

## Appendicular Skeleton

**The appendicular skeleton contains 126 bones**

The parts consists of the pectoral girdle, the upper limbs, the pelvic girdle, and the lower limbs.

### The pectoral girdle

- 2 clavicles bones
- 2 scapula bones

### The upper limbs

- 2 humerus
- 2 ulna
- 2 radius
- 16 carpal bones
- 10 metacarpal bones
- 28 phalanges

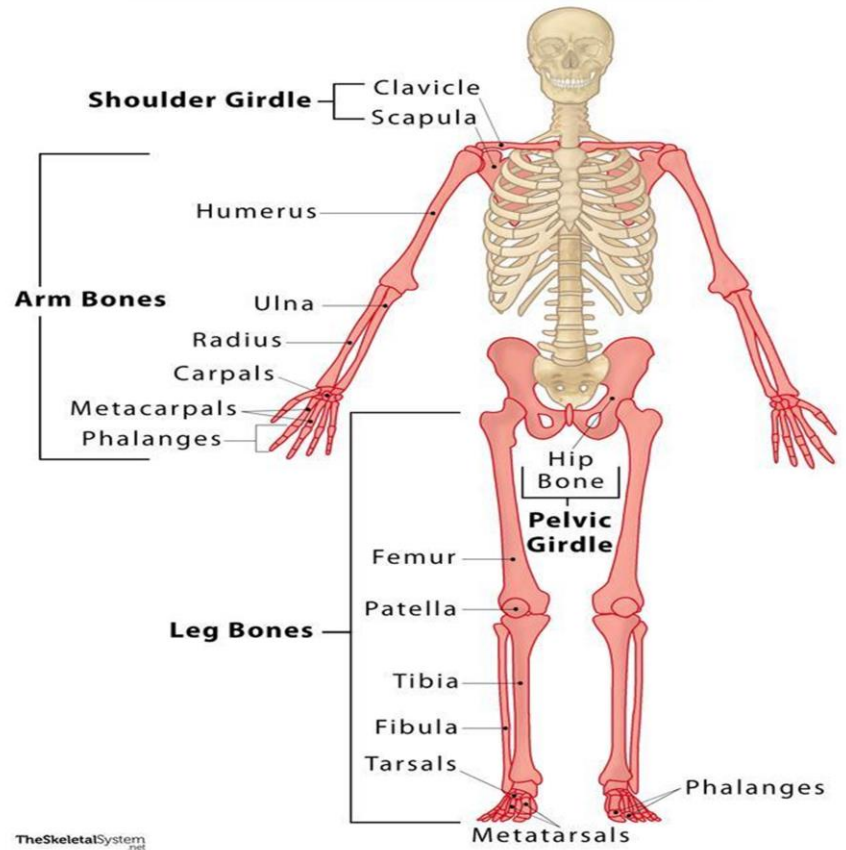
### The pelvic girdle

- 2 hip bones

### The lower limbs

- 2 femurs
- 2 patella
- 2 tibia
- 2 fibula
- 14 tarsal bones
- 10 metatarsal bones
- 28 phalanges

## Appendicular Skeleton



## Pectoral Girdle

Also known as the shoulder girdle, the pectoral girdle is made up of a clavicle (collarbone) and a scapula (shoulder blade) on each side of the body. These structures aid in the movements of the arms. It connects the upper limb bones to the axial skeleton. The sternum separates the bones of the pectoral girdle in the front. The pectoral girdle supports the upper limbs and is where the muscles that move the upper limbs attach.

- **clavicle (collarbone)**
- elongated S-shape
- They are located at the base of the neck,
- running horizontally between the sternum and the scapulae.
- The articulation of
- the medial sternal extremity of the clavicle to the manubrium of the sternum is referred to as the **sternoclavicular joint**.
- The lateral acromial extremity of the clavicle articulates with the acromion of the scapula. This articulation is referred to as the **acromioclavicular joint**.

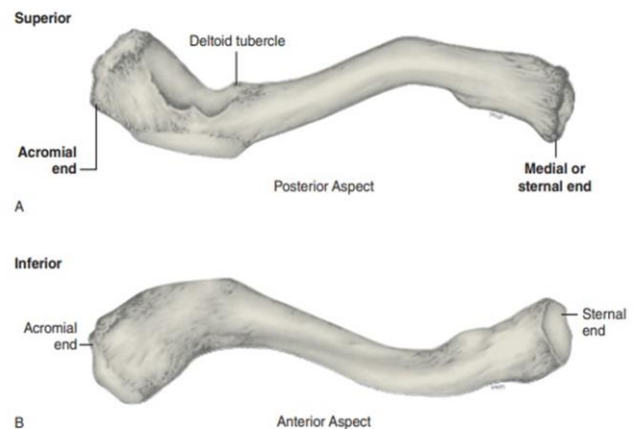


FIGURE 7-27 Right clavicle.

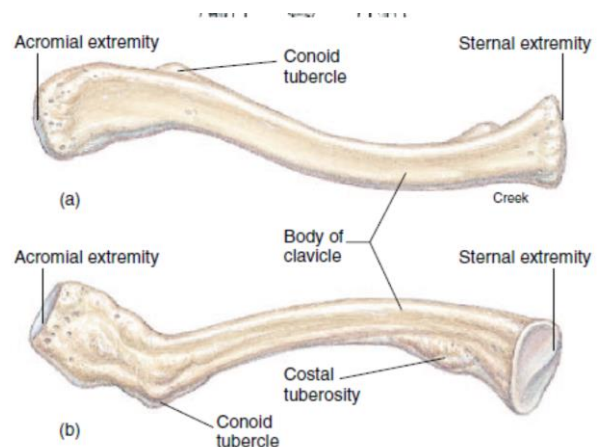


FIGURE 7.2 The right clavicle. (a) A superior view and (b) an inferior view.

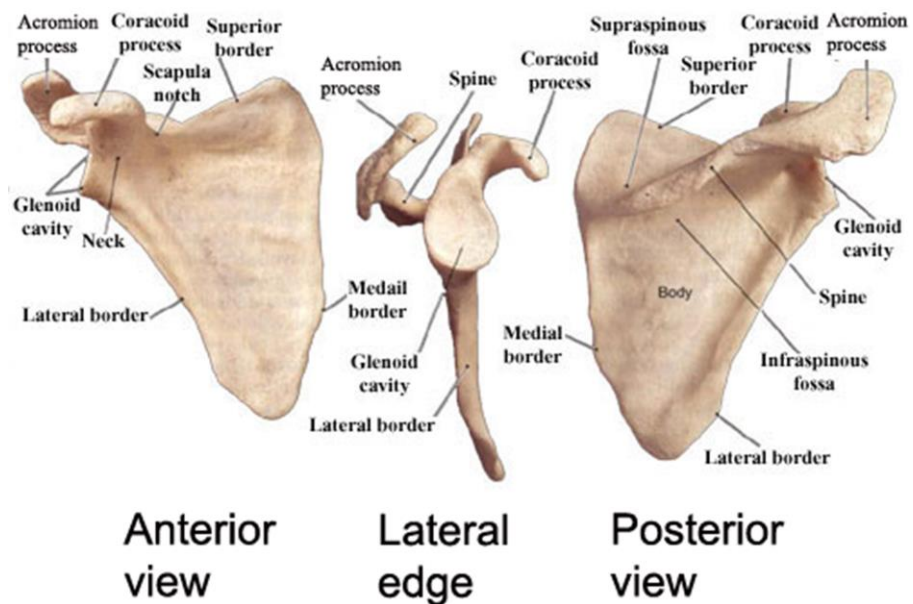
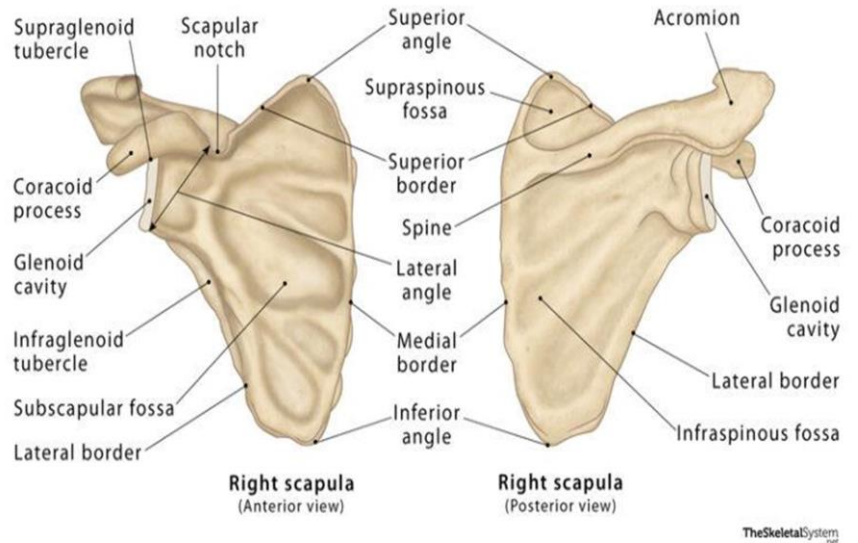
## Scapulae

The scapulae or shoulder blades are -triangular bones on either side of the upper back. They lie on the dorsal surface of the rib cage, between the second and seventh ribs.

□ the scapula has:

- ❖ three borders : The superior border, The medial border and The lateral border .
- ❖ three angles, superior angle, lateral angle and The inferior angle
- ❖ On the anterior surface of scapula a depression is known as the **subscapular fossa**. While on the posterior surface of scapulae superior to the scapular spine is the **supraspinous fossa**, whereas the area inferior to it is the **infraspinous fossa**.
- ❖ the glenoid cavity on the lateral border extends superiorly in the small, shallow fossa known as the glenoid cavity, which articulates with the head of the humerus bone to form the **shoulder joint**.
- ❖ Each scapula is divided by a spine that leads to an acromion process and a coracoid process. the acromion process articulates with the acromial end of the clavicle, the **acromioclavicular joint** is formed.
- ❖ The coracoid process provides similar attachments and projects from the superior scapular border

## Scapula

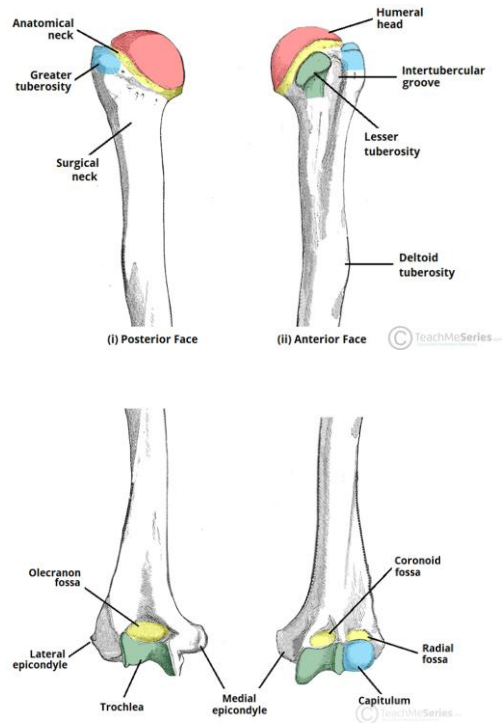


## Upper Limbs

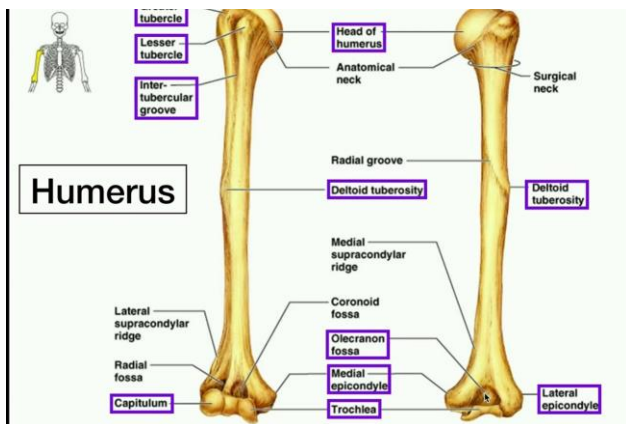
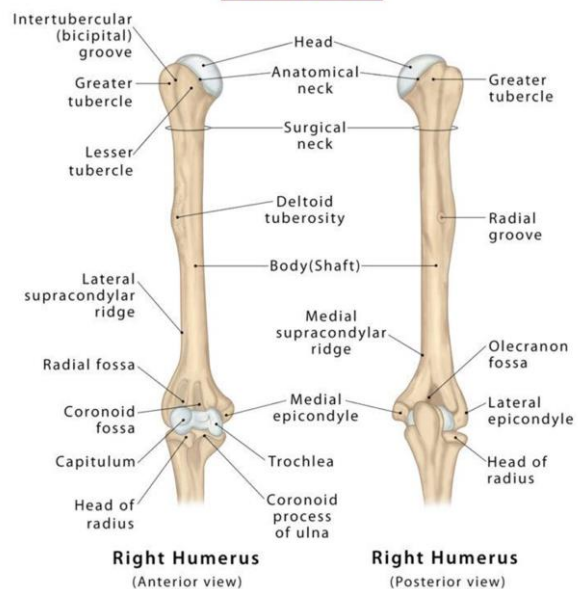
The bones of the upper limbs include the arms, forearms, and hands. They provide muscle attachments and function to move limb parts. The bones of the upper limbs are:

### Humerus:

- ❖ This is the upper arm bone, which extends from the scapula to the elbow.
- ❖ In upper portion it has a smooth upper head that connects into the glenoid cavity known as **shoulder joint** (glenohumeral joint)
- ❖ In anterior surface of the lower portion of the humerus has divided into two articular region :the **trochlea** and **capitulum** that articulate with the **ulna** and **radius**.
- ❖ on the posterior surface the of the lower portion is **olecranon fossa** is a depression of the humerus that receives an **ulnar olecranon process** when the upper limb straightens at the elbow.
- ❖ The deltoid tuberosity which the deltoid muscle attaches.



### Humerus



## Ulna

It is the stabilizing bone of the forearm.

It is the medial & longer of the two bones of the forearm.

The articulations between humerus bone with ulnar and radius bones formed **elbow joint**

### Proximal End

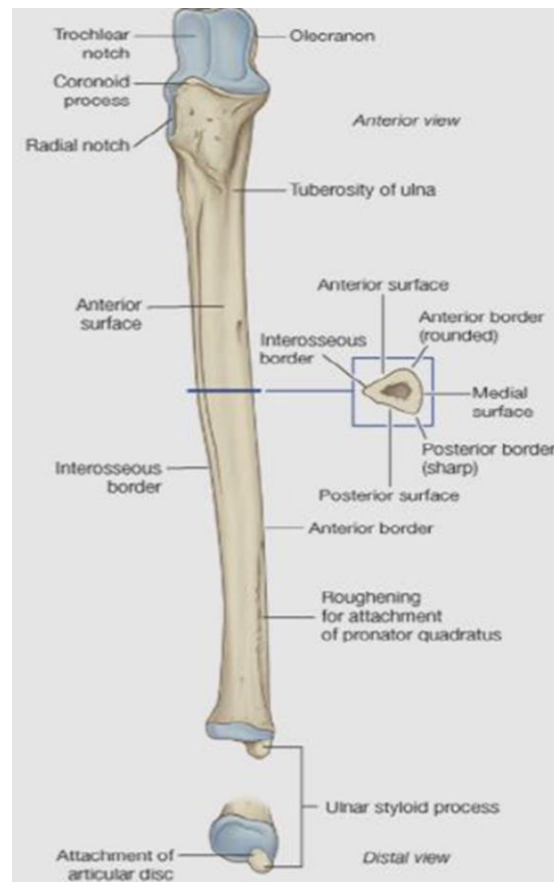
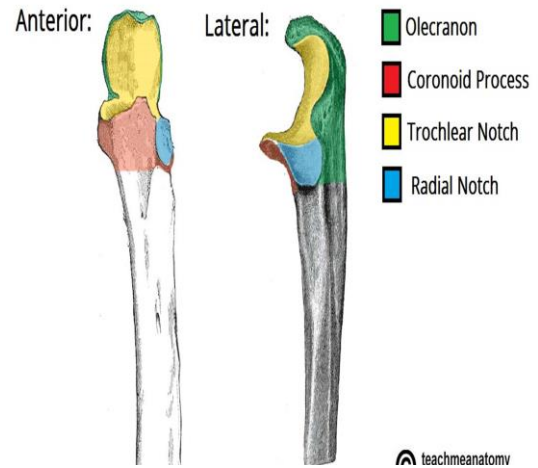
- **Olecranon Process :**
- projects proximally from the posterior aspect(forms the prominence of the elbow).
- **Coronoid Process :**
- projects anteriorly.
- **3.Tuberosity of Ulna:**
- inferior to coronoid process.
- **4.Trochlear Notch:**
- articulates with trochlea of humerus.
- **5.Radial Notch :**
- a smooth rounded concavity lateral to coronoid process.

### Shaft:

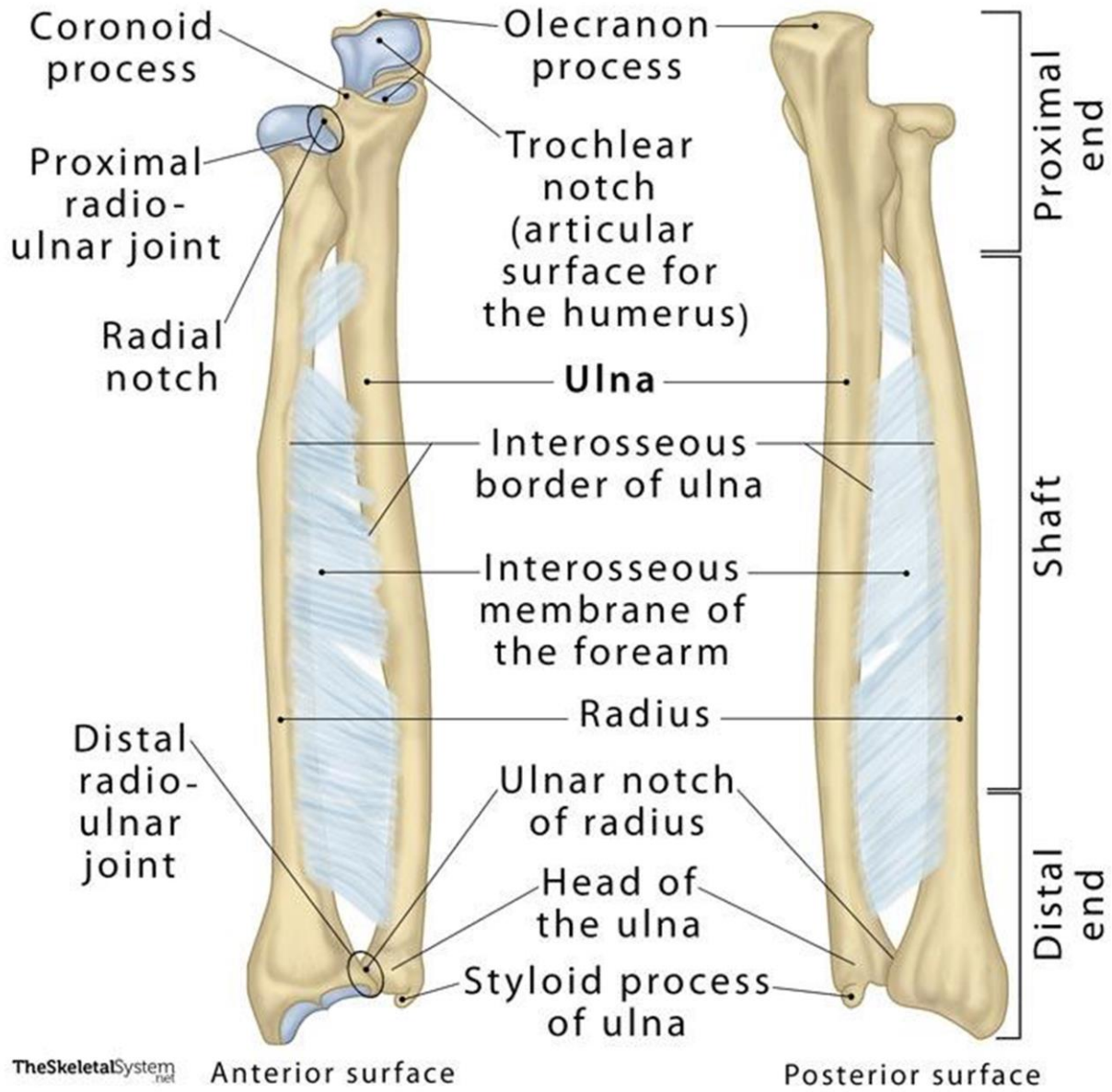
- \*Thick & cylindrical superiorly but diminishes in diameter inferiorly
- \*It has Three Surfaces (Anterior, Medial & Posterior).
- \*Sharp Lateral Interosseous border.

### \*Distal End: Small rounded

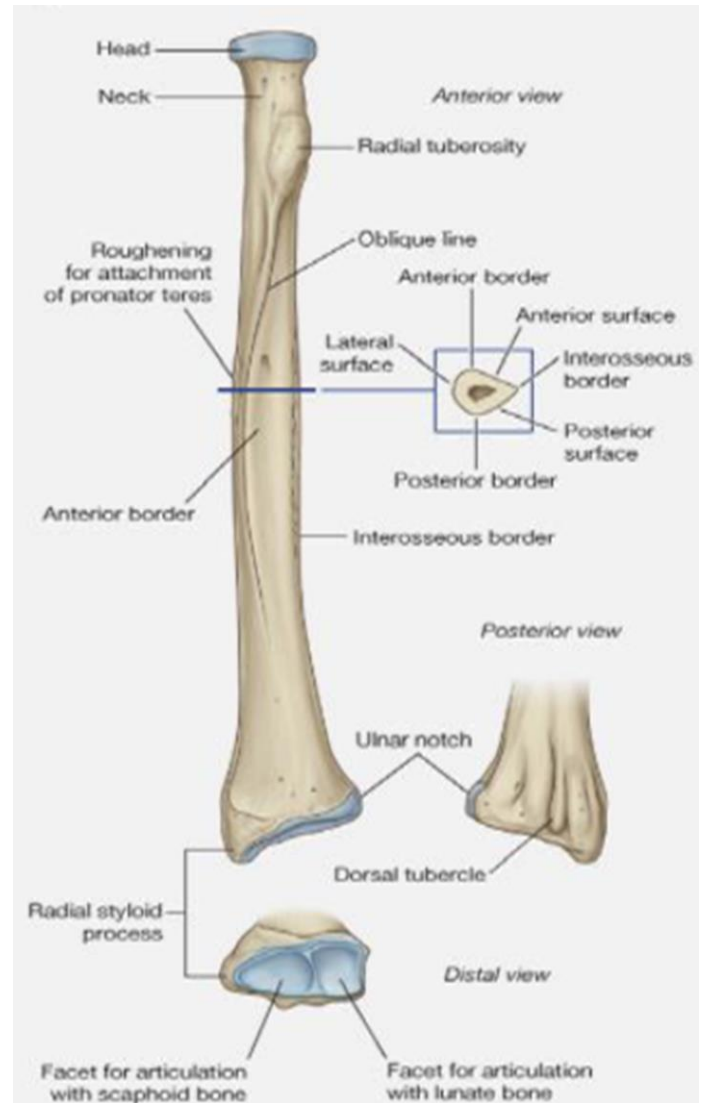
1. Head:lies distally at the wrist. .
2. Styloid process:Medial.



# The Ulna Bone



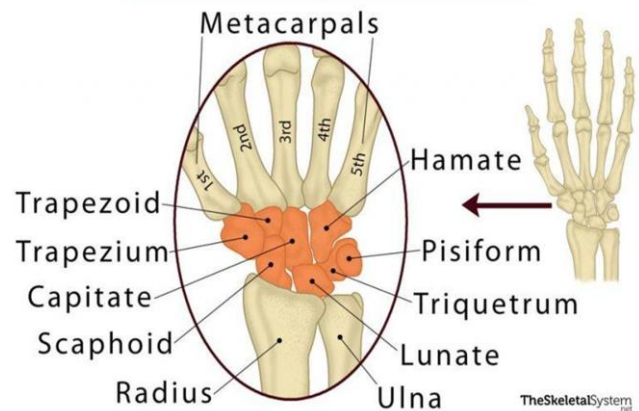
- **Radius**
- It is the shorter and lateral of the two forearm bones.
- **Proximal End:**
- 1. Head: small & circular
- Its upper surface is concave for articulation with the Capitulum.
- 2. Neck: narrow neck extend to the radial tuberosity.
- 3. Radial (Bicipital) Tuberosity: medially directed and separates the proximal end from the body.
- **Shaft:**
- Has a lateral convexity.
- It gradually enlarges as it passes
- **Distal end**
- Ulnar notch
- Radial styloid process
- Facet articulate with the proximal row of carpal bones



## The carpal bones

- The carpus, (wrist) contains 8 carpal bones
- There are 4 proximal carpal bones and distal bones and 4 distal carpal bones:
- 
- **Proximal row:**
- **Scaphoid, Lunate, Triquetrum, Pisiform**
- 
- **Distal row:**
- **Trapezium, Trapezoid, Capitate, Hamate**

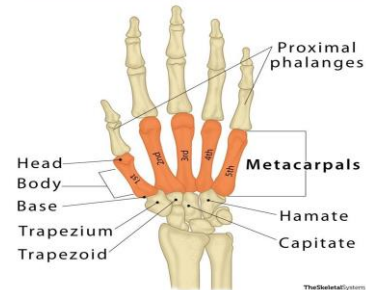
## The Carpal Bones



## The metacarpals bones

- The metacarpals bones have 5 bones that articulate with the distal carpal bones to form **carpalmetacarpal joint**.
- Each bones consist from head, body and base

## The Metacarpal Bones



## Digits (phalanges):

- Each hands has 14 phalanges (finger bones)
- The pollex- is thumb and first finger it has two phalanges (proximal and distl).
- Other fingers have 3 phalanges (proximal, middle, distal)

## Phalanges of the Hand

