<u>Baseline Knee and Thigh MRI Meta-data</u>

<u>Meta-data</u>
The MRI meta-data are derived from two sources, the knee and thigh MRI tracking form used in the clinic at the time of the imaging and the data from the Imaging QC Center processes. Most of the MRI meta-data have been included in one dataset (MRI00), with one observation (record) for each MRI series type expected for each participant. Two meta-data variables are in the biomarkers dataset (Biomarkers00) because they belong in a one-record-per-participant dataset. They are MRSEQNL and MRSEQNR, and give the number of unique MRI series obtained for the left and right knees, respectively.

MEXAMTP denotes the type of MRI series the observation is for. MRCOMP indicates whether the MRI series was acquired or not. If an MRI series of that type was not done or is missing (MRCOMP=0), but was expected based on the protocol, MNDREAS gives the reason not done, and all derived data are missing.

For a participant at baseline with a full set of knee MRI series, there will typically be 12 knee MRI series with corresponding meta-data records. Two knee MRI series are acquired on only one knee (right or left depending on a number of factors), so there will typically be 2 additional dummy meta-data records corresponding to these series indicating that they were not acquired for the contralateral side. As of release 0.2.2 and 1.2.1, thigh images are released. For the thigh, there will generally be one axial T1-weighted MRI series (of about 15 slices) and one prescription scan (a single slice series), both with a corresponding meta-data record. Some thigh scans do not have a prescription scan available, but one can often be generated using DICOM viewing software. Localizer scans are not included in the meta-data, although they are included in the image sets. There can also be additional records with MRI meta-data when multiple acceptable or unacceptable images of a series type have been released.

See the MRI Dataset Description for rules for releasing an image based on image quality and for information on merging data from different datasets.

<u>MRI Tracking Form</u>
The knee and thigh MRI tracking form data were collected on one form at baseline.

Enrollment

    -Knee and thigh (Version 1.3c, 10-15-2008)

<u>MRI Scanner</u>
MRI scanner equipment will be upgraded over time at the clinical centers, and it was necessary to use alternate equipment for a brief period at two of the sites. SCNUPGR indicates if the scan was performed on original, different, or upgraded equipment.

Description	Variable Name	Format
MRI scanner different or upgraded	**SCNUPGR**	0=Original OAI Siemens Trio MR used 1=Alternate Siemens TIM Trio platform used 2=Upgrade from OAI Trio to TIM Trio platform used

Image Groups, Related Variables and Datasets

Each separate release of a set (or batch) of images is identified by a letter (A, B, etc.) defining a group of participants with images in that set. Image Group A contains a sample of 200 progression and incidence cohort participants. Image Group B contains a sample of 160 progression cohort participants. Image Group C comprises participants in the first half of the cohort, Image Group D participants who had an 18-month interim visit, Image Group E participants in the second half of the cohort, Image Group F participants in the Non-exposed Control cohort, and Image Group G participants who had a 30-month interim visit.

There are variables in the Enrollees dataset that indicate whether a participant is part of a particular group. These indicator variables that correspond to the image groups are listed below. For more information, see the release comment IMAGESx in the documentation for each dataset.

For more information about the Enrollees dataset, see the Enrollees document in General.

For more information about image groups and images and information about imaging protocols and protocol deviations, please see the DICOM Image Release Notes (DIRN).

Description	Variable Name	Format (applies to all IMAGESx variables below)
Participant in Image Group A	**IMAGESA**	0=No 1=Yes, knee MRI only 2=Yes, knee x-ray only 3=Yes, knee MRI and knee x-ray
Participant in Image Group B	**IMAGESB**	
Participant in Image Group C	**IMAGESC**	
Participant in Image Group D	**IMAGESD**	
Participant in Image Group E	**IMAGESE**	
Participant in Image Group F	**IMAGESF**	
Participant in Image Group G	**IMAGESG**	

MRI Meta-Data Variable Information

The variables derived from the OAI data collection forms include:

Description	Variable Name	Format
Days between most recent surgery and MRI	**MRSURDY**	(numeric)
MRI series completed	**MRCOMP**	0=No 1=Yes
Reason MRI series not completed	**MNDREAS**	1=Participant not eligible 2=MRI stopped at participant request 3=Equipment failure 4=Other 5=Severe metal distortion 6=Refused 8=Knee with short protocol 9=Not available 11=Knee not eligible 14=Scanned before thigh protocol started
MRI tech ID	**MRTECID**	(character)

The variables derived from the Imaging QC process include:

Description	Variable Name	Format
MRI series type	**MEXAMTP**	(character)
MRI series barcode	**MRBARCD**	(numeric text)
Date MRI series completed	**MRDATE**	mm/dd/yy
Number of MRI sequences obtained R knee L knee	**MRSEQNR** **MRSEQNL**	0=0 1=1 2=2 3=3 4=4 5=5 6=6 7=7
MRI series side	**MRSIDE**	1=Right 2=Left 3=Bilateral
MRI series QC rating	**QCRESLT**	NR=QC'd unacceptable, chosen for release Y=QC'd and found to be acceptable YD=Not QC'd and accepted by default

KNEE MRI TRACKING FORM

Baseline knee MRI status: ○ First knee MRI scan ○ Repeat knee MRI scan   MRIVIS6

1 Name of OAI participant: _____

First Name   Middle Initial   Last Name

2 Which knee(s) are eligible for an MRI scan? MRELIGK

(Examiner Note: Please refer to the Data from Prior Visits Report for the Enrollment Visit.)

○ Right knee only   ○ Left knee only   ○ Both knees   ○ No knees eligible

Perform MRI scan on eligible knee(s)	Not eligible for OAI. Go to Question #5.

3 What subcohort is the participant in?

(Examiner Note: Please refer to the Data from Prior Visits Report for the Enrollment Visit.)

○ Progression   ○ Incidence   ○ Non-exposed control group   COHORT1

Question #4-7 should be completed by the MRI technologist.

4 Is there any other reason why this participant should not have a knee MRI scan?

○ Yes   ○ No   OTREASK

Not eligible for OAI.
Please describe and then go to Question #5: _____

5 Was an MRI fully completed on eligible knee(s)?   **MRCOMP**

MRICOMP ○ Yes   ○ No (no sequences obtained)   ○ No (only some sequences obtained)

Why wasn't a knee MRI completed? *(Mark only one.)*

1 ○ Not eligible for knee MRI ⟶ | STOP. Not eligible for OAI. |
6 ○ Refused ⟶
2 ○ MRI stopped at participant request
3 ○ Equipment failure   MRIREAS   **MNDREAS**
5 ○ Severe distortion due to metal in one knee
4 ○ Other *(Please specify: _____)*
8 *(Knee with short protocol)*
9 *(Not available)*
11 *(Knee not eligible)*

6 Date knee MRI scan performed?   ☐☐ / ☐☐ / ☐☐☐☐   MRIDT

Month   Day   Year

7 What is the OAI staff ID# for the technologist who performed the knee MRI scan?   ☐☐☐☐   MRSTFID   **MRTECID**

THIGH MRI TRACKING FORM

Baseline thigh MRI status: ○ First thigh MRI scan   ○ Repeat thigh MRI scan   TMRVIS

1   Name of OAI participant: _____
First Name   Middle Initial   Last Name

2   Has participant had a knee or hip replacement?

(Examiner Note: Please refer to the Data from Prior Visits Report for the Enrollment Visit.)

○ Yes   ○ No   KHRSTMR

> Not eligible for thigh MRI.
> Go to Page 3, Question #6.

Question #3-8 should be completed by the MRI technologist.

3

Does the participant have any of the following:	JEWTHI			
a. Non-removable necklace and/or bracelet?	○ Yes	○ No	○ Don't know	○ Refused
b. Implanted metal rod, plate or prosthesis (> 4 inch length)?	○ Yes	○ No	○ Don't know	○ Refused

(RODTHI)

4   Are any of the above items in Question #3 marked "Yes," "Don't know," or "Refused"?

○ Yes   ○ No   THIEXCL

> Not eligible for thigh MRI.
> Go to Page 3, Question #6.

THIGH MRI TRACKING FORM

Baseline thigh MRI status: O First thigh MRI scan   O Repeat thigh MRI scan TMRVIS1

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5 Is there any other reason why this participant should <u>not</u> have a thigh MRI scan?

O Yes   O No OTREAST

Not eligible for thigh MRI.
Please describe and then go to Question #6: _____

_____

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6 Was a <u>thigh</u> MRI fully completed?

O Yes   O No THICOMP   **MRCOMP**

Why wasn't a <u>thigh</u> MRI completed? *(Mark only one.)*
1 O Not eligible for thigh MRI   THIREAS   **MNDREAS**
6 O Refused
2 O MRI stopped at participant request
3 O Equipment failure
4 O Other *(Please specify: _____)*
9   *(Not available)*
14   *(Scanned before thigh protocol started)*

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7 Date thigh MRI scan performed? ☐☐ / ☐☐ / ☐☐☐☐ TMRIDT

Month   Day   Year

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8 What is the OAI staff ID# for the technologist who performed the thigh MRI scan? ☐☐☐☐ TMRSID **MRTECID**