

# Introduction to Shoulder MSK Ultrasound

Carlos Jimenez, PhD(c), DPT, RMSK, CPSS



# Introduction to Shoulder MSK Ultrasound

- Key structures: rotator cuff (SITS), bursa, biceps tendon
- Clinical applications: impingement, tendinopathy, cuff tears.
- Advantages: dynamic assessment, contralateral comparison, real-time findings

# Key Areas of Interest

## Required

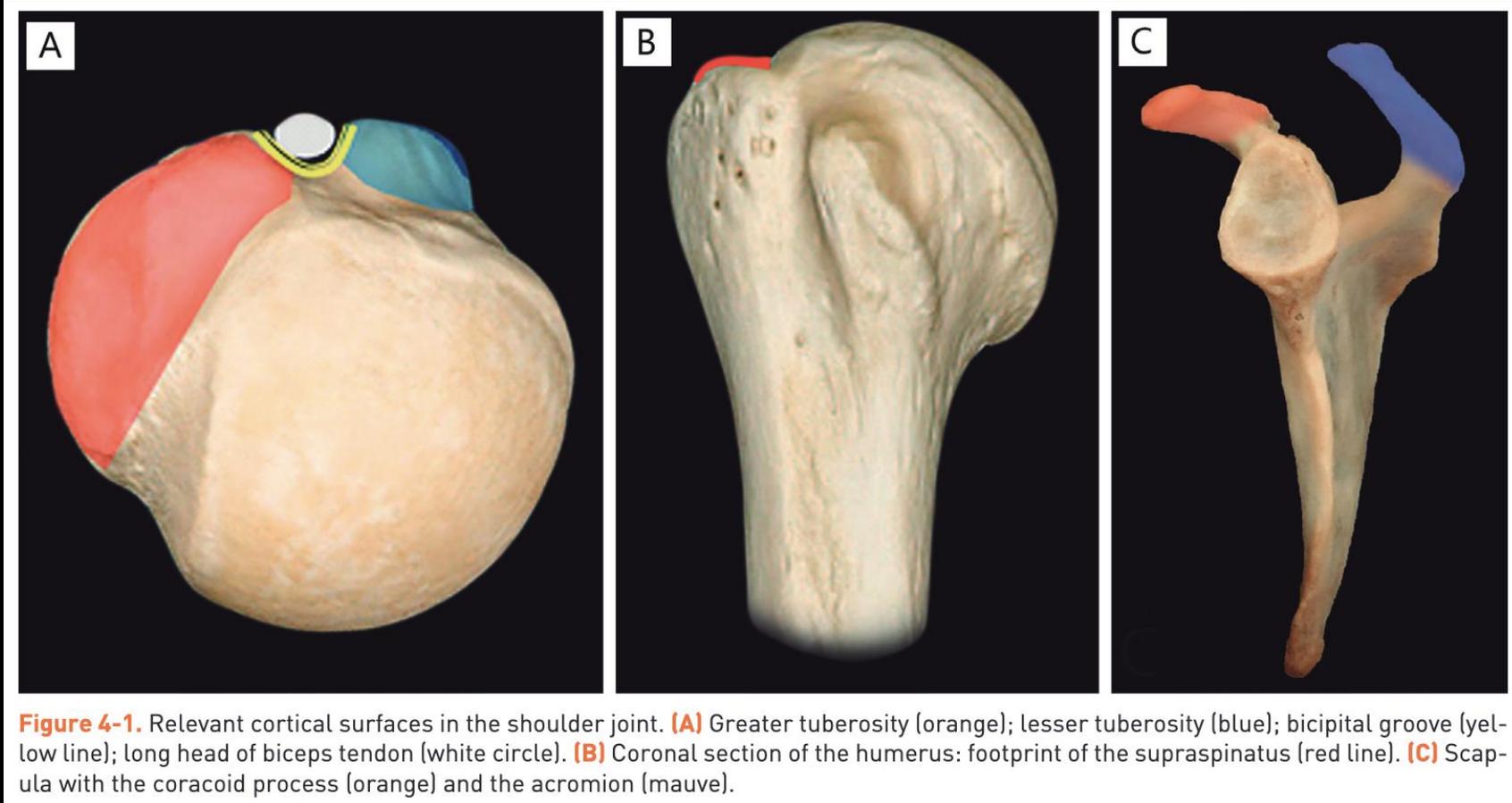
1. Biceps tendon (long head) and muscle
2. Subscapularis tendon
3. Dynamic assessment of biceps subluxation/dislocation & subcoracoid impingement as indicated
4. Acromioclavicular joint
5. Infraspinatus tendon and muscle
6. Teres minor tendon and muscle
7. Posterior glenohumeral joint
8. Spinoglenoid notch (suprascapular nerve and vessels)
9. Supraspinatus tendon and muscle
10. Subacromial-subdeltoid bursa
11. Coracoacromial ligament

12. Dynamic rotator cuff assessment and impingement testing

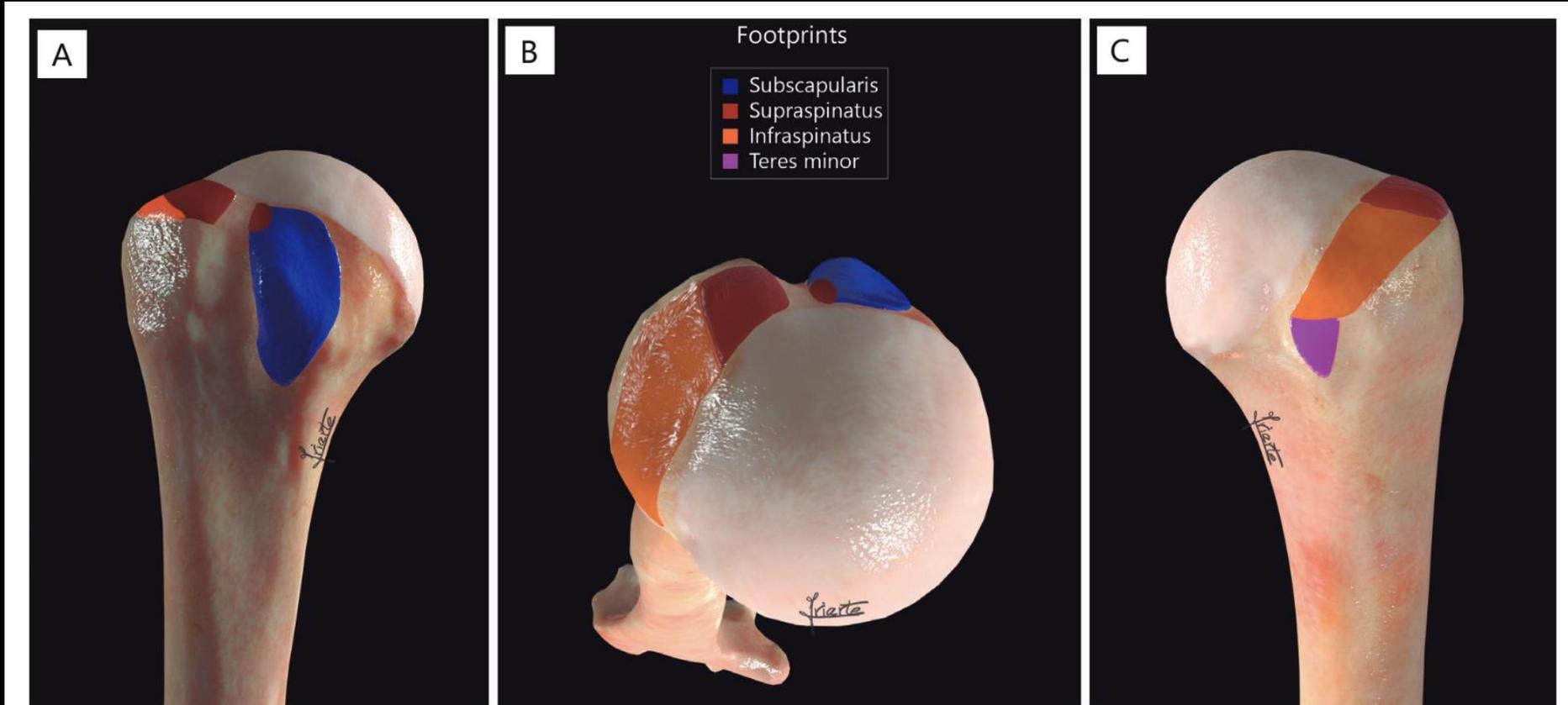
## Optional (based on clinical question)

1. Pectoralis major tendon and muscle
2. Rotator Interval (including the coracohumeral ligament and superior glenohumeral ligament)
3. Clavicle
4. Sternoclavicular joint
5. Subscapularis muscle
6. Suprascapular notch (suprascapular nerve and vessels)
8. Radial nerve
9. Humerus
10. Brachial Plexus

# Shoulder Anatomy Overview



# Shoulder Anatomy Overview



**Figure 4-2.** Insertional footprints of the rotator cuff tendons.

# Greater Tuberosity Facets

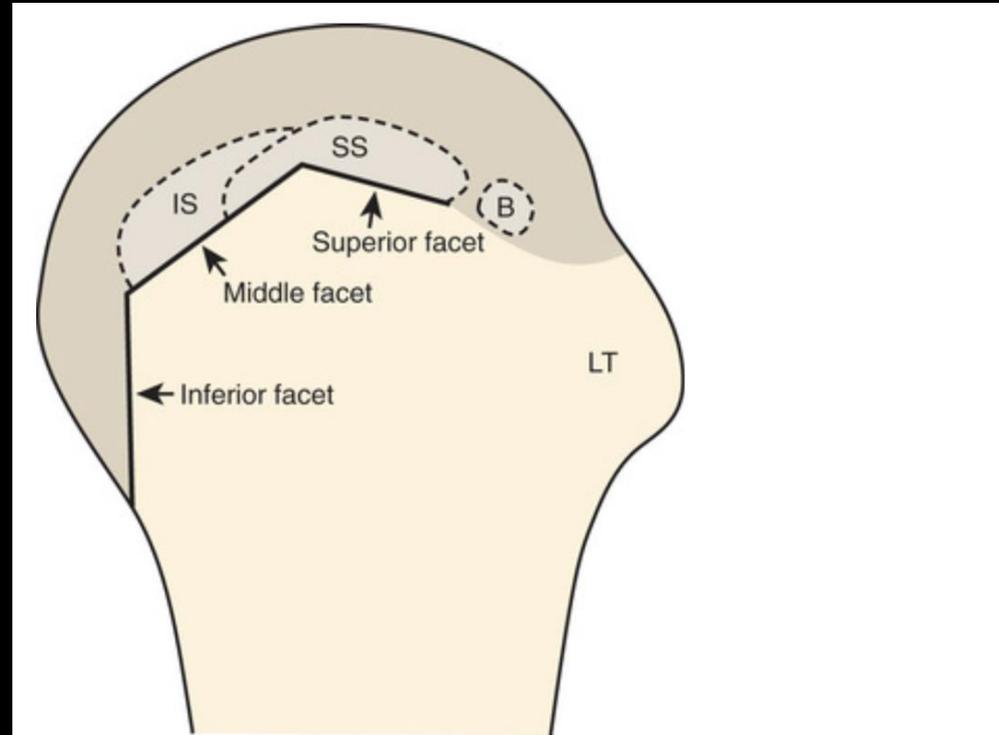


FIGURE 3.2 Greater Tuberosity Facets. Illustration of lateral humerus shows superior, middle, and inferior facets. B, Long head of biceps brachii; SS, supraspinatus; IS, infraspinatus; LT, lesser tuberosity.

# Shoulder Bursae

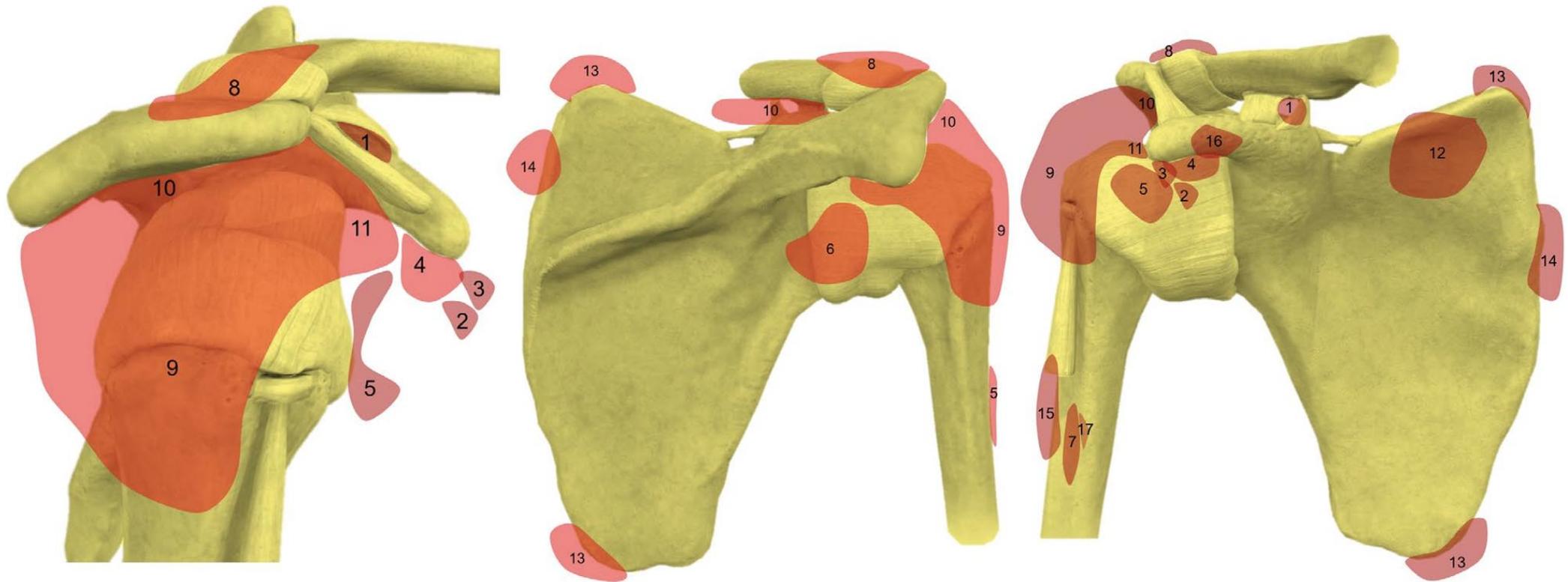
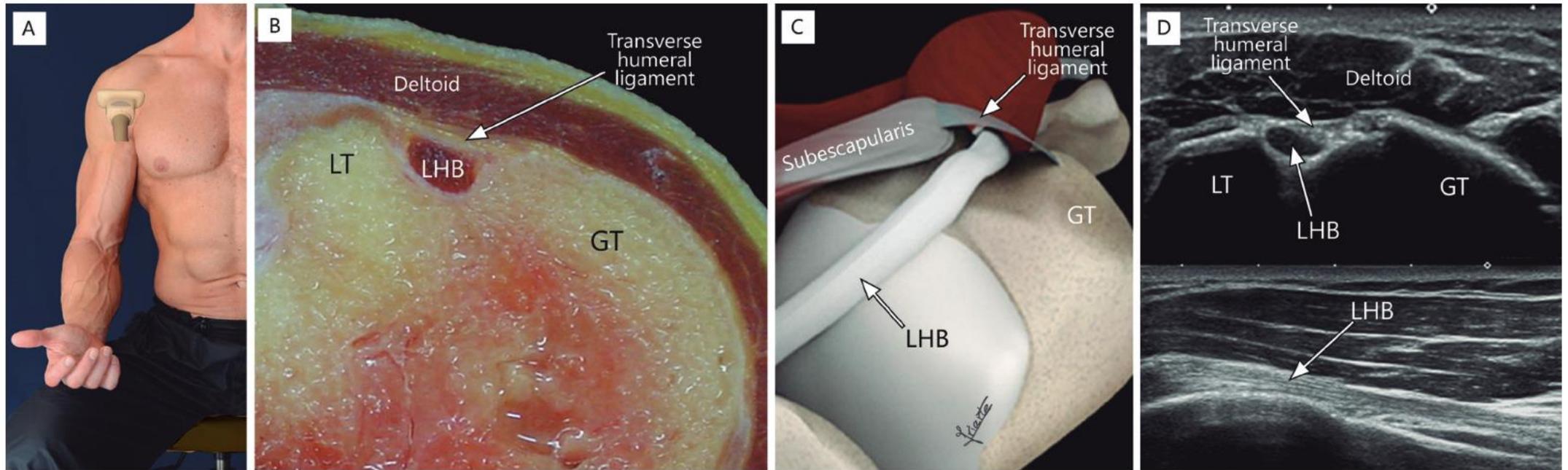


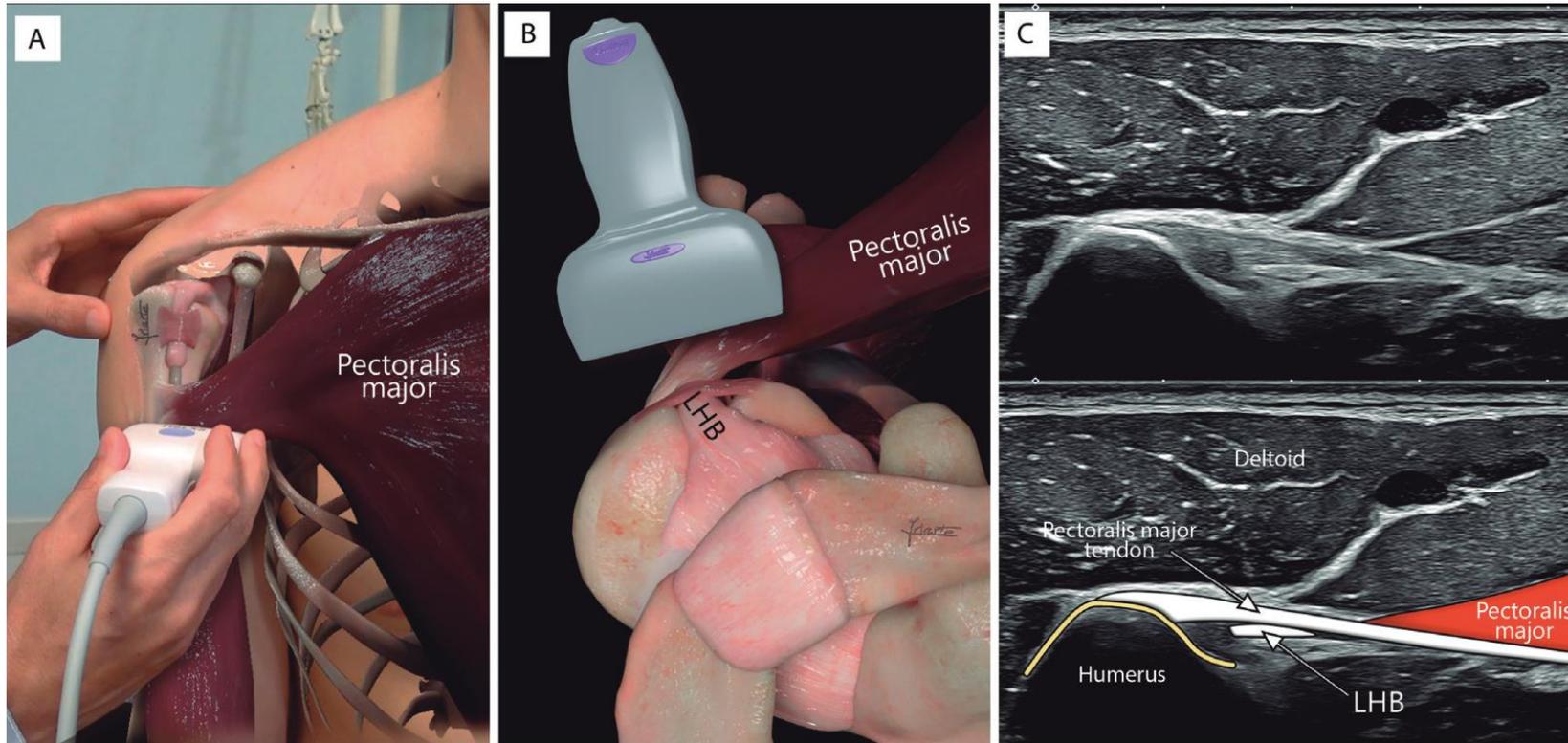
Fig. 6. Schematic drawing of selected common bursae in the shoulder area, Tab 3

# Anterior Shoulder Scan – Biceps Tendon



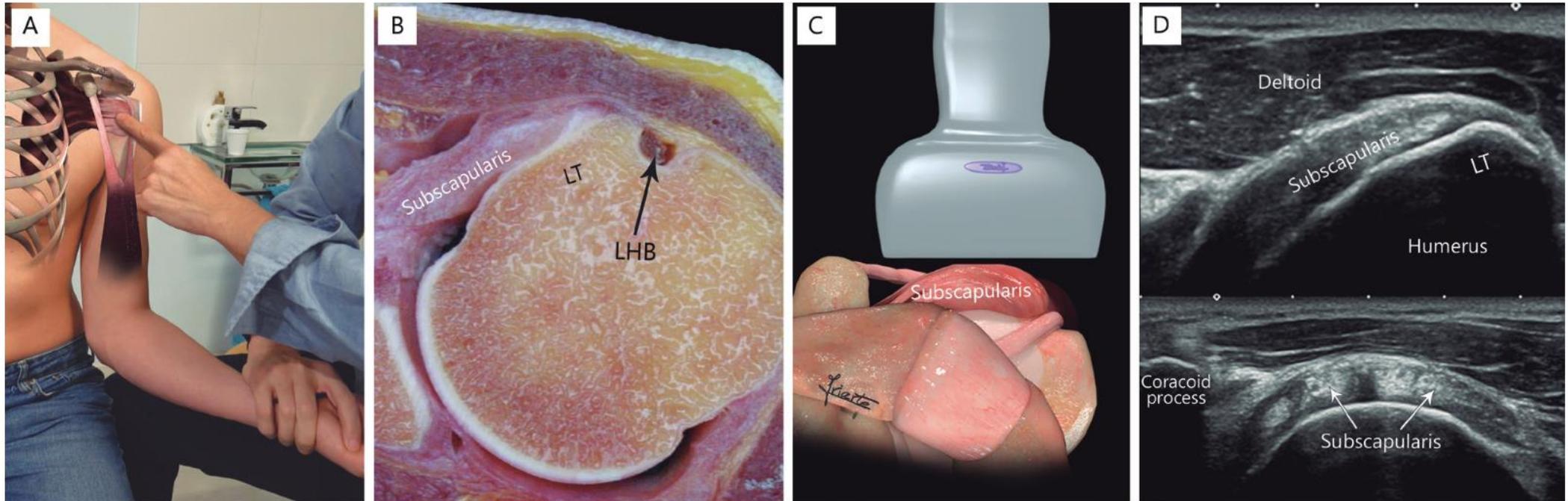
**Figure 4-5.** Position 1. **(A)** Position of the patient and the probe. **(B)** Cadaveric axial section. **(C)** Anatomical model. **(D)** Ultrasound image: above, in the transverse axis; below, in the longitudinal axis. LHB: long head of biceps; GT: greater tuberosity; LT: lesser tuberosity.

# Anterior Shoulder Scan – Pec Major



**Figure 4-6.** Evaluation of the long head of biceps tendon (LHB) and of the pectoralis major tendon. **(A)** Probe position. **(B)** Anatomical correspondence. **(C)** Ultrasound image.

# Anterior Shoulder Scan - Subscapularis

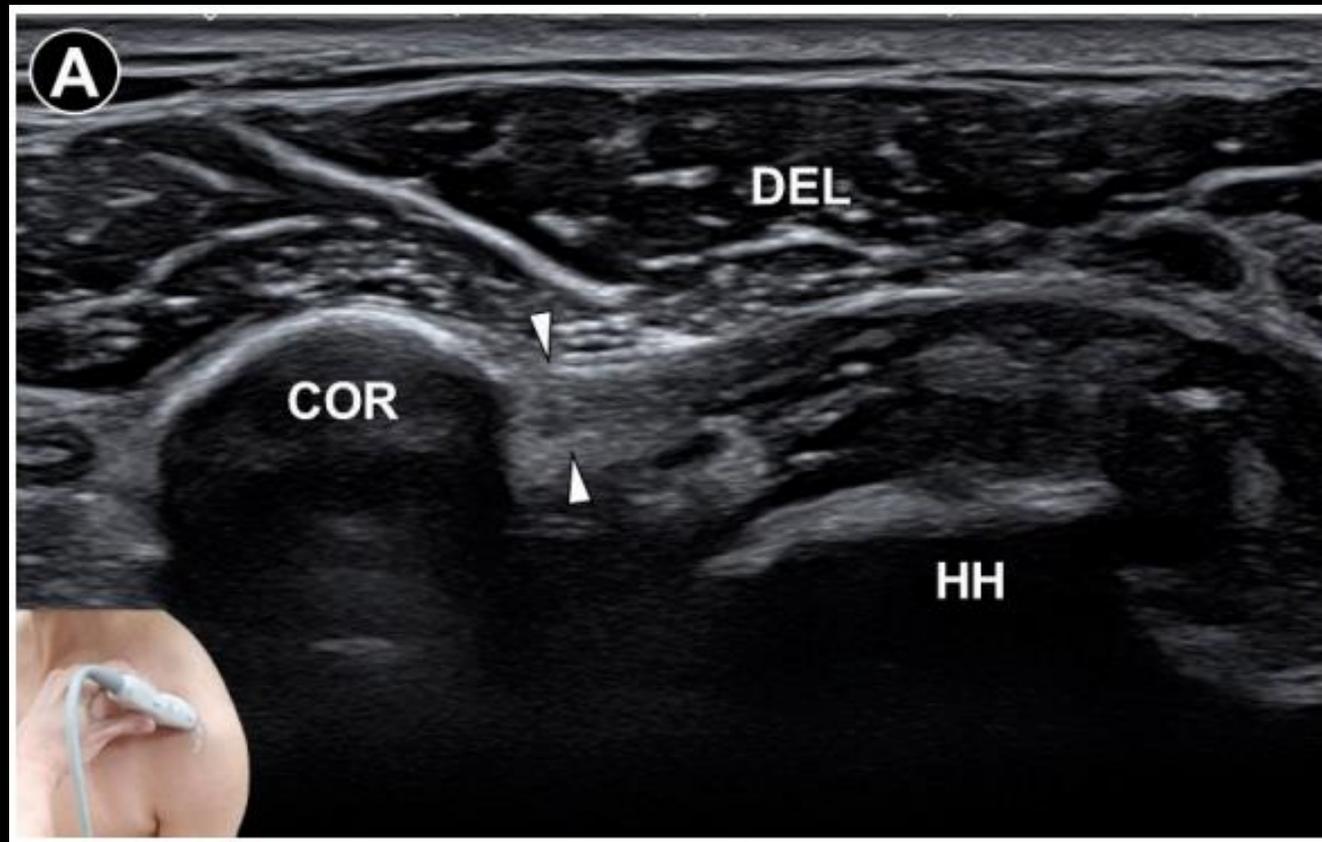


**Figure 4-7.** Evaluation of the subscapularis tendon with the shoulder in external rotation. **(A)** Position of the patient and point where the probe is placed. **(B)** Cadaveric axial section. **(C)** Anatomical model. **(D)** Ultrasound image: above, longitudinal axis; below, transverse axis. Lt: lesser tuberosity; LHB: long head of biceps tendon.

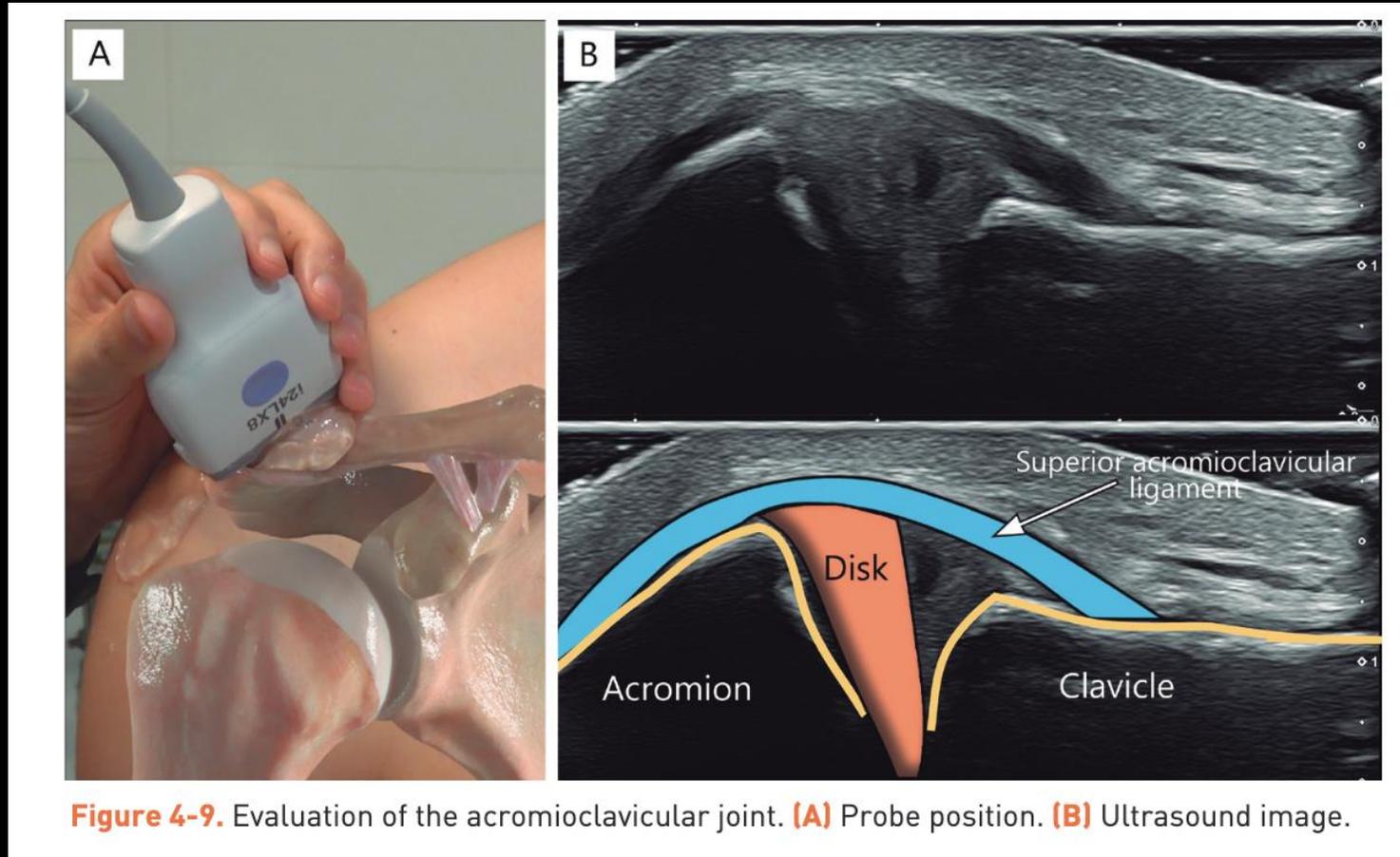
# Normal subscapularis tendon



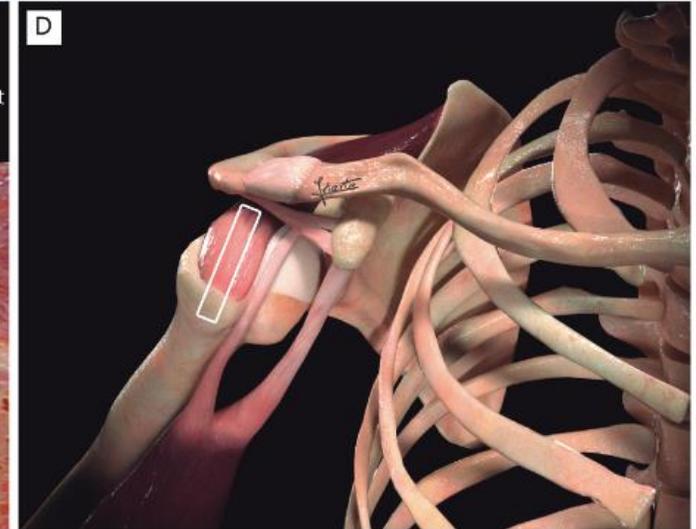
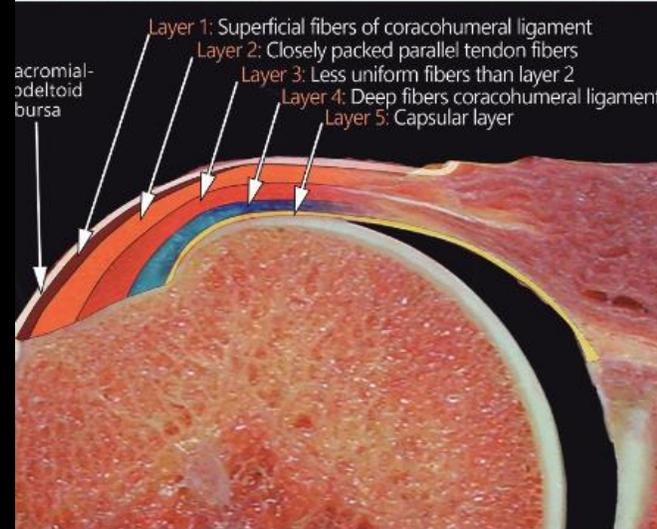
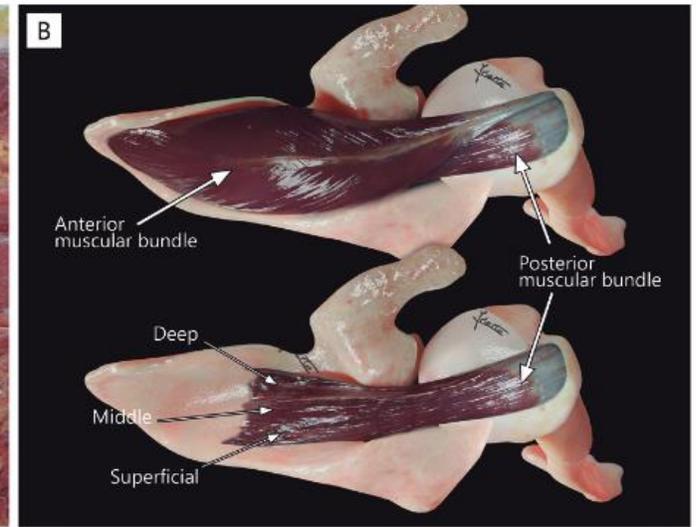
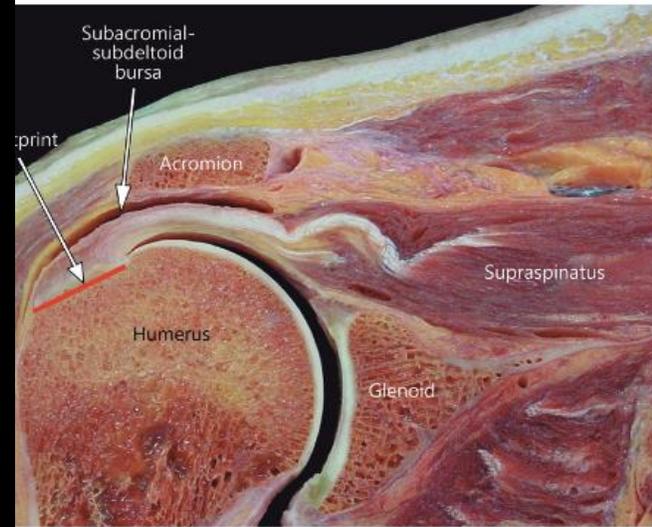
# Ultrasound imaging of the coracohumeral ligament



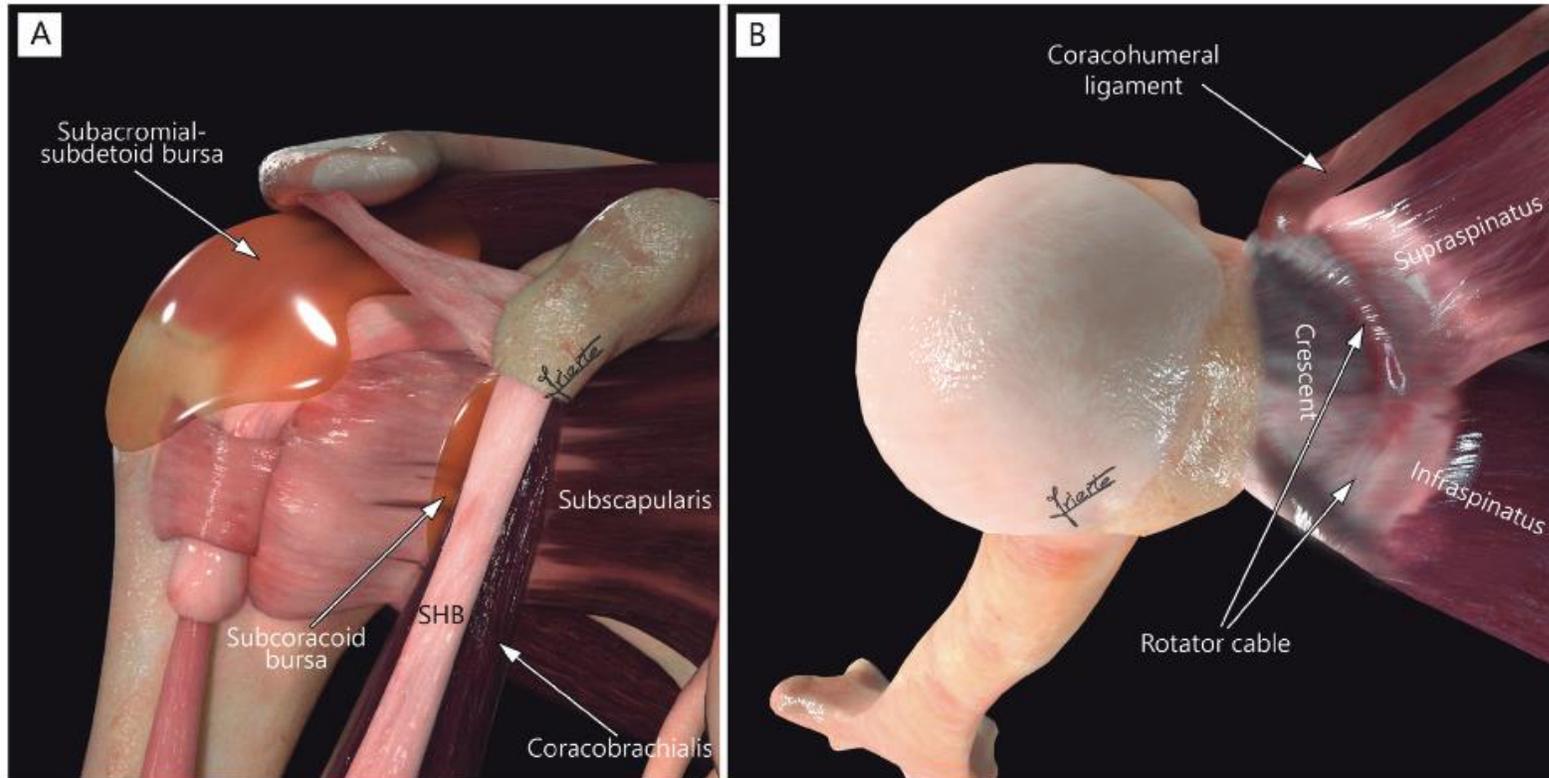
# AC Joint



# Antero – Lateral Supraspinatus

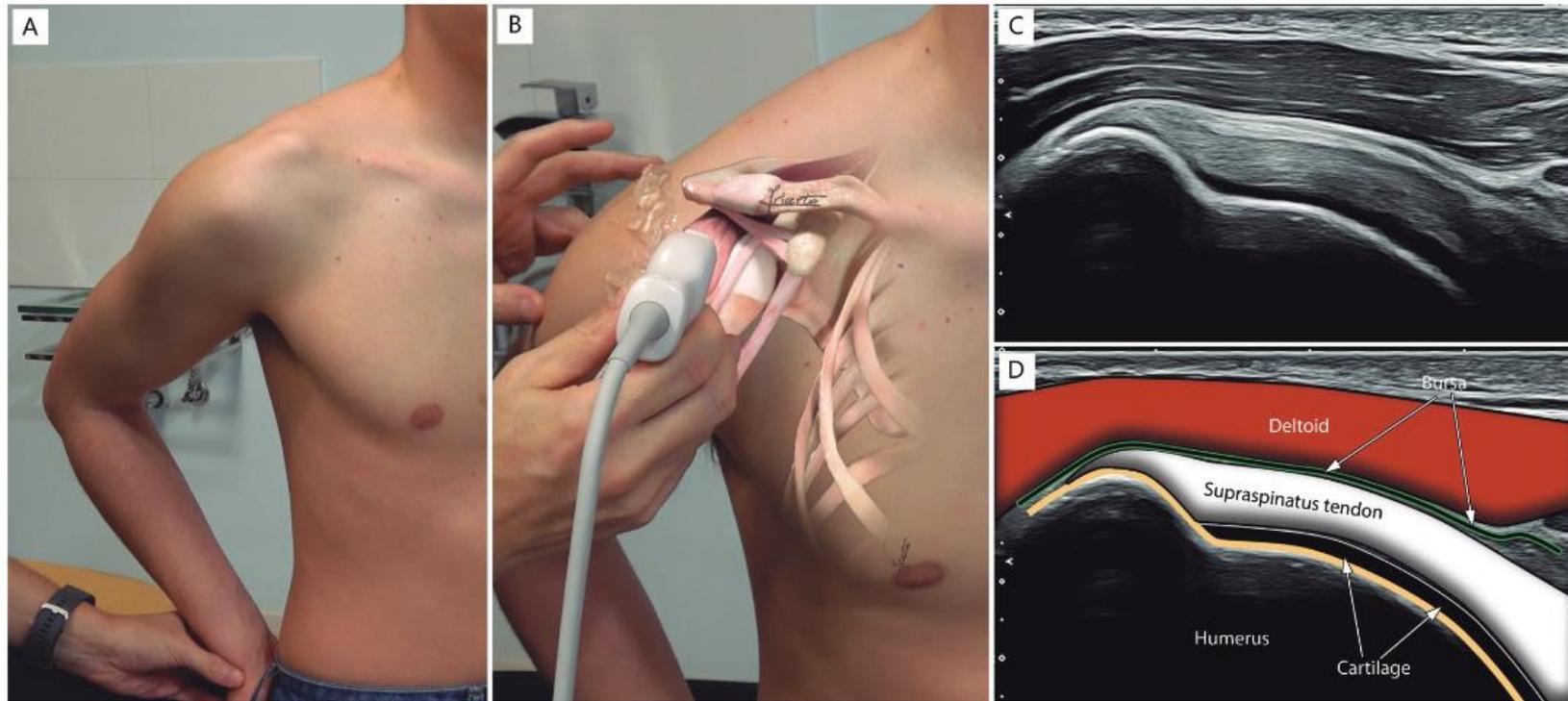


# Subacromial subdeltoid bursa



**Figure 4-11.** Subacromial-subdeltoid bursa and rotator cable. **(A)** Anatomical model showing an anterior view of the bursa and its relationship with the surrounding structures. **(B)** Anatomical model of the rotator cable seen from above. The supraspinatus and infraspinatus tendons and the coracohumeral ligament have been turned over to show their inferior contours and a detail of the rotator cable and crescent area.

# Modified Crass Position

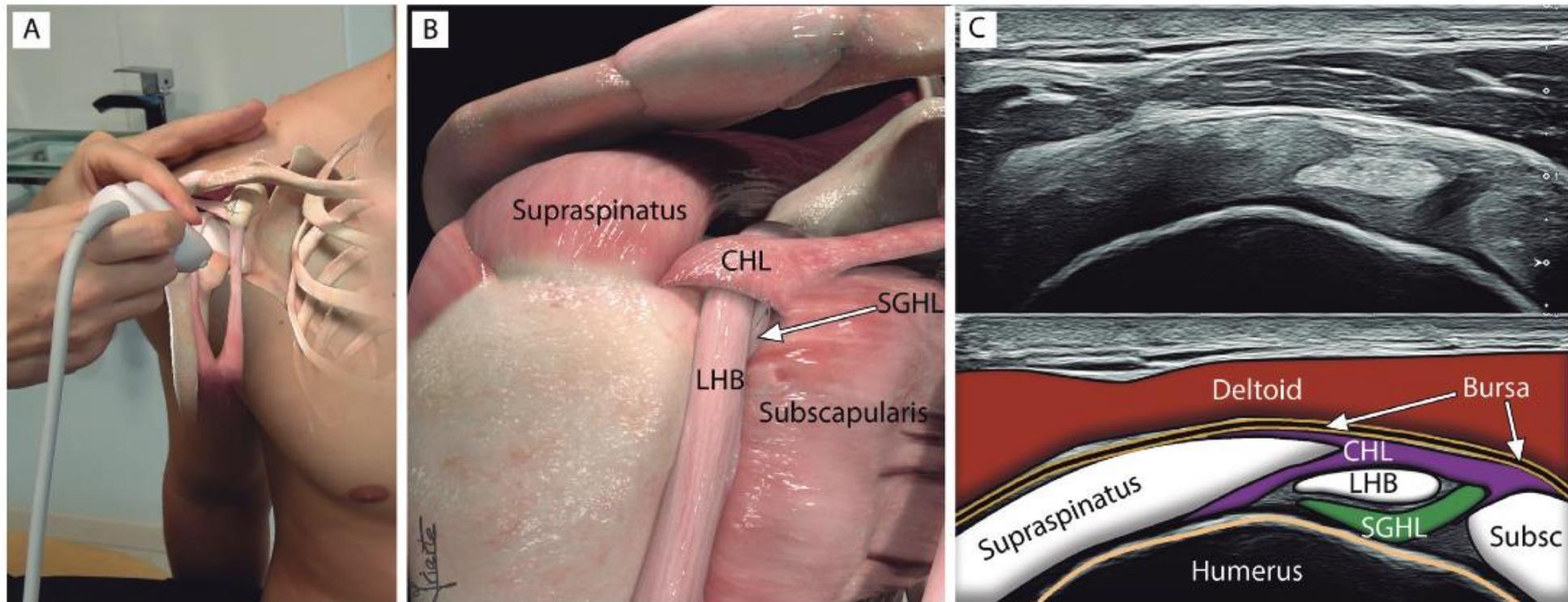


**Figure 4-12.** Evaluation of the supraspinatus tendon and subacromial-subdeltoid bursa in the longitudinal axis. **(A)** Modified Crass position. **(B)** Probe position for viewing the longitudinal axis of the supraspinatus. **(C)** Ultrasound image. **(D)** The same image with important structures highlighted.

# Subacromial impingement test

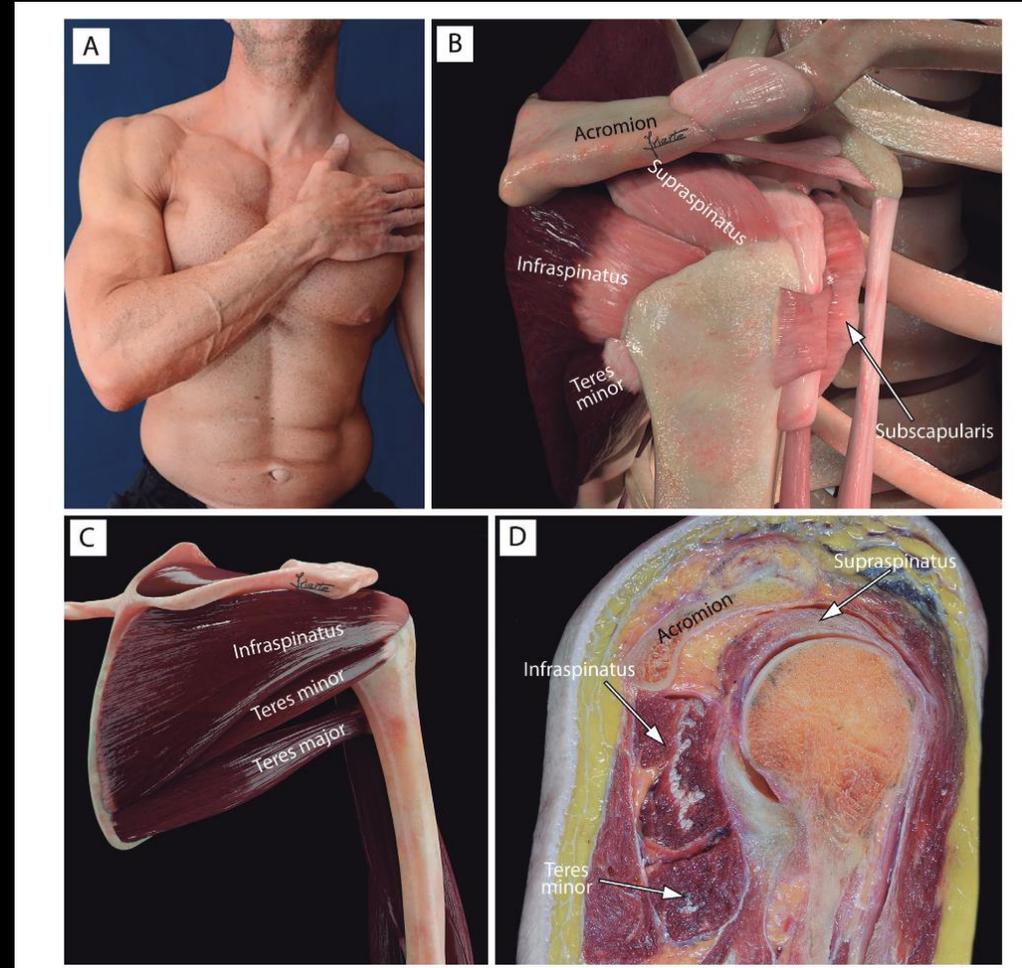


# Rotator interval



**Figure 4-13.** Evaluation of the supraspinatus tendon, rotator interval, and subacromial-subdeltoid bursa in the transverse axis. **(A)** Modified Crass position and probe placement. **(B)** Anatomical model of these structures. **(C)** Ultrasound image and corresponding diagram. CHL: coracohumeral ligament; SGHL: superior glenohumeral ligament; LHB: long head of biceps tendon; Subsc: subscapularis.

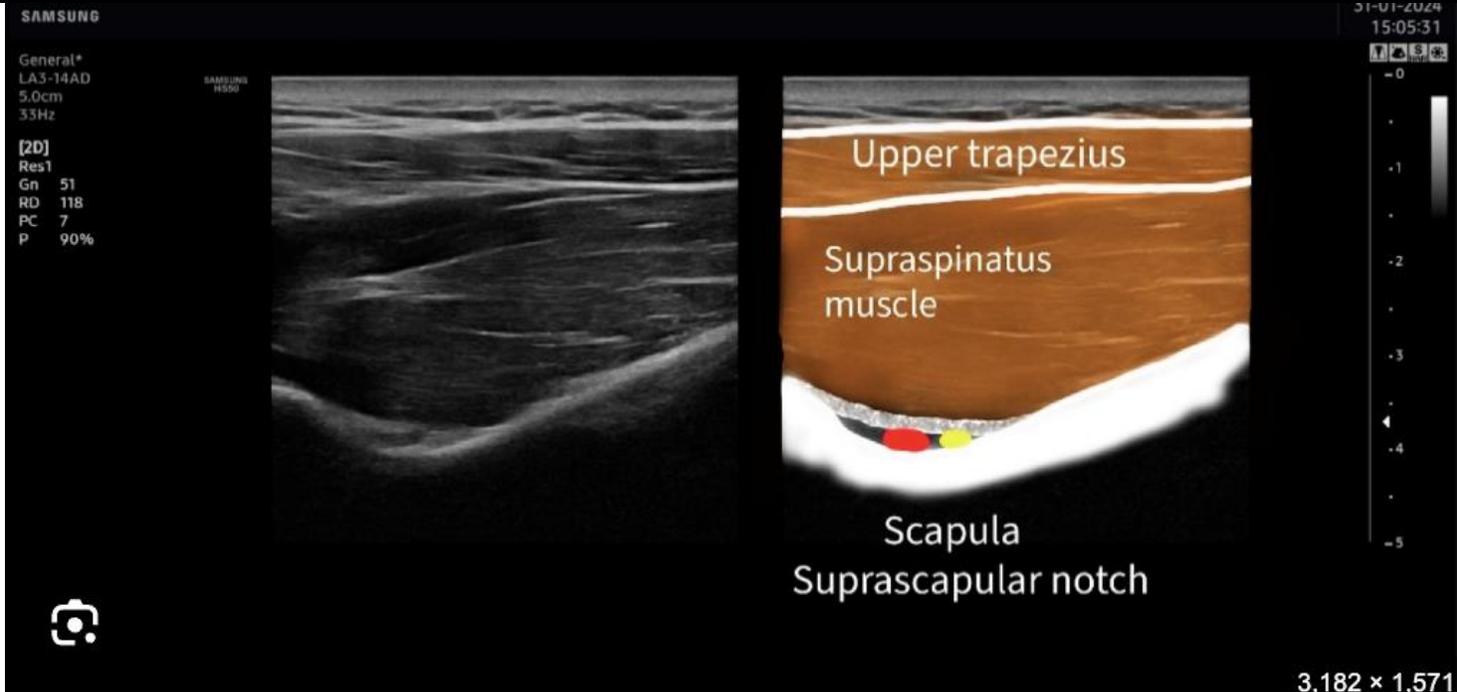
# Postero lateral



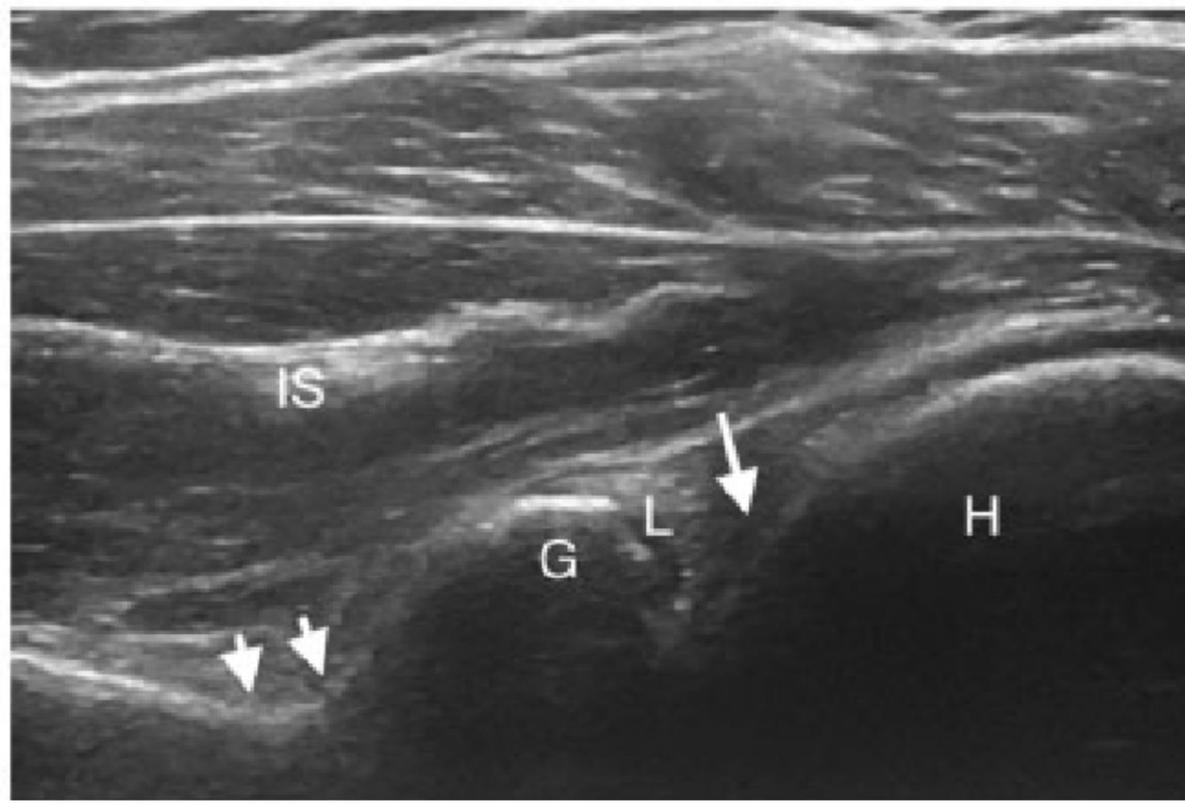
# Posterior Shoulder



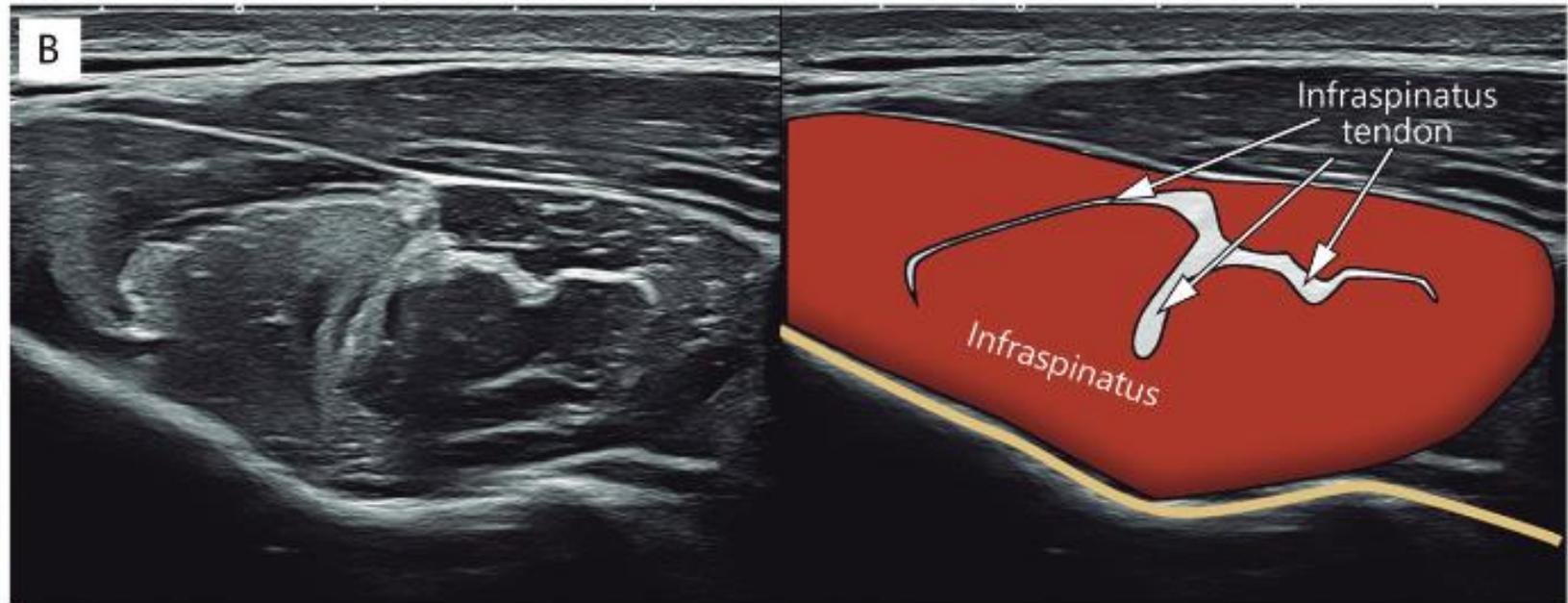
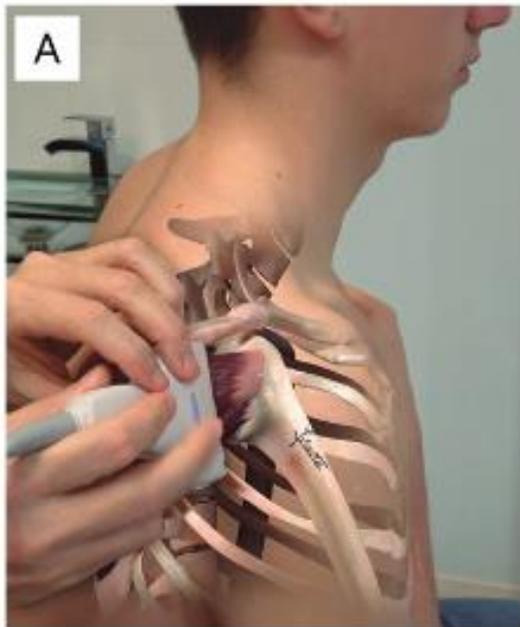
# Suprascapular Notch



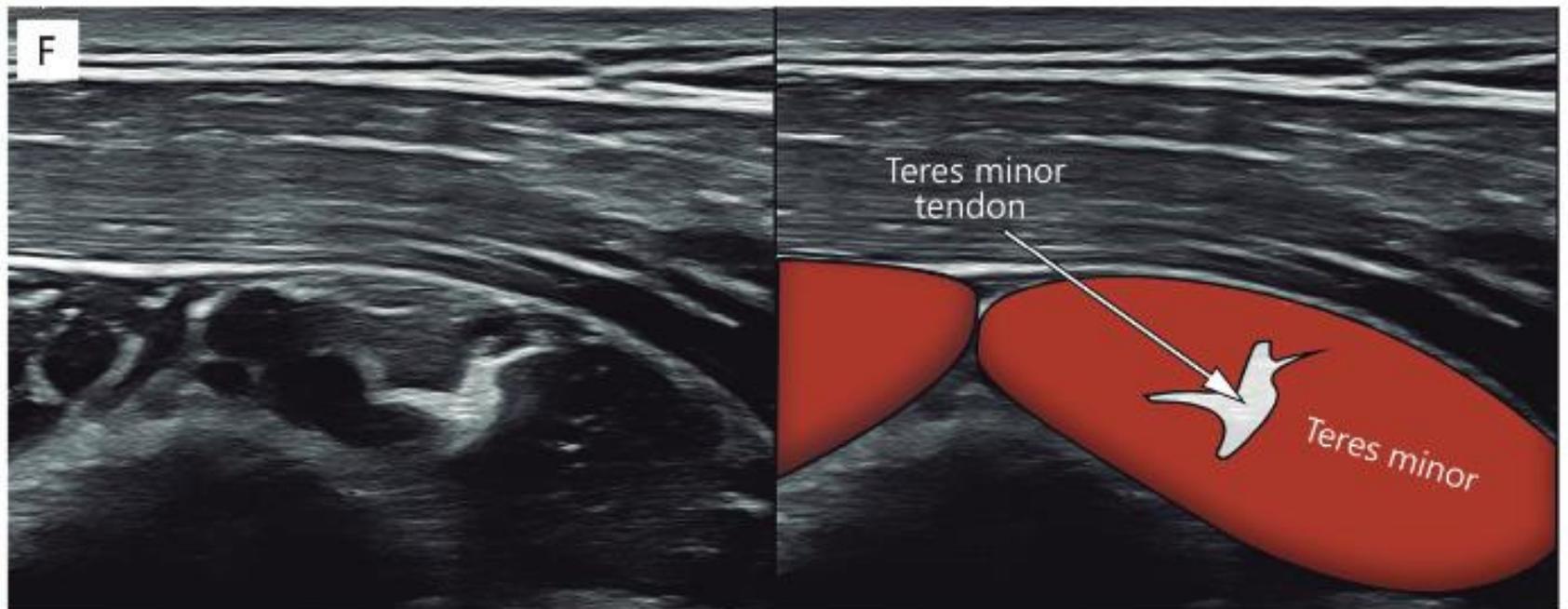
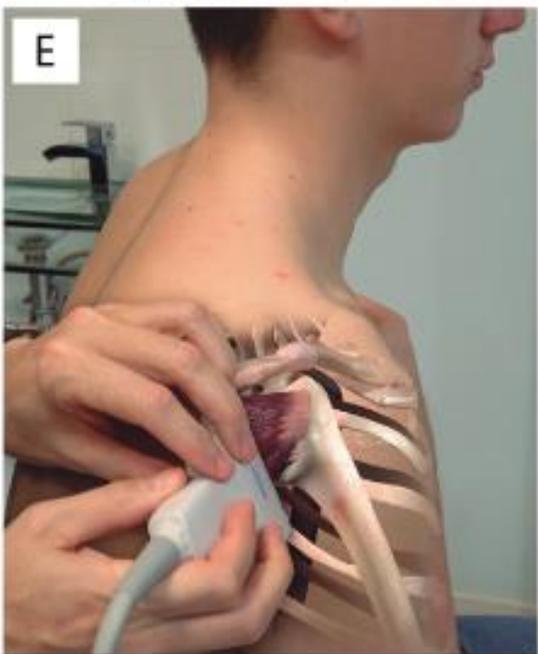
# Sipnogeloid notch



# Infraspinatus tendon



# Teres minor



# Shoulder Pre-Lab Module.

- Great work completing the **Shoulder Pre-Lab Module**. You've now reviewed probe positioning, key anatomy, and scanning order for the rotator cuff and biceps region.
- Next step: take the short **Shoulder Quiz** below to reinforce what you've learned then download the **Quick Reference Guide** before your live hands-on session.

# References

## Primary Textbooks (Paid / Standard References)

1. Jacobson JA. **Fundamentals of Musculoskeletal Ultrasound**. 3rd ed. Elsevier; 2018.
2. Iriarte O, Pedret C, Balius R, Cerezal L. **Ultrasound of the Musculoskeletal System: Anatomy, Exploration, and Pathology**. JIMS Publishing; 2017.

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3. Beggs I, Bianchi S, et al. **Musculoskeletal Ultrasound Technical Guidelines — Shoulder**. European Society of Musculoskeletal Radiology (ESSR).
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5. Azzoni R, Cabitza P. **Ultrasonography of the Rotator Cuff**. *Acta Biomed*. 2010;81(1):56–63.
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9. **Shoulder Scanning — Normal Sonoanatomy Guide**. (Open educational PDF)
- 10. **MSK Ultrasound Normal Thickness & CSA Reference Table**. Open-access compilation.