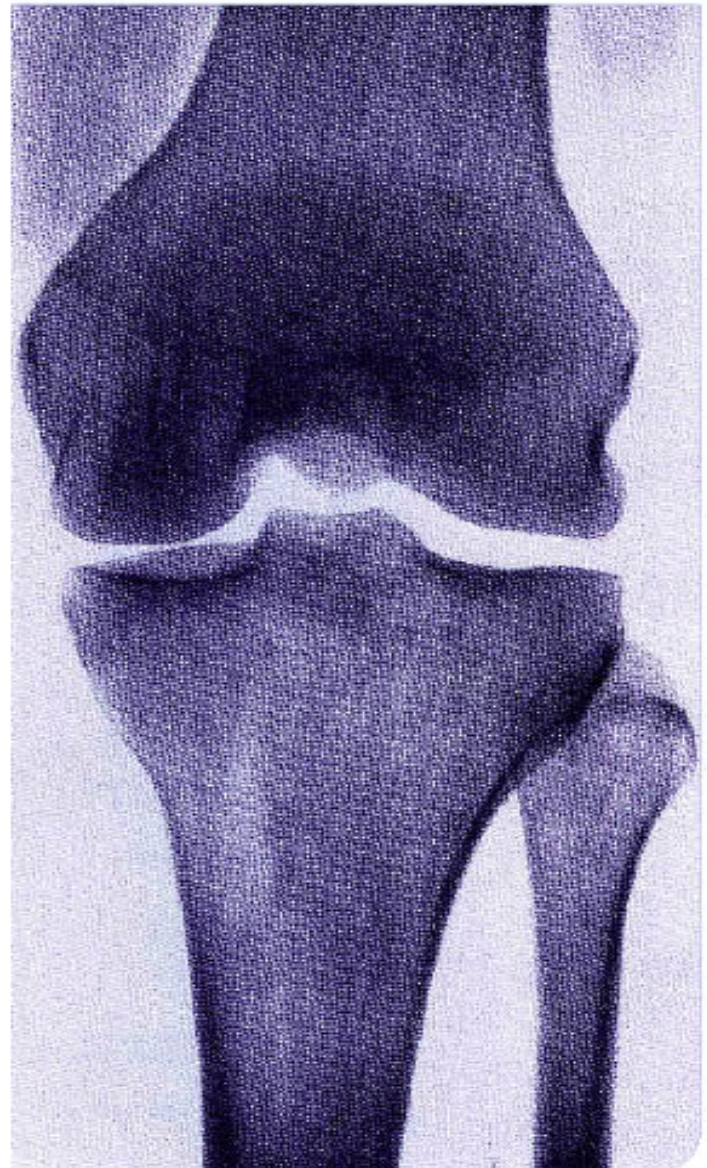




Osteoarthritis of the hip and knee
Management checklist

Department of General Practice



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Osteoarthritis of the Hip and Knee Management Checklist/Key Messages Table

as at 12 May 2006

Osteoarthritis (OA) is the most common forms of arthritis; it is a chronic degenerative disorder and develops when the cartilage starts break down. Arthritis and other rheumatic diseases affect people of all ages.

- Clinical features - include among other things, tenderness, pain, stiffness of the joints including early morning stiffness, swelling of joints caused by inflammation, and muscle weakness which causes the joints to feel unstable, accompanied by a grinding sensation in the joints and loss of mobility.
- Symptoms - while symptoms may vary, they generally include pain and stiffness in the joint and swelling.
- Cause - although there appears to be no single cause, identified risk factors include being overweight, advancing age, low socio-economic status, hereditary factors, chronic stress of joints (such as sports injuries) and other metabolic or inflammatory disorders
- Cure - currently there is no cure, with gradual (although slow) progression is most common

Management of established OA – reducing modifiable risk factors and maximizing quality of life, which can be achieved through controlling pain, maintaining and improving movement of affected joints and limiting impairment. The most successful management includes an individualized management plan that is patient-centred and usually involves multiple strategies

- Treatment - the major components that should be considered are symptomatic, minimization of disability, slowing the disease process, educating and empowering the patient and/or carer

Patient Information and support

Arthritis Victoria
263 Kooyong Road
Elsternwick Vic 3185
Ph (03) 8531 8000
1800 011 041
<http://www.arthritisvic.org.au/>

Australian Rheumatology Association
145 Macquarie Street
Sydney NSW 2000
Ph (02) 9256 5458
<http://www.rheumatology.org.au>

Arthritis Australia
<http://arthritisaustralia.com.au>

Australian Orthopaedic Association
Ground Floor, William Bland Centre,
229 Macquarie Street
Sydney NSW 2000
Ph (02) 9233 3018
www.aoa.org.au

OSTEOARTHRITIS OF THE HIP AND KNEE
Management Checklist/Key Messages Table (as at 12 May 2006)

CONSTRUCT	INTERVENTION	MESSAGE/RECOMMENDATION	REFERENCES
Diagnosis & Follow-up			
	Imaging	Radiographic evaluation <ul style="list-style-type: none"> ▪ X-ray (<i>Level I</i>) ▪ MRI (<i>Level: Consensus</i>) ▪ Bone scan (<i>Level: Consensus</i>) ▪ CT Scans (<i>Level: Consensus</i>) ▪ X-ray standing anteroposterior (weight bearing), lateral and notch patellar views (<i>Level I</i>) ○ Joint space narrowing, femoral or acetabular osteophytes in hip osteoarthritis ○ Subchondral sclerosis, cyst formation 	[1] [2-15] [2] [2] [2] [2-16] [13, 16, 17] [13]
	History	<ul style="list-style-type: none"> ▪ Take detailed history and physical examination (<i>Level IV</i>) ○ Sex, occupation, family history ○ Quality of life, impact of knee dysfunction, range of motion, level of symptomology, medical co-morbidity ○ Patient's wishes and expectations, scheduling visit according to urgency ▪ Detailed pain assessment (<i>Level: Consensus</i>) ▪ Indicators of osteoarthritis (<i>Level: Consensus</i>) ○ >50 years of age ○ <30min morning stiffness ○ Long standing pain that increases with weight bearing/stair climbing that reduces with rest ○ Insidious onset ○ Bone deformity ○ Contracture ○ Crepitus ○ Effusions that are not warm (as in inflammatory arthritis) ○ Muscle weakness and wasting ○ Locked knee, unable to bend 	[4, 7, 18, 19] [4, 6, 7, 9, 11, 18-21] [3, 4, 6, 7, 9, 11, 14, 16, 18-22] [11, 12, 23] [11, 24] [2-12, 14, 16, 25] [2-12, 16, 25] [2-12, 16] [2-12, 16] [2-12] [2-12] [2-12, 16, 25] [2-12] [16] [12]
	Objective clinical assessment	<ul style="list-style-type: none"> ▪ Dynamic gait analysis (<i>Level IV</i>) ▪ WOMAC and Lequesne Index can be applied in follow-up (<i>Level: Consensus</i>) 	[1, 12] [1]
	Pathology	<ul style="list-style-type: none"> ▪ Blood tests ○ Erythrocyte sedimentation rate (<i>Level: Consensus</i>) ▪ Inflammatory arthritis should be excluded as a cause of unicompartmental arthritis (<i>Level: Consensus</i>) ▪ Joint taps (<i>Level: Consensus</i>) 	[13, 16, 17] [13, 16, 17] [1, 3] [2]

Non-pharmacological management

Non-pharmacological interventions should form an integral part of the treatment of osteoarthritis but the optimal treatment requires combination with pharmacologic measures (*Level I*) [26, 27]

Psychosocial support	Information/education (self management courses)	<ul style="list-style-type: none"> ▪ Patient education should represent a mainstay of therapy (<i>Level I</i>) ○ Treatment should begin with education, reinforced with written or oral instructions ▪ Self management courses, including lay language discussion (<i>Level II</i>) 	<p>[3, 5-7, 9, 11, 12, 15, 17, 20, 22-25, 28-34] [2, 17, 25-28, 30, 35]</p> <p>[8, 11, 13, 18, 31, 32]</p>
Pain Function	Physiotherapy	<ul style="list-style-type: none"> ▪ Physiotherapy referral recommended (<i>Level I</i> for exercise, taping, education and some modalities) ▪ Cold therapy (<i>Level II</i>) ▪ Superficial or deep heat therapy (<i>Level: consensus</i>) ▪ Transcutaneous electrical nerve stimulation (TENS) (<i>Level II</i>) ▪ Pulsed electromagnetic fields (PEMF) (<i>Level I</i>) ▪ Massage (<i>Level: Consensus</i>) ▪ Therapeutic ultrasound of no benefit (<i>Level I</i>) 	<p>[7, 8, 10, 11, 15, 28, 36, 37]</p> <p>[7, 8, 10, 11, 15, 28, 36, 37] [7, 10, 11, 15, 28, 36, 38, 39] [7, 9-11, 15, 16, 28, 31, 36, 38-40] [41] [7, 10, 11, 15, 24, 28, 36] [31, 38, 39, 42]</p>
	Acupuncture	<ul style="list-style-type: none"> ▪ Acupuncture (<i>Level II</i>) 	[6, 16, 28]
	Exercise	<ul style="list-style-type: none"> ▪ Active range of motion exercises for hip and knee (<i>Level II</i>) ▪ Strengthening (<i>Level II</i>) ○ Increased dynamic stability of the knee can reduce symptoms ▪ Aerobic fitness/non impact exercise (<i>Level: Consensus</i>) ▪ Gait training (<i>Level: Consensus</i>) ▪ Group exercise and home exercise are equally effective (<i>Level II</i>) 	<p>[1-3, 7, 12, 13, 17-20, 22, 23, 25, 30, 33, 43] [3-5, 7-12, 15, 17-20, 22, 23, 25, 29-31, 33, 34, 36, 43-45] [7, 10] [9, 10] [46]</p>
Function	Footwear modification & orthoses	<ul style="list-style-type: none"> ▪ Appropriate footwear, patella taping, lateral wedged insoles (<i>Level II</i>) 	[3, 6, 8-10, 13, 16, 18-24, 28-31, 33, 36, 44, 47]
	Functional aids	<ul style="list-style-type: none"> ▪ Taping of patella (<i>Level II</i>) ▪ Supportive devices, joint protection techniques and braces (<i>Level II</i>) 	<p>[6, 7, 9, 12, 17-19, 21, 25, 30, 36, 43] [2, 3, 8-10, 13, 15-20, 22-25, 28-31, 33, 36, 47]</p>
Pain Function	Hydrotherapy	<ul style="list-style-type: none"> ▪ Hydrotherapy (<i>Level II</i>) 	[7, 10, 11, 15, 28, 31, 36]
	Tai Chi	<ul style="list-style-type: none"> ▪ Tai Chi (<i>Level II</i>) 	[31]
Psychosocial support	Social support	<ul style="list-style-type: none"> ▪ Social support including reassurance and counseling (<i>Level II</i>) ▪ Telephone support (continuity of care) (<i>Level II</i>) ▪ Support groups (eg Arthritis Foundation) (<i>Level II</i>) 	<p>[17, 25, 30] [31] [5, 7, 9, 11, 32]</p>
Co-morbidity	Weight loss	<ul style="list-style-type: none"> ▪ Weight loss recommended (<i>Level II</i>) ○ Obesity aggravates pain and disability especially knee OA (<i>Level III-2</i>) 	<p>[3, 6, 8-10, 12, 13, 15-25, 28-31, 33, 36, 44] [5, 13, 15, 29, 31, 36, 44]</p>

Pain Function	Occupational therapy	<ul style="list-style-type: none"> Occupational therapy referral (<i>Level IV</i>) 	[24, 28, 31, 45]
Psychosocial support	Psycho-educational	<ul style="list-style-type: none"> Management must be individualized, based on holistic, patient-centered, patient's beliefs, co-morbidities, activity requirements (<i>Level: Consensus</i>) 	[17, 25-27, 30, 34]

Complementary and Alternative therapy/treatment

Pain Function	Herbal therapies	<ul style="list-style-type: none"> Avocado-soybean unsaponifiables (ASU) (<i>Level II</i>) 	[16, 31, 48]
	Magnetic bracelet	<ul style="list-style-type: none"> Magnetic bracelet therapy may be effective (<i>Level II</i>) 	[24]
	Antioxidants/minerals	<ul style="list-style-type: none"> Antioxidants for preventing progression (<i>Level III-1</i>) 	[6]

Pharmacological Management

Pain	Glucosamine	<ul style="list-style-type: none"> Glucosamine use recommended, but awaiting further trials (<i>Level I</i>) 	[6, 13, 16, 18, 19, 24, 28, 31, 36, 43, 49] [3, 5, 7, 9, 20, 22, 23, 28, 30, 50]
	Chondroitin sulfate	<ul style="list-style-type: none"> Chondroitin sulfate use recommended but long term effects not established (<i>Level I</i>) 	[13, 16, 31, 36, 43, 49] [5-7, 9, 30, 50]
	Topical agents	<p>Topical agents</p> <ul style="list-style-type: none"> NSAIDS (<i>Level I</i>) Capsaicin (<i>Level I</i>) Methylsalicylate (<i>Level: Consensus</i>) Menthol (<i>Level: Consensus</i>) 	[13, 22, 26, 36, 43] [1, 7-9, 16, 31] [1, 4, 7-9, 18, 19, 24, 25, 28, 30, 31, 49] [7, 18, 19, 30] [7, 24]
	NSAIDS	<ul style="list-style-type: none"> If paracetamol fails to provide symptomatic relief, then NSAIDS are most appropriate alternative, especially for moderate to severe osteoarthritis (<i>Level I</i>) 	[2-4, 6-10, 12, 13, 15-20, 22-28, 30-32, 35, 49-54] [7, 11, 13, 15, 28, 31-33,

		<ul style="list-style-type: none"> ▪ **Potential side effects i.e. disruption of renal, liver, gastrointestinal function (<i>Level II</i>) ▪ Those who use NSAIDS for 6 months should have a CBC, renal and liver function tests and a stool guiac every 6 months (<i>Level: Consensus</i>) ▪ Only 1 NSAID should be prescribed at a time (<i>Level: Consensus</i>) ▪ For gastrointestinal protection in people with gastrointestinal events, non-selective NSAID should be used in conjunction with misoprostal, a proton pump inhibitor, antacid or H2 blocker (<i>Level II</i>) 	<p>35, 43, 51, 54, 55]</p> <p>[5]</p> <p>[16]</p> <p>[5, 11, 13, 15, 16, 18, 19, 22-24, 26, 28, 30, 32, 36, 49, 50, 54]</p>
	Cox-2 inhibitors	<ul style="list-style-type: none"> ▪ Cox-2 inhibitor use (<i>Level II</i>) ▪ Patients on anticoagulants should be watched carefully. Cox-2 specific should be chosen over non-specific NSAIDS in patients on anticoagulants and INR should be monitored (<i>Level: Consensus (40)</i>) ▪ Cox-2 inhibitors in people with PUB (perforation, ulcers and bleeding) (<i>Level: Consensus (40)</i>) ▪ People with hypertension should have blood pressure checked 1 week after starting (<i>Level: Consensus (40)</i>) 	<p>[6, 7, 10, 11, 22-24, 28, 30-33, 36, 43, 49, 50, 54, 55]</p> <p>[11, 26-28, 35, 49, 55]</p> <p>[7, 17, 26, 28, 35, 49]</p> <p>[28, 35]</p>
Pain Function	Intra-articular corticosteroid injections	<ul style="list-style-type: none"> ▪ Intra-articular corticosteroid injections (<i>Level II</i>) <ul style="list-style-type: none"> ○ but little evidence for hip osteoarthritis [30] ▪ May be considered in patients with a flare that is unresponsive to analgesic and NSAIDS (<i>Level II</i>) ▪ Can increase risk of articular cartilage damage and should not be repeated more than 3 or 4 times/year (<i>Level: Consensus</i>) 	<p>[2-9, 12, 13, 16-20, 22, 24, 25, 28, 30-33, 36, 43, 49, 50, 56]</p> <p>[23, 26, 27]</p> <p>[1, 17, 25]</p>
	Intra-articular hyaluronan injections	<ul style="list-style-type: none"> ▪ Intra-articular hyaluronan injections for knee (<i>Level II</i>) <ul style="list-style-type: none"> ○ No evidence in the hip (15,31) ○ Effect size is small and pharmaeconomic aspects are unclear (10) ○ Reduces symptoms of osteoarthritis and provides viscosupplementation in arthritic knee ○ May alter progression of knee arthritis and reduce inflammation of synovial membrane 	<p>[2, 3, 5-9, 13, 16, 18-20, 22, 24, 28, 31-33, 36, 43, 49, 50, 57, 58]</p> <p>[1]</p> <p>[1]</p>
Pain	Tramadol	<ul style="list-style-type: none"> ▪ Tramadol use (<i>Level II</i>) <ul style="list-style-type: none"> ○ Use with caution 	<p>[11, 18, 19, 24, 31, 36, 50]</p> <p>[11]</p>
	Opioid analgesia	<ul style="list-style-type: none"> ▪ Opioid analgesia (<i>Level II</i>) <ul style="list-style-type: none"> ○ Useful alternative in patients in whom NSAIDS (including Cox-2 selective inhibitors) are contraindicated, ineffective and/or poorly tolerated (<i>Level II</i>) 	<p>[7, 11, 17-19, 22-25, 30, 31]</p> <p>[22, 23, 26, 27]</p>
Pain	Simple analgesia	<ul style="list-style-type: none"> ▪ Paracetamol for initial treatment and treatment of mild osteoarthritis (<i>Level II</i>) 	<p>[3-13, 15-20, 22-33, 36, 49-51, 54]</p>

Surgery

If a patient without a medical contraindication to surgery or neuropathic joint remains dissatisfied with the outcome of conservative care and has significant knee dysfunction, pain or both, surgical alternatives should be considered. (*Level: Consensus*) [9]

Pain Function	Osteotomy	<ul style="list-style-type: none"> ▪ Osteotomy (<i>Level II for knee medial compartment</i>) ○ May provide pain relief and may prevent progression of disease for those not yet needing total joint arthroplasty ○ Consider in young adults with symptomatic hip OA, especially in the presence of dysplasia or varus/valgus deformity (<i>Level Consensus</i>) ○ Tibial osteotomy for young who failed to respond to conservative treatment (<i>Level II</i>) ○ Young, very active with isolated narrowing of lateral compartment may have distal femoral varus osteotomy (<i>Level III-2</i>) ○ Young, very active with symptomatic and radiological changes isolated to the patellofemoral joint may have patellectomy or procedure to elevate the tibial tubercle (<i>Level III-2</i>) 	<p>[9, 10, 14-17, 23-25, 30, 36, 59, 60]</p> <p>[17, 25, 30]</p> <p>[23]</p> <p>[14]</p> <p>[14]</p> <p>[14]</p>
	Arthroscopic surgery	<ul style="list-style-type: none"> ▪ Arthroscopy (<i>Level III-3</i>) ○ For unicompartmental arthritis of the knee in patients with mechanical symptoms ○ Arthroscopic lavage may be useful ○ Arthroscopic debridement may be considered for knee osteoarthritis with mechanical symptoms 	<p>[1, 13, 24, 36]</p> <p>[1]</p> <p>[9, 25]</p> <p>[6, 14, 16]</p>
	Total/partial arthroplasty	<ul style="list-style-type: none"> ▪ Unicompartmental knee arthroplasty (<i>Level III-2</i>) ○ for patients who are less active ▪ Total arthroplasty (<i>Level III-3</i>) ○ Cost effective, marked pain relief and functional improvement ○ For refractory pain with disability and radiological deterioration ○ Severe cases ○ For bi- and tri-compartmental ▪ Total hip arthroplasty recommended but insufficient evidence regarding choice of surgical approach 	<p>[6, 10, 14, 15, 24, 36]</p> <p>[1, 3, 6, 9, 10, 13-17, 20, 22-25, 30, 31, 36, 43]</p> <p>[17, 25, 30]</p> <p>[3, 16, 20, 22, 23]</p> <p>[13]</p> <p>[61]</p>
	Closed tidal irrigation	<ul style="list-style-type: none"> ▪ Not enough evidence for closed tidal irrigation 	<p>[6, 25, 30]</p>
	Other	<ul style="list-style-type: none"> ▪ Autogenous cartilage implantation promising but need further study (<i>Level: Consensus</i>) ▪ Autogenous osteochondral grafting recommended for lesions no larger than 2cm² (<i>Level: Consensus</i>) 	<p>[57]</p> <p>[57]</p>
	Other		
	Other	<ul style="list-style-type: none"> ▪ Not enough evidence to recommend MMP inhibitors, growth factors, autologous chondrocyte transplantation, cartilage repair using mesenchymal stem cells, autologous osteochondral plugs (<i>Level: Consensus</i>) 	<p>[30]</p>

NOTE: Level applies to Level of Evidence cited by reference guideline or systematic review against extracted recommendation. Levels of Evidence are defined in the Table below. Where no level of evidence was attributed to the recommendation by the Guideline, and the methods of Guideline development were not detailed, the recommendation was assumed to be consensus based.

Levels of evidence for recommendations about diagnosis and intervention/ management

Level	Intervention	Diagnosis
I	A systematic review of level II studies	A systematic review of level II studies
II	A randomised controlled trial	A study of test accuracy with: an independent, blinded comparison with a valid reference standard, among consecutive patients with a defined clinical presentation
III-1	A pseudorandomised controlled trial (i.e. alternate allocation or some other method)	A study of test accuracy with: an independent, blinded comparison with a valid reference standard, among non-consecutive patients with a defined clinical presentation
III-2	A comparative study with concurrent controls: <ul style="list-style-type: none"> • Non-randomised, experimental trial • Cohort study • Case-control study • Interrupted time series with a control group 	A comparison with reference standard that does not meet the criteria required for Level II and III-1 evidence
III-3	A comparative study without concurrent controls: <ul style="list-style-type: none"> • Historical control study • Two or more single arm study • Interrupted time series without a parallel control group 	Diagnostic case-control study
IV	Case series with either post-test or pre-test/post-test outcomes	Study of diagnostic yield (no reference standard)

Source: NHMRC 2005

- Denotes headings
- Denotes subheadings

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