

Management of Osteoarthritis in the Older Adult: The Rheumatologist's Perspective

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Rheumatology Research Foundation

Advancing Treatment | Finding Cures

Disclosures

I have no relevant financial relationships to disclose

Overview



- Epidemiology Osteoarthritis (OA)
- Common Myths about Aging and OA Pain
- Hand, Knee, Hip OA Management
 - Non-pharmacologic
 - Pharmacologic
 - Surgical, when appropriate



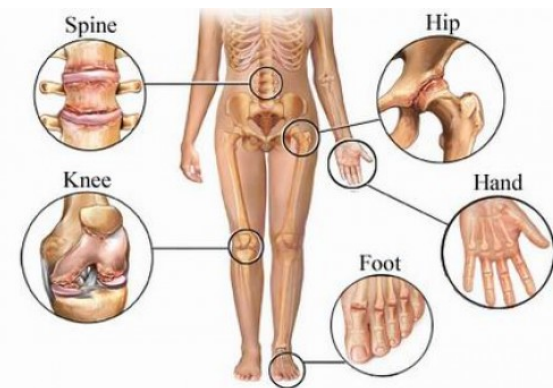
Why Aging Population Matters



- NIA: “very large increase in disability caused by increases in age-related” disease (**arthritis)
- WHO: major disabling conditions among elderly are MSK conditions
 - Implications for social support systems, resources, economy

Epidemiology

- Prevalence varies depending on population studied, definition used
- Highest >45 years old, women, obese
- Knee: estimated incidence highest ages 55-64, lifetime risk ~14%, highest in obese women
- ~50% >65 with self-report, MD diagnosed
- May taper off oldest old
- Multiple sites: hand, knee, hip, spine



Is OA Inevitable in Later Life?

- Many common causes of pain in older adults, especially OA, are from degenerative changes, which ? worsen over time
- Beliefs about pain in later life (Thielke, 2012):
 - OA patients in primary care, >70 years old were more likely than younger to believe that people should expect to live with pain as they get older (Appelt, 2007)
 - 50%+ older adults who responded to a community-based survey considered arthritis to be a natural part of getting old (Goodwin, 1999)

Is OA Inevitable?

- Physicians, too, often view pain as an inevitable part of the aging process, giving patients feedback:
 - “What do you expect? You’re just getting older”
- **Not necessarily:**
 - “No, well I have friends who are 95 and go line dancing every day”
- **OA is not caused by aging and does not necessarily deteriorate**



While Present, May Not Progress

- Large cohort of patients with peripheral OA (Dieppe, 2000)
 - Radiographic joint space narrowing worsened over 3 years
 - But no correlation with worsening pain
 - 8 years later, significant variability in pain, with no clear progression
- Another study of patients with knee osteoarthritis identified factors protective against decline in pain-related function (Sharma, 2003)
 - Good mental health
 - Self-efficacy
 - Social support
 - Greater activity
 - But not younger age



Major Challenges in Older Adults

- Remains undertreated
 - In part, common held perception that pain in older age is inevitable
- Challenges:
 - Comorbid conditions
 - Existing polypharmacy
 - Limited evidence for efficacy and safety of drugs in *older* populations

Limitations of the Evidence

- Most studies focus on one joint, esp knee
- Short duration (i.e. 6 weeks)
- Single therapies
- Exclude older adults with particular comorbidities (chronic kidney disease, on anticoagulants)

Goals of OA Management

- Control of pain and associated symptoms
 - Poor sleep, increased fatigue, possibly worsened depression or anger, social isolation
- Reduce functional limitations
- Prevent/ minimize disability
- Improve health-related quality of life
- Avoid/minimize therapeutic toxicity

Importantly,

- Ask patients about individualized goals:
 - what matters most to the patient
 - “what specifically would you want to be able to do if it weren’t for the knee pain?”
- Educate patient about
 - What is out there
 - Their role in managing symptoms
- Individual needs and preferences

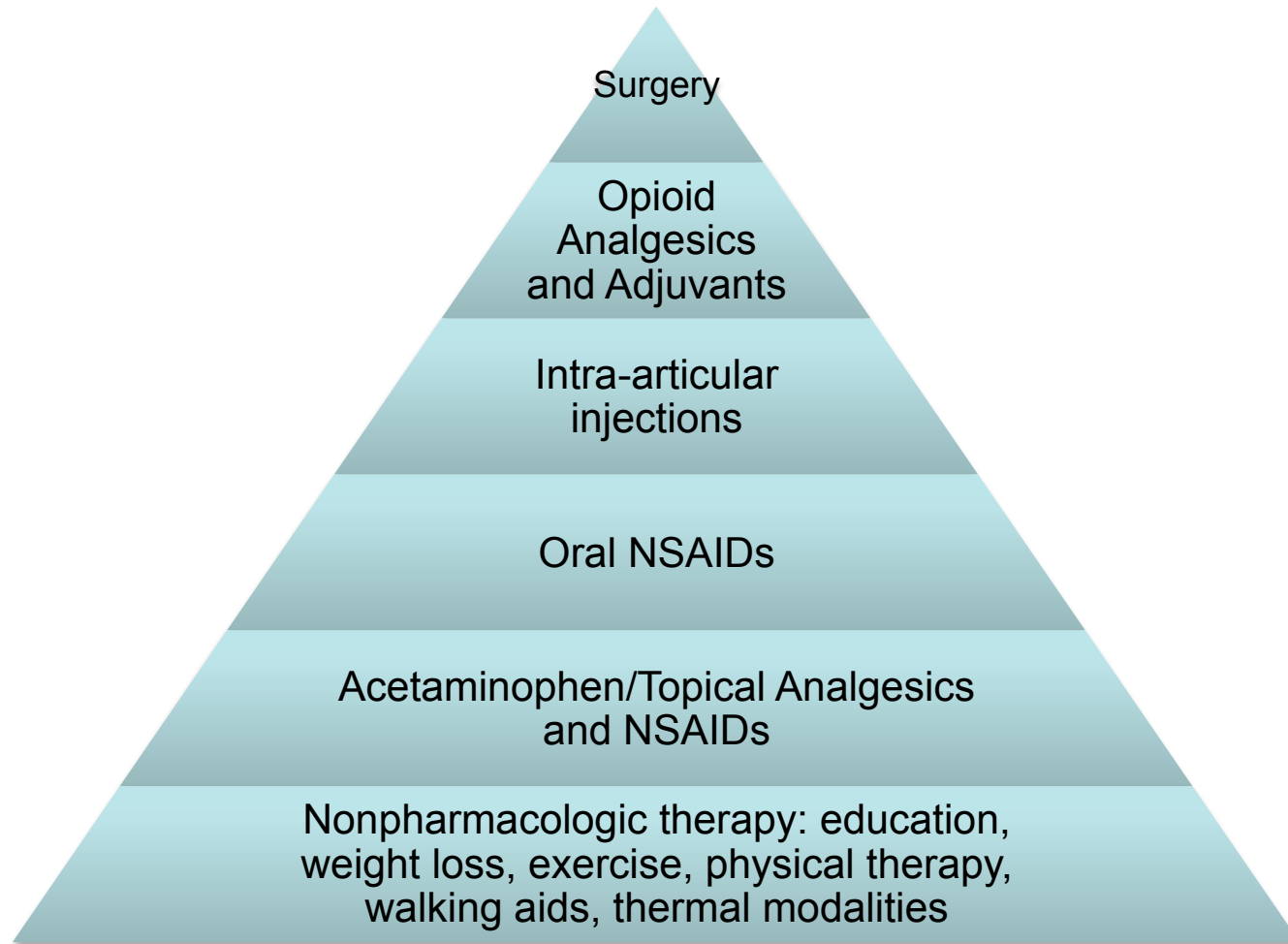
General Principles for Managing Pain in Older Adults

- Assessment is key
 - Severity? Functional impairments?
 - Expectations?
- Careful consideration of comorbidities
- Minimize disease progression/pain and help maintain function
- Realistic goals of care
- Weighing risks/ benefits: ongoing discussion
- Optimal management: combination of non-pharmacological and pharmacological modalities

Follow-Up

- How often? If making changes q2-3 months, ow q6-12 months (esp if taking meds for OA)
 - Monitor symptoms and impact on function, QoL
 - Monitor progression
 - Gauge patient's knowledge of condition, concerns, preferences, access to services
 - Review effectiveness and tolerability of Rx
 - Support for self-management

OA Management Summary



Adapted from MC Hochberg's Figure on Overview of osteoarthritis management, HSSK 2012, p 36

Self-Management

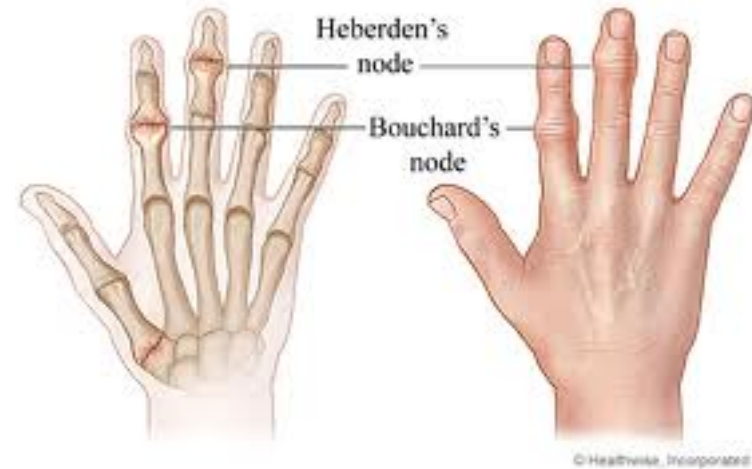
- Agree to individualized self-management strategies
- Ensure positive behavioral changes such as exercise, weight loss are appropriately targeted
- Individual vs group

Guidelines

- National Institute for Health and Care Excellence (NICE) guidelines released Feb 2014
 - Holistic approach
 - Section on “very old”
- American College of Rheumatology, 2012
- European League Against Rheumatism (EULAR)
- Osteoarthritis Research Society International, 2010

Management of Hand OA

- Case
- Non-pharmacologic
- Pharmacologic
 - Topical
 - Oral



Case - Hand OA

76 yo white woman with pain in her PIP and DIP joints for 2 years, reports pain worse in evening and after knitting. Has tried Tylenol up to 3 grams/day with little improvement. Pain keeps her up at night. Unable to garden because of pain.



Keep In Mind

- Type of OA: nodal, erosive, traumatic
- Presence of inflammation
- Severity of structural damage- how does this correlate clinically
- Level of pain, disability, restricted QoL

2012 ACR guidelines

Table 1. Nonpharmacologic recommendations for the management of hand OA*

We conditionally recommend that health professionals should do the following:

- Evaluate the ability to perform activities of daily living (ADLs)
- Instruct in joint protection techniques
- Provide assistive devices, as needed, to help patients perform ADLs
- Instruct in use of thermal modalities
- Provide splints for patients with trapeziometacarpal joint OA

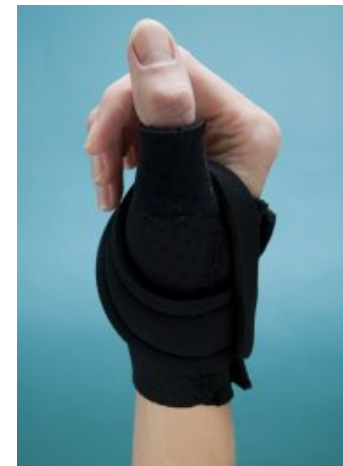
* No strong recommendations were made for the nonpharmacologic management of hand osteoarthritis (OA). The evidence supporting these interventions demonstrated only a small to moderate effect size (see supplementary bibliography for hand OA in Supplementary Appendix B, available in the online version of this article at [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)2151-4658](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)2151-4658)).

Nonpharmacologic - Hand OA

- Behavior modification
- Joint protection techniques
- Assistive devices
- Hot/cold modalities
- Paraffin wax
- Splints
- PT/OT



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Thumb Arthritis

- Try soaking hand in warm water
- Ice can help flare-ups or swelling at end of day
- Activity modifications
 - Change door knobs to latches
 - Use bigger grip for pens, bigger handles on utensils and garden tools
 - Use bottle and jar openers
- Splints



<http://www.orthocare.com.au/>



<http://mysplint.com/services/arthritis-base-thumb/>

2012 ACR guidelines

Table 2. Pharmacologic recommendations for the initial management of hand OA*

We conditionally recommend that health professionals should use one or more of the following:

Topical capsaicin

Topical NSAIDs, including trolamine salicylate

Oral NSAIDs, including COX-2 selective inhibitors

Tramadol

We conditionally recommend that health professionals should not use the following:

Intraarticular therapies

Opioid analgesics

We conditionally recommend that persons age ≥ 75 years should use topical rather than oral NSAIDs. In persons age < 75 years, the TEP expressed no preference for using topical rather than oral NSAIDs.

* No strong recommendations were made for the pharmacologic management of hand osteoarthritis (OA). For patients who have an inadequate response to initial pharmacologic management, please see the Results for alternative strategies. NSAIDs = nonsteroidal antiinflammatory drugs; COX-2 = cyclooxygenase 2; TEP = Technical Expert Panel.

Topical Therapies

- Capsaicin: hot chili pepper, thin film applied 3-4x daily
- Salicylates: OTC Aspercreme and Bengay
 - Rubefaciants not recommended per NICE
- Menthol or camphor products: hot or cold
- Diclofenac (Voltaren gel 1% or Pennsaid 2%), application 2-4 times/ day
 - Evaluated in hands, knees, not hip or spine

Adverse Effects of Topical Nonsteroidal Antiinflammatory Drugs in Older Adults with Osteoarthritis: A Systematic Literature Review

UNA E. MAKRIS, MINNA J. KOHLER, and LIANA FRAENKEL

Table 3. Systemic adverse events among RCT.

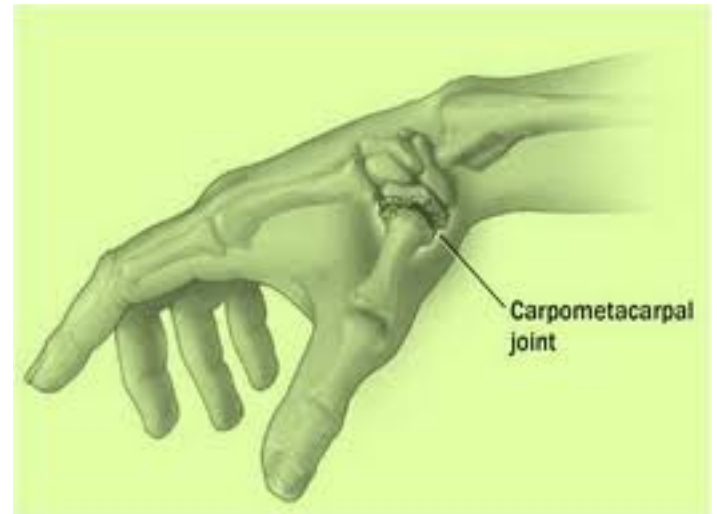
Adverse Effects	Treatment Group/Drug Administration (range, %)			
	Topical	PO	Vehicle*	Placebo
Upper GI NOS ⁸	10.3	8.5	—	—
GI NOS ^{8,11}	2.6–4.8	0.8–13.4	—	7.3
Abdominal pain	1.4–12	3–22	0.9–3.1	0.6–2.4
Dyspepsia	0.7–15	3–26	0.9–5	0.8–6
Gastritis	0.9–2.2	0	0	0–2.4
Nausea	0–8	2–13	0.6–5.6	0
Diarrhea	0–9	1.5–17	0–2	0–4
Constipation	0.9–8	0–10	0.6–1	1
GI bleed**	0–1	0–2	0–1.2	0
Halitosis	0–5	0.3	0–1.2	0
Liver function abnormality	0–6.9	7.9–19.6	1.3–5.3	0.6–4.2
Renal abnormality [†]	0–7.6	7.2–10	6	0–5.7
Change in hemoglobin	0–2.1	5.8–10	3.3	4.9
Respiratory disorder ^{††}	0–3.2	2–5.3	0.5–2.5	3.8
CNS NOS ^{8,11}	6–9.5	6.8–7.3	—	4.9
Dizziness	0.6–1.2	4	0	—
Vertigo	0–1	—	—	—
Headache	5–17.5	6–17.2	4.3–13	11.5

Systemic Therapies

- Acetaminophen: first line- NTE 3 grams/ day
 - NICE review suggests not as effective as previously thought
- NSAIDs: use with caution, avoid continuous use
 - GI protection, lowest effective dose, short courses
- Tramadol more effective than placebo at reducing pain, improving function- small (~8-12 units on 0-100 scale) (Cepeda, 2006: MA 11 RCT, 1019 participants)
 - 1 of 5 experienced minor adverse events: nausea, vomiting, dizziness, constipation, *somnolence*, *tiredness*, headache
 - 1 of 8 will stop med bc of AEs
 - Dosing: 25 mg po qd- to tid, then can increase to 50 mg NTE 300 mg/day
- Erosive/Inflammatory OA
 - Hydroxychloroquine (200 mg po bid): well tolerated
 - Colchicine (0.6 mg po bid x 3 month trial)
- Opioids: careful! Not recommended for hand OA

Intra-articular injections

- Intra-articular cortisone injections- no proven efficacy (although studies weren't powered sufficiently) beyond 1 month



Surgery for Thumb Base

- Thumb osteotomy: cut thumb metacarpal and reposition bone: off-loads the joint
- Arthrodesis (fusion)- improved pain, possibly strength, loss of flexibility
- Thumb arthroplasty: joint replacement vs use of tendon to reconstruct thumb ligament to restore stability

Management of Knee OA

- Case
- Non-pharmacologic
- Pharmacologic
 - Topical
 - Oral
- Intra-articular injections
- Total knee arthroplasty



Case – Knee OA

85 yo AA man with 5 years of pain in L>R knee, most prominent medially, occasionally swells. +Popping and clicking. Does not lock or give way. Worse in the evenings. Responded well to cortisone injection year ago. Asking about glucosamine chondroitin, and whether synvisc works.

Nonpharmacologic – Knee OA

- Education, weight loss, behavior modification
 - “Listen to your body”
- Exercise: local muscle strengthening and general aerobic fitness
- Physical therapy: strengthening, range of motion exercises, teaching appropriate techniques for home, engaging care-takers
- Aquatic exercise
- Consider use of transcutaneous electrical nerve stimulation (TENS) as adjunct

Nonpharmacologic – Knee OA

- Hot/cold modalities: careful not to burn skin
- If pes planus present consider insoles
- Appropriate footwear (including shock-absorbing properties)
- Heel wedges: involve podiatry/prosthetics
- Assistive devices such as walking aids: cane, walkers

Patellofemoral Braces May Decrease Pain



<http://www.thirdage.com/image/knee-brace>

- Plenary session at 2013 ACR; Felson and colleagues
- Soft, Neoprene-like brace for pain + radiographic Patellofemoral OA
- RCT 126 adults (mean age 55.5 years) x 6 weeks
- Excluded subjects with other forms arthritis and impaired renal function
- Primary symptom outcome: change in pain at 6 weeks (0–100 VAS scale) during the PF painful activity in the more symptomatic knee
- Primary structural outcome was BML volume in the PF joint of that knee
- Subjects wore brace, mean of 7.4 hrs/day
- Compared with control group, brace group had significant reduction in PF-related knee pain (~40%) and a decrease in the volume of BML's in the PF but not in the tibiofemoral joint

Diet and Exercise Knee OA

- Does $\geq 10\%$ reduction in body weight induced by diet, with or without exercise, improve mechanistic + clinical outcomes more than exercise alone in overweight/obese adults with knee OA? (Messier, 2013)
- Single-blind RCT, 454 overweight and obese community-living adults (age 55+) with pain and radiographic knee OA
 - Intensive diet induced weight loss + exercise VS intensive diet-induced weight loss vs exercise alone, stratified by BMI and sex
 - Mechanistic primary outcome knee joint compressive force, secondary outcomes self-reported pain, function (mobility) and hrQoL
- At 18 months, 399 participants completed study.
- Diet +Exercise group resulted in less pain, better function, faster walking speed and better hrQoL
- Cautions: study was powered to detect certain differences in outcomes, not met

CAM – Knee OA

- Tai Chi- limited amount of evidence
- Accupuncture- as good as sham
 - As good as the provider
 - NICE guidelines do not recommend accupuncture



2012 ACR guidelines

Table 4. Pharmacologic recommendations for the initial management of knee OA*

We conditionally recommend that patients with knee OA should use one of the following:

Acetaminophen

Oral NSAIDs

Topical NSAIDs

Tramadol

Intraarticular corticosteroid injections

We conditionally recommend that patients with knee OA should not use the following:

Chondroitin sulfate

Glucosamine

Topical capsaicin

We have no recommendations regarding the use of intraarticular hyaluronates, duloxetine, and opioid analgesics

* No strong recommendations were made for the initial pharmacologic management of knee osteoarthritis (OA). For patients who have an inadequate response to initial pharmacologic management, please see the Results for alternative strategies. NSAIDs = non-steroidal antiinflammatory drugs.

Pharmacologic – Knee OA

- Topical therapies- diclofenac
- Tylenol- MA and may be less effective than p
- NSAIDS- see hand OA; short term
- Tramadol
- Opioids
- Glucosamine (500 mg tid) chondroitin (400 mg tid): little to no evidence for clinically meaningful benefit
 - NICE guidelines do not recommend
- Strontium renelate vs placebo- less joint space narrowing and improved sx (but only at higher dose) , ? CV safety, not available (Reginster, 2013)



Intra-articular steroids– Knee OA

- In patients with moderate to severe pain
- Short-term improvements vs sham/placebo (Bellamy, 2006)
 - 2006 MA, 28 RCT, 1973 patients: greater pain reduction and patient global at 1-3 wks post injection, not at 4-24 wks
- How frequently? Not clear
 - Anywhere from q 3 months to q 6 months
 - If effective for < 3 months consider alternative therapy
- Formulations used: 40 mg triamcinolone (kenalog)

Viscosupplementation– Knee OA

- Hyaluronic acid derivatives: replace what is deficient in degenerative cartilage
- Compared to IA steroid: ~ similar (not sustained)
- Compared to IA placebo: superior but small effect size on pain; no improvement in function
- Compared to NSAIDS and placebo: no statistical sig difference with NSAID group; re-do of analysis using intention to treat showed no difference with placebo at 12 or 26 weeks
- NICE does not recommend

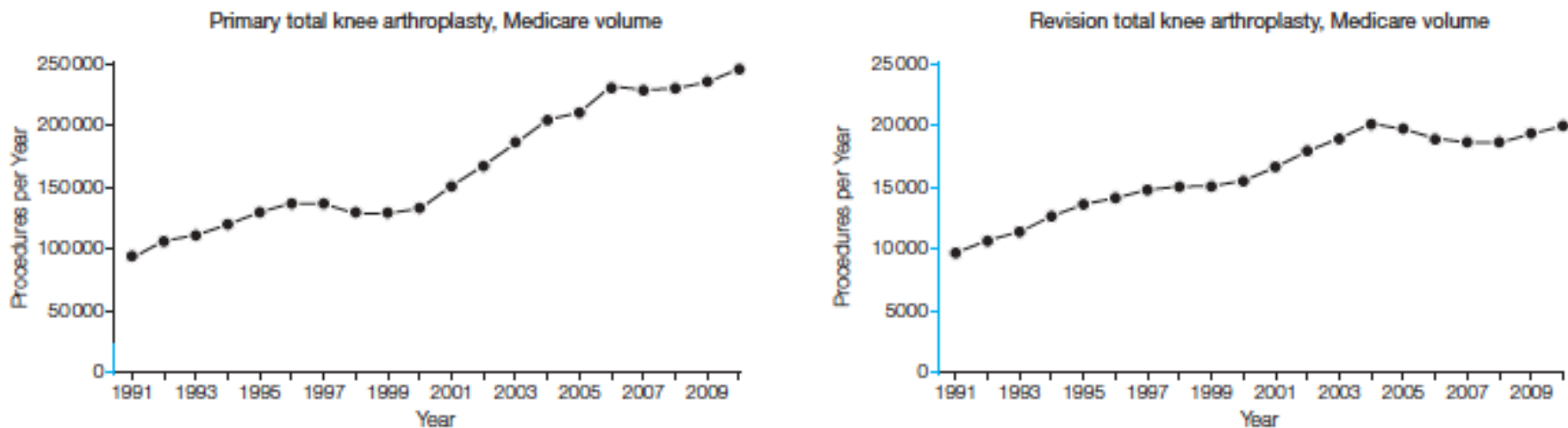
Arthroscopic Surgery for OA

- No evidence to support arthroscopic lavage and debridement (Moseley, 2002)
- Unless, knee OA with clear history of mechanical locking
- Future studies should determine who may benefit

Referral for Total Knee Arthroplasty

- Considerable variability in recommendations for TKA by rheumatologists and orthopedic surgeons (Fraenkel, 2014)
- Consider when symptomatic, refractory to medical management
- Maximize outcome, minimize complications, optimal timing
 - Prior to significant deformities, joint instability, contractures, functional loss, muscular atrophy
- Outcome impacted by preoperative medical status- optimize!
- Patient specific factors (age, sex, smoking, obesity, comorbidities) should not be barriers to referral for joint surgery
- Who is your surgeon? Volume of TKA (bilateral, unilateral)
- Rehabilitation

Figure 1. Primary and Revision Total Knee Arthroplasty Medicare Volume Between 1991 and 2010



Y-axis shown in blue indicates range from 0 to 25 000 procedures per year.

- Mean age at initial TKA: 74
- Knee implants may last 15-20 years
- May see rise in revision surgeries in TKA done in 50s
- Newer implants may be more durable (Cram, 2012)

Management of Hip OA

- Case
- Non-pharmacologic
- Pharmacologic
 - Topical
 - Oral



Case – Hip OA

- 74 yo obese woman with 6 months of L sided hip pain. Hurts when she rolls over the hip at night. Also reports dull aching pain in the groin. This pain limits her ability/desire to walk.

2012 ACR guidelines

Table 5. Nonpharmacologic recommendations for the management of hip osteoarthritis (OA)

We strongly recommend that patients with hip OA should do the following:

Participate in cardiovascular and/or resistance land-based exercise

Participate in aquatic exercise

Lose weight (for persons who are overweight)

We conditionally recommend that patients with hip OA should do the following:

Participate in self-management programs

Receive manual therapy in combination with supervised exercise

Receive psychosocial interventions

Be instructed in the use of thermal agents

Receive walking aids, as needed

We have no recommendations regarding the following:

Participation in balance exercises, either alone or in combination with strengthening exercises

Participation in tai chi

Receiving manual therapy alone

Pharmacologic – Hip OA

Table 6. Pharmacologic recommendations for the initial management of hip OA*

We conditionally recommend that patients with hip OA should use one of the following:

Acetaminophen

Oral NSAIDs

Tramadol

Intraarticular corticosteroid injections

We conditionally recommend that patients with hip OA should not use the following:

Chondroitin sulfate

Glucosamine

We have no recommendation regarding the use of the following:

Topical NSAIDs

Intraarticular hyaluronate injections

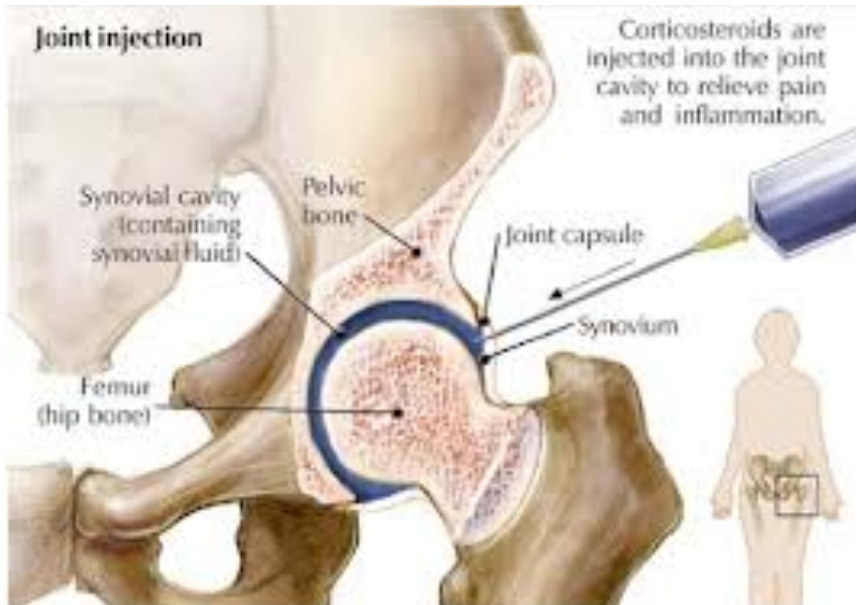
Duloxetine

Opioid analgesics

* No strong recommendations were made for the initial pharmacologic management of hip osteoarthritis (OA). For patients who have an inadequate response to initial pharmacologic management, please see the Results for alternative strategies. NSAIDs – non-steroidal antiinflammatory drugs.

Pharmacologic – Hip OA

- Same as for knee OA
- Fluoroscopically guided intra-articular corticosteroids: placebo controlled RCT (n=55) showed improvements in pain and stiffness for up to 3 months
 - How frequently? No data



Hip Surgery

- Hip replacement and hip resurfacing are recommended as possible treatments for patients with end-stage arthritis of the hip
 - Only an artificial hip or hip resurfacing with a replacement rate of less than 1 in 20 at 10 years should be used (NICE)



Abundant resources at hospitals, clinics, communities to help older adults with OA stay active

arthritis foundation

PROGRAMS for better living

Arthritis Foundation fitness programs are designed to help you live better with arthritis.

These programs are proven to reduce pain, increase strength and flexibility and help you feel great! You can take part in a fitness program on your own or in a group setting. Group classes are led by Arthritis Foundation certified instructors and can be modified to meet your needs.

[FIND A LOCAL PROGRAM](#)



WALK WITH EASE

The Arthritis Foundation Walk With Ease Program is an exercise program that can reduce pain and improve overall health. If you can be on your feet for 10 minutes without increased pain, you can have success with Walk With Ease. For more information [click here](#).



TAI CHI

Tai Chi is an ancient practice proven to reduce pain and improve your mental and physical well-being. The Arthritis Foundation Tai Chi Program, developed by Dr. Paul Lam, uses gentle Sun-style Tai Chi routines that are safe, easy to learn and suitable for every fitness level. For more information [click here](#).



EXERCISE

The Arthritis Foundation Exercise Program is a low-impact physical activity program proven to reduce pain and decrease stiffness. The routines include gentle range-of-motion exercises that are suitable for every fitness level. For more information [click here](#).



AQUATICS

The Arthritis Foundation Aquatic Program is a warm-water exercise program shown to reduce pain and improve overall health. Suitable for every fitness level, the classes are held in a friendly and supportive environment that encourages social interaction among participants. For more information [click here](#).

Thank you

Questions?

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Bone and Joint Decade
Young Investigator Initiative

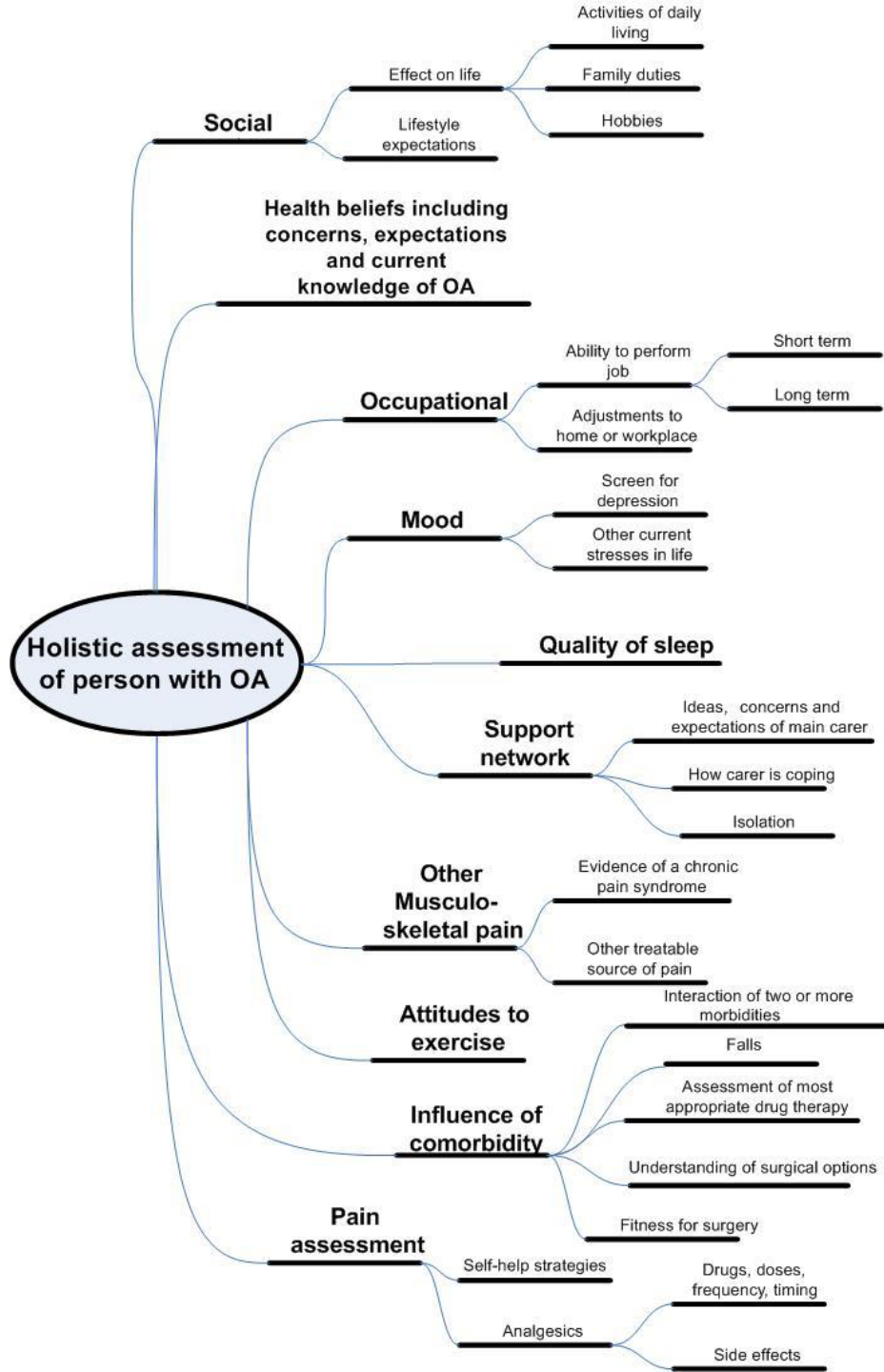


Guidelines

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NICE clinical guideline 177, issued February 2014:
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