

ARTICULATIONS OF UPPER EXTREMITY

Pages 394 - 401



Articulations of the Pectoral Girdle



Sternoclavicular Joint (saddle)

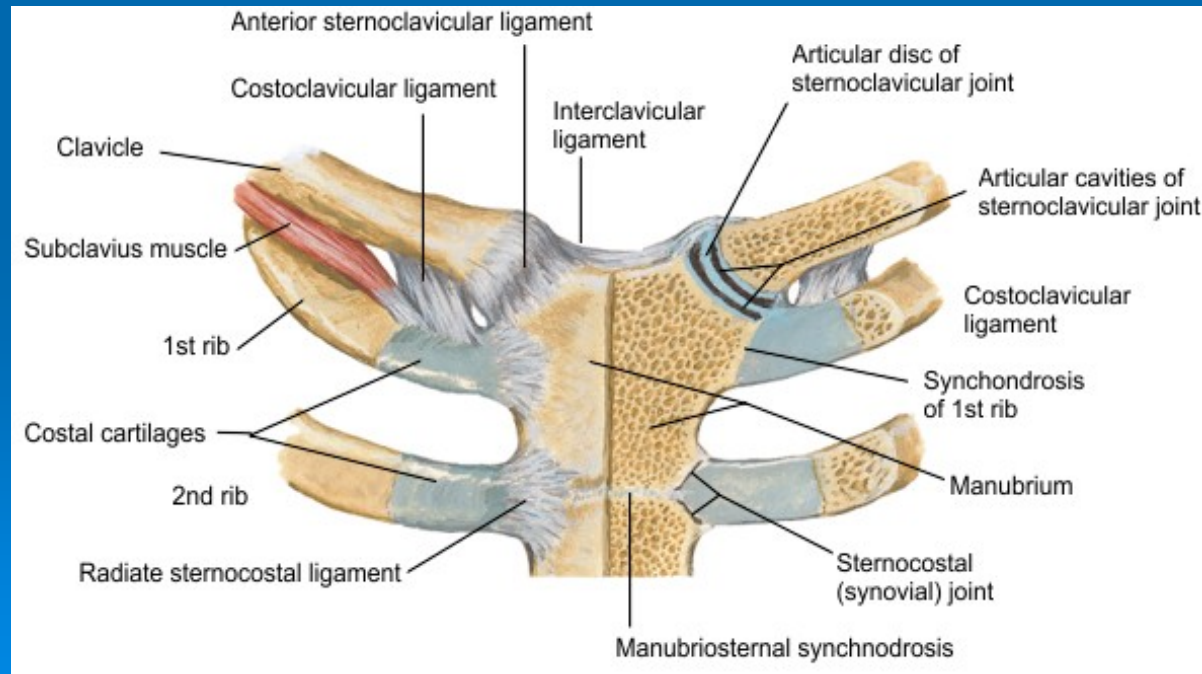
- sternal end of the clavicle articulates with manubrium
- joint cavity is divided into two compartments by articular disc
- **anterior and posterior sternoclavicular ligaments**
- **interclavicular ligament**
- **costoclavicular ligament**

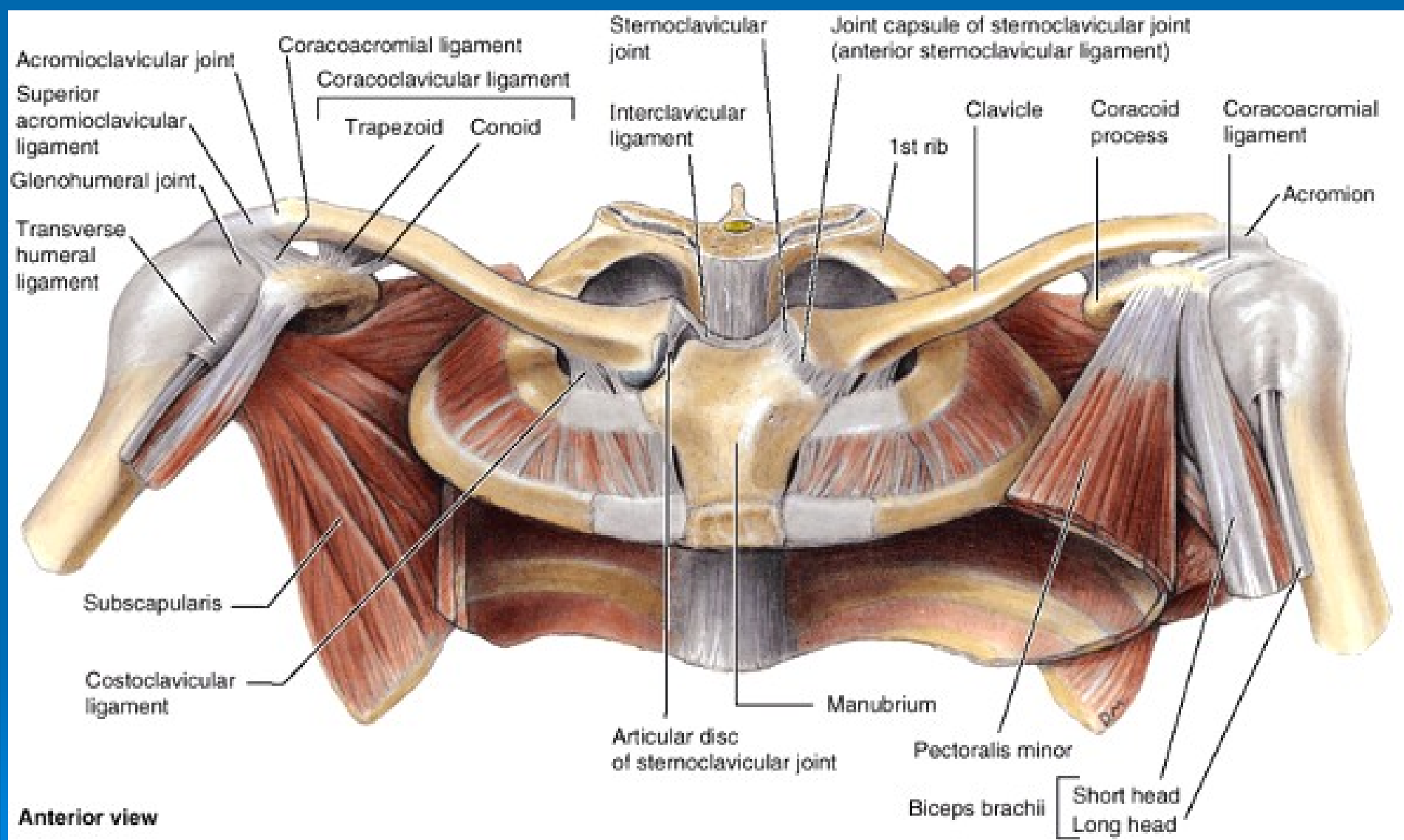
Acromioclavicular Joint (plane)

- acromial end of the clavicle + acromion of the scapula
- **acromioclavicular ligament**
- **coracoclavicular ligament**
- **coracoacromial ligament**

Scapulothoracic „Joint“

- moveable muscular anchorage of the scapula on the thoracic cage → increased range of movements of the upper limb
- movements - elevation, depression, protraction, retraction and rotation





Acromioclavicular joint
 Superior acromioclavicular ligament
 Glenohumeral joint
 Transverse humeral ligament

Coracoacromial ligament
 Coracoclavicular ligament
 Trapezoid
 Conoid

Sternoclavicular joint
 Interclavicular ligament

Joint capsule of sternoclavicular joint (anterior sternoclavicular ligament)

1st rib
 Clavicle
 Coracoid process
 Coracoacromial ligament
 Acromion

Subscapularis
 Costoclavicular ligament

Articular disc of sternoclavicular joint

Manubrium

Pectoralis minor

Biceps brachii

Short head
 Long head

Anterior view

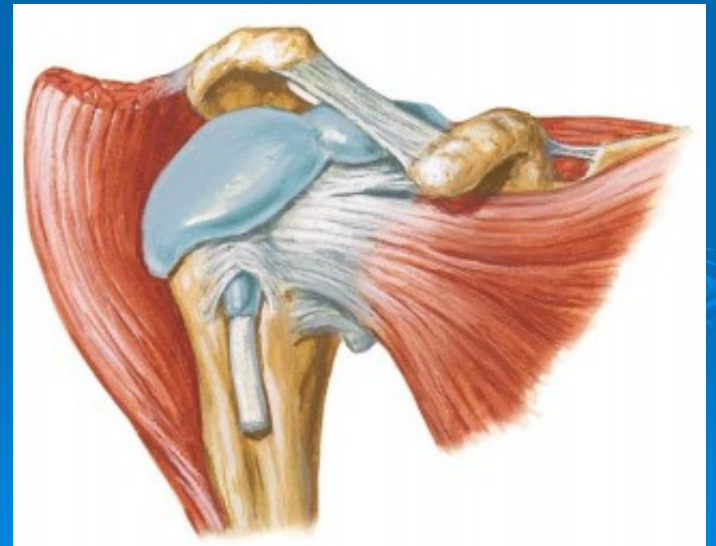
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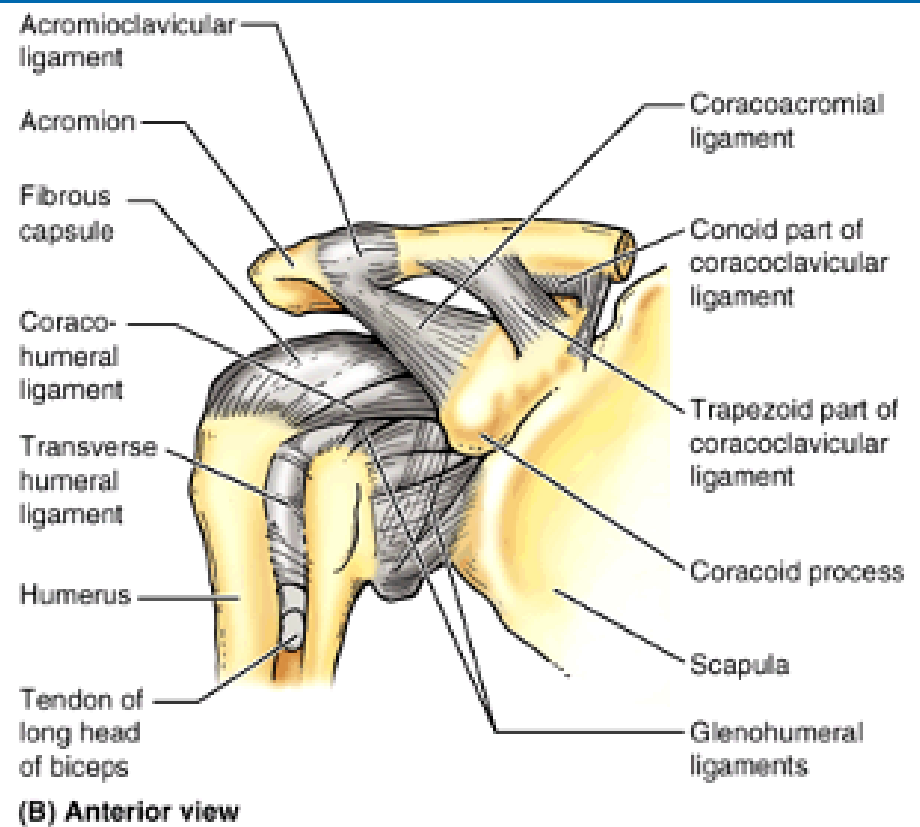
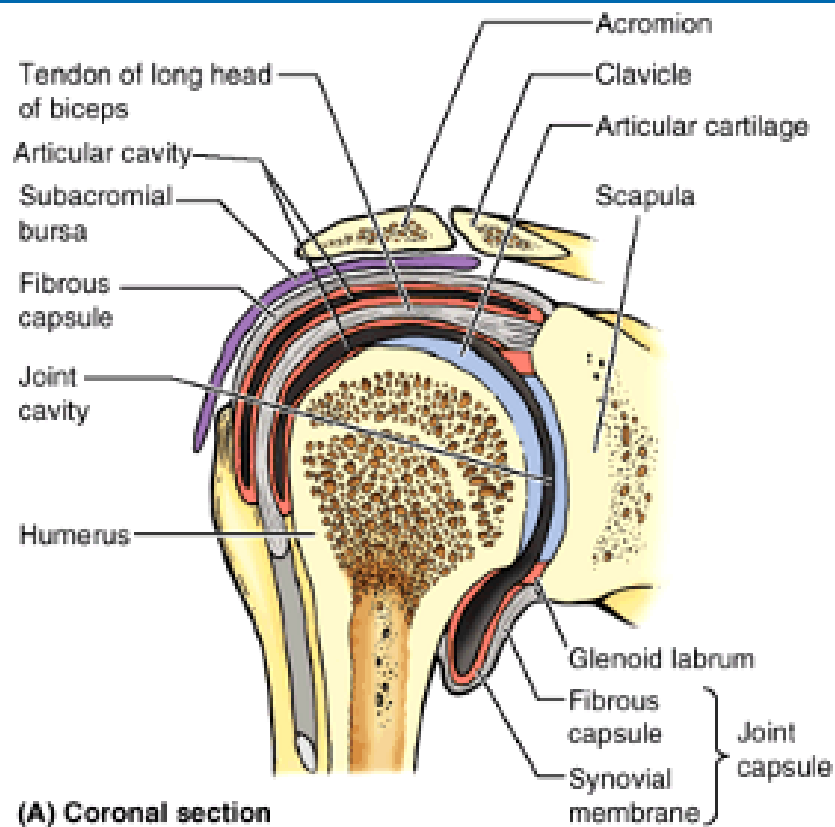


Glenohumeral Joint



- Ball-and-socket type of joint → wide range of movement
(its mobility makes the joint relatively unstable)
- humeral head articulates with the relatively shallow glenoid cavity of the scapula – deepened by the ring-like fibrocartilaginous glenoid labrum
- **glenohumeral ligaments**
- **coracohumeral ligament**
- tendon of the long head of the biceps
- **subscapular bursa**





Acromioclavicular joint

Spine of scapula

Clavicle

Acromion

Coracoid process

Glenohumeral joint (glenoid cavity)

Greater tubercle of humerus

Surgical neck of humerus

Axillary fat

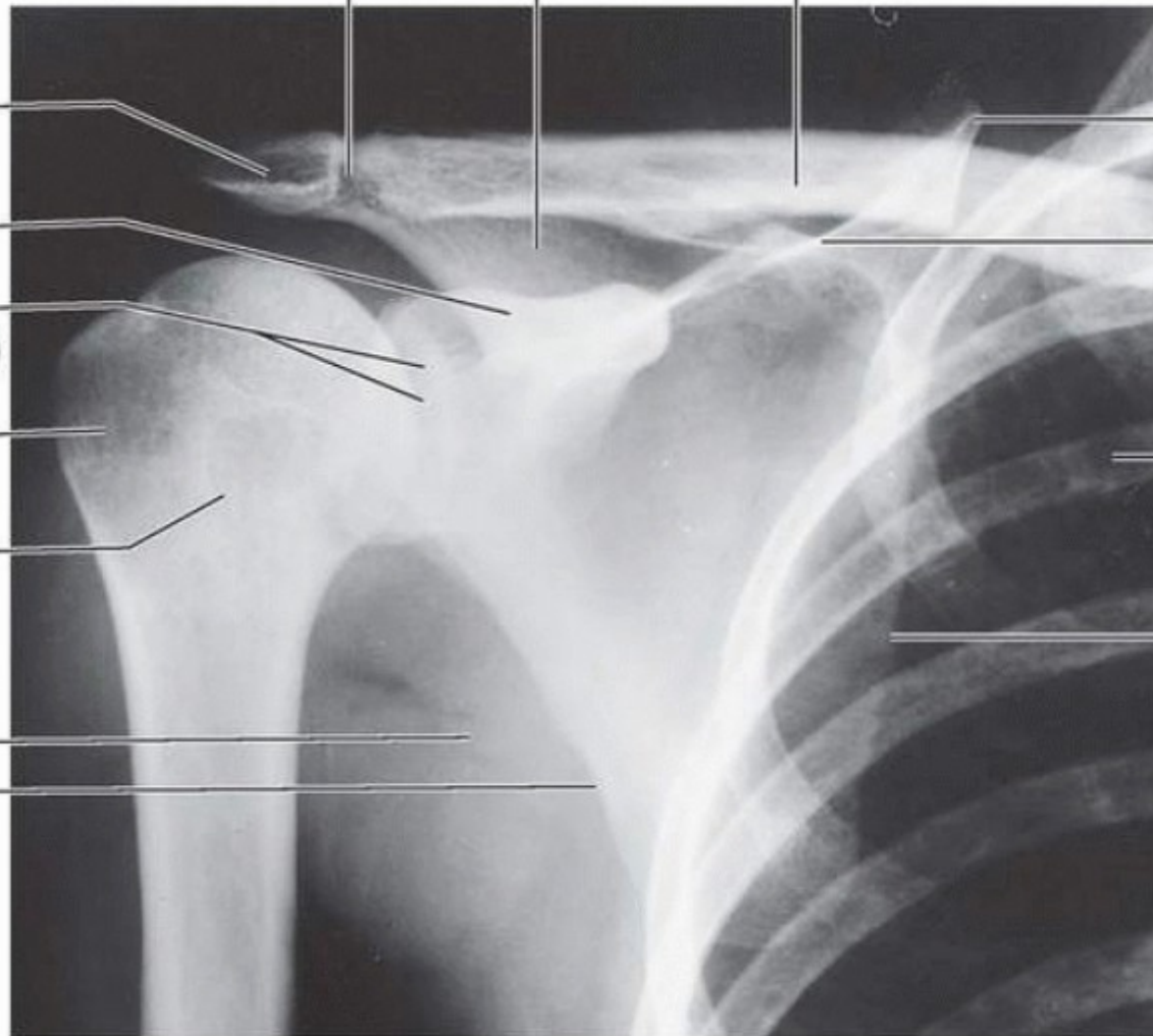
Lateral border of scapula

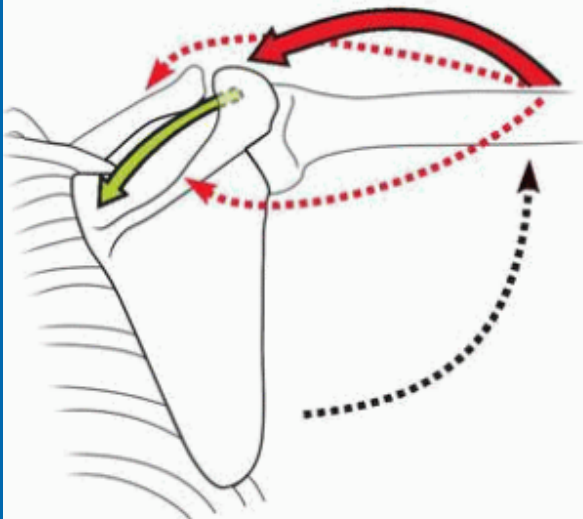
Superior angle of scapula

Superior border of scapula

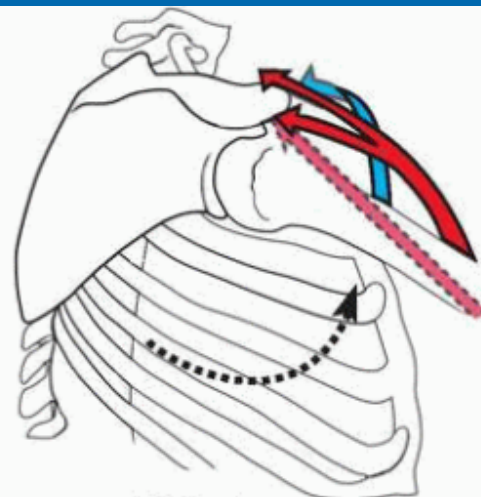
4th rib

Medial border of scapula

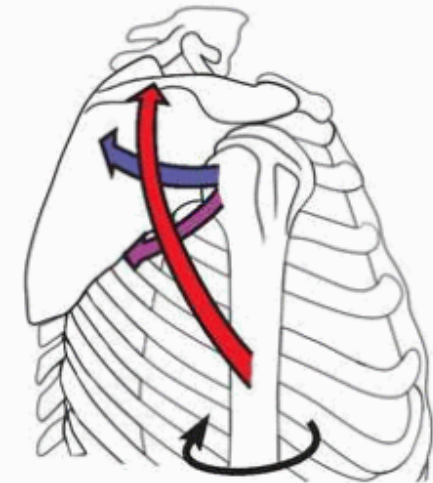




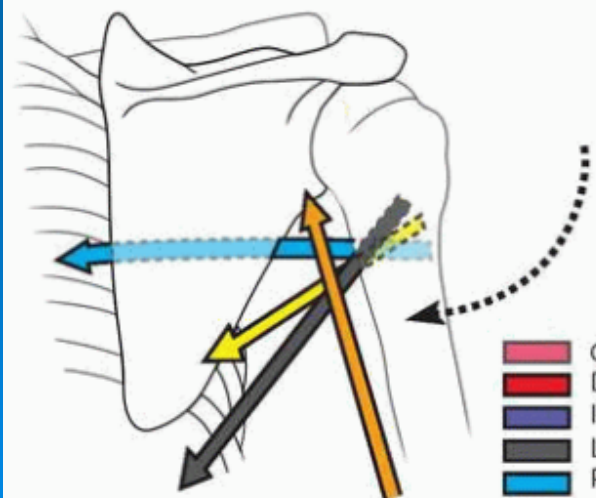
(A) Abduction



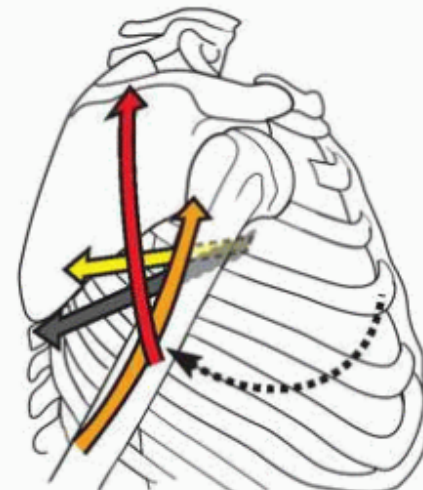
(C) Flexion



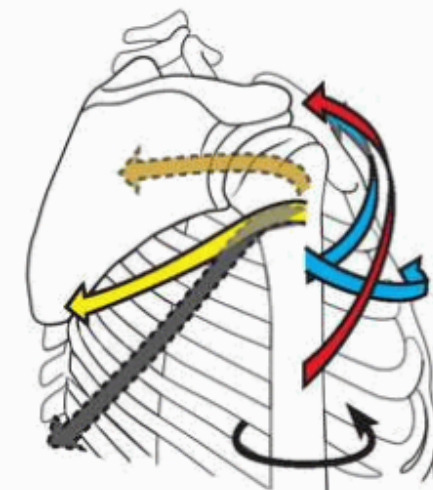
(E) Lateral rotation









(B) Adduction



(D) Extension



(F) Medial rotation

- | | | | |
|---|------------------|--|-------------------|
|  | Coracobrachialis |  | Subscapularis |
|  | Deltoid |  | Supraspinatus |
|  | Infraspinatus |  | Teres major |
|  | Latissimus dorsi |  | Teres minor |
|  | Pectoralis major |  | Triceps-long head |

Articulations of the Forearm

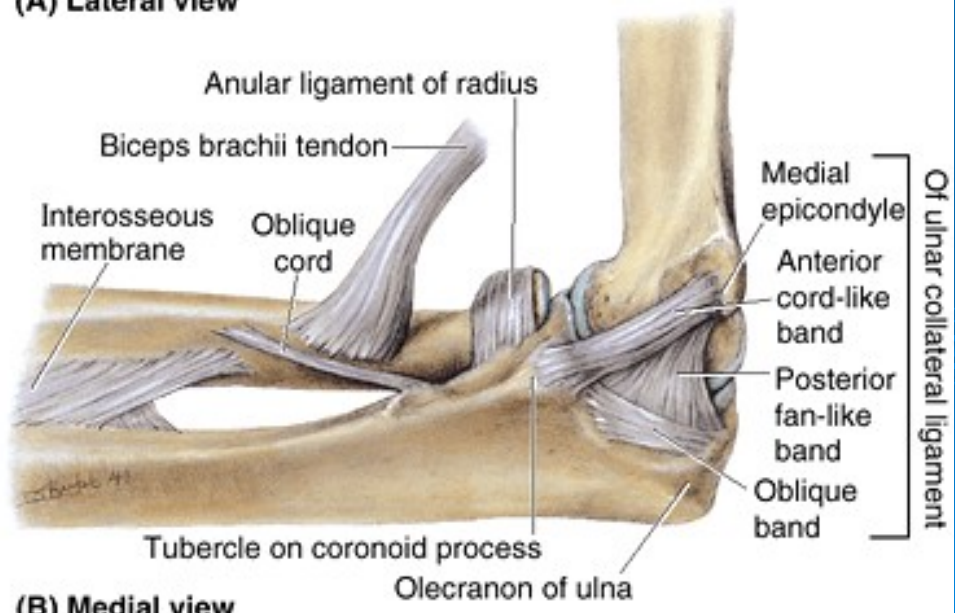
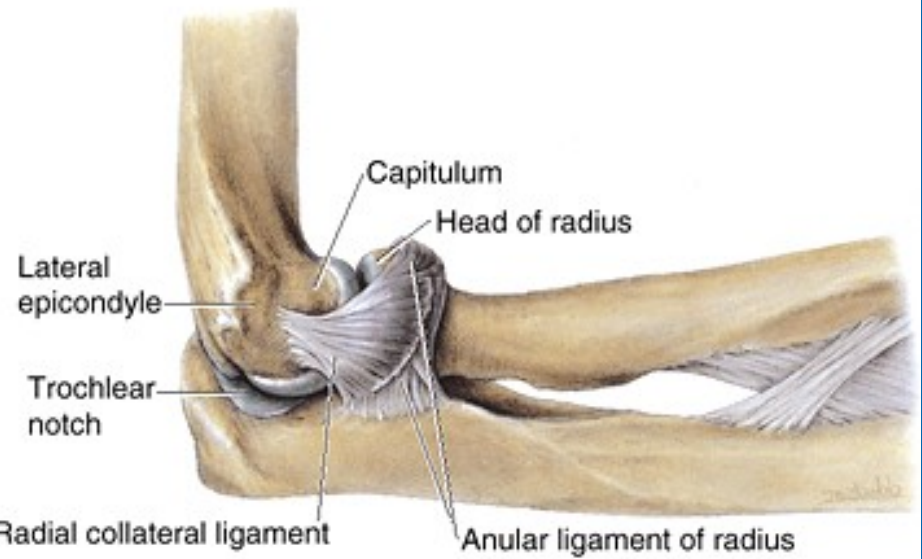
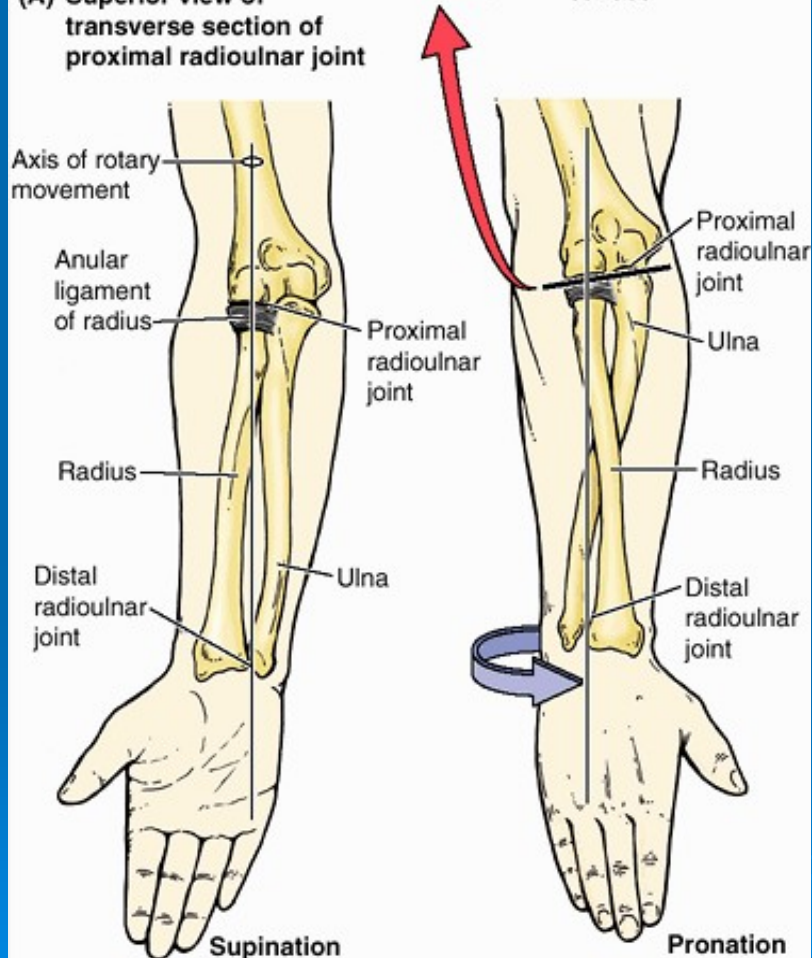
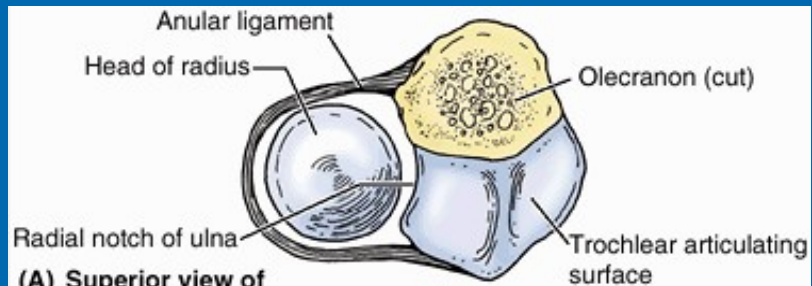


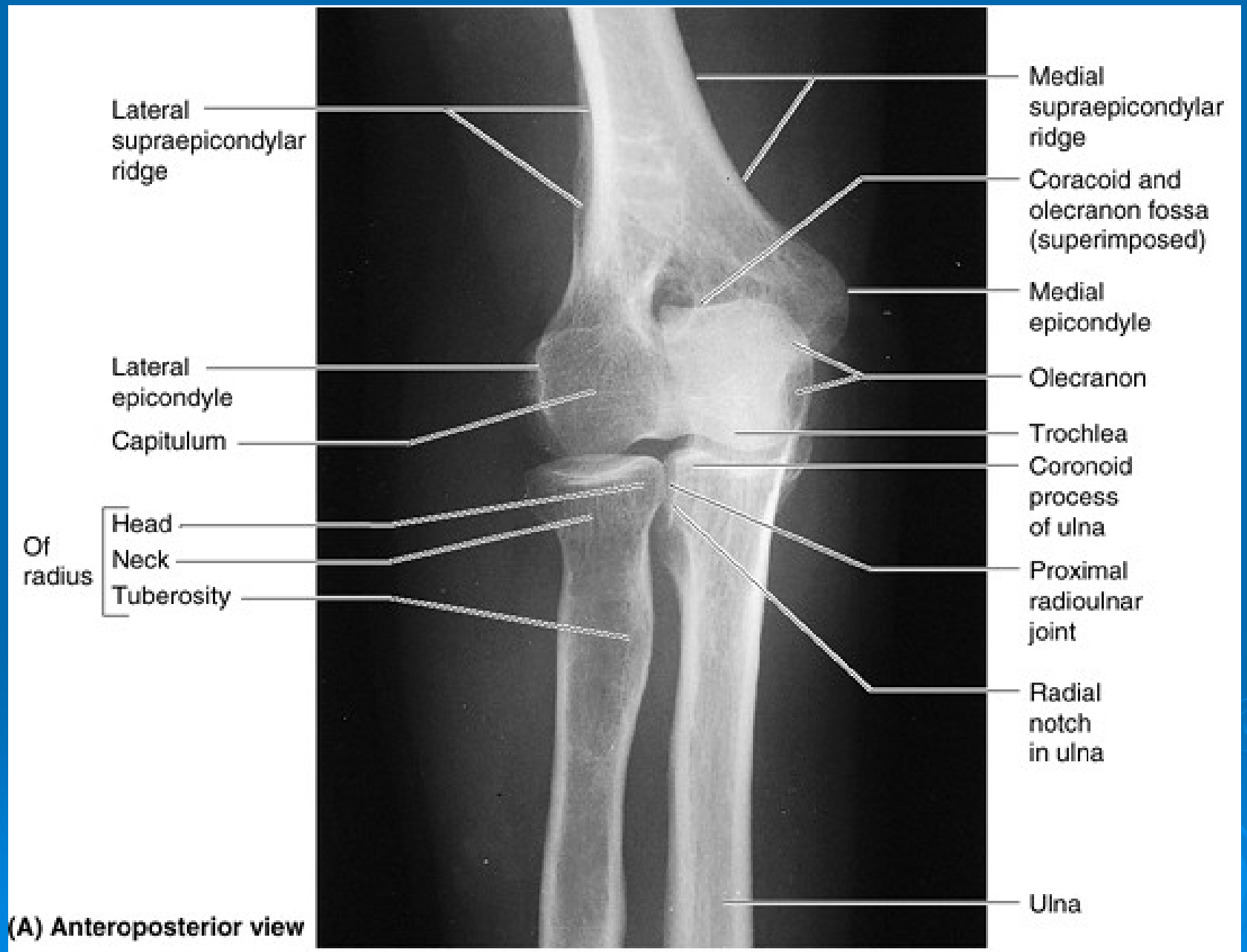
Elbow Joint (hinge)

- the spool-shaped trochlea and spheroidal capitulum of the humerus articulate with the trochlear notch of the ulna and the slightly concave superior aspect of the head of the radius
→ humeroulnar and humeroradial articulations
- **radial collateral ligament**
- **ulnar collateral ligament**
- movements - flexion and extension

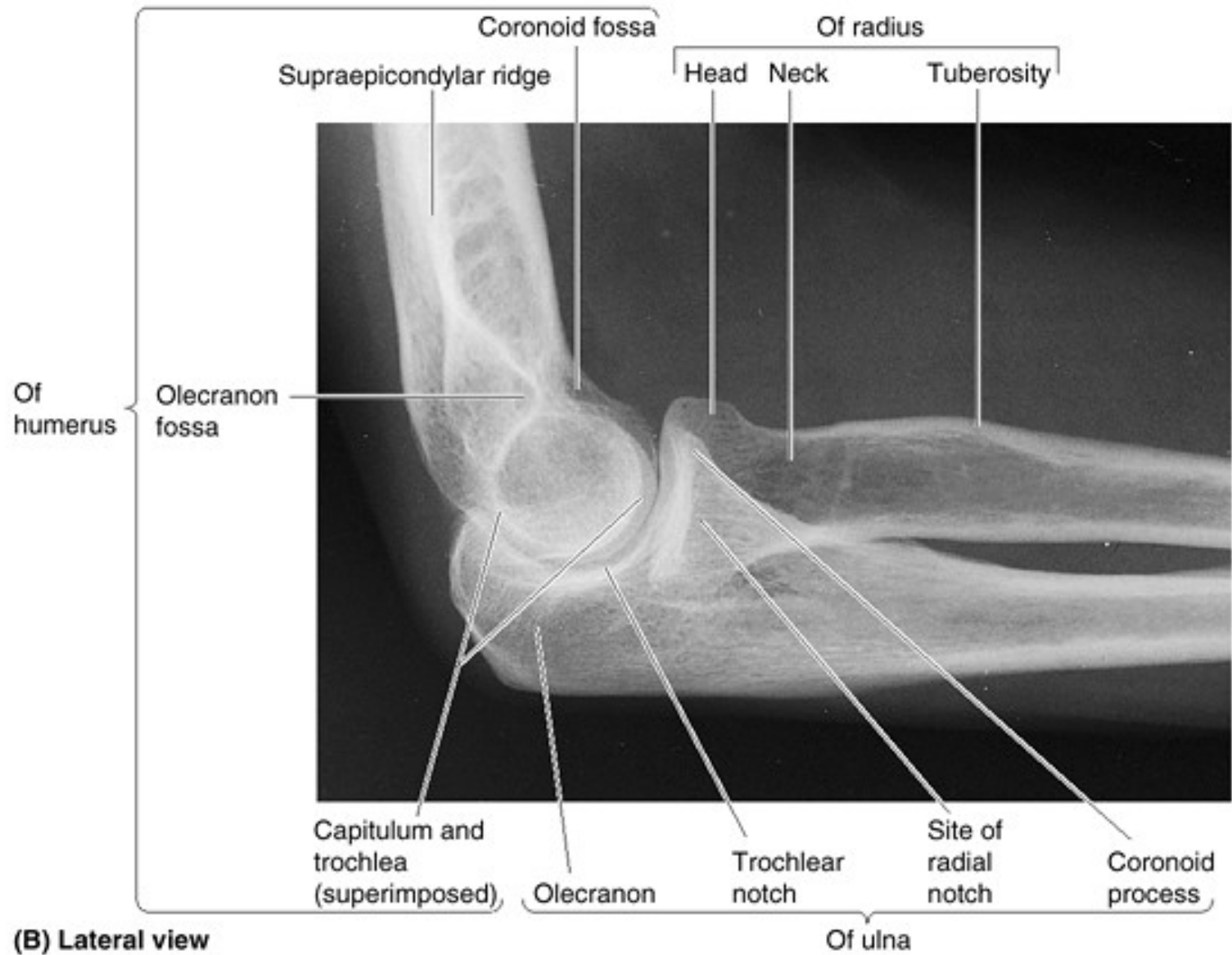
Proximal Radioulnar Joint (pivot)

- head of the radius articulates with the radial notch of the ulna
- **anular ligament of the radius** - hold the radial head in position
- movements - supination and pronation





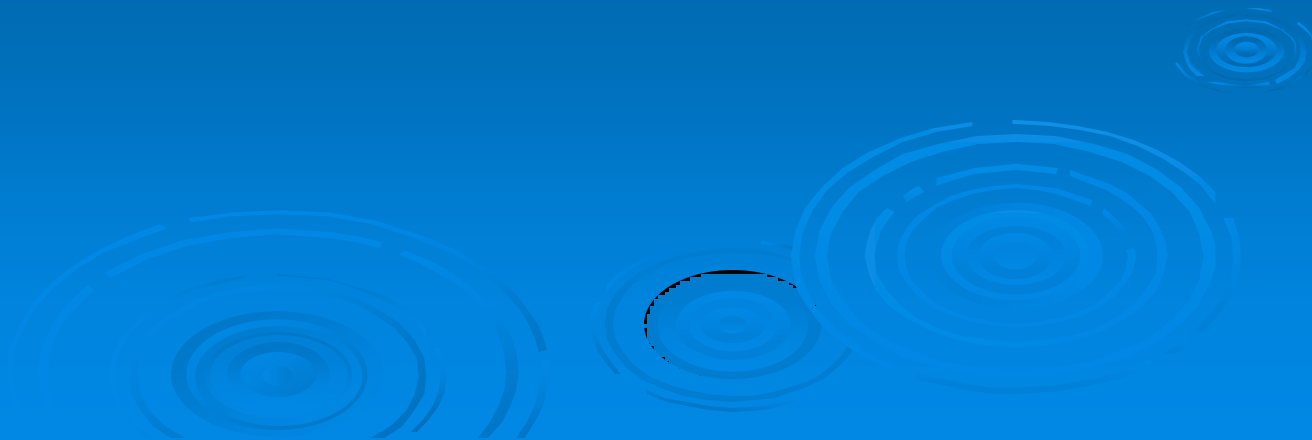
(A) Anteroposterior view

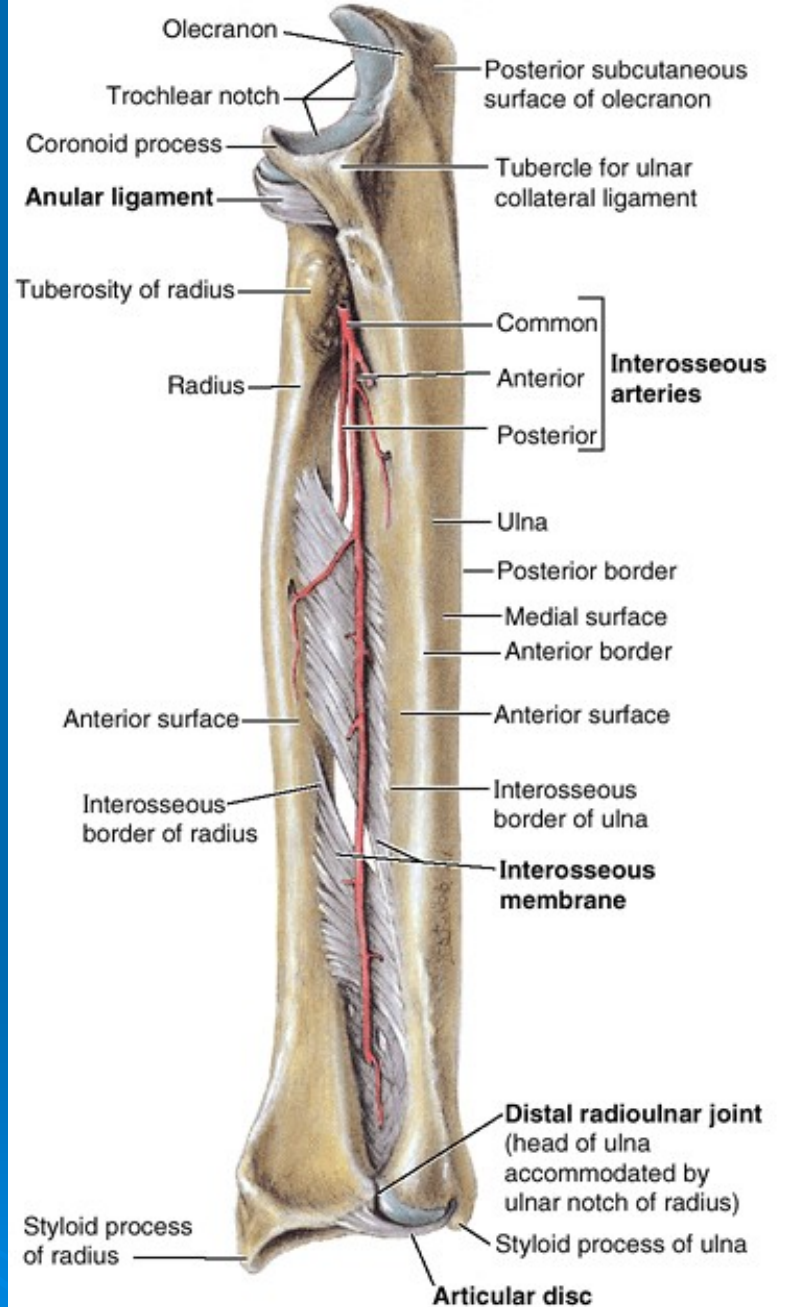
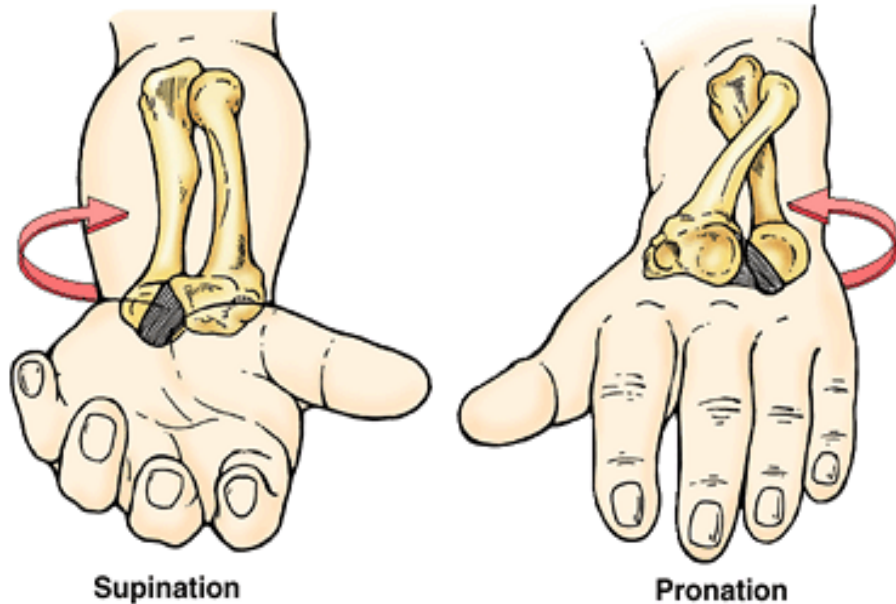
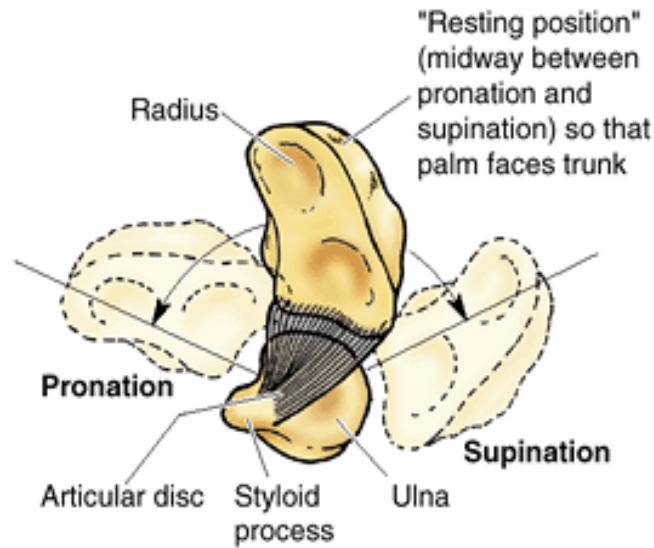


Distal Radioulnar Joint (pivot)

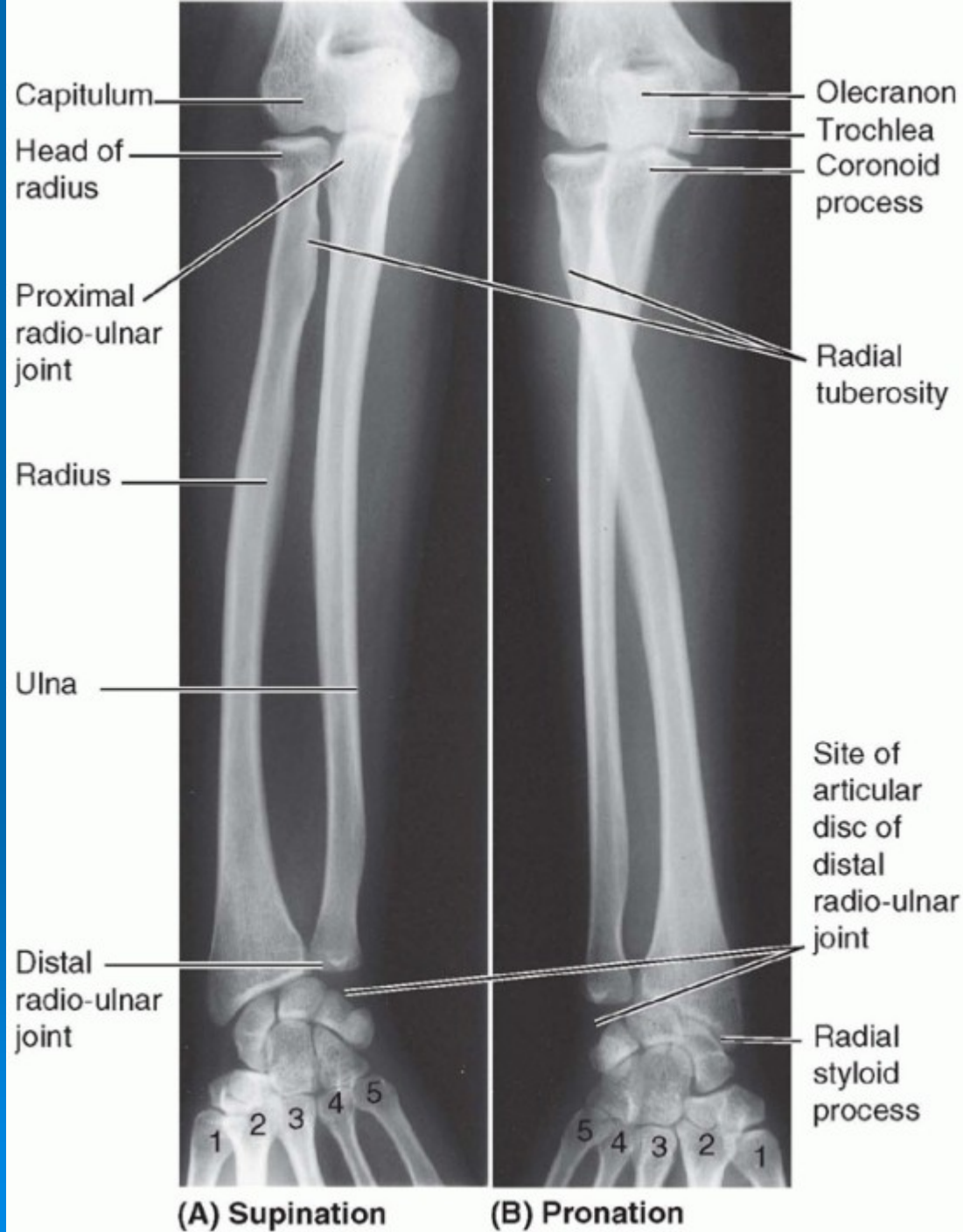
- head of the ulna articulates with the ulnar notch on the medial side of the distal end of the radius
- **articular disc** binds the ends of the ulna and radius together
- movements - supination and pronation

Interosseous membrane





Medial view with radius in "resting (midprone) position" (midway between pronation and supination) so that the palm is directed toward the body

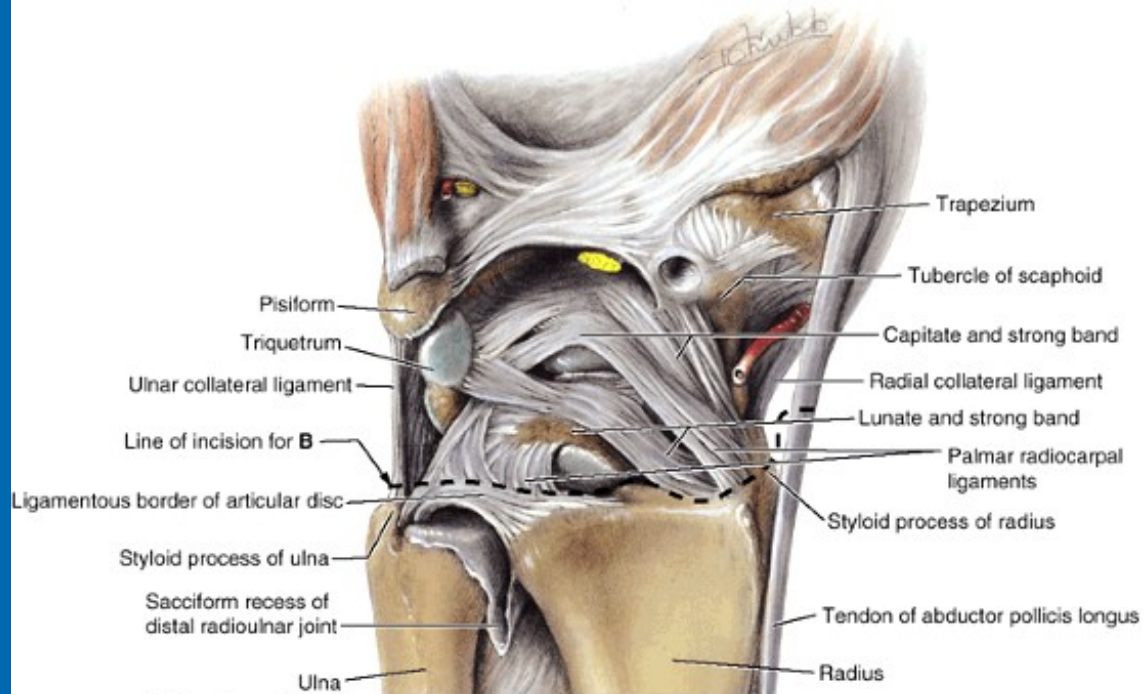


Wrist Joint and Intercarpal Articulations

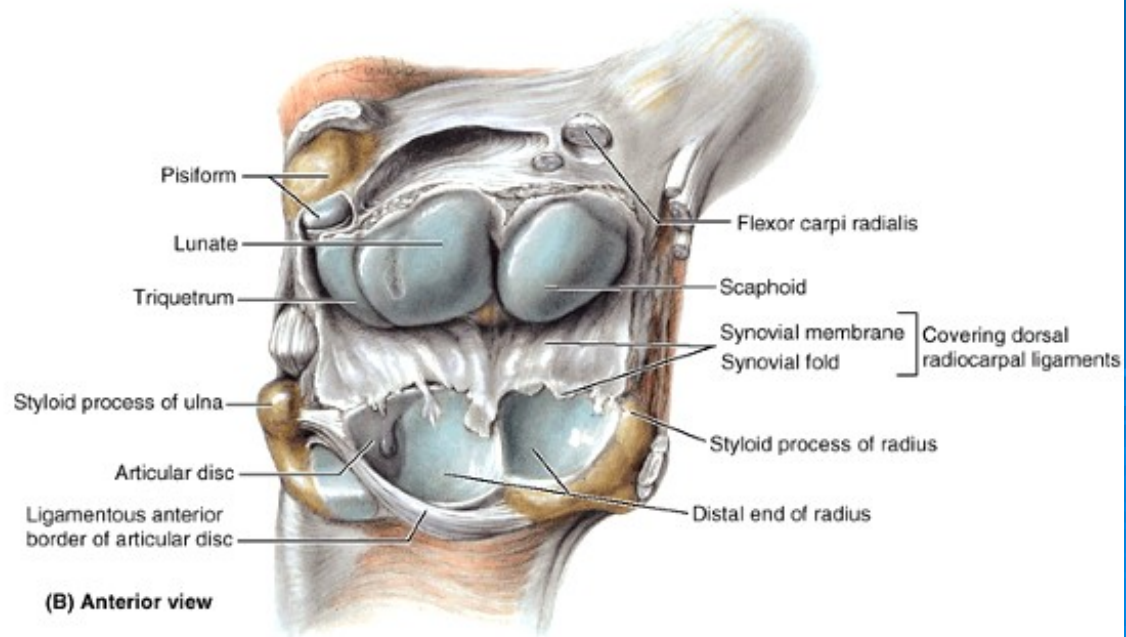


Radiocarpal Joint (condyloid/ellipsoid)

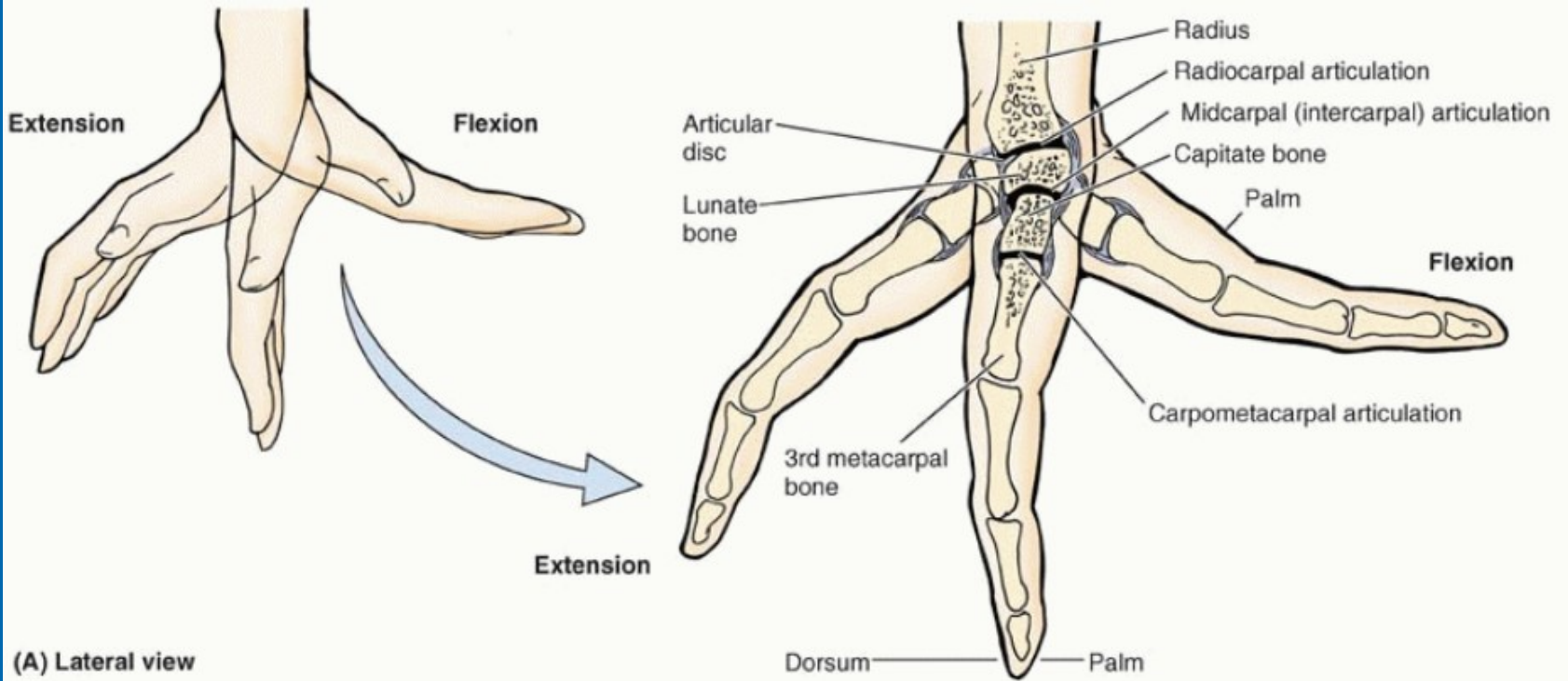
- distal end of the radius and the articular disc of the distal radioulnar joint articulate with the proximal row of the carpal bones except for the pisiform and ulna (doesn't participate)
- **dorsal radiocarpal ligaments**
- **palmar radiocarpal ligaments**
- **ulnar collateral ligament**
- **radial collateral ligament**
- movements - flexion, extension, abduction, adduction and circumduction



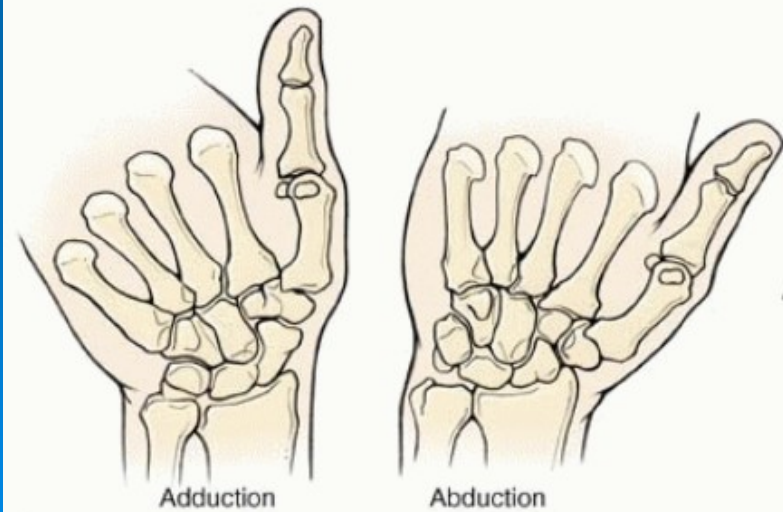
(A) Anterior view



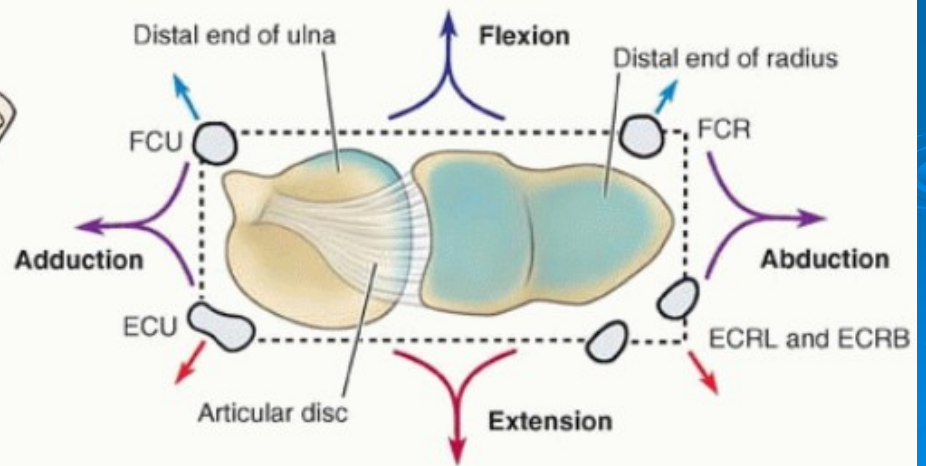
(B) Anterior view



(A) Lateral view



(B) Anteroposterior view



(C) Inferior view

Intercarpal Joints (plane)

- interconnecting the carpal bones
- joints between the carpal bones of the proximal row
- joints between the carpal bones of the distal row
- the midcarpal joint - between the proximal and distal rows
- continuous, common articular cavity is formed by intercarpal and carpometacarpal joints (except the thumb)
- movements - proximal row being more mobile than the distal row



Carpometacarpal and Intermetacarpal Joints (plane)

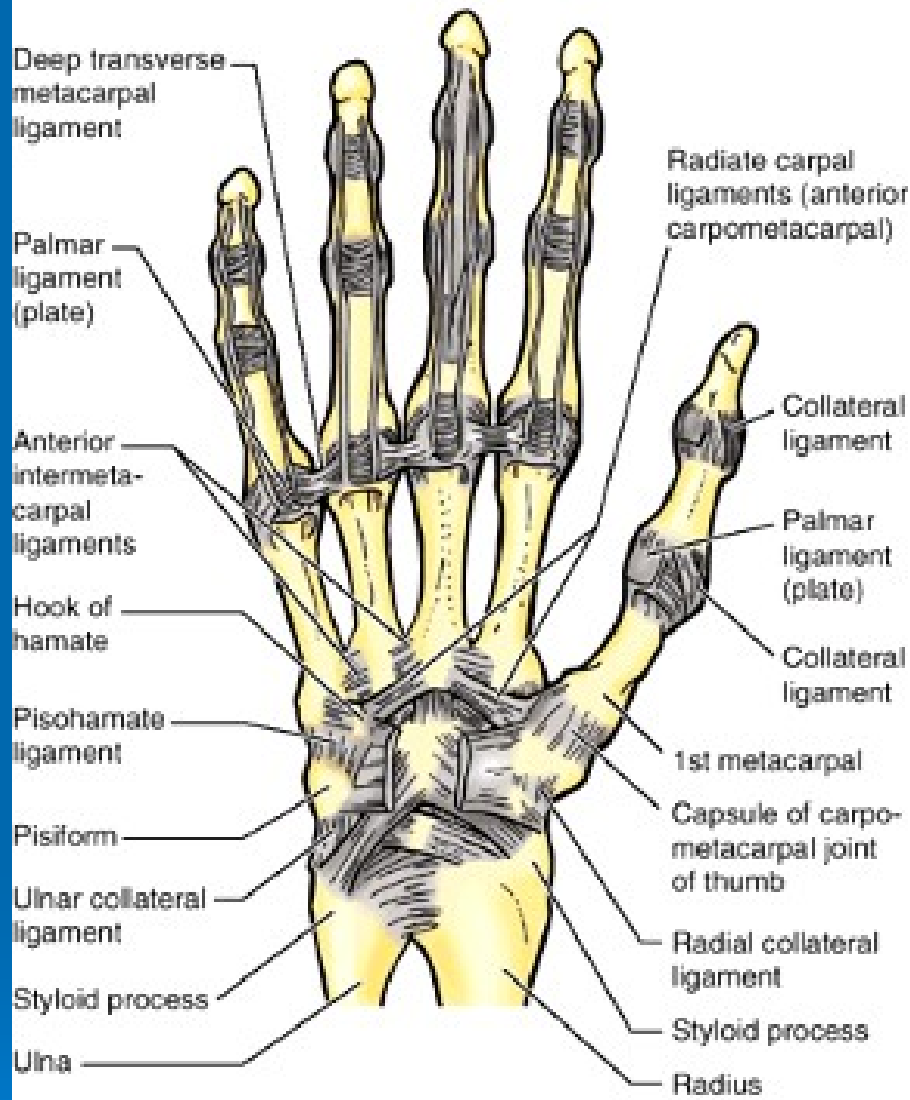
- the distal surfaces of the carpals of the distal row articulate with the bases of the metacarpals
- intermetacarpal joints occur between the radial and the ulnar aspects of the bases of the metacarpals
- **palmar and dorsal carpometacarpal ligaments**
- **palmar and dorsal intermetacarpal ligaments**
- **superficial and deep transverse ligaments**
- movements of the thumbs - flexion, extension, adduction, abduction, circumduction, restricted axial rotation and partially opposition/reposition
- movements of the 4th and 5th fingers - slightly mobile

Metacarpophalangeal Joints (condyloid)

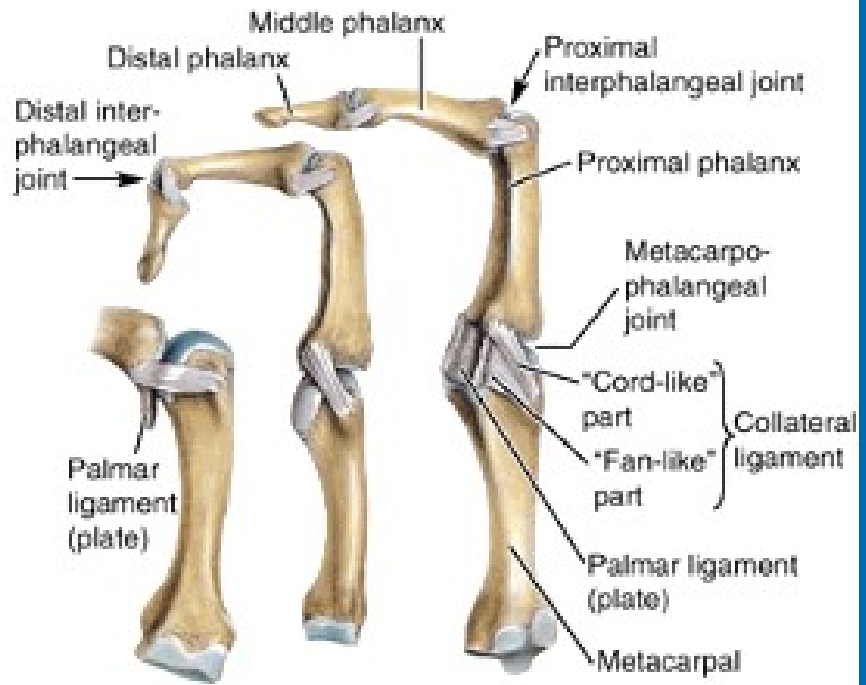
- heads of the metacarpals articulate with the bases of the proximal phalanges
- movements - flexion, extension, adduction and abduction

Interphalangeal Joints (hinge)

- movements - flexion, extension
- collateral ligaments
- palmar ligaments
- deep transverse metacarpal ligaments



(A) Anterior view, right hand



(B) Lateral view, right hand



(C) Lateral view, right hand

Distal phalanx
of thumb

Interphalangeal
joint of thumb

Proximal
phalanx
of thumb

1st metacarpo-
phalangeal joint

Sesamoid bones

1st metacarpal

Trapezium

Scaphoid

Lunate

Radius

3rd metacarpophalangeal joint

Head of 5th metacarpal

Intercarpal (midcarpal) joint

Radiocarpal (wrist) joint

Ulna

