

# The Shoulder

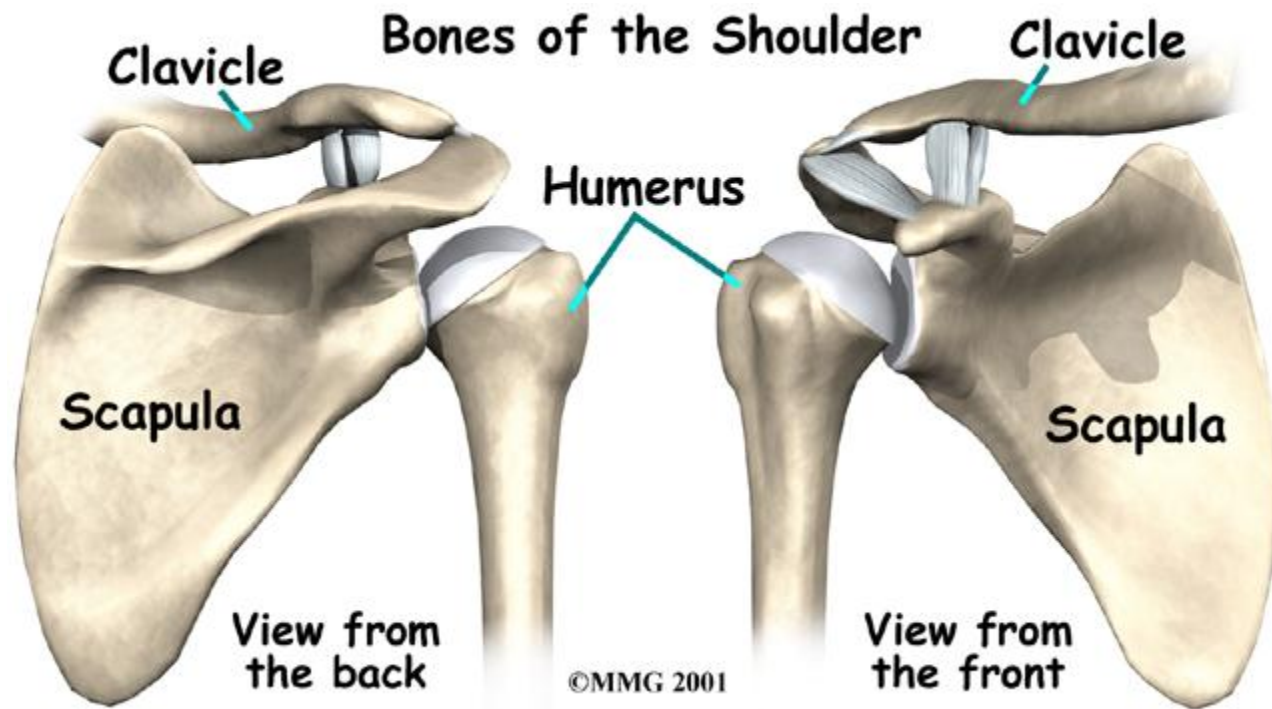
---

# Goals and Objectives

- Review shoulder anatomy
- Review the physical exam of the shoulder
- Discuss some common causes of acute shoulder pain
- Discuss some common causes of chronic shoulder pain
- Review with some case questions

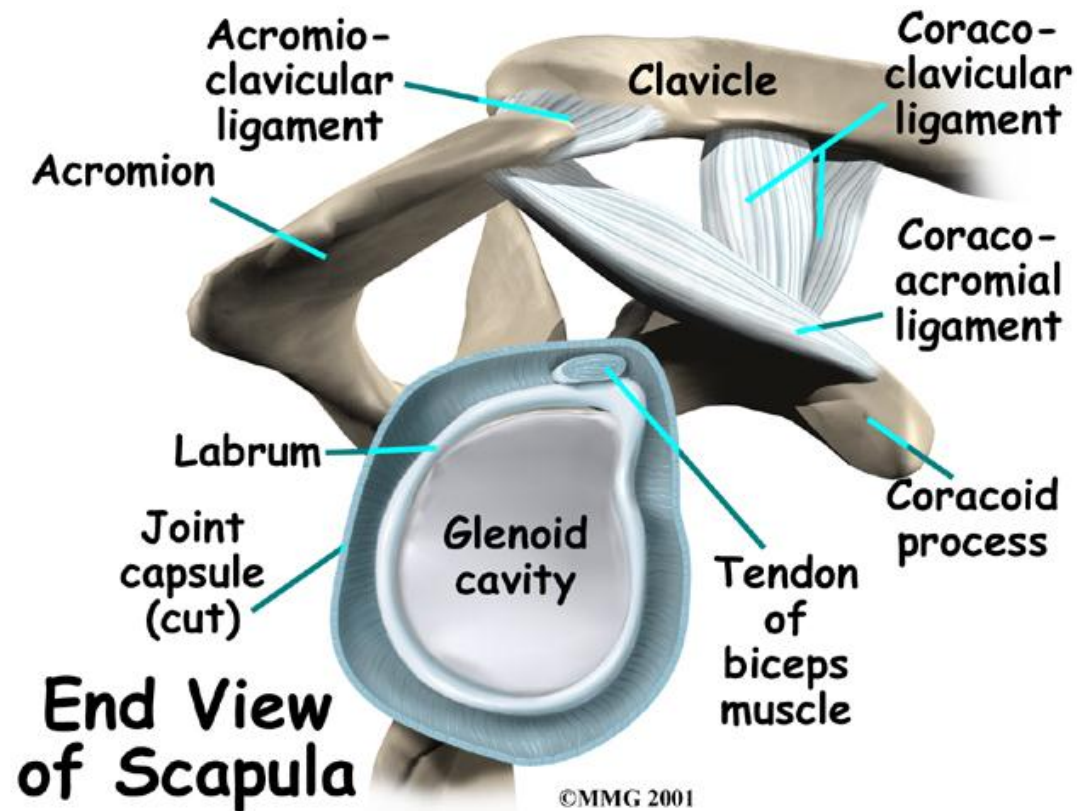
# Anatomy

- Bones:



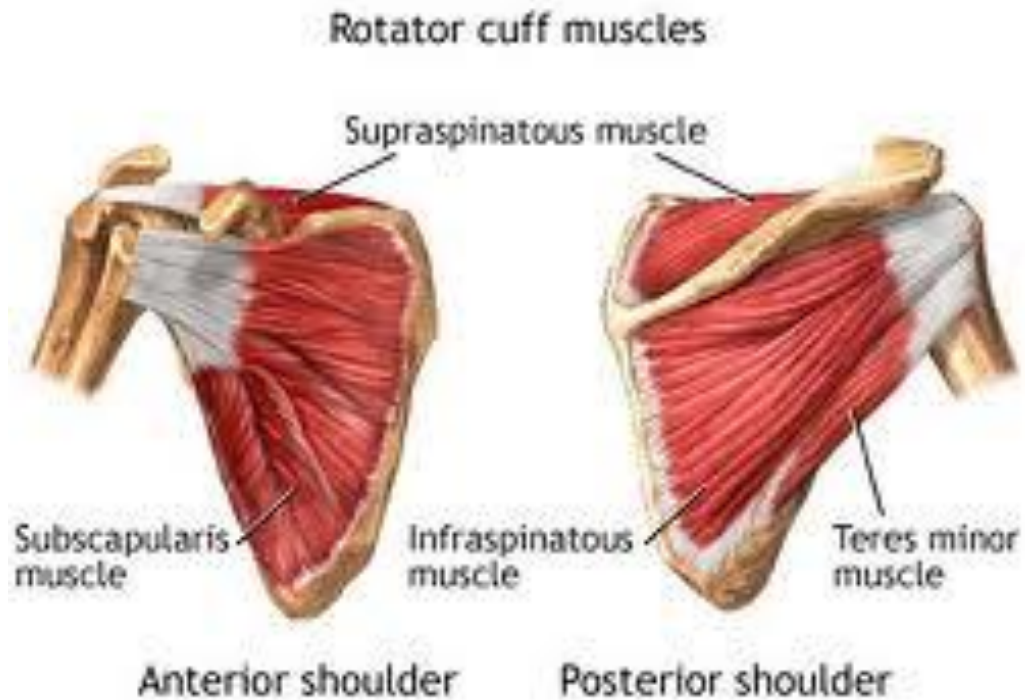
# Anatomy

- Ligaments and cartilage



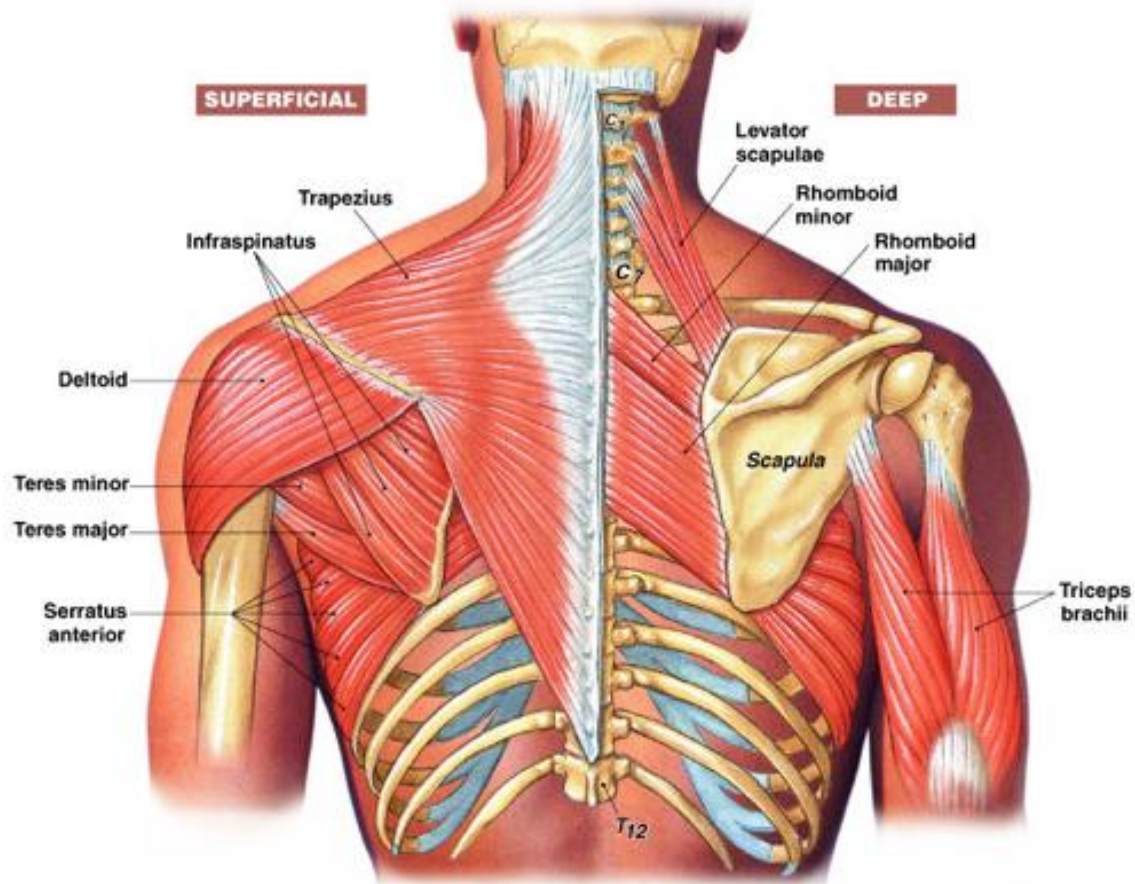
# Anatomy

- Muscles – rotator cuff:



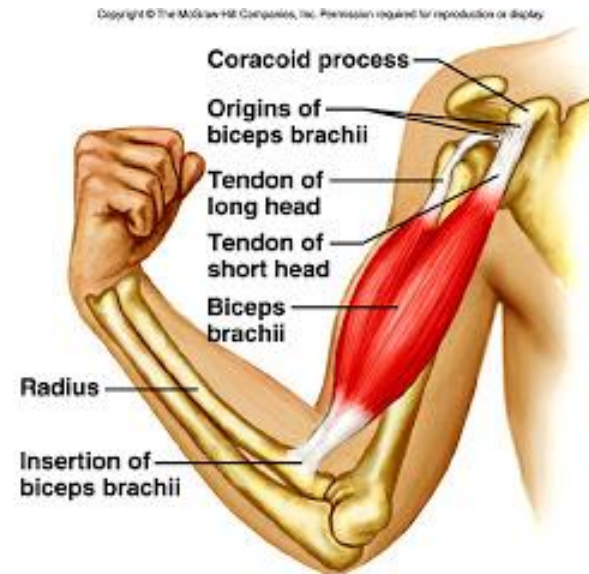
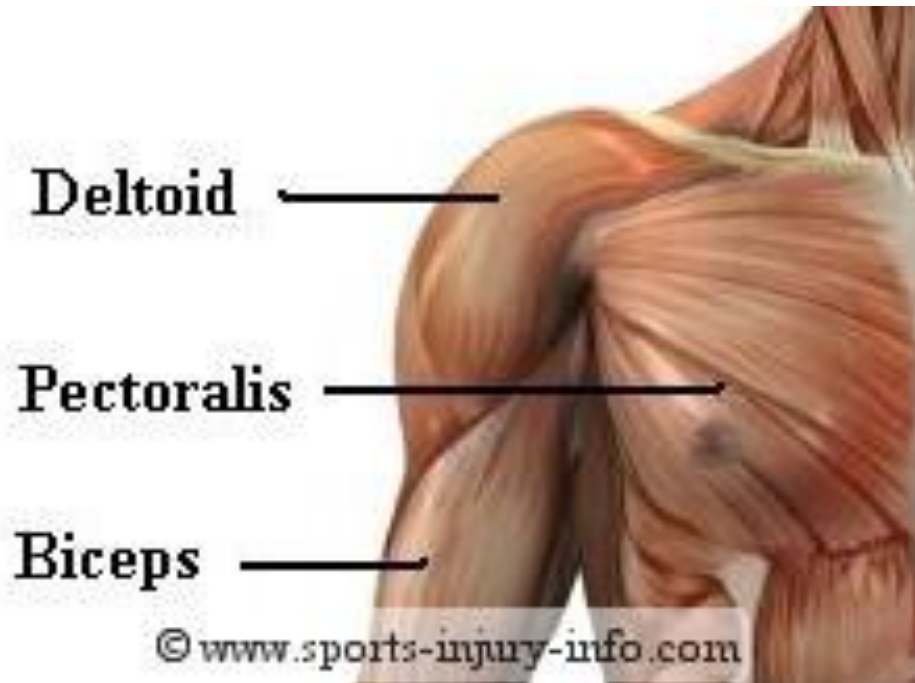
# Anatomy

- Muscles – posterior:



# Anatomy

- Muscles – anterior:



# The exam

- Inspection
- Palpation
- ROM
  - Active
  - Resisted
  - Passive
- Provocative tests
- Functional tests

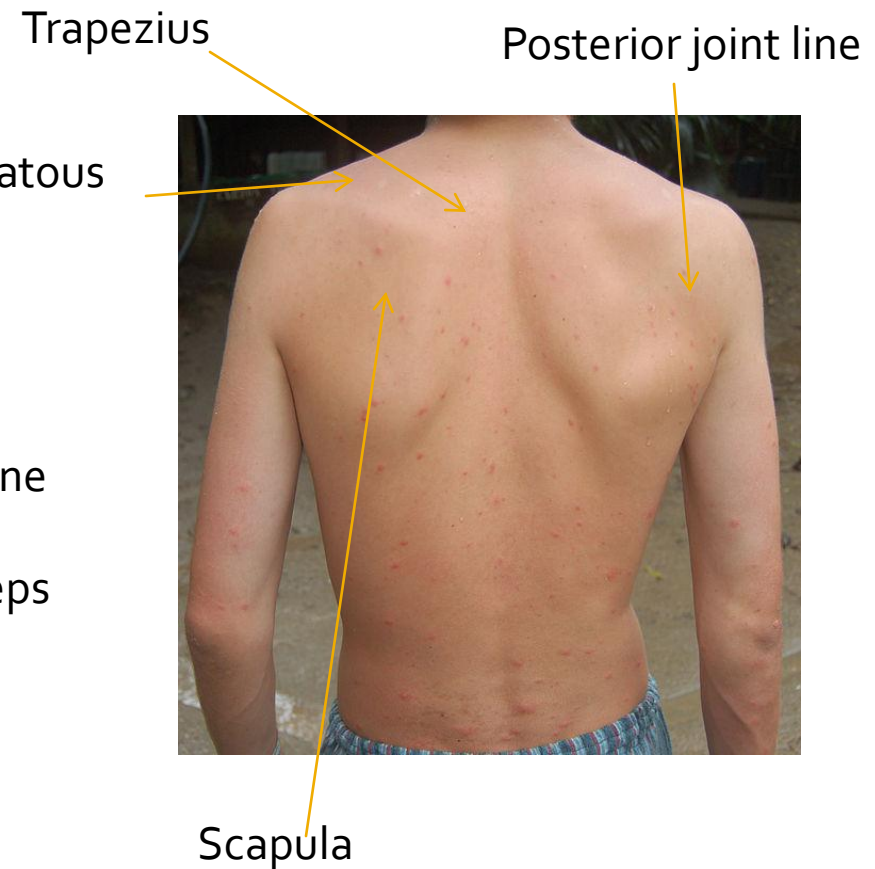
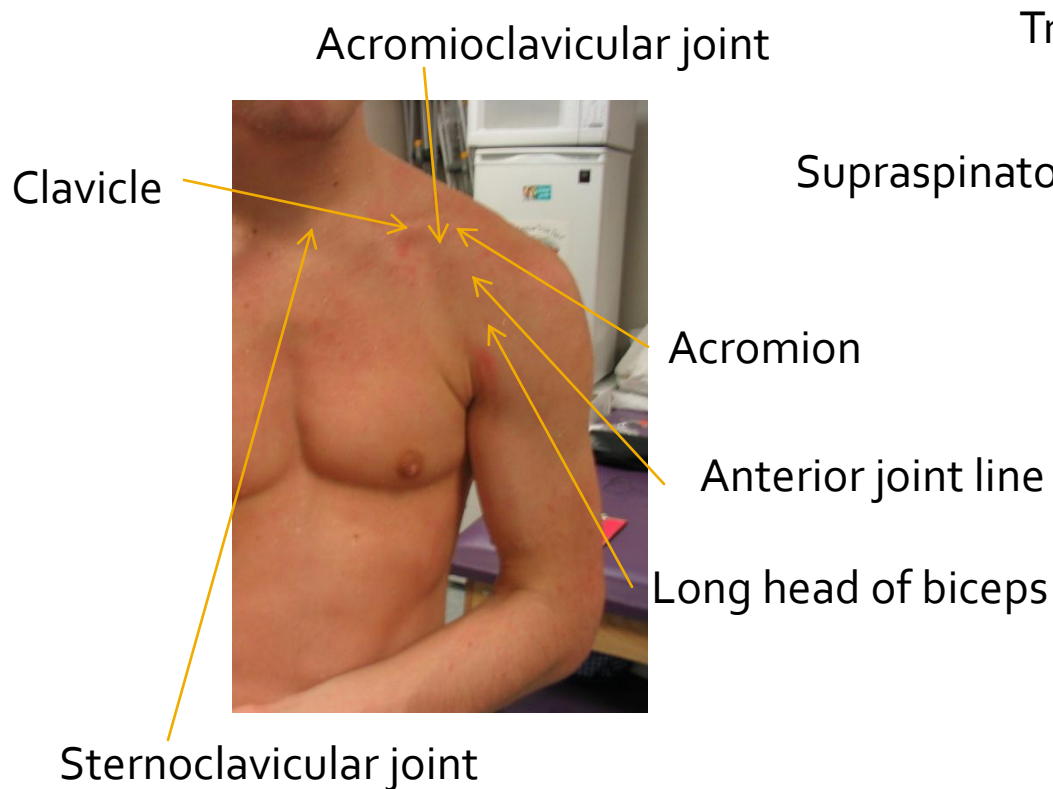
# The exam

- Inspection:
  - Alignment, bruising, swelling



# The exam

## ■ Palpation



# Shoulder

## ■ ROM:

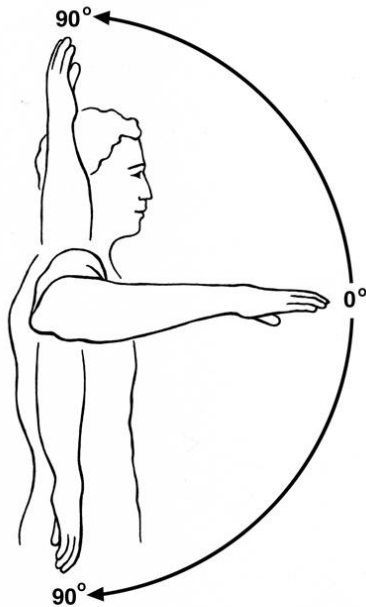
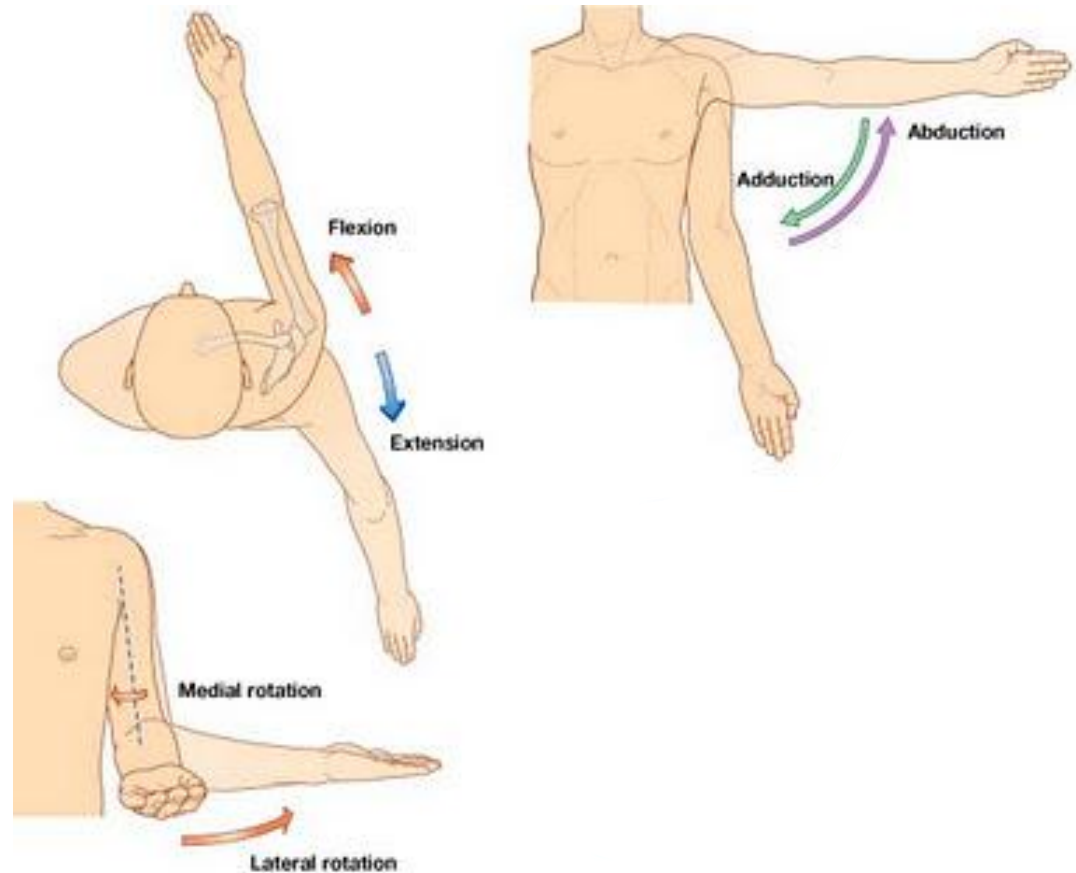
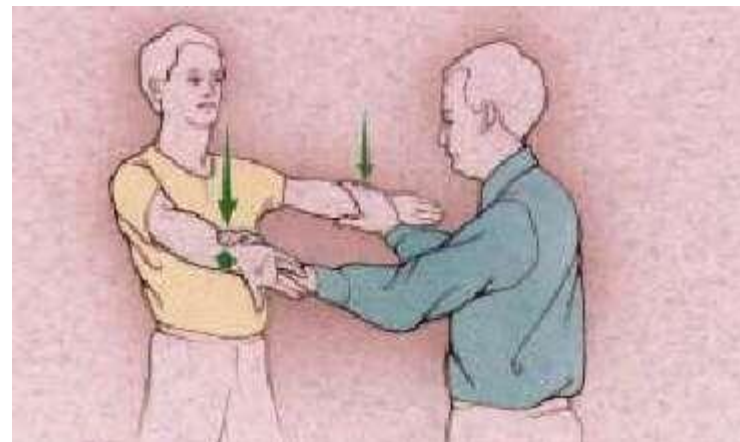


Figure 10 - Internal and External Rotation  
Rotation interne et externe



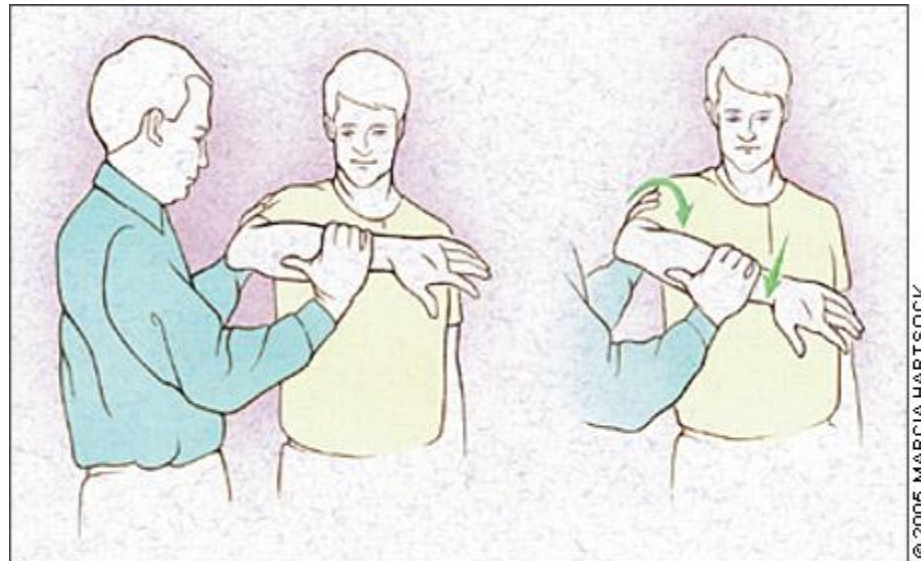
# Provocative Tests

- Rotator cuff
  - Lift off test; subscapularis
  - Resisted external rotation; infraspinatus and teres minor
- Empty Can Test; supraspinatus



# Provocative Tests

- Impingement
  - Hawkins



# Provocative Tests

- Instability; apprehension
  - Anterior
  - Posterior



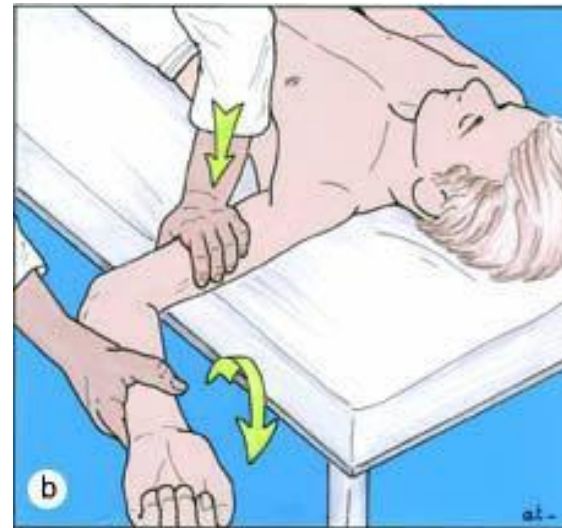
# Provocative Tests

- Instability
  - Translation – anterior, posterior, and inferior (sulcus sign)



# Provocative Tests

- Instability
  - Fowler's relocation



# Provocative Tests

- Labral tears
  - O'Brien's test
- Biceps tendonitis
  - Speed's



# Provocative Tests

- AC separation
  - Cross arm adduction



# Causes of acute shoulder pain

- Clavicle fracture
- Glenohumeral dislocation
- AC separation
- Brachial Plexopathy
- Neck Injury
- Labral Tear
- Rotator Cuff Tear

# Clavicle Fracture

- Usually from direct trauma
- Pain and visible defect
- Middle > Distal > Proximal
- Treatment:
  - Sling unless...
    - Open or risk of breaking skin
    - Cominution
    - Shortening
    - Complete displacement?



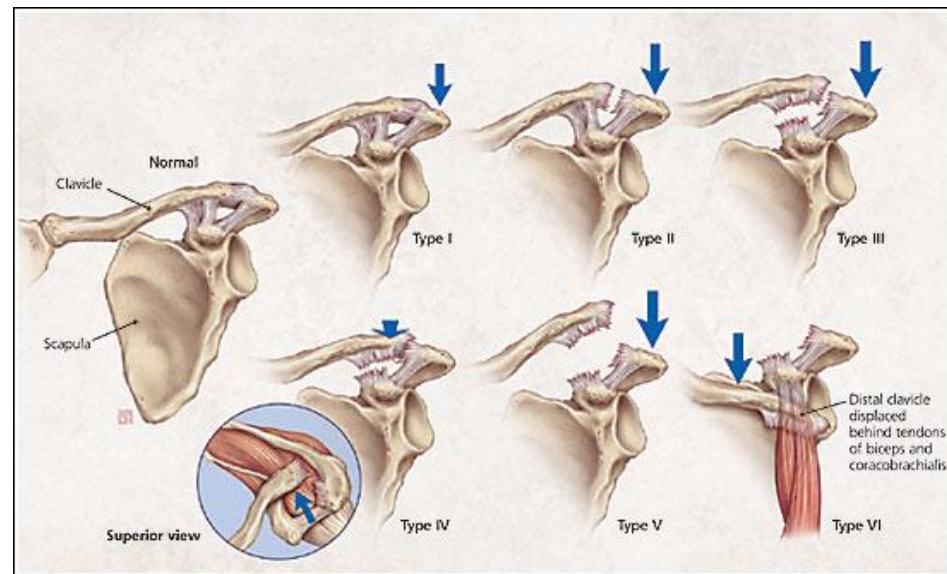
# Glenohumeral Dislocation

- Anterior most common
- Can be associated with hypermobility



# AC separation

- Direct trauma or fall onto shoulder
- Tenderness and deformity of AC joint



- Treatment: Conservative for I-III; operative for IV-VI

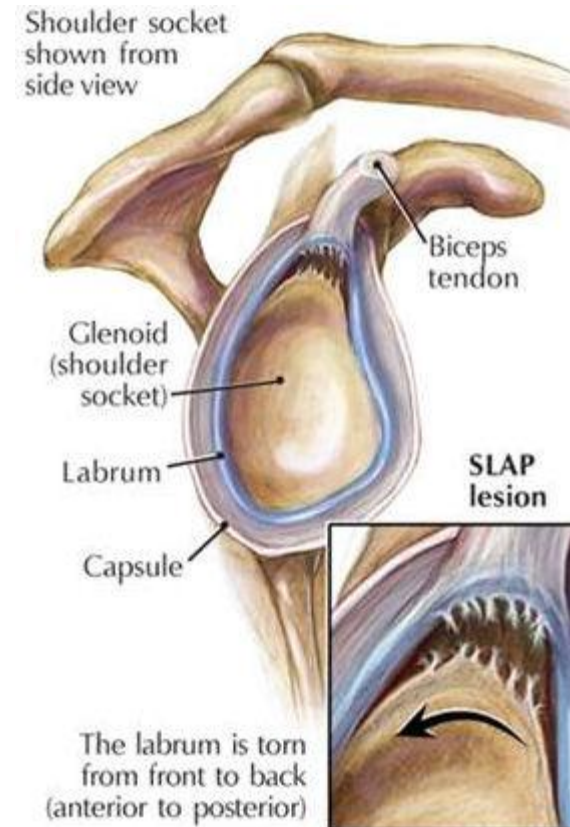
# Brachial plexopathy

- “Stinger” or “burner”
- Usually C<sub>5</sub>-C<sub>6</sub> = weakness of deltoid and biceps and decreased sensation over deltoid
- Recovers quickly



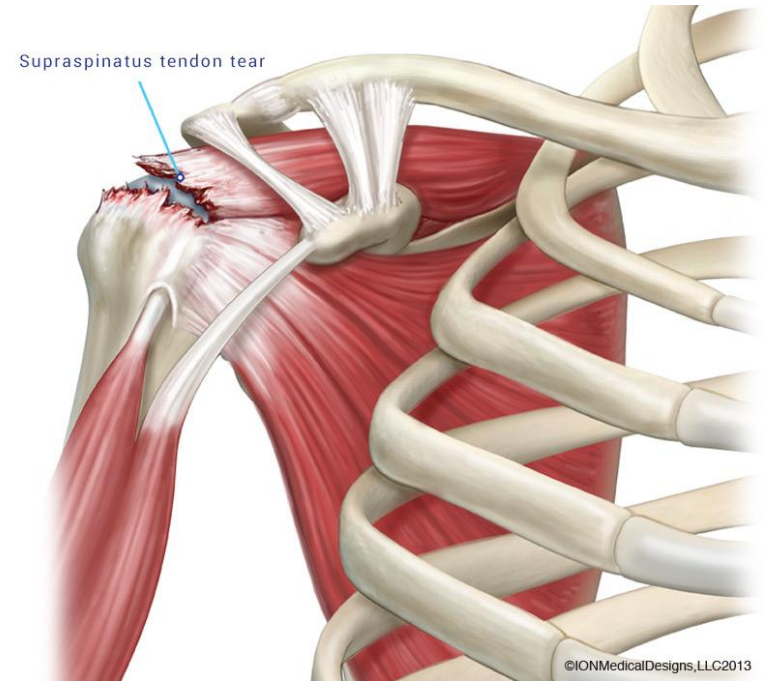
# Labral Tears

- Can be acute or chronic
- Most common are SLAP tears – superior labrum anterior to posterior
- Posterior shoulder pain and pain with overhead activity
- Mechanical sensation



# Rotator Cuff Tears

- Usually older patients with underlying shoulder complaints who have additional acute injury
- Pain with sleeping on shoulder, pain with abduction, loss of pitching velocity
- + Impingement signs with weakness
- Often refers to the deltoid

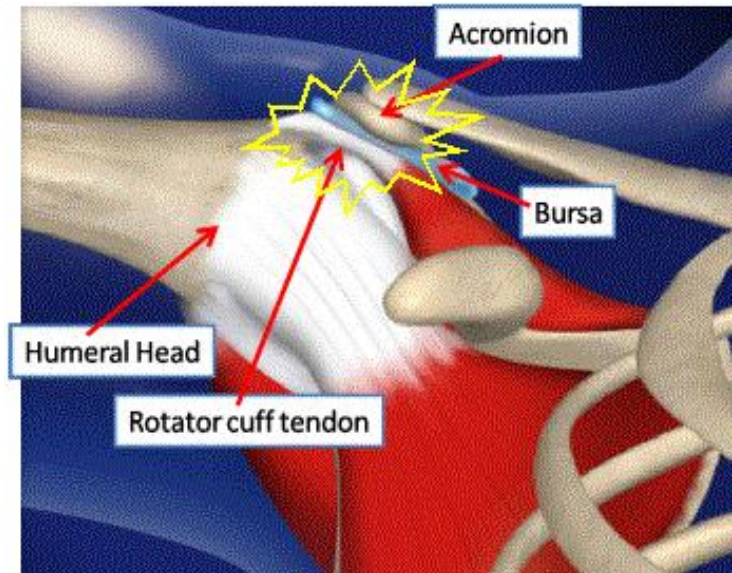


# Causes of Chronic Shoulder Pain

- Impingement
- Tendonitis
- Labral tears
- Rotator cuff tears

# Impingement

- Many structures that can be pinched:
  - Supraspinatous
  - Subacromial bursa
  - Coracoacromial ligament
  - Biceps
  - Posterior capsule
  - Labrum



# Impingement

- Risk factors include repeated overhead activity, shoulder instability, or scapular dyskinesis
- Pain with overhead activity or cocking phase of pitching
- Important to rehab
  - Impingement → Fibrosis and tendinitis → Tear

# Tendonitis

- Of rotator cuff
  - Pain with overhead activity with history of repetitive use
  - Night pain
  - Exam similar to impingement with pain at end of passive flexion and with supraspinatous testing
- Of biceps tendon
  - Tenderness over biceps
  - Increased pain with resisted elbow flexion or supination of wrist

# Questions:

- The rotator cuff consists of:
  - trapezius, supraspinatus, infraspinatus, teres minor
  - supraspinatus, infraspinatus, subscapularis, teres major
  - supraspinatus, infraspinatus, subscapularis, teres minor
  - supraspinatus, infraspinatus, teres major, teres minor

# Questions:

- A football player comes to see you in clinic. He was hit in the shoulder yesterday during practice with a friend's helmet. He now has pain and swelling in the area of his AC joint. You can feel a deformity on palpation. Which of the following tests would you anticipate would be positive?
  - Fowler's relocation
  - Speed's test
  - O'brien's test
  - Apprehension test
  - Cross arm adduction test

# Questions:

- A 13 yo pitcher comes into your office with shoulder pain. He plays baseball year round. He has recently started to learn to throw a curve ball. He does not remember any acute injury. He is tender over the area of the humeral physis. Which of the following would not be beneficial in his recovery?
  - Rest from pitching until asymptomatic then slowly progress back to throwing
  - PT to strengthen rotator cuff
  - Working on proper mechanics with a pitching coach
  - Pitching for multiple teams once he recovers so that he can get more practice