

Assignment Anesthesia 1<sup>st</sup> semester INU Peshawar.

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## **Joints of upper limb:-**

These have the following three main joints,

1. Shoulder joint
2. Elbow joint
3. Wrist joint

### **Shoulder Joint:-**

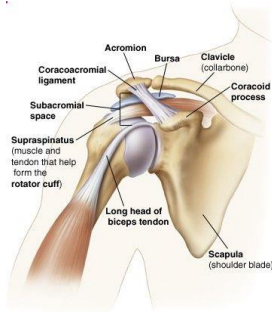
The shoulder is made up of two joints, the acromioclavicular joint and the glenohumeral joint. The acromioclavicular joint is where the acromion, part of the shoulder blade (scapula) and the collar bone clavicle meet. The glenohumeral joint is where the ball and the socket (the glenoid) articulate.

### **Articulating surface:-**

The shoulder joint is formed by the articulation of the head of the humerus with the glenoid cavity or Fossa of the scapula.

### **Capsule:-**

The joint capsule is a fibrous sheath which encloses the structures of the joint and attached to the,



### Medially:-

The margin of the glenoid cavity outside the labrum.

### Laterally:-

It is attached to the anatomic neck of the humerus .

- The capsule is thin and lax allowing a wide range of movement.

### Ligaments:-

In the shoulder joint, the ligaments play a key role in stabilising the bony structures.

### Glenohumeral ligaments :-

These are three weak bands of fibrous that strengthen the front of the capsule.

### Transverse humeral ligament :-

spans the distance between the two tubercles of the humerus. It holds the tendon of the long head of the biceps in the intertubercular groove.

### Coracohumeral ligament :-

- attaches the base of the coracoid process to the greater tubercle of the humerus. It supports the superior part of the joint capsule.

## Accessory Ligaments:-

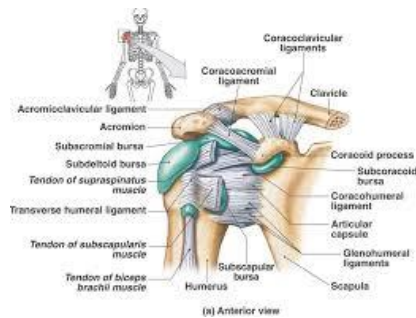
- ligaments extend between the coracoids process and the acromium.
- Its function is to protect the superior aspect of the joint.

## • Synovial membrane:-

- This line the capsule and is attached to the margin of the cartilage covering the articular surfaces.
- It forms a tubular sheath around the tendon of the long head of the biceps brachii.

## Nerve supply:-

- The axillary and supra scapular nerves
- See in diagram



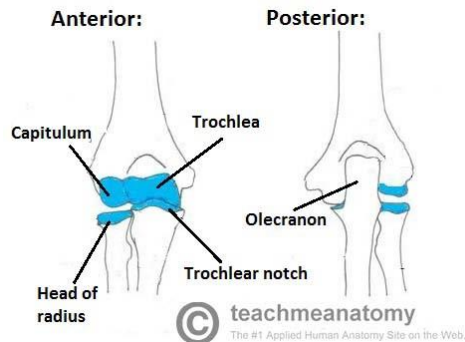
## 2 Elbow joint:-

The elbow joint is a synovial joint found in the upper limb between the arm and the forearm. It is the point of articulation of three bones: the humerus of the arm and the radius and the ulna of the forearm. The elbow joint is classified structurally as a synovial joint

- It consists of two separate articulations:

Trochlear notch of the ulna and the trochlea of the humerus

Head of the radius and the capitulum of the humerus



## Capsule:-

Anteriorly ,

it is attached to the humerus along the upper margin of the coronoid and radial fossae.

To the front of the medial and lateral epicondyles

Below; to the margin of coronoid process of the ulna and the annular ligaments which surround the head of the radius

Posteriorly;

it is attached to the margin of olecranon fossa of the humerus .

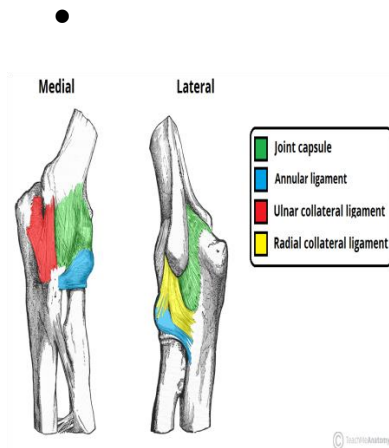
Below the upper margin and the side of the olecranon process of the ulna and the annular ligaments.

## Ligaments:-

The joint capsule of the elbow is strengthened by ligaments medially and laterally.

1 the radial lateral collateral ligaments is triangular and is attached to the

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- By its base to upper margin of the annular ligaments

### The ulnar medial collateral ligaments :-

The medial ligaments is also triangular and consist principally of three strong bands

The anterior band which passes from medial epicondyle of the humerus to the medial margin of the coronoid process

the posterior band which passes from medial epicondyle of the humerus to the medial side of the olecranon process

the transverse band which pass between the ulnar attachment of the two preceding bands.

### Synovial membrane:-

This lines the capsule and fatty pads in the floors of the coronoid radial and olecranon fossae it is continues below with the synovial membrane of the proximal radioulnar joint

### Nerve supply :-

- Branches from
- Median nerve

- Ulnar nerve
- Musculocutaneous nerve
- Radial nerves

### 3 Wrist joint:-



( radiocarpal joint )

**The wrist joint (also known as the radiocarpal joint) is a synovial joint in the upper limb, marking the area of transition between the forearm and the hand.**

#### Articulation :-

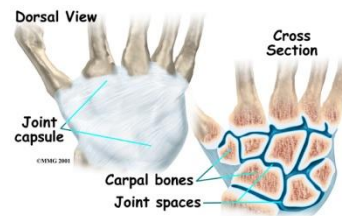
Distally – The proximal row of the carpal bones (except the pisiform).

Proximally – The distal end of the radius, and the articular disk.

## Joint Capsule:-

The capsule is dual layered. The fibrous outer layer attaches to the radius, ulna and the proximal row of the carpal bones. The internal layer is comprised of a synovial membrane, secreting synovial fluid which lubricates the joint.

See in diagram



## Ligaments:-

There are four main ligaments which mention below.

- Medial ligaments

Origin . ulnar styloid process

Insertion triquetrum dorsally and pisiform palmary

Provide medial stability

- Anterior ligaments

Most important ligament for controlling motion and wrist stability

Origin. anterior surface of distal radius

Insertion , courses obliquely and medially to split into

- The radiocapitate ligament
- Radio triquetrum ligament
- The radio scaphiod ligament

### Dorsal ligaments :-

Origin posterior surface of the distal radius and styloid process

Insertion – lunate and triquetrum

- Synovial membrane :- this lines the capsule and is attached to the margins of the articular. The joint cavity does not communicate with that of the distal radioulnar joint or with the joint cavities of the intercarpal joints.
- Nerv supply

**Anterior interosseus nerve**

**Deep branch of the radial nerve**

### Intercarpal joint:-

#### Articular surfaces

Joints of the proximal carpal row: Adjacent articular surfaces of scaphoid, lunate, and triquetrum bones

#### Joints of the distal carpal row:

Adjacent articular surfaces of trapezium, trapezoid, capitate and hamate bones

### Metacarpal joint:

distal articular surfaces of proximal carpal bones, proximal articular surfaces of distal carpal bones

### Daigram:-

Daigrames are mentioned below ,





### Ligaments:

The bones are united by strong Interosseous ligaments of proximal and distal carpal rows, palmar intercarpal, dorsal intercarpal ligaments

Innervation Articular branches of anterior interosseous nerve, posterior interosseous nerve, deep and dorsal branches of ulnar nerve

### Blood supply

Anterior interosseous nerve deep branch of the radial nerve and deep branch of ulnar nerve.

### Movements:-

A small amount of gliding movement is possible .

### Carpometacarpal joints:-

The carpometacarpal joints are five joints in the wrist that articulate the distal row of carpal bones and the proximal bases of the five metacarpal bones.

A small amount of gliding movement is possible .

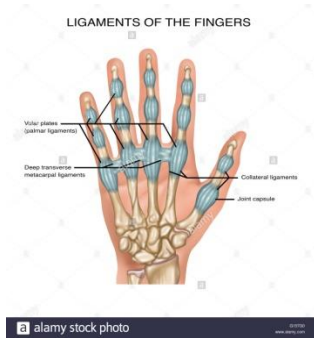
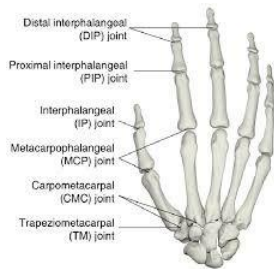


Diagram are mentioned below,



## Thumb:-

Articulation between the trapezium and the saddled shaped base of the 1<sup>st</sup> meta carpals bones .

## Capsule:-

The capsule surrounds the joint.

## Synovial membrane :-

This lines the capsule and forms a separate joint cavity.

## interphalangeal joint:-

- interphalangeal joint are synovial joints that have a structure similar to that of the metacarpophalangeal joints

they are may

- proximal interphalangeal joint
- distal interphalangeal joint.

The END...!!!!

- Completed. thanks madam