VA/DoD CLINICAL PRACTICE GUIDELINE

Non-Surgical Management of Hip & Knee Osteoarthritis

KEY ELEMENTS OF THE GUIDELINE

- Assessment of signs and symptoms through medical history and physical examination are the foundation for clinical diagnosis of OA
- Weight bearing plain radiographs of knee or hip may aid in the diagnosis of OA. Advanced imaging (MRI, CT) are not required for initiation or management of treatment
- Assessment for function and pain is an essential component of treatment decisions
- A multimodal treatment approach is indicated based on shared decision-making and patient preferences
- The optimal management of OA requires a combination of non pharmacologic and pharmacologic treatment modalities
- Maintaining physical activity is beneficial to successful and sustained functionality and control of pain
- Weight loss is critical component of therapy in overweight and obese patients with OA
- Prescription of chondroitin sulfate or glucosamine is not recommended for treatment of OA
- Insufficient evidence to support other nutritional supplements or CAM modalities for treatment of OA
- Surgical intervention should be last option for patients who failed pharmacologic and non-pharmacologic therapy and desire surgery after discussion of risks and benefits

Access to full guideline and toolkit:
http://www.healthquality.va.gov or,
https://www.qmo.amedd.army.mil
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VA/DoD Evidence-Based Practice

Algorithm: *Management of Hip & Knee Osteoarthritis*

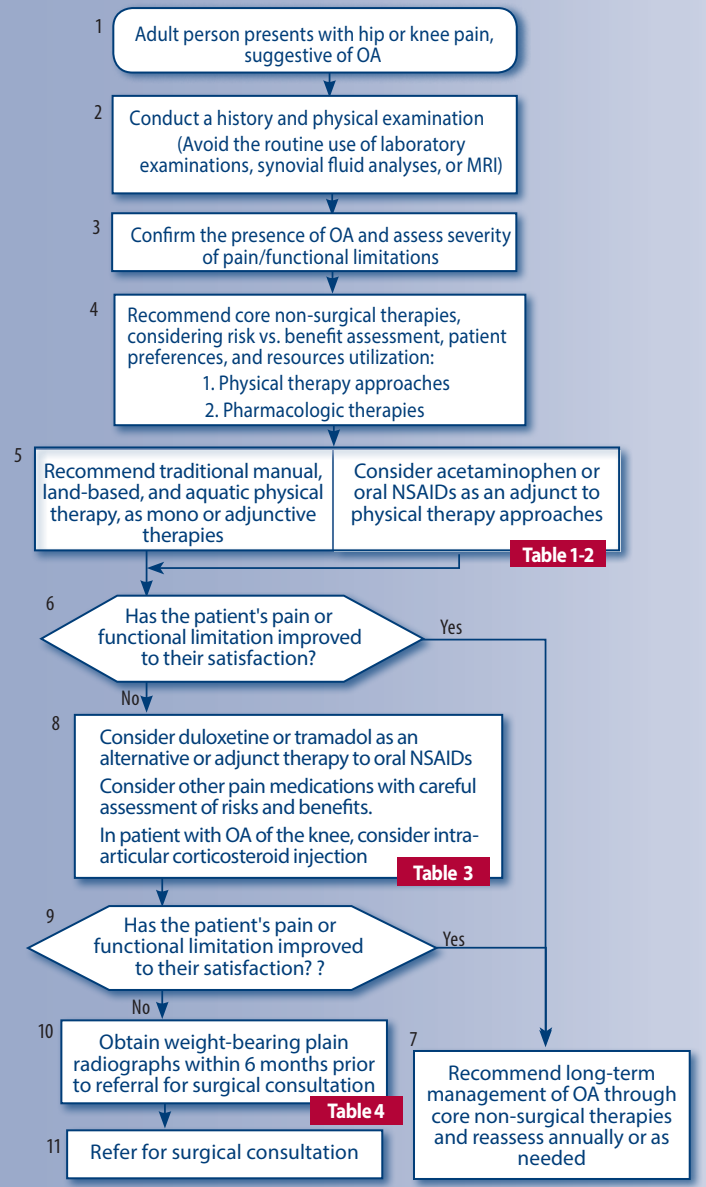

TABLE 1 Pharmacotherapy Considerations

Drug	Recommendations
Acetaminophen	Ensure patient received no more than 4 grams per day from all sources, prescribed or non-prescribed. Prefer lower maximum dose (2 to 3 grams daily) in advanced age or patient with heavy alcohol use
Opioids	Toxicity/Dependence
NSAIDs *(See also Table 2)*	Avoid in patient with history of or at risk for cardiovascular or cerebrovascular disease (on ASA or consider adding ASA) Avoid in patient with renal injury/disease Consider addition of a proton-pump inhibitor (PPI) or misoprostol in patient at risk for serious upper gastrointestinal events
Topical capsaicin	Consider as alternative or adjunct in mild to moderate knee OA Insufficient evidence to recommend for hip pain

TABLE 2 Consideration when Initiating NSAIDs *(COX-2 selective inhibitor or nonselective NSAID)*

GI complication Risk:	No or Low	High
No history or No sufficient risk for Cardiovascular or Cerebrovascular Disease (AND Not receiving low-dose ASA)	Nonselective NSAID (ibuprofen, naproxen, etc.)*	If possible, consider other treatment modalities. NSAID or salsalate + PPI or misoprostol Hospital admission for UGI bleeding (Very high risk): Celecoxib + PPI
History or Sufficient risk for Cardiovascular or Cerebrovascular Disease (On ASA or consider adding ASA)	If possible, consider other treatment modalities. Nonselective NSAID (naproxen)	If possible, consider other treatment modalities. Nonselective NSAID (naproxen) + PPI or misoprostol

** Generic nonselective NSAID, Adapted from Fendrick 2004, and Scheiman and Fendrick 2005.*

TABLE 3 Intra-articular Injections

Consider Intra-articular injection therapy in patient with refractory pain after core treatment:

Knee OA:	Hip OA:
• Corticosteroid injections may be beneficial • Insufficient evidence for hyaluronate/ hylan injections	• Consider imaging/ultrasound directed corticosteroid injection to reduce pain • The use of hyaluronate/hylan injections is not recommended

TABLE 4 Referral to Surgery

Patient referred to surgery should:

- Failed non-surgical core therapy
- Have confirmed OA by weight bearing radiographs within 6 month prior to referral
- Desire surgery after discussion of risk an benefits

TABLE 5 Pharmacologic Agents Dosages * +

Generic Name	Brand	Dose [mg]		Frequency [daily]	Max Daily Dose [mg]
		Usual Starting	Max Single		
COX-2 Selective NSAIDs:[a]					
Celecoxib	CELEBREX	100-200	200	once or twice	200 mg for OA
Partially selective NSAIDs:[a]					
Etodolac	generic only/XR	200	400	2-4 times	XR up to 1200
Meloxicam	MOBIC/ generics	7.5	15	once	15 mg
Nabumetone	generic only	1000	2000	once	2000 mg May divide twice
Non-aspirin, nonselective NSAIDs:[a]					
Diclofenac potassium/ sodium	generics	50	75	2-3 times	150 mg May divide up to 3 times
Diclofenac sodium	Voltaren XR	100	100	once	100 mg
Diflunisal	generic only	250	750	twice	1500 mg
Fenoprofen	Nalfon/ generics	300	600	3-4 times	3,200 mg Higher renal risk
Flurbiprofen	NSAID/ generics	50-100	100	twice	300 mg
Ibuprofen	generics	400	800	3-4 times	2400 mg for chronic pain
Indomethacin	Indocin/SR /generics	25-50 [IR]	50	2-3 times	150 mg May divide up to 4 times (IR)
Indomethacin		75 [SR]	75	1-2 times	
Ketoprofen IR	generic only	50	75	3-4 times	300 mg
Ketoprofen ER	generic only	200		once	
Meclofenamate sodium	generic only	50	100	4 times	400 mg May give 3 times

TABLE 5 Pharmacologic Agents Dosages (cont.)

Generic Name	Brand	Dose [mg]		Frequency [daily]	Max Daily Dose [mg]
		Usual Starting	Max Single		
Non-aspirin, nonselective NSAIDs:[a] (cont.)					
Naproxen/-EC	NAPROSYN/ generics	250	500	twice	1000 mg for chronic pain
Naproxen Sodium	ANAPROX/ generics	275	550	twice	1100 mg for chronic pain
Oxaprozin	DAYPRO/ generics	1200	1800	once	26 mg/kg no more than 1800
Piroxicam	FELDENE/ generics	10	20	once	20 mg may divide twice
Sulindac	CLINORIL/ generics	150	200	twice	400 mg
Tolmetin	generic only	400-600	600	3 times	1800 mg
Aspirin and Salsalate					
Aspirin	several	1000	1000	3 times	4000 mg
Salsalate	several	500-750	1000	2-3 times	3000 mg
Acetaminophen					
Acetaminophen	several	650	1300	3-4 times	3000-4000 mg
		Consider lower total daily doses (e.g., 2-3 grams) in elderly patients or in those with heavy use of alcohol The total daily dose of acetaminophen from all sources (single and multiple ingredient products) must not exceed 4000 mg/day			
Supplements					
Chondroitin	several	400	-	3 times	large variation Not recommended due to lack of evidence
Glucosamine	several	500	-	3 times	
Topical Therapies					
Capsaicin	generics	-	-	3-4 times	wash hands with soap after application.
Diclofenac	Pennsaid	40 drops	40 drops	4 times	Local skin irritation
	Flector	180 1 patch	180 1 patch	twice	Not FDA approved for OA Local skin irritation
	Solaraze	-	-		Local skin irritation

TABLE 5 Pharmacologic Agents Dosages (cont.)

Generic Name	Brand	Dose [mg]		Frequency [daily]	Max Daily Dose [mg]
		Usual Starting	Max Single		
Other therapies					
Duloxetine	Cymbalta/ generics	30 for 1 week, increase to 60 once daily	60	once	60
		Higher doses are not associated with improved outcomes but a higher rate of adverse events . Avoid in end-stage renal disease or CrCl <30 ml/min or in patients with substantial alcohol intake +			
Tramadol (IR)	generics	25-50	100 every	every 4-6 hours	400
		For patients not requiring rapid onset of pain relief, initiate dosing at 25 mg 4 times daily, increasing by 25 mg every 3 days until reaching 25 mg 4 times daily, and so on When combined with certain drugs or in those patients with a history of seizure disorder, may increase the risk of seizures			

Hyaluronate/Hylan Injections: Treatment Course (Each injection is given at weekly intervals)

Hyaluronate/Hylan	Frequency	Volume	Notes
Euflexxa	One weekly for a total of 3; repeat approved	2.0 ml	---
Gel-One	Single injection	3.0 ml	Caution in those with avian allergy
Hyalgan	One weekly for a total of 3 to 5	2.0 ml	
Orthovisc	One weekly for a total of 3 to 4	2.0 ml	---
Supartz	One weekly for a total of 3 to 5	2.5 ml	Caution in those with avian allergy
Synvisc	One weekly for a total of 3	2.0 ml	
Synvisc-One	Single injection	6.0 ml	

* The list may not be all-inclusive or may change with time as will generic availability. Refer to VA or DoD formularies for availability of agents or comparable agents.

\+ For additional details on warnings and precautions, drug-drug interactions, etc., refer to the prescribing information for the individual agents of interest.

a All NSAIDs have the potential to increase the risk for cardiovascular (CV) events and therefore should be used at the lowest effective dose for the shortest possible duration. Naproxen has a neutral or lowest risk for adverse CV events. Use with caution or avoid use of NSAIDs in patients with renal impairment, history of gastrointestinal bleeding, uncontrolled hypertension, congestive heart failure, advanced liver diseases, known cardiovascular disease, patients receiving anticoagulants, etc.