

# OSTEOARTHRITIS MANAGEMENT GUIDELINES (Part 1 of 2)

Osteoarthritis (OA) is the most common form of arthritis and leading cause of disability among older adults. Knees, hips, and hands are most commonly affected. OA is characterized by pathology involving whole joint, including cartilage degradation, bone remodeling, osteophyte formation, and synovial inflammation leading to pain, stiffness, swelling, and loss of normal joint function. The American College of Rheumatology (ACR) and the Arthritis Foundation have developed in collaboration an evidence-based guideline for the comprehensive management of OA, including educational, behavioral, psychosocial, and physical interventions, as well as pharmacologic therapies (eg, topical, oral, intraarticular medications).

Treatments	Hand	Knee	Hip	Notes
<b>NON-PHARMACOLOGIC APPROACHES</b>				
<b>Exercise</b>	Strongly recommended	Strongly recommended	Strongly recommended	Knee and Hip OA: stronger evidence. Includes walking, strengthening, neuromuscular training, aquatic exercise; no hierarchy of one over another. Associated with better outcomes when supervised.
<b>Self-efficacy and self-management programs</b>	Strongly recommended	Strongly recommended	Strongly recommended	Multidisciplinary group-based format combining sessions on skill-building, disease and medication education, joint protection measures, fitness and exercise goals.
<b>Weight loss</b>		Strongly recommended	Strongly recommended	Loss of ≥5% of body weight may be associated with changes in clinical and mechanistic outcomes. Increased benefits with weight loss of 5–10%, 10–20%, and >20% of body weight.
<b>Tai chi</b>		Strongly recommended	Strongly recommended	Focus on strength, balance, fall prevention, depression, and self-efficacy.
<b>Cane</b>		Strongly recommended	Strongly recommended	In patients whom disease in ≥1 joints is causing large impact on ambulation, joint stability, pain.
<b>First carpometacarpal orthosis</b>	Strongly recommended			Neoprene or rigid orthoses strongly recommended for first CMC joint OA.
<b>Tibiofemoral knee brace</b>		Strongly recommended		For patients whom disease in ≥1 knee is causing large impact on ambulation, joint stability, or pain.
<b>Other hand orthoses</b>	Conditionally recommended			Conditionally recommended in joints other than the first CMC joint. Includes digital orthoses, ring splints, and rigid or neoprene orthoses which support specific joints or the entire hand.
<b>Patellofemoral knee brace</b>		Conditionally recommended		For patients whom disease in ≥1 knee is causing large impact on ambulation, joint stability, or pain. Conditional due to the variable outcomes from published trials and patient’s difficulty in tolerating these braces.
<b>Heat, therapeutic cooling</b>	Conditionally recommended	Conditionally recommended	Conditionally recommended	Includes moist heat, diathermy, ultrasound, hot and cold packs. May provide short duration of benefit.
<b>Cognitive behavioral therapy</b>	Conditionally recommended	Conditionally recommended	Conditionally recommended	Limited evidence suggests pain reduction in OA. Improved pain, health-related QOL, functional capacity, disability in conditions other than OA.
<b>Acupuncture</b>	Conditionally recommended	Conditionally recommended	Conditionally recommended	Efficacy remains controversial.
<b>Kinesiotaping</b>	Conditionally recommended	Conditionally recommended		Permits range of motion of the joint, in contrast to a brace which maintains joint in a fixed position. Limited quality of evidence.
<b>Balance training</b>		Conditionally recommended	Conditionally recommended	Low quality of evidence.
<b>Paraffin</b>	Conditionally recommended			Additional method of heat therapy.
<b>Yoga</b>		Conditionally recommended		Lack of available data. Focus on physical postures, breathing techniques, meditation.
<b>Radiofrequency ablation</b>		Conditionally recommended		Potential analgesic benefits. Lack of long-term safety data.
<b>Iontophoresis</b>	Conditionally against			Lack of available data.
<b>Manual therapy with/without exercise</b>		Conditionally against	Conditionally against	Includes manual lymphatic drainage, manual traction, massage, mobilization/manipulation, passive range of motion. Limited data.
<b>Massage therapy</b>		Conditionally against	Conditionally against	Not shown to reduce OA symptoms.
<b>Shoe alterations</b>		Conditionally against	Conditionally against	Modified shoes and/or lateral and medical wedged insoles lack data.
<b>Pulsed vibration therapy</b>		Conditionally against		Limited data.
<b>Transcutaneous electrical nerve stimulation (TENS)</b>		Strongly against	Strongly against	Low quality of evidence. Studies shown lack of benefit for knee OA.

(continued)

# OSTEOARTHRITIS MANAGEMENT GUIDELINES (Part 2 of 2)

Treatments	Hand	Knee	Hip	Notes
<b>PHARMACOLOGIC THERAPIES*</b>				
<b>Oral NSAIDs</b>	Strongly recommended	Strongly recommended	Strongly recommended	Mainstay of pharmacologic management. Use lowest effective dose for shortest duration.
<b>Topical NSAIDs</b>	Conditionally recommended	Strongly recommended		In knee OA, topical NSAIDs should be considered before oral NSAIDs. Frequent hand washing and lack of direct evidence of efficacy in hand OA led to conditional recommendation.
<b>Intraarticular glucocorticoid inj</b>	Conditionally recommended	Strongly recommended	Strongly recommended	Hip OA strongly recommended to be ultrasound-guided. Short-term efficacy in knee OA. Lack of evidence in hand OA.
<b>Acetaminophen</b>	Conditionally recommended	Conditionally recommended	Conditionally recommended	Few experience important benefit. Monotherapy may be ineffective. May be appropriate for short-term and episodic use in patients with contraindications or intolerance to NSAIDs.
<b>Tramadol</b>	Conditionally recommended	Conditionally recommended	Conditionally recommended	May be appropriate if contraindication to NSAIDs, other therapies ineffective, or no available surgical options.
<b>Duloxetine</b>	Conditionally recommended	Conditionally recommended	Conditionally recommended	May have efficacy in OA when used alone or in combination with NSAIDs. Concerns regarding tolerability and side effects.
<b>Topical Capsaicin</b>	Conditionally against	Conditionally recommended		Increased risk of contamination of the eye when used for hand OA.
<b>Colchicine</b>	Conditionally against	Conditionally against	Conditionally against	Low quality of data.
<b>Non-tramadol opioids</b>	Conditionally against	Conditionally against	Conditionally against	With recognition that they may be used in certain circumstances, particularly when no available alternatives.
<b>Fish oil</b>	Conditionally against	Conditionally against	Conditionally against	Lack of available data.
<b>Vitamin D</b>	Conditionally against	Conditionally against	Conditionally against	Limited evidence of benefit.
<b>Prolotherapy</b>		Conditionally against	Conditionally against	Limited data.
<b>Intraarticular botulinum toxin</b>		Conditionally against	Conditionally against	Studies demonstrate lack of efficacy.
<b>Intraarticular hyaluronic acid inj</b>	Conditionally against	Conditionally against	Strongly against	Limited evidence of benefit; used in clinical practice when other alternatives have been exhausted or failed to provide satisfactory benefit. Stronger evidence of lack of benefit in hip OA.
<b>Chondroitin</b>	Conditionally recommended	Strongly against	Strongly against	Analgesic efficacy without evidence of harm in hand OA (single trial).
<b>Bisphosphonates</b>	Strongly against	Strongly against	Strongly against	No improvement in pain or functional outcomes.
<b>Glucosamine</b>	Strongly against	Strongly against	Strongly against	Studies demonstrate lack of efficacy.
<b>Hydroxychloroquine</b>	Strongly against	Strongly against	Strongly against	Studies demonstrate lack of efficacy.
<b>Methotrexate</b>	Strongly against	Strongly against	Strongly against	Studies demonstrate lack of efficacy.
<b>TNF inhibitors, IL-1 antagonists</b>	Strongly against	Strongly against	Strongly against	Studies demonstrate lack of efficacy with increased risks of toxicity.
<b>Platelet-rich plasma</b>		Strongly against	Strongly against	Concerns with heterogeneity and lack of standardization in available preparations and techniques.
<b>Stem cell</b>		Strongly against	Strongly against	Concerns with heterogeneity and lack of standardization in available preparations and techniques.

## NOTES

**Key:** CMC = carprometacarpal; IA = intraarticular; IL-1 = interleukin-1; inj = injection; NSAIDs = nonsteroidal anti-inflammatory drugs; TNF = tumor necrosis factor

\* When selecting pharmacologic therapies, initiate treatments with the least systemic exposure or toxicity first.

## REFERENCE

Kolasinski SL, Neogi T, Hochberg MC, et al. 2019 American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee. *Arthritis Care & Research*. 2020;0(0):1-14. DOI 10.1002/acr.24131.