

# An overview of Arthritis

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## Introduction

Arthritis is the **inflammation of joints** in our body. It can be broadly categorized into degenerative osteoarthritis (OA) and inflammatory. The former is due to “wear and tear” of the articular cartilage. The latter can be due to gouty arthritis, rheumatoid arthritis, pseudogout, infective arthritis etc. It is important to rule out other differential diagnoses at the clinical assessment; as there may be specific therapy to cure some of them while OA so far cannot be rectified or reversed and is considered as part of the ageing process of our body. This degeneration process can at times be accelerated in some patients due to associated factors like obesity, previous trauma or infection to that joint, or repeated bleeding episodes into the joints in haemophiliacs.

## Presentations

Arthritis usually **presents with** pain, swelling, stiffness and loss of function of the involved joint(s). “Initiation pain” are common with significant joint pain at the first few steps after prolonged rest, and ease out after walking for short period (say 10-30 steps). Swelling of the joint is usually associated with acute pain exacerbations of OA.

**Physical examination** of the involved joint shows the cardinal signs of inflammation: red, hot, tender and swelling. Redness is associated with severe acute inflammation and is more commonly seen



in septic arthritis or gouty arthritis but less common in OA. Joint stiffness and swelling are common during exacerbations, partly related to joint effusion and partly related to synovial thickening (inflammation). Again, other signs should be watched out to rule out other diagnoses, e.g. gouty tophi, rheumatoid hands deformities etc. Note that a painful joint (with symptoms only) but no clinical sign of inflammation is “arthralgia”.

Plain Xray examination is the preliminary **investigation** for arthritis. For OA, there may be narrowed joint space, subchondral sclerosis, subchondral cyst, and osteophytes formation at joint margins. Musculoskeletal Ultrasound can check presence of effusion, synovial thickening and other causes like ganglion cyst, loose bodies etc. Further investigation may involve MRI for assessment of status of articular cartilage, ligament or meniscus injury.

## Management

Treatment of arthritis can be conservative or operative. **Conservative treatment** includes modification of lifestyle (avoid stairs, reduce body weight, do appropriate exercise), NSAID (non-steroidal anti-inflammatory drugs), joint injections with corticosteroid, hyaluronic acid, platelet-rich plasma or recently experimental harvested stem cells. Unloading brace and

walking aid can reduce symptoms at ambulation by shifting stress across the joint.

**Exercise Therapy**<sup>2</sup> is usually not emphasized enough to OA patients. It consists of three main areas: (a) Range of motion (stretching) to maintain flexibility, (b) strengthening ex. for building up muscle mass and protecting the joints, e.g. light weight training or push-up by using own body as “weight” training; (c) cardiopulmonary fitness training for overall fitness. Low impact exercise like swimming, Gym bike or brisk walking can be a good start.

### Medication

For inflammatory joint disease causing arthritis, there can be specific medications to target the cause(s) of the inflammation. For example, colchicine can be used for acute gouty attack while allopurinol or febuxostat can be used for more long term control of blood uric acid level. The recent use of various “biologics” in treatment of rheumatoid arthritis brought a significant change in the course of disease in many of those patients. The previously severely deformed “burned out” rheumatoid deformities in the limbs are rarely seen any more. For OA, acetaminophen (Panadol) can be useful in some patients with early disease. Non-steroidal anti-inflammatory drugs (NSAID’s) are more commonly used to combat the inflammation in the joints for symptom relief and function improvement. However, they may be associated with cardiovascular and renal complication risks and are recently more cautiously prescribed (no excessive dose) and also for more limited duration. Oral corticosteroids are usually used for severe acute attacks and then only for very limited time.

Intra-articular injection of corticosteroid is useful during acute exacerbations OA. It is used more cautiously by the British led orthopaedic surgeons but more liberal from the USA perspectives. Intra-articular hyaluronic acid had been used for more than a decade. Its efficacy is still debatable. And for those patients finding it helpful, the injections will need to be repeated once every 6-12 months depending on how soon its effect worn out with time. Recently, platelet-rich plasma (PRP) and even harvested stem cells have been tried for intra-articular injection for OA as scientific studies.



### Operative management

When conservative treatment fails (to give necessary improvement of joint symptoms), **surgery** can be considered. Different surgical options are related to specific joint involved. Taking as an example for OA knee which is very common, we can consider arthroscopy for removal loose bodies and synovectomy; osteotomy to correct the lower limb mechanical axis if only one compartment OA is present. Unicompartmental knee replacement can also be considered in this similar situation of “limited” OA. More diffuse and patellofemoral joint OA will need to consider total joint replacement. Arthrodesis is much less considered in knee joint but is more often used in other joints like and ankle and finger joints.

Reference:

1. Mark D. Miller et al – Review of Orthopaedics 6<sup>th</sup> ed. Ch. 5 - Adult Reconstruction: pp. 392-394.
2. American Academy of Orthopaedic Surgeons (AAOS) website at “OrthoInfo” web page – Arthritis: An Overview. <http://orthoinfo.aaos.org/topic.cfm?topic=A00208>
3. A good video for reference at [www.orthoinfo.aaos.org](http://www.orthoinfo.aaos.org) → “Exercise and Arthritis”.