## Osteoarthritis

A disease of synovial joints characterised by cartilage loss and accompanying periarticular change

**Epidemiology of osteoarthritis (OA)**

- Very common:
  - >80% of over 65 years have radiographic signs of OA
- Women>men, particularly hand and knee OA
- Geographically, OA happens everywhere but is commoner in Caucasians

**Pathophysiology of osteoarthritis (OA)**

- Inflammation occurs as cytokines and metalloproteinases are released into the joint
- Initially hypertrophic repair of the cartilage, then flaking occurs
- Over time loss of cartilage leads to loss of joint space

**Risk factors for osteoarthritis (OA)**

- Increasing age
- Female sex
- Abnormal joint e.g. congenital hip dysplasia
- External Joint stress
  - Obesity
  - Occupational stress on joint (pneumatic drills, athletes, etc.)
  - Trauma
- Internal joint stress
  - Crystal deposition (gout and pseudogout)
  - Previous joint infection

**Presentation of osteoarthritis (OA)**

- Joint pain exacerbated by exercise and relieved by rest
- Joint stiffness after rest
- Reduced range of movement
- Joint swelling
- Signs of synovitis: warmth, effusion
- Tenderness around joint
- Crepitus
- Malalignment
- Osteophyte formation
  - Heberden's nodes: DIP joints
  - Bouchard's nodes: PIP joints

**Diagnosis and investigation of osteoarthritis (OA)**

- OA can be diagnosed without investigation in those over 45 with joint pain on exertion and an absence of stiffness
- Body weight and BMI
  - Note this as a baseline – obesity is the simplest modifiable risk factor
- If in doubt regarding diagnosis:

- Bloods
  - ESR and CRP normal (raised in inflammatory arthropathies)
  - Rheumatoid factor
- Joint aspiration and microscopy (excludes septic arthritis and crystal arthropathies)
- Plain X-rays
  - Normal until OA advanced, but will then show:
  - Osteophytes
  - Bone cysts
  - Joint space narrowing
  - Sub-articular sclerosis
- MRI
  - More sensitive to early cartilage and subchondral bone changes the XR
- Arthroscopy
  - Fissuring and early erosion of cartilage

**Treatment of osteoarthritis (OA)**

- **Conservative**
  - Exercise: aids weight loss and improves muscle mass and strength around the joint, both of which can improve symptoms
  - Adjust diet to lose weight
  - Physiotherapy
  - Heat/cold pads can help with pain
- **Pharmaceutical**
  - Paracetamol (regularly)
  - Topical NSAIDs
  - Topical capsaicin
  - Oral NSAIDs
    - If NSAIDs used regularly add gastric protection
  - Consider intra-articular steroids e.g in carpometacarpal joint or knee OA
- **Surgical**
  - Arthroscopy & debridement
  - Joint replacement surgery often gives very good results, particularly in the hip and knee

**Prognosis of OA**

- Most people with OA do not become severely disabled
- Knee OA seems to have the worst prognosis in terms of deterioration over 10 years