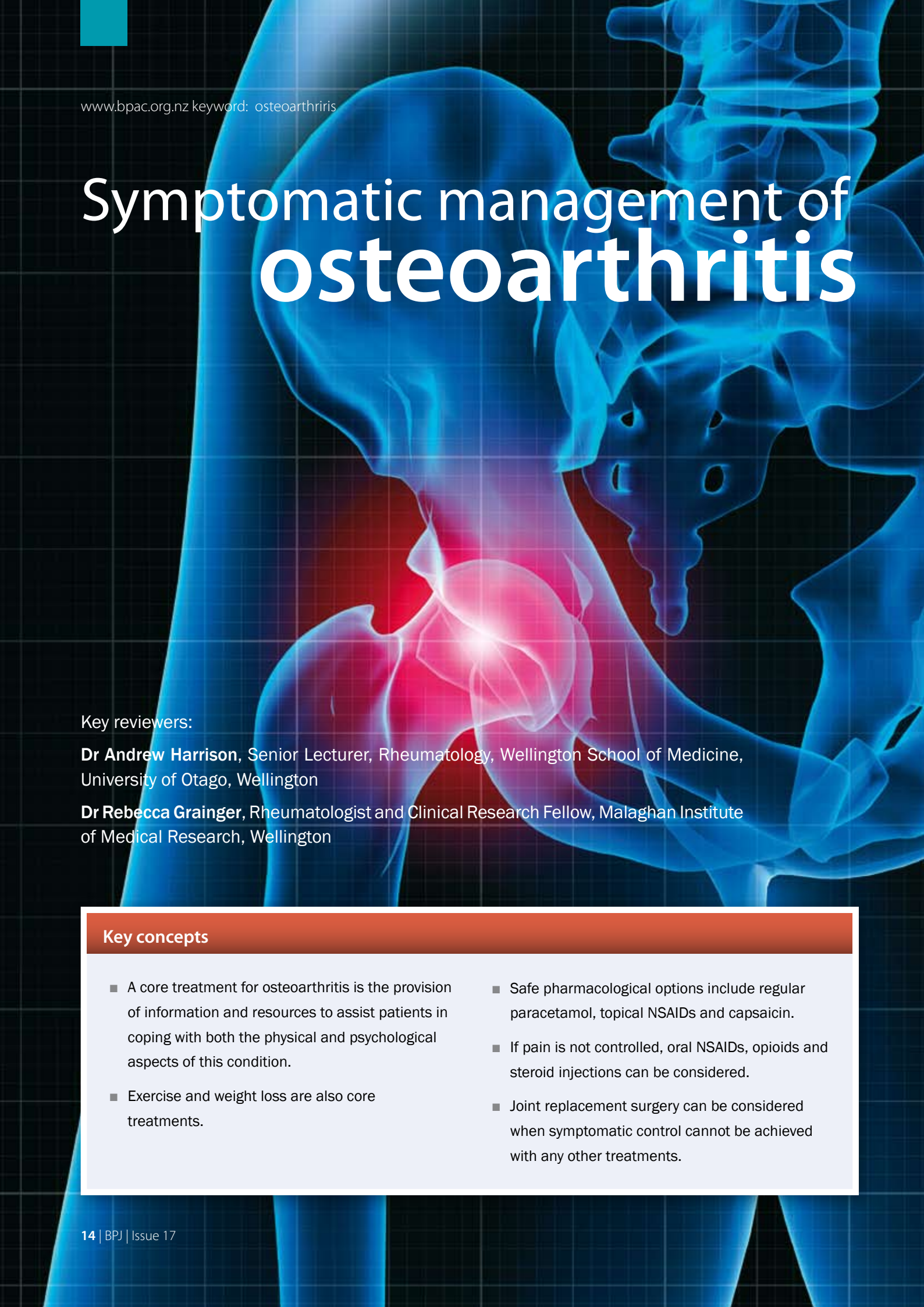
Symptomatic management of osteoarthritis



Key reviewers:

Dr Andrew Harrison, Senior Lecturer, Rheumatology, Wellington School of Medicine, University of Otago, Wellington

Dr Rebecca Grainger, Rheumatologist and Clinical Research Fellow, Malaghan Institute of Medical Research, Wellington

Key concepts

- A core treatment for osteoarthritis is the provision of information and resources to assist patients in coping with both the physical and psychological aspects of this condition.
- Exercise and weight loss are also core treatments.
- Safe pharmacological options include regular paracetamol, topical NSAIDs and capsaicin.
- If pain is not controlled, oral NSAIDs, opioids and steroid injections can be considered.
- Joint replacement surgery can be considered when symptomatic control cannot be achieved with any other treatments.

Osteoarthritis is the most common form of arthritis and a leading cause of pain and disability around the world. It affects approximately 50% of people aged over 60 years and almost all people aged over 80 years. However osteoarthritis is not just caused by ageing. Factors which may lead to the development of osteoarthritis include:[1]

- Genetic factors
- Age
- Joint damage by injury
- Joint damage by chronic obesity

The joints most commonly affected are the knee, hip, spine and hand.

Treating osteoarthritis

There is currently no treatment that can reverse joint damage due to osteoarthritis, but early management can slow disease progress, and allow patients to gain control of symptoms.

Symptomatic management should be guided by the severity of the disease, the joints affected, specific symptoms, co-morbidities and activity level. A team approach to management including occupational therapist, physiotherapist and other health workers is often beneficial. Referral to a rheumatology or rehabilitation unit may be appropriate.

First tier (core treatment for every person with osteoarthritis):

Knowledge/education

Exercise

Weight loss (if overweight)

Second tier ("safe" pharmacological options if further treatment required):

Paracetamol

Topical NSAIDs, capsaicin cream

Third tier (if pain is still not controlled):

Oral NSAIDs (including COX-2 inhibitors)

Opioids

Intra-articular corticosteroid injections

Surgery

Joint arthroplasty

Other treatments

Local heat and cold

Assistive devices (e.g. walking sticks, tap turners)

Supports/braces

Shock-absorbing insoles

Transcutaneous electrical nerve stimulation (TENS)

Manual therapy (manipulation and stretching)[1]

Core treatments for osteoarthritis

Providing accurate information helps patients cope with the ongoing nature of osteoarthritis and develop effective self-management strategies for both its physical and psychological aspects. This includes advice on lifestyle, exercise, activity and weight loss.[2]

Exercise is a core treatment for anyone with osteoarthritis, irrespective of age, co-morbidity, pain severity or disability.[1]

Exercise can help to manage pain, keep joints mobile and increase the ability to perform day to day tasks. A fitness programme should be individually tailored and may require modification at times depending on symptoms, but should always include cardiovascular (aerobic), muscle strength (especially around the damaged joint), muscle endurance and flexibility components. Joint pain can limit the intensity of exercise, but should not be a deterrent. Referral to a physiotherapist for a tailored exercise programme is appropriate.

General practitioners and practice nurses play an important role in encouraging and motivating patients to participate in and maintain exercise programmes e.g. “green prescription”.

Regular exercise is beneficial for weight loss, which is also an important component of symptomatic management. Patients who are overweight should be encouraged to reduce and maintain their weight at recommended levels.

Shock-absorbing footwear, joint supports and mobility aids, heat packs, warm baths or application of ice packs can all provide symptomatic relief.

Safe pharmacological options

Paracetamol

Regular paracetamol at a dose of up to 4g per day is effective as initial oral analgesia for treating mild to moderate pain associated with osteoarthritis.[2] If pain is successfully managed, paracetamol can be maintained long-term.[2]

Topical NSAIDs

Topical NSAIDs are generally less effective than oral NSAIDs but they are considered to be safer and serious adverse effects are unlikely. Local reactions such as

itching or burning may occur.[2] The "placebo effect" is said to play a role in the clinical effect of topical NSAIDs and they may only be effective in the first few weeks of treatment.[2] Topical NSAIDs can be considered, but are not a key component of treatment for osteoarthritis.

Capsaicin cream

Topical capsaicin cream (0.025%) contains a chilli pepper extract and may cause burning pain at the site of application but is an effective analgesic. Other than the intended burning effect, capsaicin is not associated with other adverse effects.[2]

Capsaicin cream is applied by squeezing a bead of cream onto the finger and rubbing over each affected joint, four times per day. It should not be applied after a hot bath or shower or to broken skin. Hands should be washed after application to avoid inadvertent transfer to the eyes. Treatment should be continued for three months before assessing clinical effect.

Note that topical NSAIDs and capsaicin are not subsidised for the treatment of osteoarthritis in New Zealand.

Further treatment approaches if pain is still uncontrolled

NSAIDs

There is evidence that NSAIDs are superior to paracetamol for pain relief in patients with osteoarthritis,[3] but they are also associated with more adverse effects. The major concern is serious gastrointestinal, renal and cardiovascular complications, with risk increasing with age, concurrent use of other medications and duration of therapy.[2] NSAIDs help relieve pain, swelling and stiffness but they do not alter the progression of osteoarthritis.

Oral NSAIDs should only be considered when paracetamol or topical treatments are ineffective for pain relief. NSAIDs should be used at the lowest effective dose for the shortest possible time. Do not exceed maximum daily doses (Table 1). Long-term use of NSAIDs is not routinely recommended,[2] however individual patient factors can be taken into account, such as risk of adverse events and the effect of NSAID treatment on functional ability. Paracetamol can be continued throughout NSAID treatment,[1] however topical NSAIDs should be discontinued.

Cyclo-oxygenase-2 (COX-2) selective drugs are not recommended for routine use in osteoarthritis, except where the patient is at high risk of developing a serious GI adverse effect from other standard NSAIDs, or has GI intolerance of standard NSAIDs in spite of the use of a gastroprotective agent. COX-2 drugs are not subsidised in New Zealand.

Table 1: Recommended total daily doses of NSAIDs for osteoarthritis[4]

NSAID	Total dose/day
Ibuprofen	1200 – 1600 mg
Diclofenac sodium	75 – 150 mg
Naproxen	500 – 1000 mg
Celecoxib	200 mg

Which NSAID?

Choice of NSAID should be based on the overall safety profile of the drug and the patient's individual risk factors. All NSAIDs have similar analgesic effect but individual patients may have a better response to one type over another. It may be reasonable to trial ibuprofen, naproxen and diclofenac depending on other risk factors. NSAIDs (including COX-2) should not be combined.[2]

All NSAIDs should be used with caution in patients with cardiovascular risk factors (e.g. hypertension, hyperlipidaemia, diabetes, smoking, peripheral arterial disease).[2] COX-2 drugs are contraindicated in patients with ischaemic heart disease or stroke.[2]

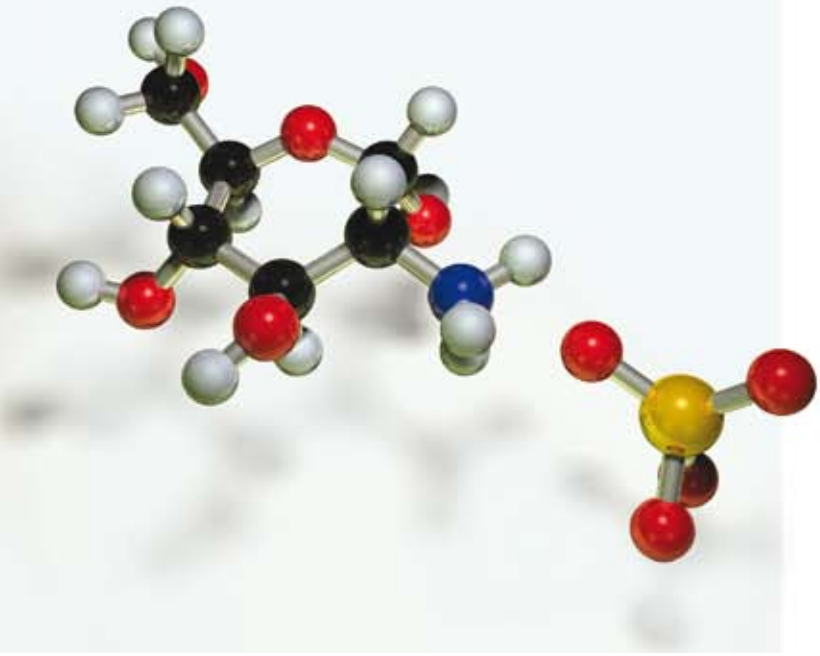
Naproxen 500mg, twice per day appears to be the safest choice of NSAID for patients with cardiovascular risk factors.[5]

The role of glucosamine in osteoarthritis

A 2001 Cochrane systematic review reported that there was some evidence that glucosamine sulphate 1500mg/day provides pain relief and improved mobility in people with osteoarthritis. However an updated review that included newer and higher quality studies has concluded that glucosamine is not as effective in reducing pain and improving mobility as originally thought.[7]

Most guidelines do not recommend nutraceuticals for the treatment of osteoarthritis.[1] If a patient wishes to purchase these supplements, ensure they select an adequate dose and if symptomatic benefit is not apparent within three months, treatment should be discontinued.[2] Glucosamine is generally well tolerated and not associated with any significant adverse effects.

See BPJ 11 (February 2008) for more information on glucosamine and other alternative treatments for osteoarthritis.



All NSAIDs can increase blood pressure, especially in people with hypertension, and cause fluid retention and oedema. In rare cases, congestive heart failure and renal dysfunction may occur.[5] Monitoring of blood pressure and for signs of fluid retention should occur within two to four weeks of initiating NSAID treatment.[5]

In patients with increased GI risk, prescribe a non-selective NSAID with a 20mg proton pump inhibitor (PPI) or a COX-2 selective agent.[2] The GI protection associated with the use of a COX-2 drug is mostly lost when low-dose aspirin is concurrently administered.[2] Aspirin also does not offset the increased cardiovascular risk associated with COX-2 drugs.

Opioids may be considered when other oral treatment is unsuccessful

Weak opioids such as codeine can be considered for relieving pain where other pharmacological agents have been ineffective or are contraindicated. A recommended dose of codeine is one to two 30mg tablets, every four to six hours as required, to a maximum of 240 mg (60mg codeine is equivalent to 6mg morphine).[4]

Stronger opioids should only be used for severe pain in exceptional circumstances. Adverse effects including sedation, risk of falls and constipation are common and are of particular concern in older people.

Tramadol has no advantages over other opioids but is increasingly used for pain management (50mg tramadol is equivalent to 10mg morphine). A systematic review concluded that while tramadol is effective in relieving pain and improving function in people with osteoarthritis (compared to placebo) the benefits are small. Adverse effects may limit its use and include nausea, confusion and interaction with SSRIs.[6]

Intra-articular injections may be useful in severe pain

Intra-articular injections with corticosteroids can be considered when patients have moderate to severe pain

What doesn't work for treating osteoarthritis?

There is no evidence of clinical effectiveness for the following common treatments for osteoarthritis:

- Avoiding or eating particular foods
- Multivitamin and mineral supplements
- Copper bracelets/ jewellery
- Cod liver oil (excessive consumption can cause vitamin D toxicity)
- Acupuncture (not enough consistent evidence of clinical effectiveness)[1]
- Rubifacients such as eucalyptus oil, salicylates and camphor[1]
- Magnets and magnetic underlays

that does not respond adequately to oral treatment and when there are physical signs of local inflammation or joint effusion.[1, 2]

Correct placement of the injection is crucial to maximise benefit and reduce the risk of adverse effects such as fat necrosis and peri-articular tissue atrophy. It is recommended that injections are administered no more than four times a year to the same joint without specialist review.[2] Duration of symptomatic benefit varies between individuals.

Hyaluronic acid is a glycosaminoglycan which is a constituent of synovial fluid. Hyaluranate preparations are available in New Zealand but are not subsidised and are very costly. UK guidelines do not recommend hyaluronate injections due to their high cost in relation to their benefit.[1] However, intra-articular hyaluronate injections can decrease pain and compared to corticosteroids, have a prolonged duration of symptomatic benefit (up to six months) but a delayed onset of action.[2]

Prevalence of arthritis in New Zealand adults

A Portrait of Health—key results of the 2006/07 New Zealand Health Survey:

- One in seven adults (14.8%) have been told by a doctor they have arthritis
- The age standardised prevalence of arthritis was higher in women (13.2%) than in men (10.9%)
- Osteoarthritis was the most common type of arthritis (8.4%) followed by rheumatoid arthritis (3.5%) and then gout (1.3%)

The prevalence of arthritis increased rapidly as age increased, especially in women. More than half of women aged 75 years and over had been diagnosed with arthritis.

Arthritis in New Zealand adults, by ethnic group (unadjusted)

Ethnic group	Prevalence (95% CI)
European/other	16.1% (15.4– 16.8)
Māori	11.1% (9.8 – 12.4)
Pacific	7.9% (6.1 – 9.8)
Asian	6.2% (5.1 – 7.2)

After adjusting for age, Māori men had an increased prevalence of arthritis compared to men in the total population. Pacific women and Asian men and women had a significantly lower prevalence of arthritis than men and women in the total population.

Gout is a major cause of arthritis in Māori and Pacific peoples

see BPJ 8 and BPJ 13 for more information on the treatment of gout.

Surgical options

Patients who cannot obtain adequate pain relief and functional improvement from core treatments and are requiring strong opioids should be considered for joint replacement surgery.[2] Patient specific factors such as age, gender, smoking, obesity and comorbidities should not be barriers to referral for surgery.[1]

Osteotomy and joint preserving surgical procedures can be considered in younger adults, to delay the need for joint replacement.[2]

Joint fusion may be used as first line surgical management of joints such as first metatarsophalangeal joints, subtalar and radiocarpal joints. Joint fusion can also be considered when joint replacement has failed.[2]

Joint lavage and arthroscopic debridement (removal of cartilage fragments and debris) are not always associated with a significant improvement in symptoms or mobility but may reduce locking.[2] This procedure is not routinely recommended.[1]

References

1. National Institute for Health and Clinical Excellence (NICE). Osteoarthritis: The care and management of osteoarthritis in adults. NICE clinical guideline 59. London, 2008.
2. Zhang W, Moskowitz R, Nuki M, et al. OARSI recommendations for the management of hip and knee osteoarthritis, Part II: OARSI evidence-based, expert consensus guidelines. Osteoarthritis Cartilage 2008;16(2):137-62.
3. Towheed T, Maxwell L, Judd M, et al. Acetaminophen for osteoarthritis. Cochrane Database Syst Rev 2006(1):CD004257.
4. Clinical Knowledge Summaries. Osteoarthritis management. UK: National Library for Health, 2008.
5. Laine L, White W, Rostom A, Hochberg M. COX-2 selective inhibitors in the treatment of osteoarthritis. Semin Arthritis Rheum 2008;[Epub ahead of print].
6. Cepeda M, Camargo F, Zea C, Valencia L. Tramadol for osteoarthritis. Cochrane Database Syst Rev 2006(3):CD005522.
7. Towheed T, Maxwell L, Anastassiades T. Glucosamine therapy for treating osteoarthritis. Cochrane Database Syst Rev 2005(2):CD002946.