



Streaming a Live Shoulder Surgery

Insights on work related shoulder injuries

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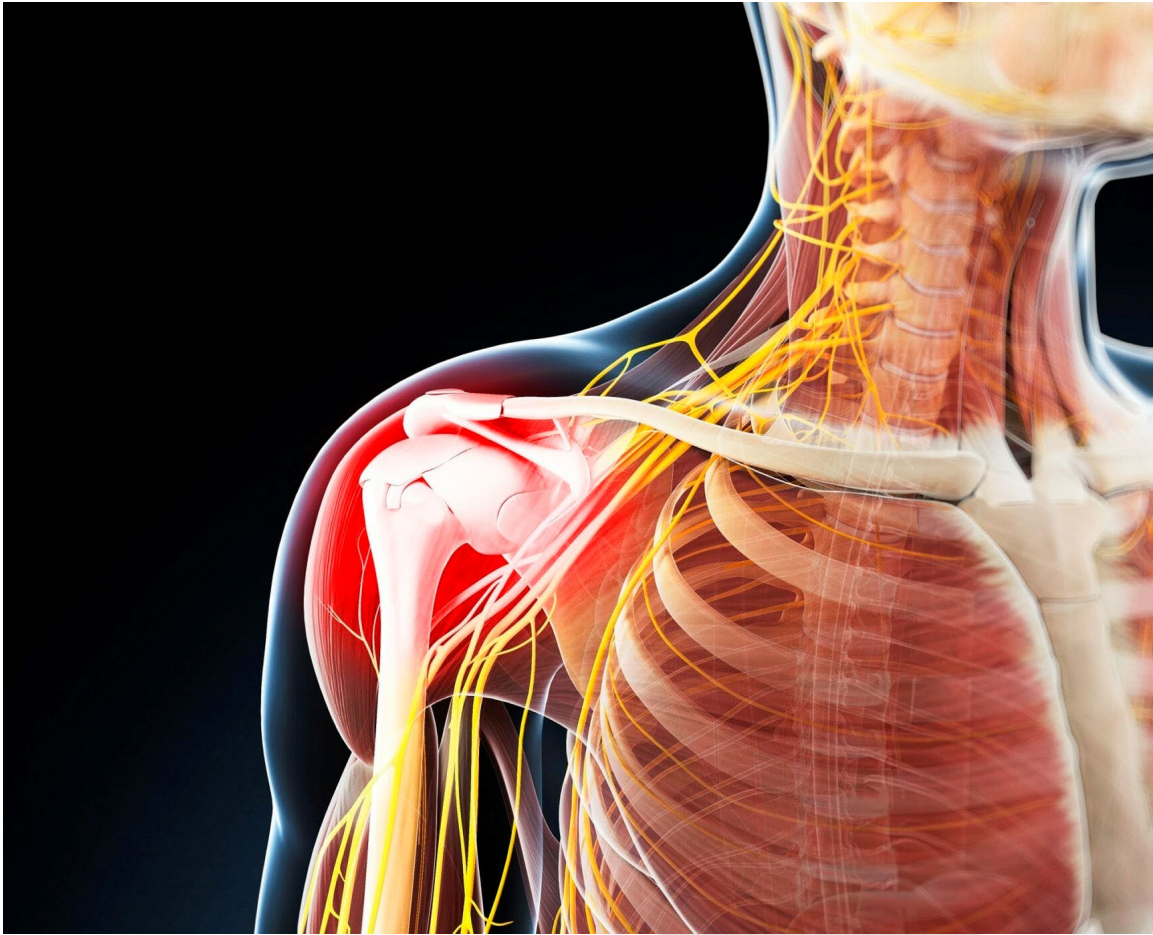
May 5, 2023

I have no conflicts of interest

Except...that I'm a surgeon



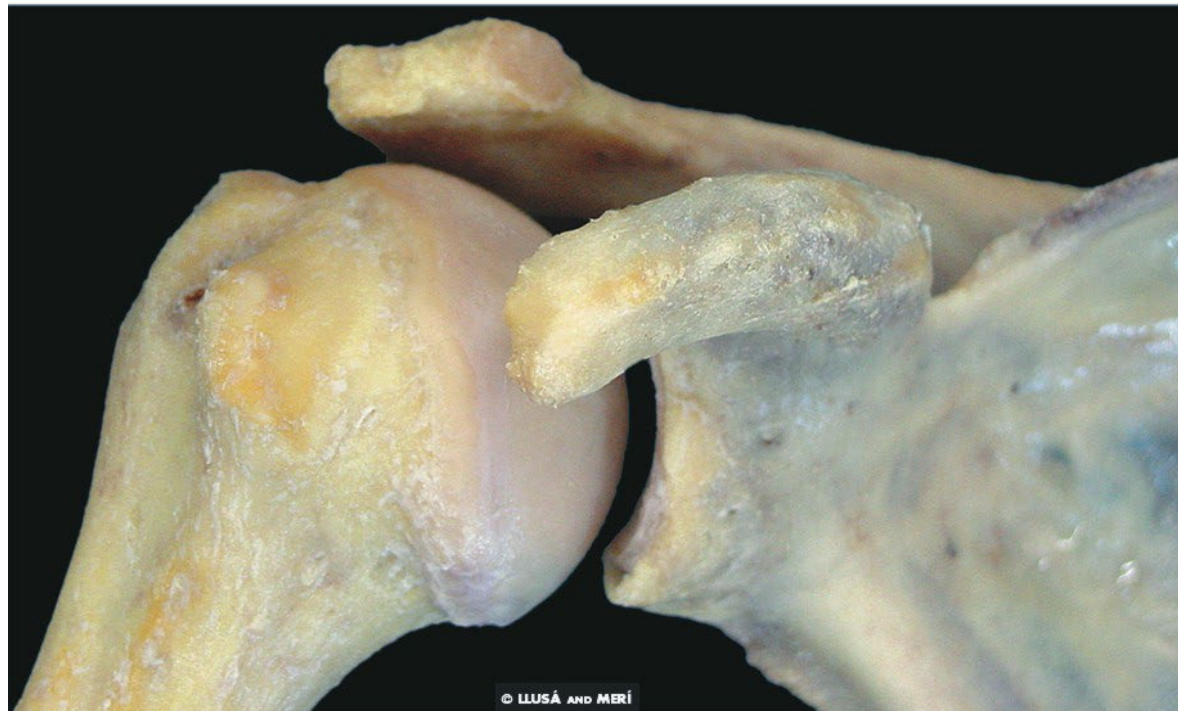
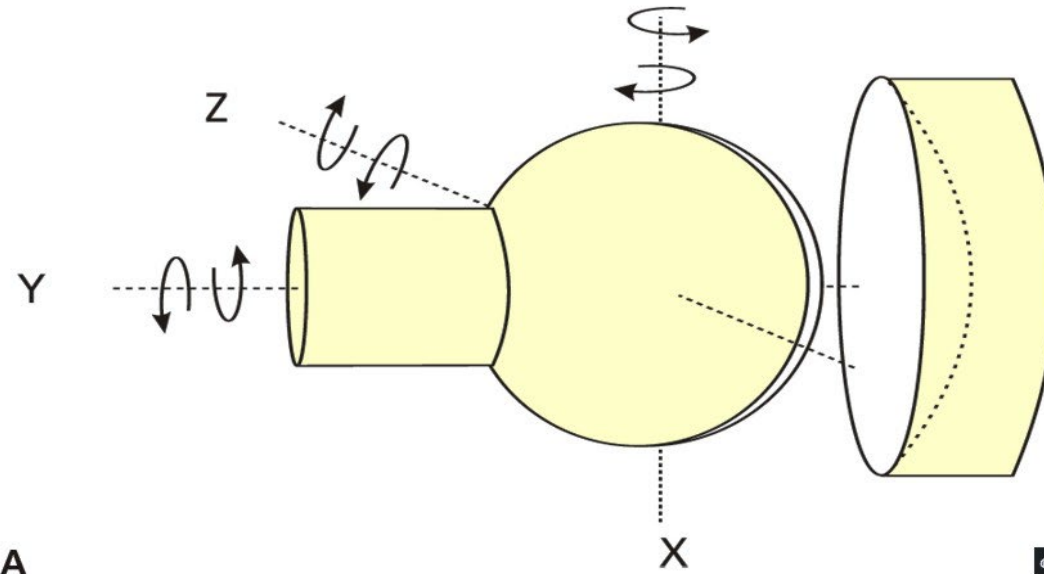
Shoulder Pathology



- One of most common MSK complaints
- Top 3 MSK complaints in PCP office

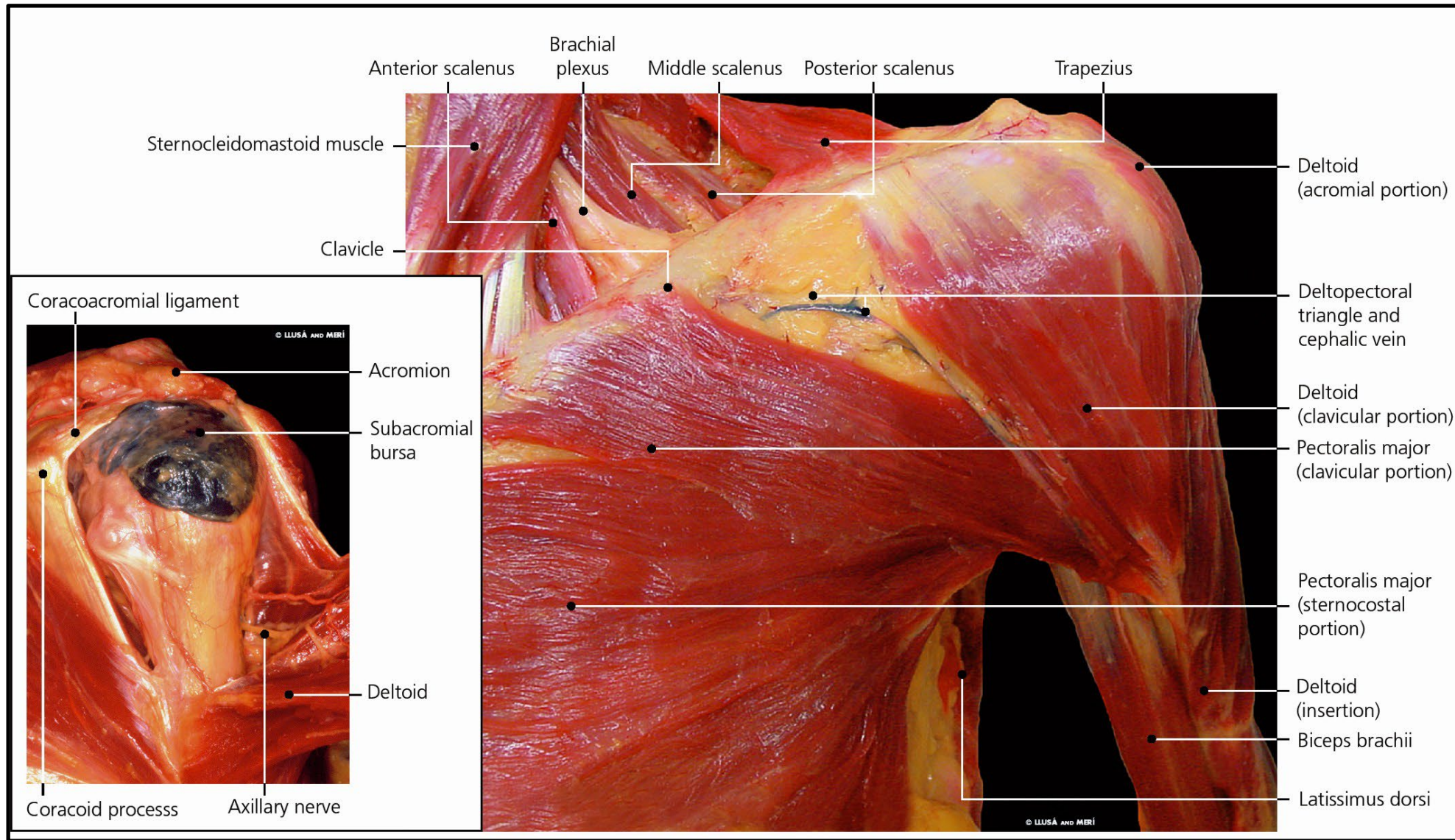
- (van Doorn PF, et al. Fam Pract. 2021 Sep)

Anatomy

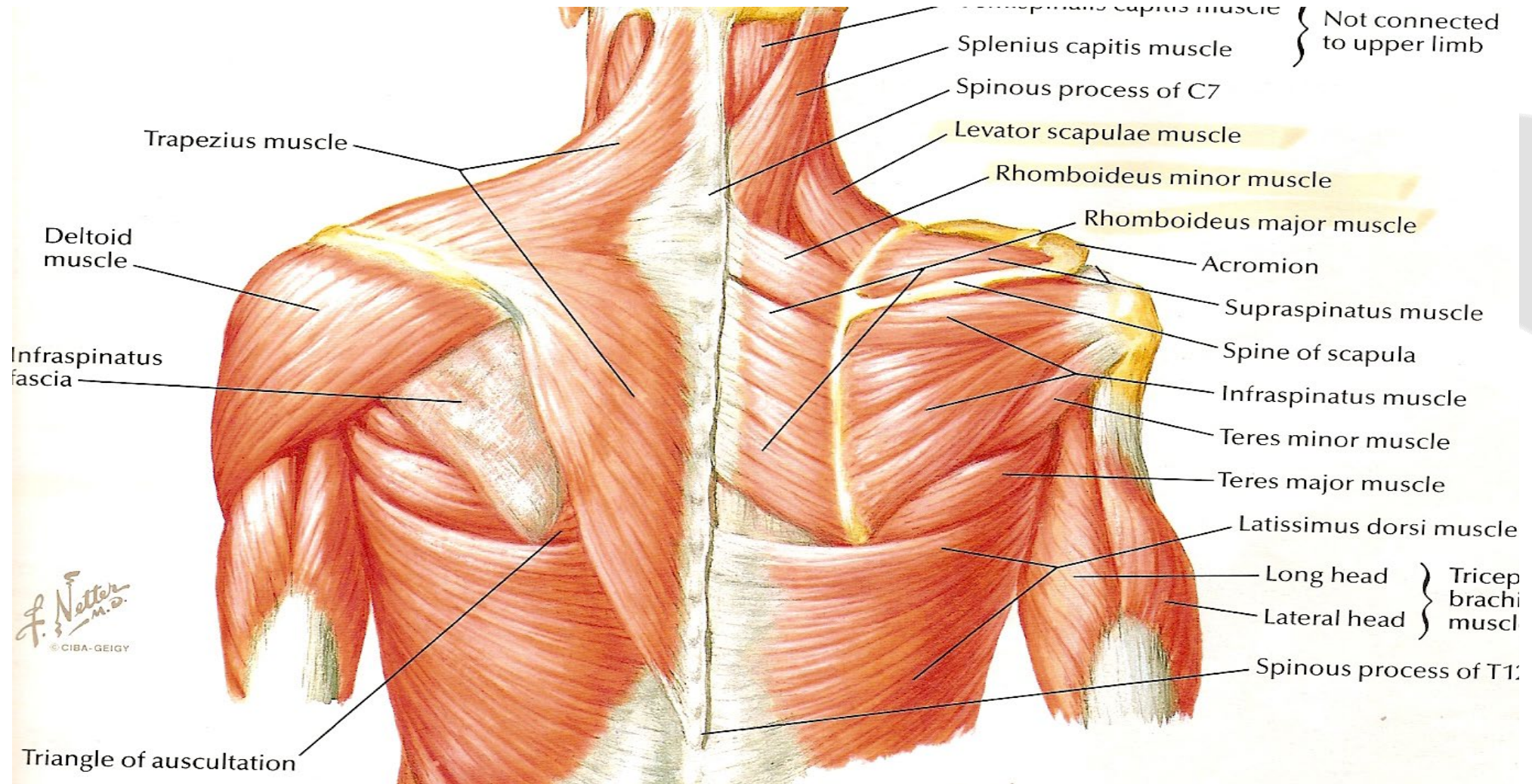


Anatomy images from
Surg Atlas of the
Musculoskeletal System.
Perez et al, 2008.

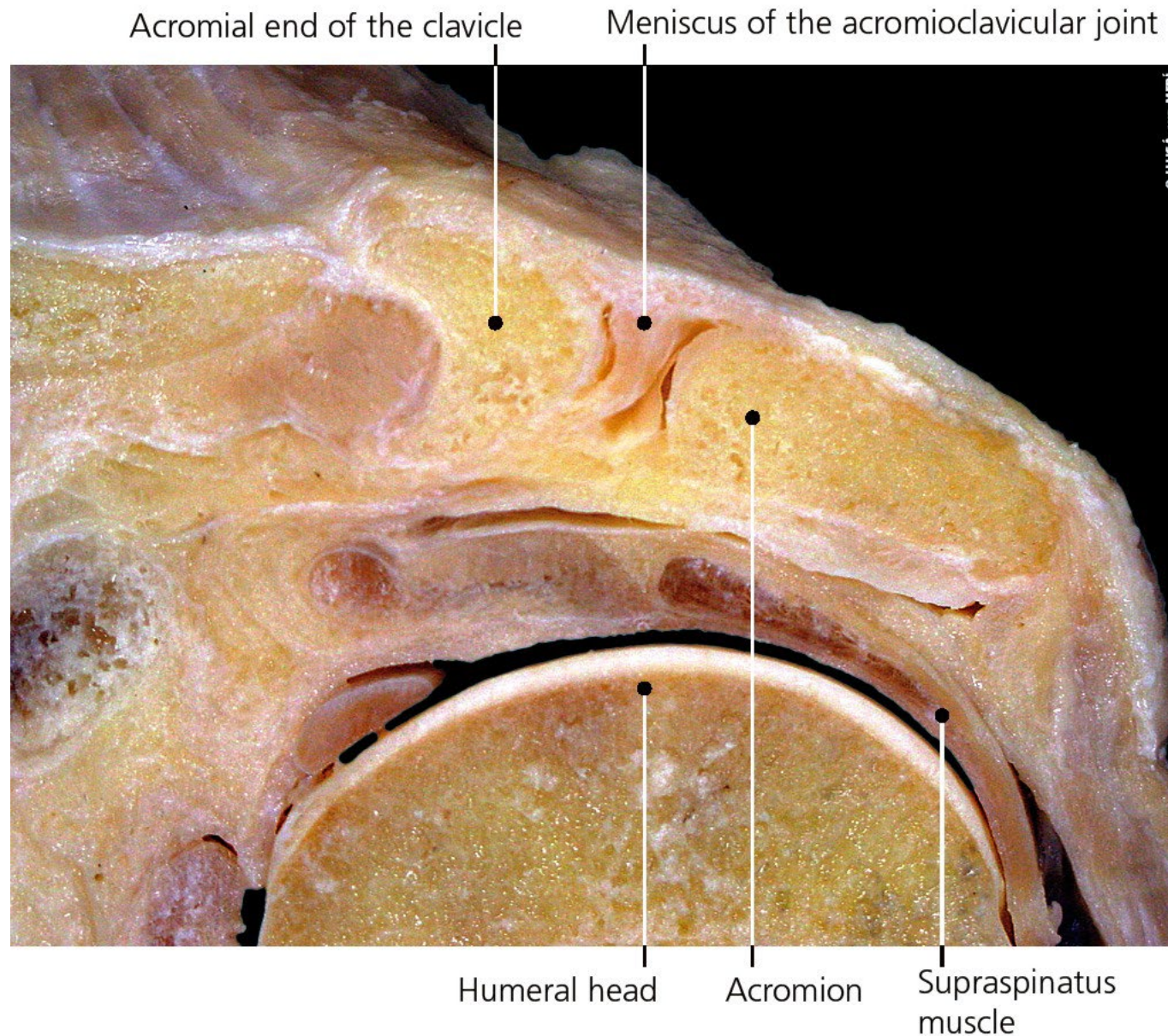
Muscle Anatomy



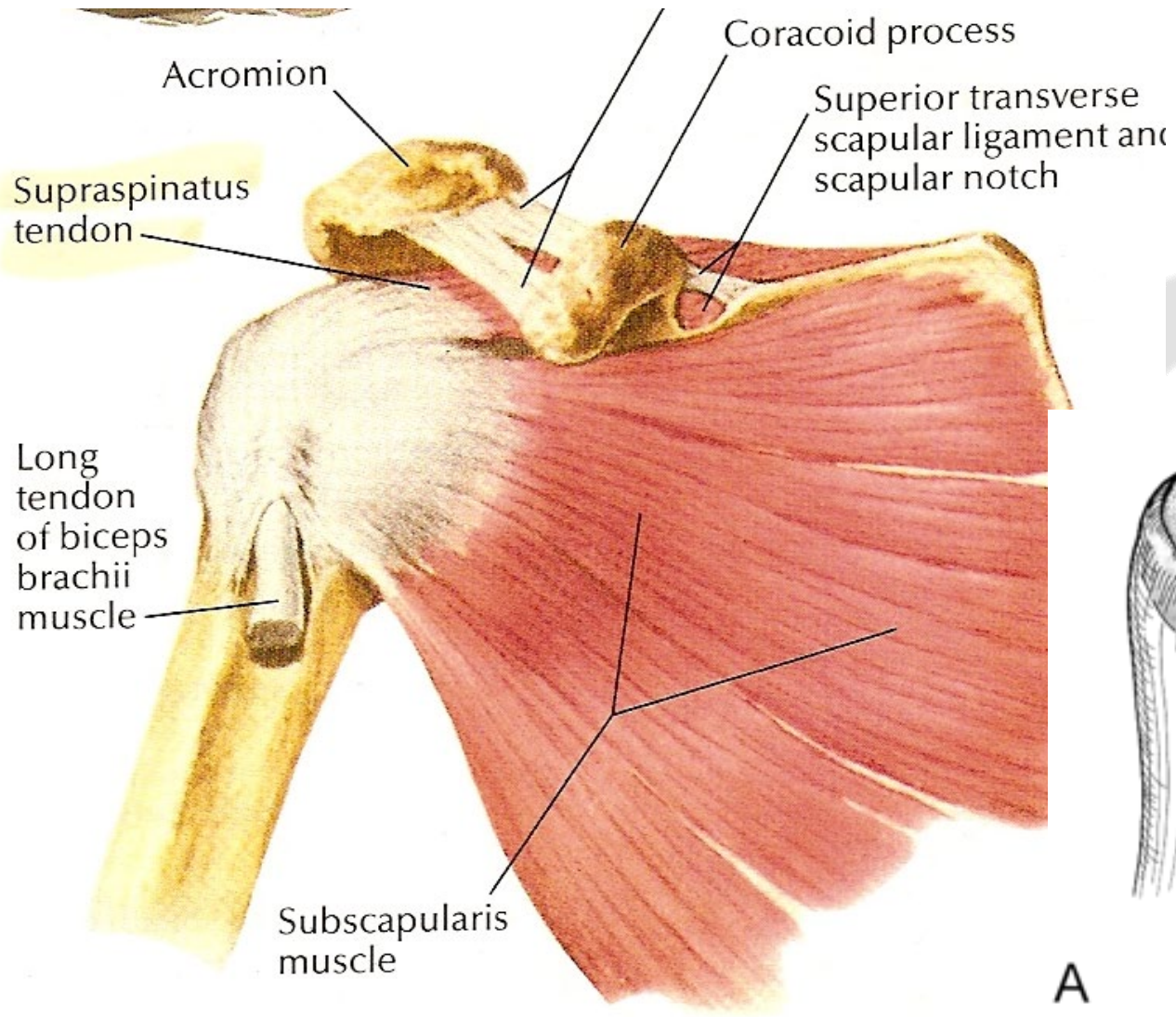
Muscle Anatomy



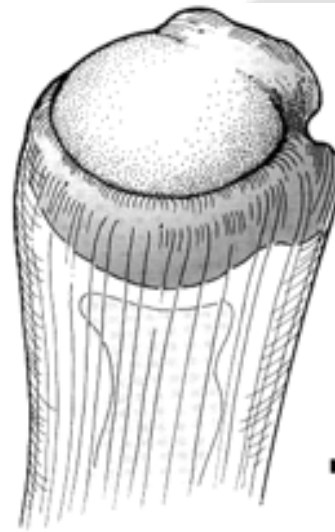
Rotator Cuff Anatomy



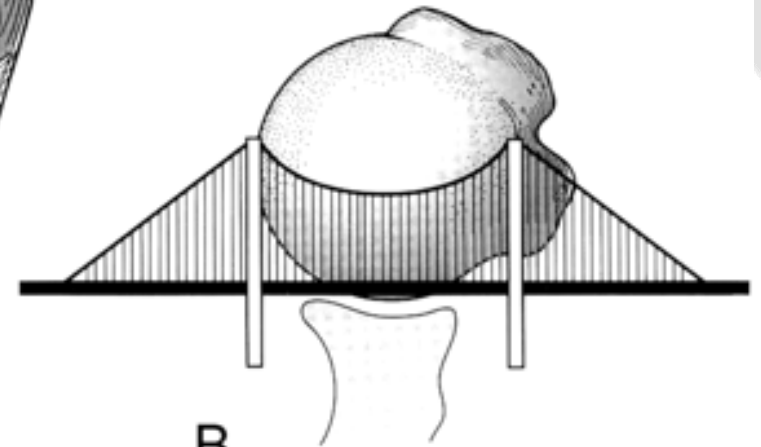
Rotator Cuff Anatomy



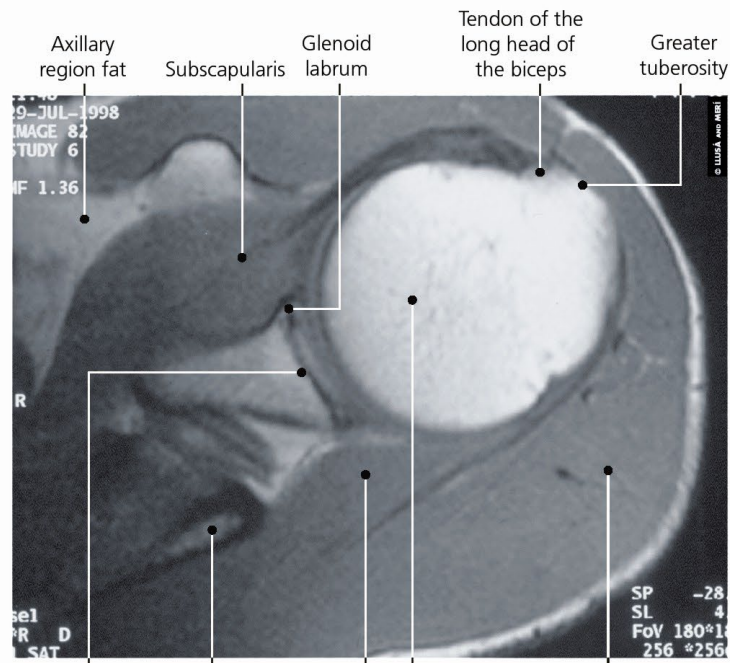
Anterior view



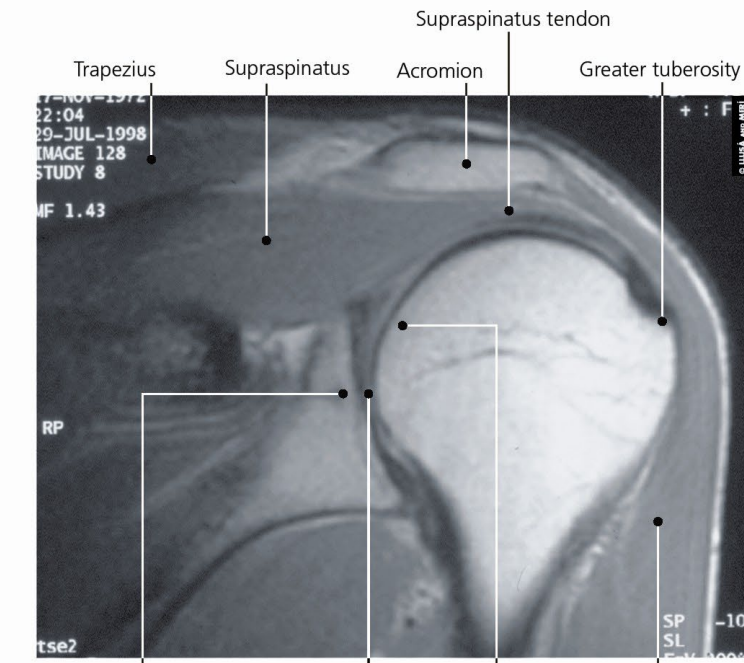
A



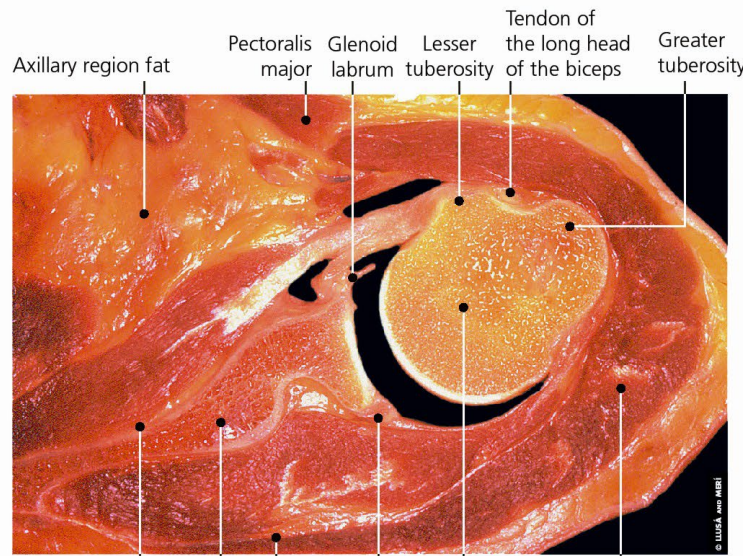
B



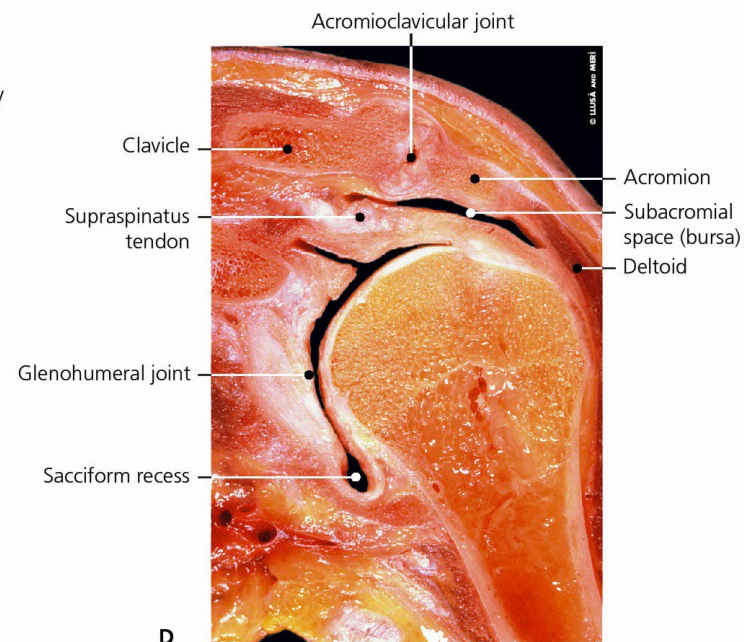
A Glenoid cavity Spine of the scapula Infraspinatus Humeral head Deltoid



B Glenoid cavity Glenohumeral joint Humeral head Deltoid



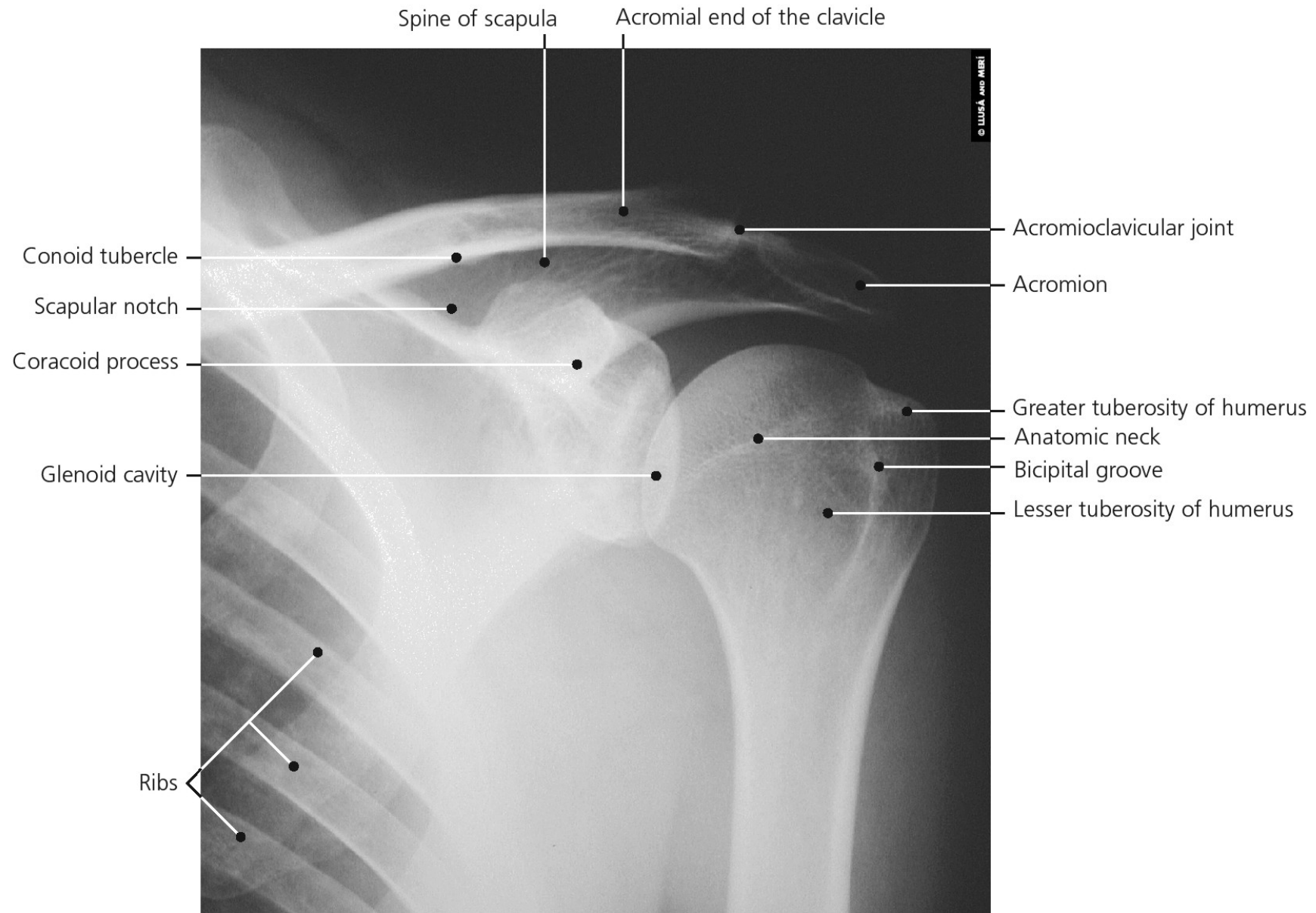
C Subscapularis Scapula Infraspinatus Glenoid labrum Humeral head Deltoid



D

Cuff =
Head
“compressor”

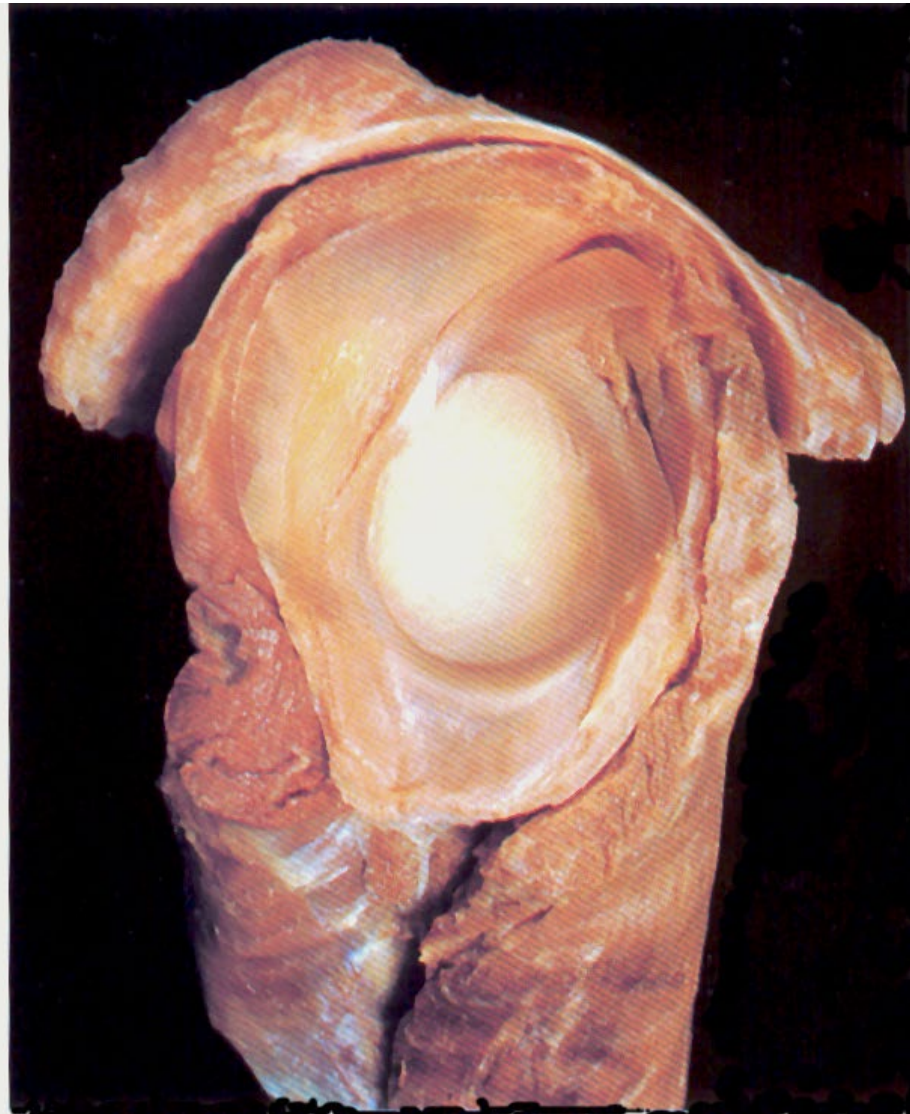
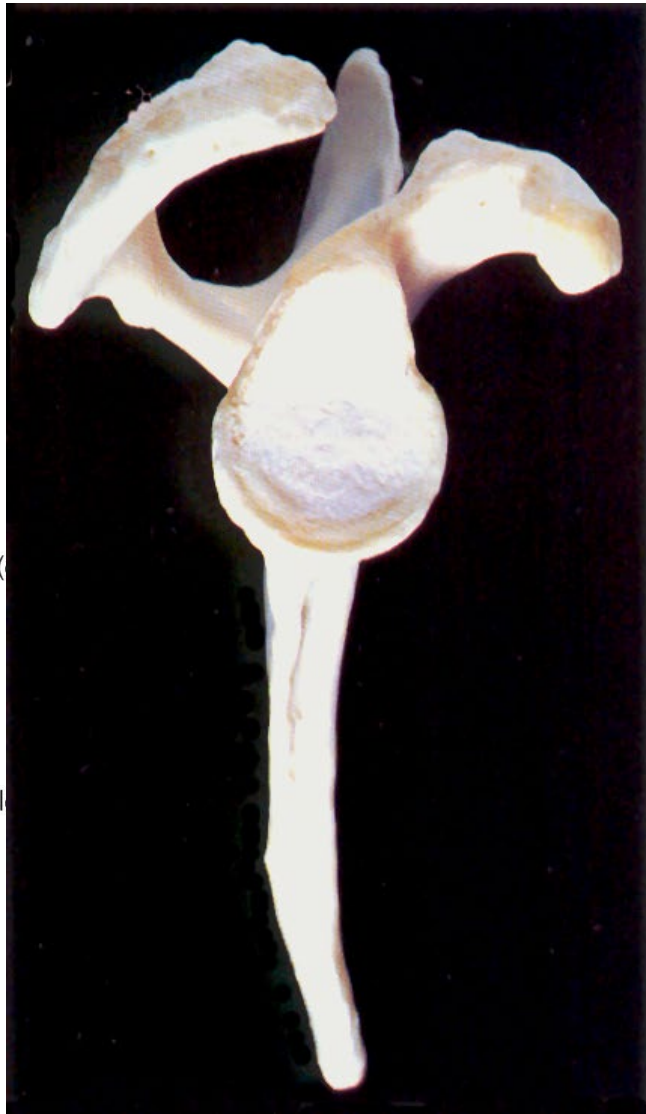
X-Ray Anatomy



X-Ray Anatomy



Glenoid Anatomy



ment

capularis muscle)

Biomechanics

- Shoulder a complex balance between motion, stability and strength
- More motion than any other joint to place hand in space
- Force generation



“My Shoulder Hurts!”



Rotator Cuff

- Complete tear
- Partial tear
- Rotator cuff Impingement/Tendinitis

Shoulder Joint

- Biceps/SLAP tears
- Labral tear/Instability
- Osteoarthritis
- Adhesive Capsulitis (Frozen shoulder)

“Other” Shoulder

- AC joint injuries
- Deltoid/Pec injuries
- Scapular Dyskinesis

“Not” Shoulder

- Cervical Pathology

“Not” Shoulder

- Pain is periscapular or in the neck
- Radicular symptoms
- Constant, burning pain



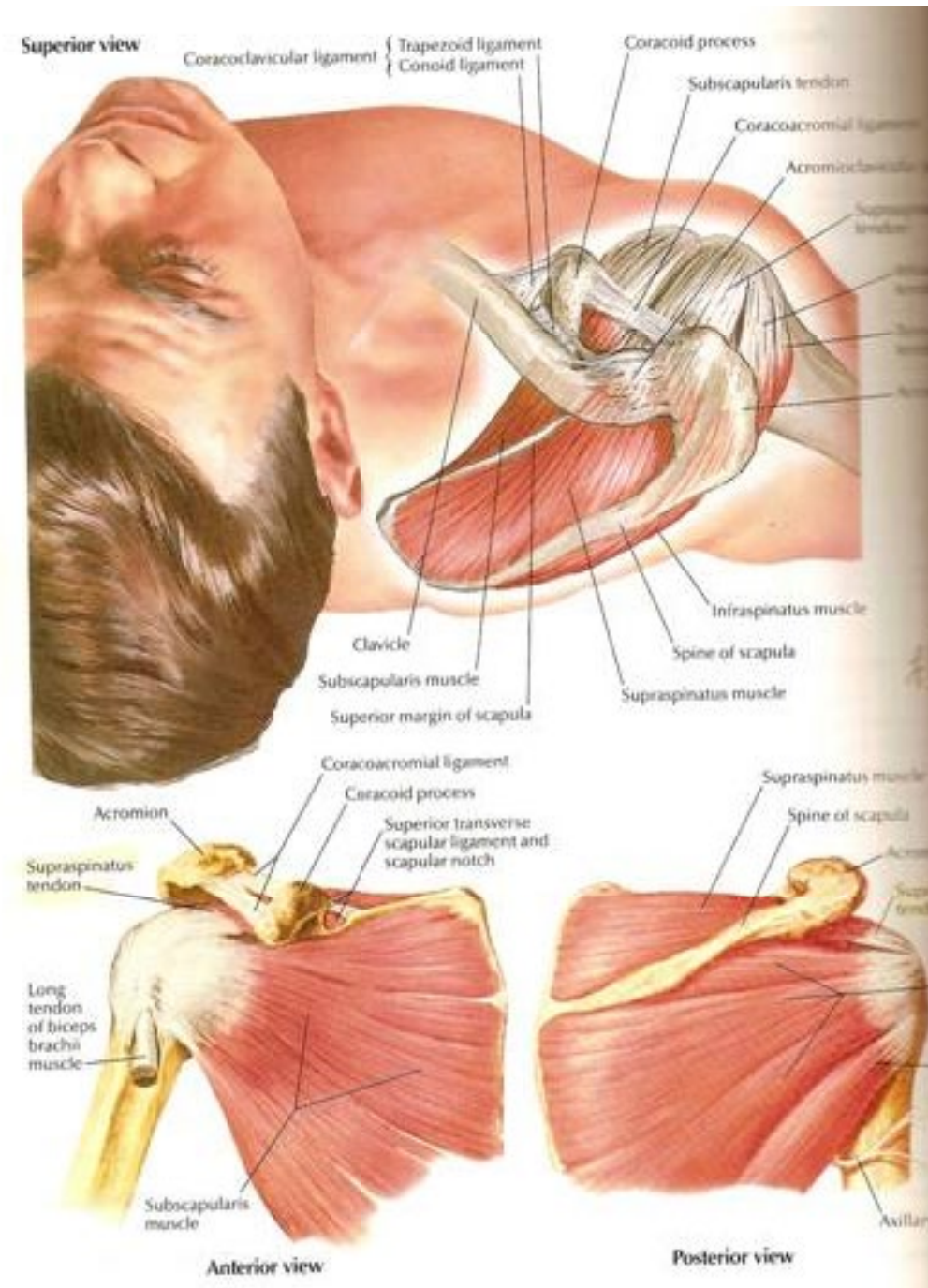
“Not” Shoulder

- Neck exam elicits symptoms (limited ROM)
- Positive Spurling’s maneuver or shoulder abduction test (75 -100 % specific)
- Trapezial pain with both neck and shoulder problems (be careful)



Rotator Cuff

- Smaller, deeper muscles
 - Initiates elevation and rotation but NOT sole generators of torque or abduction
- Along with capsule, helps keep ball centered in socket
 - Humeral head “compressor”



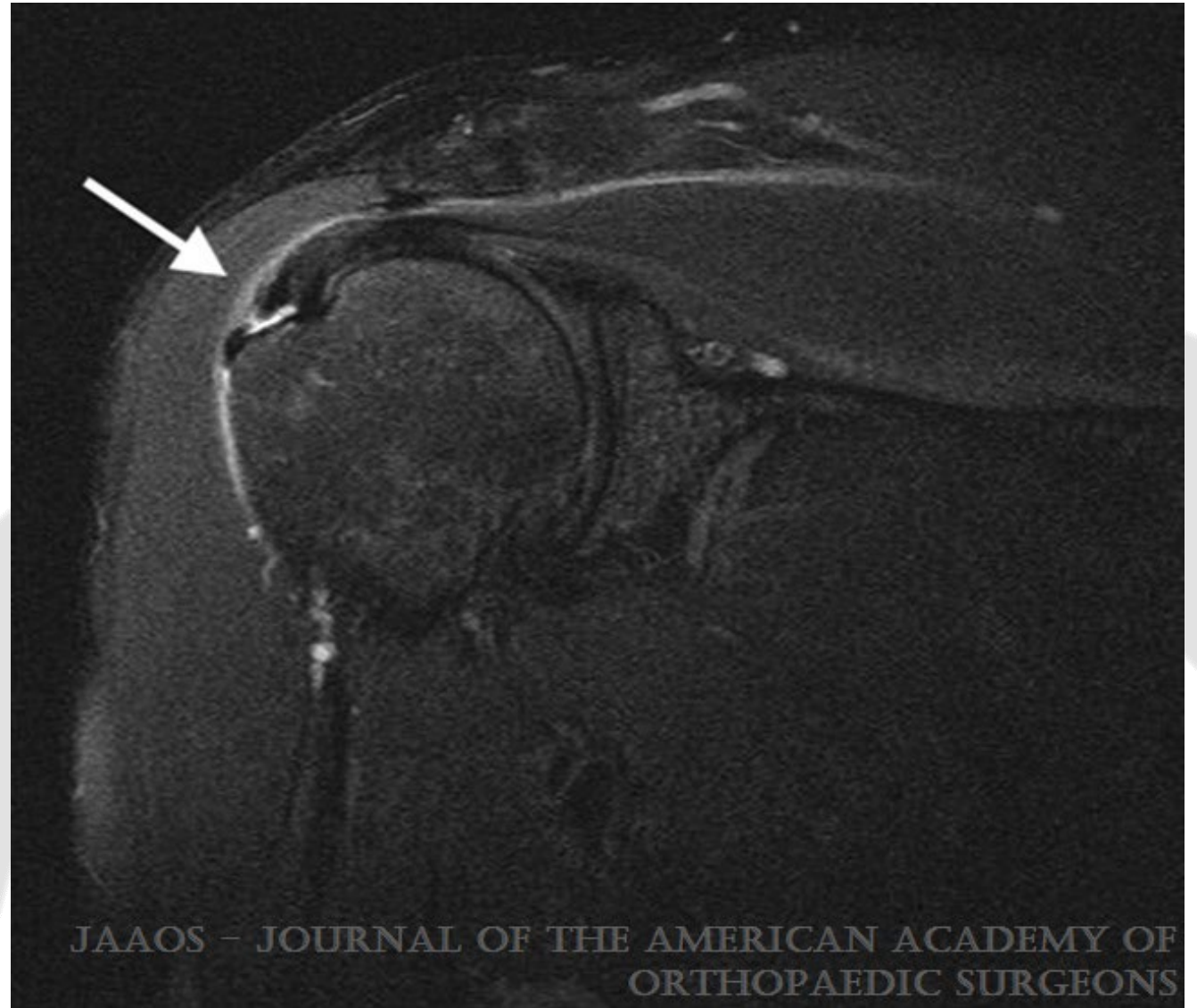
Rotator Cuff

- Many rotator cuff conditions are a degenerative process with or without superimposed injury
- Overuse or injury can play a role



Rotator Cuff

- 30-50% of patients over 50 have some tearing of rotator cuff
 - Tuenis, et al; JSES Dec 2014



Presentation

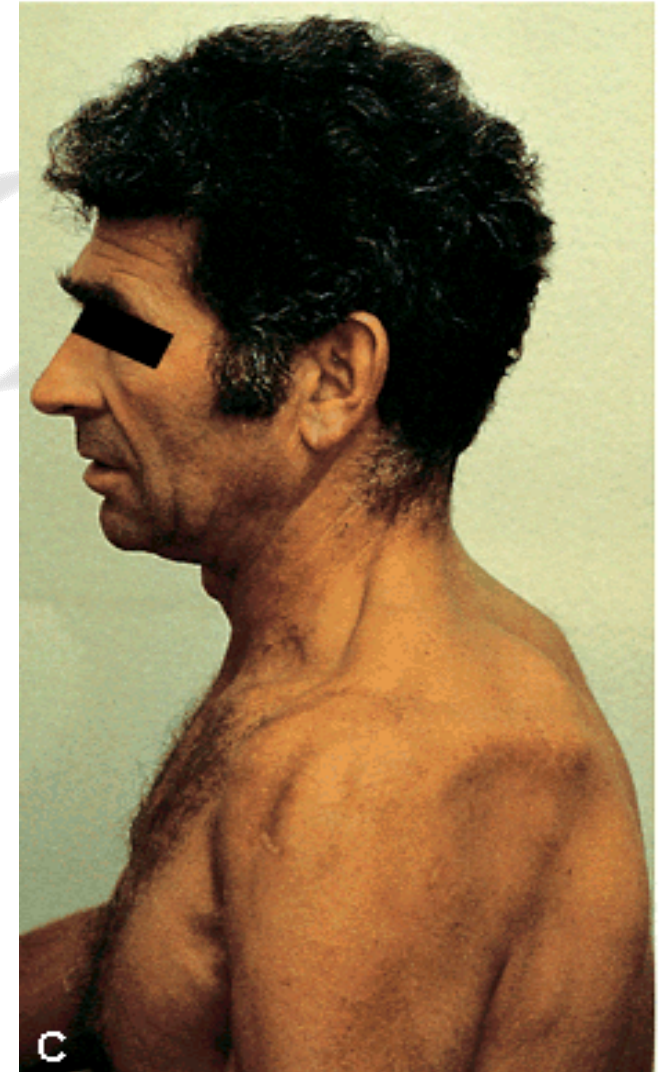


- Acute
 - Fall
 - Lifting
 - Twist/turn/pull
- Acute on chronic
 - Chronic symptoms exacerbated by acute episode
- Chronic
- Traumatic vs insidious



Presentation

- Pain
 - Lateral arm
 - Pain with motion
 - Night pain
- Weakness
 - Difficulty with elevation
 - Painful Arc
- Atrophy

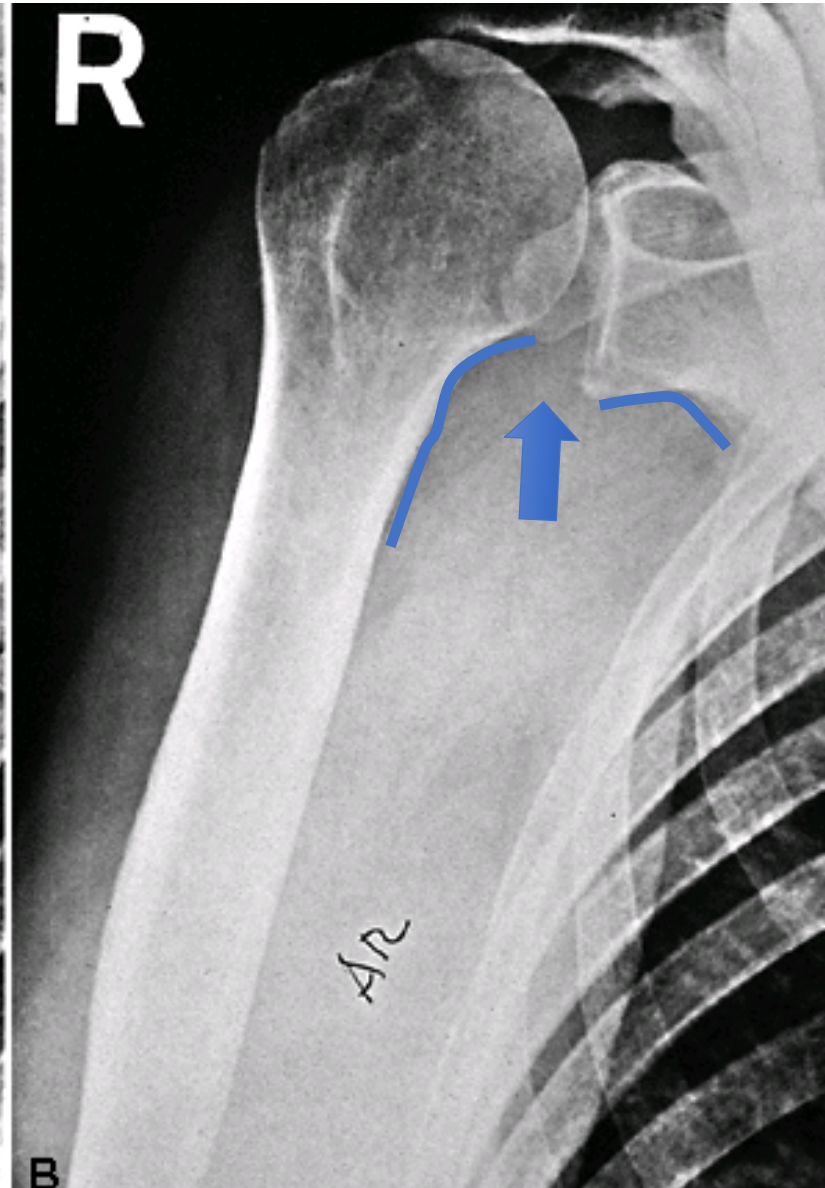


Exam



- Evaluate if the cuff engages!
- Distract and revisit tests

Studies



- Plain films

- Spurs

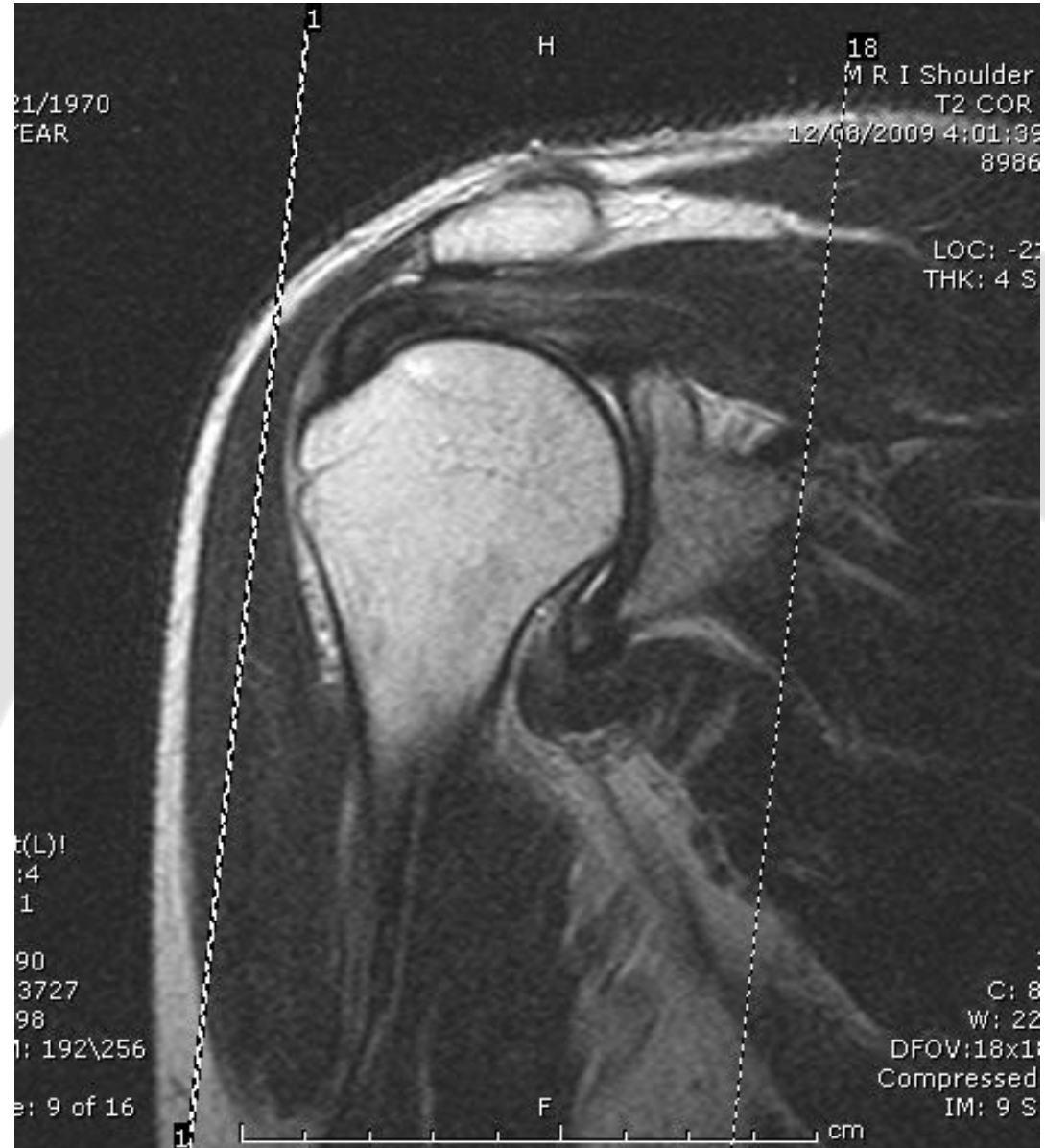
- High riding head

- Fractures

- Arthritis

Studies

- MRI indications
 - Younger patient
 - Acute injury with weakness
 - Chronic injury that has failed conservative treatment



Spectrum of disease

Tendinitis/bursitis

Tendinopathy

Partial tear

Full thickness
rotator cuff tear

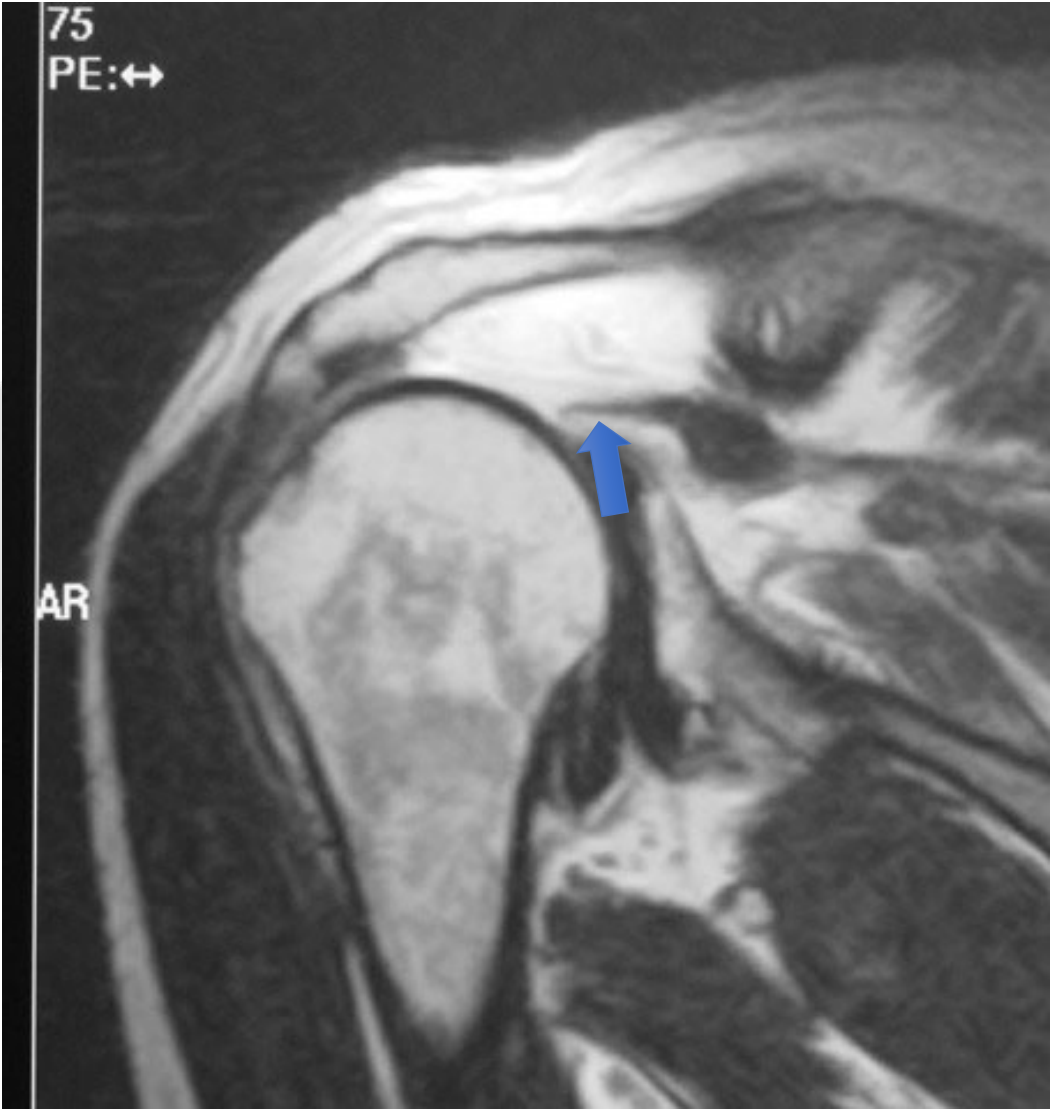
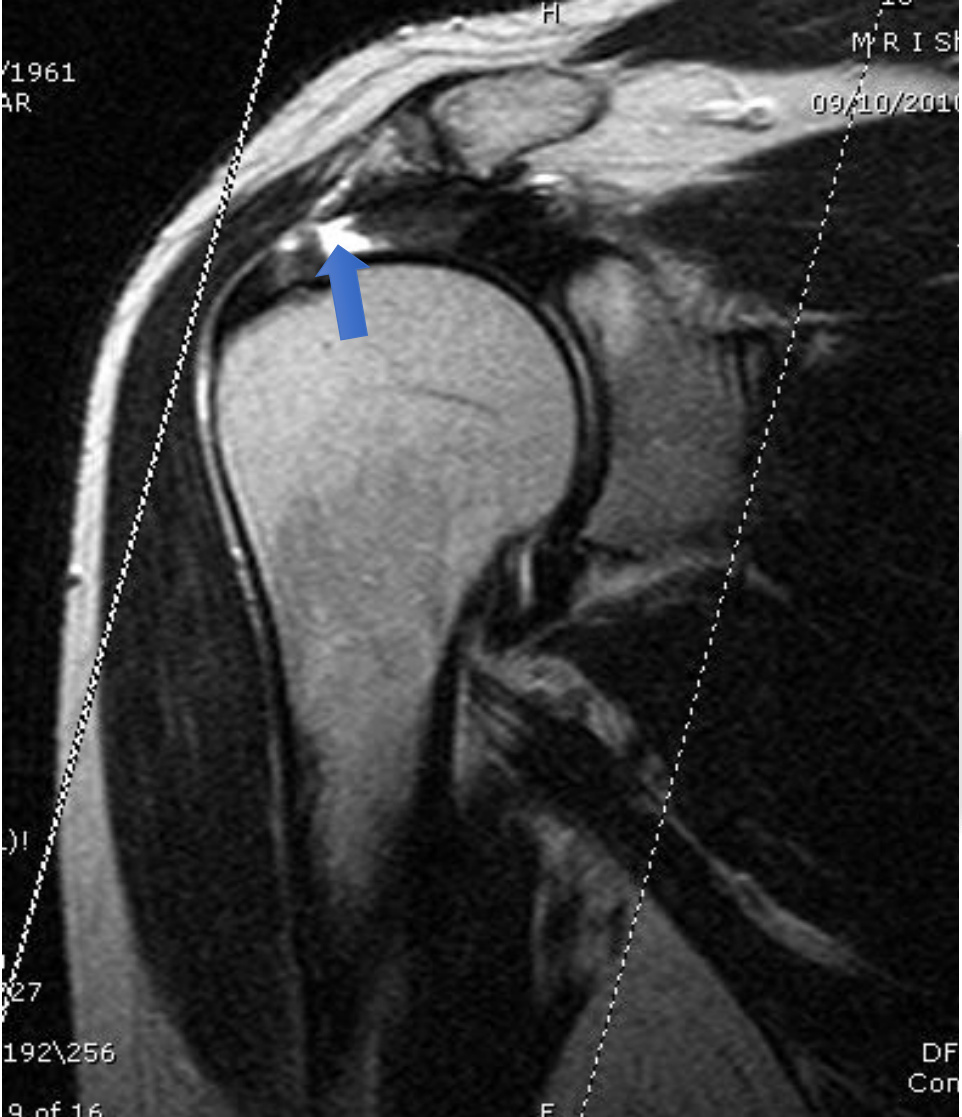
Rotator cuff arthropathy



Normal or partial tear



Small vs Large (Massive) tears



Treatment

- Not all cuff tears need fixed
- 30-50% of patients over 50 have some tearing of rotator cuff



Important Treatments

- Glucose Control! (Hgb A1C < 7)
- Smoking Cessation
- Weight Loss
 - Better Results with lower BMI
 - Anti-inflammatory diet
- Ergonomics at work



Treatment

- Non-operative
 - Physical Therapy!
 - Rehab!
 - Physio!
- NSAIDS
- Activity modification
- Corticosteroid injections
 - Multiple studies with improved function!



Steroid injections



- More than 2 Steroid injections leads to a higher failure rate of RTC repair
 - Weber, et al, Arthroscopy 2019
- Injections within 1 month of arthroscopic rotator cuff repair significantly increases the risk of surgical site infection
 - Forsythe et al, JBJS 2019