Skeletal System

Anatomy First Stage

Lec....4 and Lec....5

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Appendicular skeleton (Bones of upper limbs)

- The appendicular skeleton refers to those structures that are appended to the axial skeleton.
- The pectoral girdle and the upper limbs form the upper appendage.
- The pelvic girdle and the lower limbs form the lower appendage

The Skeletal System

The upper limb consists of the:

- Shoulder / Pectoral Girdle
- Arm
- Forearm
- Hand

λ Each upper limb contains 32 bones.

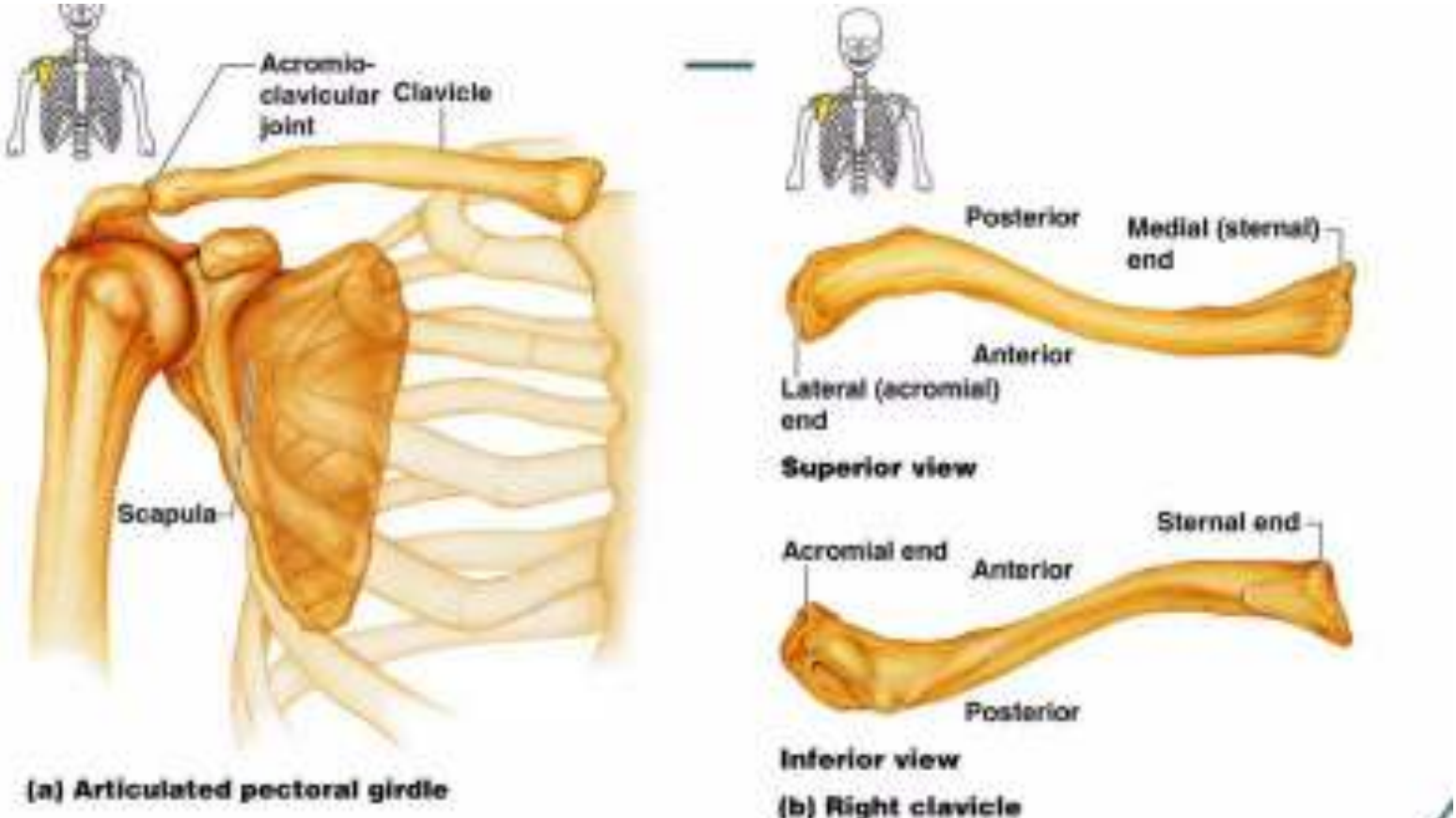
The Shoulder Girdle

Composed of two bones

- Clavicle – collarbone
- Scapula – shoulder blade

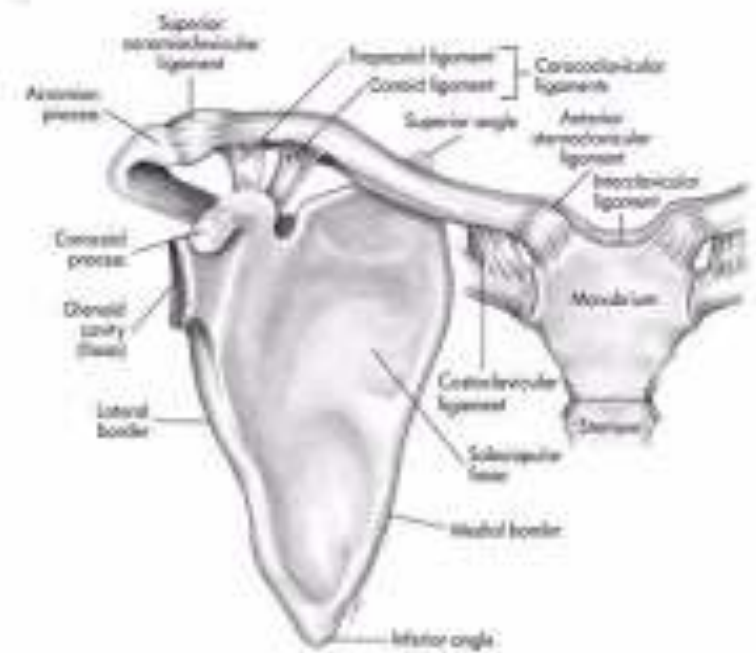
λ Only the clavicle actually attaches to the thorax.

λScapulae do not join each other or the axial skeleton but “float” on the back of the ribs.


Acromio-
clavicular
joint
Clavicle
Scapula
(a) Articulated pectoral girdle
Posterior
Medial (sternal)
end
Anterior
Lateral (acromial)
end
Superior view
Sternal end
Acromial end
Anterior
Posterior
Inferior view
(b) Right clavicle

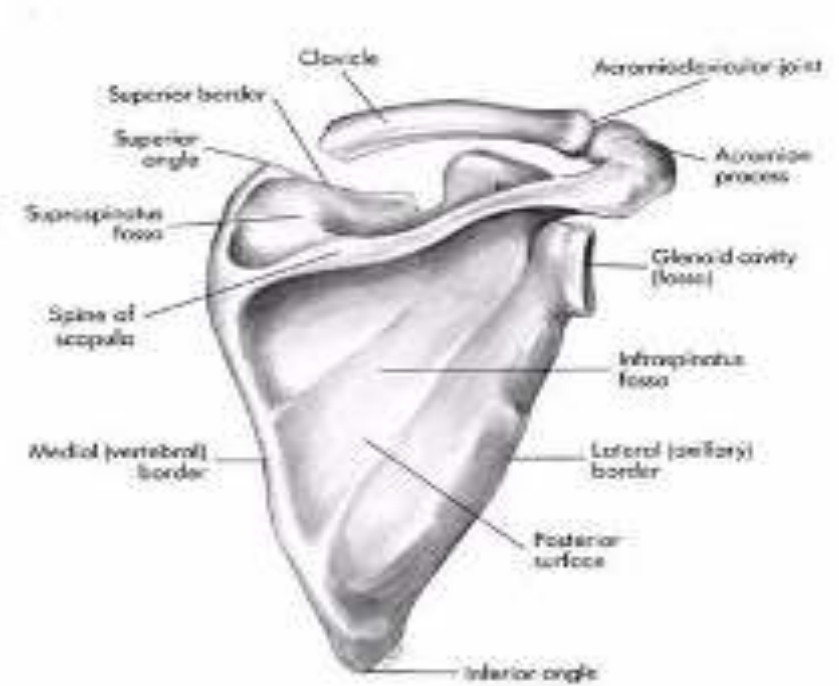
Bones of the Shoulder Girdle (Anterior View)

- Manubrium
- Clavicle
- Coracoid process
- Acromion process
- Glenoid fossa
- Lateral border
- Inferior angle
- Medial border



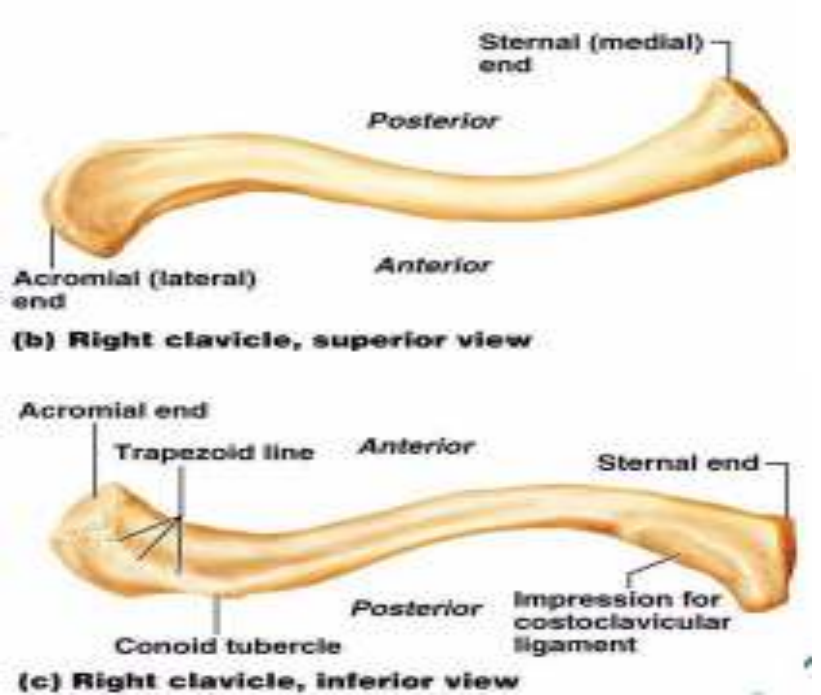
Bones of the Shoulder Girdle (Posterior View)

- Acromion process
- Glenoid fossa
- Lateral border
- Inferior angle
- Medial border
- Superior angle
- Spine of the scapula



Clavicles

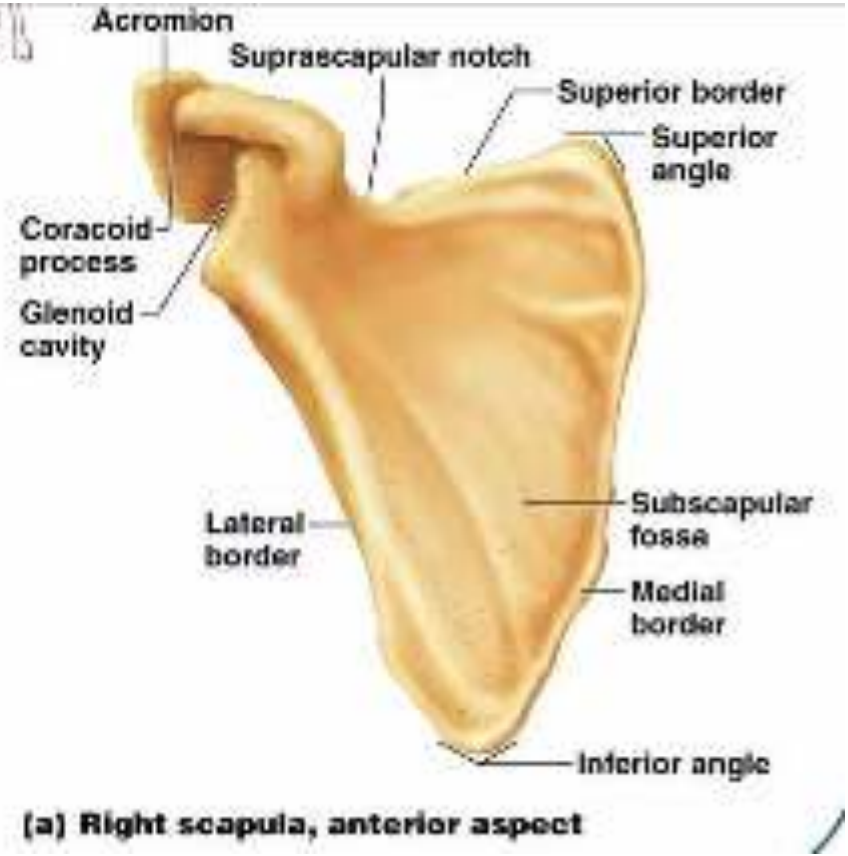
- Extend horizontally across the superior thorax
- Sternal end articulates with the manubrium
- Acromial end articulates with scapula
- Provide attachment for muscles
- Hold the scapulae and arms laterally



Scapulae

- Lie on the dorsal surface of the rib cage
- Located between ribs 2 – 7
- Have three borders
  - Superior
  - Medial (vertebral)
  - Lateral (axillary)
- Have three angles
  - Lateral, superior, and inferior

Structures of the Scapula

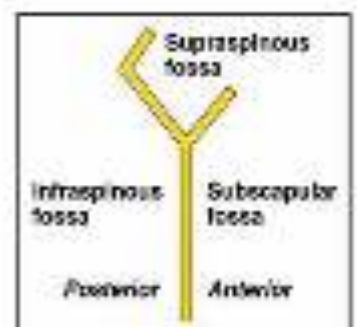


Structures of the Scapula



Structures of the Scapula





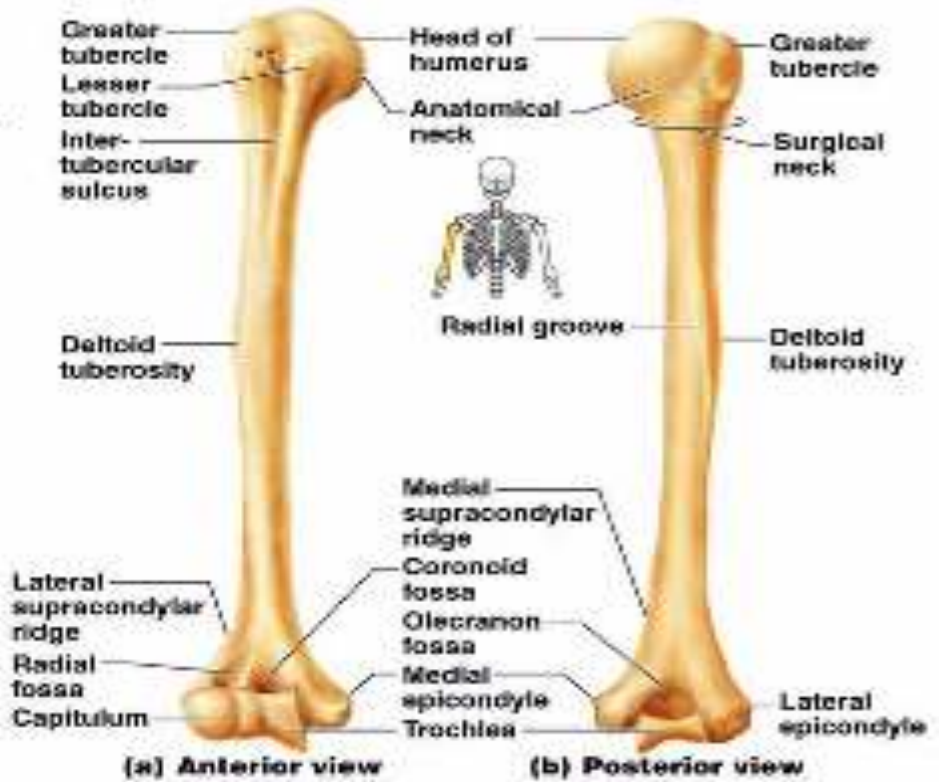
Arm

Region of the upper limb between the shoulder and elbow

λ Humerus

- The only bone of the arm
- Longest and strongest bone of the upper limb
- Articulates with the scapula at the shoulder
- Articulates with the radius and ulna at the elbow
- Many structures of the humerus provide sites for muscle attachment
- Other structures of the humerus provide articulation sites for other bones

Structures of the Right Humerus



Bones of the Fore Arm

- The forearm has two bones
  - •Ulna
  - •Radius
- Proximal ends articulate with the humerus
- Distal ends articulate with carpals
- Radius and ulna articulate with each other
  - At the proximal and distal radioulnar joints



Bones of the Fore Arm

- The interosseous membrane
    - Interconnects radius and ulna
- In anatomical position
    - The radius is lateral and the ulna is medial

Ulna

- Main bone responsible for forming the elbow joint with the humerus
- Hinge joint, allows forearm to bend on arm
- Distal end is separated from carpals by fibrocartilage
- Plays little to no role in hand movement

Radius

- Superior surface of the head of the radius articulates with the capitulum
- Medially – the head of the radius articulates with the radial notch of the ulna
- Contributes heavily to the wrist joint
    - Distal radius articulates with carpal bones
    - When radius moves, the hand moves with it

Details of Elbow Joint

