, however coding manual displays only year to preserve confidentiality. 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: Date includes month, day and year, however coding manual displays only year to preserve confidentiality. 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

Verified Outcomes – Dementia and Related Variables

Note: Date includes month, day and year, however coding manual displays only year to preserve confidentiality. 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: Date includes month, day and year, however coding manual displays only year to preserve confidentiality. 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
---------------	-------------

0	No
1	Yes
.	Unknown

Note: This variable refers to all-cause dementia.

DEMRV103

Variable name: demrv103

Description: Dementia subtype

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

Verified Outcomes – Dementia and Related Variables

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.

Verified Outcomes – First Coronary Heart Disease (CHD) Event

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

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

Verified Outcomes – First Stroke (CVA) Event

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

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

Verified Outcomes – First Atrial Fibrillation (AF) Event

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

Note on first diagnosis date

TAKE NOTE: Only one diagnosis is included in the curated dataset, but there are cases when more than one diagnosis was made on the first date. The indicator variable multiple_cancer_indicator denotes if there were multiple diagnoses on the first diagnosis date. Refer to the source dataset “vr_cancer_2019_a_1162” for in-depth information.

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

Verified Outcomes – First Cancer and Related Variables

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

MULTIPLE_CANCER_INDICATOR

Variable name: multiple_cancer_indicator

Description: Indicator if there were multiple diagnoses on the first diagnosis date of cancer diagnosis for the participant

0	Not multiple
1	Multiple
.	Unknown

Note: Only one diagnosis is included in the curated dataset, but there are cases when more than one diagnosis was made on the first date. Refer to the source dataset “vr_cancer_2019_a_1162” for in-depth information.

Survival Information

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

Prevalence

PREVALENT_CHD_CORE1 – PREVALENT_CHD_CORE32

Variable name: prevalent_chd_core1 – prevalent_chd_core32
Description: History of CHD present at core exam 1 – 32

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_CORE32

Variable name: prevalent_stroke_core1 – prevalent_stroke_core32
Description: History of stroke present at core exam 1 – 32

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_CORE32

Variable name: prevalent_af_core1 – prevalent_af_core32
Description: History of AF present at core exam 1 – 32

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”.

Prevalence

PREVALENT_DEMENTIA_CORE1 – PREVALENT_DEMENTIA_CORE32

Variable name: prevalent_dementia_core1 – prevalent_dementia_core32
Description: History of dementia present at core exam 1 – 32

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_CORE32

Variable name: prevalent_cancer_core1 – prevalent_cancer_core32
Description: History of cancer present at core exam 1 – 32

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”.

Prevalence

PREVALENT_CHD_NP1 – PREVALENT_CHD_NP13

Variable name: prevalent_chd_np1 – prevalent_chd_np13
Description: History of CHD present at NP test 1 – 13

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_NP13

Variable name: prevalent_stroke_np1 – prevalent_stroke_np13
Description: History of stroke present at NP test 1 – 13

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_NP13

Variable name: prevalent_af_np1 – prevalent_af_np13
Description: History of AF present at NP test 1 – 13

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”.

Prevalence

PREVALENT_DEMENTIA_NP1 – PREVALENT_DEMENTIA_NP13

Variable name: prevalent_dementia_np1 – prevalent_dementia_np13
Description: History of dementia present at NP test 1 – 13

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_NP13

Variable name: prevalent_cancer_np1 – prevalent_cancer_np13
Description: History of cancer present at NP test 1 – 13

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”.

FHS CVD risk scores are only available from core exam 15, 20, 22 – 28

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_CORE15 – AGE_FHSCVD_CORE28

Variable name: age_fhscvd_core15 – age_fhscvd_core28

Description: Age component for FHS CVD risk score at exam 15 – 28

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

Note: This derived variable is only available from core exam 15, 20, 22 – 28. Refer to publication for more information

HDL_FHSCVD_CORE15 – HDL_FHSCVD_CORE28

Variable name: hdl_fhscvd_core15 – hdl_fhscvd_core28

Description: HDL component for FHS CVD risk score at exam 15 – 28

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

Note: This derived variable is only available from core exam 15, 20, 22 – 28. Refer to publication for more information

TC_FHSCVD_CORE15 – TC_FHSCVD_CORE28

Variable name: tc_fhscvd_core15 – tc_fhscvd_core28

Description: TC (Total Cholesterol) component for FHS CVD risk score at exam 15 – 28

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

Note: This derived variable is only available from core exam 15, 20, 22 – 28. Refer to publication for more information

FHS CVD Risk Score

SMOKING_FHSCVD_CORE15 – SMOKING_FHSCVD_CORE28

Variable name: smoking_fhscvd_core15 – smoking_fhscvd_core28
Description: Current smoker component for FHS CVD risk score at exam 15 – 28

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

Note: This derived variable is only available from core exam 15, 20, 22 – 28. Refer to publication for more information

DM_FHSCVD_CORE15 – DM_FHSCVD_CORE28

Variable name: dm_fhscvd_core15 – dm_fhscvd_core28
Description: History of diabetes component for FHS CVD risk score at exam 15 – 28

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

Note: This derived variable is only available from core exam 15, 20, 22 – 28. Refer to publication for more information

SBP_FHSCVD_CORE15 – SBP_FHSCVD_CORE28

Variable name: sbp_fhscvd_core15 – sbp_fhscvd_core28
Description: Systolic blood pressure component for FHS CVD risk score at exam 15 – 28

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

Note: This derived variable is only available from core exam 15, 20, 22 – 28. It takes into consideration use of anti-hypertensive medications. Refer to publication for more information

FHS CVD Risk Score

FHSCVD_CORE15 –FHSCVD_CORE28

Variable name: fhscvd_core15 – fhscvd_core28

Description: FHS CVD risk score at exam 15 – 28

```
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 from core exam 15, 20, 22 – 28, and all components of the FHS CVD risk score **MUST BE** available. Refer to publication for more information

FSRP are only available from core exam 4, 5, 7-4, 20, 17 – 28**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_CORE4 – AGE_FSRP_CORE28

Variable name: age_fsrp_core4 – age_fsrp_core28

Description: Age component for FSRP at exam 4 – 28

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

Note: This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

SBP_FSRP_CORE4 – SBP_FSRP_CORE28

Variable name: sbp_fsrp_core4 – sbp_fsrp_core28

Description: Systolic blood pressure component for FSRP at exam 4 – 28

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

Note: This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

HRX_FSRP_CORE4 – HRX_FSRP_CORE28

Variable name: hrx_fsrp_core4 – hrx_fsrp_core28

Description: Anti-hypertensive medications usage component for FSRP at exam 4 – 28

Code or Value	Description
0	No

FHS Stroke Risk Profile

2	Yes (Male)
0 – 6	Yes (Female)
.	Did not attend core exam or out of bounds

Note: This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. For female participants, the score is dependent on the systolic blood pressure measurements. Refer to publication for more information

DM_FSRP_CORE4 – DM_FSRP_CORE28

Variable name: dm_fsrp_core4 – dm_fsrp_core28

Description: History of diabetes component for FSRP at exam 4 – 28

Code or Value	Description
----------------------	--------------------

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

Note: This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

SMOKING_FSRP_CORE4 – SMOKING_FSRP_CORE28

Variable name: smoking_fsrp_core4 – smoking_fsrp_core28

Description: Current smoker component for FSRP at exam 4 – 28

Code or Value	Description
----------------------	--------------------

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

Note: This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

PRECVDF_FSRP_CORE4 – PRECVDF_FSRP_CORE28

Variable name: precvdf_fsrp_core4 – precvdf_fsrp_core28
Description: History of CVD component for FSRP at exam 4 – 28

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

Note: This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28.

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

PRAAF_FSRP_CORE4 – PRAAF_FSRP_CORE28

Variable name: prAAF_fsrp_core4 – prAAF_fsrp_core28
Description: History of AF component for FSRP at exam 4 – 28

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

FHS Stroke Risk Profile

Note: This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

DLVH_FSRP_CORE4 – DLVH_FSRP_CORE28

Variable name: dlvh_fsrp_core4 – dlvh_fsrp_core28
Description: Ventricular hypertrophy component for FSRP at exam 4 – 28

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

Note: This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

FSRP_CORE4 – FSRP_CORE28**Variable name:** fsrp_core4 – fsrp_core28**Description:** FSRP at exam 4 – 28

$$\text{fsrp_core} = \text{age_fsrp_core} + \text{sbp_fsrp_core} + \text{hrx_fsrp_core} + \text{dm_fsrp_core} + \text{smoking_fsrp_core} + \text{precvd_fsrp_core} + \text{pref_fsrp_core} + \text{dlvh_fsrp_core}$$

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 from core exam 4, 5, 7-4, 20, 17 – 28, and all components of the FSRP **MUST BE** available. Refer to publication for more information

REVISED_FSRP_CORE4 – REVISED_FSRP_CORE28**Variable name:** revised_fsrp_core4 – revised_fsrp_core28**Description:** Revised FSRP at exam 4 – 28

$$\text{revised_fsrp_core} = \text{age_fsrp_core} + \text{sbp_fsrp_core} + \text{hrx_fsrp_core} + \text{dm_fsrp_core} + \text{smoking_fsrp_core} + \text{precvd_fsrp_core} + \text{pref_fsrp_core}$$

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 from core exam 4, 5, 7-4, 20, 17 – 28, and all components of the revised FSRP **MUST BE** available. Refer to publication for more information

Mini-Mental State Examination (MMSE)

MMSE were only available from core exam 17 onwards

COGSCR_CORE17 — COGSCR_CORE32

Variable name: cogscr_core17 – cogscr_core32

Description: Total score for MMSE cognitive function test (at exam 17 — 32)

Code or Value	Description
0 – 30	Range of values
.	Unknown

MAXCOG_CORE17 — MAXCOG_CORE32

Variable name: maxcog_core17 – maxcog_core32

Description: Maximum score based on the questions answered (at exam 17 — 32)

Code or Value	Description
17 – 30	Range of values
.	Unknown

CES-D were only available from core exam 22 onwards

CESD_CORE22_1 — CESD_CORE31_1

Variable name: CESD_core22_1 — CESD_core31_1

Description: CESD: I was bothered by things that usually don't bother me (at exam 22 — 31)

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

CESD_CORE22_2 — CESD_CORE31_2

Variable name: CESD_core22_2 — CESD_core31_2

Description: CESD: I did not feel like eating: my appetite was poor (at exam 22 — 31)

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

CESD_CORE22_3 — CESD_CORE31_3

Variable name: CESD_core22_3 — CESD_core31_3

Description: CESD: I felt that I could not shake off the blues, even with the help of family and friends (at exam 22 — 31)

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

CESD_CORE22_4 — CESD_CORE31_4

Variable name: CESD_core22_4 — CESD_core31_4

Description: CESD: I felt that I was just as good as other people (at exam 22 — 31)

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

CESD_CORE22_5 — CESD_CORE31_5

Variable name: CESD_core22_5 — CESD_core31_5

Description: CESD: I had trouble keeping my mind on what I was doing (at exam 22 — 31)

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

CESD_CORE22_6 — CESD_CORE31_6

Variable name: CESD_core22_6 — CESD_core31_6

Description: CESD: I felt depressed (at exam 22 — 31)

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

CESD_CORE22_7 — CESD_CORE31_7

Variable name: CESD_core22_7 — CESD_core31_7

Description: CESD: I felt that everything I did was an effort (at exam 22 — 31)

0	<1 day
1	1 — 2 days
2	3 — 4 days

Center for Epidemiologic Studies Depression Scale (CES-D)

3	5 – 7 days
.	Unknown

CESD_CORE22_8 — CESD_CORE31_8

Variable name: CESD_core22_8 — CESD_core31_8

Description: CESD: I felt hopeful about the future (at exam 22 — 31)

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

CESD_CORE22_9 — CESD_CORE31_9

Variable name: CESD_core22_9 — CESD_core31_9

Description: CESD: I thought my life had been a failure (at exam 22 — 31)

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

CESD_CORE22_10 — CESD_CORE31_10

Variable name: CESD_core22_10 — CESD_core31_10

Description: CESD: I felt fearful (at exam 22 — 31)

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

CESD_CORE22_11 — CESD_CORE31_11

Variable name: CESD_core22_11 — CESD_core31_11

Description: CESD: My sleep was restless (at exam 22 — 31)

Center for Epidemiologic Studies Depression Scale (CES-D)

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

CESD_CORE22_12 — CESD_CORE31_12

Variable name: CESD_core22_12 — CESD_core31_12

Description: CESD: I was happy (at exam 22 — 31)

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

CESD_CORE22_13 — CESD_CORE31_13

Variable name: CESD_core22_13 — CESD_core31_13

Description: CESD: I talked less than usual (at exam 22 — 31)

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

CESD_CORE22_14 — CESD_CORE31_14

Variable name: CESD_core22_14 — CESD_core31_14

Description: CESD: I felt lonely (at exam 22 — 31)

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

CESD_CORE22_15 — CESD_CORE31_15

Center for Epidemiologic Studies Depression Scale (CES-D)

Variable name: CESD_core22_15 — CESD_core31_15

Description: CESD: People were unfriendly (at exam 22 — 31)

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

CESD_CORE22_16 — CESD_CORE31_16

Variable name: CESD_core22_16 — CESD_core31_16

Description: CESD: I enjoyed life (at exam 22 — 31)

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

CESD_CORE22_17 — CESD_CORE31_17

Variable name: CESD_core22_17 — CESD_core31_17

Description: CESD: I had crying spells (at exam 22 — 31)

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

CESD_CORE22_18 — CESD_CORE31_18

Variable name: CESD_core22_18 — CESD_core31_18

Description: CESD: I felt sad (at exam 22 — 31)

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

CESD_CORE22_19 — CESD_CORE31_19

Variable name: CESD_core22_19 — CESD_core31_19

Description: CESD: I felt that people disliked me (at exam 22 — 31)

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

CESD_CORE22_20 — CESD_CORE31_20

Variable name: CESD_core22_20 — CESD_core31_20

Description: CESD: I could not "get going" (at exam 22 — 31)

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

CESD_TOTAL_CORE22 — CESD_TOTAL_CORE31

Variable name: CESD_total_core22 — CESD_total_core31

Description: CESD total score at exam 22 — 31

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

Center for Epidemiologic Studies Depression Scale (CES-D)

CESD_CORE32_1

Variable name: CESD_core32_1

Description: CESD: I was bothered by things that usually don't bother me (at exam 32)

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

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

Note: Only the first ten CES-D questions were asked for exam 32.

CESD_CORE32_2

Variable name: CESD_core32_2

Description: CESD: I did not feel like eating: my appetite was poor (at exam 32)

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

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

Note: Only the first ten CES-D questions were asked for exam 32.

CESD_CORE32_3

Variable name: CESD_core32_3

Description: CESD: I felt that I could not shake off the blues, even with the help of family and friends (at exam 32)

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

Center for Epidemiologic Studies Depression Scale (CES-D)

Note: Only the first ten CES-D questions were asked for exam 32.

CESD_CORE32_4

Variable name: CESD_core32_4

Description: CESD: I felt that I was just as good as other people (at exam 32)

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

Note: Only the first ten CES-D questions were asked for exam 32.

CESD_CORE32_5

Variable name: CESD_core32_5

Description: CESD: I had trouble keeping my mind on what I was doing (at exam 32)

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

Note: Only the first ten CES-D questions were asked for exam 32.

CESD_CORE32_6

Variable name: CESD_core32_6

Description: CESD: I felt depressed (at exam 32)

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

Note: Only the first ten CES-D questions were asked for exam 32.

CESD_CORE32_7

Variable name: CESD_core32_7

Description: CESD: I felt that everything I did was an effort (at exam 32)

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

Note: Only the first ten CES-D questions were asked for exam 32.

CESD_CORE32_8

Variable name: CESD_core32_8

Description: CESD: I felt hopeful about the future (at exam 32)

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

Note: Only the first ten CES-D questions were asked for exam 32.

CESD_CORE32_9

Variable name: CESD_core32_9

Description: CESD: I thought my life had been a failure (at exam 32)

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

Note: Only the first ten CES-D questions were asked for exam 32.

CESD_CORE32_10

Center for Epidemiologic Studies Depression Scale (CES-D)

Variable name: CESD_core32_10

Description: CESD: I felt fearful (at exam 32)

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

Note: Only the first ten CES-D questions were asked for exam 32.

Neuropath Data and Availability

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

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

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

Neuropath Data and Availability

AD_NEUROPATH

Variable name: AD_NEUROPATH

Description: Neuropathological presence of Alzheimer's disease

Code or Value	Description
0	No
1	Yes
.	Missing

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

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

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

Neuropath Data and Availability

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

Original Cohort (idtype=0)		Age Range	Mean Age	Total # of Participants
Exam #	Exam Date Range			
1	1948-1953	28-74	44	5209
2	1950-1955	31-65	46	4792
3	1952-1956	32-67	48	4416
4	1954-1958	34-69	50	4541
5	1956-1960	37-70	52	4421
6	1958-1963	38-72	54	4259
7	1960-1964	40-74	55	4191
8	1962-1966	42-76	57	4030
9	1964-1968	44-78	59	3833
10	1966-1970	46-80	61	3595
11	1968-1971	49-81	62	2955
12	1971-1974	50-83	64	3261
13	1972-1976	53-85	66	3133
14	1975-1978	55-88	68	2871
15	1977-1979	57-89	69	2632
16	1979-1982	59-91	70	2351
17	1981-1984	61-93	72	2179
18	1983-1985	63-94	74	1825
19	1985-1988	65-96	75	1541
20	1986-1990	67-97	77	1401
21	1988-1992	69-99	79	1319
22	1990-1994	72-101	80	1166
23	1992-1996	73-101	81	1026
24	1995-1998	76-103	83	831
25	1997-1999	78-104	84	703
26	1999-2001	79-103	86	558
27	2002-2003	82-104	87	414
28	2004-2005	84-104	89	303
29	2006-2007	85-102	91	218
30	2008-2010	88-102	92	141
31	2010-2011	90-99	92	91
32	2012-2014	93-106	96	40

Revisions	
November 2021	<p>Original Draft</p> <ul style="list-style-type: none"> • Coding Manual of Curated Gen 1 dataset • Dataset: curated0_09_16_2021 <p>Available in both SAS and csv files</p>
December 2021	<p>Revision of November 2021</p> <ul style="list-style-type: none"> • Description corrections for selected variables • Added missing datapoints for waist circumferences • Dataset has been renamed as “curated0_12_09_2021” <p>Available in both SAS and csv files</p>
Feb 2023	<p>Revision of Dec 2021 draft</p> <ul style="list-style-type: none"> • 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 of 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	<p>Revision of Feb 2023 draft</p> <ul style="list-style-type: none"> • Updated neuropath section • Typo/grammatical/format corrections
April 2023	<p>Revision of March 2023 draft</p> <ul style="list-style-type: none"> • Included prevalence variables • Typo/grammatical/format corrections
May 2023	<p>Revision of April 2023 draft</p> <ul style="list-style-type: none"> • Included FHS CVD Risk Score FSRP • Updated the following section: <ul style="list-style-type: none"> ○ NP summary scores

	<ul style="list-style-type: none"> ○ Dementia Review ○ Sequence of event (CHD, Stroke) ○ Atrial Fibrillation ○ Survival Information ● Typo/grammatical/format corrections
July 2023	<p>Revision of May 2023 draft</p> <ul style="list-style-type: none"> ● Correction of date format and missing EDDD values
Sept 2023	<p>Revision of July 2023 draft</p> <ul style="list-style-type: none"> ● SAS code correction for csv file export
Feb 2024	<p>Revision of Sept 2023 draft</p> <ul style="list-style-type: none"> ● Major update to outcome and mortality data <ul style="list-style-type: none"> ○ 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	<p>Revision of Feb 2024 draft</p> <ul style="list-style-type: none"> ● Format correction to neuropath variables ● Update of neuropath variables to include data up to 2023 ● Typo/grammatical/format corrections of manual
April 2024	<p>Revision of March 2024 draft</p> <ul style="list-style-type: none"> ● Update of dementia review variables to include data up to 2023
May 2024	<p>Revision of April 2024 draft</p> <ul style="list-style-type: none"> ● Added information regarding consent restrictions in the foreword ● Update of NP summary score variables to include data up to 2023
Sept 2024	<p>Revision of May 2024 draft</p> <ul style="list-style-type: none"> ● Correction of dementia diagnosis of one observation ● Correction of "exam #" in appendix
March 2025	Revision of Sept 2024 draft

	<ul style="list-style-type: none">• Adjustment to race variables
May 2025	<p>Revision of March 2025 draft</p> <ul style="list-style-type: none">• Update of race source dataset and correction for race and ethnicity variables• Update of dementia review source dataset to include data up to 2024• Update of neuropath source dataset to include data up to 2024• Curated dataset SAS code now contains an additional section to create compatible version for external sharing
October 2025	<p>Revision of May 2025 draft</p> <ul style="list-style-type: none">• Update of sequence of events source dataset to include data up to 2023• Update of Atrial Fibrillation/Flutter source dataset to include data up to 2023• Update of Verified Survival dataset to include data up to 2022• Update of NP Summary score source dataset to include data up to 2024• Updates to versioning of multiple datasets mainly to remove withdrawn Gen 2 participant• New first cancer diagnosis indicator variable included