RESEARCHERS DATA DICTIONARY

Imaging Data

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Introduction

The *Researcher's Data Dictionary — Imaging Data (RDD-ID)* is intended to be the first and primary resource for researchers analyzing imaging for UDS subjects (structural MRIs, some with calculated MRI summary data, and PET scans).

The NACC imaging database is a large, freely available sample of MRIs and PET scans that are linked to the standardized UDS and NP data, and can also be linked to genotype data from ADGC.

MRIs and PET scans at NACC are most appropriately described as a convenience sample of images, voluntarily submitted by several Alzheimer's Disease Centers (ADCs). Imaging data collection and acquisition protocols vary by ADC. For instance, MRI sessions may include T1-weighted, FLAIR, DTI, T2, or other sequence types (and any combination thereof), and subjects may or may not have multiple sessions in the NACC database. There is no defined data collection period, and there are no submission deadlines for MRIs or PET scans; instead, the images are submitted at the discretion of the individual ADCs.

For a subset of the MRIs, calculated summary data are also available. The calculations were performed by the IDeA Lab (Director: Charles DeCarli, MD; University of California, Davis; http://idealab.ucdavis.edu/), following ADNI protocols.

Definitions

Original variables are coded as they are collected from the MRI or PET DICOM header during image processing at NACC or as they were sent to NACC by the IDeA Lab. In some instances, NACC has added codes to explain missing data and to facilitate use of the variable in analyses (e.g., an 8888 code to indicate data not collected for this subject and 9999 to indicate data missing for this variable), but the essential format of the variable remains unchanged.

Derived variables are developed by NACC from the original data collected. These variables provide new information that is collected indirectly from data in the UDS, the DICOM header, or the files provided by the Lab calculating the volumes — for example, **NACCNMRI** is a calculation of the total number of MRI sessions available at NACC for each UDS subject.

Revisions made to the RDD-ID since implementation

Date yyyy-mm-dd	Description	Data element(s) affected
2017-12-12	Variable added	LIGANDN
2017-06-16	Variable removed	NACCMRI
2017-06-16	Two variables added	NACCDICO, NACCNIFT

Table of variables

Section 1: MRI scan date data

	Variable name	Short descriptor	Data type	Data source
1	NACCDICO	DICOM image file available (y/n)	Numeric cross-sectional	NACC derived
2	NACCNIFT	NIfTI image file available (y/n)	Numeric cross-sectional	NACC derived
3	MRIMO	Month MRI performed	Numeric longitudinal	MRI DICOM header
4	MRIDY	Day MRI performed	Numeric longitudinal	MRI DICOM header
5	MRIYR	Year MRI performed	Numeric longitudinal	MRI DICOM header
6	NACCMRIA	Subject age at time of MRI	Numeric longitudinal	NACC derived
7	NACCMRFI	File locator variable	Character longitudinal	NACC derived
8	NACCNMRI	Total number of MRI sessions	Numeric cross-sectional	NACC derived
9	NACCMNUM	MRI session in chronological order	Numeric longitudinal	NACC derived
10	NACCMRDY	Days between MRI session and closest UDS visit	Numeric longitudinal	NACC derived

Section 2: MRI scan type and series-associated data

	Variable name	Short descriptor	Data type	Data source
11	MRIT1	MRI sequence type — T1	Numeric longitudinal	MRI DICOM header
12	MRIT2	MRI sequence type — T2	Numeric longitudinal	MRI DICOM header
13	MRIDTI	MRI sequence type — DTI	Numeric longitudinal	MRI DICOM header
14	MRIDWI	MRI sequence type — DWI	Numeric longitudinal	MRI DICOM header
15	MRIFLAIR	MRI sequence type — FLAIR	Numeric longitudinal	MRI DICOM header
16	MRIOTHER	MRI sequence type — other	Numeric longitudinal	MRI DICOM header
17	MRIFIELD	Magnetic field strength (T)	Numeric longitudinal	MRI DICOM header
18	MRIMANU	Manufacturer	Numeric longitudinal	MRI DICOM header
19	MRIMODL	Manufacturer's model name	Numeric longitudinal	MRI DICOM header

Section 3: MRI calculated summary data

	Variable name	Short descriptor	Data type	Data source
20	NACCMVOL	Calculated summary data available (y/n)	Numeric longitudinal	NACC derived
21	NACCICV	Total intracranial volume (cc)	Numeric longitudinal	NACC derived
22	NACCBRNV	Total brain volume (cc)	Numeric longitudinal	NACC derived
23	GRAYVOL	Total volume of gray matter (cc)	Numeric longitudinal	IDeA Lab
24	WHITEVOL	Volume of white matter excluding WMH (cc)	Numeric longitudinal	IDeA Lab
25	WMHVOL	Volume of white matter hyperintensities (cc)	Numeric longitudinal	IDeA Lab
26	NACCWMVL	Total white matter volume (cc)	Numeric longitudinal	NACC derived
27	CSFVOL	Volume of intracranial CSF (cc)	Numeric longitudinal	IDeA Lab
28	HIPPOVOL	Volume of hippocampus (cc)	Numeric longitudinal	IDeA Lab
29	FRONTGRY	Volume of frontal lobe gray matter (cc)	Numeric longitudinal	IDeA Lab
30	FRONTWHT	Volume of frontal lobe white matter (cc)	Numeric longitudinal	IDeA Lab
31	FRONTCSF	Volume of frontal lobe CSF (cc)	Numeric longitudinal	IDeA Lab
32	OCCIPGRY	Volume of occipital lobe gray matter (cc)	Numeric longitudinal	IDeA Lab
33	OCCIPWHT	Volume of occipital lobe white matter (cc)	Numeric longitudinal	IDeA Lab
34	OCCIPCSF	Volume of occipital lobe CSF (cc)	Numeric longitudinal	IDeA Lab
35	PARGRY	Volume of parietal lobe gray matter (cc)	Numeric longitudinal	IDeA Lab
36	PARWHT	Volume of parietal lobe white matter (cc)	Numeric longitudinal	IDeA Lab
37	PARCSF	Volume of parietal lobe CSF (cc)	Numeric longitudinal	IDeA Lab
38	TEMPGRY	Volume of temporal lobe gray matter (cc)	Numeric longitudinal	IDeA Lab
39	TEMPWHT	Volume of temporal lobe white matter (cc)	Numeric longitudinal	IDeA Lab
40	TEMPCSF	Volume of temporal lobe CSF (cc)	Numeric longitudinal	IDeA Lab

Section 4: PET scan data

	Variable name	Short descriptor	Data type	Data source
41	APETMO	Month amyloid PET scan performed	Numeric longitudinal	PET DICOM header
42	APETDY	Day amyloid PET scan performed	Numeric longitudinal	PET DICOM header
43	APETYR	Year amyloid PET scan performed	Numeric longitudinal	PET DICOM header
44	NACCAPTA	Subject age at time of amyloid PET scan	Numeric longitudinal	NACC derived
45	NACCAPTF	Amyloid PET scan file locator variable	Character longitudinal	NACC derived
46	NACCAPNM	Amyloid PET scan in chronological order	Numeric longitudinal	NACC derived
47	NACCAPTD	Days between amyloid PET scan and closest UDS visit	Numeric longitudinal	NACC derived
48	APETMANU	Manufacturer	Numeric longitudinal	PET DICOM header
49	APETMODL	Manufacturer's model name	Numeric longitudinal	PET DICOM header
50	NACCNAPT	Total number of amyloid PET scans	Numeric cross-sectional	NACC derived
51	NACCAPET	At least one amyloid PET scan available (y/n)	Numeric cross-sectional	NACC derived
52	LIGANDN	Amyloid tracer used for PET scan	Numeric longitudinal	ADC

Variable definitions

Section 1: MRI scan date information

1	Variable name	**NACCDICO**
	Short descriptor	DICOM image file available (y / n)
	Data type	Numeric cross-sectional
	Data source	NACC derived
	Allowable codes	0 = No; does not have any DICOM files available at NACC 1 = Yes; has at least one DICOM file available at NACC
	Description / derivation	This variable flags UDS subjects who have at least one DICOM file at NACC.
2	Variable name	**NACCNIFT**
	Short descriptor	NIfTI image file available (y / n)
	Data type	Numeric cross-sectional
	Data source	NACC derived
	Allowable codes	0 = No; does not have any NIfTI files available at NACC 1 = Yes; has at least one NIfTI file available at NACC
	Description / derivation	This variable flags UDS subjects who have at least one NIfTI file at NACC.
3	Variable name	**MRIMO**
	Short descriptor	Month MRI performed
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	0–12 88 = Not applicable / no MRI available
	Description / derivation	This variable indicates the month during which the MRI was performed.
4	Variable name	**MRIDY**
	Short descriptor	Day MRI performed
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	0–31 88 = Not applicable / no MRI available
	Description / derivation	This variable indicates the day of the month during which the MRI was performed.
5	Variable name	**MRIYR**
	Short descriptor	Year MRI performed
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	2000 – current year 8888 = Not applicable / no MRI available
	Description / derivation	This variable indicates the year during which the MRI was performed.

6	Variable name	**NACCMRIA**
	Short descriptor	Subject age at time of MRI
	Data type	Numeric longitudinal
	Data source	NACC derived
	Allowable codes	18–120 888 = Not applicable / no MRI available
	Description / derivation	This variable provides the subject's age at the time of the MRI session. Birth month and birth year are required elements in the UDS; however, birth day is not collected. To calculate age at MRI, birth day is set to 1 for all UDS subjects, and **NACCMRIA** is computed as MRI date – birth date.
7	Variable name	**NACCMRFI**
	Short descriptor	MRI file locator variable
	Data type	Character longitudinal
	Data source	NACC derived
	Allowable codes	"mri" followed by four digits and ".zip" Blank = No file available / no MRI available
	Description / derivation	This variable provides a unique identifier for the MRI zip file.
8	Variable name	**NACCNMRI**
	Short descriptor	Total number of MRI sessions
	Data type	Numeric cross-sectional
	Data source	NACC derived
	Allowable codes	1–20 88 = Not applicable / no MRI available
	Description / derivation	This variable provides the number of MRI sessions a UDS subject has in the NACC database, regardless of time between sessions. Note that while this variable is listed for all visits, it does not change across visits; it is cross-sectional.
9	Variable name	**NACCMNUM**
	Short descriptor	MRI session in chronological order
	Data type	Numeric longitudinal
	Data source	NACC derived
	Allowable codes	1–20 88 = Not applicable / no MRI available
	Description / derivation	This variable assigns a number to each MRI session per subject ID, in chronological order, beginning with the first MRI available at NACC.
10	Variable name	**NACCMRDY**
	Short descriptor	Days between MRI and closest UDS visit
	Data type	Numeric longitudinal
	Data source	NACC derived
	Allowable codes	–3650 to 3650 8888 = Not applicable / no MRI available
	Description / derivation	This variable is the MRI date minus the *closest* UDS visit date for every MRI. For MRI sessions the closest visit date, **NACCMRDY** < 0, and for MRI sessions after the closest visit date, **NACCMRDY** > 0.

Section 2: MRI sequence type and other series-associated data

11	Variable name	**MRIT1**
	Short descriptor	MRI sequence type — T1
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	0 = T1 not available 1 = T1 available 8 = Not applicable / no MRI available
	Description / derivation	This variable is determined from the DICOM tag (0008,103E) "Series Description" in the MR image header.
12	Variable name	**MRIT2**
	Short descriptor	MRI sequence type — T2
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	0 = T2 not available 1 = T2 available 8 = Not applicable / no MRI available
	Description / derivation	This variable is determined from the DICOM tag (0008,103E) "Series Description" in the MR image header.
13	Variable name	**MRIDTI**
	Short descriptor	MRI sequence type — DTI
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	0 = DTI not available 1 = DTI available 8 = Not applicable / no MRI available
	Description / derivation	This variable is determined from the DICOM tag (0008,103E) "Series Description" in the MR image header.
14	Variable name	**MRIDWI**
	Short descriptor	MRI sequence type — DWI
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	0 = DWI not available 1 = DWI available 8 = Not applicable / no MRI available
	Description / derivation	This variable is determined from the DICOM tag (0008,103E) "Series Description" in the MR image header.

15	Variable name	**MRIFLAIR**
	Short descriptor	MRI sequence type — FLAIR
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	0 = Flair not available 1 = Flair available 8 = Not applicable / no MRI available
	Description / derivation	This variable is determined from the DICOM tag (0008,103E) "Series Description" in the MR image header.
16	Variable name	**MRIOTHER**
	Short descriptor	MRI sequence type — other
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	0 = Other scan type not available 1 = Other scan type available 8 = Not applicable / no MRI available
	Description / derivation	This variable is determined from the DICOM tag (0008,103E) "Series Description" in the MR image header.
17	Variable name	**MRIFIELD**
	Short descriptor	Magnetic field strength (T)
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	1 = 1.5 2 = 3.0 5 = Other 7 = Field strength varies across images 8 = Not applicable / no MRI available 9 = Missing / unknown
	Description / derivation	This variable is derived from the DICOM tag (0018,0087) "Magnetic field strength" in the MR image header. Where applicable, units of gauss were converted to tesla (1 gauss = $1x10^4$ T). **Note**: The format of the DICOM header data is not consistent across Centers, sessions, sequences, and possibly even images within a given sequence. To help identify images with certain technical properties, NACC has created this variable from text strings contained within the DICOM tags. Analysts should confirm these data by examining the DICOM header data.

18	Variable name	**MRIMANU**
	Short descriptor	Manufacturer
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	1 = GE 2 = Siemens 3 = Phillips 5 = Other 8 = Not applicable / no MRI available 9 = Missing / unknown
	Description / derivation	This variable is determined from the DICOM tag (0008,0070) "Manufacturer" in the MR image header. **Note**: The format of the DICOM header data is not consistent across Centers, sessions, sequences, and possibly even images within a given sequence. To help identify images with certain technical properties, NACC has created this variable from text strings contained within the DICOM tags. Analysts should confirm these data by examining the DICOM header data.
19	Variable name	**MRIMODL**
	Short descriptor	Manufacturer's model name
	Data type	Numeric longitudinal
	Data source	MRI DICOM header
	Allowable codes	1 = DISCOVERY MR 750 2 = GENESIS SIGNA 3 = SIGNA HDxt 4 = Trio Tim 5 = Eclipse 1.5T 6 = Allegra 7 = SIGNA EXCITE 8 = SIGNA 9 = GEMINI 10 = Ingenuity 11 = Sonata 12 = Skyra 13 = Signa HDx 14 = Achieva 15 = Prisma 16 = Verio 88 = Not applicable / no MRI available 99 = Missing / unknown
	Description / derivation	This variable is determined from the DICOM tag (0008,1090) "Manufacturer's model name" in the MR image header. **Note**: The format of the DICOM header data is not consistent across Centers, sessions, sequences, and possibly even images within a given sequence. To help identify images with certain technical properties, NACC has created this variable from text strings contained within the DICOM tags. Analysts should confirm these data by examining the DICOM header data.

Section 3: MRI calculated summary data

Calculated summary data for NACC MRIs are provided by the IDeA Lab at University of California, Davis. All original total and lobar volumes are calculated per the ADNI four-tissue segmentation protocol, and hippocampal volume is calculated per the EADC-ADNI harmonized protocol. Documents describing calculation methods and protocols are provided to the investigator at the time of the data request.

20	Variable name	**NACCMVOL**
	Short descriptor	Calculated summary data available (y/n)
	Data type	Numeric longitudinal
	Data source	NACC derived
	Allowable codes	0 = No, calculated summary data available for this MRI 1 = Yes, calculated summary data is available for this MRI 8 = Not applicable/no MRI available
	Description/derivation	This variable indicates MRIs with corresponding calculated summary data available.
21	Variable name	**NACCICV**
	Short descriptor	Total intracranial volume (cc)
	Data type	Numeric longitudinal
	Data source	NACC derived
	Allowable codes	900.000–2000.000 8888.888 = Not applicable/no MRI available / calculations not performed 9999.999 = Missing/could not calculate
	Description/derivation	This variable records the total intracranial volume for a given MRI by summing gray matter, white matter, CSF, and white matter hyperintensities (**NACCICV**=**GRAYVOL**+**WHITEVOL**+**CSFVOL**+**WMHVOL**). **NACCICV** also represents the total image segmentation volume for a given MRI, per the ADNI four-tissue segmentation protocol.
22	Variable name	**NACCBRNV**
	Short descriptor	Total brain volume (cc)
	Data type	Numeric longitudinal
	Data source	NACC derived
	Allowable codes	500.000–1800.000 8888.888 = Not applicable/no MRI available / calculations not performed 9999.999 = Missing/could not calculate
	Description/derivation	This variable records the total brain volume for a given MRI by summing the gray and white matter (**NACCBRNV**=**GRAYVOL**+**WHITEVOL**).

23	Variable name	**GRAYVOL**
	Short descriptor	Total volume of gray matter (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	200.000–800.000 8888.888 = Not applicable / no MRI available / calculations not performed 9999.999 = Missing / could not calculate
	Description / derivation	This variable records the total volume of gray matter for a given MRI.
24	Variable name	**WHITEVOL**
	Short descriptor	Volume of white matter excluding WMH (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	100.000–800.000 8888.888 = Not applicable / no MRI available / calculations not performed 9999.999 = Missing / could not calculate
	Description / derivation	This variable records the volume of white matter for a given MRI. **Note:** Volume of white matter hyperintensities is not included in this variable. For total white matter volume, use NACC derived variable **NACCWMVL**.
25	Variable name	**WMHVOL**
	Short descriptor	Volume of white matter hyperintensities (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.00000–300.00000 8888.88888 = Not applicable / no MRI available / calculations not performed 9999.99999 = Missing / could not calculate
	Description / derivation	This variable records the volume of white matter hyperintensities for a given MRI. **Note:** For total white matter volume, use NACC derived variable **NACCWMVL**.
26	Variable name	**NACCWMVL**
	Short descriptor	Total white matter volume (cc)
	Data type	Numeric longitudinal
	Data source	NACC derived
	Allowable codes	100.000–1100.000 8888.888 = Not applicable / no MRI available / calculations not performed 9999.999 = Missing / could not calculate
	Description / derivation	Total white matter volume is calculated by summing white matter volume and white matter hyperintensity volume (**NACCWMVL** = **WHITEVOL** + **WMHVOL**).

27	Variable name	**CSFVOL**
	Short descriptor	Volume of intracranial CSF (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	100.000–700.000 8888.888 = Not applicable / no MRI available / calculations not performed 9999.999 = Missing / could not calculate
	Description / derivation	This variable records the volume of intracranial cerebrospinal fluid (CSF) for a given MRI.
28	Variable name	**HIPPOVOL**
	Short descriptor	Volume of hippocampus (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	1.00000–12.00000 8888.88888 = Not applicable / no MRI available / calculations not performed 9999.99999 = Missing / could not calculate
	Description / derivation	This variable records the volume of the hippocampus for a given MRI.
29	Variable name	**FRONTGRY**
	Short descriptor	Volume of frontal lobe gray matter (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.000–500.000 8888.888 = Not applicable / no MRI available / calculations not performed 9999.999 = Missing / could not calculate
	Description / derivation	This variable records the volume of frontal gray matter for a given MRI.
30	Variable name	**FRONTWHT**
	Short descriptor	Volume of frontal lobe white matter (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0 .000–500.000 8888.888 = Not applicable / no MRI available / calculations not performed 9999.999 = Missing / could not calculate
	Description / derivation	This variable records the volume of frontal white matter for a given MRI.

31	Variable name	**FRONTCSF**
	Short descriptor	Volume of frontal lobe CSF (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.0000–500.0000 8888.8888 = Not applicable / no MRI available / calculations not performed 9999.9999 = Missing / could not calculate
	Description / derivation	This variable records the volume of frontal CSF for a given MRI.
32	Variable name	**OCCIPGRY**
	Short descriptor	Volume of occipital lobe gray matter (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.0000–200.0000 8888.8888 = Not applicable / no MRI available / calculations not performed 9999.9999 = Missing / could not calculate
	Description / derivation	This variable records the volume of occipital gray matter for a given MRI.
33	Variable name	**OCCIPWHT**
	Short descriptor	Volume of occipital lobe white matter (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.0000–200.0000 8888.8888 = Not applicable / no MRI available / calculations not performed 9999.9999 = Missing / could not calculate
	Description / derivation	This variable records the volume of occipital white matter for a given MRI.
34	Variable name	**OCCIPCSF**
	Short descriptor	Volume of occipital lobe CSF (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.0000–200.0000 8888.8888 = Not applicable / no MRI available / calculations not performed 9999.9999 = Missing / could not calculate
	Description / derivation	This variable records the volume of occipital CSF for a given MRI.
35	Variable name	**PARGRY**
	Short descriptor	Volume of parietal lobe gray matter (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.0000–200.0000 8888.8888 = Not applicable / no MRI available / calculations not performed 9999.9999 = Missing / could not calculate
	Description / derivation	This variable records the volume of parietal gray matter for a given MRI.

36	Variable name	**PARWHT**
	Short descriptor	Volume of parietal lobe white matter (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.0000–200.0000 8888.8888 = Not applicable / no MRI available / calculations not performed 9999.9999 = Missing / could not calculate
	Description / derivation	This variable records the volume of parietal white matter for a given MRI.
37	Variable name	**PARCSF**
	Short descriptor	Volume of parietal lobe CSF (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.0000–200.0000 8888.8888 = Not applicable / no MRI available / calculations not performed 9999.9999 = Missing / could not calculate
	Description / derivation	This variable records the volume of parietal CSF for a given MRI.
38	Variable name	**TEMPGRY**
	Short descriptor	Volume of temporal lobe gray matter (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.0000–200.0000 8888.8888 = Not applicable / no MRI available / calculations not performed 9999.9999 = Missing / could not calculate
	Description / derivation	This variable records the volume of temporal gray matter for a given MRI.
39	Variable name	**TEMPWHT**
	Short descriptor	Volume of temporal lobe white matter (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.0000–200.0000 8888.8888 = Not applicable / no MRI available / calculations not performed 9999.9999 = Missing / could not calculate
	Description / derivation	This variable records the volume of temporal white matter for a given MRI.
40	Variable name	**TEMPCSF**
	Short descriptor	Volume of temporal lobe CSF (cc)
	Data type	Numeric longitudinal
	Data source	IDeA Lab
	Allowable codes	0.0000–200.0000 8888.8888 = Not applicable / no MRI available / calculations not performed 9999.9999 = Missing / could not calculate
	Description / derivation	This variable records the volume of temporal CSF for a given MRI.

Section 4: PET scan data

41	Variable name	**APETMO**
	Short descriptor	Month amyloid PET scan performed
	Data type	Numeric longitudinal
	Data source	PET DICOM header
	Allowable codes	0 – 12 88 = Not applicable / no amyloid PET scan available
	Description/derivation	This variable indicates the month during which the amyloid PET scan was performed.
42	Variable name	**APETDY**
	Short descriptor	Day amyloid PET scan performed
	Data type	Numeric longitudinal
	Data source	PET DICOM header
	Allowable codes	0 – 31 88 = Not applicable / no amyloid PET scan available
	Description/derivation	This variable indicates the day of the month during which the amyloid PET scan was performed.
43	Variable name	**APETYR**
	Short descriptor	Year amyloid PET scan performed
	Data type	Numeric longitudinal
	Data source	PET DICOM header
	Allowable codes	2000 – current year 8888 = Not applicable / no amyloid PET scan available
	Description/derivation	This variable indicates the year during which the amyloid PET scan was performed.
44	Variable name	**NACCAPTA**
	Short descriptor	Subject age at time of amyloid PET scan
	Data type	Numeric longitudinal
	Data source	NACC derived
	Allowable codes	18 – 120 888 = Not applicable / no amyloid PET scan available
	Description/derivation	This variable provides the subject's age at the time of the amyloid PET scan. Birth month and birth year are required elements in the UDS; however, birth day is not collected. To calculate age at amyloid PET scan, birth day is set to 1 for all UDS subjects, and **NACCAPTA** is computed as amyloid PET scan date – birth date.

45	Variable name	**NACCAPTF**
	Short descriptor	Amyloid PET scan file locator variable
	Data type	Character longitudinal
	Data source	NACC derived
	Allowable codes	"apet" followed by 1–3 digits and ".zip" Blank = No file available / no amyloid PET scan available
	Description/derivation	This variable provides a unique identifier for the amyloid PET scan zip file.
46	Variable name	**NACCAPNM**
	Short descriptor	Amyloid PET scan in chronological order
	Data type	Numeric longitudinal
	Data source	NACC derived
	Allowable codes	1 – 20 88 = Not applicable / no amyloid PET scan available
	Description/derivation	This variable assigns a number to each amyloid PET scan per subject ID, in chronological order, beginning with the first amyloid PET scan available at NACC.
47	Variable name	**NACCAPTD**
	Short descriptor	Days between amyloid PET scan and closest UDS visit
	Data type	Numeric longitudinal
	Data source	NACC derived
	Allowable codes	-3650 – 3650 8888 = Not applicable / no amyloid PET scan available
	Description/derivation	This variable is the amyloid PET scan date minus the closest UDS visit date for every amyloid PET scan. For amyloid PET scans before the closest visit date, **NACCAPTD** < 0, and for amyloid PET scans after the closest visit date, **NACCAPTD** > 0.
48	Variable name	**APETMANU**
	Short descriptor	Manufacturer
	Data type	Numeric longitudinal
	Data source	PET DICOM header
	Allowable codes	1 = GE 2 = Siemens 3 = Phillips 5 = Other 8 = Not applicable / no amyloid PET scan available 9 = Missing / unknown
	Description/derivation	This variable is determined from the DICOM tag (0008,0070) "Manufacturer" in the amyloid PET scan header.
	Note	The format of the DICOM header is not consistent across Centers, sessions, sequences, and possibly even images within a given sequence. To help identify images with certain technical properties, NACC has created this variable from text strings contained within the DICOM tags. Analysts should confirm these data by examining the DICOM header data.

49	Variable name	**APETMODL**
	Short descriptor	Manufacturer's model name
	Data type	Numeric longitudinal
	Data source	PET DICOM header
	Allowable codes	1 = DiscoveryST 2 = Biograph16 88 = Not applicable / no amyloid PET scan available 99 = Missing / unknown
	Description/derivation	This variable is determined from the DICOM tag (0008,1090) "Manufacturer's model name" in the amyloid PET scan header.
	Note	The format of the DICOM header is not consistent across Centers, sessions, sequences, and possibly even images within a given sequence. To help identify images with certain technical properties, NACC has created this variable from text strings contained within the DICOM tags. Analysts should confirm these data by examining the DICOM header data.
50	Variable name	**NACCNAPT**
	Short descriptor	Total number of amyloid PET scans
	Data type	Numeric cross-sectional
	Data source	NACC derived
	Allowable codes	1 – 20 88 = Not applicable / no amyloid PET scan available
	Description/derivation	This variable provides the number of amyloid PET scans a UDS subject has in the NACC database, regardless of time between scans. Note that while this variable is listed for all visits, it does not change across visits; it is cross-sectional.
51	Variable name	**NACCAPET**
	Short descriptor	At least one amyloid PET scan available (y/n)
	Data type	Numeric cross-sectional
	Data source	NACC derived
	Allowable codes	0 = No; does not have any amyloid PET scans at NACC 1 = Yes; has at least one amyloid PET scan available at NACC
	Description/derivation	This variable flags UDS subjects who have at least one amyloid PET scan at NACC.
52	Variable name	**LIGANDN**
	Short descriptor	Amyloid tracer used for PET scan
	Data type	Numeric longitudinal
	Data source	ADC
	Allowable codes	1 = PIB 2 = Florbetapir 3 = Florbetaben 4 = Flutemetemol 8 = Not applicable / no amyloid PET scan available 9 = Missing / unknown
	Description/derivation	This variable indicates the amyloid tracer used for the PET scan as reported by the ADC.