

OAI Examination Measures

Osteoarthritis Initiative: A Knee Health Study

| Examination Measures and Frequency | | | | | | | | | | | | | | |
|---|-----------------|------------------|-----------------|------------------------|----------------|------------------------|----------------|----------------|----------------|-----------------|----------------|-----------|----------------|-----------------------------------|
| Measurement | Screening Visit | Enrollment Visit | Follow-up Visit | | | | | | | | | | 108- mo | 120- /132- mo ¹⁹ |
| | | | 12 - mo | 18- mo ¹ | 24 - mo | 30- mo ¹ | 36 - mo | 48 - mo | 60- mo | 72- mo | 84- mo | 96- mo | | |
| Blood collection, fasting^{2, 12} | | | | | | | | | | | | | | |
| - Blood draw for serum | | X | X | X | X | X | X | X | X | | X | | | |
| - Blood draw for plasma and buffy coat | | X | X | X | X | X | X | X | X | | X | | | |
| - Blood draw for RNA | | | X | | | | | X | | | | | | |
| - Blood draw for lymphocyte extraction and cryopreservation | | | | | | | | X | | X ¹⁴ | | | | |
| Urine collection | | | | | | | | | | | | | | |
| - Fasting second AM void | | X | X | X | X | X | X | X | X | | X | | | |
| - Pregnancy test for premenopausal women | X | X | X | X | X | X | X | X | X | | X | | X | X |
| Height, standing | X | | | | X | | | X | | | | X | | X |
| Weight | X | | X | | X | | X | X | X | | X | | X | X |
| Knee size screen for MRI knee coil | X | | X ³ | X ³ | X ³ | X ³ | X ³ | X ³ | X ³ | | X ³ | | X ³ | |
| Body size screen for MRI bore | X | | | | | | | | | | | | | |
| Abdominal circumference⁴ | | X | | | X | | | X | | | | | X | |
| Hand examination (DIP bony enlargements)⁴ | X | | | | | | | | | | | | | X |
| Hallux valgus | | | | | | | | | | | | | X | |
| Knee examination⁴ | | | | | | | | | | | | | | |
| - Alignment (by goniometer) | | X | X | | X | | X | | | | | | | |
| - Anserine bursa tenderness | | X | X | | | | X | X | | | | | | |
| - Effusion | | X | | | X | | | X | | | | | | X |

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| - Flexion contracture and hyperextension | | X | | | | | | | | | | | | | X |
| - Tibiofemoral joint line tenderness | | X | X | | X | | | X | X | | | | | | X |
| - Knee flexion pain/tenderness | | X | | | | | | | | | | | | | |
| - Patellar tenderness | | X | X | | X | | | X | X | | | | | | |
| - Patellar quadriceps tenderness/tendinitis | | X | | | | | | | | | | | | | |
| - Patello-femoral crepitus | | X | X | | X | | | X | X | | | | | | X |
| - Medial-lateral laxity | | | | | X | | | X | | | | | | | |
| - Knee pain location (knee pain map) | | | | | X | | | | | | | | X | | |
| Thrust, walk⁴ | | | X | | X | | | X | | | | | | | |
| Blood pressure, seated | | X | X | | X | | | X | X | | X | | X | | X |
| Resting heart rate⁴ | | X | | | X | | | X | | X | | X | | X | |
| Performance Measures / Physical Activity | | | | | | | | | | | | | | | |
| - 20-meter timed walk | | X | X | | X | | | X | X | | X | | X | | X |
| - 400-meter timed walk ⁴ | | X | | | X | | | X | | | | | X | | |
| - Chair stands, timed | | X | X | | X | | | X | X | | X | | X | | X |
| - Isometric quadriceps and hamstring strength ⁴ | | X | X ⁵ | | X | | | X ⁵ | X | | | | | | |
| - Accelerometry ¹³ | | | | | | | | X ¹³ | | X ¹⁷ | | | | | |
| - Standing balance test (semi-tandem, tandem, and one-leg) | | | | | | | | | | | | | | | X |

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| MRI | | | | | | | | | | | | | | | |
| - Knee, right and left | | X | X | X ⁶ (Unilat) | X | X ⁶ (Unilat) | X ⁷ | X | | X | | X | | | |
| - Thigh, right and left ⁴ | | X | X ⁵ | | X | | X ⁵ | X | | | | X | | | |
| X-ray | | | | | | | | | | | | | | | |
| - Knee: bilateral PA fixed flexion view | X | | X | | X | | X | X | | X | | X | | X | |
| - Knee: unilateral fluoroscopic-guided view (one or both knees) ⁸ | | X ⁸ | X ⁸ | | X ⁸ | | | | | | | | | | |
| - Knee: unilateral lateral view (both knees) ⁹ | | X ⁹ | X ⁵ | | | | X ⁹ | X ⁵ | | | | | | | |
| - Hip: AP pelvis view | | X | X ⁵ | | | | | X | | | | X | | | |
| - Hand: dominant PA hand | | X | X ⁵ | | | | | X | | | | | | | |
| - Bilateral full limb for mechanical alignment ¹⁰ | | | X ¹⁰ | | X ⁵ | | X ⁵ | X ⁵ | | | | | | | |
| - Spine | | | | | | | | | | | | | | | |
| DXA | | | | | | | | | | | | | | | |
| - Knee (bilateral) | | | | | | | X ¹¹ | X ¹¹ | X ¹¹ | | X ¹⁵ | | X ¹⁸ | | |
| - Hip | | | | | | | X ¹¹ | X ¹¹ | X ¹¹ | | X ¹⁵ | | X ¹⁶ | | |
| - Body composition | | | | | | | | | | | X ¹⁶ | | | | |

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- ¹This visit obtained in a subset of progression cohort participants at either the 18-month or 30-month follow-up visit
- ²Most participants will have AM blood draws after an overnight fast; a small percent will have PM blood draws after a minimum 2 hour fast. AM vs PM blood draws will be consistent for the same participant across visits.
- ³ Optional
- ⁴The majority of the Reference (Non-exposed) controls had a streamlined clinic visit which did not include the following exams: abdominal circumference, hand examination, knee examination, walk thrust, resting heart rate, 400-meter timed walk, isometric strength, and thigh MRI.
- ⁵ To be obtained if participant eligible and a valid measurement was not obtained at the previous visit.
- ⁶ Obtained in the knee that had the extended set of sequences at baseline, usually the right knee. 30-month visit may include trabecular sequences.
- ⁷ Shorter MRI protocol is an option. Shorter protocol is defined as a scan of one knee (usually right) that had the extended set of sequences at previous visit. If both knees scanned, MRI may include trabecular sequences.
- ⁸ Obtained in a subset of Progression subcohort participants at 2 clinical centers.
- ⁹ Obtained in Reference (Non-exposed) controls.
- ¹⁰ Obtained in the Progression and Incidence subcohort participants.
- ¹¹ BMD of bilateral knees and unilateral hip obtained in a subset of Progression subcohort participants at 1) either the 30-month or 36-month follow-up visit and 2) a follow-up measure at the 48-month follow-up visit.
- ¹² Selected assays for retention purposes only at clinic's discretion.
- ¹³ Funded by D. Dunlop/P.Semanik ancillary study.
- ¹⁴ To be obtained if not obtained at the 48-month follow-up visit.
- ¹⁵ BMD of bilateral knees and unilateral hip obtained in the incidence and non-exposed control cohort, and those progression cohort participants enrolled in the McAlindon bone ancillary study who did not have an MRI with trabecular sequences at the 48-month follow-up visit.
- ¹⁶ Body composition and hip DXA only if clinic wants to for retention purposes (not funded)
- ¹⁷ Participants who completed the accelerometry measurement at the 48-month follow-up visit will be asked to do the accelerometry measurement again at the 72-month follow-up visit
- ¹⁸ To be obtained in the incidence cohort participants who had knee DXA at the 72-month follow-up visit
- ¹⁹ To be obtained in a subset of participants with K/L 0 at baseline