

Degenerative arthritis of Hip Bone School @ Bangalore

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KMC Manipal

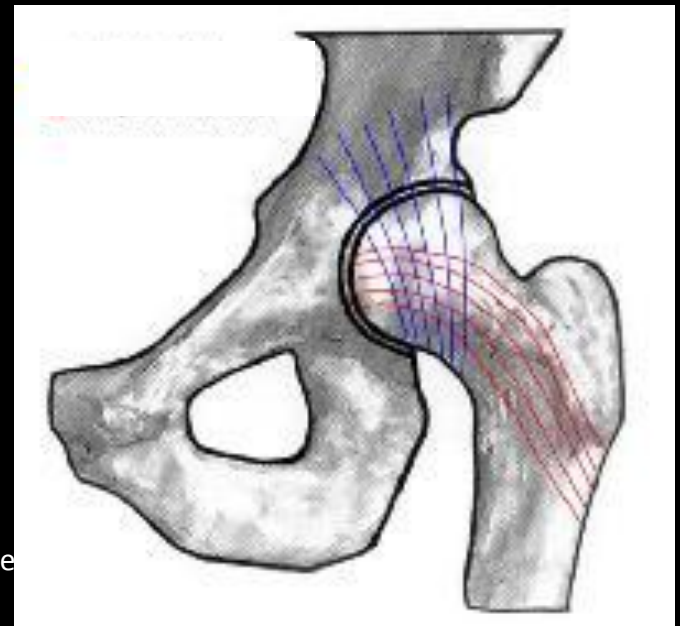
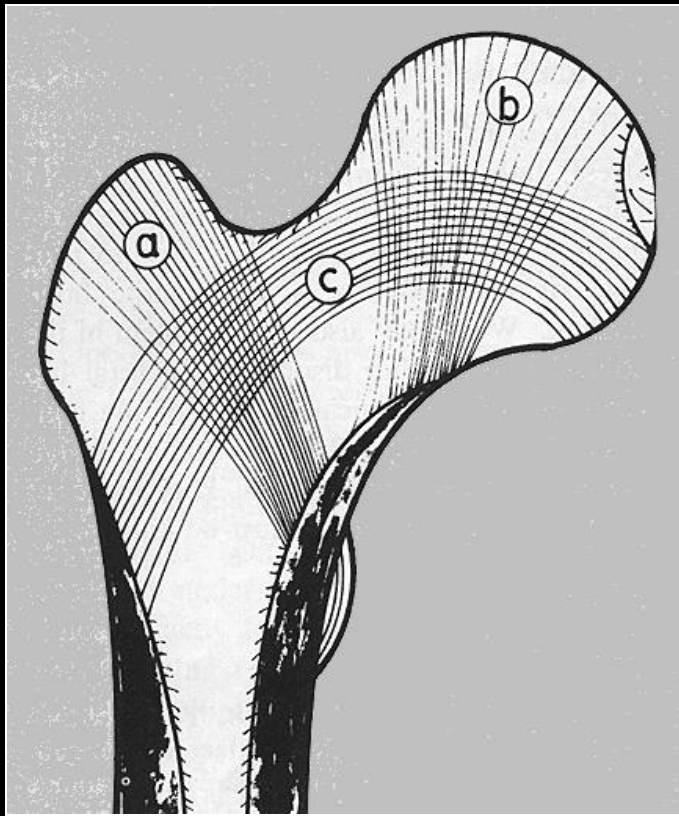
Hip joint

Classical Synovial joint

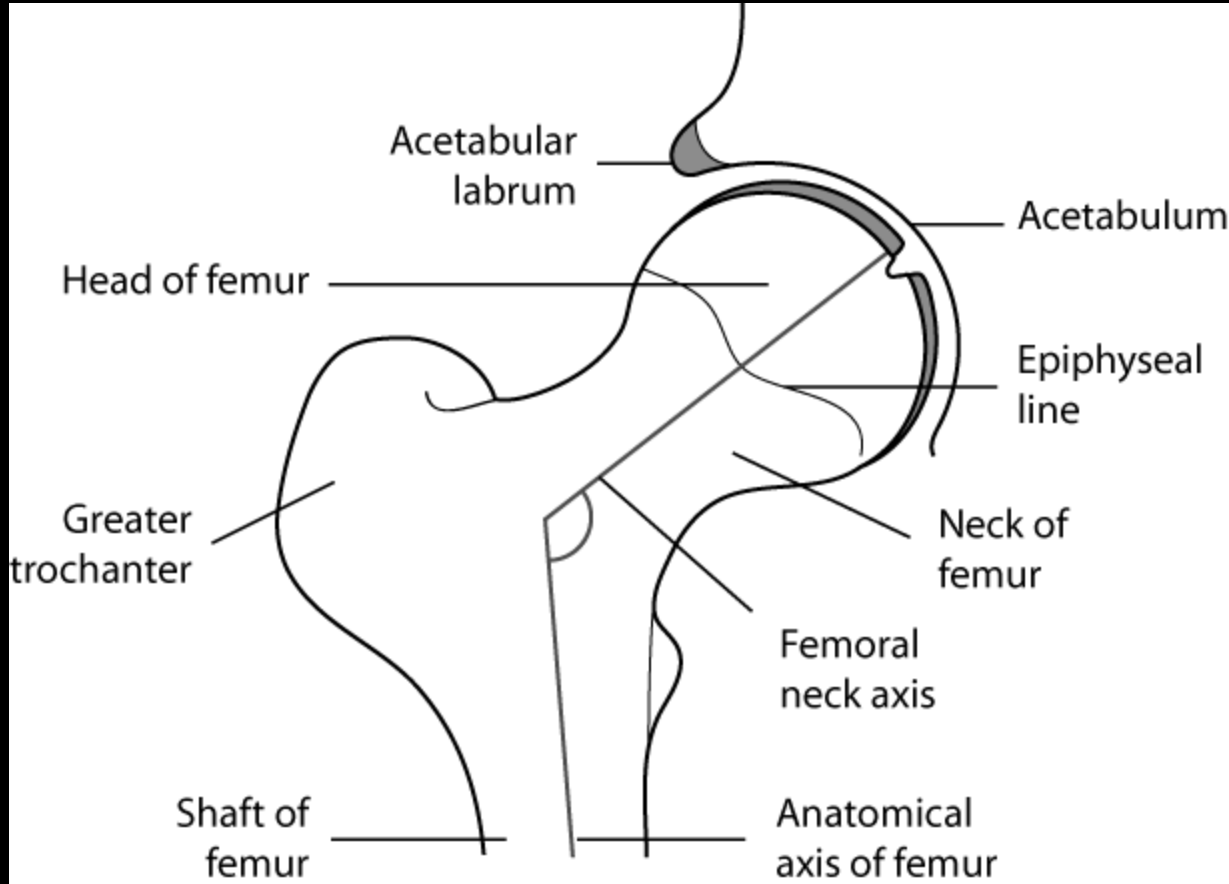


Biomechanics of hip

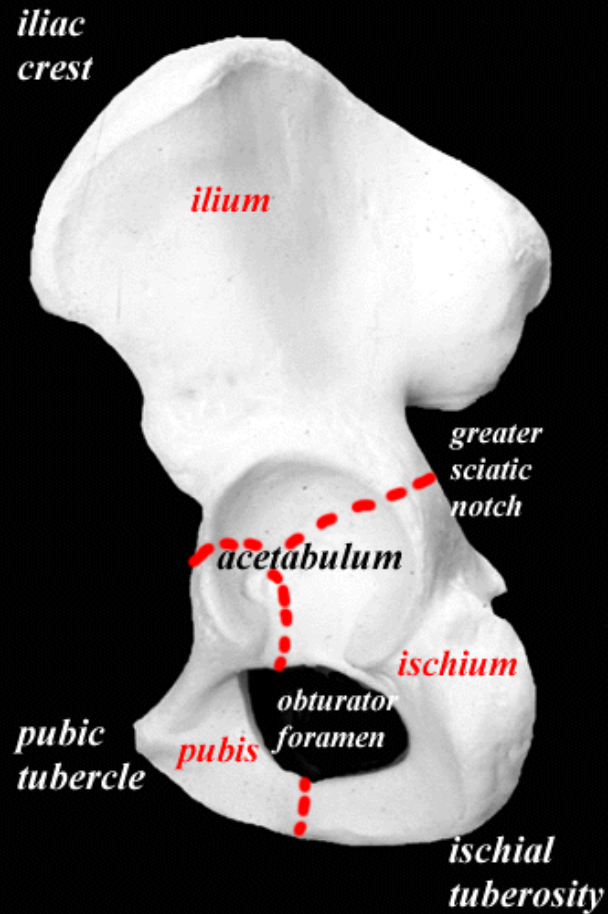
Force coincides with trabecular pattern



Hip joint

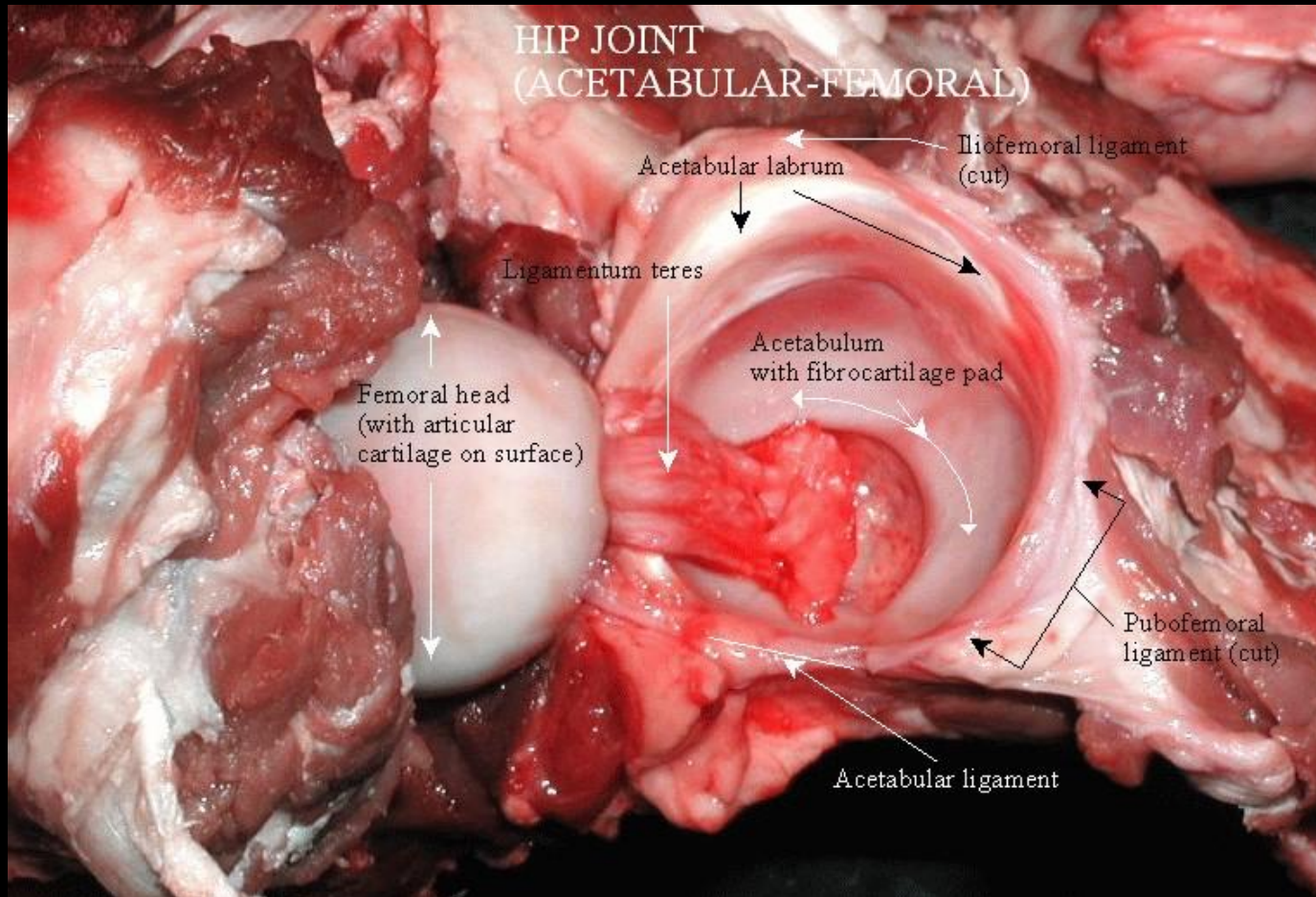


Acetabulum



Hip joint

Acetabulum

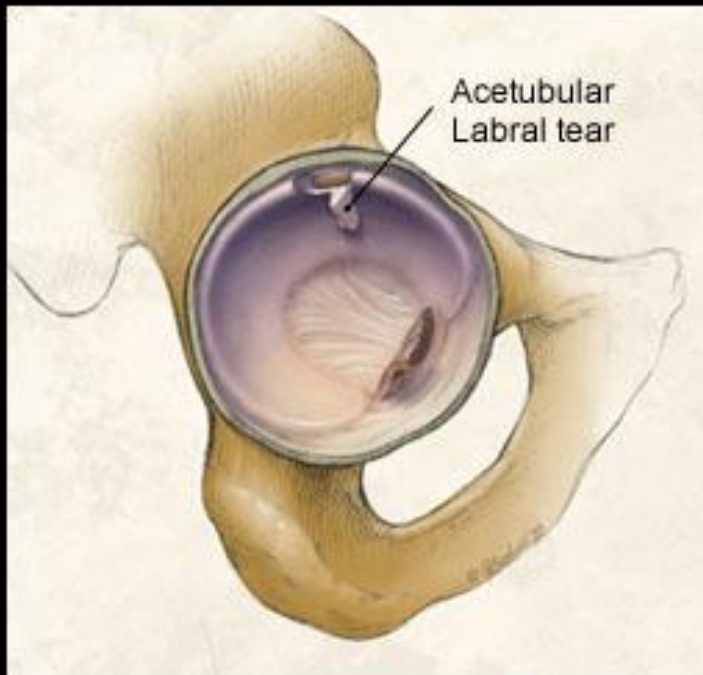


Acetabulum



Hip joint

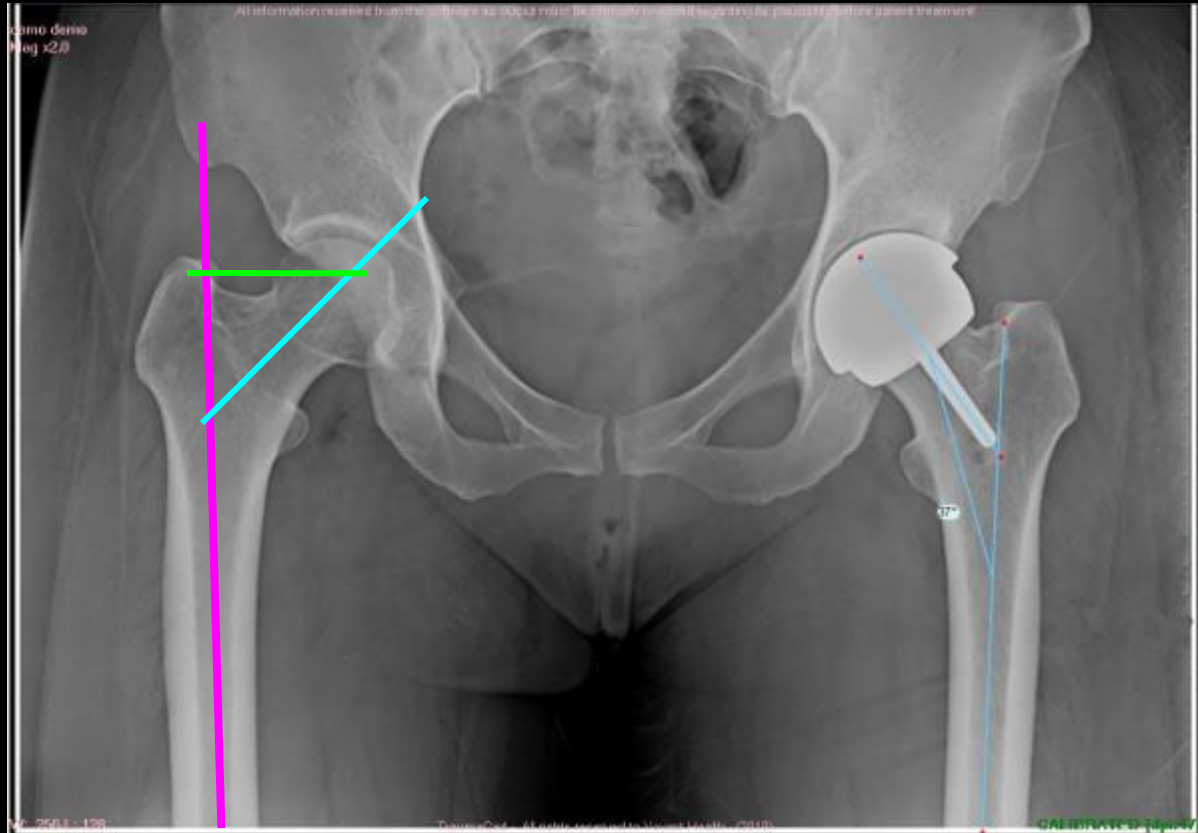
Acetabulum



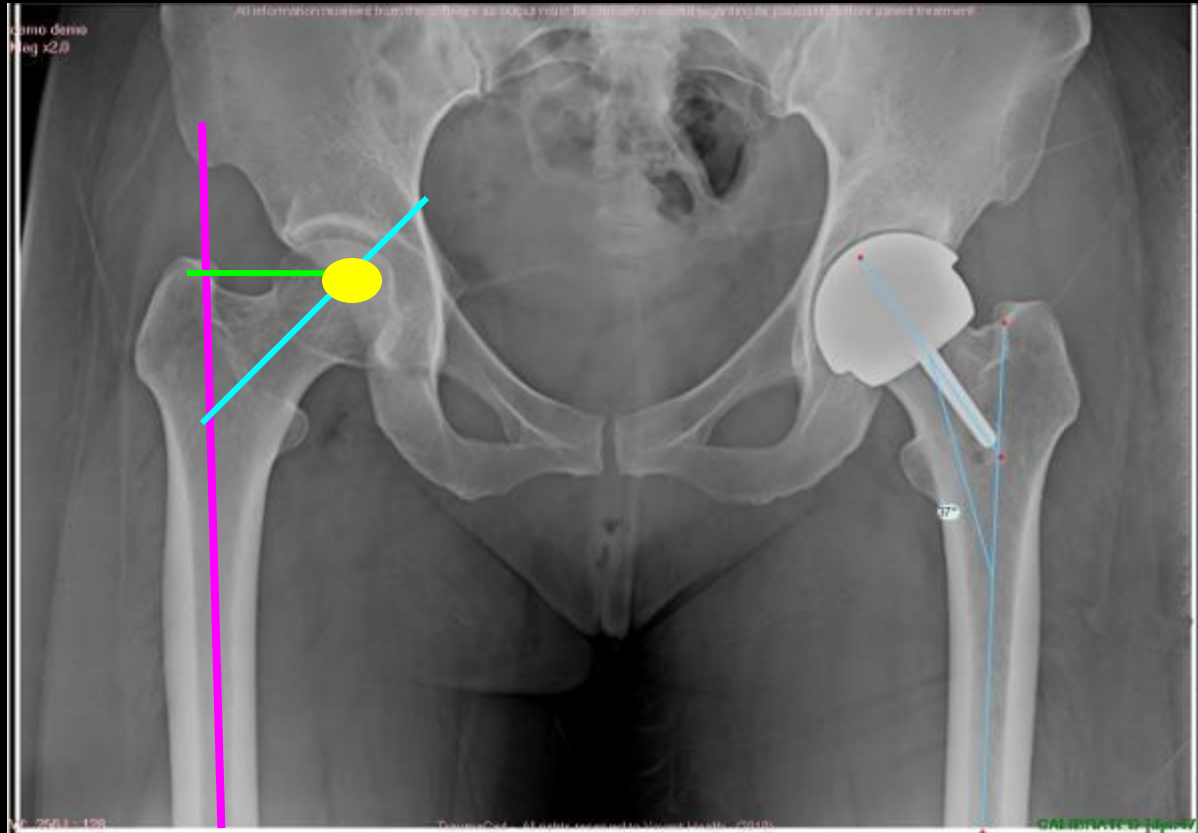
Neck shaft angle



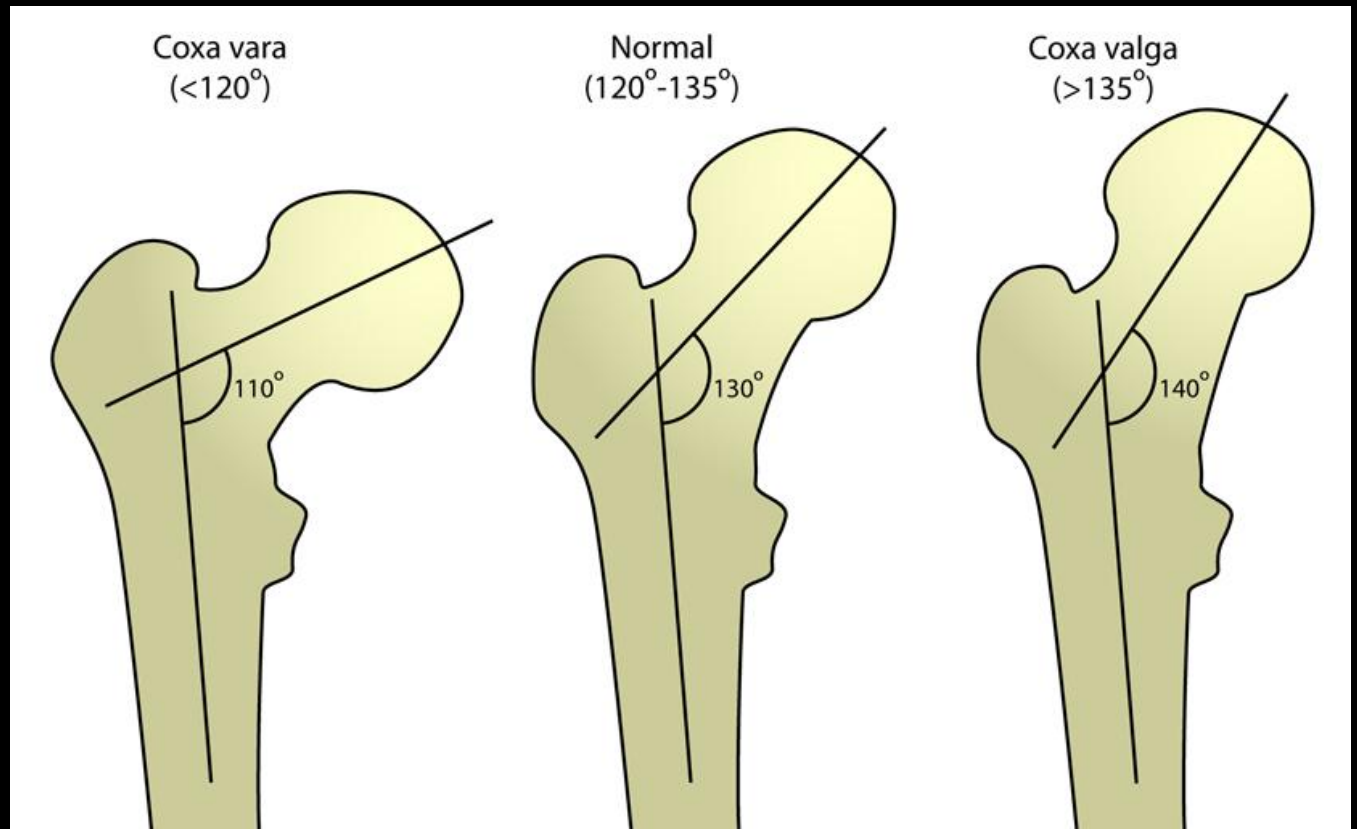
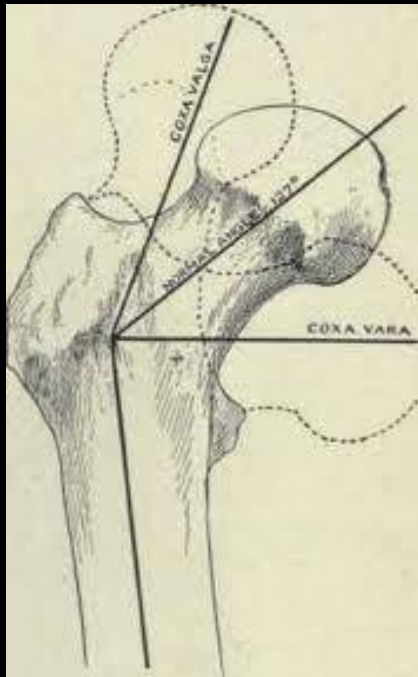
Neck shaft angle



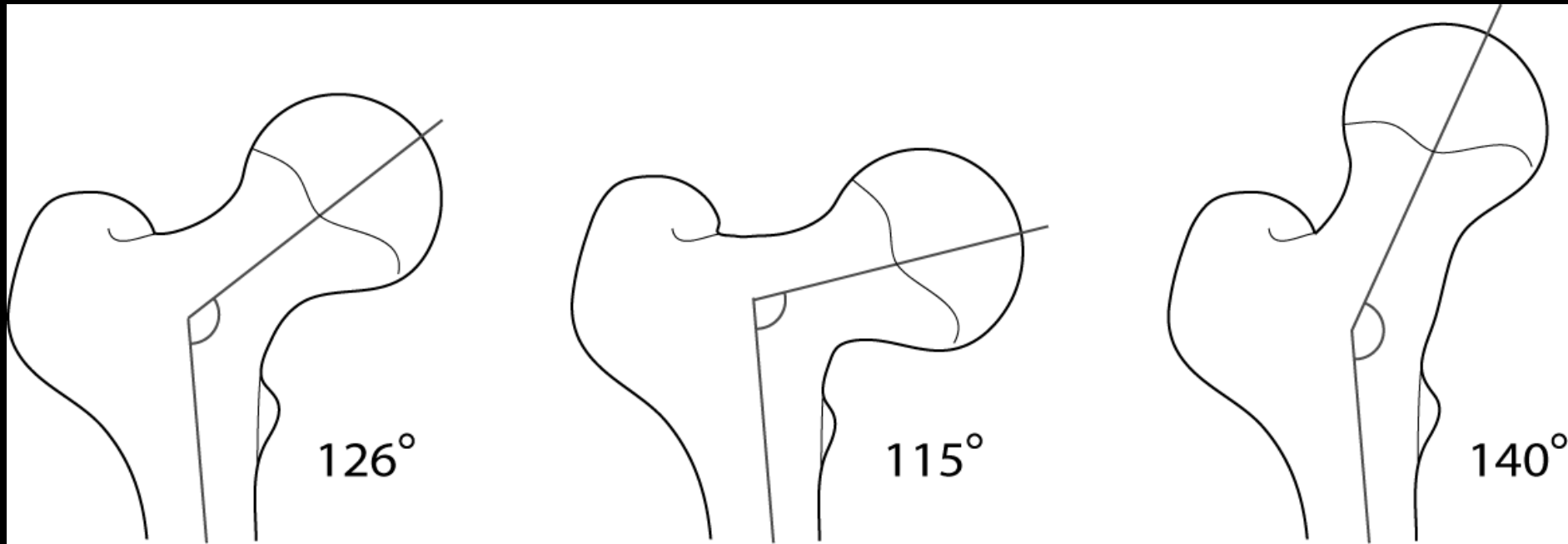
Neck shaft angle



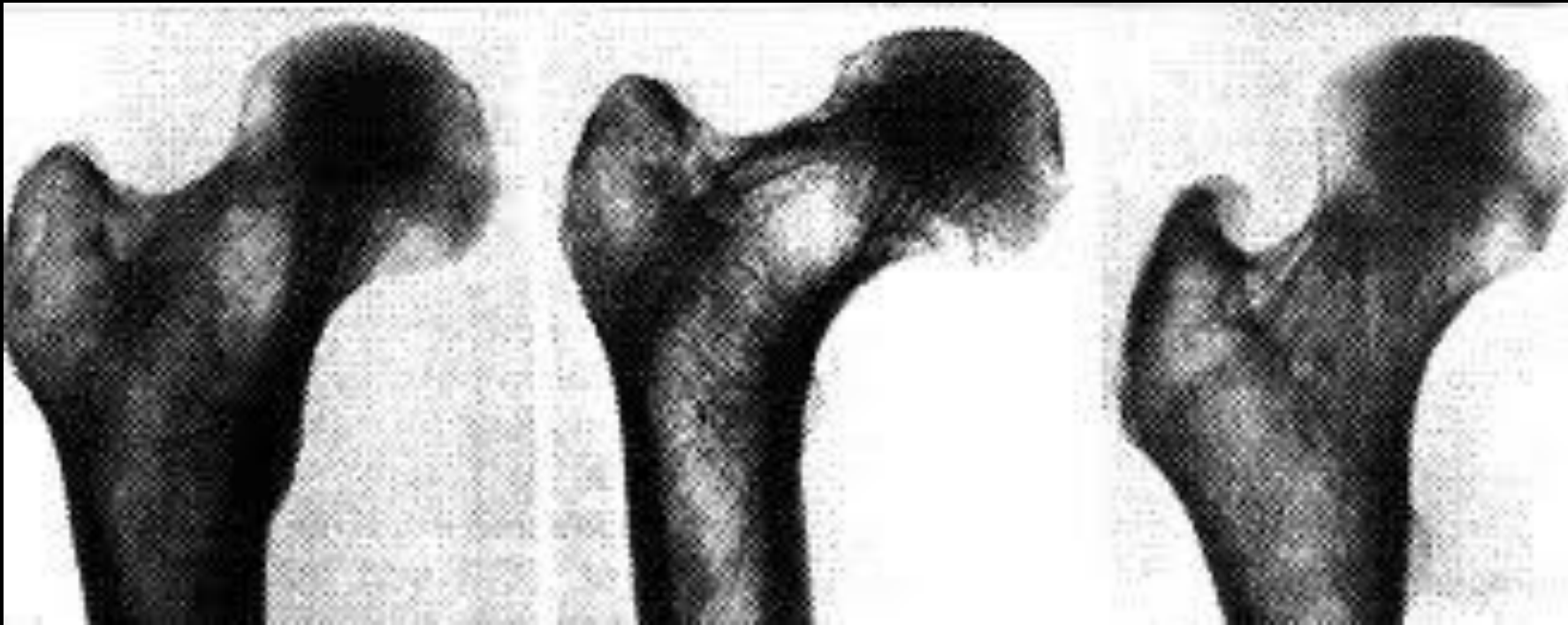
Neck shaft angle



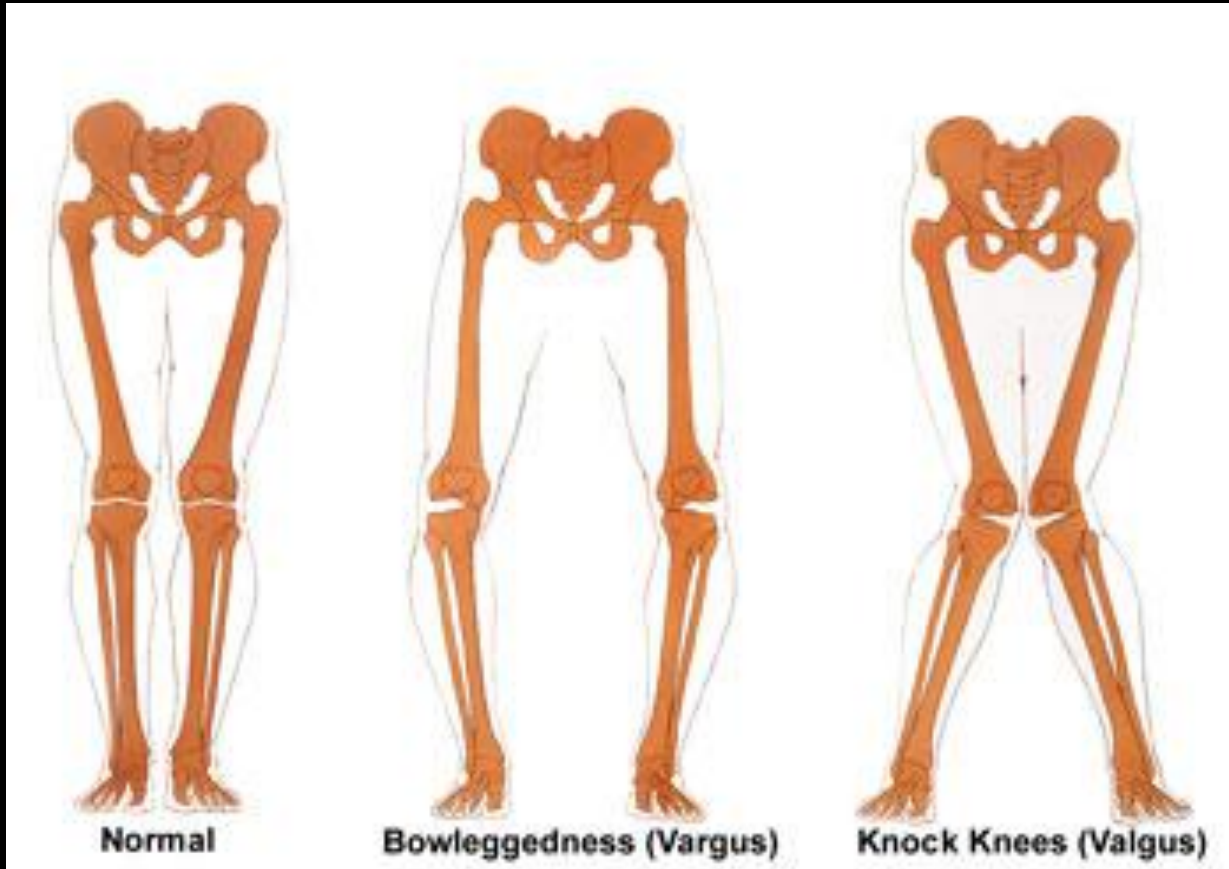
Neck shaft angle



Neck shaft angle

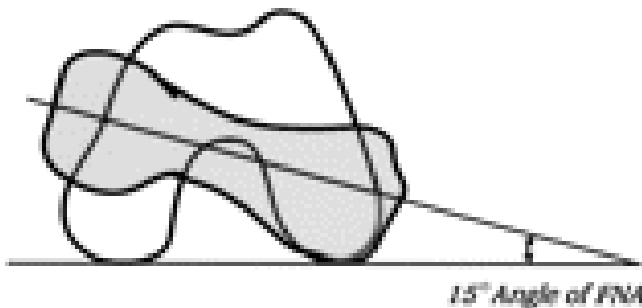


Neck shaft angle

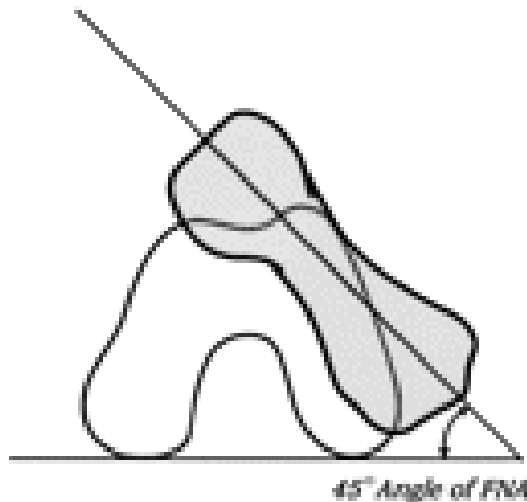


Anteversio of neck

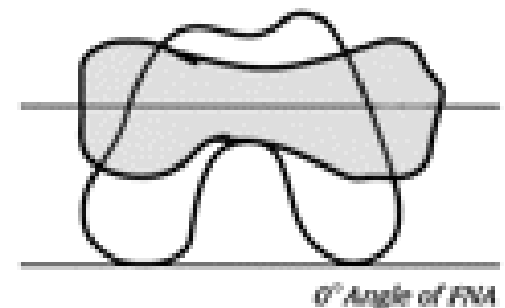
Normal Femoral Neck Anteversion



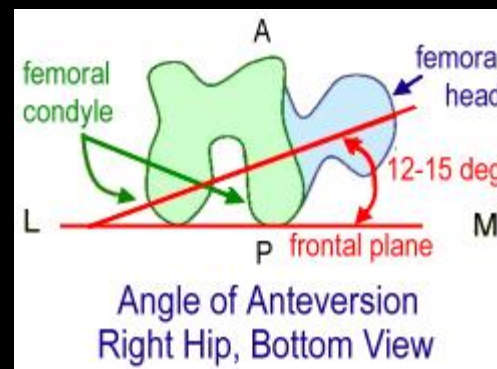
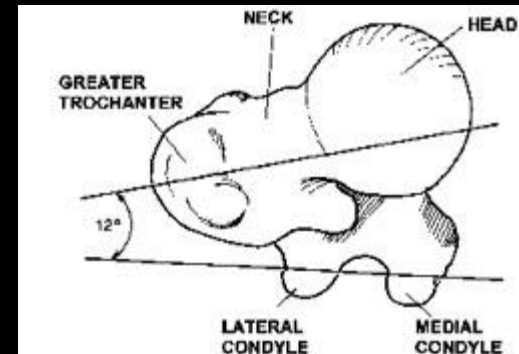
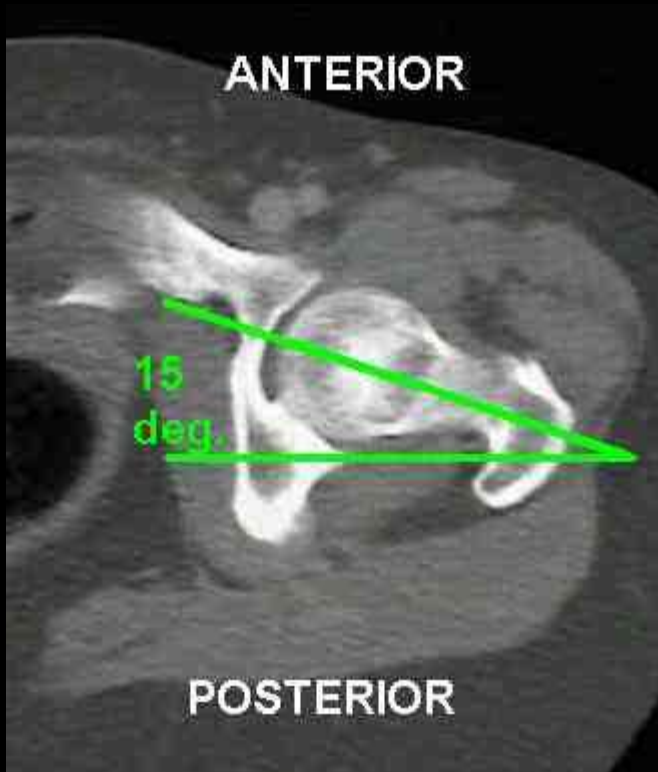
Increased Femoral Neck Anteversion



Femoral Neck Retroversion



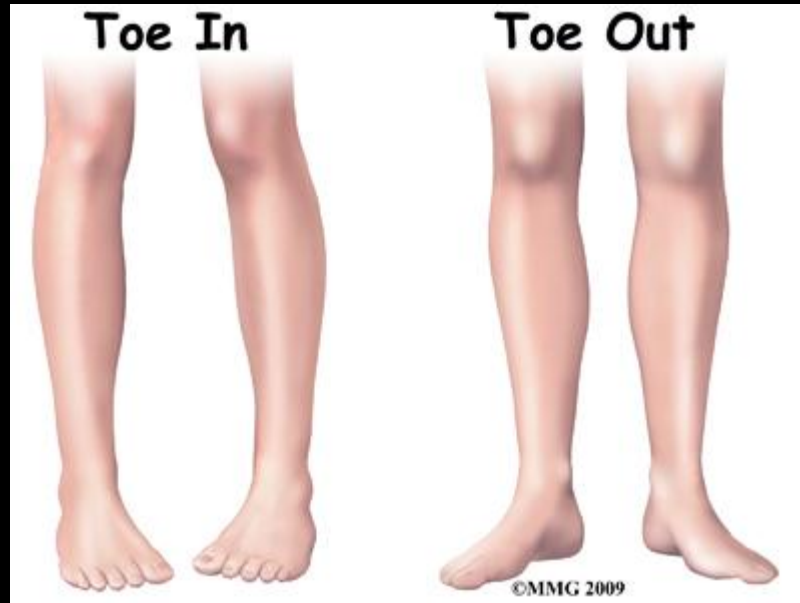
Anteversio of neck



Anteversio of neck



Anteversio of neck



Definition

- **Chronic joint disorder in which there is progressive softening and disintegration of articular cartilage and bone at the joint margin (osteophytes) and capsular fibrosis**

Etiology

- Increase frequency with age
 - Reduced proteoglycan
 - Loss of elasticity
 - Decrease in breaking strength
- Cartilage matrix changes
 - Crystal deposition disease
 - Ochronosis
 - Genetic defect in type II collagen

Etiology

- **Inflammatory disorders**
 - Enzymatic leaching of proteoglycans
 - Il-i mediated suppression in synthesis
- **Increased mechanical stress**
 - Increased load
 - Reduced articular contact area
- **Idiopathic**

Types

- **Primary osteoarthritis**
 - No obvious antecedent cause
- **Secondary osteoarthritis**
 - Following a demonstrable abnormality

Pathogeneisis

- **Dysplasia – instability spectrum**
- **Femoro acetabular impingement**
- **Both**

Pathogeneisis

- Structural damage to
- Articular cartilage
- Chondro labral complex

Pathogeneisis

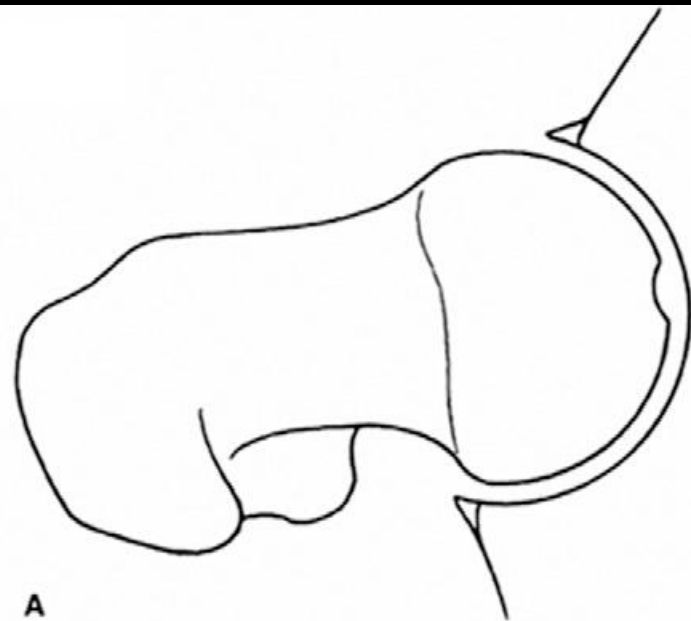
- **Acetabular dysplasia**
- **Femoral head is inadequately covered**
- **Instability**
- **Shearing forces on the edge of acetabulum & head**

Femoro acetabular impingement - FAI

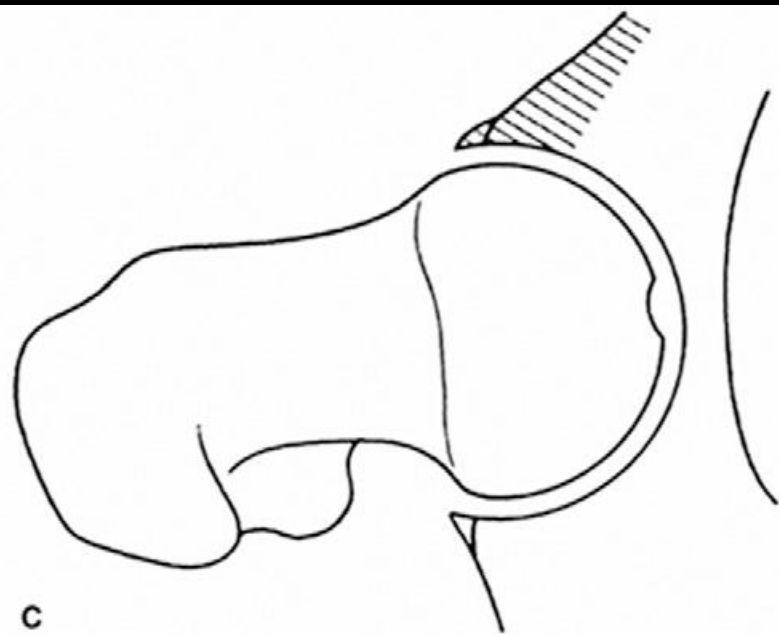
Cam type

Pincer type

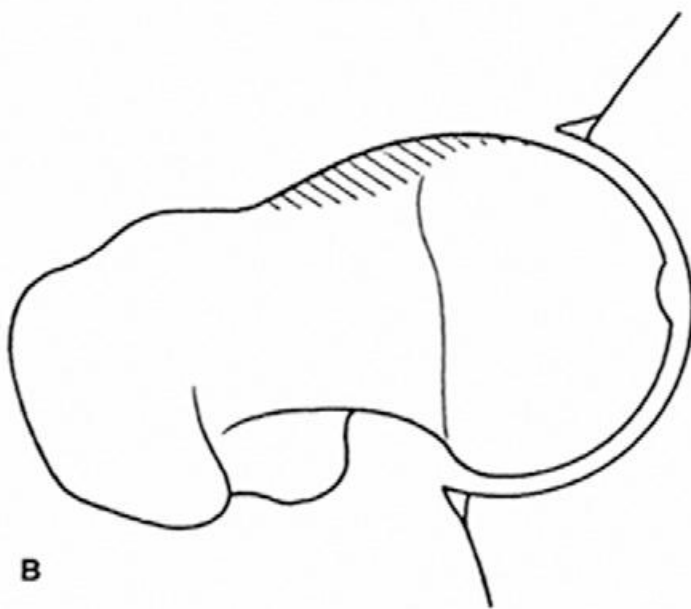
Mixed



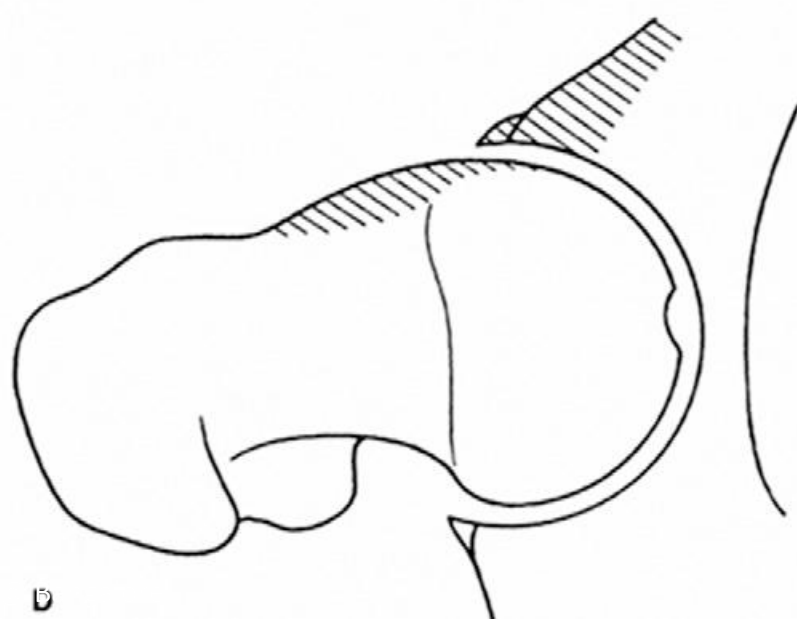
A



C

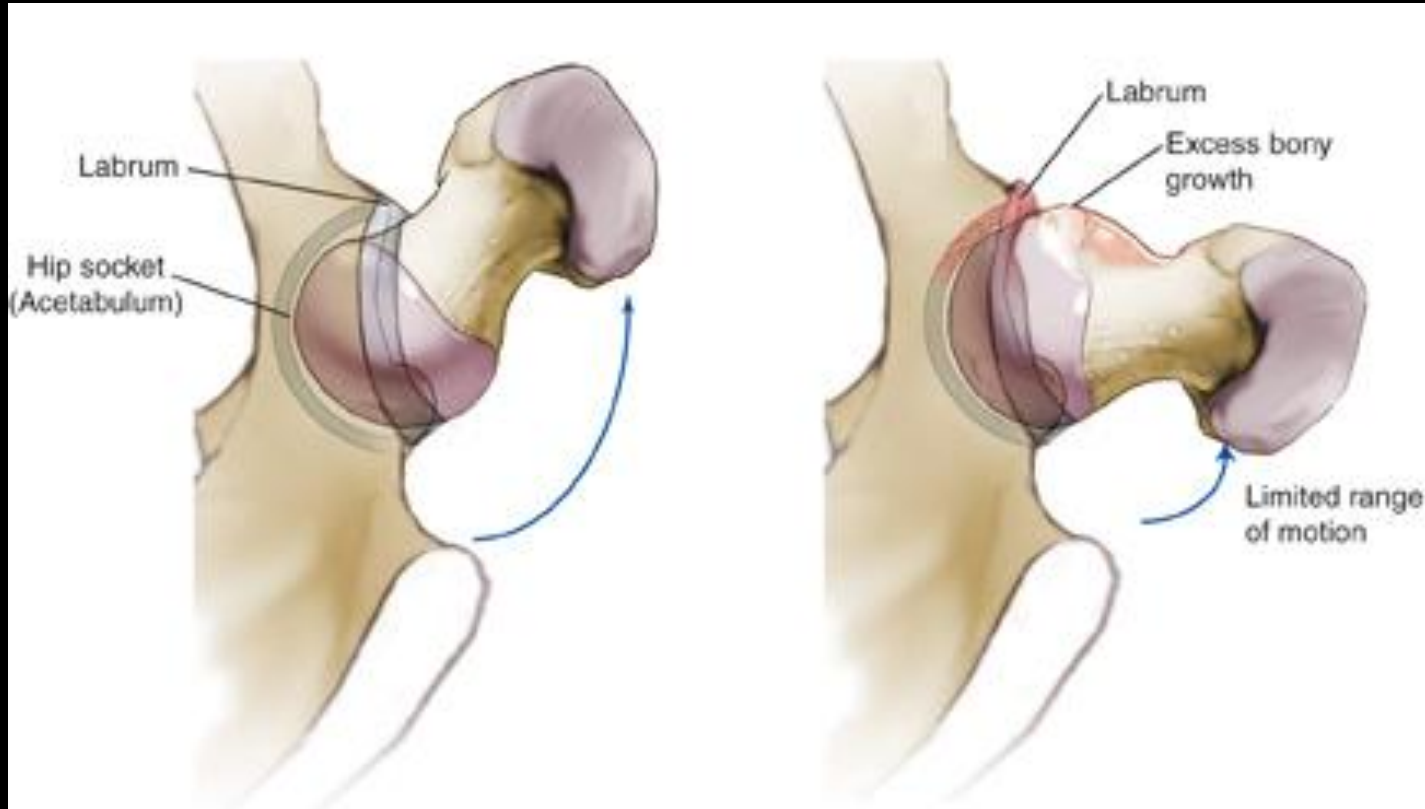


B

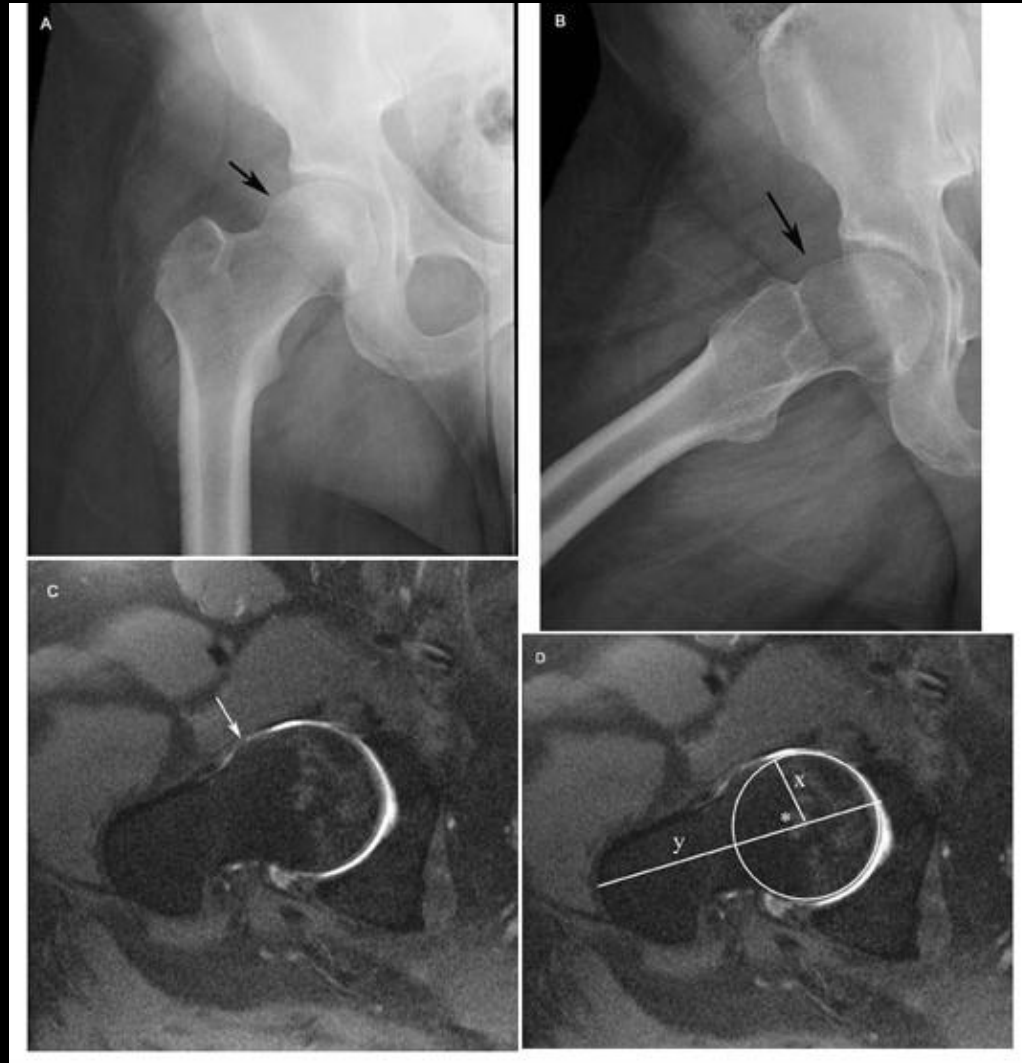


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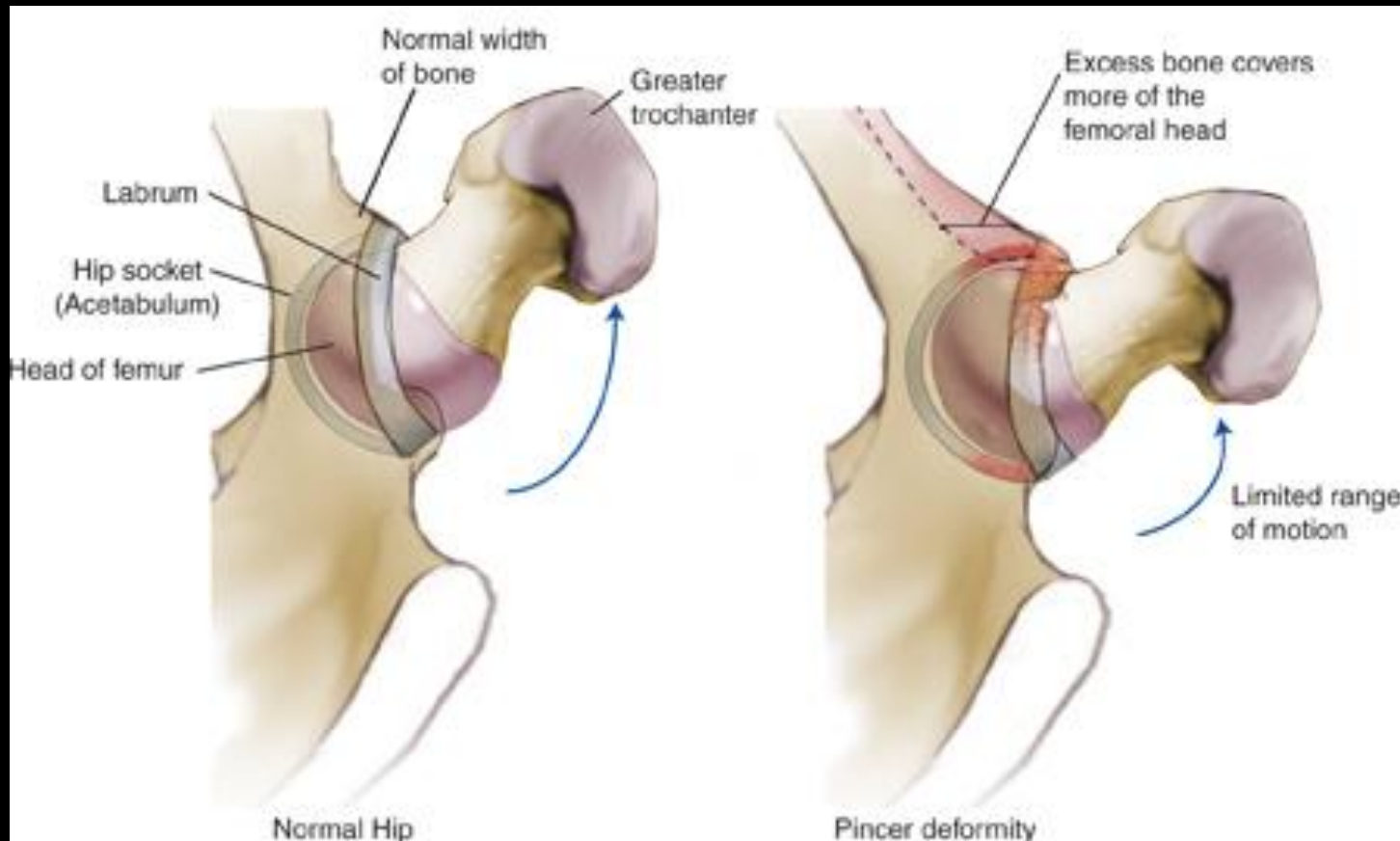
Cam type of impingement



Cam type of impingement



Pincer type of impingement

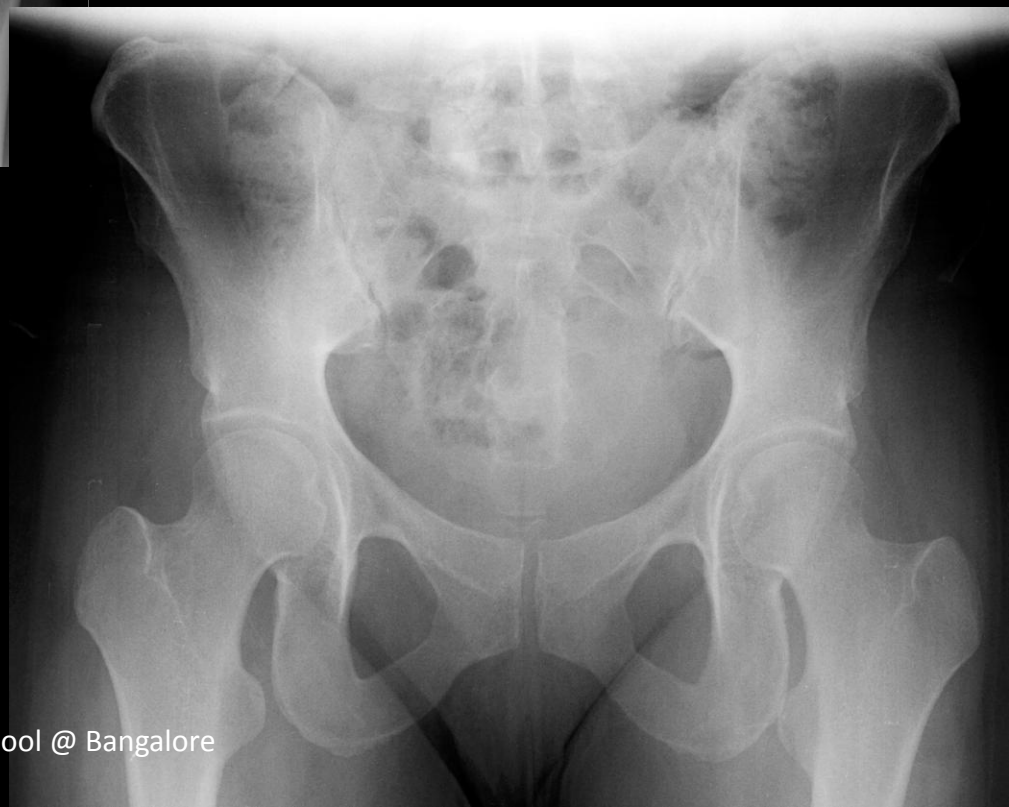


pincer type of impingement



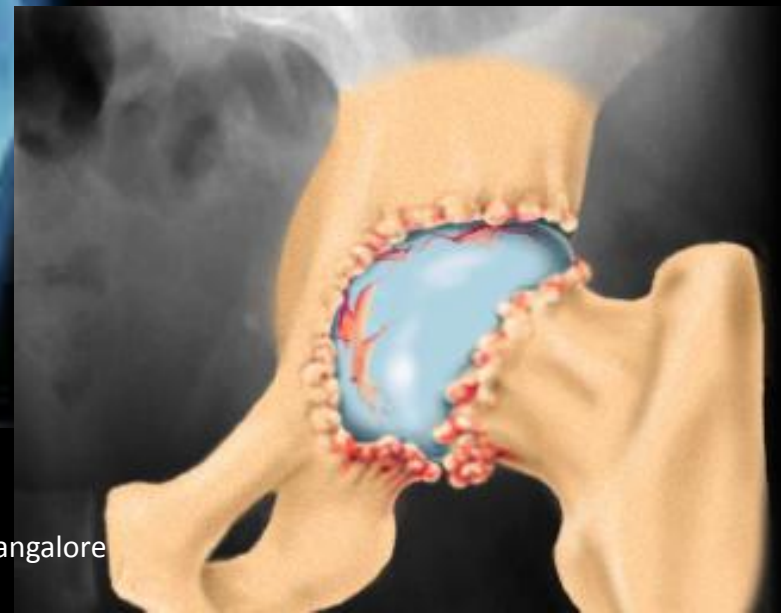
Cam & pincer type of impingement



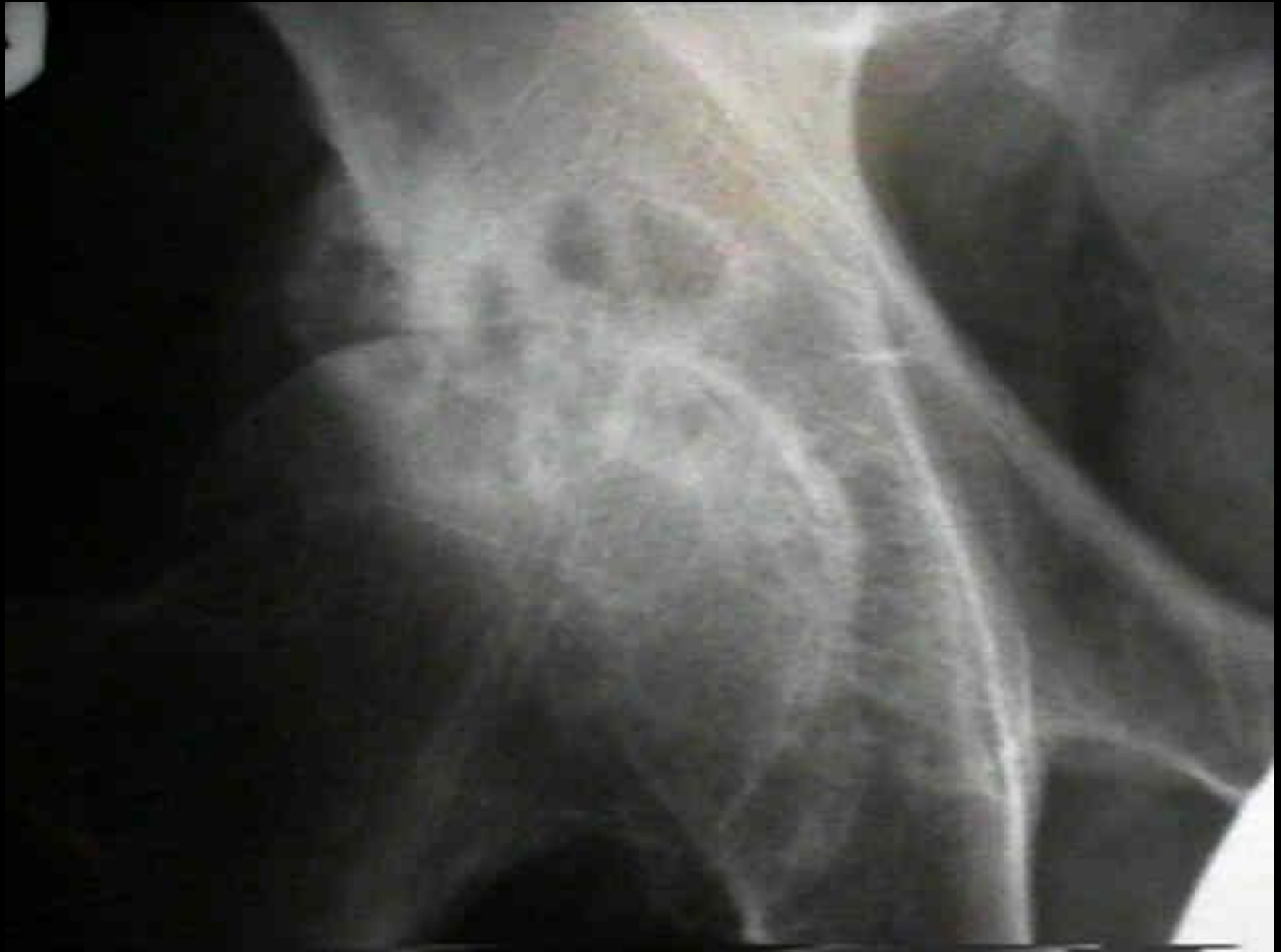


Pathogenesis

- Progressive cartilage destruction
- Subarticular cyst formation
- Sclerosis of surrounding bone
- Osteophyte formation
- Capsular fibrosis

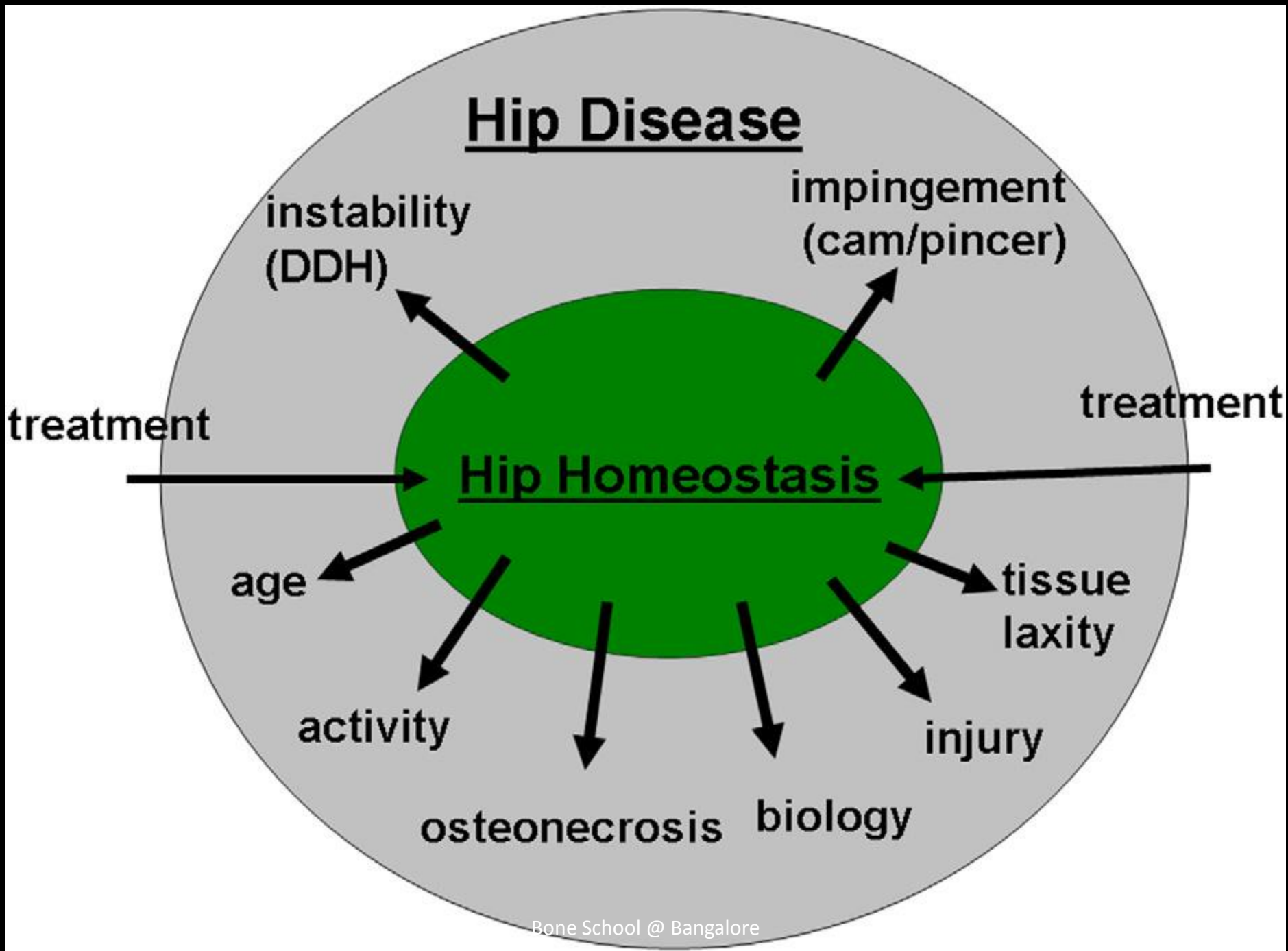












Prevalence

- **Commonest of all joint diseases**
- **Equal in both sexes**
- **Hip is second most involved in Indian population.**
- **Opposite in the European countries**

Risk factors

- Joint dysplasia
- Trauma
- Occupation
- Bone density
- Obesity
- Family history

Causes

ABNORMAL STRESS

- SUBLUXATION
- COXA MAGNA
- COXA VARA
- MINOR DEFORMITY
- PROTRUSIO

DEFECTIVE CARTILAGE

- INFECTION
- RHEUMATOID
- CALCINOSIS

ABNORMAL BONE

- FRACTURE
- NECROSIS
- PAGETS
- OTHERS

Clinical features

- **Pain**
 - Groin
 - Radiation to knee
- **Stiffness**
 - Increased after rest
- **Limp**
 - Early manifestation
 - Shortening

Pain

- Pain worsening after activity
- Trochanteric pain abd muscle fatigue
- Pain on prolonged sitting & groin pain
FAI

Clinical features

- **Passive hip extension, adduction & external rotation**
- **Hip 90 degrees flexion adduction & internal rotation**

Clinical features

- Hip is flexed, Abducted & externally rotated and then extended and internally rotated
- There is a snap

Clinical features

- **Look**
 - Shortening
 - Scars
 - Sinuses
- **Feel**
 - Temp
 - Joint line tenderness
- **Move**
 - Deformity

Deformity

- **Primary osteoarthritis**
 - Flexion
 - Abduction
 - External rotation
- **Secondary osteoarthritis**
 - Depending on the condition

Investigation

- **Radiograph**
 - **Pelvis with both hips AP**
 - **Frog or translateral**
 - **Special views**

Investigation

- **Reading of x-ray**
 - **A. Alingnment**
 - **B. Bone quality**
 - **C. Cartilage / joint space**

Investigation

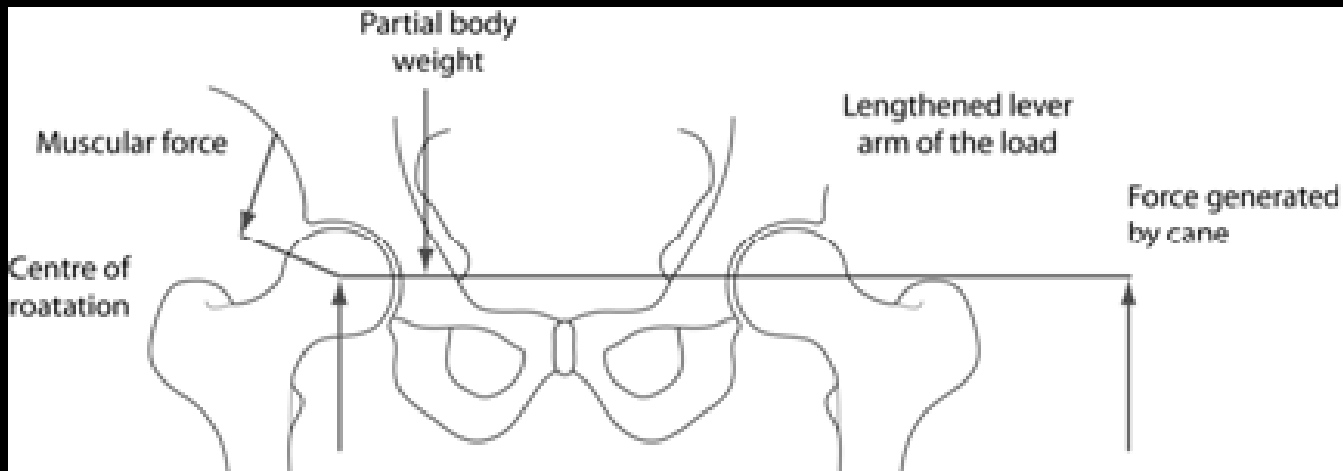
- Complete blood work
- Bone scan
- Ct scan
- MRI

Treatment

- **Early**
 - **Maintain movement**
 - **Muscle strengthening**
 - **Protect joint from overload**
 - **Pain relief**
 - **Activity modification**

Treatment

Using a cane



Treatment

- **Joint preserving**
 - **Acetabular osteotomy**
 - **Femoral osteotomy**
 - **Safe surgical dislocation**
 - **Arthroscopy**

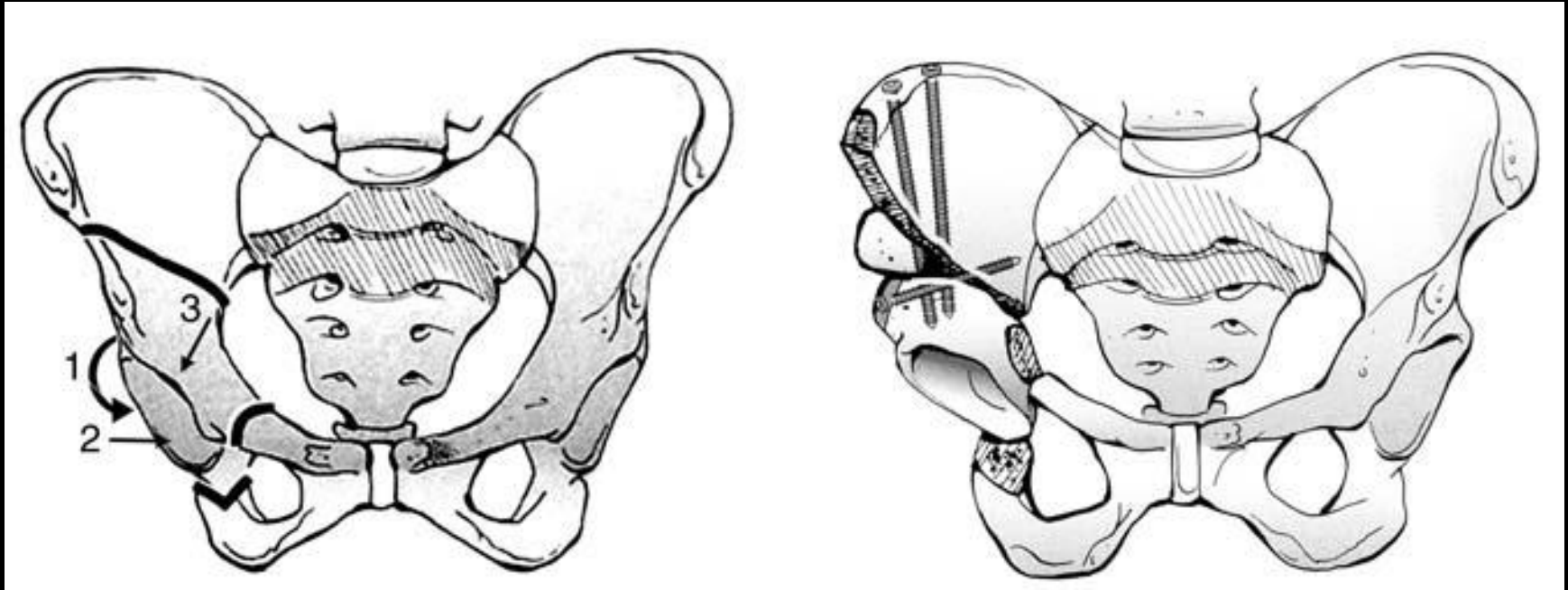
Acetabular osteotomy



Acetabular osteotomy



Acetabular osteotomy



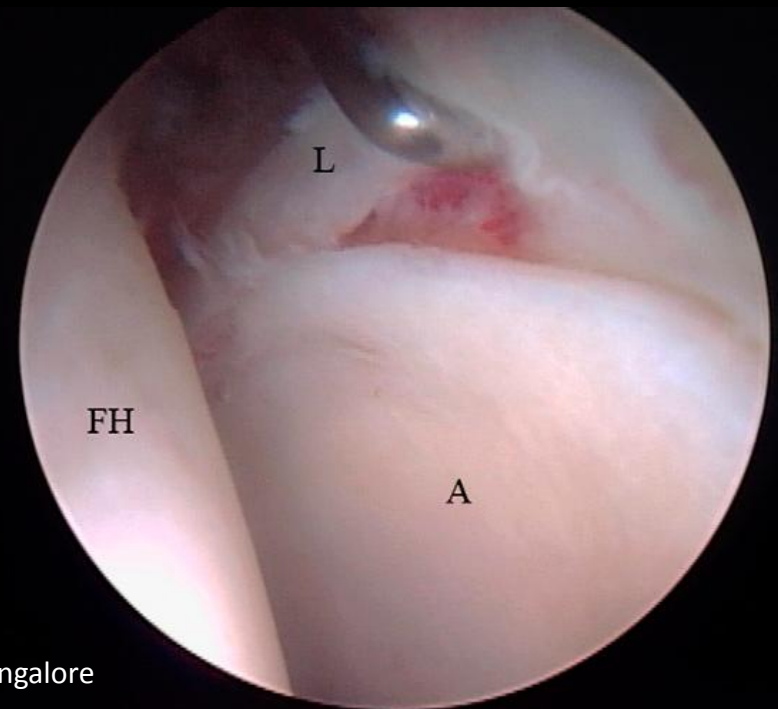
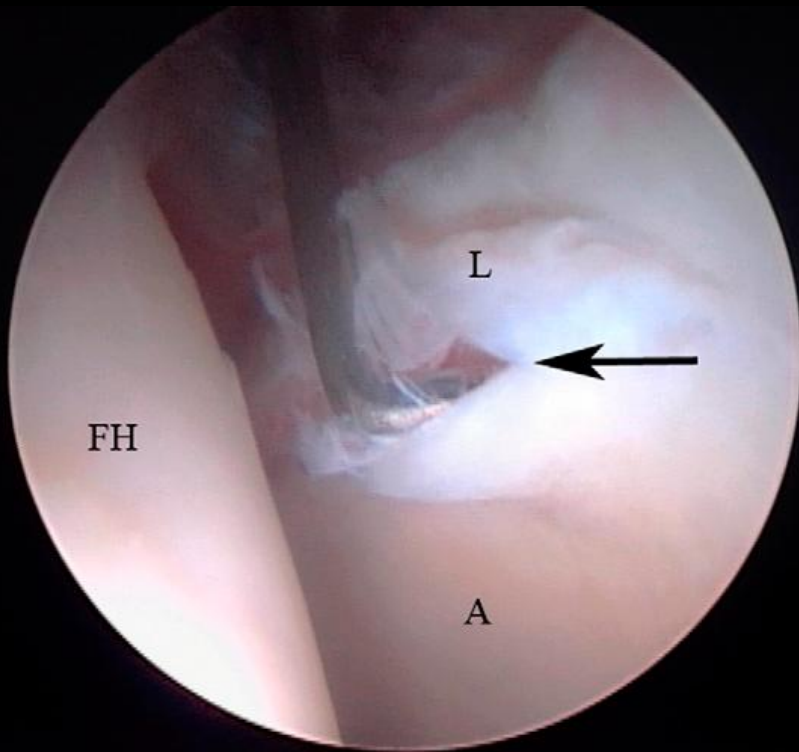
Femoral osteotomy



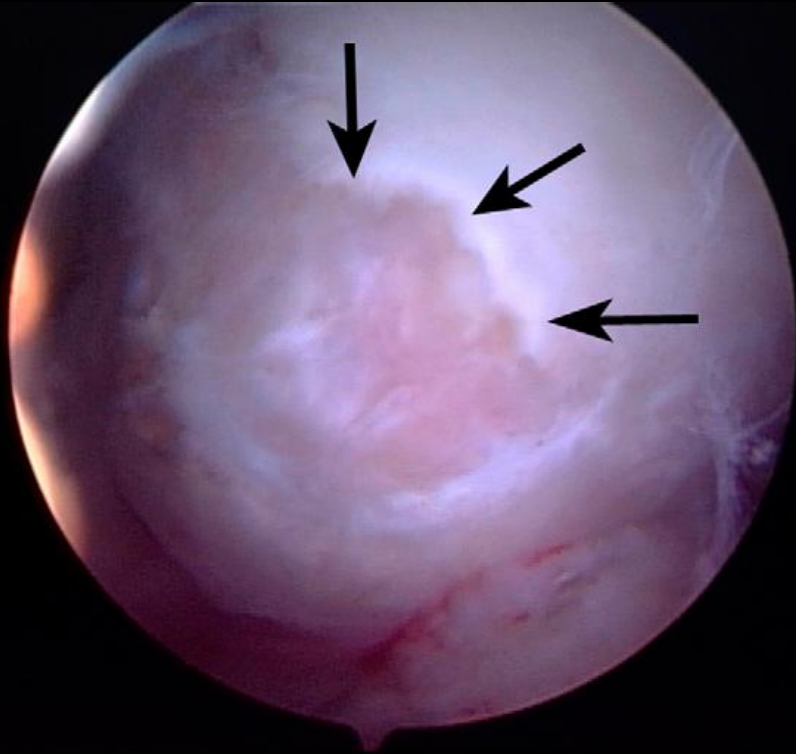
Safe surgical dislocation



Arthroscopy – labral tear



Arthroscopy – FAI



Treatment

- **Late / operative treatment indication**
 - Progressive increase in pain
 - Rest pain
 - Restriction of activity
 - Marked deformity
 - Progressive loss of movement
 - Radiological evidence of joint destruction

Operative management

- **Joint debridement**
- **Excision arthroplasty**
- **Arthrodesis**
- **Replacement Arthroplasty**