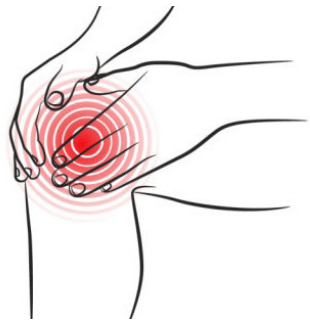
Diagnosis & Treatment of Osteoarthritis



Osteoarthritis (OA) most often affects the knees, hips, hands (first carpometacarpal and proximal and distal interphalangeal joints), and the metatarsophalangeal joints of the great toes. A thorough history and physical examination are the keys to diagnosis.

Typical presentation of OA:

- Activity-related pain
- Insidious onset
- Brief morning stiffness (e.g., <30 minutes)
- No systemic symptoms
- Age >45 years
- No locking or catching suggestive of another mechanical joint process
- Clinical findings not suggestive of a periarticular process, such as bursitis or tendinopathy

Atypical features suggesting alternative diagnoses:

- Rapid onset
- Presence of systemic symptoms (e.g., fever, weight loss)
- Prolonged morning stiffness
- Inflammatory changes on physical examination (e.g., swelling, redness, warmth)
- Involvement of atypical joints (e.g., elbows, wrists, metacarpophalangeal joints, ankles)

✘ Testing / imaging not needed

✓ Try nonpharmacologic therapies:

KNEE
- Physical therapy (PT)
- Land- or water-based exercises
- Biomechanical realignment with braces
- Weight loss in patients with overweight or obesity

HAND
- Occupational therapy for consideration of devices to assist with activities of daily living, joint protection, and splinting

HIP
- Land- or water-based exercises
- PT (although typically only modest improvement)

If pain is moderate to severe:

Consider initiation of pharmacologic therapy (see below) at this stage, especially if needed to allow participation in PT.

Evaluate:

OBTAIN LABORATORY TESTS:
- Complete blood count (CBC)
- Erythrocyte sedimentation rate (ESR)
- C-reactive protein (CRP)
- Rheumatoid factor, anti-CCP antibody
- Consider antinuclear antibody if suspicion for lupus or Sjögren syndrome
- Consider Lyme-disease testing if risk factors present and if there is mono- or oligoarthritis

Note: Abnormalities in these tests will not rule out or rule in OA.

PERFORM ARTHROCENTESIS IF AN EFFUSION IS PRESENT:
- Synovial fluid analysis
  - » Cell count*
  - » Crystal analysis
  - » Gram stain
  - » Bacterial culture

*A leukocyte count 200–2000 cells/mm^3 with <70% (typically <25%) polymorphonuclear leukocytes is consistent with OA or another noninflammatory joint disease.

Note: Use of a cane may be helpful as palliative therapy for knee and hip OA.

OBTAIN IMAGING:

- Plain film; CT or MRI in specific cases

→ POSSIBLE FINDINGS

- Suggestive of OA*:
  - » Joint-space narrowing
  - » Osteophytes
  - » Sclerosis
  - » Subchondral cysts
- Suggestive of alternative diagnosis:
  - » Erosive changes (seen in inflammatory arthritis)
  - » Fracture
  - » Primary bone tumors or metastatic tumors
  - » Osteonecrosis

**Note:* Radiographic findings suggestive of OA do not always correlate well with pain or functional limitations.

Alternative diagnosis found?

no

yes

Refer/treat accordingly

If pain or function does not improve, consider the following first-line pharmacologic therapies:

- Acetaminophen
- Topical NSAIDs
- Oral NSAIDs (unless contraindicated)

TREATMENTS WITH AN UNCERTAIN BALANCE OF RISKS AND BENEFITS:

- Chondroitin
- Glucosamine–chondroitin
- Fish oil
- Acupuncture

DO NOT USE:

- Disease-modifying antirheumatic drugs (such as methotrexate, hydroxychloroquine, sulfasalazine)
- Oral glucocorticoids

If pain or function does not improve, consider intra-articular glucocorticoid injections

Relief is typically temporary, lasting on average several months

Consider the following second-line pharmacologic therapies:

- Topical capsaicin
- Duloxetine
- Tramadol

Consider imaging and specialist referral:

INDICATIONS FOR JOINT REPLACEMENT (SURGICAL REFERRAL):

- Failure of conservative treatments
- Significantly impaired function and quality of life
- Patient preference and willingness to accept the risks of surgery

Note: Avoid performing surgery too soon (when revision surgery may be necessary in the future) or too late (leaving pain untreated and risking the patient no longer being a good surgical candidate). Arthroscopic surgery is not beneficial for knee OA.

INDICATIONS FOR PAIN MANAGEMENT REFERRAL:

- Uncertainty about the specific pain diagnosis or pain generator
- Interventional pain treatment options considered

Note: Pain specialists offer a wide variety of services ranging from behavioral therapies to interventional therapies to comprehensive multimodal care. Clinicians should be aware of the specific services offered by a given pain specialist to ensure that the specialist offers the services required for a particular patient.

INDICATIONS FOR RHEUMATOLOGY REFERRAL:

- Uncertainty about diagnosis
- Difficult to treat OA or need for glucocorticoid injections (if cannot be done by other providers)

References:

1. Kolasinski SL et al. 2019 American College of Rheumatology/Arthritis Foundation guideline for the management of osteoarthritis of the hand, hip, and knee. Arthritis Care Res (Hoboken) 2020 Feb; 72:149.
2. Hunter DJ and Bierma-Zeinstra S. Osteoarthritis. Lancet 2019 Apr 27; 393:1745.

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