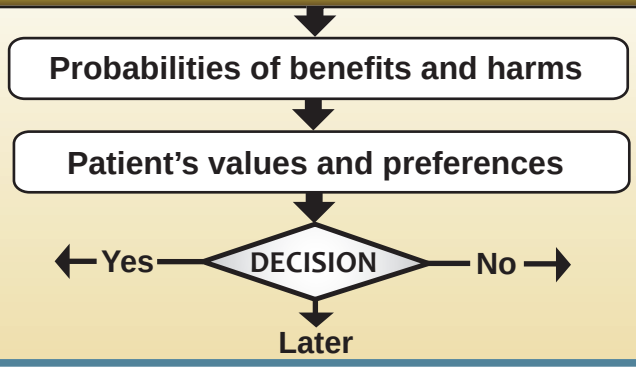
Options for managing hip or knee osteoarthritis



This document prepares the clinician to discuss scientific data with the patient so they can make an informed decision together.

Presenting treatment options to patients

What is osteoarthritis?

Osteoarthritis (OA) is condition where joint tissue breaks down causing **joint pain, stiffness** and **swelling.** It is most common in the **knee, hip and hand** and it worsens over time. There is no cure for progressive joint damage caused by OA but its symptoms can be managed and quality of life improved.

Who might consider being treated for OA?

Individuals with clinical symptoms or a diagnosis of OA**.**

Treatment options

When choosing treatment, one should consider treatment costs, the severity of symptoms and an individual's risk for potentially adverse events. The following treatment options are presented from least to most invasive.[1, 2]

less invasive

- Medially wedged insoles
- Muscle strengthening, aerobic exercises and weight loss for overweight individuals
- Glucosamine
- Acetaminophen
- Acupuncture
- Oral or topical NSAID therapy
- Opioid therapy
- Corticosteroid injection (knee OA)

more invasive

- Referral for joint replacement surgery

Why do patient preferences matter when making this decision?

There are pros and cons to each option:

PROS: Depending on the option, more or less people have a chance of experiencing **reduced pain** or **improved functioning**. Patient preferences regarding the options may depend on how invasive an intervention is, or on the severity of their symptoms.

CONS: Most options present potential **harms** or pose challenges regarding **patient adherence**. Patients may have preferences for some options based on their tolerance of the side effect or based on the challenge for them to adhere to treatment.

Both taking and not taking the medication are acceptable options, so we propose that:

1. The decision takes into account the **patient's values and preferences**
2. The clinician **shares this decision with the patient**

Questions to identify the patient's decision making needs:

- Do you have any questions about the benefits and harms of each option?
- Which benefits and harms matter most to you?
- Do you feel sure about the best choice for you?
- Who will support and advise you in making a choice?

See page 2 for the current state of knowledge

State of knowledge - September 2012

Selection of the best available studies

less invasive

more invasive

Option	Benefits	Harms
Medially wedged insoles for lateral compartment knee OA[3]	**Reduces pain** ⊕⊕⊕◯ For each 100 individuals who use medially wedged insoles, **44 more (44%)** experience **reduced pain** after 8 weeks compared to 100 individuals who use neutrally wedged insoles. **Improves functioning** ⊕⊕⊕◯ For each 100 individuals who use medially wedged insoles, **59 more (59%)** experience **improved function** after 8 weeks compared to 100 individuals who use neutrally wedged insoles.	**Mild discomfort** ⊕⊕◯◯ For each 100 individuals who use medially wedged insoles, **5 more (5%)** experience **mild discomfort** after 8 weeks compared to 100 individuals who use neutrally wedged insoles.
Healthy weight for knee OA[3]	**Reduces pain** ⊕⊕⊕◯ For each 100 individuals who participate in a weight loss program, **8 more (8%)** experience **reduced pain** after 8-24 weeks compared to 100 individuals receiving usual care. **Improves functioning** ⊕⊕⊕◯ For each 100 individuals who participate in a weight loss program, **9 more (9%)** experience **improved functioning** after 8-24 weeks compared to 100 individuals receiving usual care.	**None reported**
Aquatic exercises for hip or knee OA[3]	**Reduces pain** ⊕⊕⊕⊕ For each 100 individuals who participate in aquatic exercises, **7 more (7%)** experience **reduced pain** immediately after exercise compared to 100 individuals receiving usual care. **Improves functioning** ⊕⊕⊕⊕ For each 100 individuals who participate in aquatic exercises, **10 more (10%)** experience **improved functioning** immediately after exercise compard to 100 individuals receiving usual care.	**None reported** **Adherence** For each 100 individuals who participate in studies on aquatic exercises for OA, **6 more (6%) withdraw from the study** compared to 100 individuals receiving usual care.
Cardiovascular land-based exercise for knee OA[3]	**Reduces pain** ⊕⊕⊕◯ For each 100 individuals who participate in land-based cardiovascular exercie, **17 more (17%)** experience **reduced pain** compared to 100 individuals receiving usual care. **Improves functioning** ⊕⊕⊕◯ For each 100 individuals who participate in a land-based cardiovascular exercise, **12 more (12%)** experience **improved physical function** compared to 100 individuals receiving placebo.	**Falls** ⊕⊕⊕◯ For each 100 individuals who participate in land-based cardiovascular exercise, **1 more (1%)** experiences a **fall** during walking compared to 100 individuals receiving usual care. **Adherence**: **30%** of individuals who participate in land-based cardiovascular exercise for OA **do not adhere** to the exercise program.
Glucosamine[4]	**Reduces pain** ⊕⊕◯◯ Individuals treated with glucosamine experience slight **pain reduction** (**0.25** point on a scale from 0-20) compared to individuals receiving placebo. **Improves functioning** ⊕⊕◯◯ Individuals treated with glucosamine experience slightly **improved functioning (0.4 point on a scale of 0-68)** compared to individuals receiving placebo.	**None reported**
Acetaminophen for knee or hip OA[5]	**Reduces pain** ⊕⊕⊕◯ Individuals treated with acetaminophen experience a **pain reduction** of about **4 points on a scale ranging from 0-100** compared to individuals receiving placebo.	**Gastrointestinal events** ⊕⊕⊕◯ For each 100 individuals treated with acetaminophen for knee or hip OA, **1 more (1%)** experience an adverse **gastrointestinal event** compared to 100 individuals receiving placebo.
Acupuncture for knee or hip OA[6]	**Reduces pain** ⊕⊕⊕⊕ Individuals treated with acupuncture experience a **pain reduction** of less than **1 point on a scale of 0-20** after 26 weeks compared to individuals not treated with acupuncture. **Improves functioning** ⊕⊕⊕⊕ Individuals treated with acupuncture experience **improved functioning** of about **1 point on a scale of 0-68** after 26 weeks compared to individuals not treated with acupuncture.	**Bruising and bleeding** ⊕◯◯◯ For each 100 individulas treated with acupuncture, **0 to 45 (0-45%)** experience minor side effects including **bruising and bleeding** at the needle insertion site.

☞ How much confidence can we have in these results?

⊕◯◯◯ **Very low**
⊕⊕◯◯ **Low**
⊕⊕⊕◯ **Moderate**
⊕⊕⊕⊕ **High**

DECISION BOX

Treatment options for OA

State of knowledge - September 2012 (continued)

Selection of the best available studies

less invasive

more invasive

Option	Benefits	Harms
Oral NSAIDs for knee OA[7]	**Reduces pain** ⊕⊕⊕⊕ For each 100 individuals treated with oral NSAIDs, **11 more (11%)** experience **reduced pain** compared to 100 individuals receiving placebo.	**Adverse effects** • Oral NSAIDs may have adverse **gastrointestinal effects** (dyspepsia, peptic ulcer, bleeding), **renal effects** (renal failure, worsening of underlying hypertension), **cardiovascular effects**, or cause **hepatic injury**.
Opioids (non-tramadol) for knee or hip OA[8]	**Reduces pain** ⊕⊕⊕⊕ For each 100 individuals treated with oral or transdermal opioids , **4 more (4%)** experience **reduced pain** compared to 100 individuals receiving placebo. **Improves functioning** ⊕⊕⊕⊕ For each 100 individuals treated with opioids, **3 more (3%)** experience **improved physical functioning** compared to 100 individuals receiving placebo.	**Side effects** ⊕⊕⊕○ For each 100 individuals treated with opioids, **8 more (8%)** experience an adverse event compared to 100 individuals receiving placebo. Adverse events include **nausea constipation and symptoms of withdrawal.**
Oral tramadol for for knee or hip OA[9]	**Reduces pain** ⊕⊕⊕○ For each 100 individuals treated with oral tramadol, **19 more (19%)** experience **reduced pain** compared to 100 individuals receiving placebo.	**Side effects** ⊕⊕⊕○ For each 100 individuals treated with oral tramadol, **21 more (21%)** experience **minor side effects** and **13 more (13%)** had side effects that caused them to **withdraw from treatment**. Minor side effects include: • Nausea • Vomiting • Constipation • Dizziness • Fatigue • Headache
Intraarticular (IA) corticosteroid injections (knee)[10]	**Reduces pain** ⊕⊕⊕⊕ For each 100 individuals with knee OA treated with IA corticosteroids joint injections, **25 to 30 (25-30%)** will experience **reduced pain** and **improved global assessment** at one week post injection.	**Uncommon complications** ⊕○○○ • post injection flare (skin reddening) • crystal-induced synovitis (joint membranes inflammation) • tissue atrophy (wasting of tissue) • fat necrosis • calcification (calcium salts deposit in tissue) • sepsis (tissue destruction by bacteria or their toxins) • steroid arthropathy (cartilage damage acceleration) • vascular necrosis (death of blood vessels) • haematoma (swelling caused by accumulation of blood)
Joint replacement surgery	**Most people have joint replacement surgery only when they can no longer control pain with non-surgical options and when the pain prevents them from doing daily activities. Benefits and harms vary depending on the type of surgery.**	

Study description and references:

1. Sinusas. American Family Physician 2012,85(1), 49-56. Study design: Non-systematic literature review.
2. What are my options for managing hip or knee osteoarthritis: A decision aid to discuss options with your practitioner. The Cochrane Musculoskeletal group. 2012. Click here to access the document.
3. Hochberg et al. Arthritis Care & Research 2012, 64(1), 465–474. Study design:systematic review of evidence-based literature combined with expert opinion using the GRADE approach to develop recommendations.
4. Black et al. Health Technol Assess 2009, 13:1-148. Study design: systematic review of 3 RCTs comparing 1500 mg glucosamine sulfate of hydrochloride per day to placebo. Participants: 500 men and women with knee OA. Length of follow-up: over 1 year.
5. Towheed et al. Cochrane Database Syst Rev 2006, CD004257. Study design: systematic review of 15 RCTs comparing 400 mg of acetaminophen daily to placebo or NSAIDs. Participants: 5986 women and men with knee or hip OA. Length of follow-up: average of 6 weeks.
6. Manheimer et al. Cochrane Database Syst Rev 2010, CD001977. Study design: systematic review of 16 RCTs comparing traditional acupuncture with a sham, an active treatment, or a waiting list control group. Participants: 3498 women and men (mean age of 60 or greater) with OA of the hip or knee. Length of follow up: 6 weeks - 12 months.
7. Towheed et al. Cochrane Database Syst Rev 2005, Study design: systematic review of 17 RCTs comparing two different NSAIDs or NSAIDs to a placebo. Participants: women and men (mean age 63) with knee or hip OA.
8. Nüesch et al. Cochrane Database Syst Rev 2009, CD003115.Study design: systematic review of 10 randomised or quasi-randomised controlled trials comparing non-Tramadol opioids (transdermal or oral) with placebo or no treatment. Participants: 2268 women and men with OA of the knee or hip. Length of treatment: 1-13 weeks.
9. Cepeda et al. Cochrane Database Syst Rev 2006, CD 005522. Study design: 11 RCTs comparing tramadol or tramadol/paracetemol to to placebo or active-control. Participants: 1939 women and men with knee or hip OA. Length of treatment: 1 week – 3 months.
10. Bellamy et al. Cochrane Database Syst Rev 2006, CD005328. Study design: systematic review of 28 RCTs comparing IA corticosteroids with placebo IA injection, HA product injection, joint lavage, or other IA corticosteroids. Participants: 1973 men and women with diagnosed knee OA(n= 185 for pain and n = 158 for patient global assessment). Length of follow up: 20 days - 2 years.