


# Anatomy of The Upper Limb



**1-Shoulder**, which includes

A-The pectoral

B-Scapular

C-Lateral supraclavicular regions.

The pectoral (shoulder) girdle is a bony ring, incomplete posteriorly, formed by ***the scapulae, clavicles and*** completed anteriorly by the manubrium of the sternum

**2-Arm (brachium)** is between the shoulder and the elbow and is centered around the humerus.

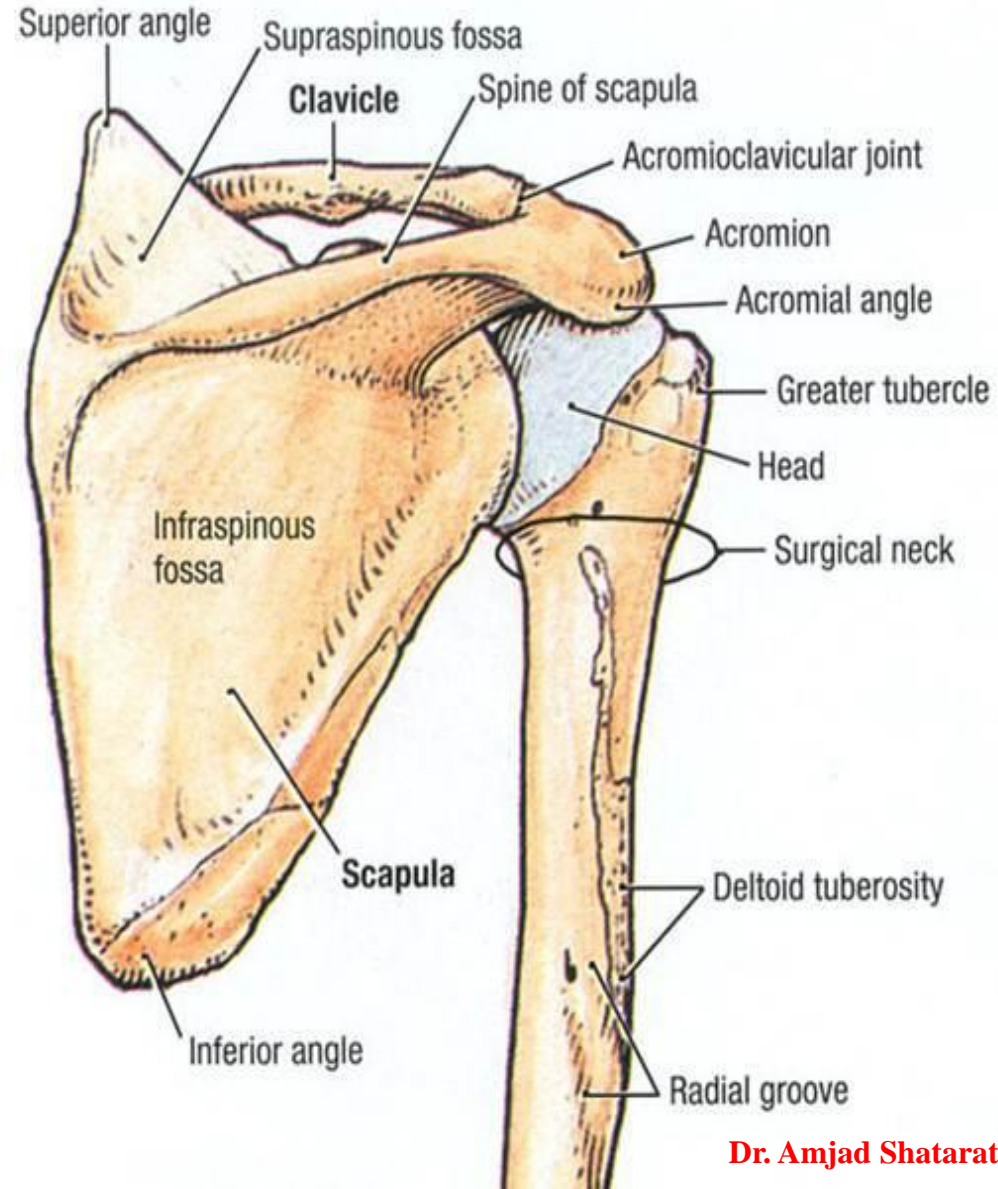
**3-Forearm (antebrachium)** is between the elbow and the wrist and contains the ulna and radius

**4-Hand (manus)** is distal to the forearm and contains the carpus, metacarpus, and phalanges.

It is composed of **the wrist, palm, dorsum of hand, and digits** (fingers, including the opposable thumb)

# Bones of the upper limbs

- 1- Clavicle
- 2- Scapula
- 3- Humerus
- 4- Ulna
- 5- Radius
- 6- Carpals bones
- 7- hand



**SHOULDER  
GIRDLE:**  
Is made of 1- clavicle  
2- scapula



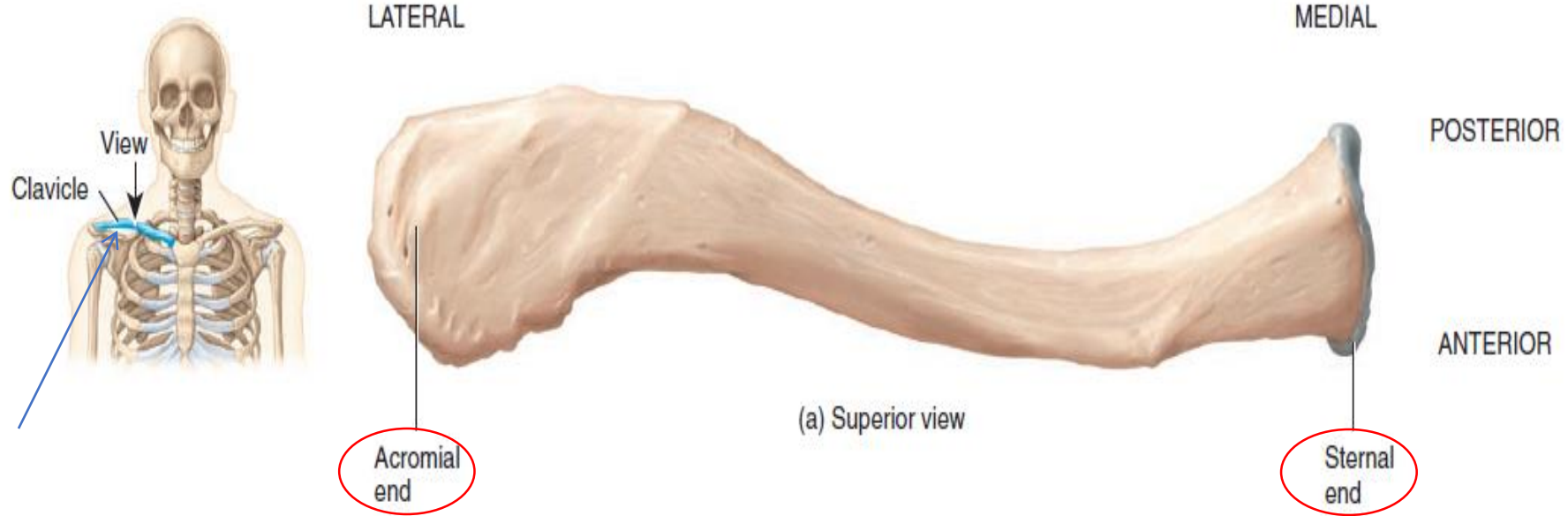
# 1-Clavicle

**It has two ends:**  
**A-Acromial (lateral)**  
**B-Sternal (medial)**

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Right clavicle.

The clavicle articulates medially with the manubrium of the sternum and laterally with the acromion of the scapula.

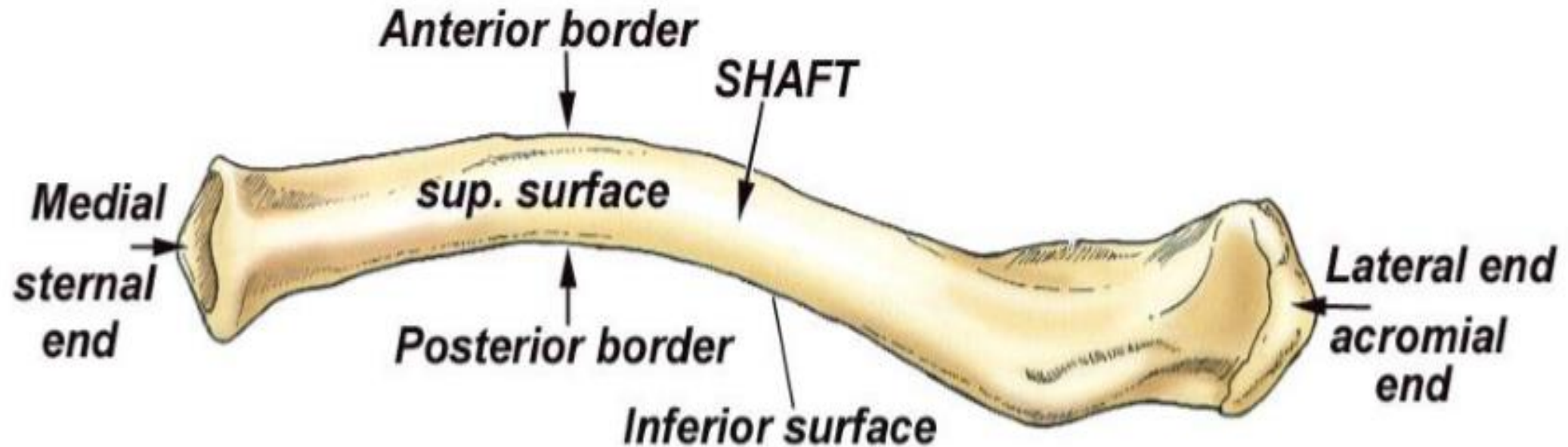


# Clavicle

- The clavicle is the only bony attachment between the *trunk and the upper limb*
- It is palpable along its entire length and has a gentle S-shaped contour, with the forward-facing convex part medial and the forward-facing concave part lateral.

- **It has**

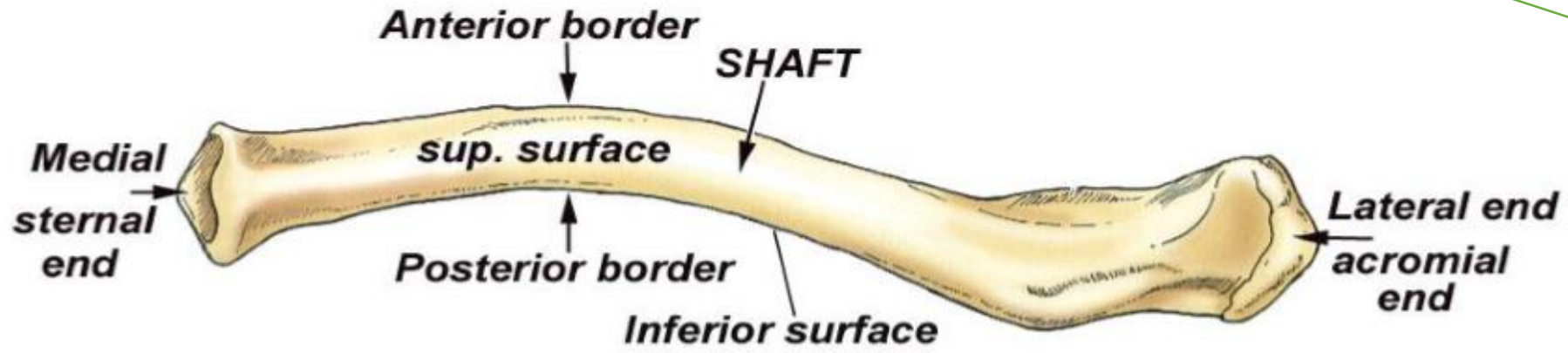
2 ends , 2 surfaces , 2 borders .



It has two ends

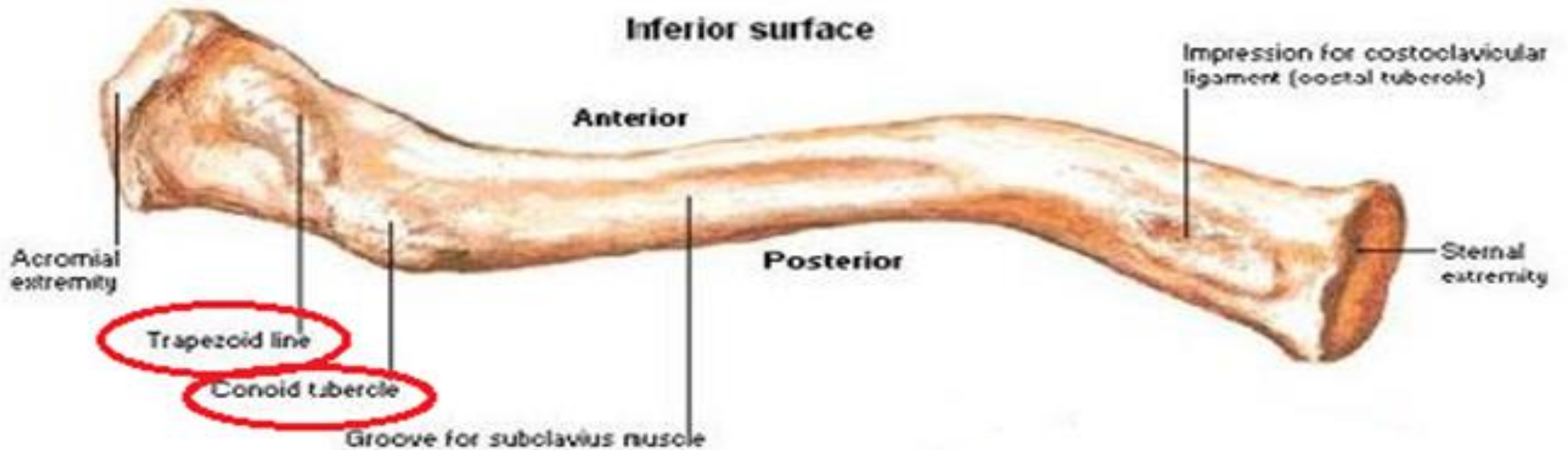
- ❖ The **sternal** (medial) end is more robust and somewhat quadrangular in shape
- ❖ The sternal end has a much larger facet for articulation mainly with the manubrium of the sternum, and to a lesser extent, with the first costal cartilage.

- ❖ It has two ends : The **acromial** (lateral) end of the clavicle is **flat**
- ❖ The acromial end of the clavicle has a small oval facet on its surface for articulation with a similar facet on the medial surface of the **acromion of the scapula**





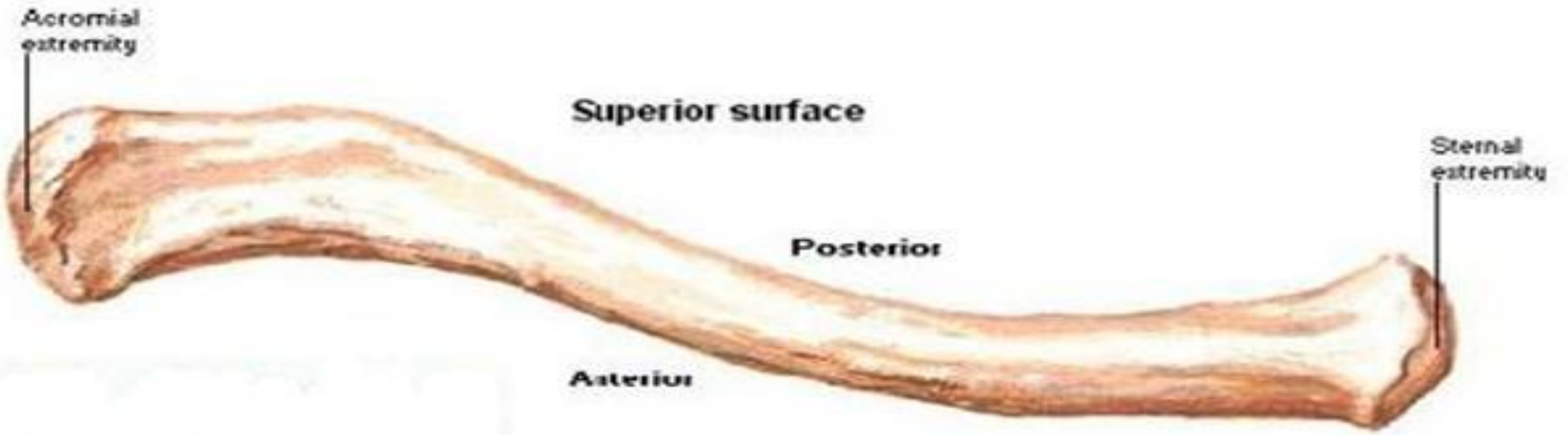
It has two surfaces:



The inferior surface **and** margins of the clavicle are **Roughened** by the attachment of muscles that connect the clavicle to the thorax, neck, and upper limb.

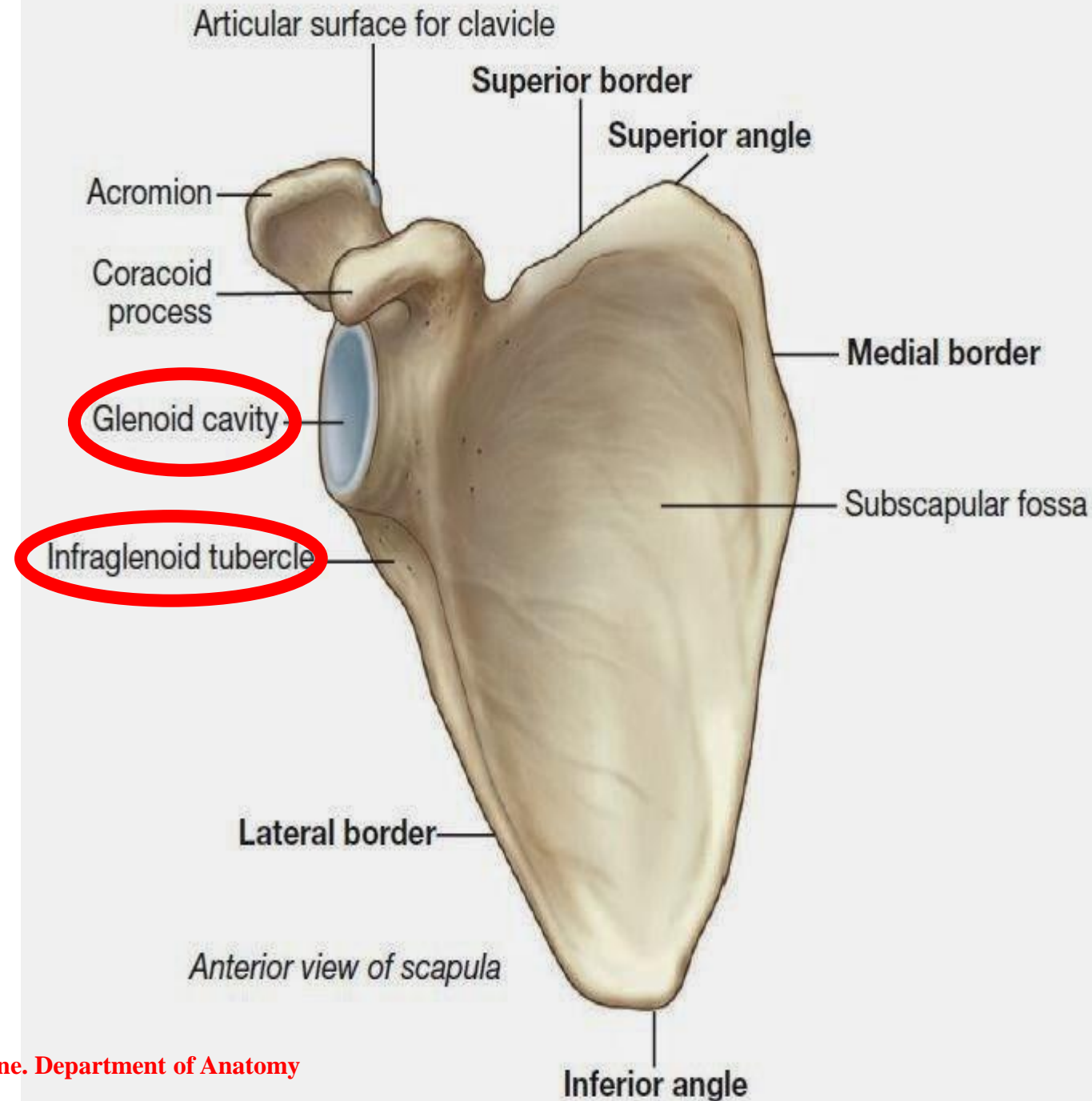
Rough surface

**The superior surface is smoother than the inferior surface.**



# 2-THE SCAPULA

The scapula is a large, **flat** triangular bone

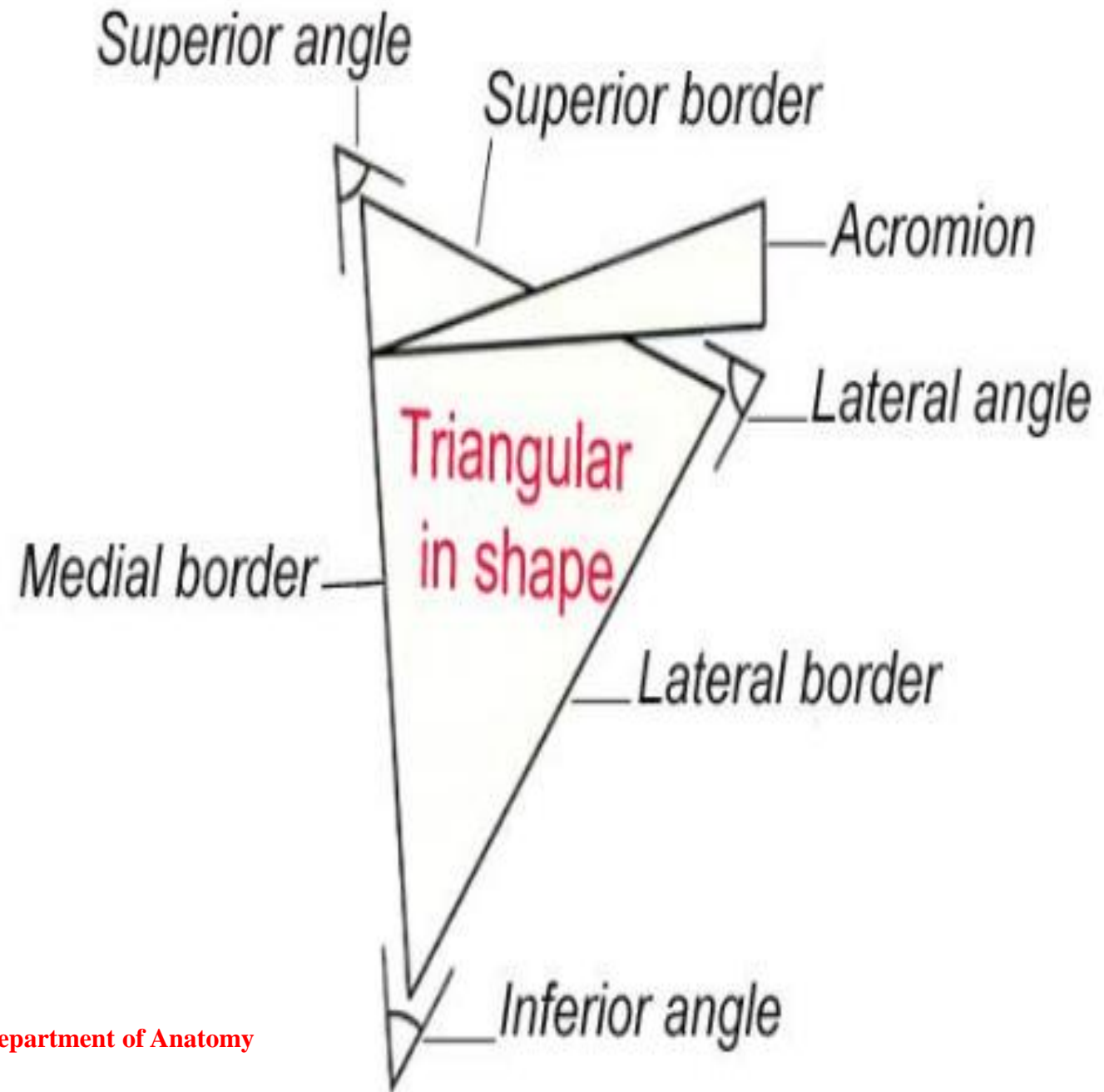




Triangular bone with:



- three angles (lateral, superior, and inferior)
- three borders (superior, lateral, and medial)
- two surfaces (costal and posterior)
- three processes (acromion, spine, and coracoid process).

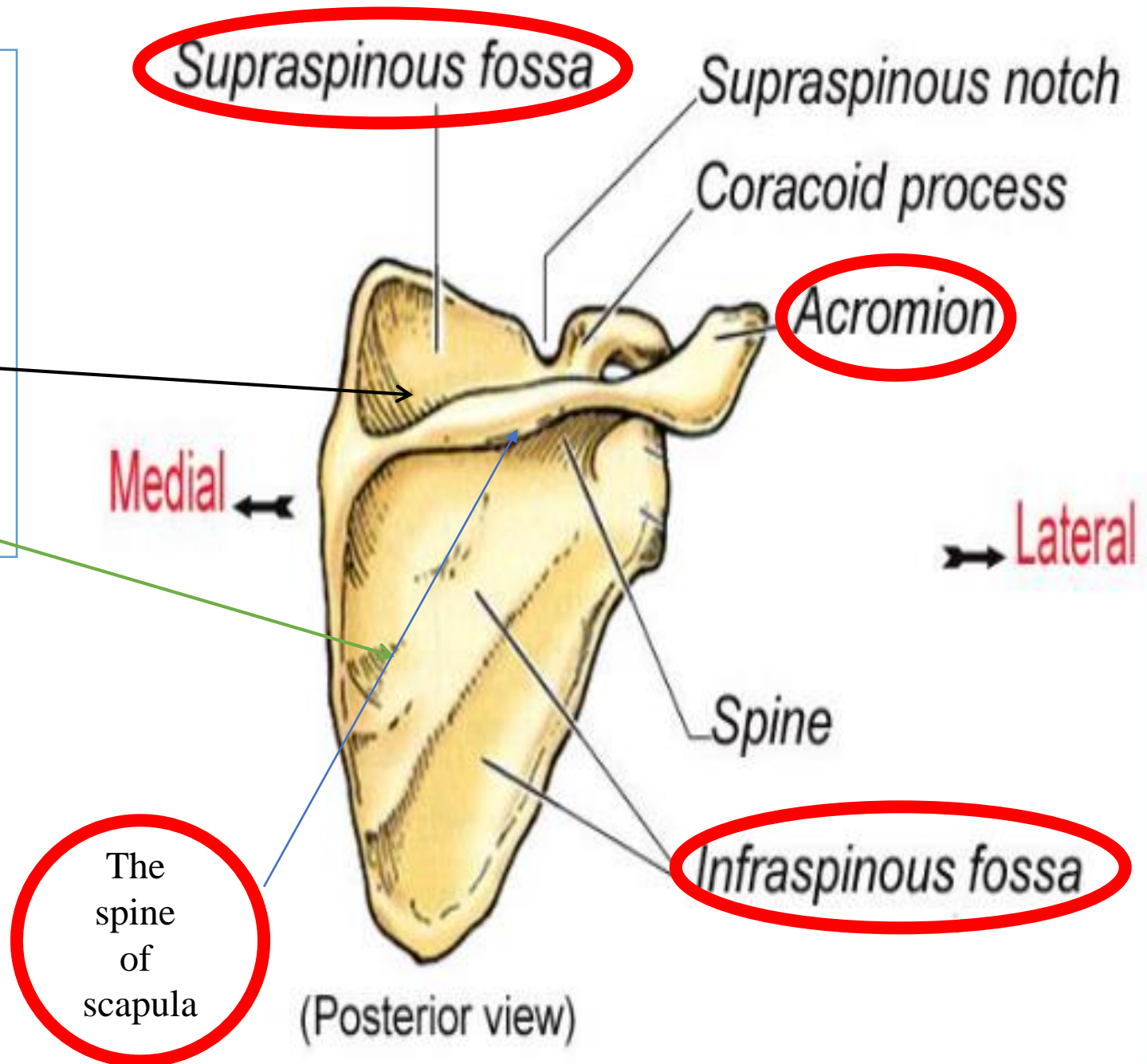


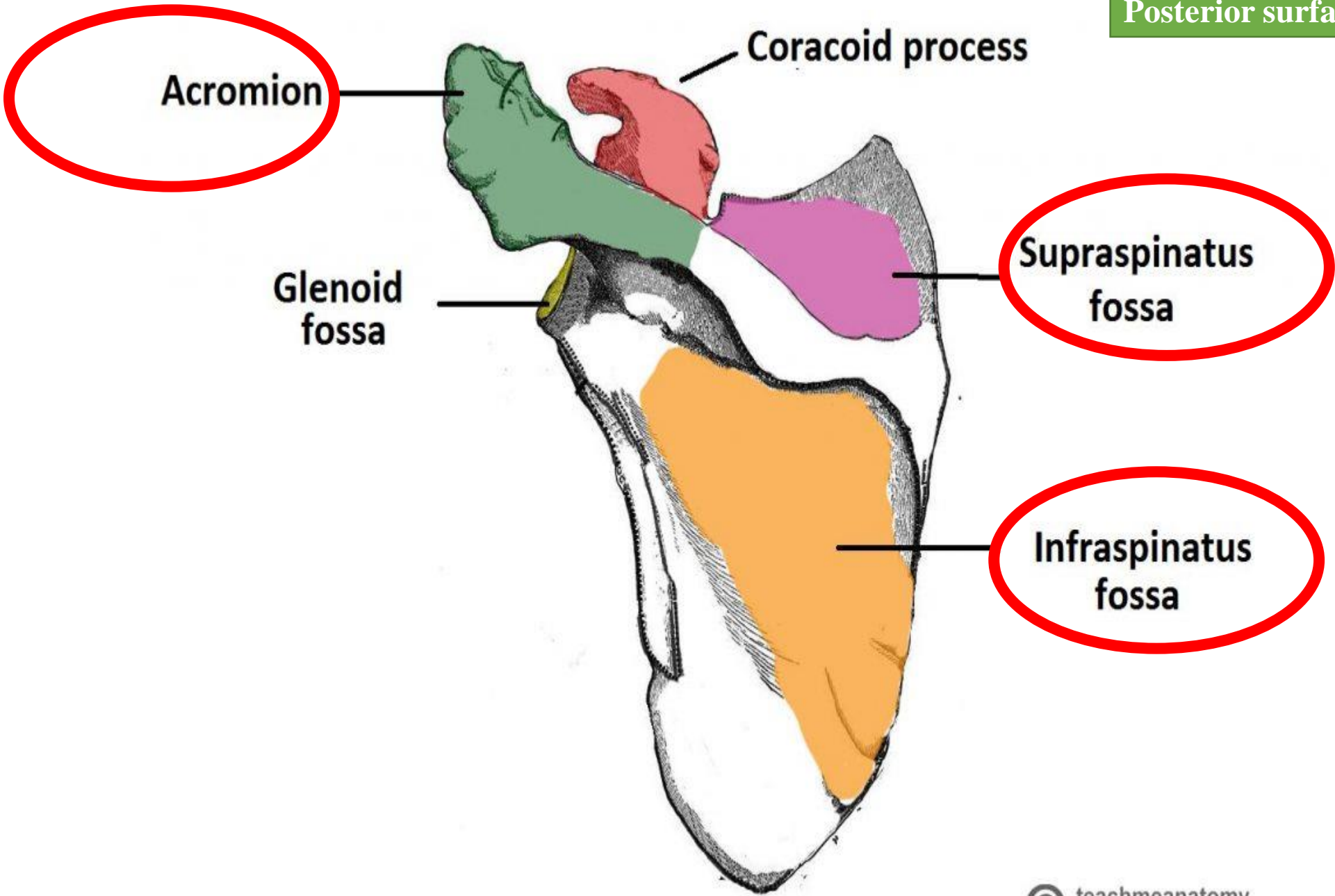
Posterior surface of the scapula

• **scapula**

- A prominent **spine** subdivides the **posterior surface** of the scapula into a small, superior **supraspinous fossa** and a much larger, **inferior infraspinous fossa**

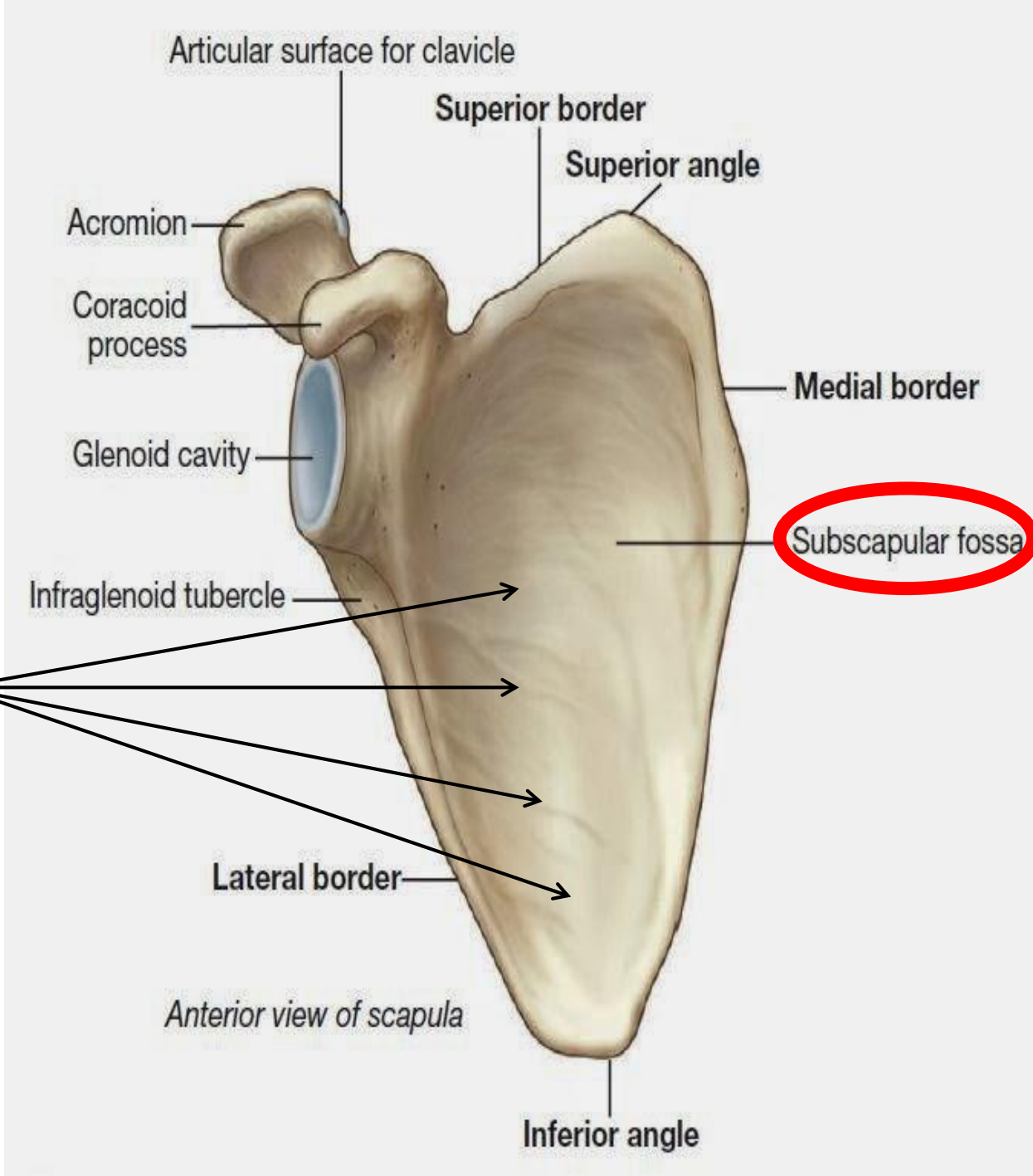
The **acromion**, which is an anterolateral projection of the spine, arches over the glenohumeral joint and articulates, via a small oval facet on its distal end, with the clavicle.



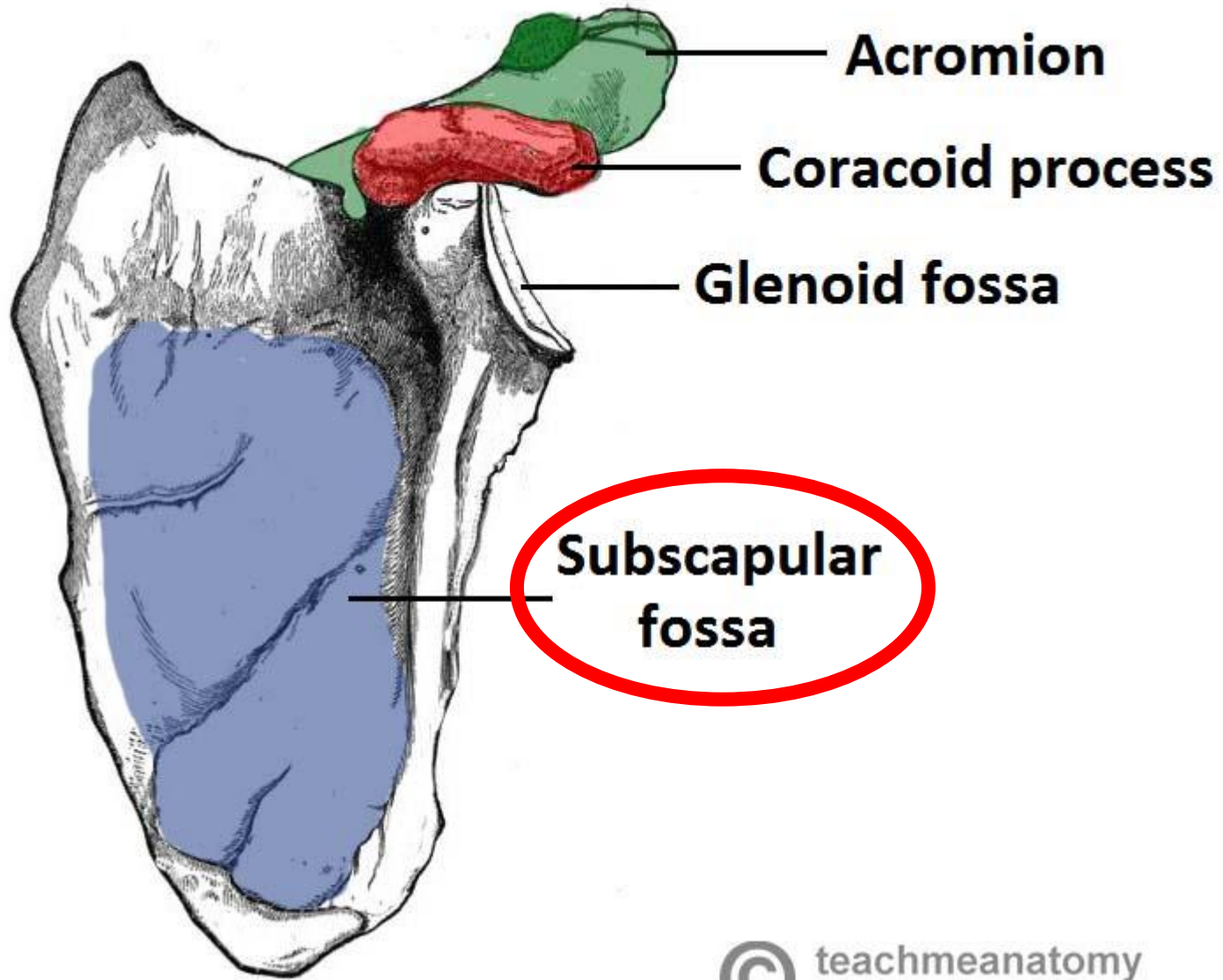


The anterior or The **costal surface** of the scapula

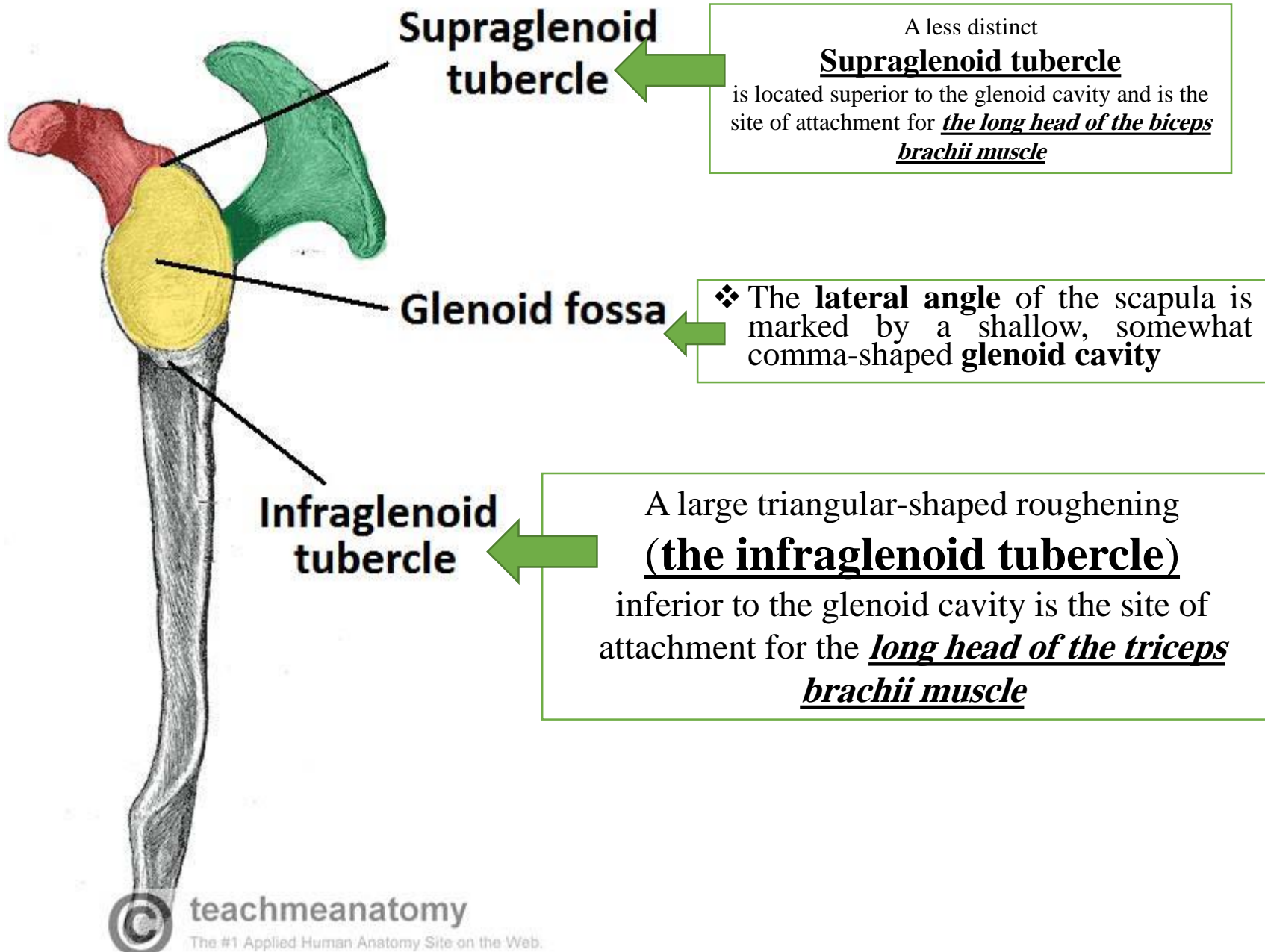
characterized by a shallow concave **subscapular fossa**



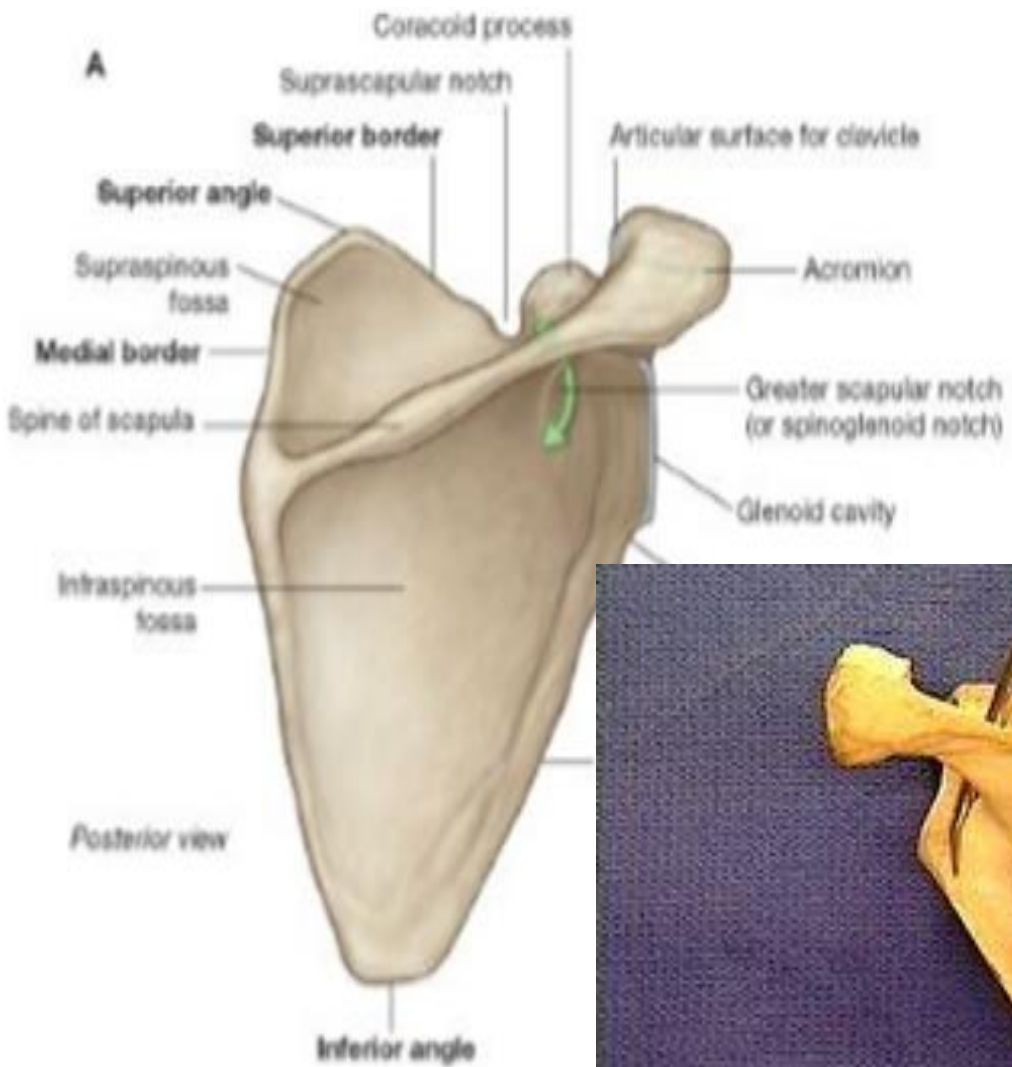




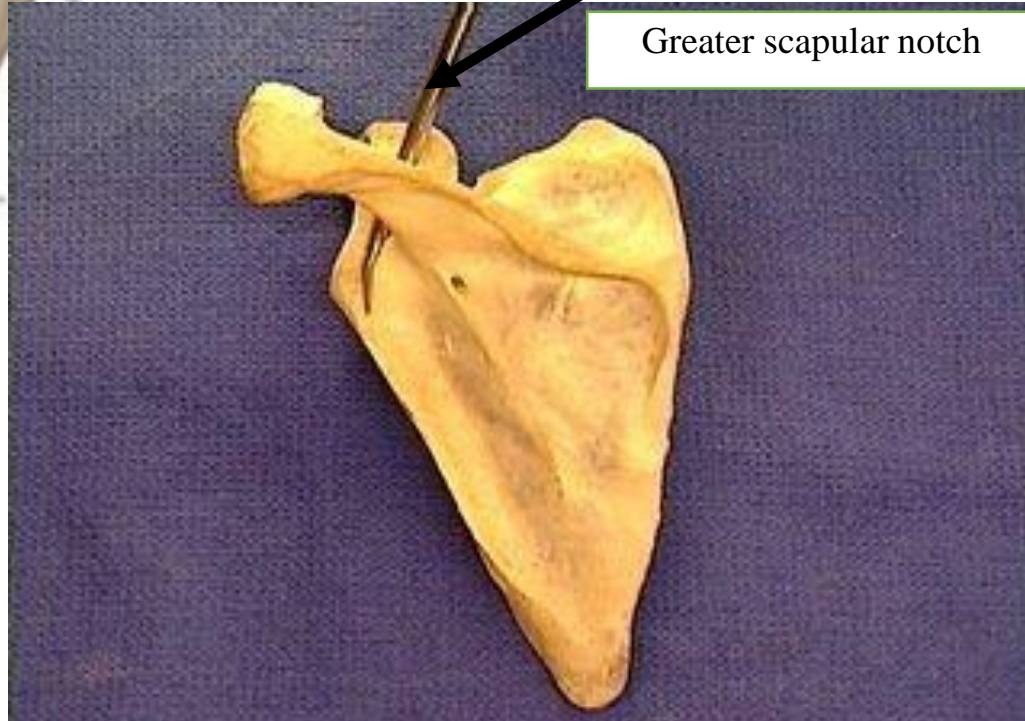




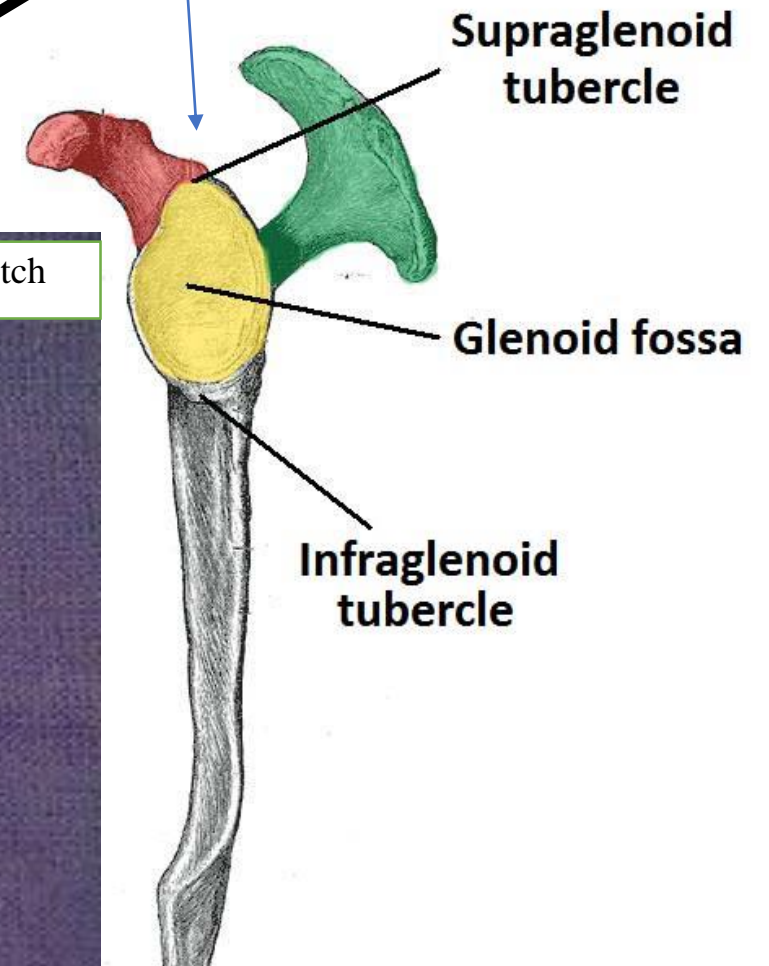
The region between the lateral angle of the scapula and the attachment of the spine to the posterior surface of the scapula is the (**Greater scapular notch**) (**spinoglenoid notch**).



POSTERIOR VIEW



POSTERIOR VIEW

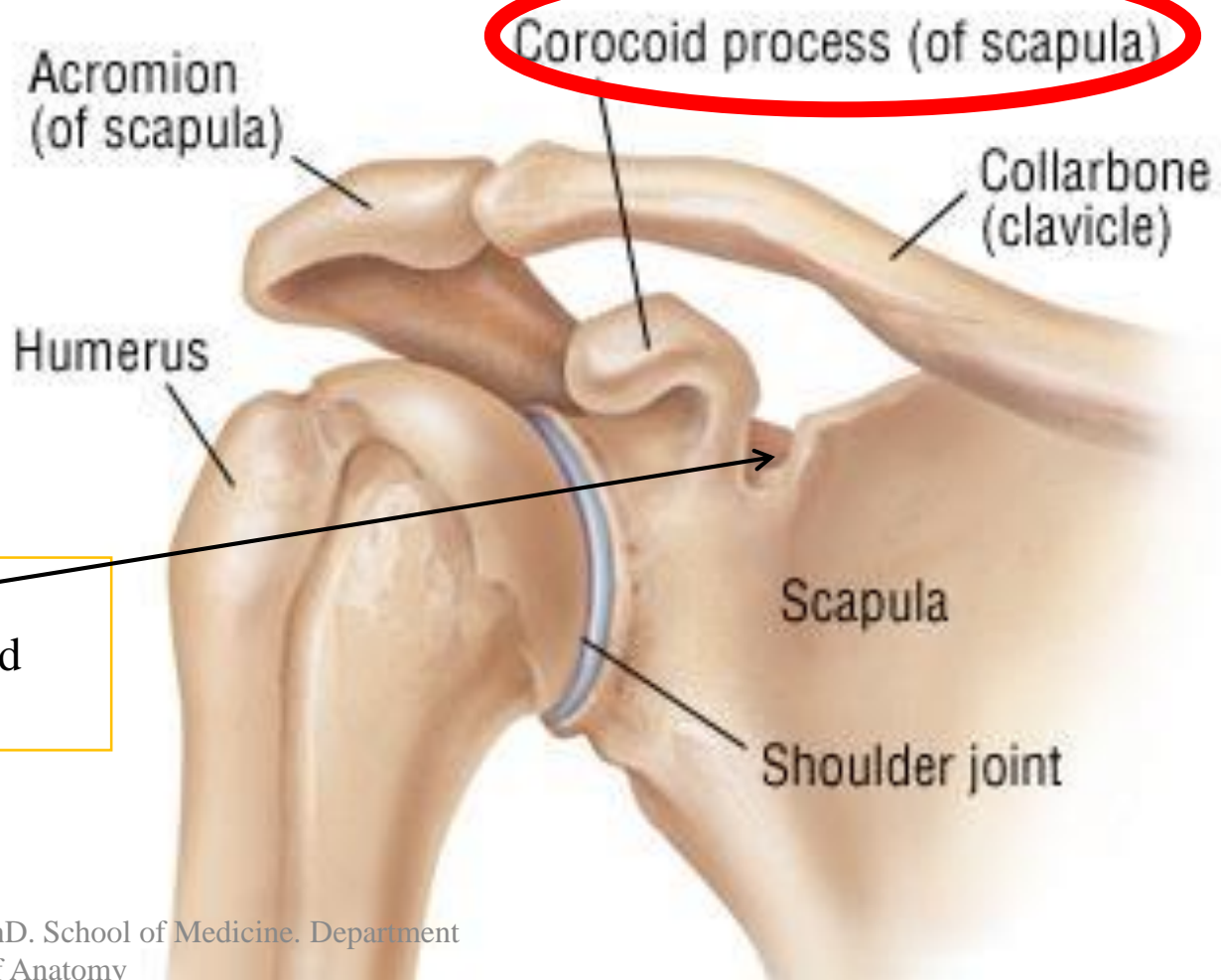


# The superior border

is marked on its lateral end by: the **coracoid process**, a hook-like structure that projects anterolaterally and is positioned directly inferior to the lateral part of the clavicle

**The suprascapular notch,** which lies immediately medial to the root of the coracoid process.

## Bones of shoulder





## Surface anatomy of the scapula

The spine and acromion can be readily palpated on a patient, as can the tip of the coracoid process, the inferior angle, and much of the medial border of the scapula.

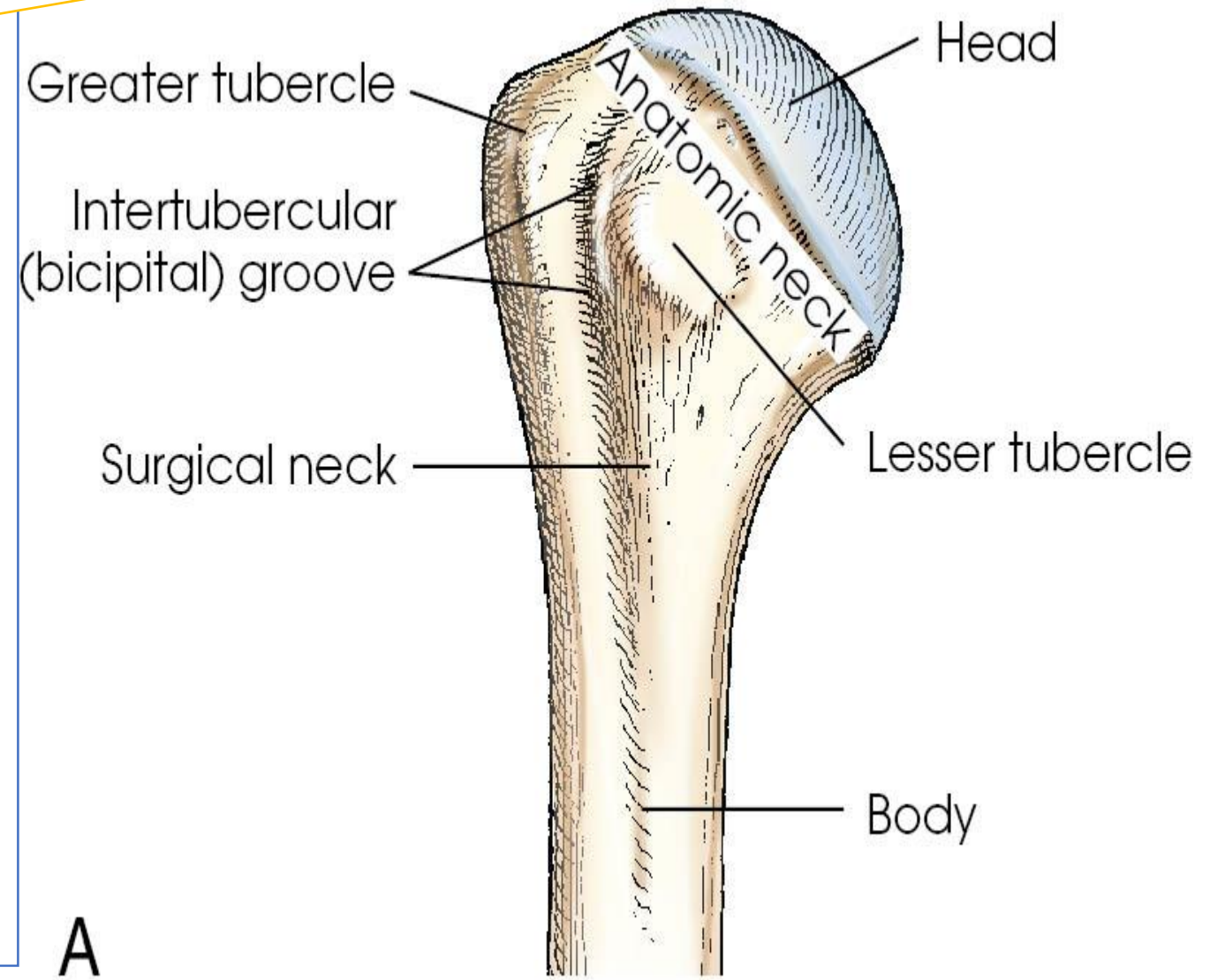


## 3-Humerus

- **Proximal humerus**

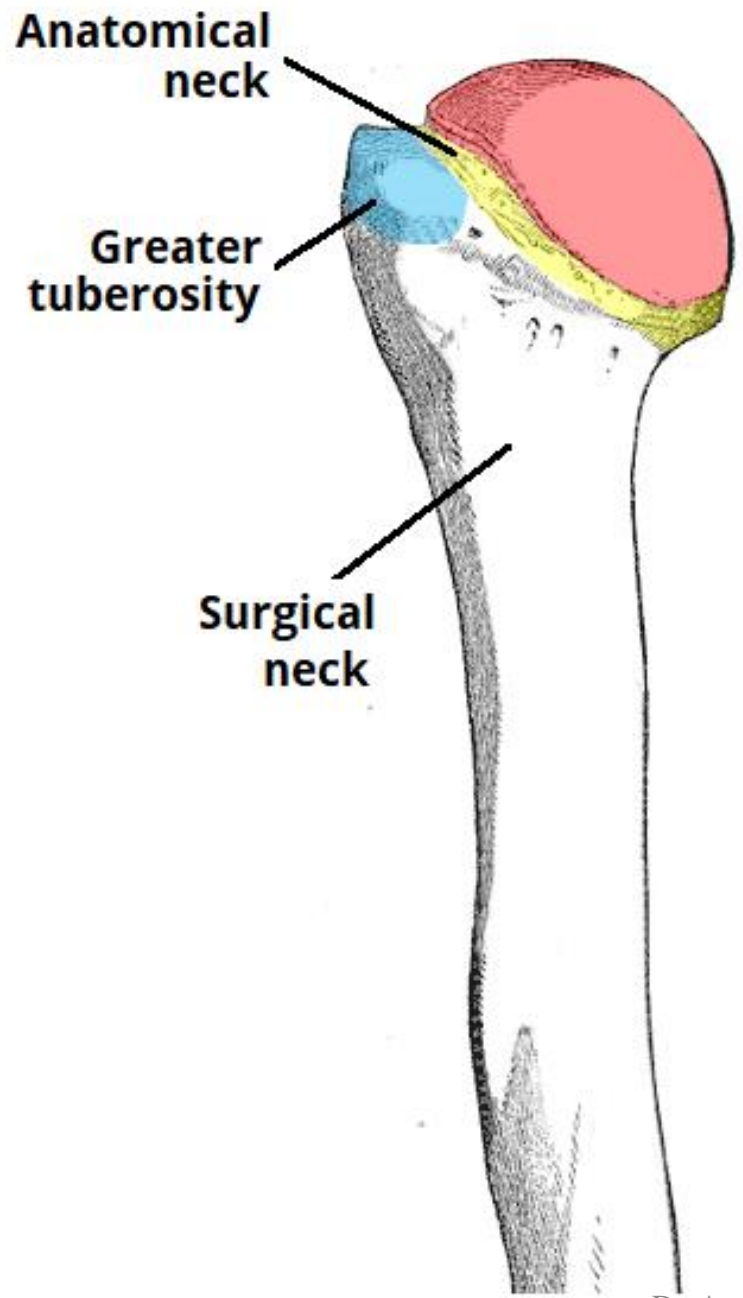
- The proximal end of the humerus consists of:

1. the head
2. the anatomical neck
3. the greater and lesser tubercles
4. the surgical neck
5. the superior half of the shaft of humerus .

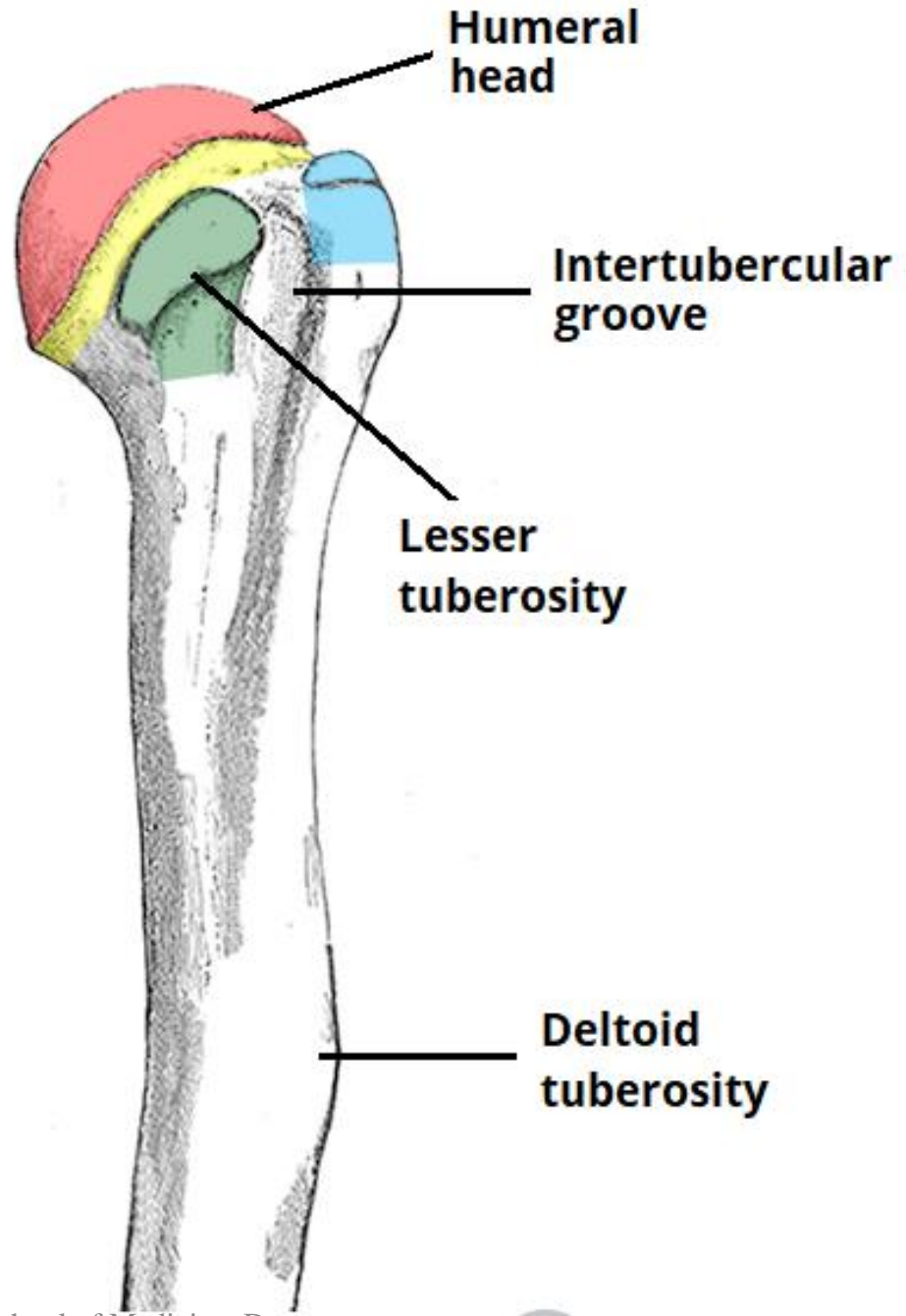


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**(i) Posterior Face**



**(ii) Anterior Face**

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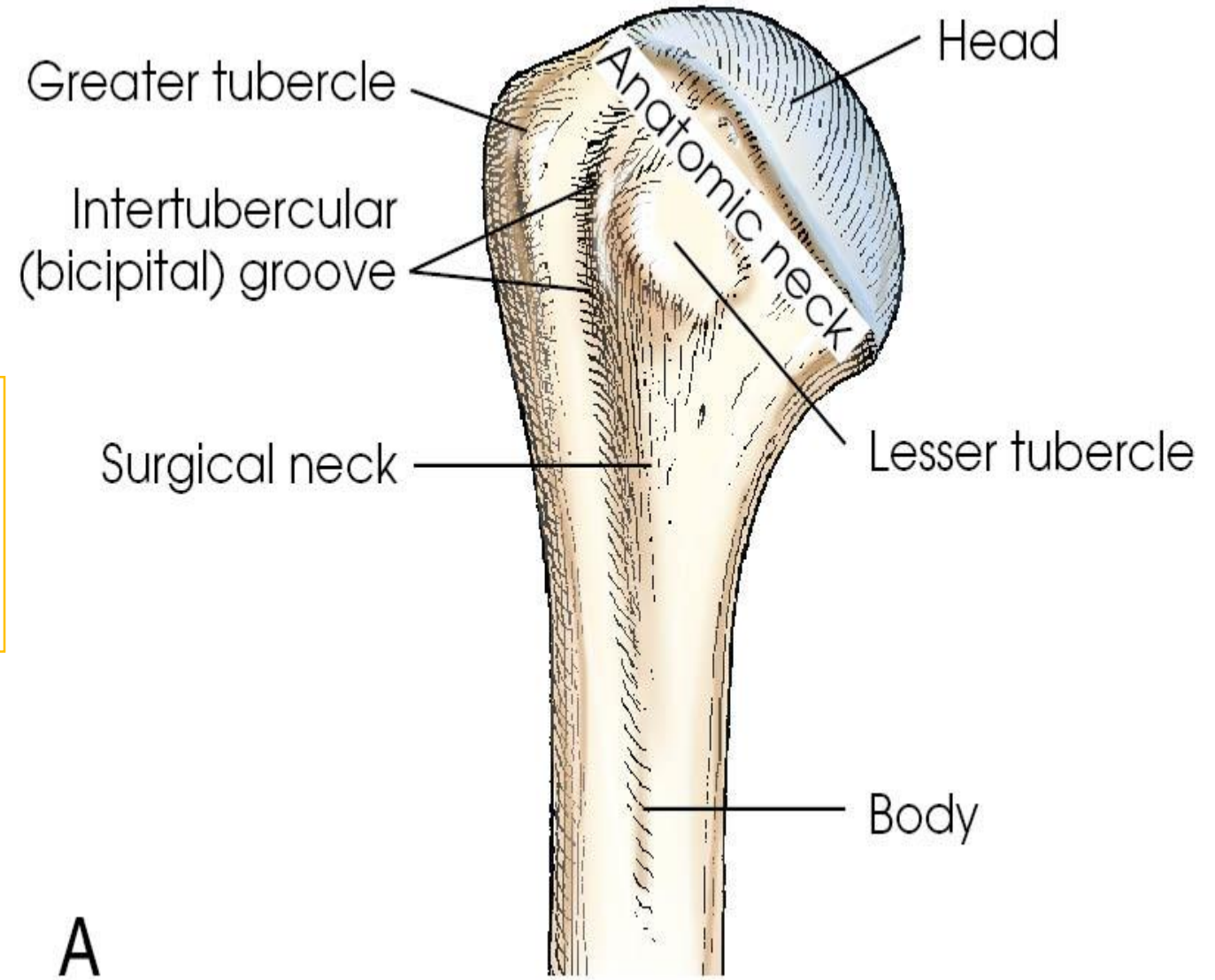
# Bones:

Read only

The **head** is half-spherical in shape and projects medially and somewhat superiorly to articulate with the much smaller glenoid cavity of the scapula.

The **anatomical neck** is very short and is formed by a narrow constriction immediately distal to the head. It lies between the head and the greater and lesser tubercles laterally, and between the head and the shaft more medially.

The **greater and lesser tubercles** are prominent landmarks on the proximal end of the humerus and serve as attachment sites for the four rotator cuff muscles of the glenohumeral joint.



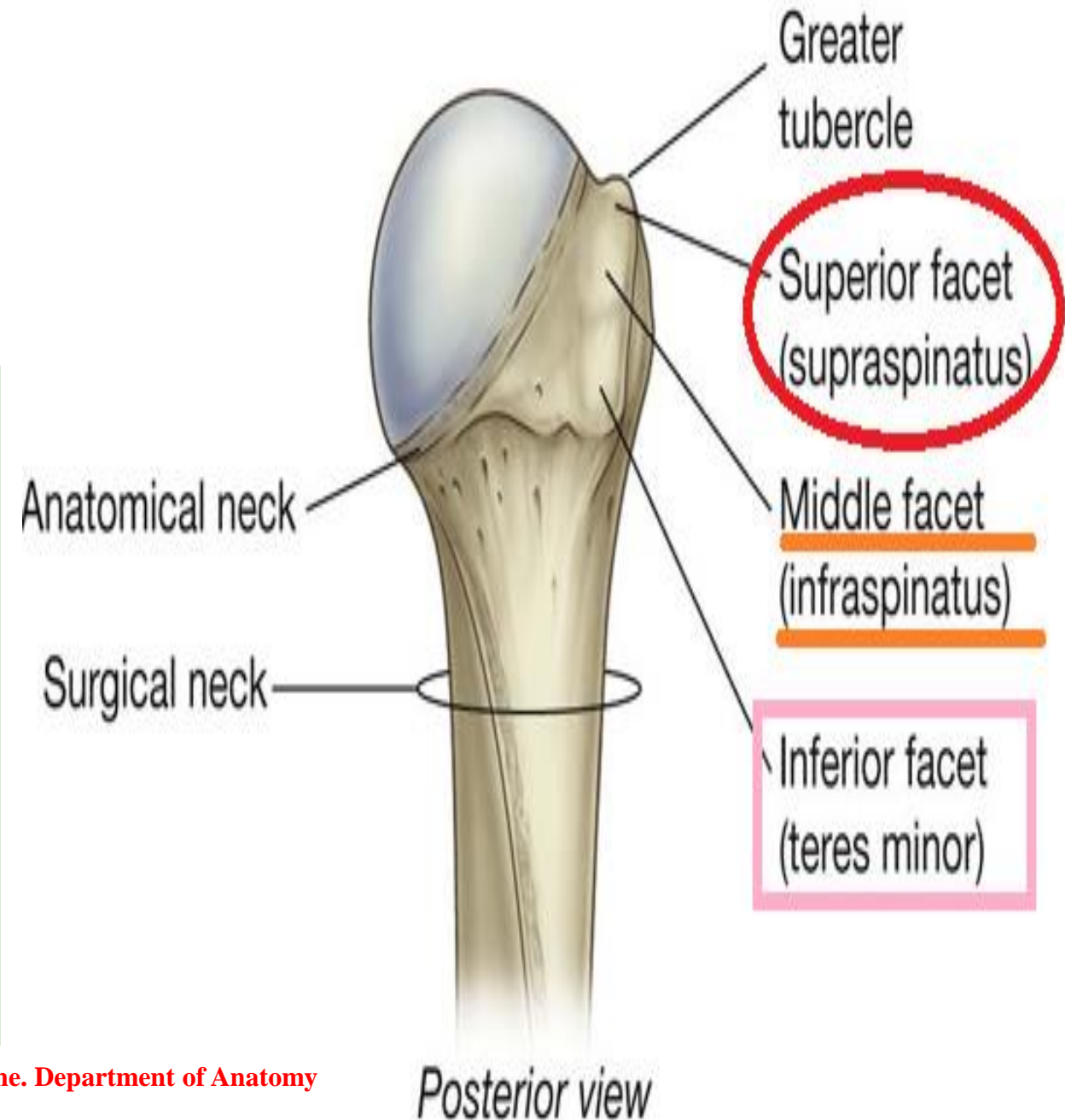
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# Bones:

## • Proximal humerus

- The **greater tubercle** is lateral in position.
- Its superior surface and posterior surface are marked by three large smooth facets for muscle tendon attachment:
- the superior facet is for attachment of the supraspinatus muscle
- the middle facet is for attachment of infraspinatus
- the inferior facet is for attachment of teres minor.

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The **lesser tubercle** is **anterior in** position and its surface is marked by a large smooth impression for attachment of the **subscapularis muscle**



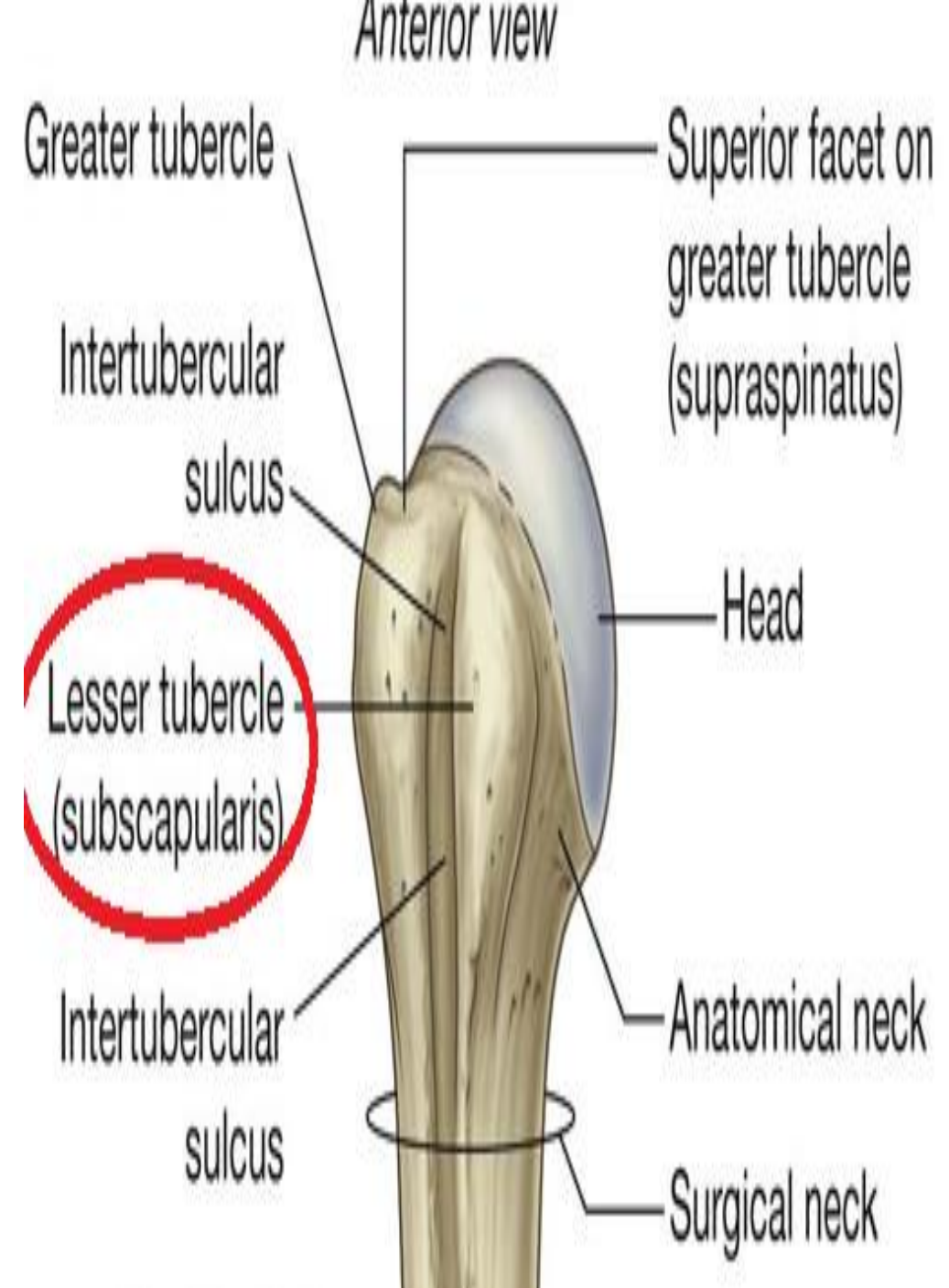


## Bicipital groove also called intertubercular sulcus

**Location:** A deep intertubercular sulcus (bicipital groove) separates the lesser and greater tubercles and continues inferiorly onto the proximal shaft of the humerus .



**Contents:** The tendon of **the long head of the biceps brachii** passes through this sulcus





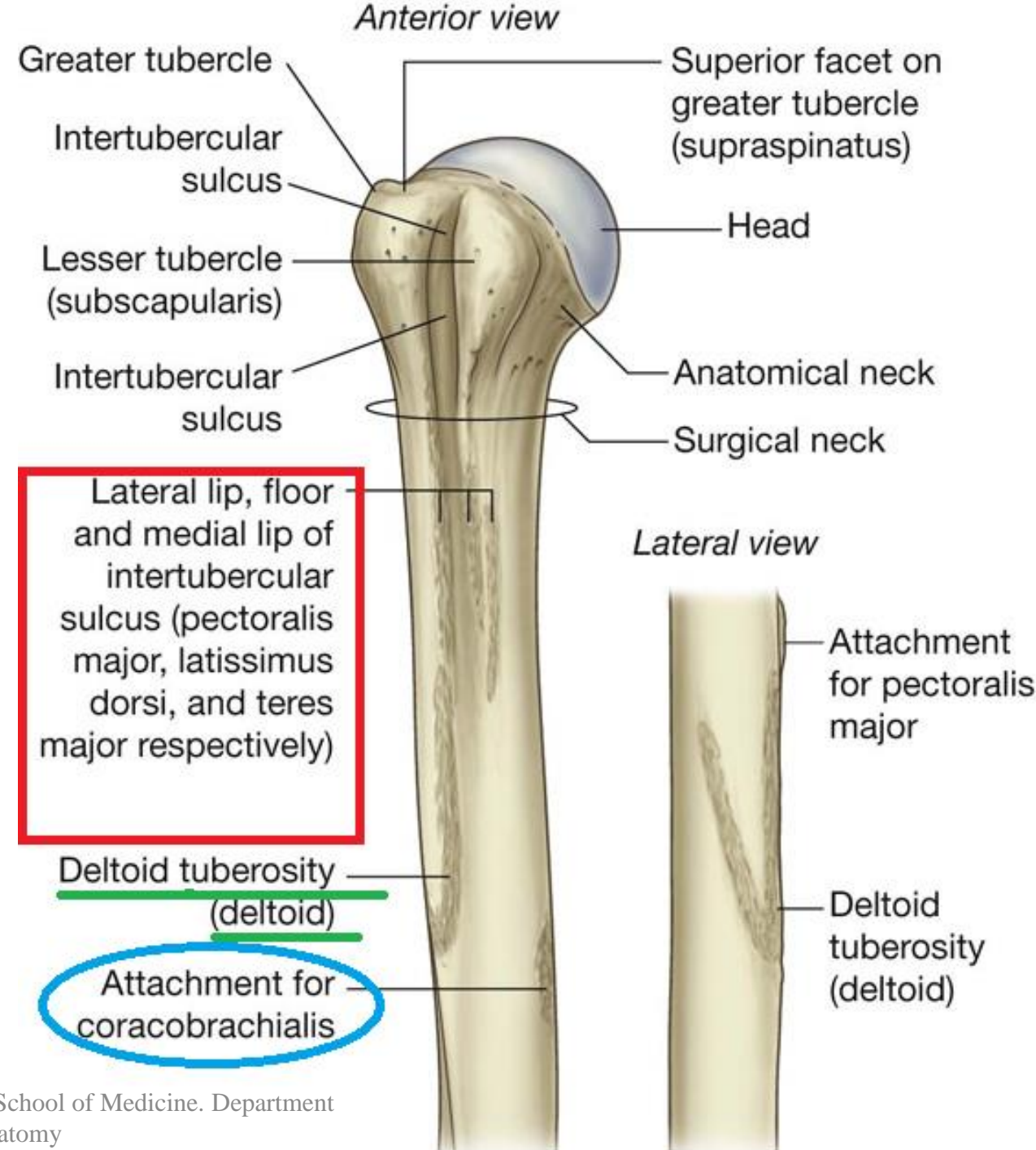
It has

Lateral lip to which is attached **pectoralis major muscle**  
Medial lip to which is attached **teres major muscle**  
a floor to which is attached **latissimus dorsi muscle**

*A lady between two men*

The lateral lip of the intertubercular sulcus is continuous inferiorly with a large V-shaped **deltoid tuberosity** on the lateral surface of the humerus midway along its length, which is where **the deltoid muscle** inserts onto the humerus.

In approximately the same position, but on the medial surface of the bone, there is a **thin vertical roughening** for attachment of the **coracobrachialis muscle**



## B. Shaft:

- 1. Deltoid Tuberosity
- 2. Spiral groove

## C. Distal end:

- 1. Radial Fossa
- 2. Lateral Epicondyle
- 3. Capitulum
- 4. Trochlea
- 5. Medial Epicondyle
- 6. Coronoid Fossa
- 7. Olecranon Fossa

