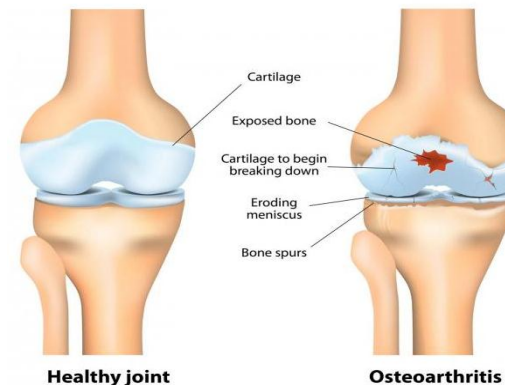


## Osteoarthritis (OA)

Is the most common form of arthritis. It has a strong relation with ageing as it's a major cause of pain and disability in older people

Osteoarthritis is characterized by focal loss of articular cartilage, subchondral osteosclerosis, osteophyte formation at the joint margin, and remodeling of joint contour with enlargement of affected joints.



### Prevalence

Females are more commonly affected except that hips OA occurs equally in both sexes

By age of 65, 80% of people have radiological OA 25-30% of them are symptomatic

The knee and hip are the principal large joints involved, affecting 10-25% of those aged over 65 years. Even in joints less frequently targeted by OA, such as the glenohumeral joint and elbow.



subchondral osteosclerosis

### Risk Factors

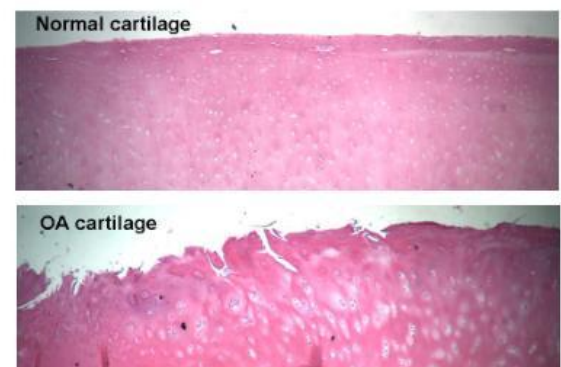
- Increasing age
- "excessive" joint loading & mobility
- Abnormal mechanical forces
- (e.g. varus & valgus knee deformities)
- Race & female sex
- Genetic predisposition
- Obesity
- (for knees & hands O.A.)
- Muscle weakness
- Prior joint disease

### Pathology

#### Stages of cartilage loss

- Superficial fissuring (fibrillation)→
- Erosions & deep ulcers→
- Thinning & hypo-cellularity
- Areas of repair with fibrocartilage

Histology of Human Normal and Osteoarthritic Cartilage



## Bone Changes

- Subchondral sclerosis
- Osteophytes
- Subchondral cysts
- Remodeling (shape changes)

## Symptoms

### Pain

- Insidious onset over months or years
- Variable or intermittent over time ('good days, bad days')
- Mainly related to movement and weight-bearing, relieved by rest

**Stiffness:** Only brief (< 15 mins) morning stiffness and brief (< 5 mins)

### Clinical signs

- Restricted movement due to capsular thickening, or blocking by osteophyte
- Palpable, sometimes audible, coarse crepitus due to rough articular surfaces
- Bony swelling around joint margins
- Deformity, usually without instability
- Joint-line or periarticular tenderness
- Muscle weakness and wasting
- Synovitis mild or absent

### Clinical Patterns

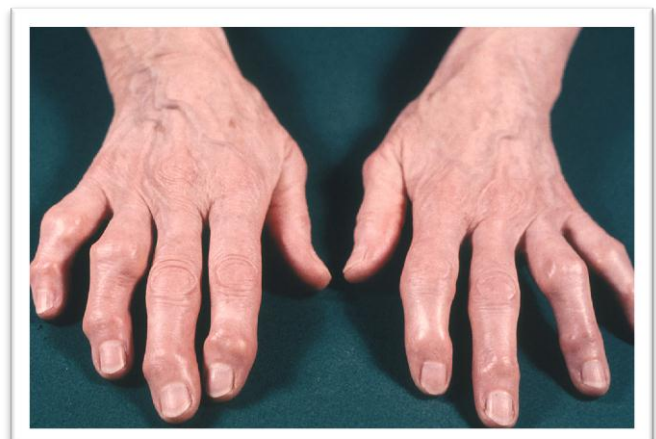
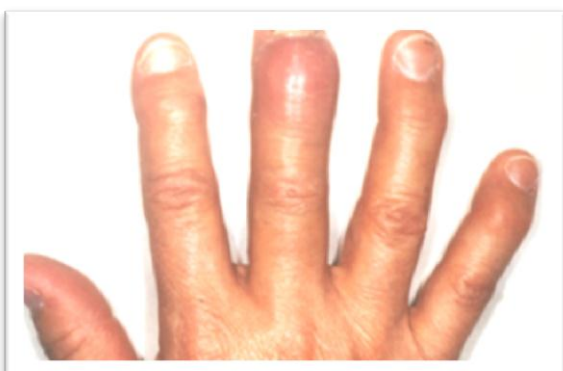
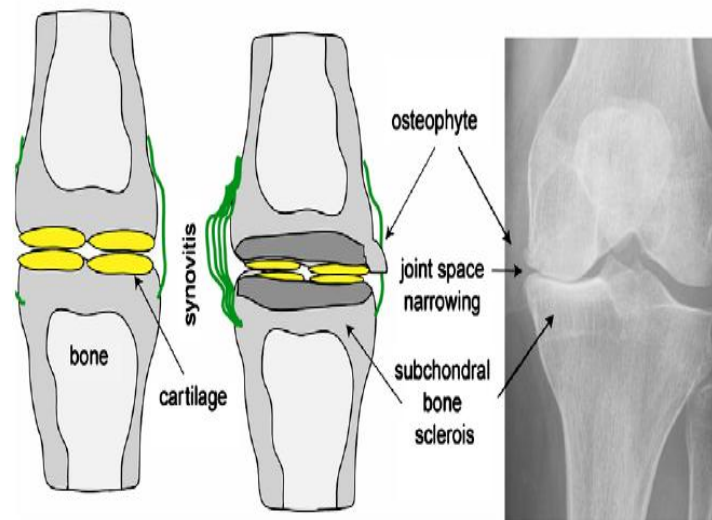
- Localized interphalangeal OA. (usually DIP)
- Generalized OA.
- Loading / mobility related OA.

**Localized interphalangeal OA** (usually DIP) Heberden's and Bouchard's nodes

- Heberden's nodes appears slowly
- Female & male 10/1
- Strong genetic factor

normal joint

osteoarthritis



## Generalized OA

- Usually post-menopausal women
- Affect 3 or more joints or joints group
- Usually starts in the interphalangeal joints (DIPs & PIPs)
- Tendency to O.A. at other sites specially knee



## Investigations

### XR findings

- Joint space narrowing
- Subchondral sclerosis
- Osteophytes
- Subchondral cysts
- Deformity contour, slipping XR patient

Osteoarthritis: lumbar vertebrae, advanced stages



Spinal stenosis: lumbar spine (MRI) due to O.A.



## Treatment

### Non pharmacological

- Reduce obesity
- Avoid static loading e.g. prolonged squatting
- Pacing of activity
- Exercise specially non weight bearing (bicycle)
- Joint rest techniques :Neck collar

## Pharmacological

- Oral analgesic : paracetamol
- Topical : capsaicin & NSAIDs
- Systemic NSAIDs
- Intra-articular steroids with careful precautions
- Intra-articular hyaluronic acid products
- Glucosamine & chondroitins sulfate

## Surgical

- 1- Osteotomy
- 2- Total joint replacement (TJR)
- 3- Cartilage repair surgery (cartilage auto-graft). Highly specialized centers

**Indications:** uncontrolled pain & functional disability refractory to conservative therapy

