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**ASSIGNMENT**

TOPIC: JOINTS OF UPPER LIMBS

SUBJECT: HUMAN ANATOMY

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# UPPER LIMBS

## DEFINATION OF UPPER LIMBS

The upper limbs or upper extremity is the region in a humans extending from the deltoid region up to and including the hand, including the arm, axilla and shoulder.

## DEFINATION OF BONES

A bone is a rigid organ that constitutes part of the vertebrate skeleton in animals.

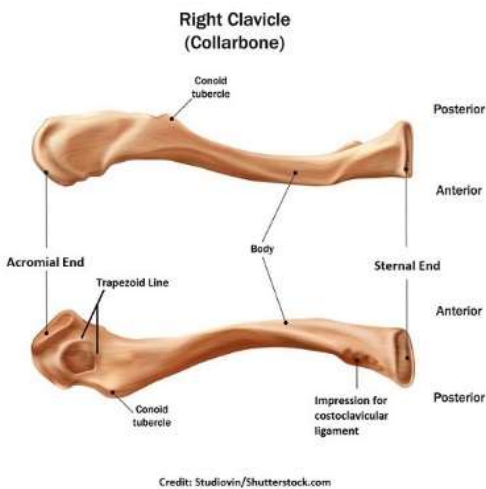
OR

Bones provide support for our bodies and help from our shape.

## **BONES OF UPPER LIMBS**

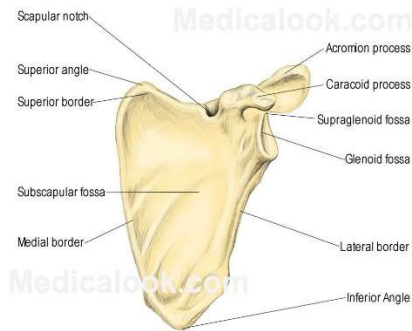
**CLAVICAL:** It is also known as collar bone or beauty bone.

**LOCATION** It is located between the sternum and scapula lies horizontally across the root of the neck.



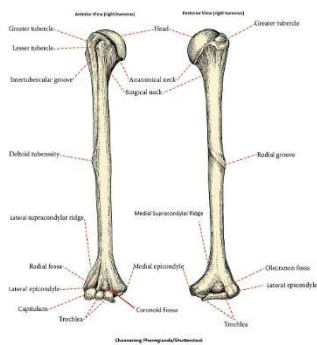
**SCAPULA:** It start from 2<sup>nd</sup> rib and ends on 7<sup>th</sup> rib.

**LOCATION** It is present at the posterior side of the body.



**HUMERUS:** It is the longest bone of upper limb.

**LOCATION:** It is located in the arm.



**RADIUS:** It is also the long bone.

**LOCATION:** It is located on the lateral side of forearm.

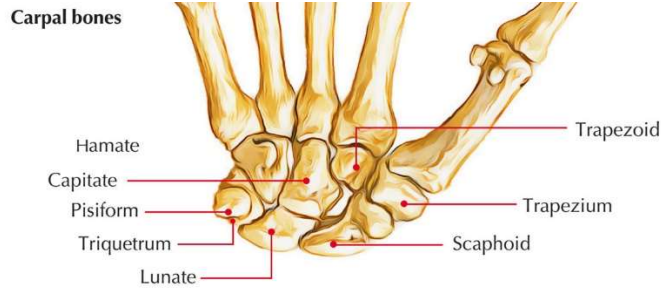
**ULNA:** It is also the long bone. It is parallel to radius.

**LOCATION:** It is located on the medial side of the forearm.



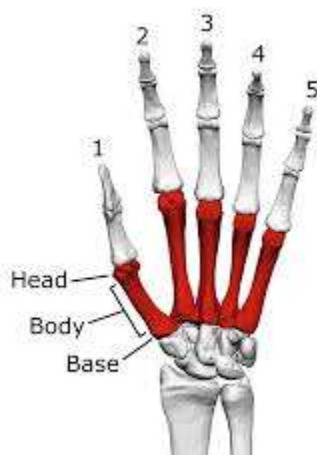
**CARPALS:** The carpals bones are the eight small bones arranged in two rows.

**LOCATION:** It comprising the wrist.



**METACARPALS:** The metacarpals bones are five bones.

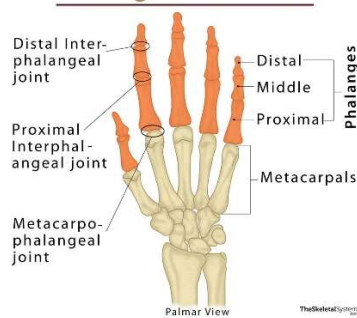
**LOCATION:** The metacarpals bones are located between carpals and phalanges.



**PHALANGES:** Phalanges are the fourteen bones.

**LOCATION:** The phalanges are the bones that comprise the digits of the hand.

### Phalanges of the Hand



### DEFINATION OF JOINTS

The area where two bones are attached for the purpose of permitting body parts to move.

## **JOINTS OF UPPER LIMBS**

### **SHOULDER JOINT**

Three bones combine and make shoulder joint

These bones include

1. Clavical bone.
2. Scapula bone.
3. Humerus bone.

### JOINTS OF CLAVICAL

There are two joints in clavical

1. Sternoclavicular joint
2. Acromioclavicular joint

### STERNOCLAVICULAR JOINT

- Sternoclavicular joint is the linkage between the clavical and sternum.
- It support the shoulder and is the only point that connects the arm to the body.

### ACROMIOCLAVICULAR JOINTS

- Acromioclavicular joint is the linked between the clavical and the acromion process.
- It is the joint at the top of the shoulder.

### JOINTS OF SCAPULA

There are three joints of scapula.

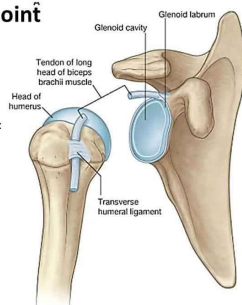
1. Glenohumeral joint.
2. Acromioclavicular joint.
3. Scapulothorasic joint

### GLENOHUMERAL JOINT

- It is also known as shoulder joint or ball and socket joint.
- It is the major joint connecting the upper limb to the trunk.
- The end of the scapula is called glenoid , meets the head of the humerus to form a glenohumeral cavity that acts as a flexible ball and socket joint.

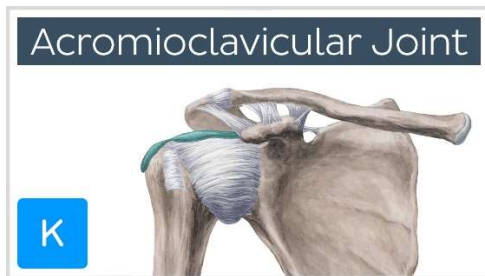
#### **Glenohumeral joint**

- Articular surface
- Synovial ball and socket articulation
- hyaline cartilage
- Joint stability is provided by:
  - rotator cuff muscles,
  - long head of biceps brachii
  - extracapsular ligaments.
- Movements: flexion, extension, abduction, adduction, medial rotation, lateral rotation, and circumduction.



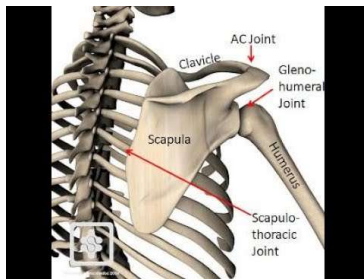
## ACROMIOCLAVICULAR JOINT

- It is the junction between the acromion and clavicle.



## SCAPULOTHORASIC JOINT

- It is also known as scapulocostal joint.
- This is where the scapula bone meets the ribs in the back of your chest.



## **ELBOW JOINT**

Three bones combine and make elbow joint.

1. Humerus
2. Radius
3. Ulna

## **JOINTS OF HUMERUS**

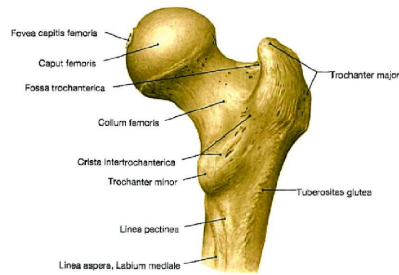
There are two extremities of humerus.

1. Proximal extremity.
2. Distal extremity.

## **PROXIMAL EXTERIMITIE**

Proximal extremity is located at the upper side of the bone or it means nearer to the center or to the point of attachment to the body.

There is only one joint in the proximal extremity which is known as glenohumeral joint.

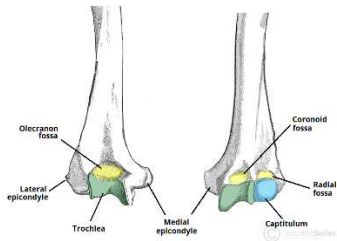


## DISTAL EXTERIMITIE

Distal exterimmitie is located at the distal extremity or at the lower side of the bone.

There are three depressions, known as the coronoid,radial and olecranon fossa.

They accommodate the forearm bones during flexion or extension at the elbow.



## CORONOID FOSSA

A depression of the humerus into which the coronoid process fits when the arm is flexed.

## RADIAL FOSSA

The radial fossa is a slight depression found on the humerus above the front part of the capitulum. It receives the anterior border of the head of the radius when the forearm is flexed.

## OLECRANON FOSSA

The olecranon fossa is the deep triangular depression on the posterior side of the humerus, superior to the trochlea, in which the summit of the olecranon is received during extension of the forearm.

## JOINTS OF RADIUS

There are two joints on radius.

1. Radioulnar joint.
2. Proximal radioulnar joint.

## RADIOULNAR JOINT

Radioulnar joints are two locations in which the radius and ulna articulate in the forearm

## PROXIMAL RADIOULNAR JOINT

Located near the elbow.

It is articulation between the head of the radius and the radial notch of the ulna.

## **WRIST JOINT**

### **Carpals**

There are eight bones combine and make wrist joint.

These eight bones are known as carpals.

1. Scaphoid
2. Lunate
3. Triquetrum
4. Pesiform
5. Trapezium
6. Trapezoid
7. Capitate
8. Hamate

These eight carpals are arranged into the two rows.

1. Proximal row
2. Distal row

### **PROXIMAL ROW**

The proximal row of carpal bones (moving from radial to ulna) are the Scaphoid, Lunate, Triquetrum and Pesiform.

### **PESIFORM**

Pesiform is the bone which is located at the little finger side. It is the floating bone.

### **DISTAL ROW**

The distal row of carpal bones (also from radial to ulna) comprises the Trapezium, Trapezoid, Capitate, Hamate.

## **METACARPALS**

Metacarpals are the long bones.

There are five metacarpals.

- Metacarpal I (Thumb)
- Metacarpal II (Index finger)
- Metacarpal III (Middle finger)
- Metacarpal IV (Ring finger)
- Metacarpal V (Little finger)

## **PARTS**



Metacarpals are divided into Three parts.

1. Base.
2. Shaft.
3. Head.

#### BASE

Base of metacarpals make joint with the carpals.

#### SHAFT

It is the middle part of the metacarpals.

#### HEAD

Head of metacarpals make joint with the phalanges.

#### PHALANGES

The phalanges are the bones that make up the fingers of the hand and the toes of the foot.

There are fourteen phalanges in the single hand.