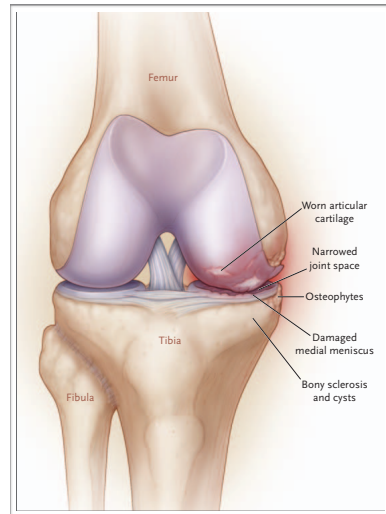


Osteoarthritis of the Knee^{1,2}

Narrative Section

HISTORICAL VIGNETTE - The presence of osteoarthritis (OA) of the knee joint dates back thousands of years. Ancient descriptions in Egyptian manuscripts provide clinical evidence of osteoarthritis. Modern evaluations of pre-historic skeletons from Alaskan hunter-gatherers (from 4000 BCE) show degenerative changes of the knee joint. Even the derivation of the word “osteoarthritis” comes from early Greek physicians, a term they used to suggest inflammatory changes of the joint. But recent understanding of this nearly ubiquitous condition questions certain features. Most OA of the knee does not involve active inflammation. More than joint pressure and overuse causes the clinical wear of the joint. And an increasing prevalence of this condition in a sedentary society suggests additional causes. So how can modern clinicians use their physical exam to increase the likelihood that the knee being examined is afflicted by osteoarthritis?



CONTEXT AND USEFULNESS - By understanding six cardinal features of the history and physical exam of the knee, clinicians can distinguish osteoarthritis of the knee from other types of joint inflammatory conditions.

Physical Manuever

Model Proper Technique - (1) Starting with the history of a patient with chronic knee pain, those older than 50 years are at greatest risk. (2) Ask how long morning stiffness is experienced. Stiffness of the knee that lasts less than 30 minutes suggests OA (LR = 3) while stiffness lasting longer suggests an inflammatory condition.



(3) Next, observe the knees. Bony enlargement seen and felt has the greatest prediction for OA being present (LR = 11.8). If a varus deformity of the knee is seen, this increases the chance of OA as well (LR = 3.4). When passively flexing and extending the knee, (4) palpating crepitus slightly increases the likelihood of OA (LR = 2.1), as does (5) the presence of tenderness along the bony margins of the joint. (6) The absence of warmth of the knee joint suggests osteoarthritis instead of inflammatory arthritis (LR = 1.6).

INTERPRETATION - Each of the six conditions above have value in distinguishing inflammatory versus non-inflammatory arthritis, with bony enlargement of the knee headlining the group. When 3 of 6 conditions above are present, that collective grouping has its own predictive value of osteoarthritis (LR = 3.1). Radiographs (above) show narrowed joint spaces, initially affecting the medial compartment, and osteophytes.

CAVEAT AND COMMON ERRORS - Radiographs are too insensitive to identify early osteoarthritis, so imaging should be interpreted in the clinical context. Referred pain to the knee, such as from hip OA, should be evaluated, as well as knee pain arising from structures outside the joint, such as bursitis and iliotibial band syndrome. Pain from a meniscal tear can also cause joint-line tenderness during examination and should be considered.

¹ Chi J *et. al.* "The Five Minute Moment." *Am J Med.* **2016 Aug**; 129 (8): 792-795.

² Felson D. "Osteoarthritis of the Knee." *N Engl J Med.* **2006 Feb**; 354 (8): 841-848.