

وسهلا

أهلا



## الأستاذ الدكتور يوسف حسين

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**Wrist Joint**

## Bones of Wrist (dorsal)

Trapezoid شبه منحرف

Capitate صورة رأس

Hamate حامي

Trapezium معين منحرف

Pisiform حمصي

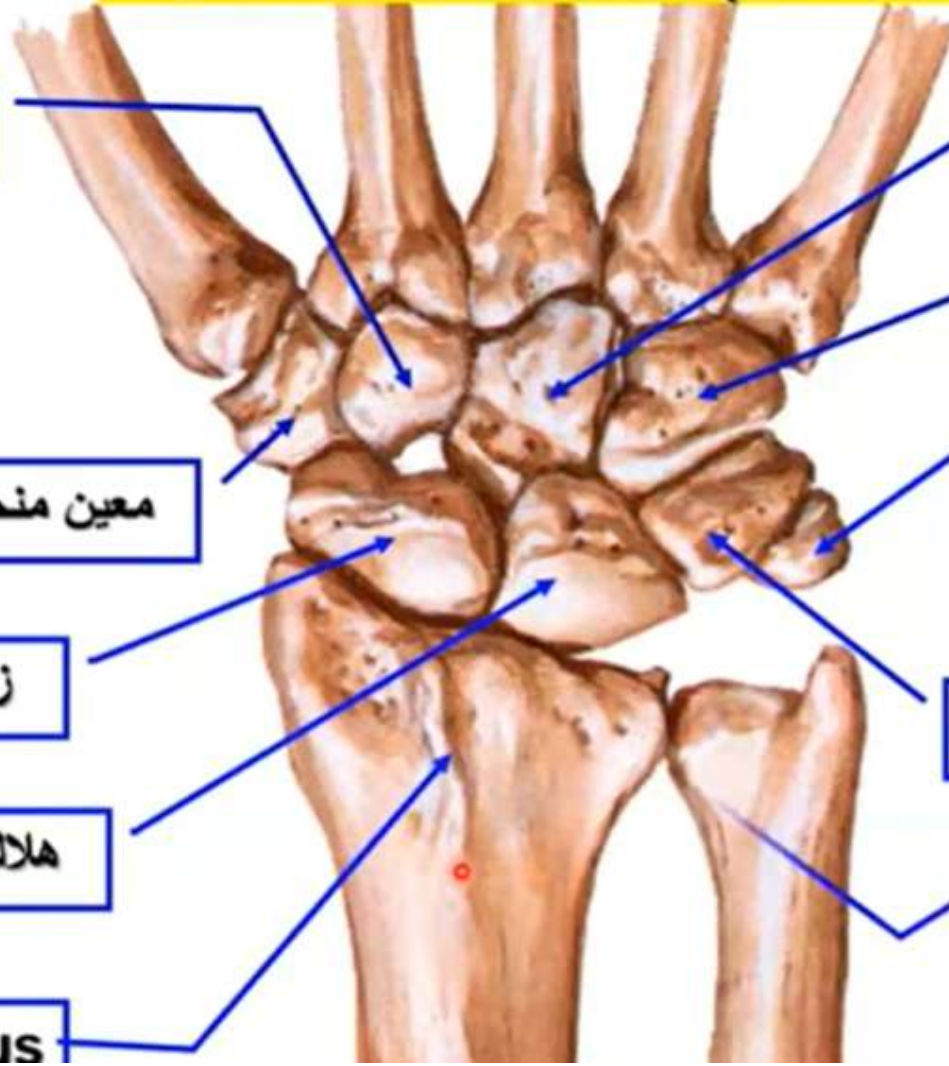
Scaphoid زورقي

Triquetral مثلثي

Lunate هلالتي

Distal end of ulna

Distal end of radius

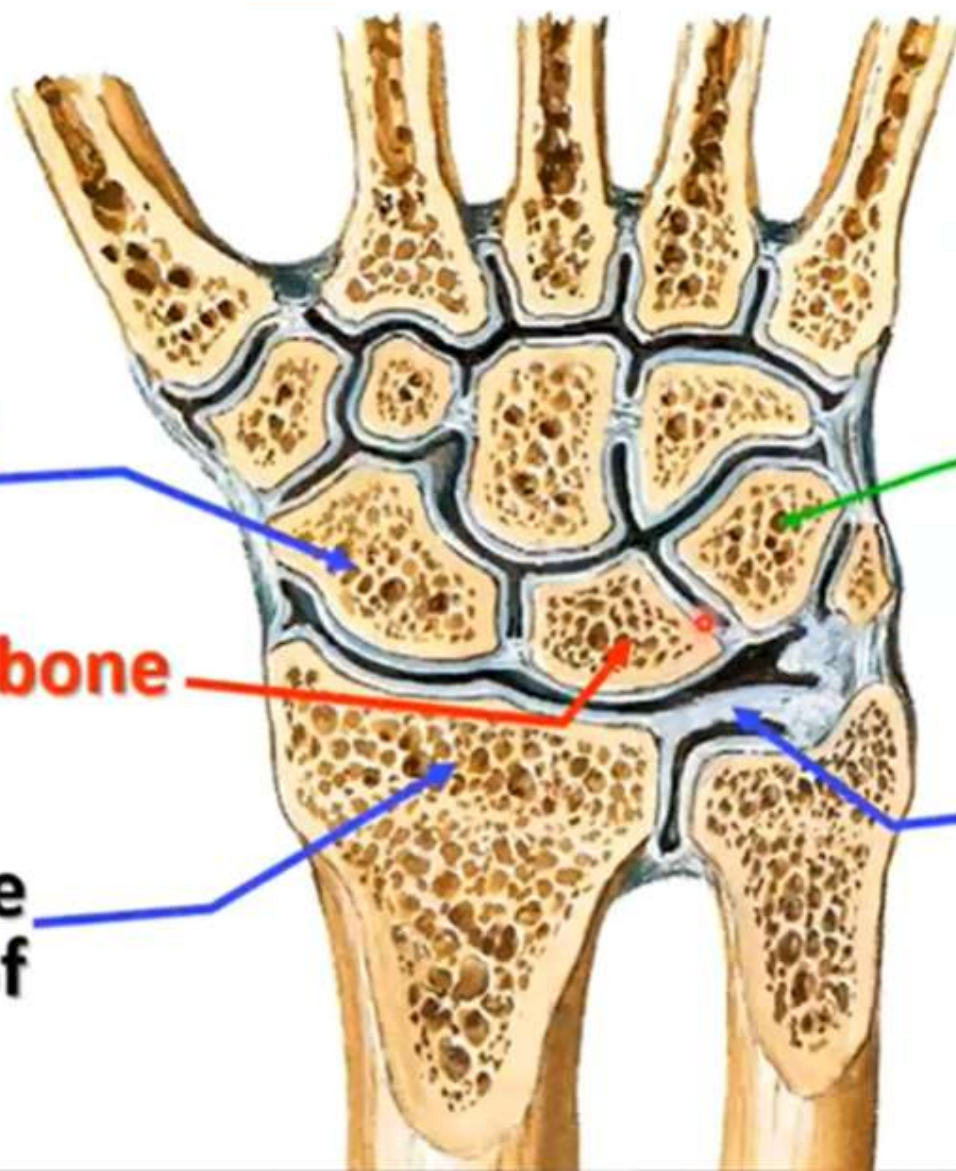


**Articular surface**

**Scaphoid bone**

**Lunate bone**

**Inferior surface  
of Distal end of  
the radius**



**Triquetral bone**

**Articular disc of  
inferior  
radioulnar joint  
So the ulna does  
not share**

## • Wrist (Radiocarpal) Joint

**1- Type;** an ellipsoid synovial joint (biaxial).

### **2- Articular surfaces**

#### **1) Superior (Proximal) articular surface:**

- a- The inferior surface of the distal end of the radius.
- b- The articular disc of the inferior radioulnar joint.

#### **2) Inferior (Distal) articular surface:**

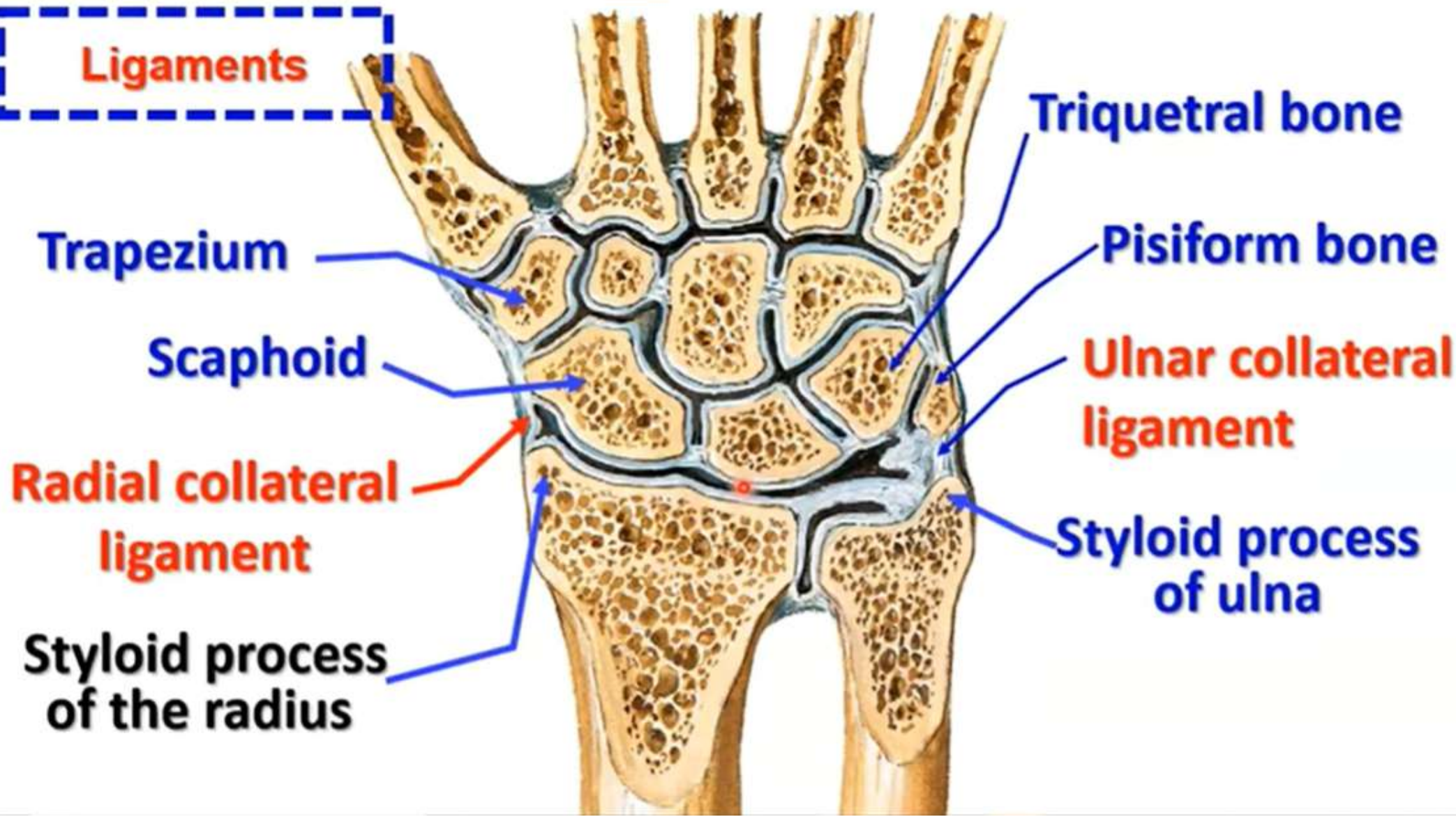
- The proximal row of carpal bones (scaphoid, lunate and triquetral).

**N.B.** Always remember that the **ulna does not share in the wrist joint** because the head is separated from the carpal bones by the articular disc of the inferior radioulnar joint.

**\*\* Capsule:** is thin and attached to the margins of the articular surfaces

**\*\* Synovial membrane** lined the inner surface of the capsule.

**Ligaments**

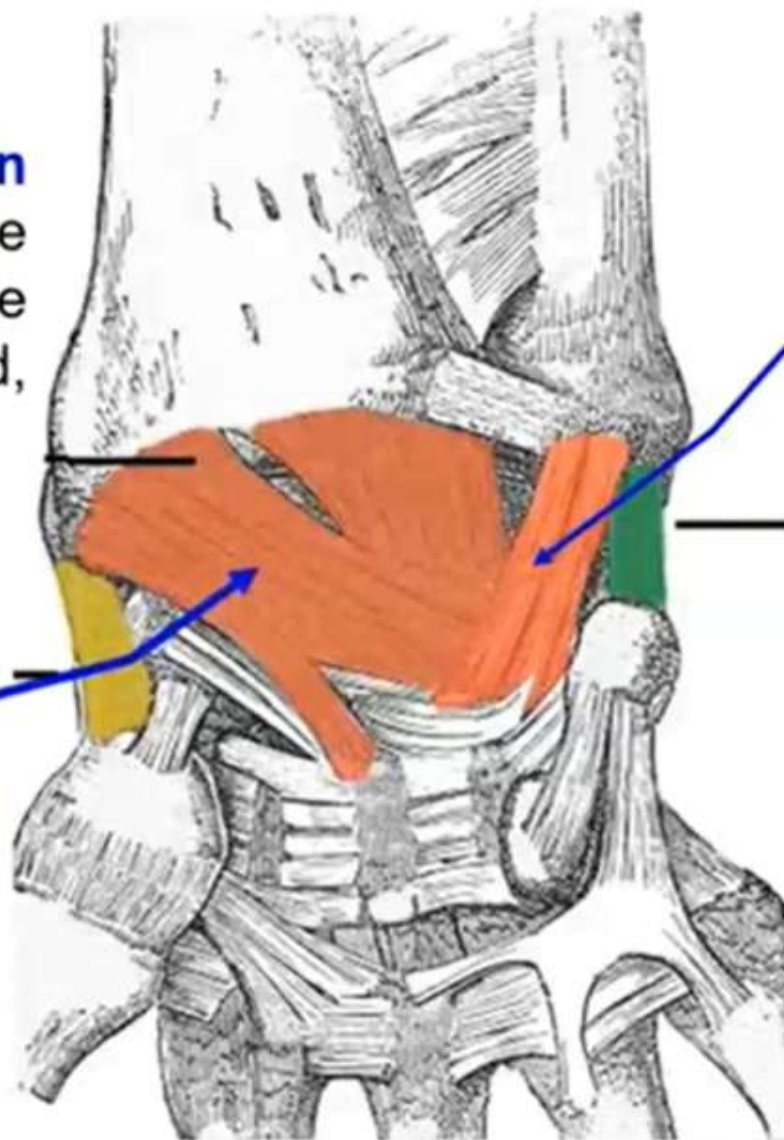


### Dorsal radiocarpal ligament

From the **posterior margin of the distal end** of the radius to the back of the carpal bones (scaphoid, lunate and triquetral).

### Palmar radiocarpal ligament

From the **anterior margin of the distal end** of the radius to the front of the carpal bones (scaphoid, lunate and triquetral).



### Palmar ulnocarpal ligament

From the **anterior margin of articular disc and styloid process of the ulna** to the **front** of the carpal bones (triquetral).

**Flexor Digitorum Profundus**



❖ **Muscles of flexion of wrist**

**Flexor carpi radialis**

**Palmaris longus**

**Flexor digitorum superficialis**

**Flexor Carpi Ulnaris**

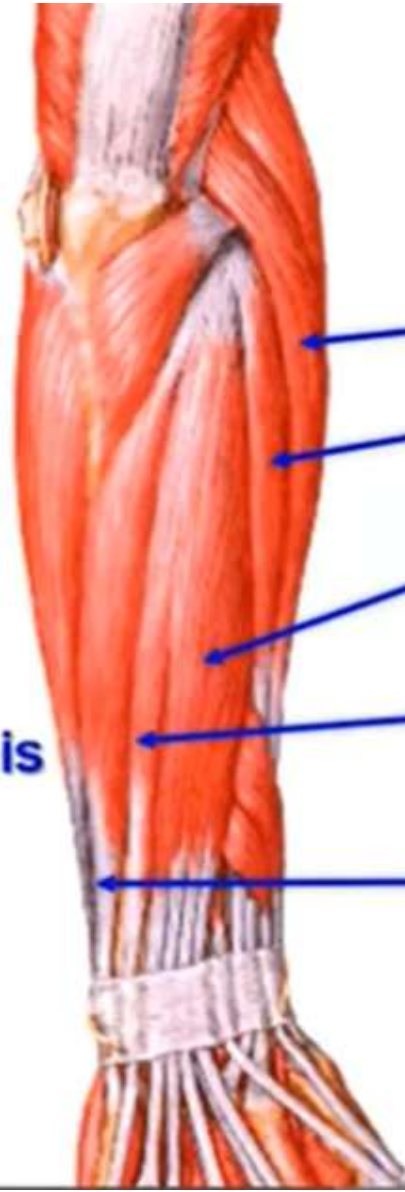




❖ **Muscles of  
extension of wrist**



**Extensor indicis**



**Extensor carpi radialis longus**

**Extensor carpi radialis brevis**

**Extensor digitorum**

**Extensor digiti minimi**

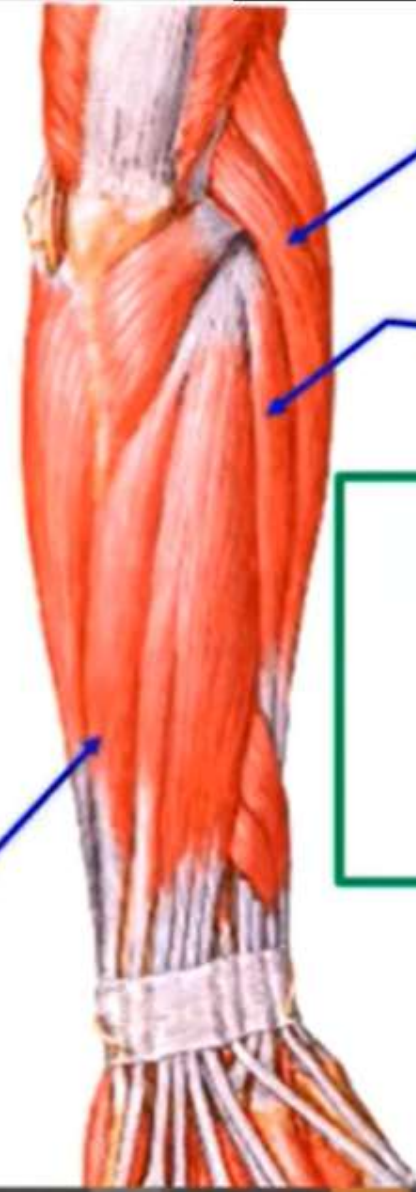
**Extensor carpi ulnaris**



**Flexor carpi radialis**

**Flexor Carpi Ulnaris**

**Extensor carpi ulnaris**



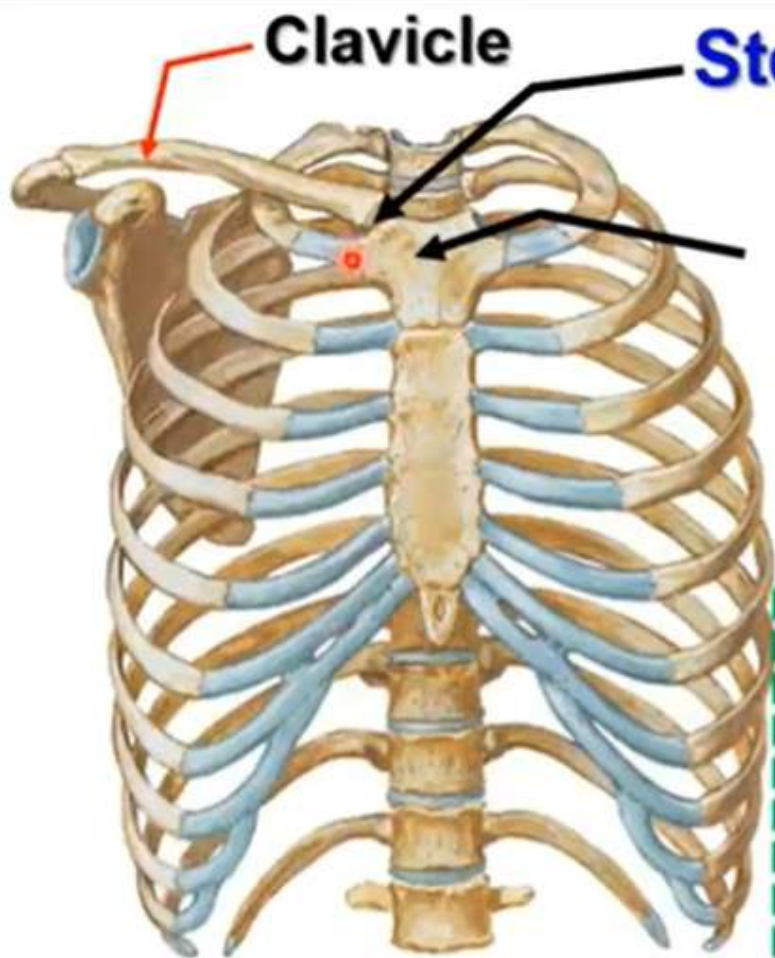
**Extensor carpi radialis longus**

**Extensor carpi radialis brevis**

❖ **Muscles of abduction and adduction of wrist joint**



**Sternoclavicular  
Joints**



**Clavicle**

**Sternoclavicular joint**

**Manubrium sterni**



\* It is the **only joint** between upper limb and trunk.

\*\* **Type**; modified saddle synovial joint.

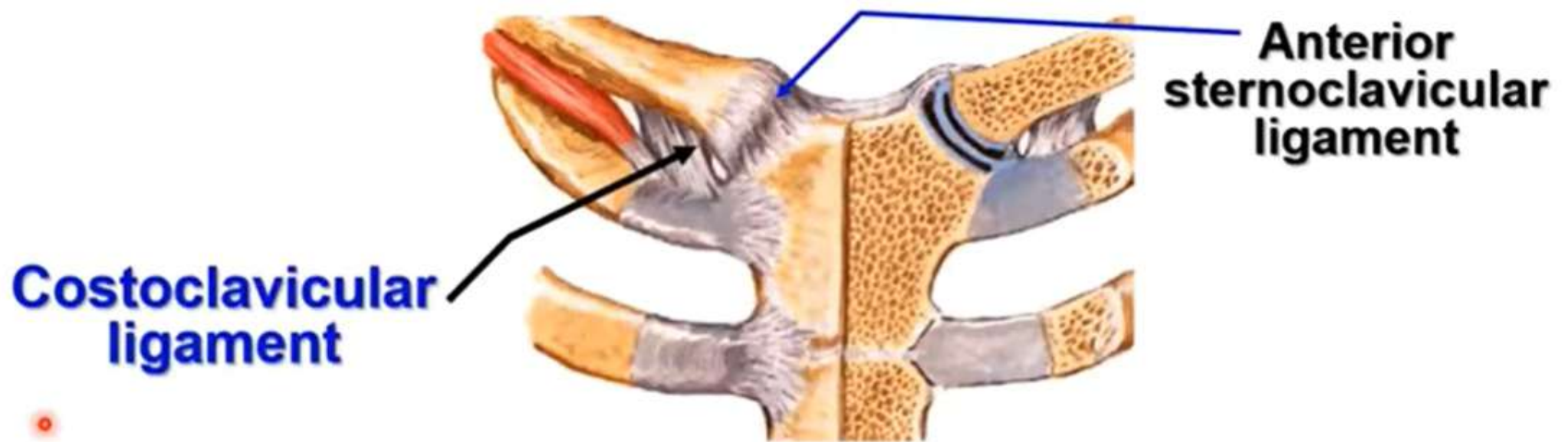
\*\* **Articular surfaces**

1- Sternal end of the clavicle.

2- Clavicular notch of the manubrium sterni

3- Superior surface of the first costal cartilage.

4- Articular disc inside the joint cavity.



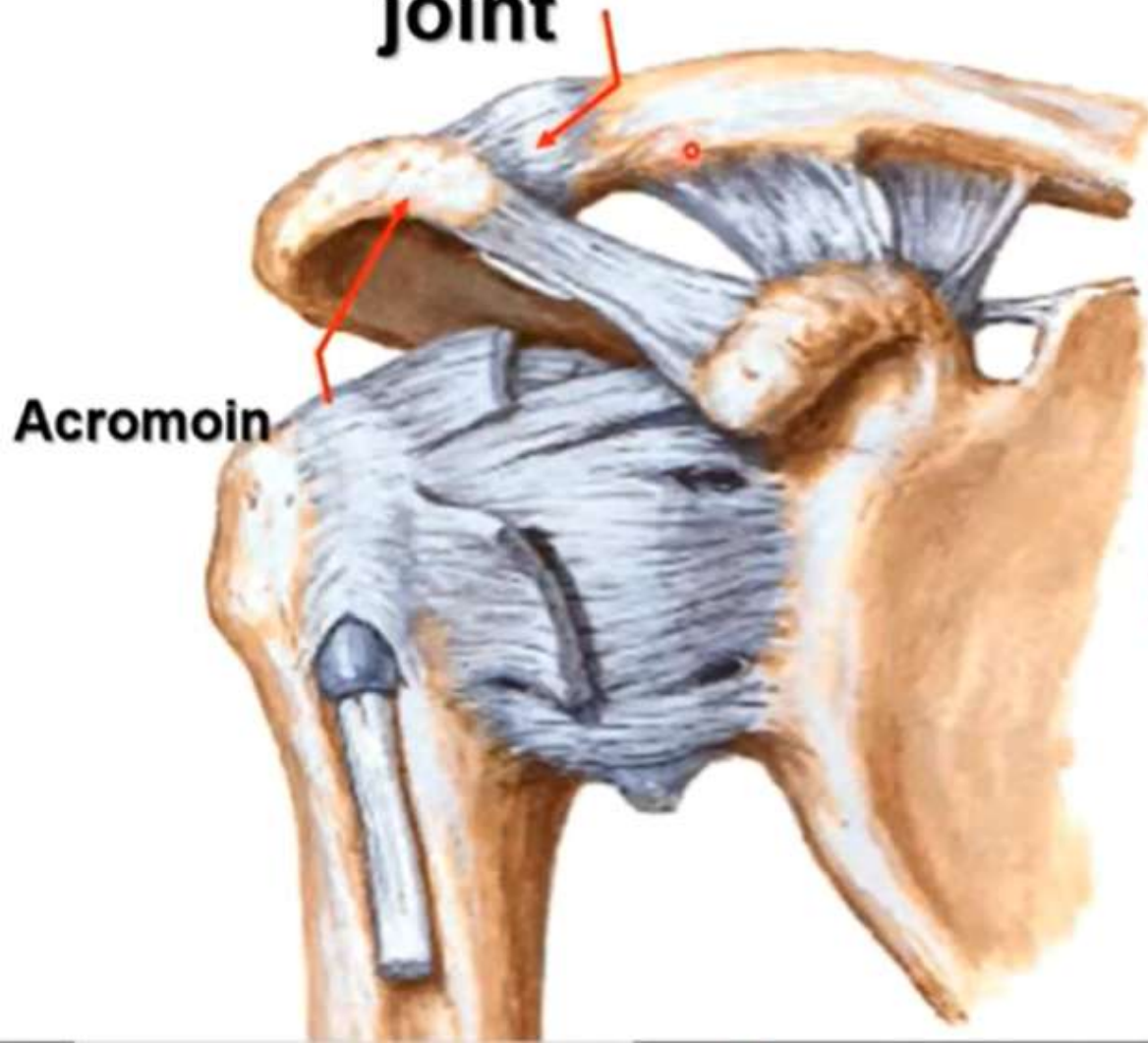
### \*\* Ligaments of sternoclavicular joint

- 1- **Anterior sternoclavicular ligament:** on the front of the capsule.
- 2- **Posterior sternoclavicular ligament:** on the back of the capsule.
- 3- **Costoclavicular ligament:** a strong, short and flattened ligament.
  - It connects the upper surface of the first rib and its costal cartilage with the inferior surface of the clavicle close to the sternal end.

A stylized graphic consisting of a red starburst shape in the center, surrounded by a yellow-green gradient background that tapers to a point at the bottom. The text "Acromioclavicular Joints" is written in white, bold, sans-serif font across the red starburst.

**Acromioclavicular  
Joints**

# Acromioclavicular joint



\*\* **Type**; plane synovial joint.

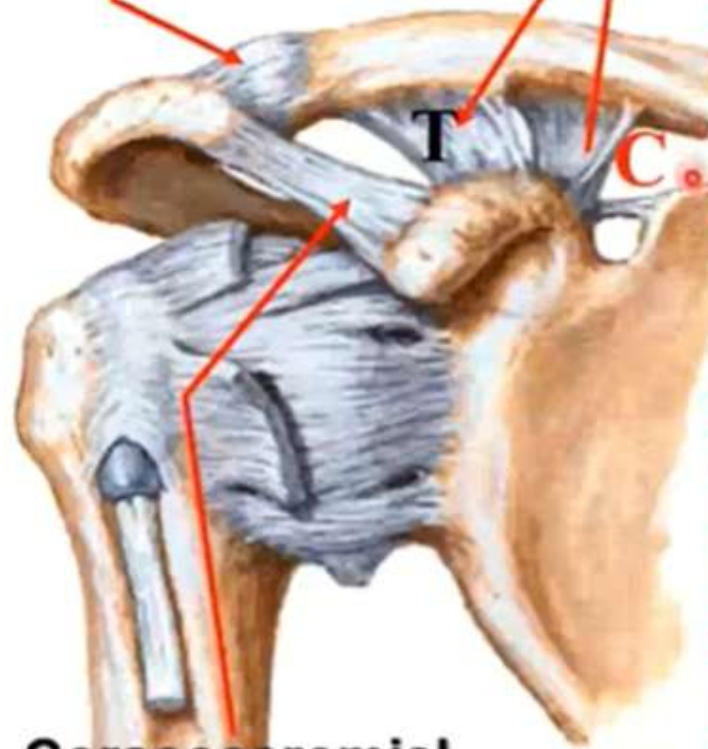
\*\* **Articular surface**:

1- Acromial end of the clavicle.

2- Clavicular facet on the medial border of the acromion.

1- Acromioclavicular ligament

2- Coracoclavicular ligament.



3- Coracoacromial ligament between coracoid process and acromion process

### \*\* Ligaments of Acromioclavicular joint

1- **Acromioclavicular ligament:** between acromion process and lateral end of the clavicle.

2- **Coracoclavicular ligament:** very strong ligament which connects coracoid process with lateral third of clavicle, it is formed of 2 parts.

a- **Conoid ligament** between **conoid tubercle** of clavicle and knuckle (bent) of Coracoid process.

b- **Trapezoid ligament** between **trapezoid line** of clavicle and upper surface of Coracoid process.

**\*\* Function;** It prevents separation of the scapula from the clavicle during complex shoulder movement

- transmits weight of upper limb to clavicle and then to the axial skeleton



- **Movements of the scapula**

- Movements of the clavicle occur at the sternoclavicular and acromioclavicular joints

**The scapular movements include:**

**1- Elevation:** by upper fibers of trapezius and levator scapulae.

**2- Depression:** by lower fibers of trapezius, pectoralis minor, and gravity.

**3- Retraction:** by middle fibers of trapezius and rhomboideus minor and major muscles.

**4- Protraction:** (forward movement) by pectoralis minor and serratus anterior.

**5- Lateral rotation:** The glenoid cavity faces upward and lateral (during **abduction** of the shoulder **more than 90 degree**) by the middle and lower fibers of the trapezius and lower 5 digitations of the serratus anterior.

**6- Medial rotation:** the scapula **returns** from upward rotation to the rest position, mainly by gravity. If muscle action is needed, this movement is produced by the levator scapula, and rhomboideus muscles.

**N.B:** **subclavius muscle** plays an important role in **fixation** of the clavicle during movements of the shoulder girdle.