

Treatment of Knee Osteoarthritis: A Clinical Practice Guideline from the AAOS

Key Points for Practice from *AFP*

- Persons with symptomatic knee osteoarthritis should participate in self-management programs, strengthening, low-impact aerobic exercise, and neuromuscular education.
- Acupuncture, glucosamine, and chondroitin are not recommended therapies for knee osteoarthritis.
- Recommended pharmacologic therapies include oral or topical nonsteroidal anti-inflammatory drugs or tramadol.
- Hyaluronic acid injections are not recommended, and evidence to support corticosteroid injections is inconclusive.

From the AFP Editors

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A collection of Practice Guidelines published in *AFP* is available at <http://www.aafp.org/afp/practguide>.

In the United States, approximately 240 per 100,000 persons per year have knee osteoarthritis. In 2010, approximately 9.9 millions adults had symptomatic knee osteoarthritis. The risk of this condition, especially in women, increases with age. Other risk factors include genetics, being overweight, working in certain job fields, repeated bending of the knee or heavy lifting, and hereditary vulnerability. Older adults who self-report having osteoarthritis have more appointments with their physicians and have more limited function than those without osteoarthritis. The aging population, increase in obesity rates, and increased focus on older persons staying active indicate that knee osteoarthritis will continue to have a large impact on the emotional and physical health of the U.S. population. This clinical guideline from the American Academy of Orthopaedic Surgeons (AAOS) updates the one previously published in 2008 and addresses treatment of symptomatic knee osteoarthritis in adults 19 years and older.

Strength of recommendation (SOR) in this guideline was defined as follows:

- Strong: benefits of the approach clearly exceed the potential harm, and/or the quality of the supporting evidence is high.
- Moderate: benefits exceed the potential harm (or in the case of a negative recommendation, the potential

harm exceeds the benefit), but the quality or applicability of the supporting evidence is not as strong.

- Limited: quality of the supporting evidence is unconvincing, or well-conducted studies show little clear advantage to one approach over another.
- Consensus: expert opinion supports the recommendation even though there is no available empirical evidence that meets the inclusion criteria of the guideline's systematic review.
- Inconclusive: lack of compelling evidence, resulting in an unclear balance between benefits and potential harm.

Treatment Recommendations

CONSERVATIVE

Persons with symptomatic knee osteoarthritis should participate in self-management programs, strengthening, low-impact aerobic exercise, and neuromuscular education. They should also participate in physical activity as outlined by national guidelines (SOR: strong). It is suggested that those with a body mass index of 25 kg per m² or greater should lose weight (SOR: moderate).

Acupuncture, glucosamine, and chondroitin are not recommended (SOR: strong). Most of the studies regarding the use of acupuncture were not statistically significant, much of the evidence was not clinically significant, and some outcomes were associated with clinical, but not statistical, significance. A considerable amount of research has been done on glucosamine and chondroitin; however, there is basically no evidence indicating that there are clinically important outcomes compared with placebo. The strength of recommendation against acupuncture, glucosamine, and chondroitin use was based on lack of effectiveness, not on possible harm.

The use of lateral wedge insoles (SOR: moderate) is not suggested. A recommendation for or against the use of physical agents (e.g., electrotherapeutic modalities), manual therapy, or a valgus directing force brace (medial compartment unloader) cannot be made (SOR: inconclusive).

PHARMACOLOGIC

Oral or topical nonsteroidal anti-inflammatory drugs or tramadol (Ultram) should be used in persons with ►

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in the car
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when you have a minute
when you have a second
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symptomatic knee osteoarthritis (SOR: strong). No recommendation can be made for or against the use of acetaminophen, opioids, or pain patches (SOR: inconclusive). Only a single study evaluated acetaminophen vs. placebo; it did not find statistically significant therapeutic benefit with acetaminophen. Studies of acetaminophen also used higher dosages than are recommended by the U.S. Food and Drug Administration. With regard to opioids and pain patches, no relevant studies met inclusion criteria, so no guidelines could be proposed.

PROCEDURAL

In persons with symptomatic knee osteoarthritis, use of needle lavage is not suggested (SOR: moderate), and hyaluronic acid is not recommended (SOR: strong). No recommendations for or against intra-articular corticosteroids, growth factor injections, or platelet-rich plasma can be made (SOR: inconclusive). Studies had mixed results regarding treatment with corticosteroid injections vs. hyaluronic acid injections and needle lavage. Because there was little evidence to support hyaluronic acid and needle lavage, the benefits of intra-articular corticosteroids were also found to be inconclusive.

SURGICAL

Valgus producing proximal tibial osteotomy may be performed in persons with symptomatic medial compartment knee osteoarthritis (SOR: limited). Arthroscopy with lavage or debridement is not recommended in persons with a primary diagnosis of symptomatic knee osteoarthritis (SOR: strong). Because of a lack of reliable evidence, free-floating (unfixed) interpositional devices should not be used in persons with medial compartment osteoarthritis of the knee (SOR: consensus). Recommendations for or against arthroscopic partial meniscectomy in persons with a torn meniscus cannot be made (SOR: inconclusive).

Guideline source: American Academy of Orthopaedic Surgeons

Evidence rating system used? Yes

Literature search described? Yes

Guideline developed by participants without relevant financial ties to industry? No

Available at: *Journal of the American Academy of Orthopaedic Surgeons*, September 2013

Available at: <http://www.aaos.org/Research/guidelines/TreatmentofOsteoarthritisoftheKneeGuideline.pdf> [subscription required]

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