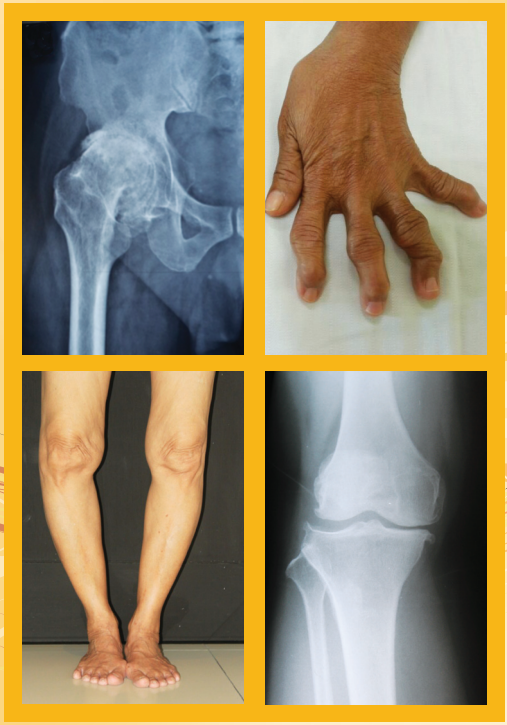
QUICK REFERENCE

Management Of Osteoarthritis

(Second Edition)



Ministry of Health Malaysia

Malaysian Society of Rheumatology

Academy of Medicine Malaysia

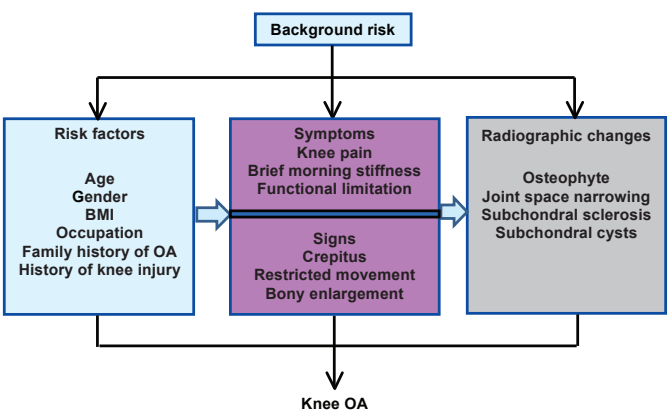
KEY MESSAGES

1. Osteoarthritis (OA) is a progressive joint disease due to failure in repair of joint damage & is one of the major causes of disability in adults.
2. Identifying the modifiable risk factors may help in prevention of OA & its progression.
3. Diagnosis of OA is mainly clinical. Blood investigations & synovial fluid analysis are seldom required.
4. Plain radiography is the standard imaging for disease assessment. Classical features include narrowed joint space, subchondral bone sclerosis, osteophytes & subchondral cysts.
5. Patient education should form an integral part of OA management.
6. Lifestyle modification such as weight reduction, physical activity & exercise is beneficial in hip & knee OA.
7. The aim of pharmacological treatments in OA is for symptom relief. The medications include simple analgesic, non-steroidal anti-inflammatory drugs (NSAIDs), cyclo-oxygenase-2 (COX-2) inhibitors, glucosamine and diacerein.
8. NSAIDs or COX-2 inhibitors should be avoided in patients with previous gastrointestinal (GI) complications & used with caution in the elderly & those with hypertension, cardiovascular disease, renal or hepatic impairment.
9. Surgery is considered if the symptoms of the affected joints significantly affect patient's quality of life & interfere with the activity of daily living (ADL) despite medical therapy.
10. Expert opinion should be sought for evaluation of arthritis with unclear diagnosis.

RISK FACTORS

Non-modifiable	Modifiable
• Advancing age • Female • Genetic • Heberden's nodes in hand OA	• Body mass index (BMI) >25 kg/m^2 • Previous knee injury • Joint malalignment

DIAGNOSIS OF KNEE OA



DIAGNOSTIC CRITERIA BASED ON AMERICAN COLLEGE OF RHEUMATOLOGY

a. Hand OA

Diagnosis / Criteria	**Clinical only 1,2,3 + 4a or 4b**
1	Hand pain, aching or stiffness
2	Hard tissue enlargement of ≥2 of 10 selected joints (2nd and 3rd DIP, 2nd and 3rd PIP, 1st CMC joints of both hands)
3	Fewer than 3 swollen MCP joints
4a **4b**	Hard tissue enlargement of ≥2 of DIP joints **OR** Deformity of ≥2 of 10 selected joints
Sensitivity **Specificity**	92% 98%

DIP=distal interphalangeal MCP=metacarpophalangeal PIP=proximal interphalangeal CMC=carpometacarpal

b. Hip OA

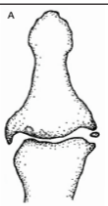
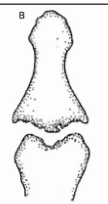
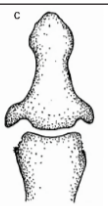
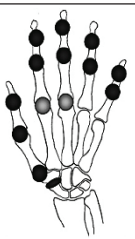
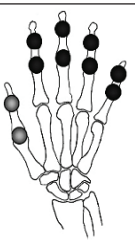
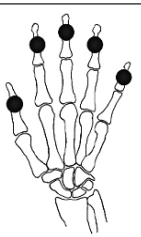
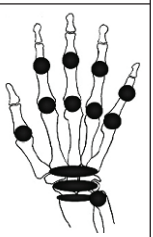
Diagnosis / Criteria	**Clinical, Laboratory and Radiographic**
	Must have hip pain + at least 2 from 3 of the following
1	ESR <20 mm/hr
2	Femoral and acetabular osteophytes on X-ray
3	Axial joint space narrowing on X-ray
Sensitivity **Specificity**	89% 91%

c. Knee OA

Diagnosis / Criteria	**Clinical and laboratory**	**Clinical and radiographic**	**Clinical only**	
Must have	Knee pain + At least 5 of 9 of the following	Knee pain + Osteophytes on x-ray + At least 1 of 3 of the following	Knee pain + At least 3 of 6 of the following	
1	Age >50 years	Age >50 years	Age >50 years	
2	Stiffness <30 min	Stiffness <30 min	Stiffness <30 min	
3	Crepitus	Crepitus	Crepitus	
4	Bony tenderness		Bony tenderness	
5	Bony enlargement		Bony enlargement	
6	No palpable warmth		No palpable warmth	
7	ESR <40			
8	RF <1: 40			
9	SF OA			
Sensitivity **Specificity**	92% 75%	91% 86%	95% 69% (if 3/6)	84% 89% (if 4/6)

ESR=erythrocyte sedimentation rate RF=rheumatoid factor
SF OA=synovial fluid signs of OA (clear, viscous or white blood cell count <2,000/mm^3)

RADIOGRAPHIC CHANGES OF INTERPHALANGEAL JOINTS & TARGET SITES INVOLVEMENT OF OA AND OTHER ARTHRITIS

	Osteoarthritis	Erosive OA	Psoriatic Arthritis	Rheumatoid Arthritis
X-Ray changes	 Focal narrowing, marginal osteophyte, sclerosis, osteochondral bodies	 Subchondral erosion	 Proliferative marginal erosion, retained or increase bone density	 Non-proliferative marginal erosion, osteopenia
Target sites				

● Common ● Uncommon

JOINT PROTECTION PRINCIPLES

Joint protection principles include:-

- Resting inflamed joints by reducing load, duration of use and repetitive movement
- Using the largest unaffected muscles and joints to perform a task
- Using proper movement techniques for lifting, sitting, standing, bending and reaching
- Using assistive devices and modifications for home equipment to minimise stress on joints
- Plan and organise activities ahead
- Using biomechanics and ergonomics to best effect
- Simplifying tasks
- Recruiting others to help
- Making exercise a part of everyday life including exercises which improve joint range of movement, stamina and strength
- Exercise should also be for cardiovascular fitness and to maintain or improve balance

QUADRICEPS STRENGTHENING EXERCISE

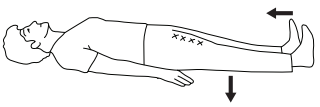


Figure A

Lie flat in bed with your legs straight. Bend your ankles & push the back of your knees down firmly against the bed. Hold for 5 seconds, then return to the original position & relax.

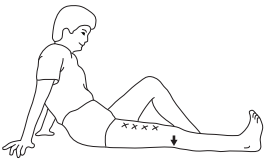


Figure B

Sit on a firm flat surface with one leg bend & keep the other leg straight. Bend your ankle & push the back of your knees down firmly against the bed. Hold for 5 seconds, then return to the original position & relax.

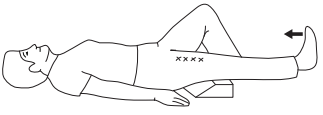


Figure C

Lie flat in bed with a rolled towel/small cushion under your knee. Bend your ankle & push the back of your knee down firmly against the rolled towel/ small cushion (keep knee on the towel/ cushion). Hold for 5 seconds, then return to the original position & relax.

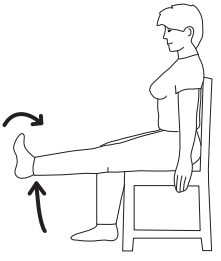


Figure D

Sit on a chair. Straighten your knee & bend your ankle. Hold for 5 seconds, then return to the original position & relax.

SUGGESTED MEDICATION DOSAGES & SIDE EFFECTS

Drug Class	Drug	Recommended Dosages	Side Effects	Caution & Contraindications	Comments
Simple analgesic	Paracetamol	0.5 – 1 gm, 6 – 8-hourly Max: 4 gm/day	Rare but hypersensitivity including skin rash may occur	Hepatic impairment Alcohol dependence	Preferred drug particularly in elderly patients
Non-selective NSAIDs	Ibuprofen	400 – 800 mg, 6 – 8-hourly Max: 3200 mg/day	Peptic ulcer GI bleed Platelet dysfunction Renal impairment Hypertension Allergic reaction in susceptible individuals Increase in CVS events	Gastroduodenal ulcer Asthma Bleeding disorder Renal dysfunction Ischaemic heart disease Cerebrovascular disease Inflammatory bowel disease	Physicians & patients should weigh the benefits & risks of NSAIDs therapy Meloxicam is a selective COX-2 inhibitor at 7.5 mg daily but not 15 mg daily
	Mefenamic acid	250 – 500 mg, 6 – 8-hourly Max: 1500 mg/day			
	Diclofenac sodium	50 – 150 mg daily, 8 – 12-hourly Max: 150 mg/day			
	Meloxicam	7.5 – 15 mg daily Max: 15 mg/day			
	Naproxen	250 – 500 mg, 12-hourly Max: 1500 mg/day			
	Naproxen sodium	275 – 550 mg, 12-hourly Max: 1650 mg/day			
Selective COX-2 inhibitors	Celecoxib	200 mg daily Max: 200 mg/day (Recommended daily maximum dose is 200 mg for OA dan 400 mg for inflammatory arthritis)	Renal impairment Allergic reaction in susceptible individuals Increase in CVS events	Ischaemic heart disease Cerebrovascular disease Contraindicated in hypersensitivity to sulfonamides	Associated with a lower risk of serious upper GI side effects Physicians & patients should weigh the benefits & risks of coxib therapy
	Etoricoxib	60 mg daily Max: 90 mg/day	Hypertension Renal impairment Increase in CVS events	Uncontrolled hypertension Ischaemic heart disease Cerebrovascular disease	

Drug Class	Drug	Recommended Dosages	Side Effects	Caution & Contraindications	Comments
Weak opioid	Tramadol	50 – 100 mg, 6 – 8-hourly Max: 400 mg/day	Dizziness Nausea Vomiting Constipation Drowsiness	Risk of seizures in patients with history of seizures & with high doses In elderly, start at lowest dose (50 mg) & maximum of 300 mg daily	Interaction with Tricyclic Antidepressant, Selective Serotonin Reuptake Inhibitor & Serotonin Norepinephrine Receptor Inhibitor
Combination of opioid & paracetamol	Paracetamol 325 mg + tramadol 37.5 mg (Ultracet®)	1 – 2 tablets, 6 – 8-hourly Max: 8 tablets/day	Nausea Vomiting Drowsiness	Hepatic impairment Renal impairment Alcohol dependence Epilepsy	

REFERRAL

Rheumatology Referral

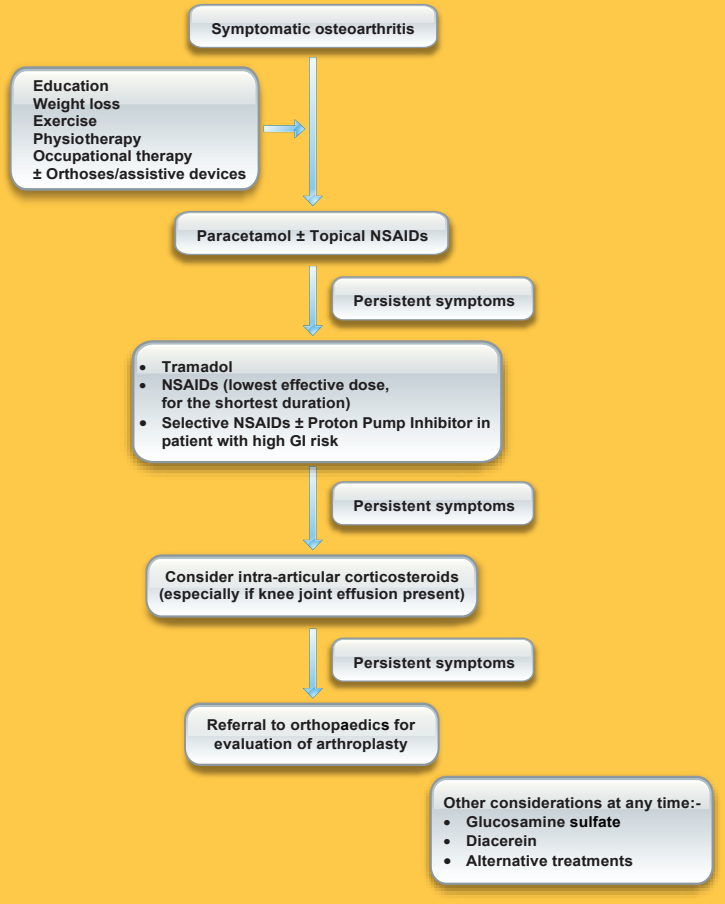
Rheumatology opinion should be sought for evaluation of arthritis with unclear diagnosis.

Orthopaedic Referral

Referral should be made when the patient does not experience satisfactory improvement in terms of pain, stability or function despite adequate pharmacological & non-pharmacological treatment.

- Referral to either rheumatology or orthopaedic clinic should provide the following information:-
  - Diagnosis
  - Severity & its impact on ADL
  - Co-morbidities that might require further medical assessment
  - Relevant investigation results & current medications

ALGORITHM ON MANAGEMENT OF KNEE & HIP OSTEOARTHRITIS



This Quick Reference provides key messages and a summary of the main recommendations in the Clinical Practice Guidelines (CPG) Management of Osteoarthritis (Second Edition).

Details of the evidence supporting these recommendations can be found in the above CPG, available on the following websites:
Ministry of Health Malaysia: **www.moh.gov.my**
Academy of Medicine Malaysia: **www.acadmed.org.my**
Malaysian Society of Rheumatology: **www.msr.my**

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