

OAI Current and Proposed Examination Measures

Osteoarthritis Initiative: A Knee Health Study

Examination Measures and Frequency												
Measurement	Screening Visit	Enrollment Visit	Follow-up Visit									
			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
Height, standing	X				X				X			X
Weight	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											
Knee examination⁴												
- Alignment (by goniometer)		X	X		X			X				
- Anserine bursa tenderness		X	X					X	X			
- Effusion		X			X				X			

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- Flexion contracture and hyperextension		X										
- Tibiofemoral joint line tenderness		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				
- Medial-lateral laxity					X		X					
- Knee pain location (knee pain map)					X							
Thrust, walk⁴			X		X		X					
Blood pressure, seated		X	X		X		X	X		X		X
Resting heart rate⁴		X			X			X		X		X
Performance Measures / Physical Activity												
- 20-meter timed walk		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
- Isometric quadriceps and hamstring strength ⁴		X	X ⁵		X		X ⁵	X				
- Accelerometry ¹³								X ¹³				

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			12 -mo	18- mo ¹	24 - mo	30- mo ¹	36 - mo	48 - mo	60- mo	72- mo	84- mo	96- mo
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-ray												
- Knee: bilateral PA fixed flexion view	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		?	
- Hip							X ¹¹	X ¹¹	X ¹¹		?	
- Lumbar spine											?	
- Body composition											?	

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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.

³Optional

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.

⁵To be obtained if participant eligible and a valid measurement was not obtained at the previous visit.

⁶Obtained in the knee that had the extended set of sequences at baseline, usually the right knee. 30-month visit may include trabecular sequences.

⁷Shorter 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.

⁸Obtained in a subset of Progression subcohort participants at 2 clinical centers.

⁹Obtained in Reference (Non-exposed) controls.

¹⁰Obtained in the Progression and Incidence subcohort participants.

¹¹BMD of bilateral knees and unilateral hip obtained in a subset of Progression subcohort participants at either the 30-month or 36-month follow-up visit and at the 48-month follow-up visit.

¹²Selected assays for retention purposes only at clinic's discretion.

¹³Funded by D. Dunlop/P.Semanik ancillary study.

¹⁴To be obtained if not obtained at the 48-month follow-up visit.

¹⁵Funding proposal submitted by T. McAlindon to perform DXA of knees, hips, and lumbar spine in incidence cohort only.

¹⁶Body composition only if clinic wants to for retention purposes (not funded)