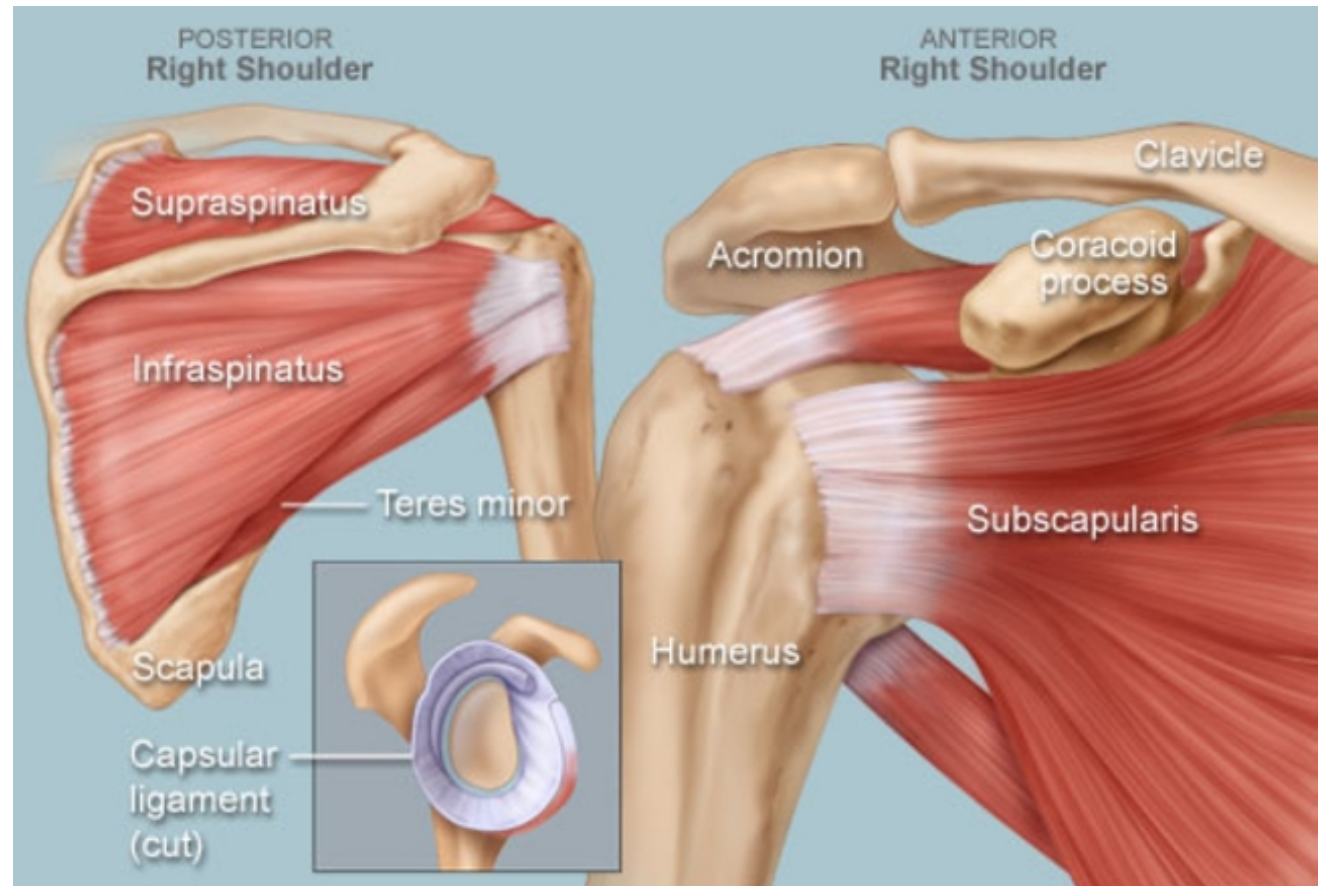


# Shoulder Disorders

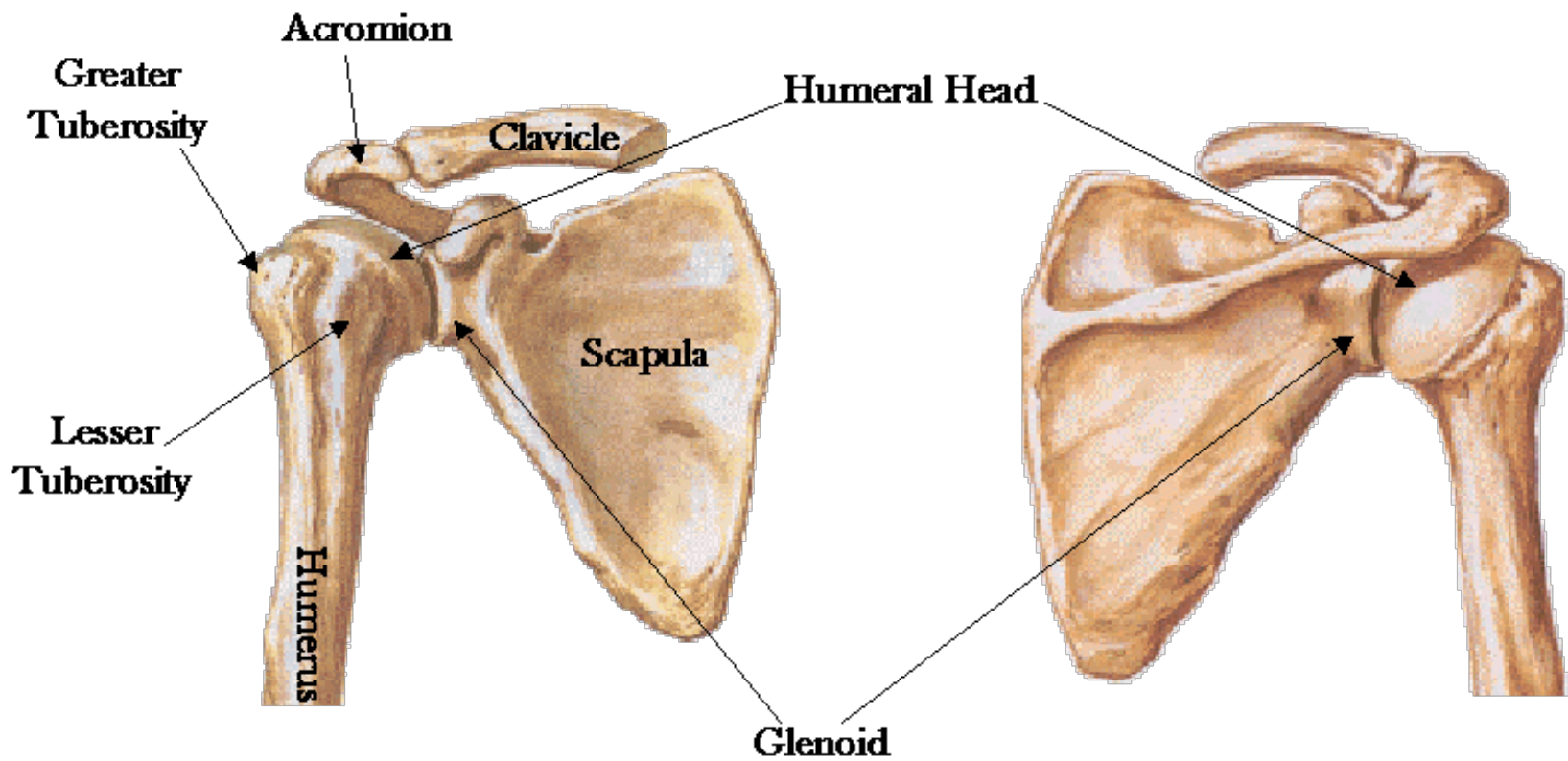
Aws Khanfar

# Recall The **Anatomy**..

- Bones
- Muscles
- Capsules
- Ligaments

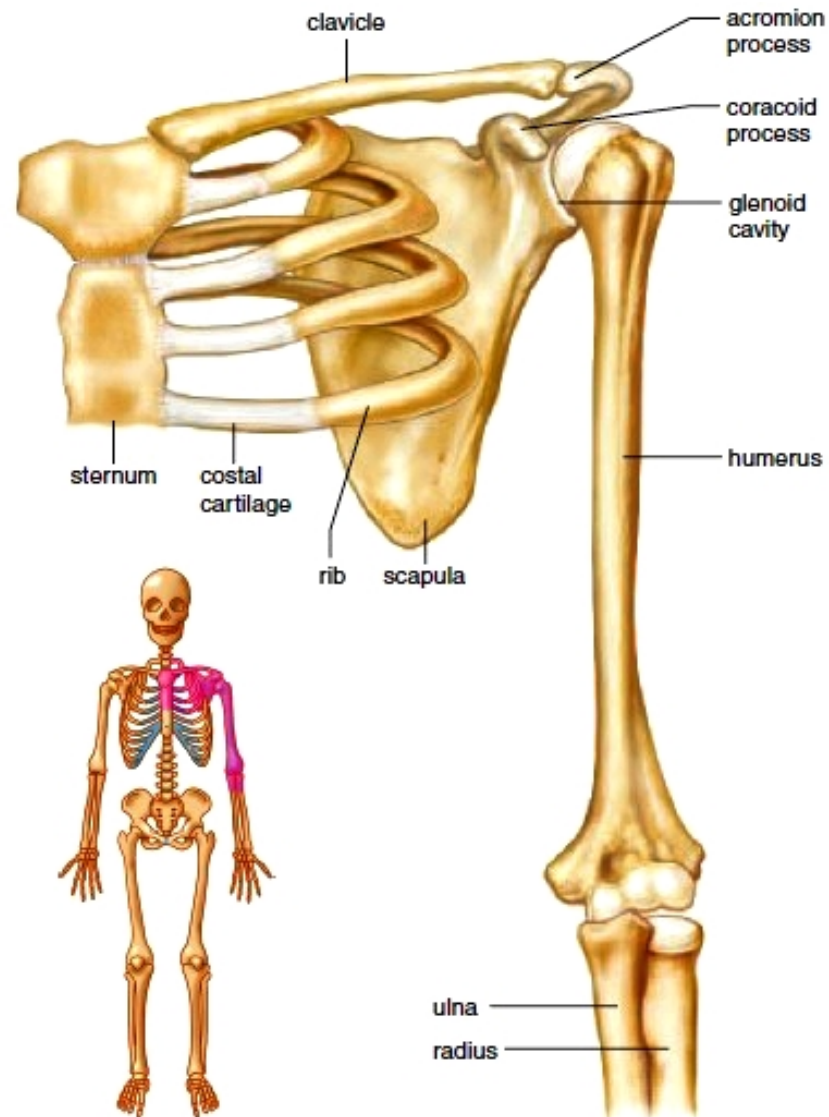
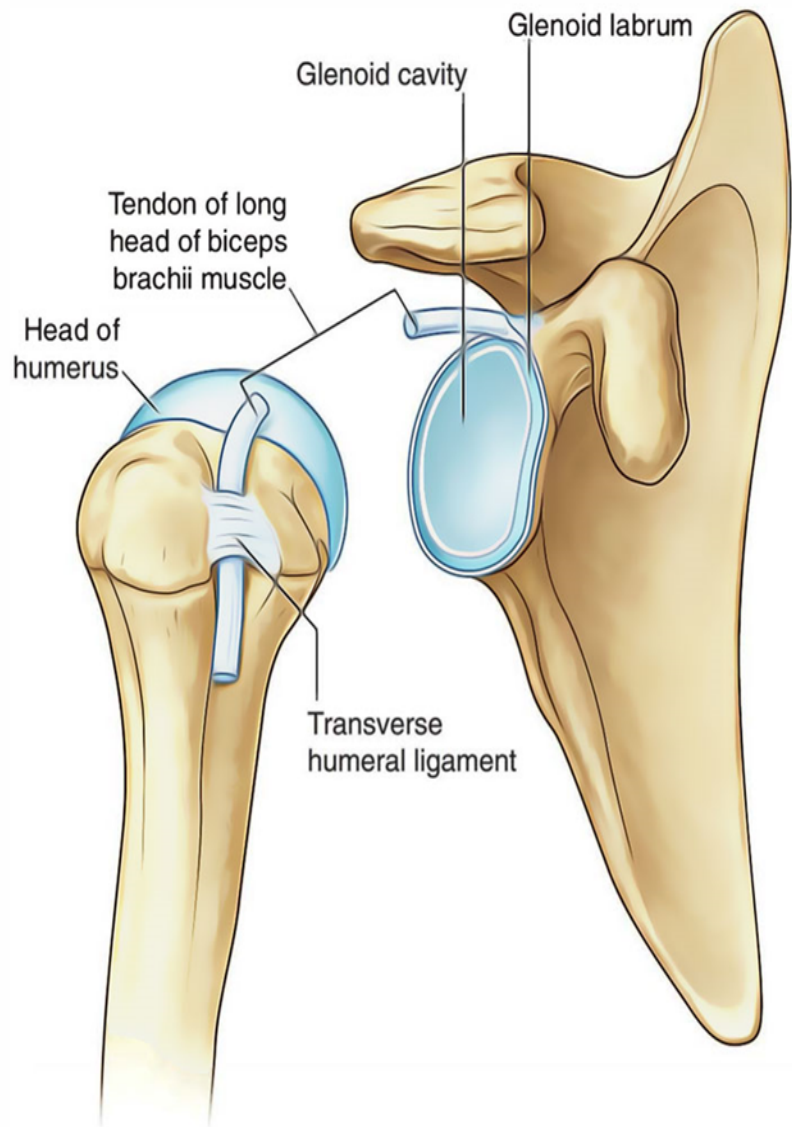


# Bones



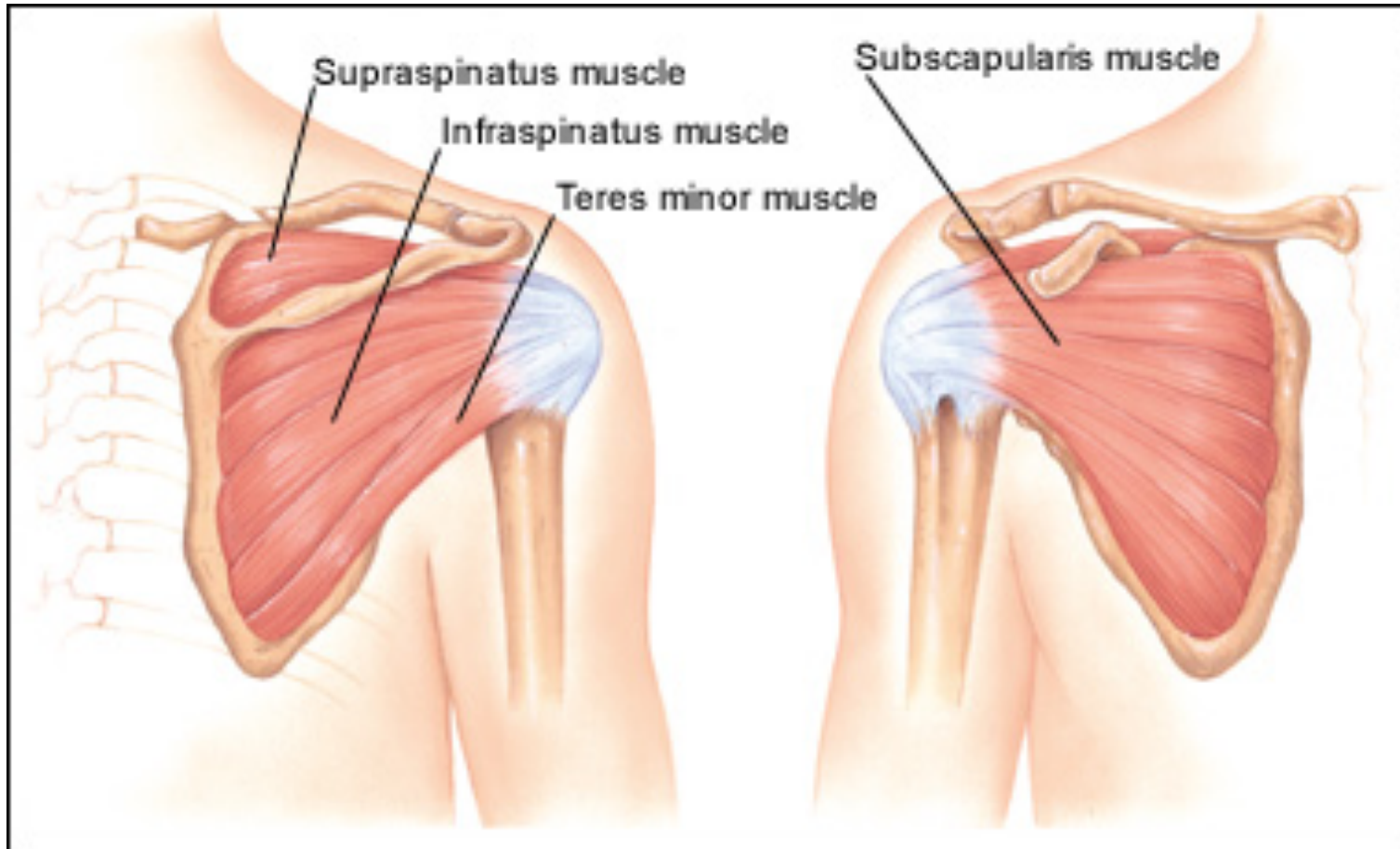
**FRONT VIEW**

**BACK VIEW**



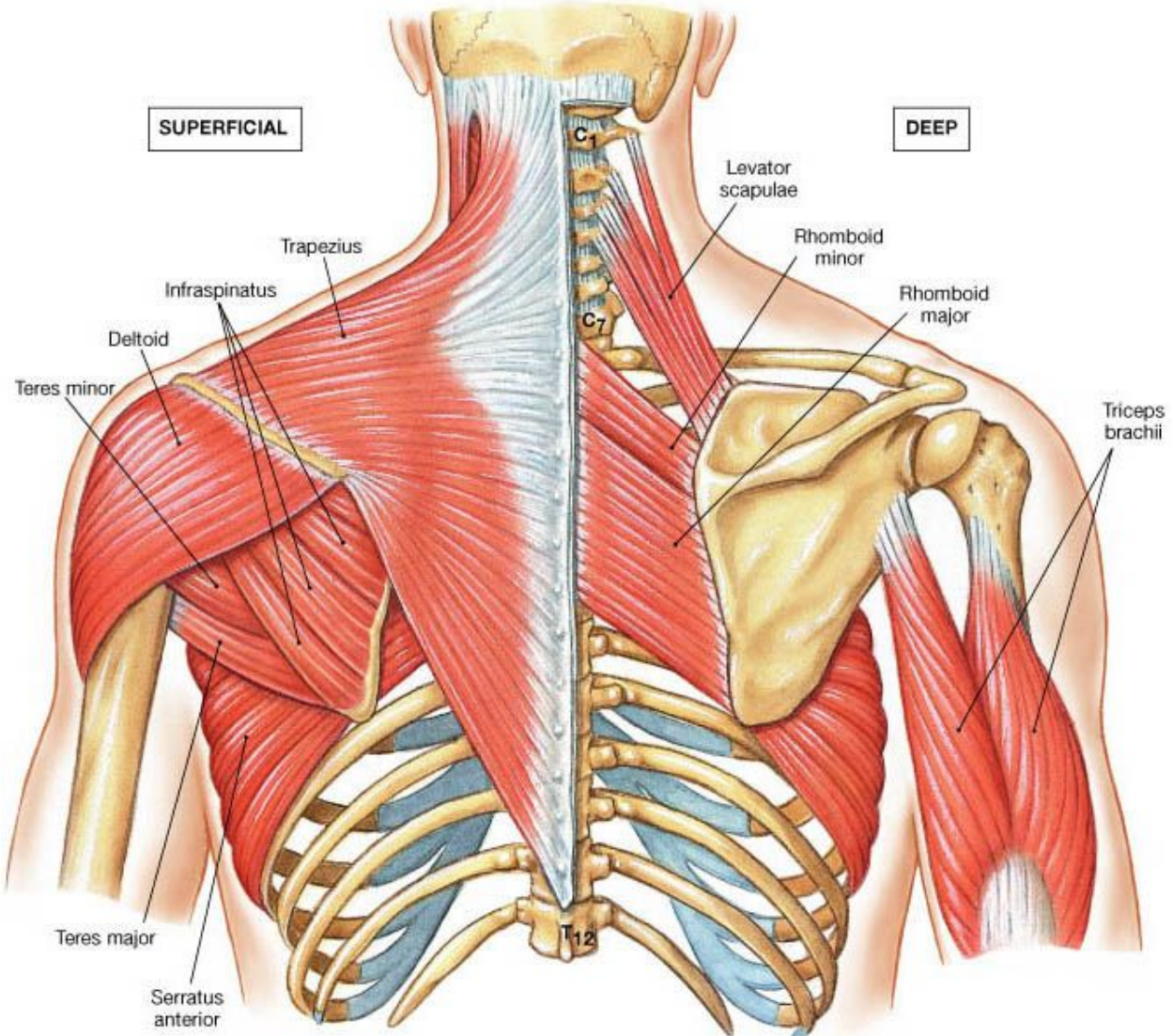
a. Pectoral girdle, frontal view

# Rotator Cuff Muscles





# Other Muscles



# Capsule

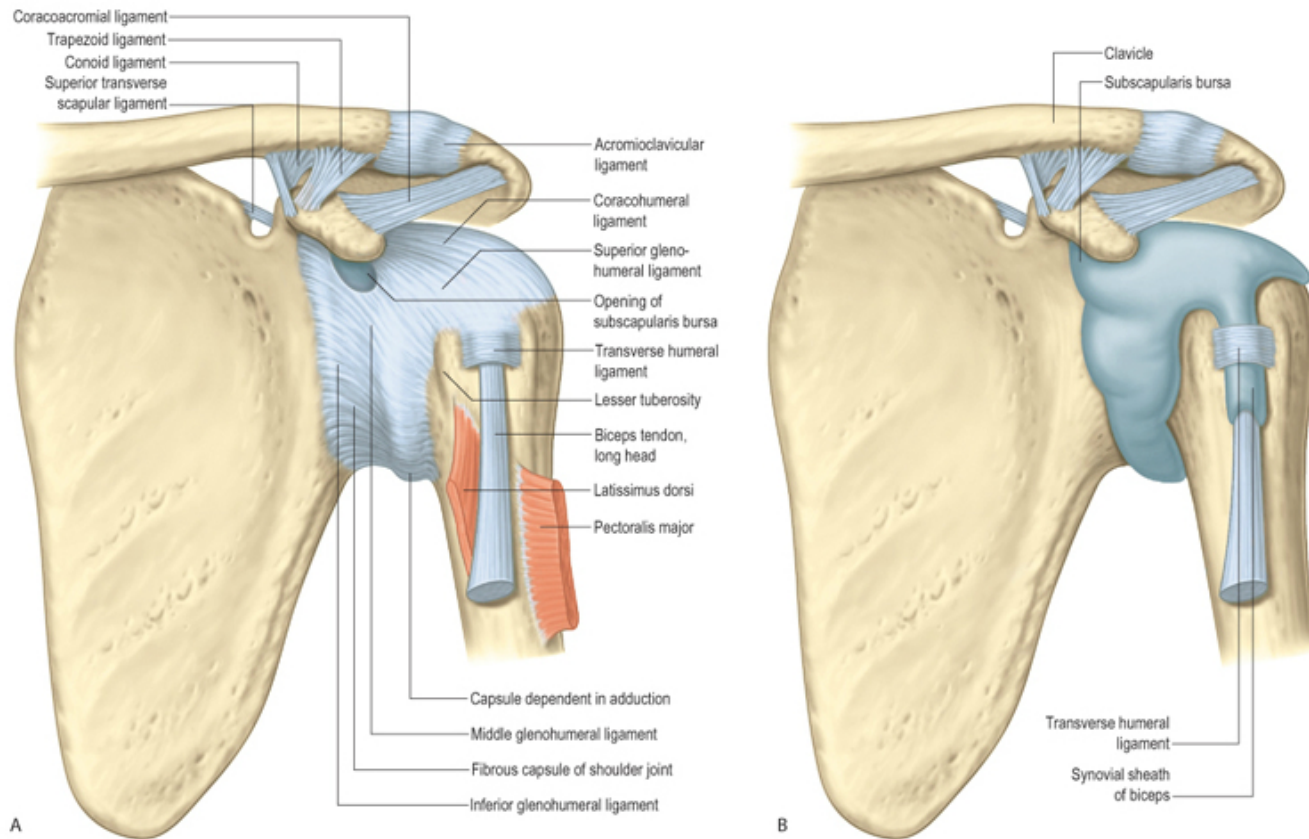
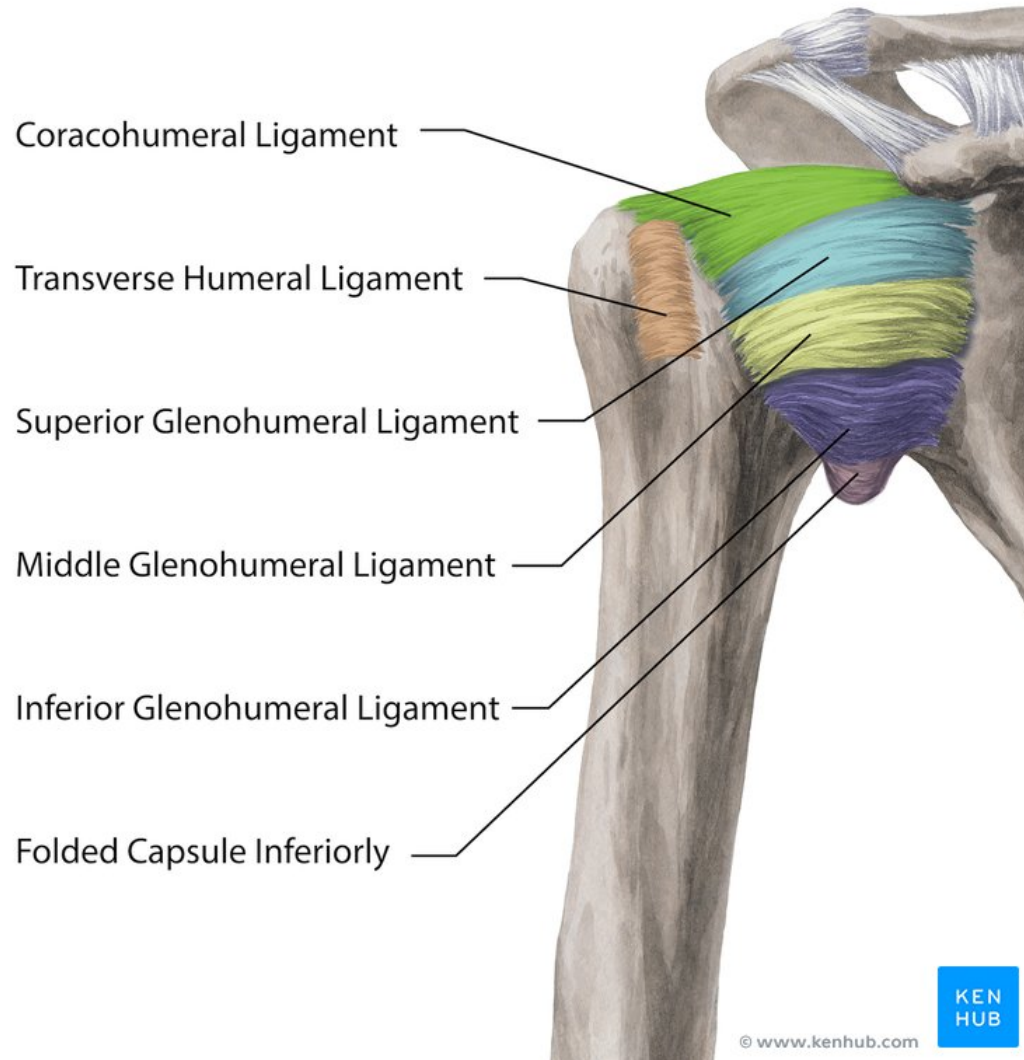


Fig. 46.14 A, The anterior aspect of the left shoulder. B, A deeper view of the anterior aspect than in (A), showing the subscapularis bursa.

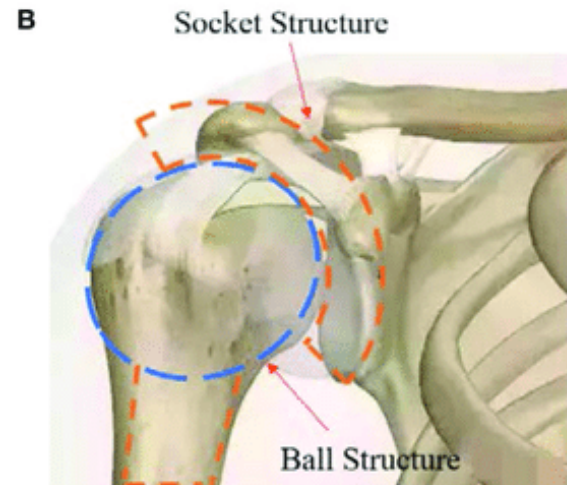
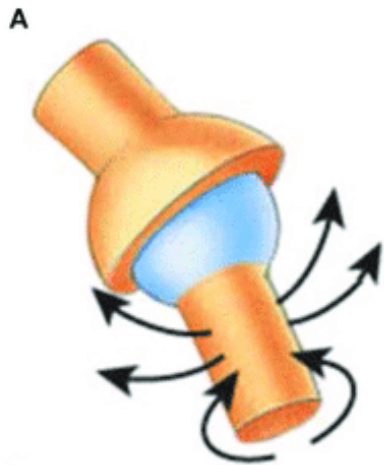
# Ligaments





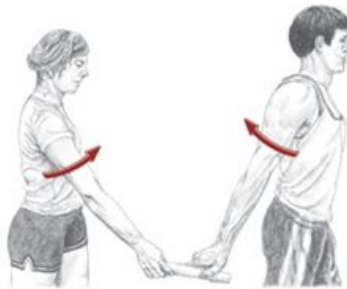
# Glenohumeral joint

Least stable joint



# Has a wide range of motion

## Shoulder (glenohumeral joint)



Flexion

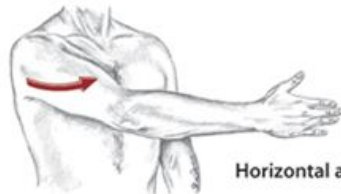
Extension



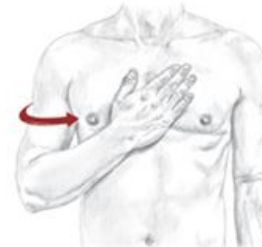
Adduction



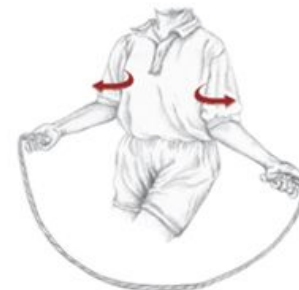
Abduction



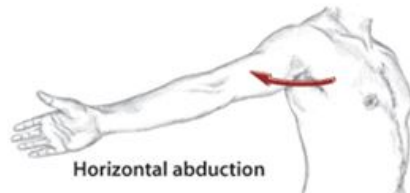
Horizontal adduction



Medial rotation  
(internal rotation)



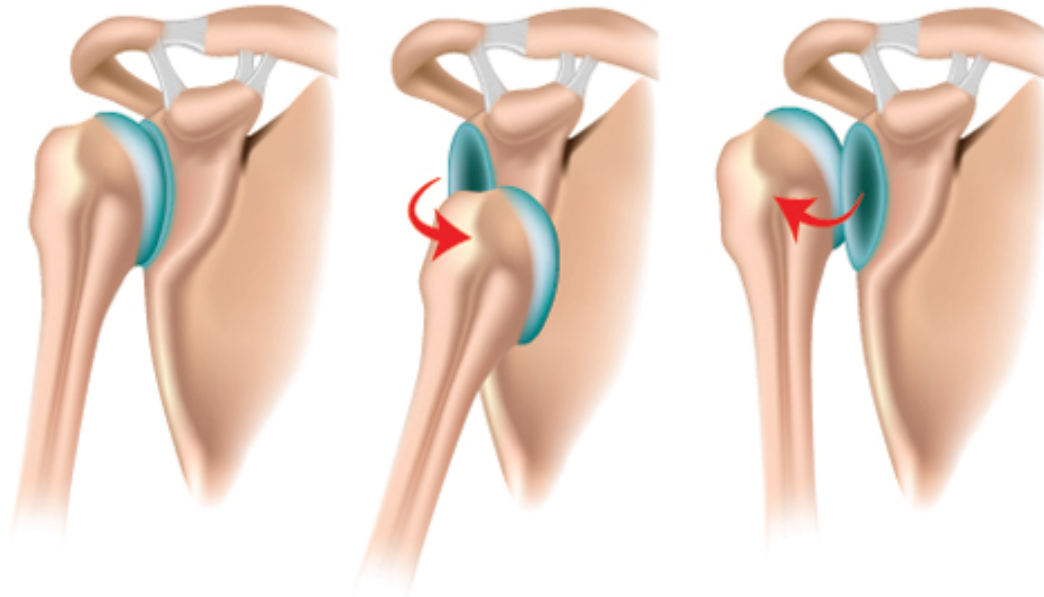
Lateral rotation  
(external rotation)



Horizontal abduction

# Shoulder (GHJ) dislocation

## Shoulder Dislocation



Normal  
anatomy

Anterior  
dislocation

Posterior  
dislocation

# Types

According to the direction in which the humerus exits the joint:

1. Anterior 95%
2. Posterior 5%
3. Inferior (luxatio erecta) extremely rare

Multidirectional (habitual) - painless

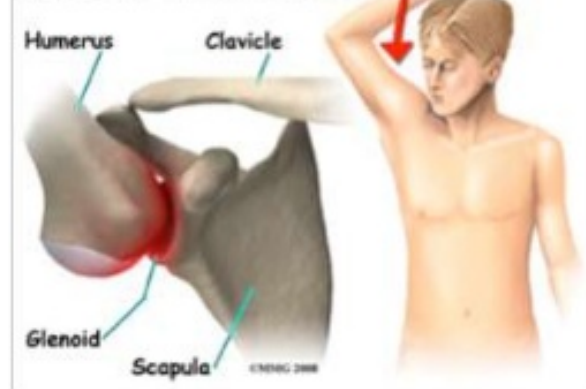
### Posterior Dislocation



### Anterior Dislocation



### Inferior Dislocation






# Anterior dislocation

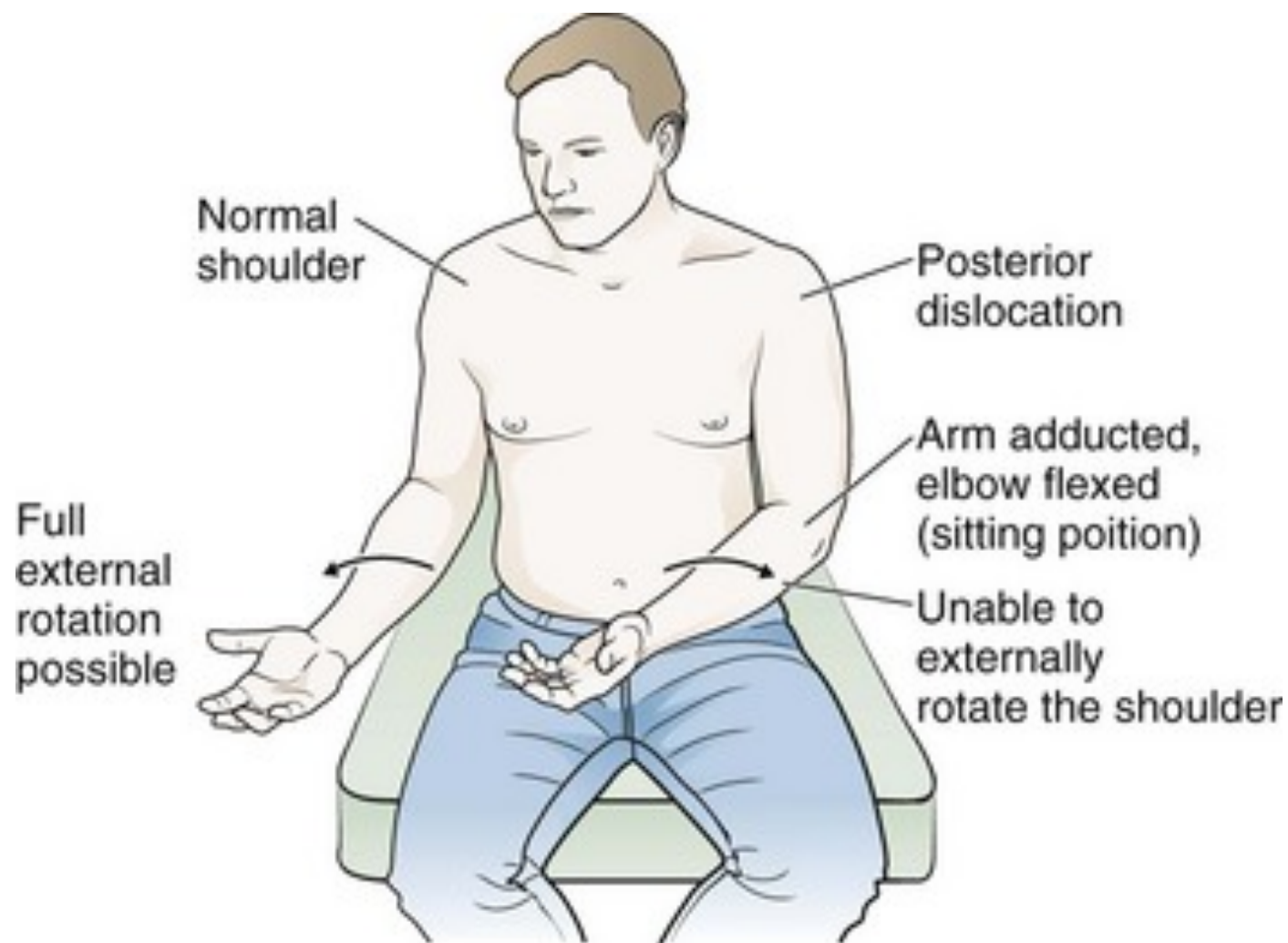
## Mechanism

- Indirect
- Direct

# Shoulder is squared off

 The picture can't be displayed.





- Patient resists abduction and internal rotation and is unable to touch the opposite shoulder.
- Positive Apprehension test

## During PE

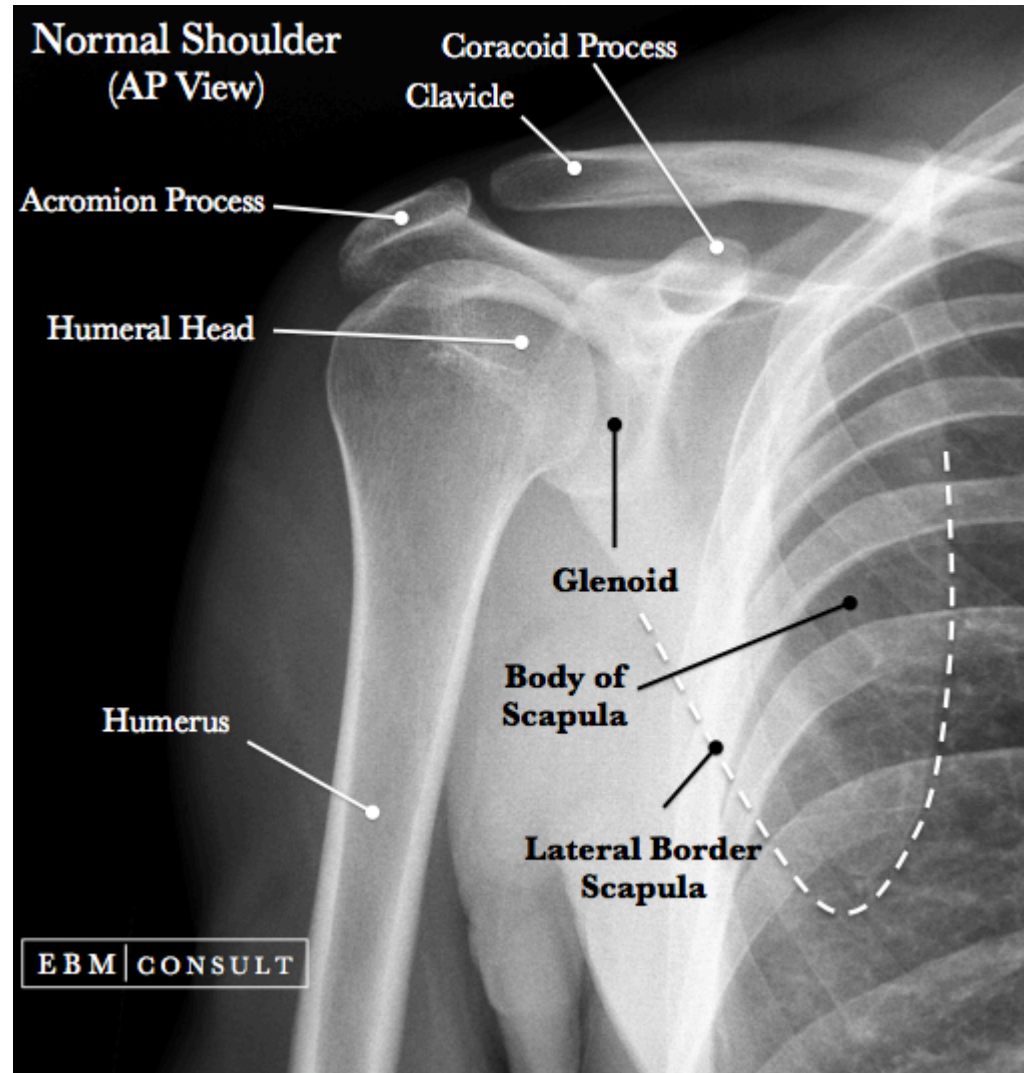
- Compare **radial pulses, ulnar pulse, capillary refill**
- Examine the **Axillary nerve (sensation of the skin over the lower half of the deltoid)**  
(before and after reduction)
- Evaluate sensory and motor function of the musculocutaneous, radial, ulnar, and median nerves.



# Imaging

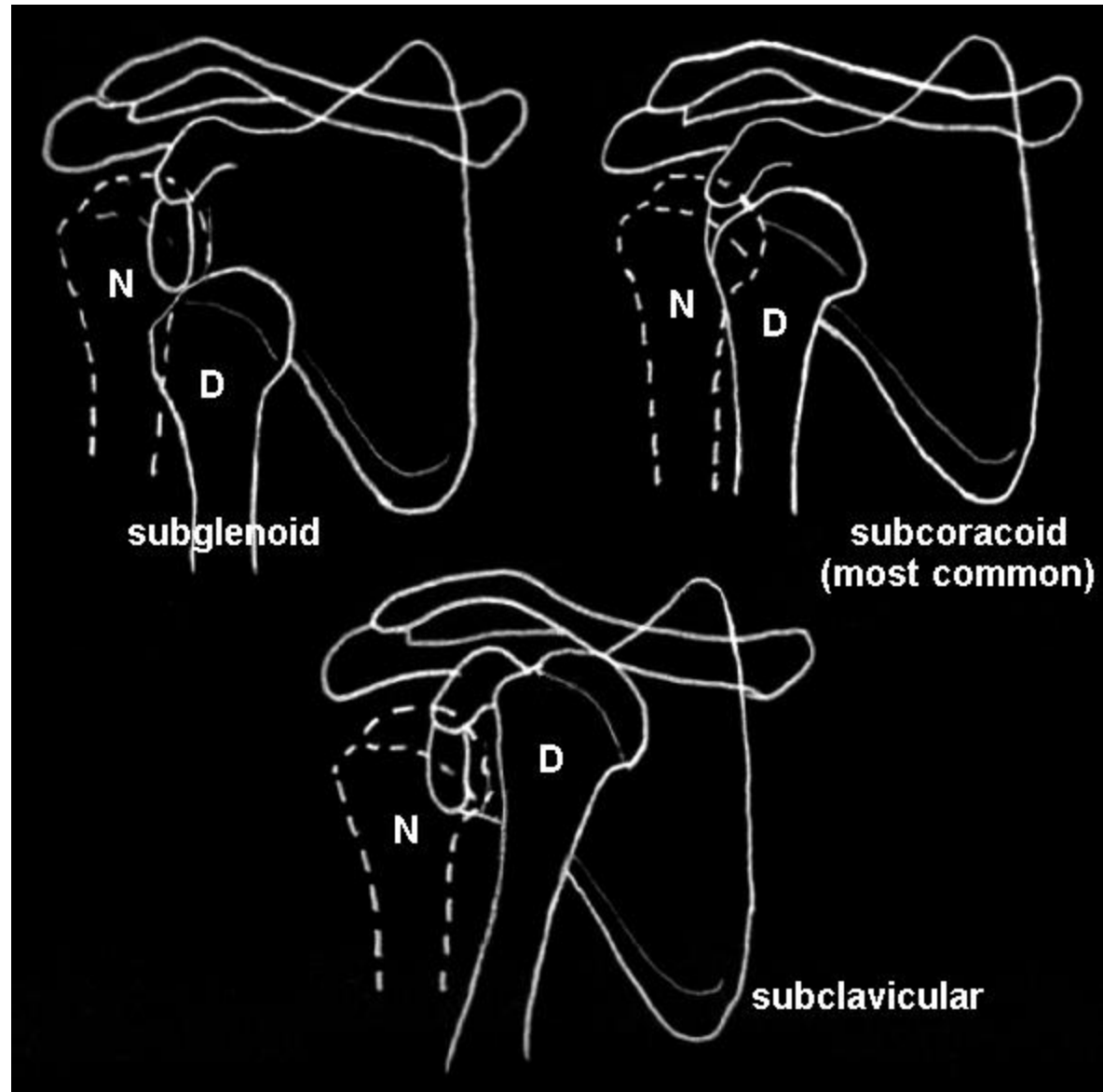
In first time dislocation, **ALWAYS do an X-Ray before reduction** to r/o any fractures

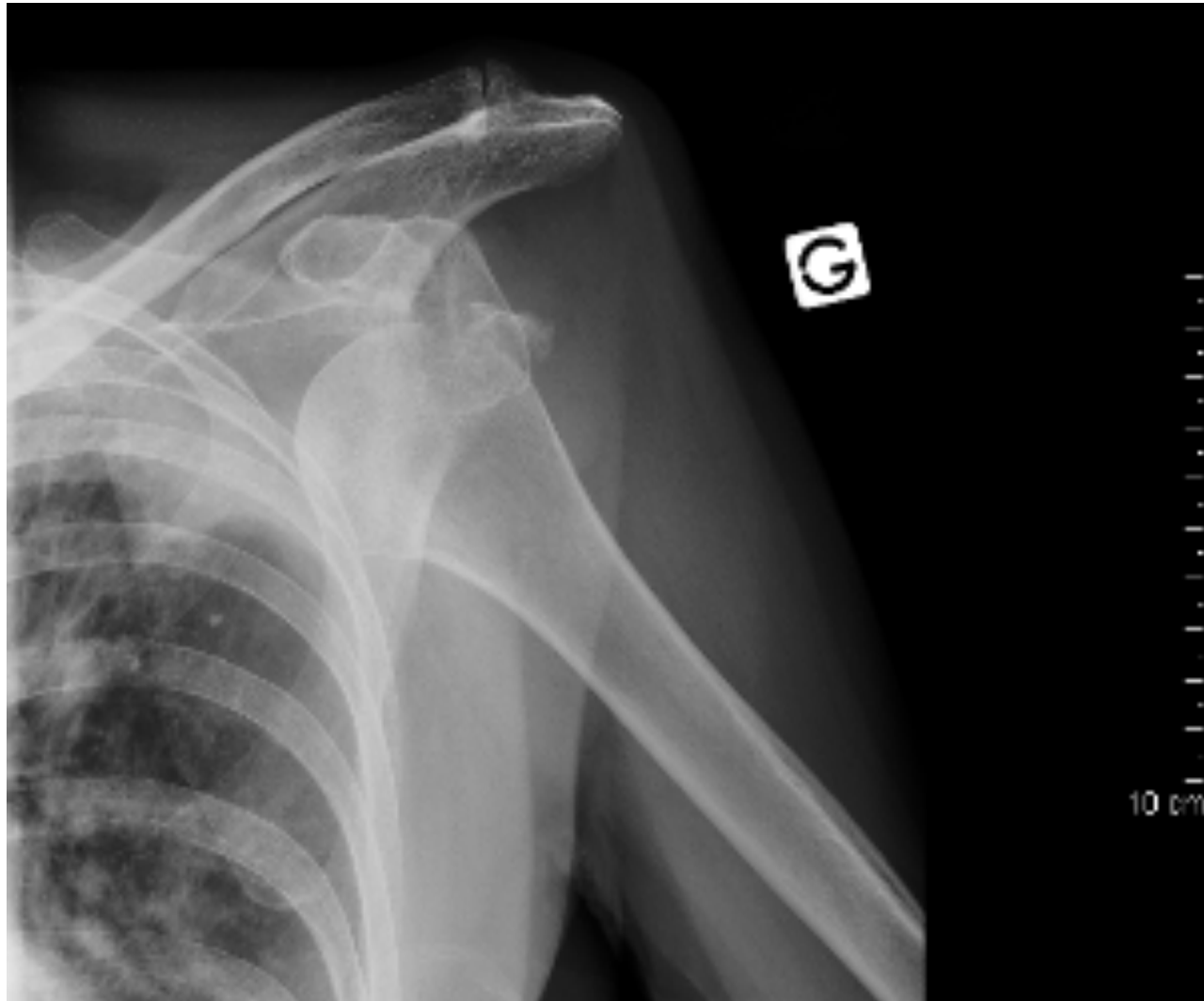
**Anterior** AP view is better  
**Posterior** Scapular or Axillary view



# Anterior Shoulder Dislocation

Remember..





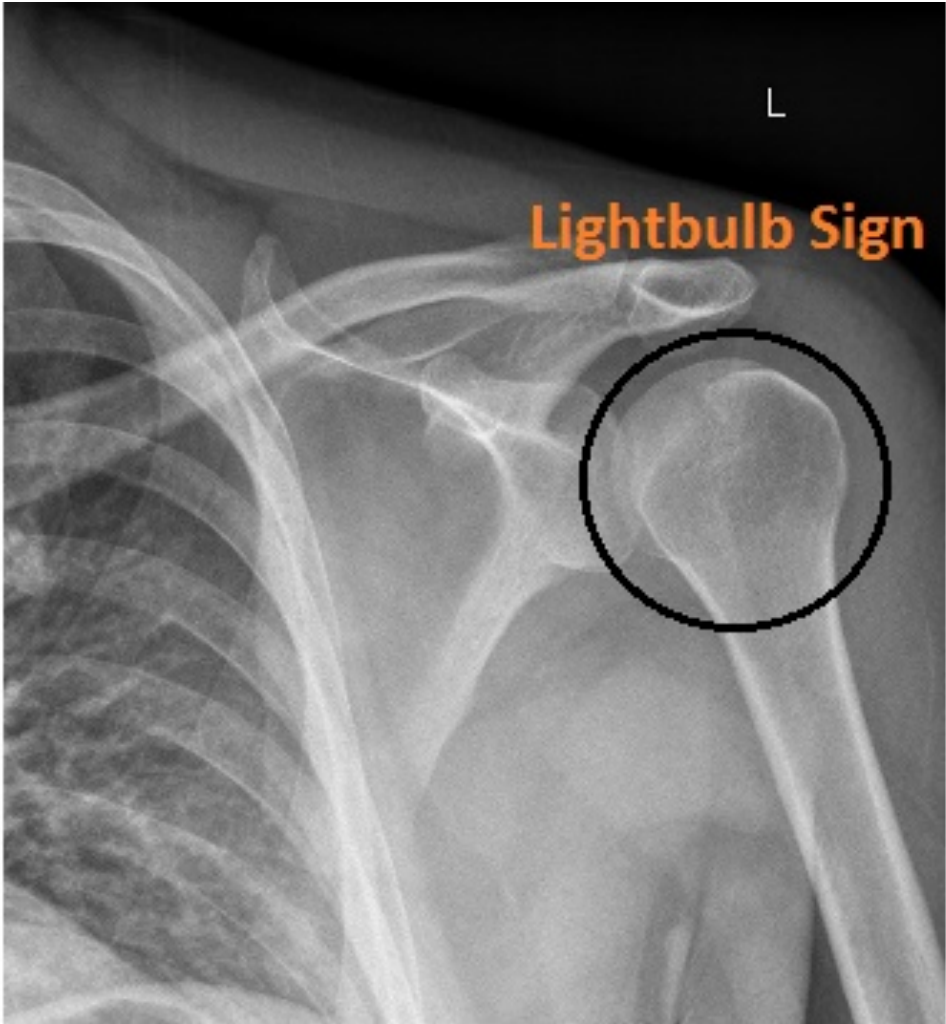


# Posterior dislocation

- Might be hard to see on X-Ray
- “Light bulb” appearance

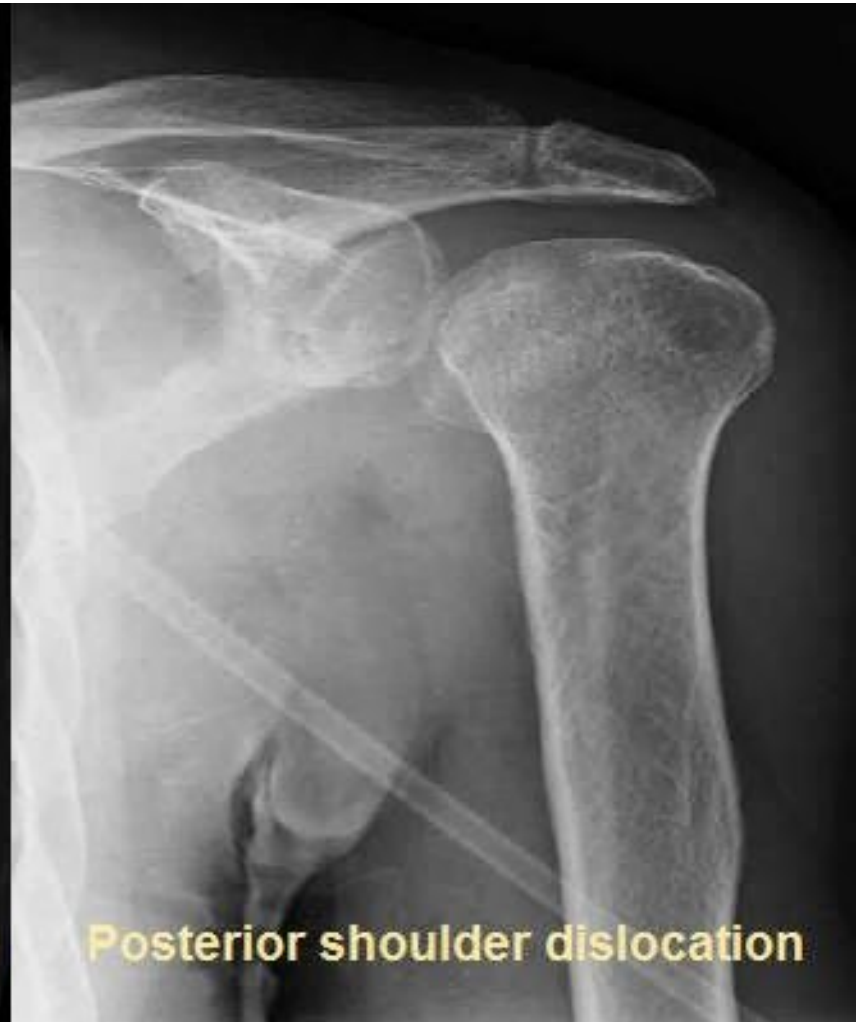






# Posterior Shoulder Dislocation





# Management

## EMERGENCY

- Analgesia
- Sedation
- Reduction
- Repeat X-ray after relocation
- Immobilize
- Rehabilitation

## Reduction Methods:

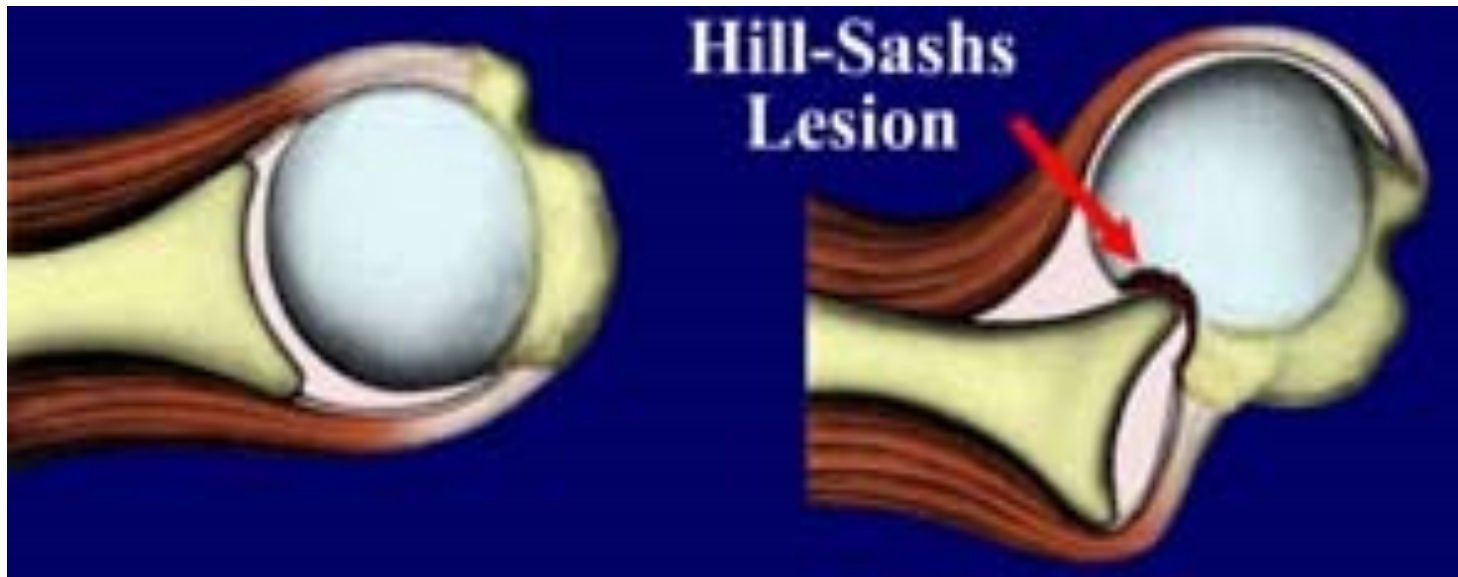
- **Traction- Counter traction method**

# Complications

## Early

- Old-> rotator cuff tear
- Middle ages ->Fractures: Greater tuberosity fracture in the anterior dislocation. GT or LT in the posterior dislocation
- Young->BankArt lesion
  
- Neurovascular lesion
  
- Hill Sachs lesion in anterior dislocation
- Reverse Hill Sachs in posterior dislocation

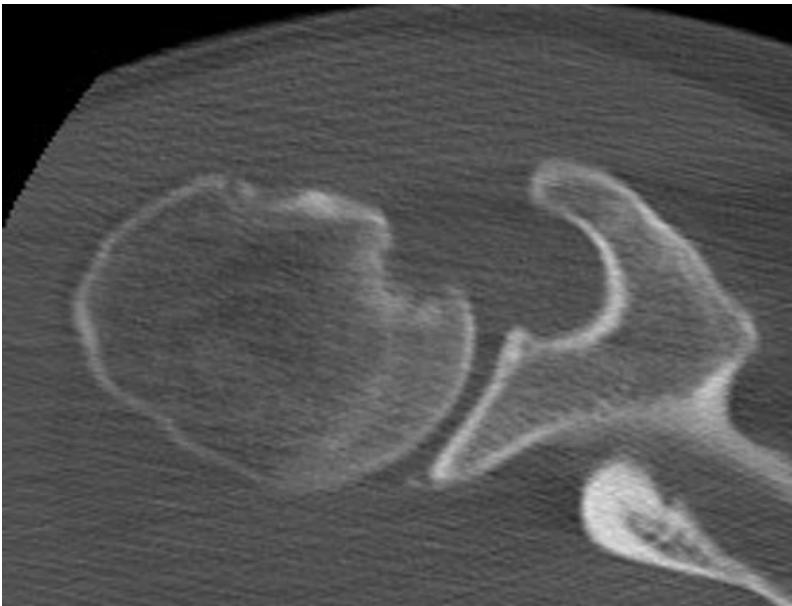
# Hill Sachs Lesion







# Reverse Hill Sachs

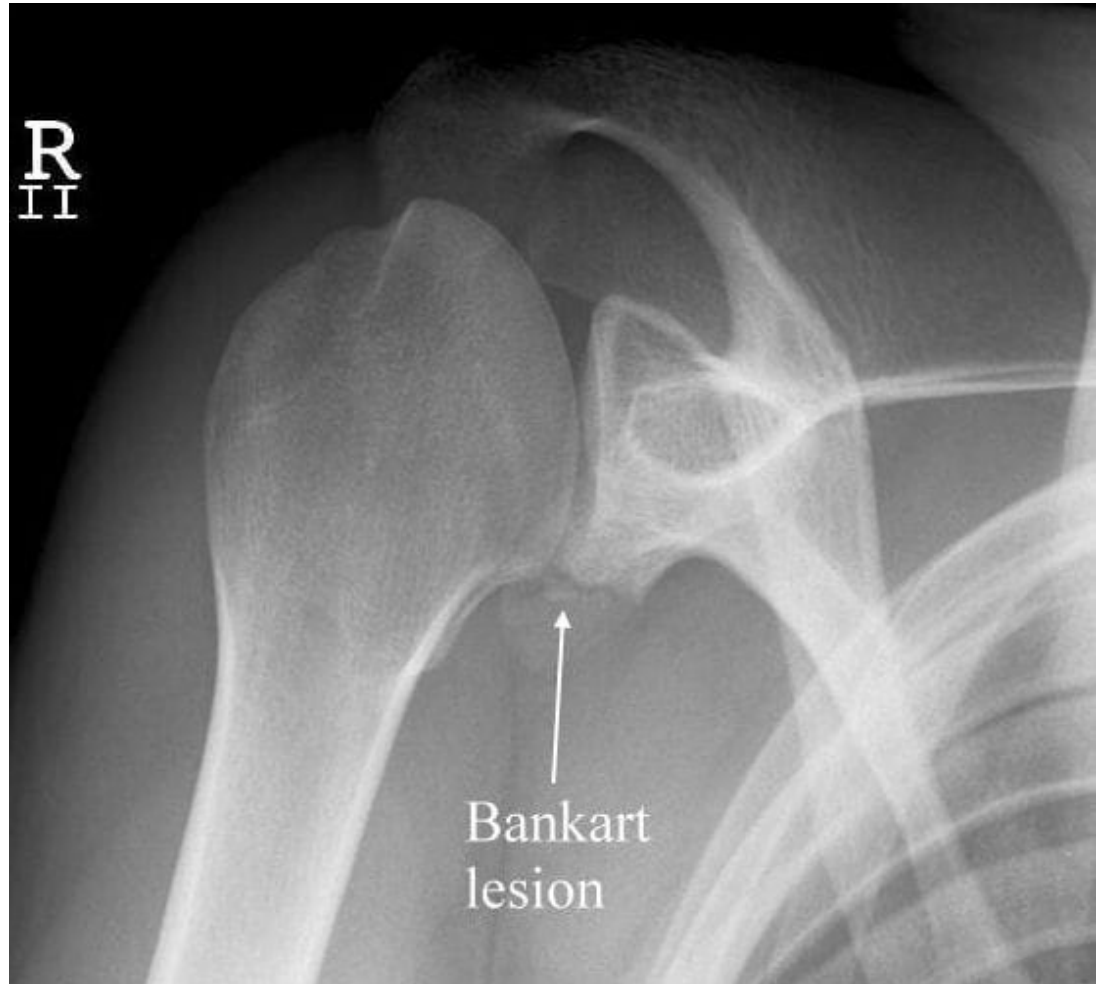


# Bankart lesion

## Avulsion of labrum

anterior and inferior  
glenohumeral ligaments  
are incompetent.

100% risk for recurrence



R



# Late Compilcations

- Avascular necrosis of humeral head
- Heterotropic calcification
- Recurrence

# Management of posterior dislocation

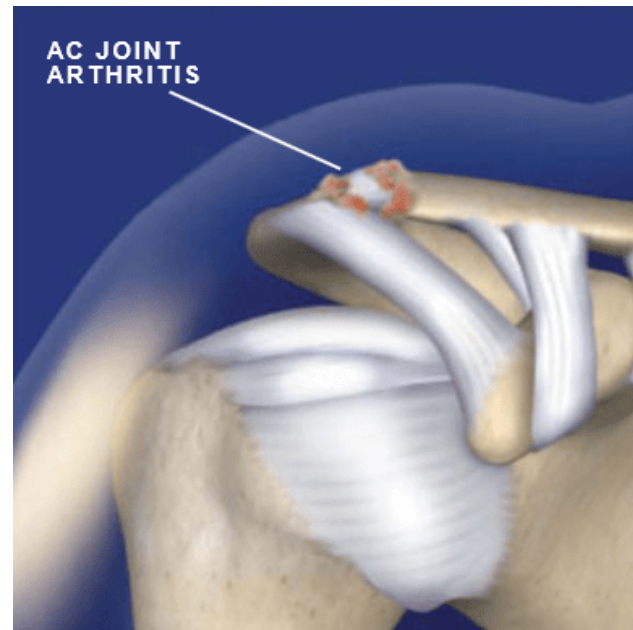
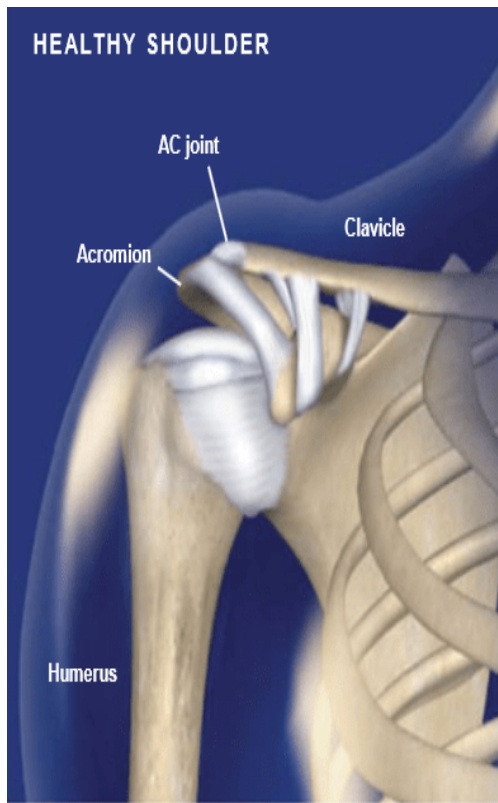
Closed reduction Traction counter traction

## Operative reduction

- If closed reduction failed
- Displaced fracture
- Recurrence
- Large defect (Reverse Hill-Sachs)

# AC joint Osteoarthritis

- Degenerative progressive joint disease
- Most common **ASYMPTOMATIC** joint to be affected in OA.





### **Epidemiology :**

- Elderly above 50 yrs.
- Women > men.

### **Risk factor :**

- Prior AC separations.
- People engaged in overhead activities.

### **Presentation :**

- Mostly asymptomatic.
- Pain during activities.

### **Physical Examination:**

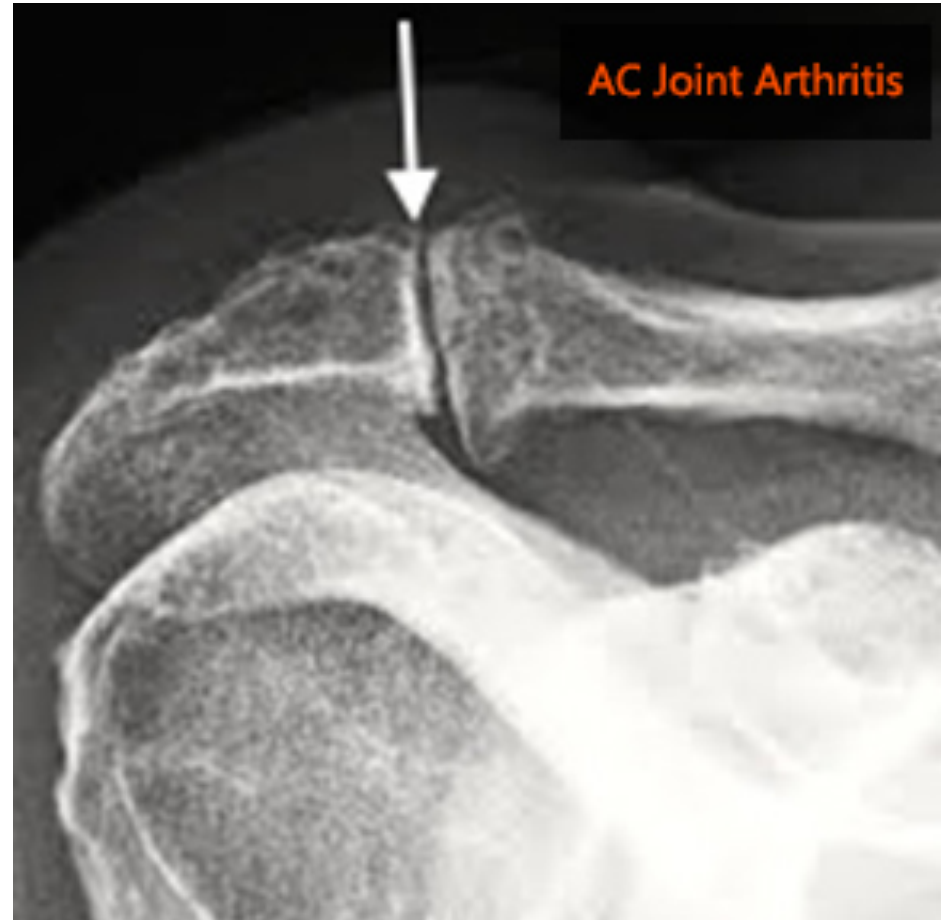
- Tenderness over the AC joint, +ve Scarf Test, crepitations.

# Investigations

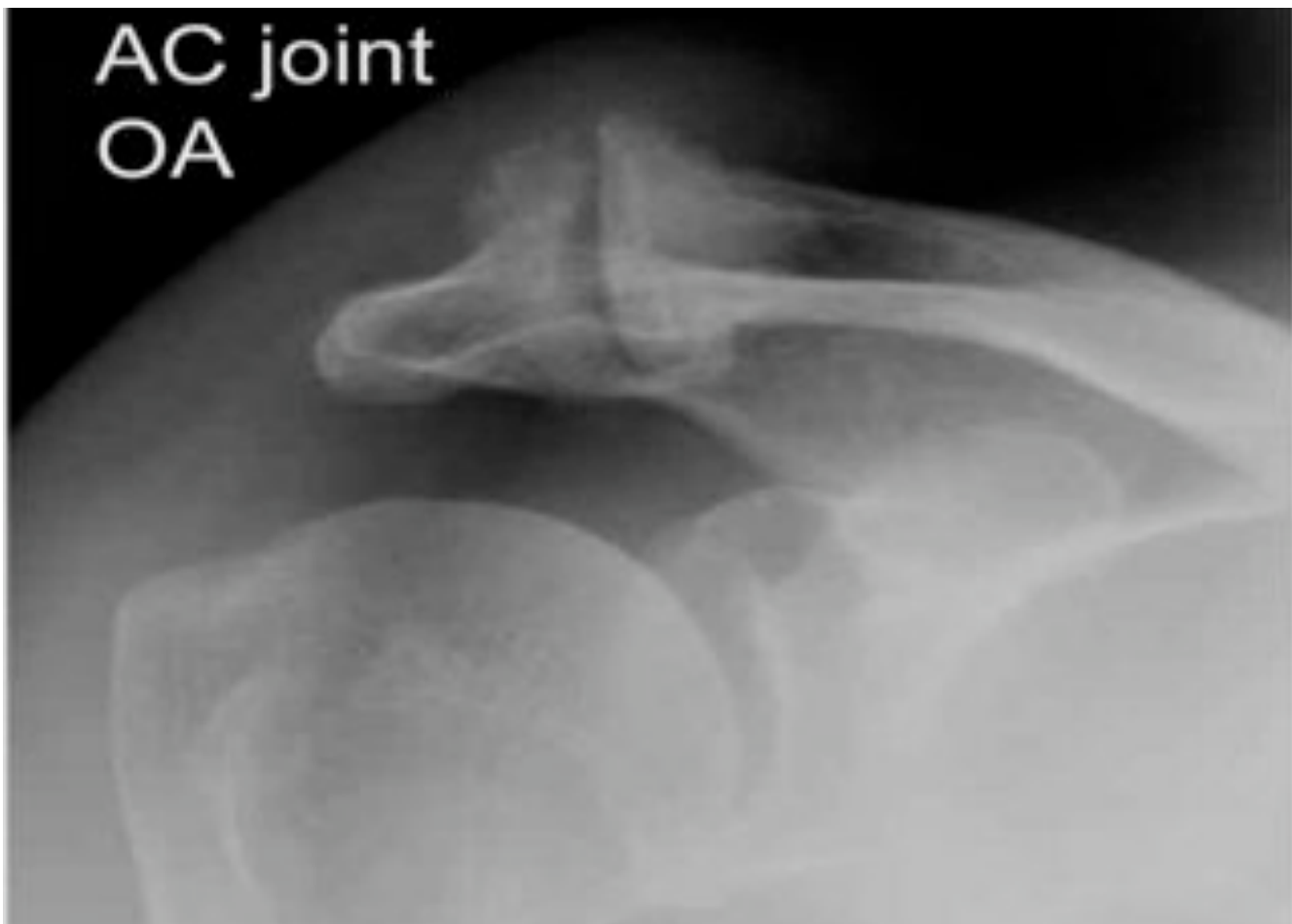
## Plain X-ray

Osteoarthrosis changes:

- 1) Narrowed joint space
- 2) Subchondral sclerosis
- 3) Osteophytes
- 4) Subchondral cysts



AC joint  
OA



# Management

- ❑ Non-operative
  - ▶ Activity modification and physical therapy
  - ▶ Analgesia
  - ▶ AC joint injection with corticosteroids
- ❑ Operative
  - ▶ arthroscopic vs open distal clavicle resection (Mumford procedure)

# Glenohumeral Joint Osteoarthritis

Degenerative progressive joint disease

- Epidemiology :
  - more common in the elderly
  - may be associated with throwing athletes at younger age

Risk factors :

- Age (usually over 50 yrs)
- Positive family hx (Hereditary )
- Posttraumatic (fracture or dislocation ): occurring at younger ages
- Rheumatoid arthritis

# Clinical presentation

- **Symptoms**

- Pain
- Limited range of motion
- Crepitations.

- **Physical exam**

- Tenderness at GH joint
- Flattening of the anterior shoulder contour
- Functional limitations at GH joint
- Painful shoulder
- Muscle atrophy or weakness

# Investigations :

## Shoulder X-ray :

### **General osteoarthrosis changes:**

- 1) Narrowed joint space
- 2) Subchondral sclerosis
- 3) Osteophytes
- 4) Subchondral cysts





# Management

## - Nonoperative:

- Activity modification
- Physiotherapy
- Medications

## Operative:

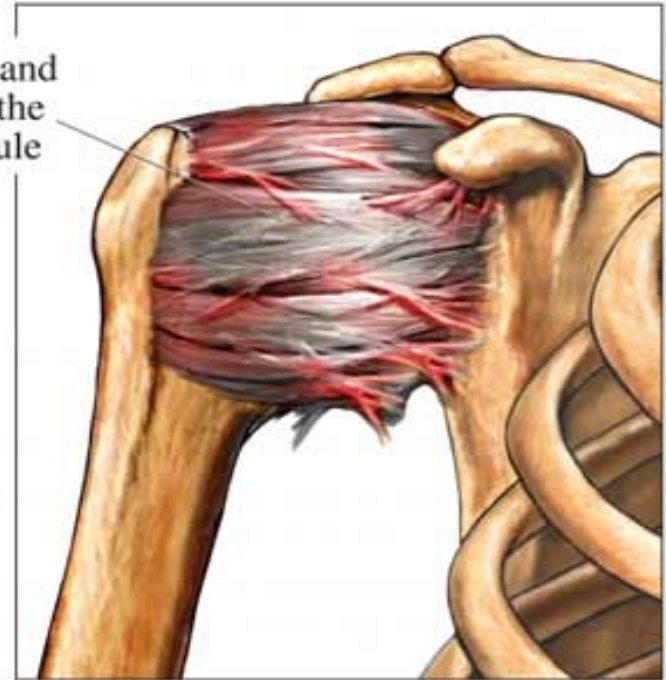
Indications :

- 1- unresponsive to nonoperative treatment
- 2- progressive pain
- 3- decreased ROM
- 4- inability to perform activities of daily living

# Frozen shoulder/adhesive capsulitis



Inflammation and thickening of the shoulder capsule

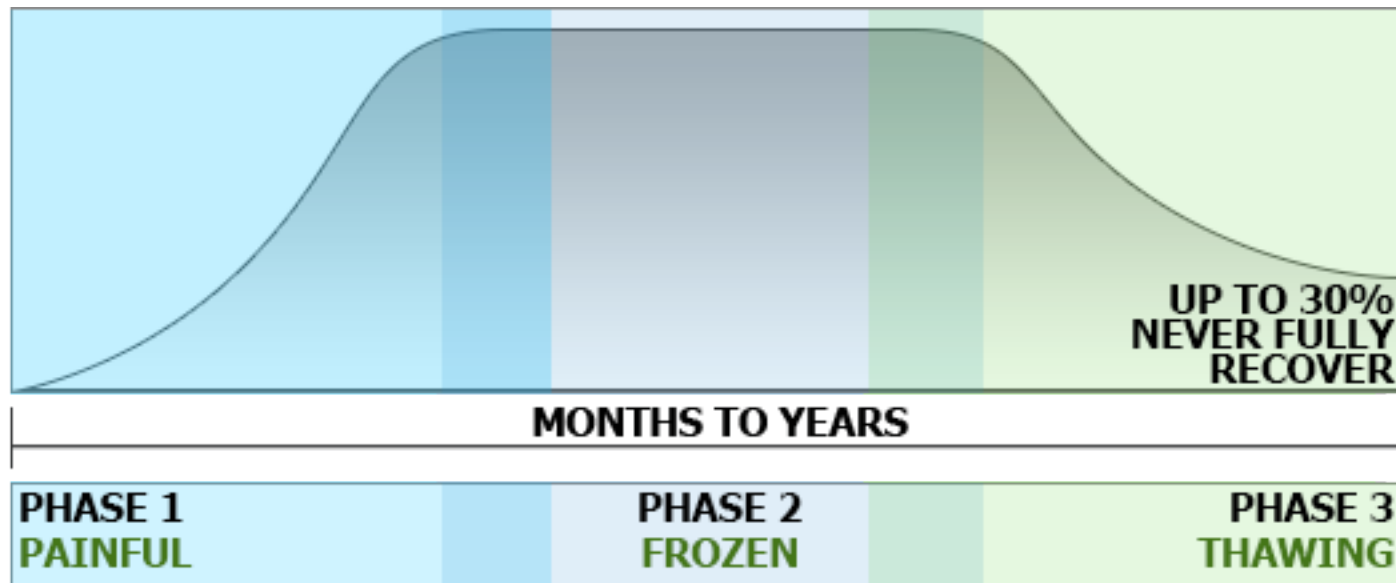


# Frozen shoulder

- It is a disorder in which the shoulder capsule **becomes inflamed, stiff and grows together with abnormal bands of tissue, called adhesions.**
- Frozen shoulder is characterized by pain and **loss of motion or stiffness in the shoulder.**
- Pain is usually constant, worse at night, when the weather is colder.
- It affects more women than men. The recovery is very slow.
- First movement to be lost is external rotation
- It is idiopathic pathology

# Stages of Frozen Shoulder

- Freezing stage: Any movement of your shoulder causes pain, and your shoulder's range of motion starts to become limited.
- Frozen stage: Pain may begin to diminish during this stage.
- Thawing stage: The range of motion in your shoulder begins to improve.



# Clinical presentation

## Symptoms:

- Severe aching pain in shoulder/upper arm.
- Restricted shoulder movement.
- Difficulty in routine activities.

## Signs:

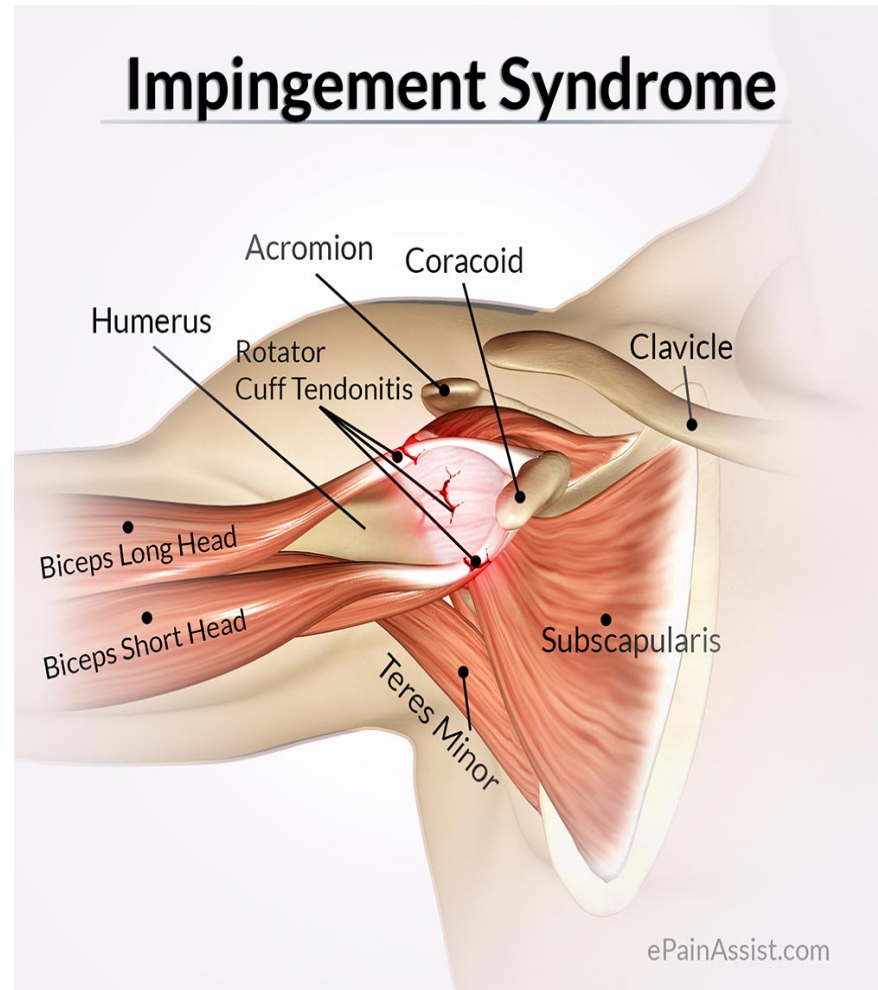
- Restricted flexion, extension, abduction and circumduction.
- Uniform impairment of all shoulder movements.

# Management

- Conservative :
- Rest to joint during acute stage.
- Provide sling.
- Mild passive shoulder exercises
  
- To prevent the problem, a common recommendation is to keep the shoulder joint fully moving to prevent a frozen shoulder.
- Physical therapy and occupational therapy can help with continued movement.

# Impingement Syndrome

- Compression of the rotator cuff against the anterior structure of coracoacromial arch, anterior 1/3 of the acromion, coraco-acromial ligament & AC joint.





# Stages of Impingement Syndrome

- **Stage 1:** Edema and hemorrhage (patients usually <25 years)
- **Stage 2:** Fibrosis and tendinitis (patients 25-40 years)
- **Stage 3:** RC tear, biceps tendon rupture, bony change (patients generally >40 years)

# Clinical Presentation

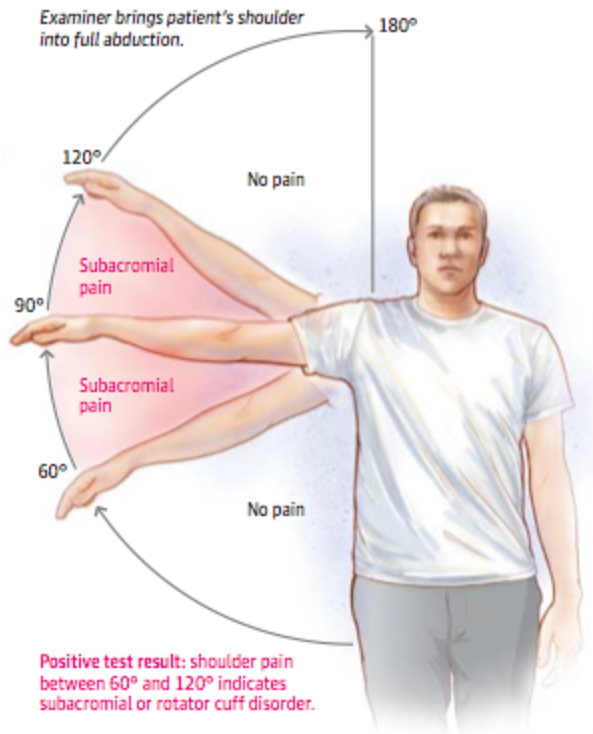
## **Symptoms**

- shoulder pain:
  - ✓ insidious onset
  - ✓ exacerbated by overhead activities and lifting objects away from body
  - ✓ night pain
- Weakness with active abduction in midrange
- Limited internal rotation compared to normal side

## **P/E**

- + ve impingement tests
- +/- rotator cuff tear tests

# Impingement tests



Neer's test



Hawkins-Kennedy Test

# Investigations

## • **Plain x ray**

- Findings :
  - Traction osteophytes
  - Calcification of the coracoacromial ligament
  - Cystic changes within the greater tuberosity
  - Hooked acromion

## • **MRI :**

Evaluating the degree of rotator cuff pathology

## • **CT /US :**

Accurately image the rotator cuff tendons and muscle bellies

# Management

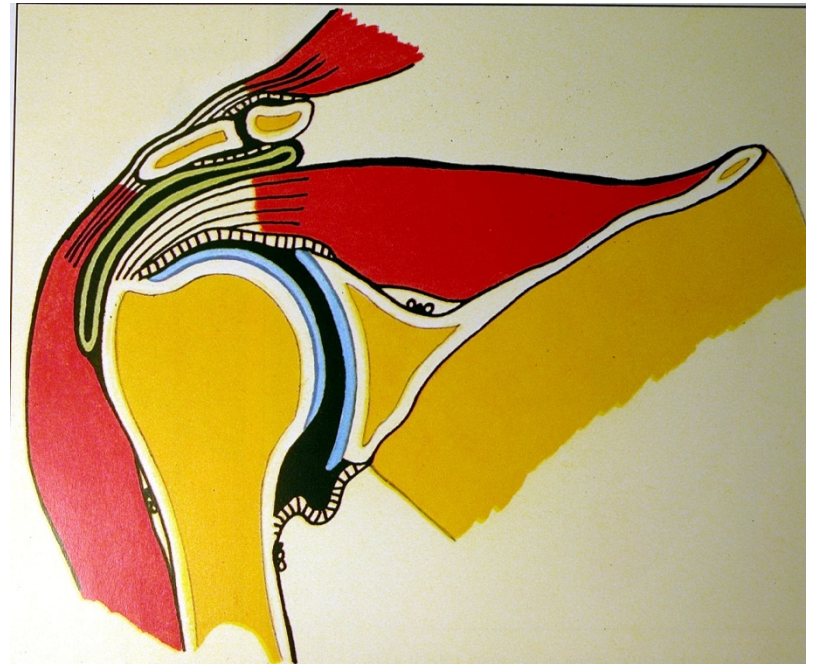
## **First line Management is non operative**

- ❖ Activity Modification
- ❖ NSAIDS For 2-3 Weeks
- ❖ Physiotherapy
- ❖ Stretching, strengthening,  
Manual therapy-6 weeks

# Rotator cuff tear

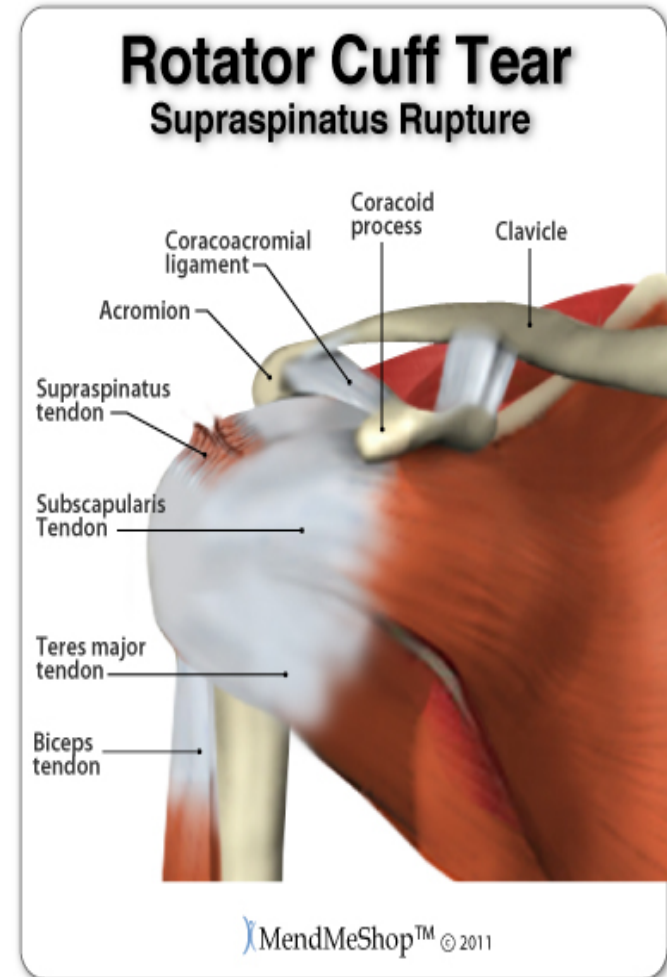
## Important functions:

- Counterbalance the upward pull of the deltoid on the humerus.
- Hold the head of the humerus secure in the glenoid.
- Externally rotate the shoulder which is important during arm elevation.



# Rotator Cuff Tear

- Partial Thickness Tear
- Full Thickness Tear
- Complete Rupture



Mechanisms of tear is either acute or chronic

**1- Acute** :acute avulsion injuries

- acute subscapularis tears seen in younger patients following a fall
- acute SIT tears seen in patients > 40 yrs with a shoulder dislocation

**2- Chronic** :

- chronic degenerative tear ( intrinsic degeneration is the primary etiology)
- Chronic impingement

*DDx:*

- Any shoulder diseases
- Cervical spine diseases
- MI



# Clinical presentation

## Symptoms :

- Pain around shoulder
- non resolving or responding to NSAIDS
- Sleep disturbed by pain
- Weakness during activities of daily living

# Shoulder Exam

## Rotator cuff muscles

### Supraspinatus

- 1- Drop arm sign
- 2- Empty bottle sign
- 3- Impingement

### External rotators Infraspinatus/teres minor

Horn blower sign

### Subscapularis

- 1- Hands on belly test
- 2- Lift off test
- 3- Napoleon sign

# Investigations

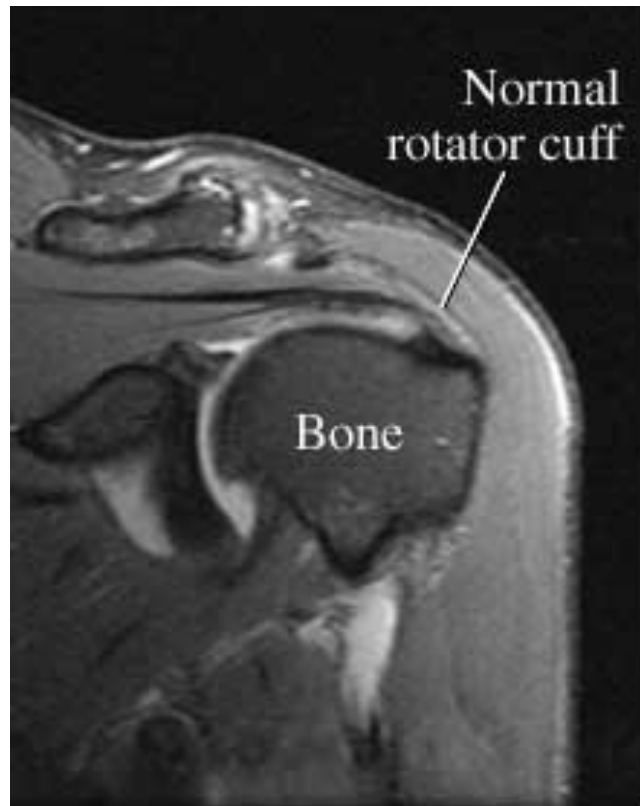


Figure 1

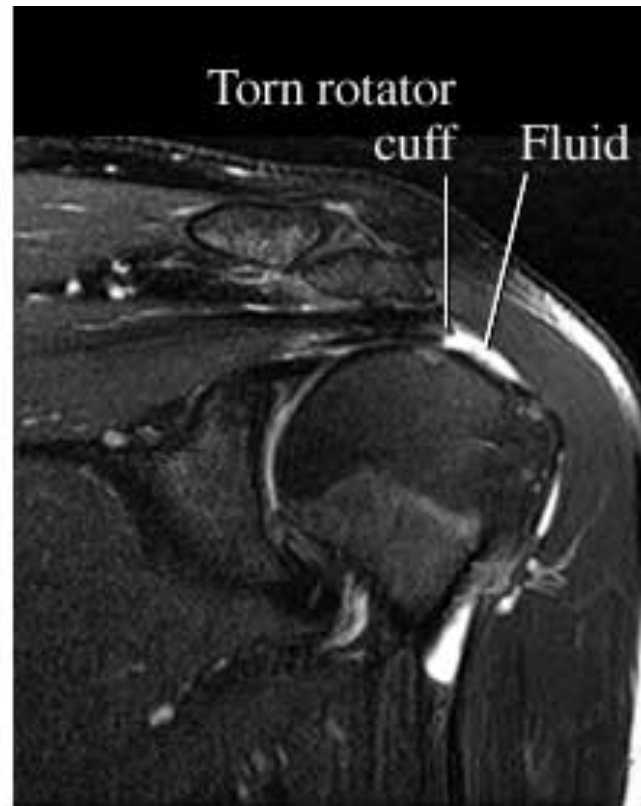


Figure 2

# Treatment

## Nonoperative

**First line** of treatment  
for most tears

1. **Physical therapy**
2. **NSAIDS**
3. **Corticosteroid injections:**

if impingement thought  
to be major cause of  
symptoms.

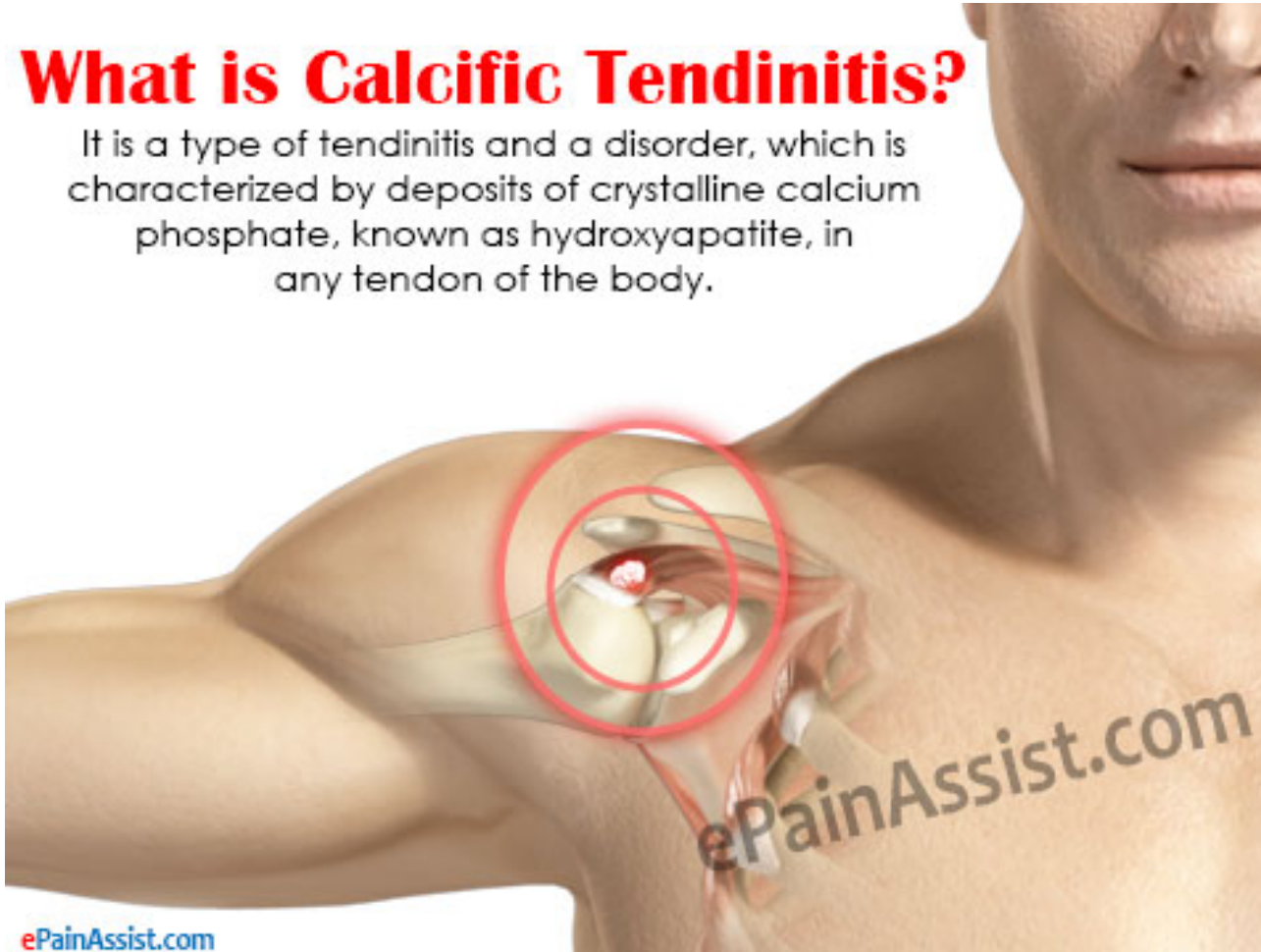
## Operative

1. Subacromial decompression and rotator cuff debridement alone
2. Rotator cuff repair (arthroscopic or mini-open)
3. Tendon release, debridement of degenerative tissue and repair
4. Tendon transfer
5. Reverse total shoulder arthroplasty

# Calcifying tendonitis

## **What is Calcific Tendinitis?**

It is a type of tendinitis and a disorder, which is characterized by deposits of crystalline calcium phosphate, known as hydroxyapatite, in any tendon of the body.





Thank you