

Arm, Elbow, Forearm



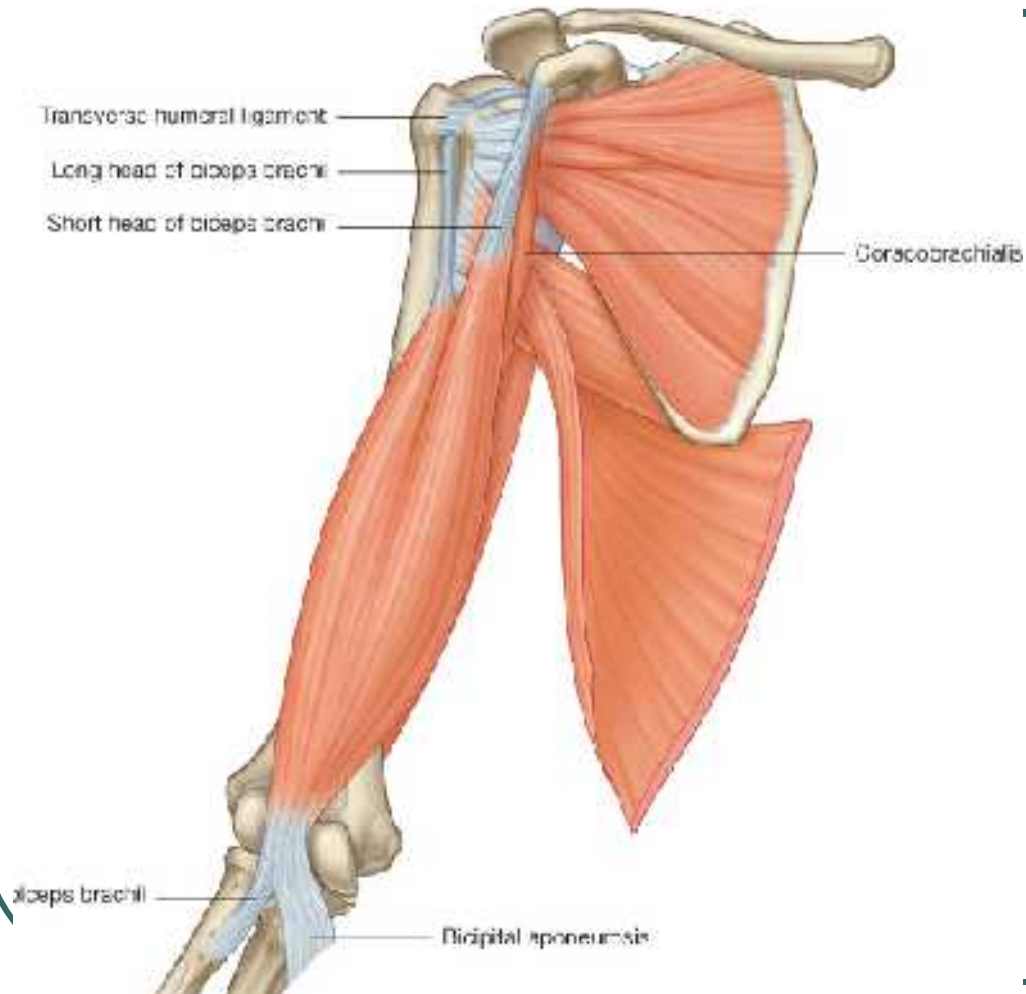
Two Compartments of Arm

- Arm = Shoulder to elbow; aka Brachium
- Anterior = flexors
 - Innervated by Musculocutaneous Nerve
 - Blood supply by brachial aa
- Posterior = extensors
 - Innervated by Radial Nerve
 - Blood supply by brachial profunda aa

Muscles of the Anterior Compartment

- Coracobrachialis
- Biceps brachii
- Brachialis

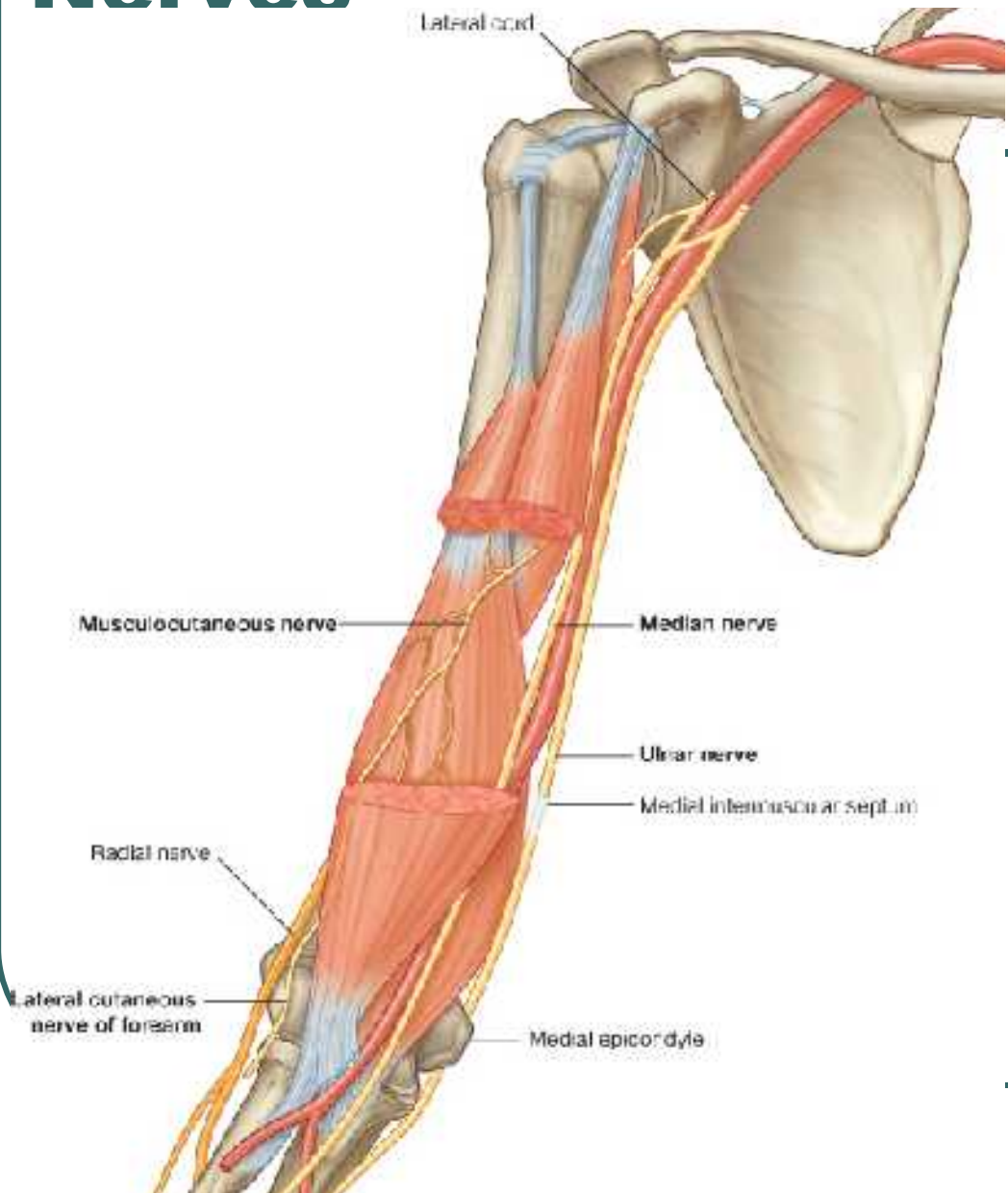
Anterior Muscles



Anterior muscles



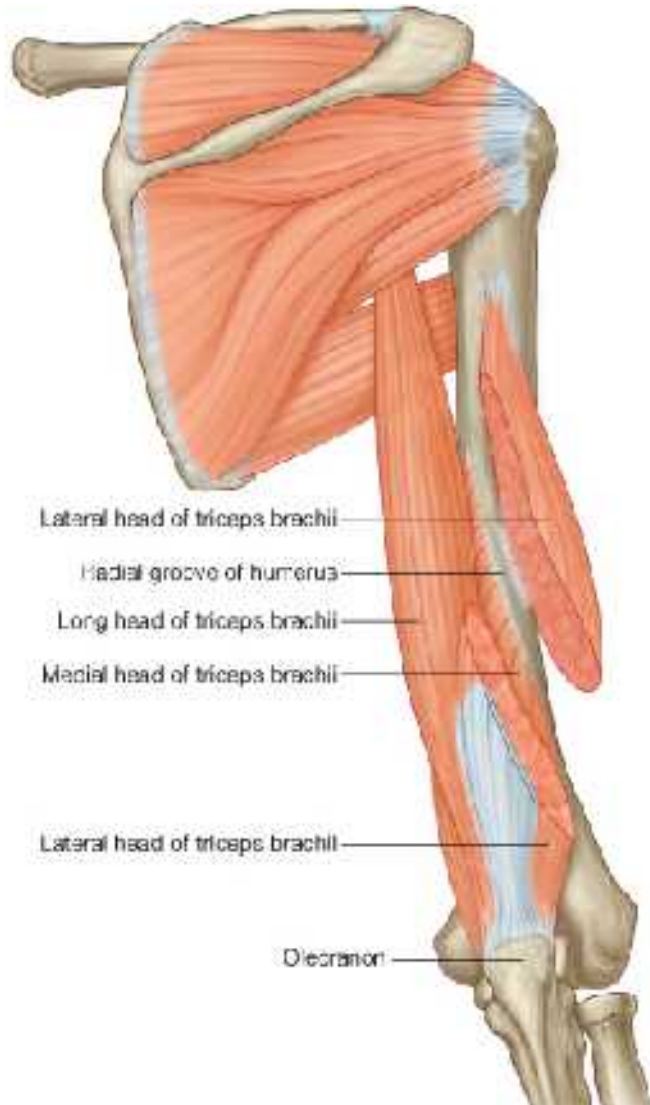
Nerves



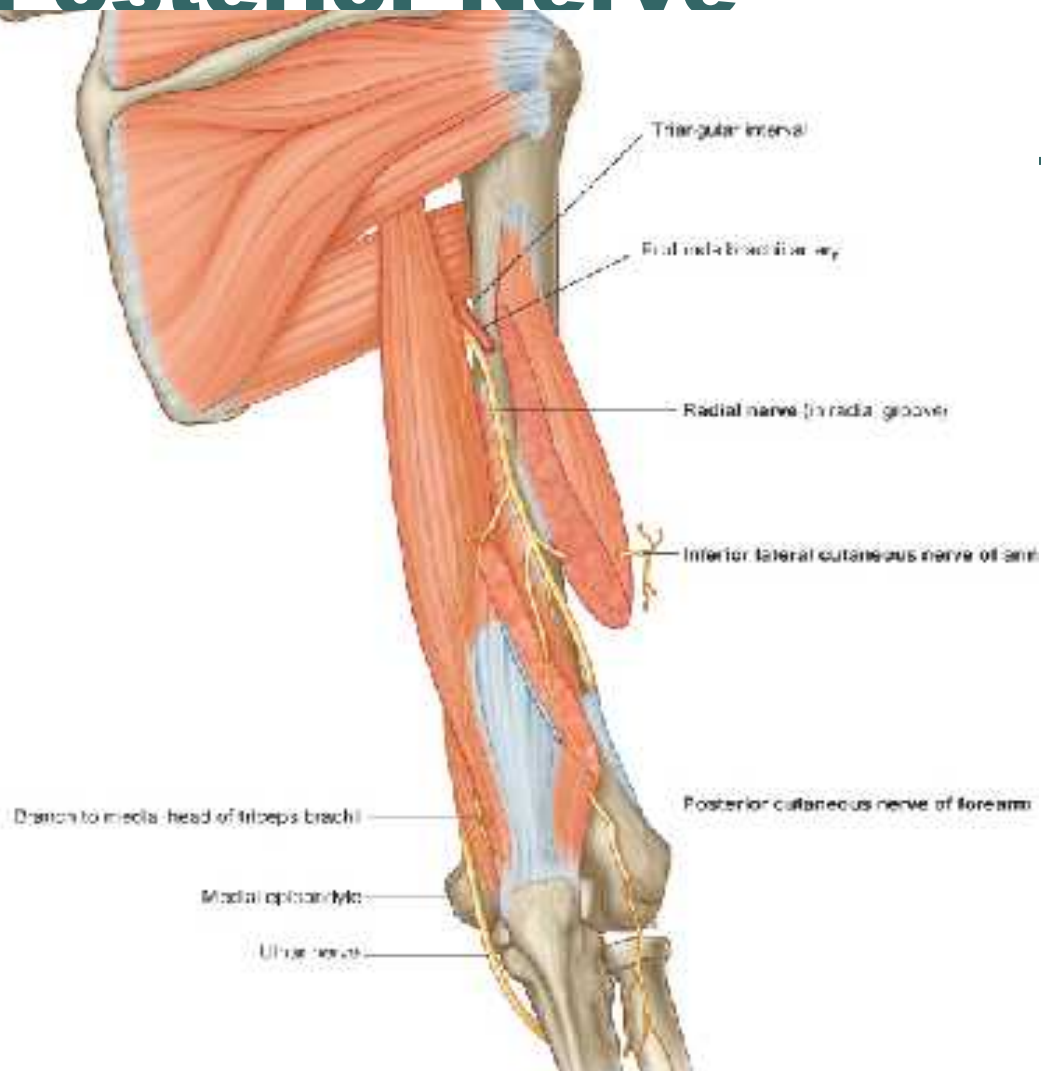
Muscles of the Posterior Compartment

- Triceps brachii
 - Long head
 - Lateral head
 - Medial head
- Anconeus

Posterior Muscles



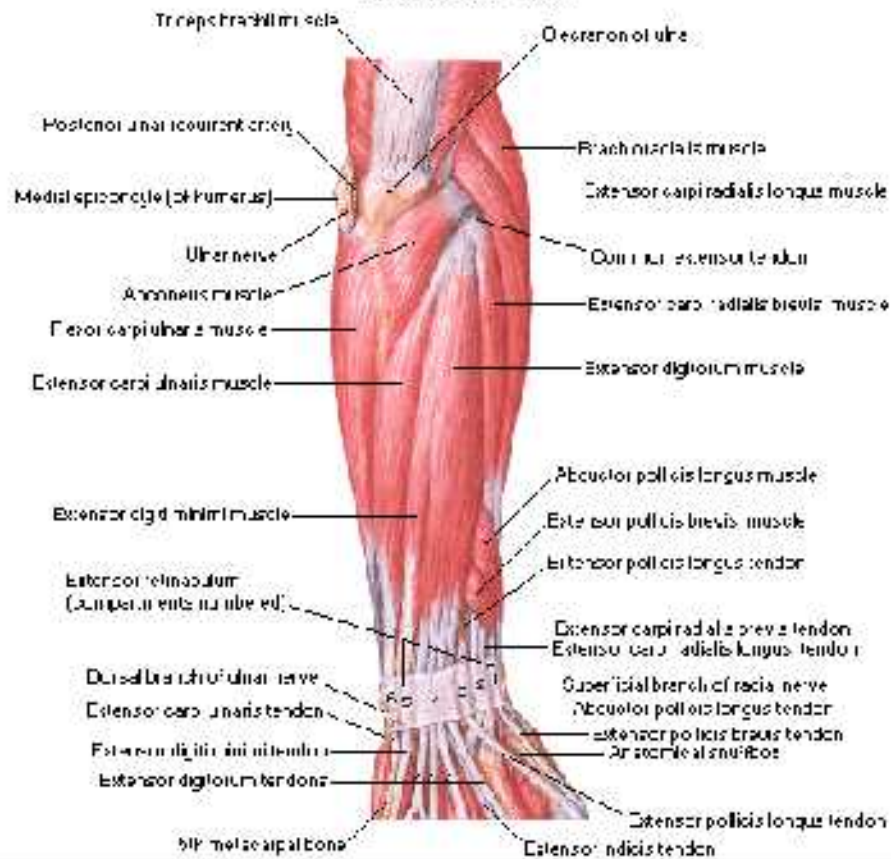
Posterior Nerve



Anconeus

Muscles of Forearm [Superficial Layer]

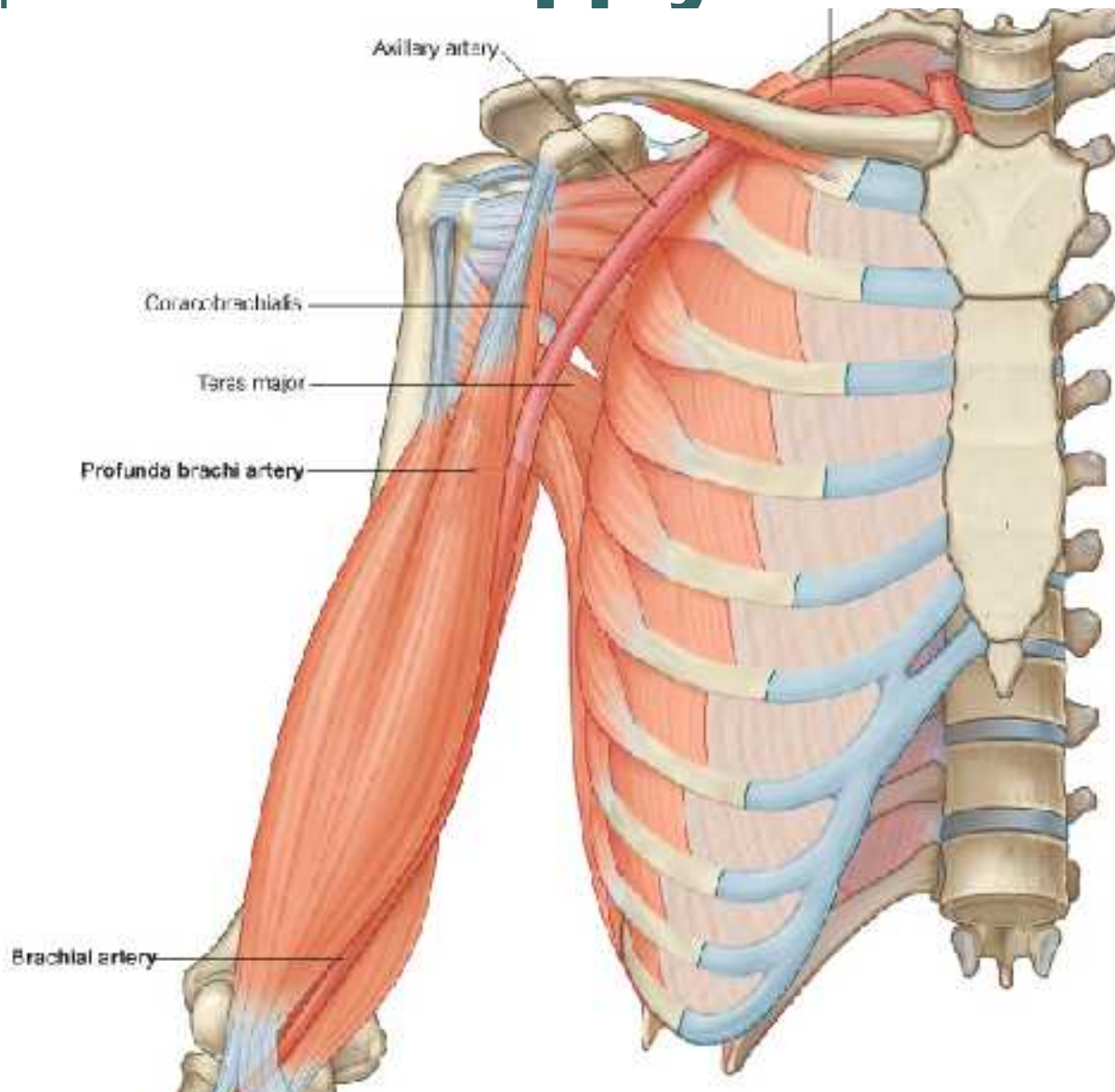
Posterior View



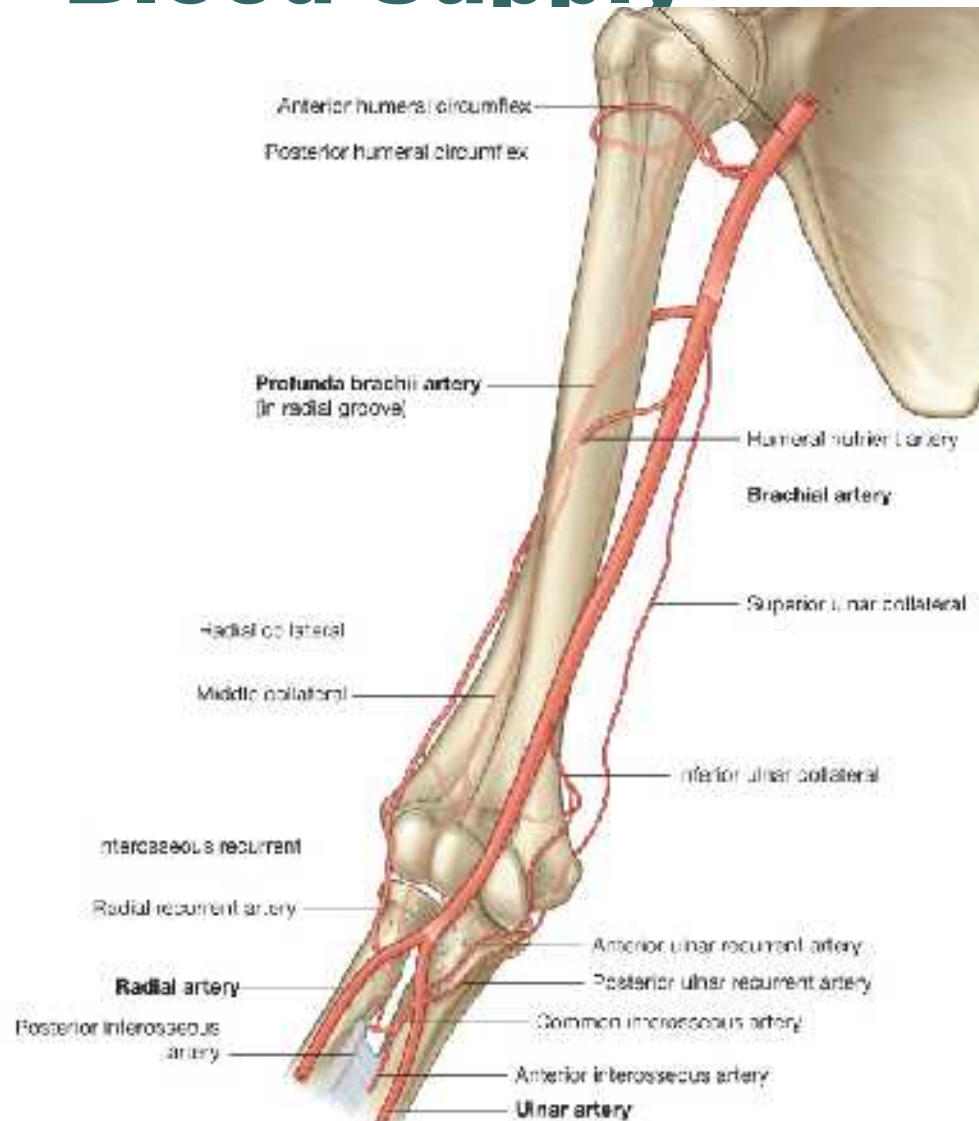
Regional Blood Supply

- Brachial
- Brachial Profunda
- Superior Ulnar Collateral
- Inferior Ulnar Collateral
- Radial Collateral
- Middle Collateral

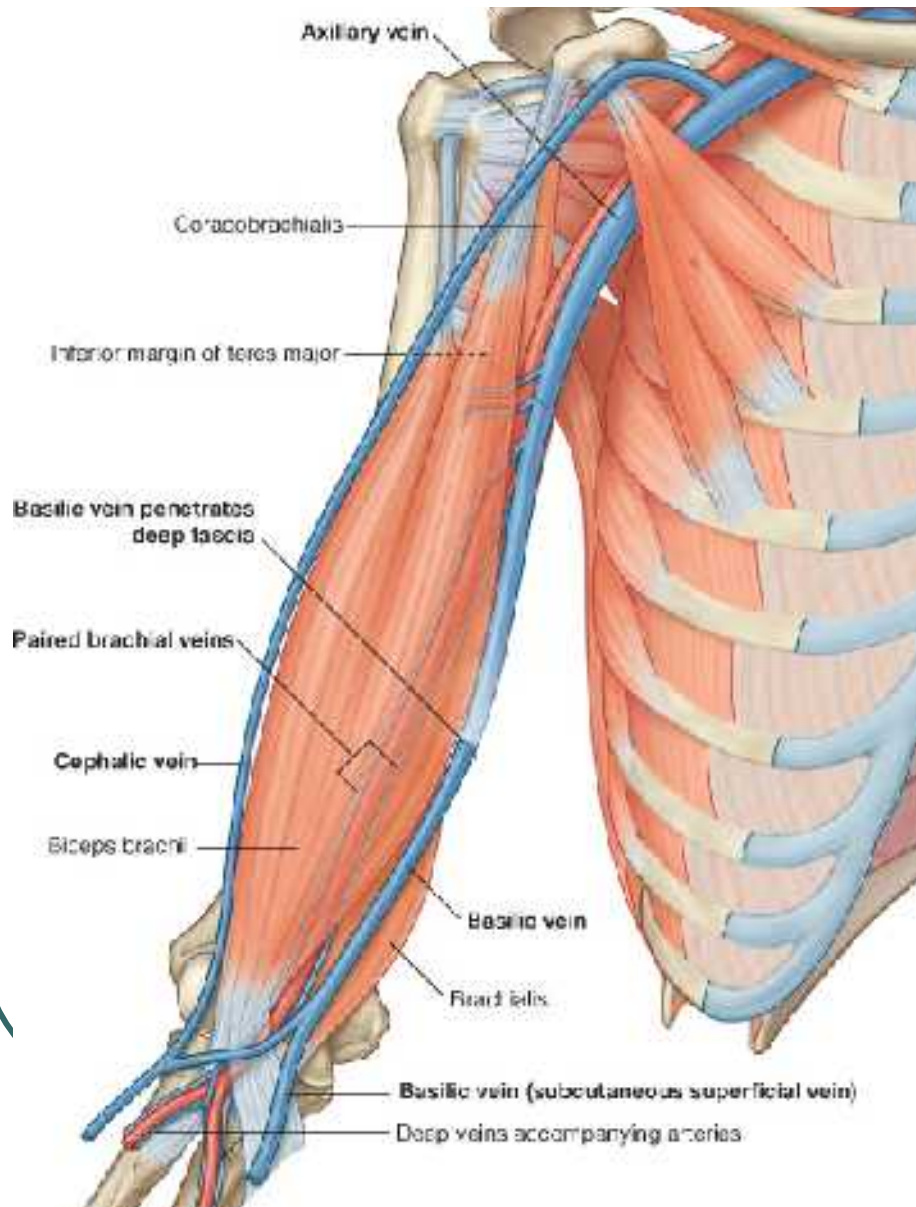
Blood Supply



Blood Supply



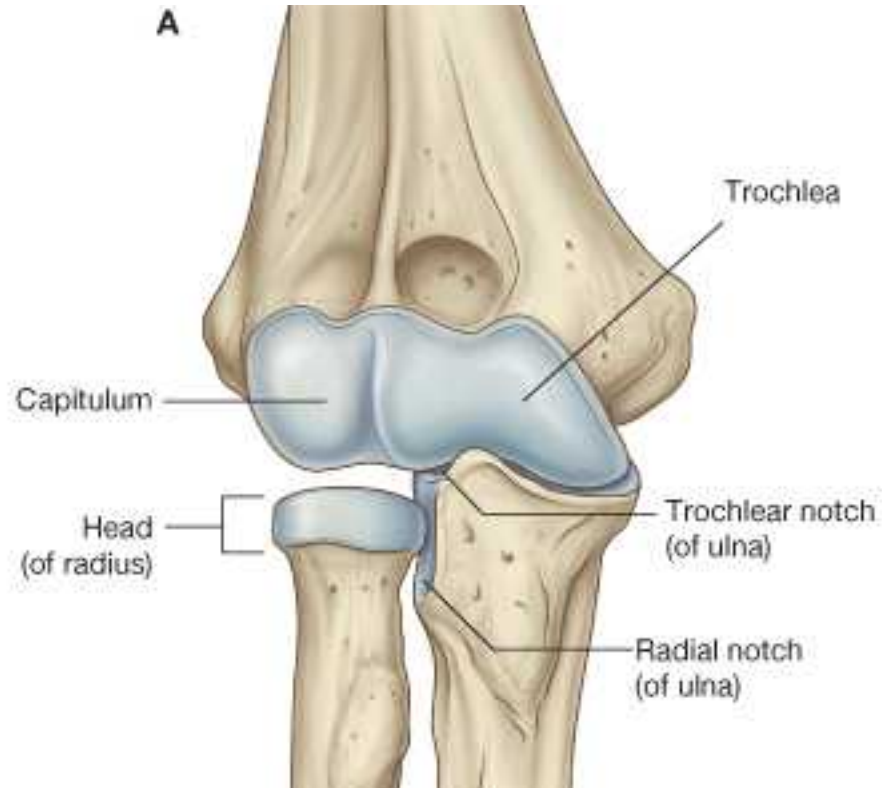
Veins



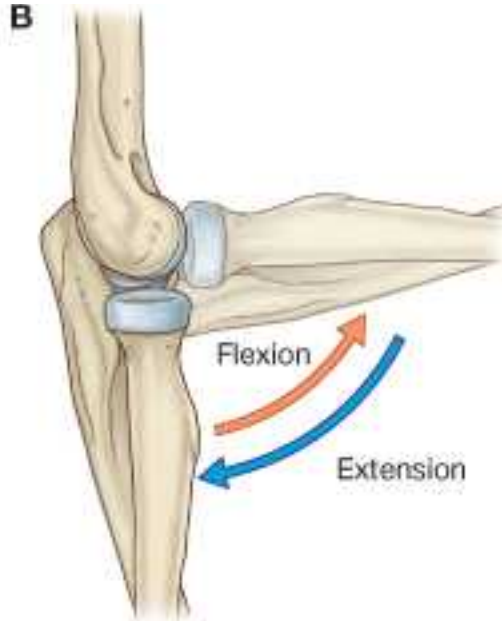
Elbow Complex

- **Humero-Ulnar Joint – flexion/extension**
 - Olecranon Process and Olecranon Fossa (post.)
 - Trochlea and Trochlear Notch (ant.)
 - Joint Capsule ant. and post.
 - Ulnar (Medial) collateral
 - Radial (Lateral) collateral
 - Anular
 - Lateral Ulnar collateral – See Interactive Hand
 - Carrying angle

Elbow Complex



Elbow Complex



d. Drake et al: Gray's Anatomy for Students www.studentconsult.com

Elbow Complex



Elbow Complex



Humerus

Capitulum

Head of radius

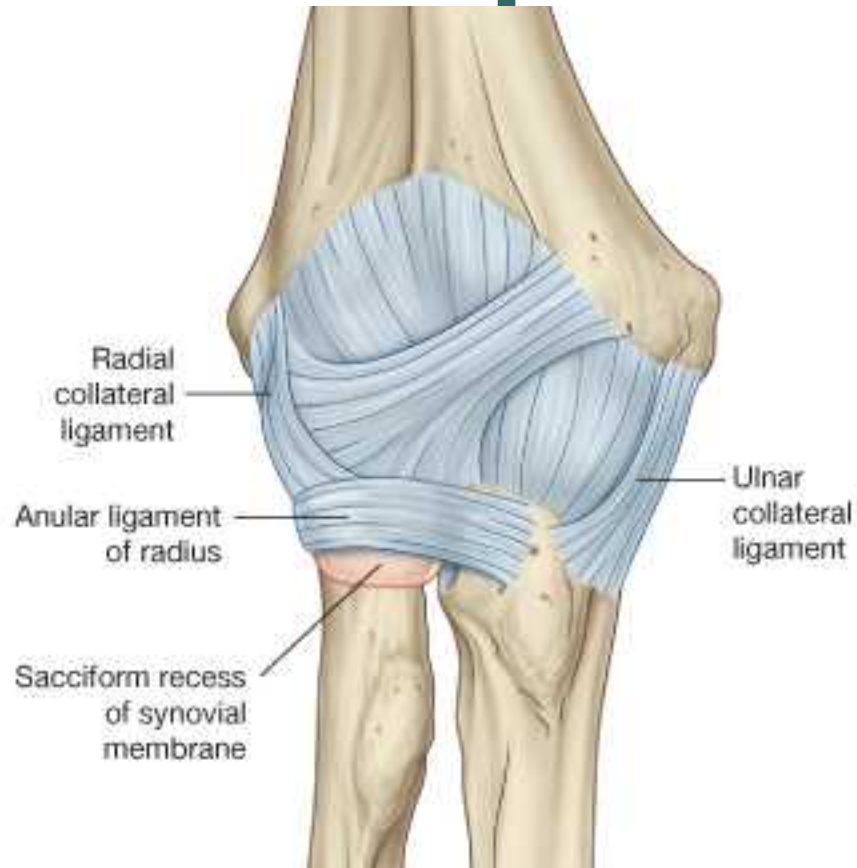
Radius

Trochlea

Ulna

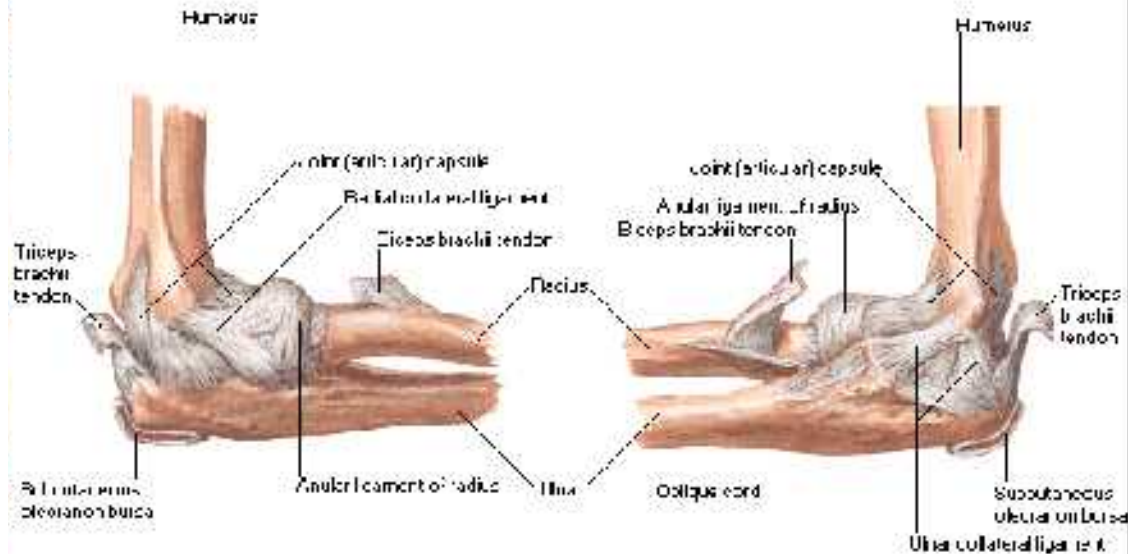


Elbow Complex

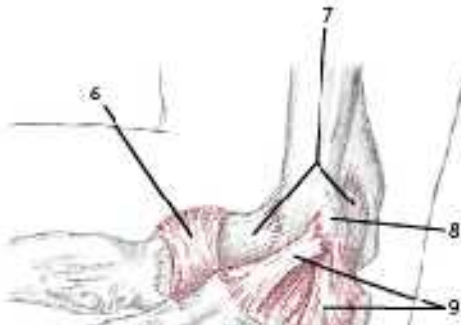
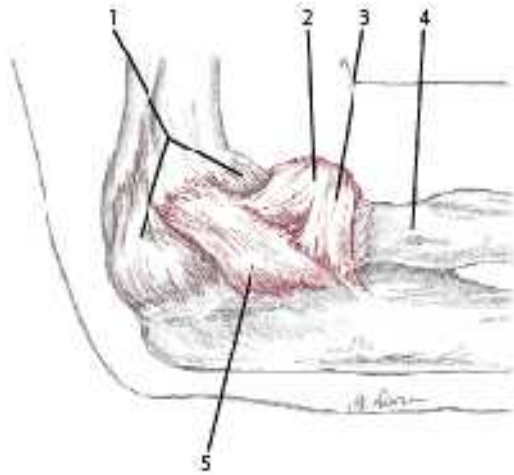


Elbow Complex

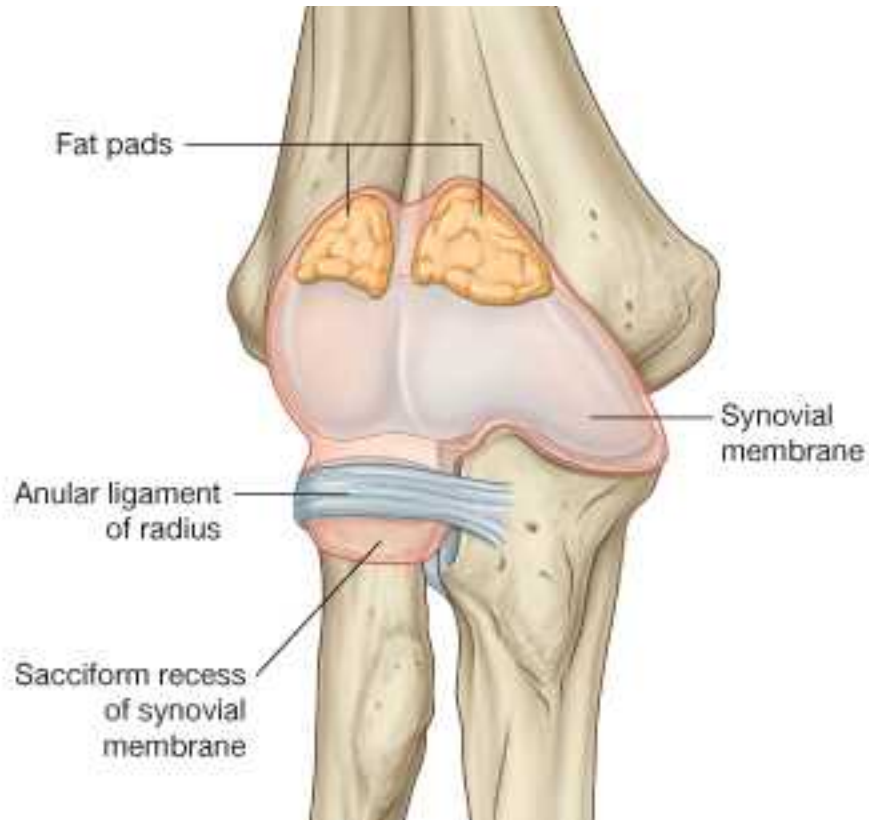
Ligaments of Elbow in 90° Flexion Lateral and Medial Views



Fill In the Blanks



Elbow complex



Elbow Complex

Radial collateral ligament

Humerus

Medial epicondyle



Head of radius

Ulna

Ulnar collateral

Elbow

- Use Interactive Elbow

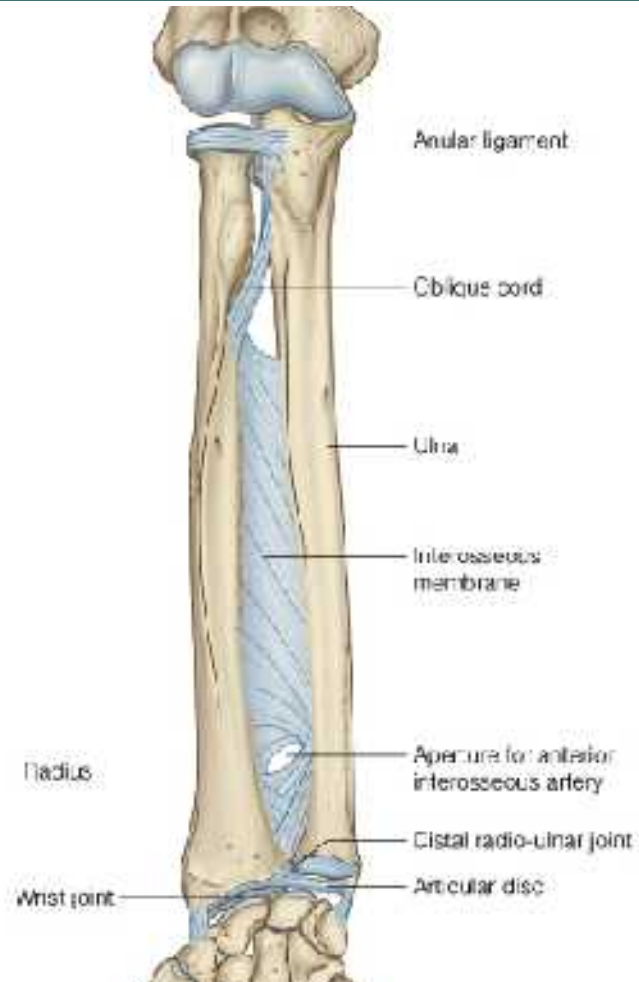
Elbow Complex

- Humero-radial
- Head of radius with capitulum of humerus
- Accessory motion
- Not a direct articulation

Radio-Ulnar Joints – Supination and Pronation

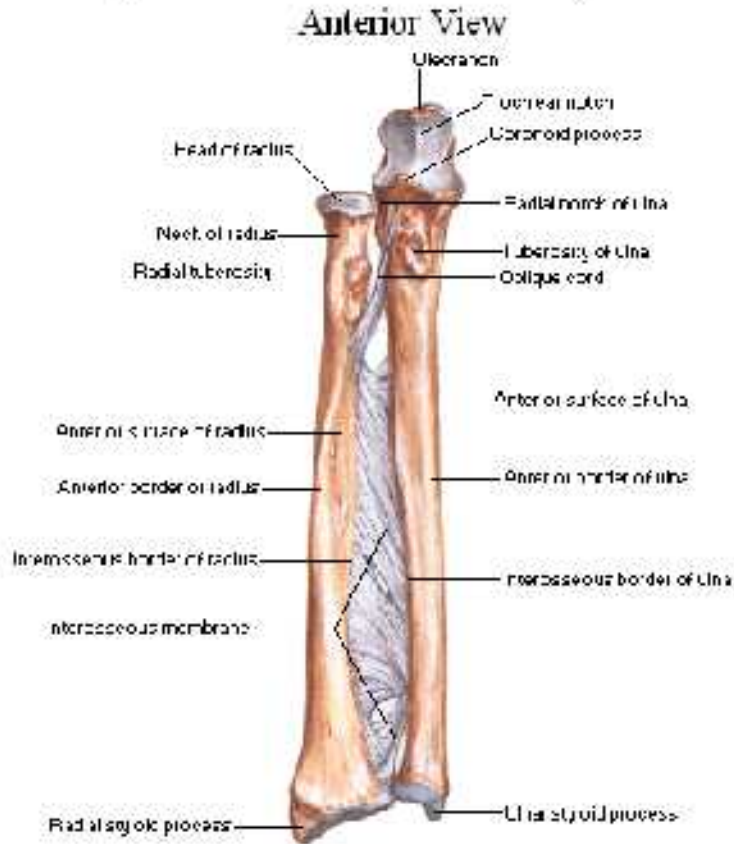
- Superior
 - Head of Radius in radial notch
 - Anular ligament
- Inferior
 - Head of Ulna in ulnar notch
 - Anterior and Posterior radio-ulnar ligaments
- Interosseous Membrane

R-U Joints

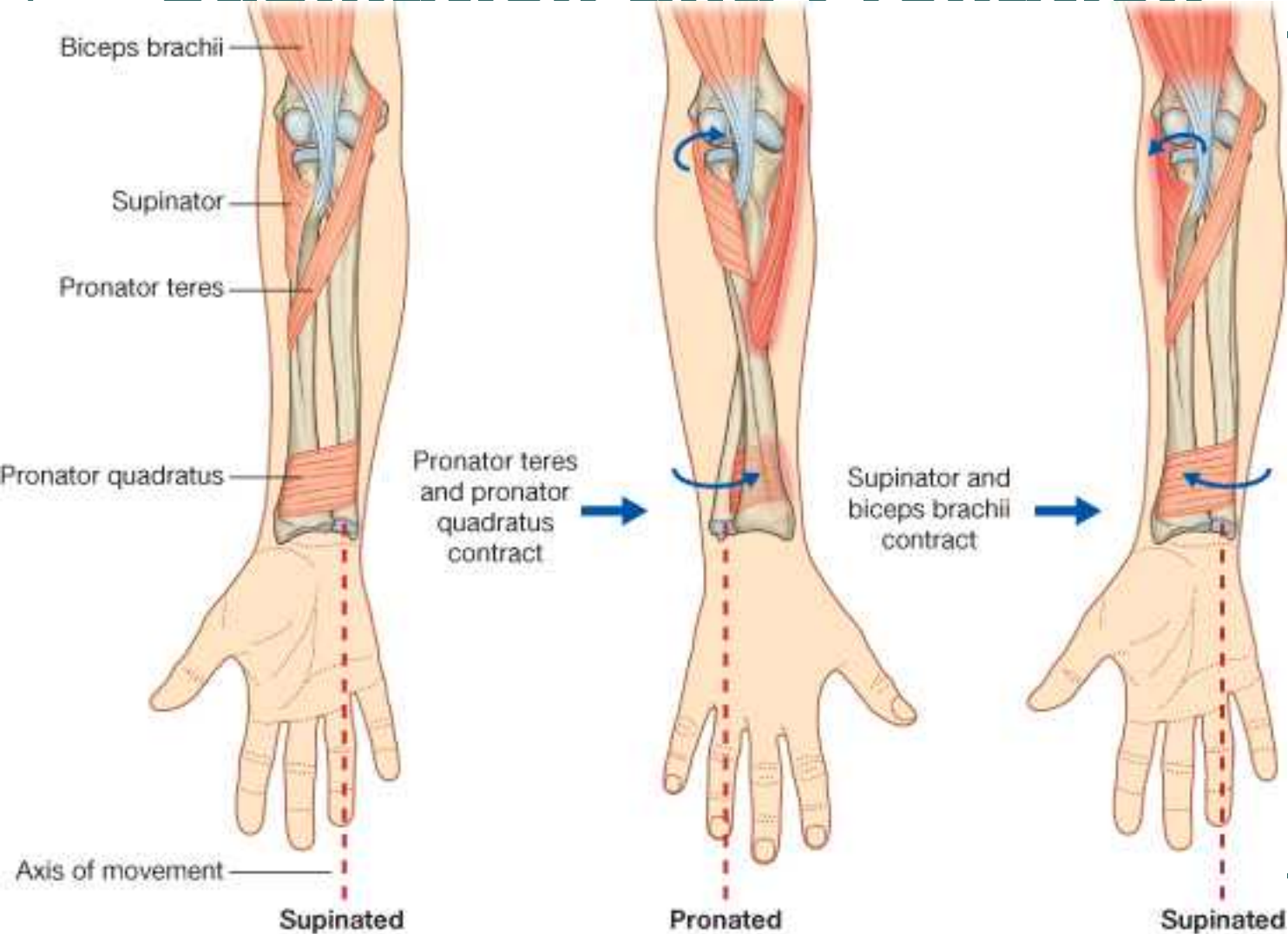


R-U Joints

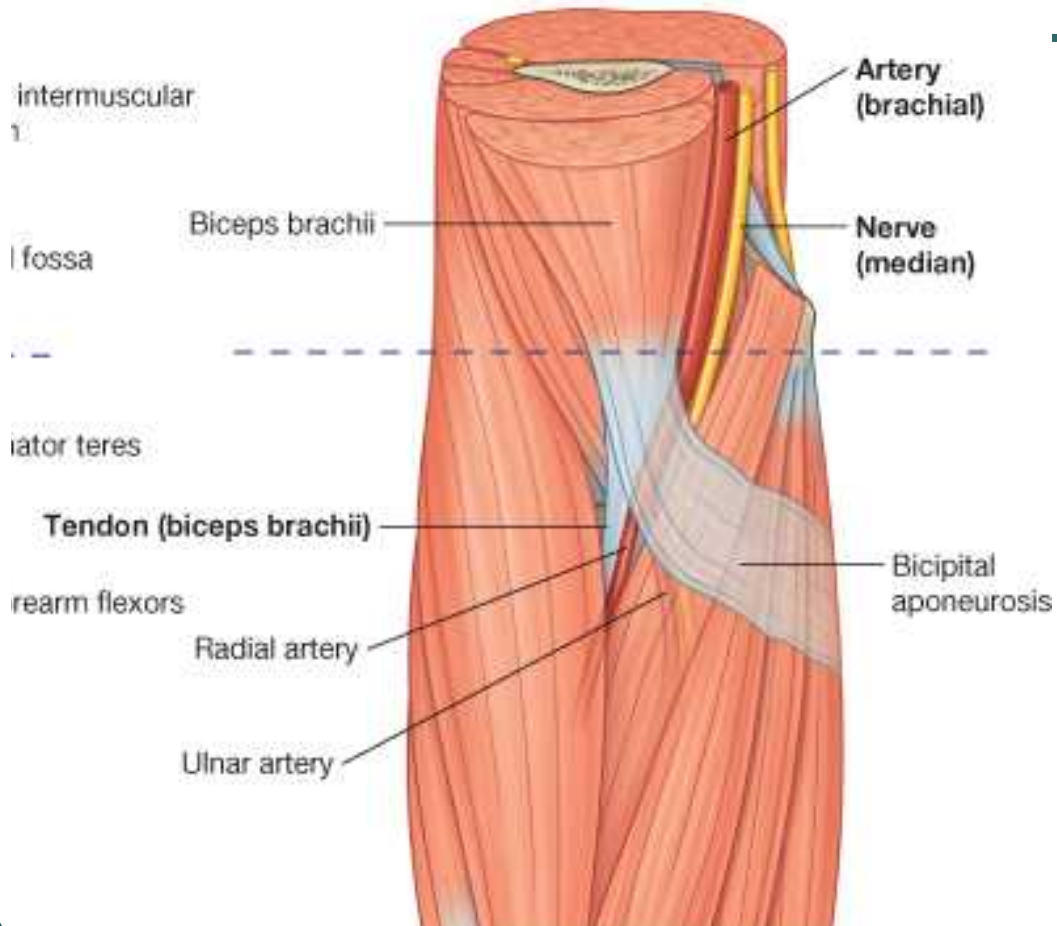
Right Radius and Ulna in Supination



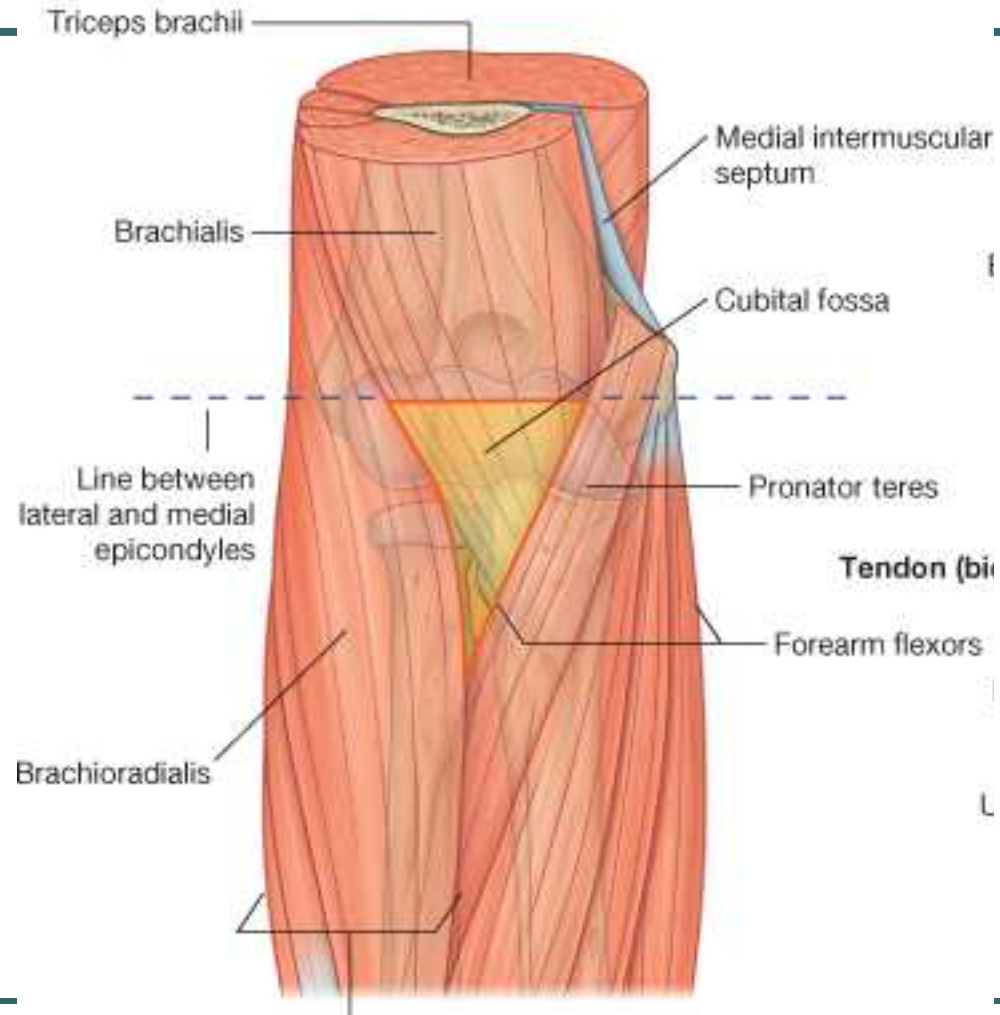
Supination and Pronation



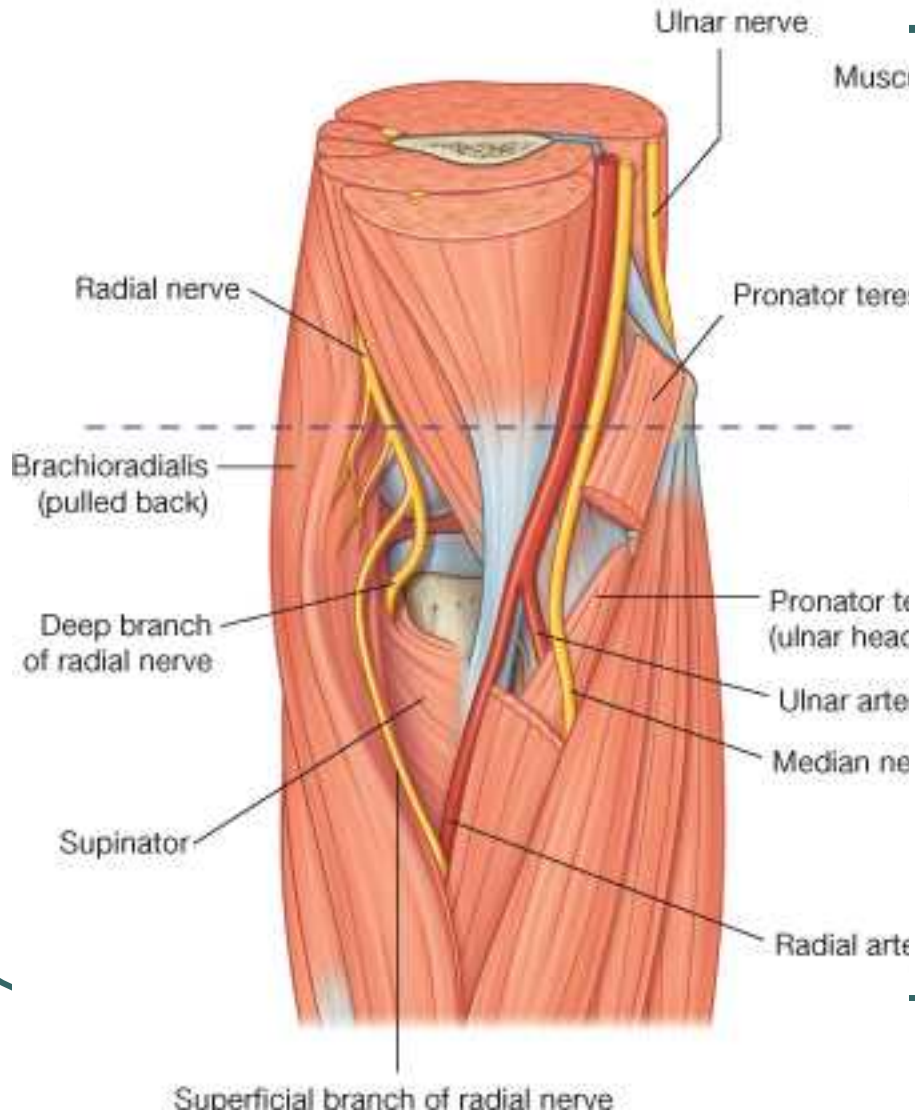
Cubital Fossa



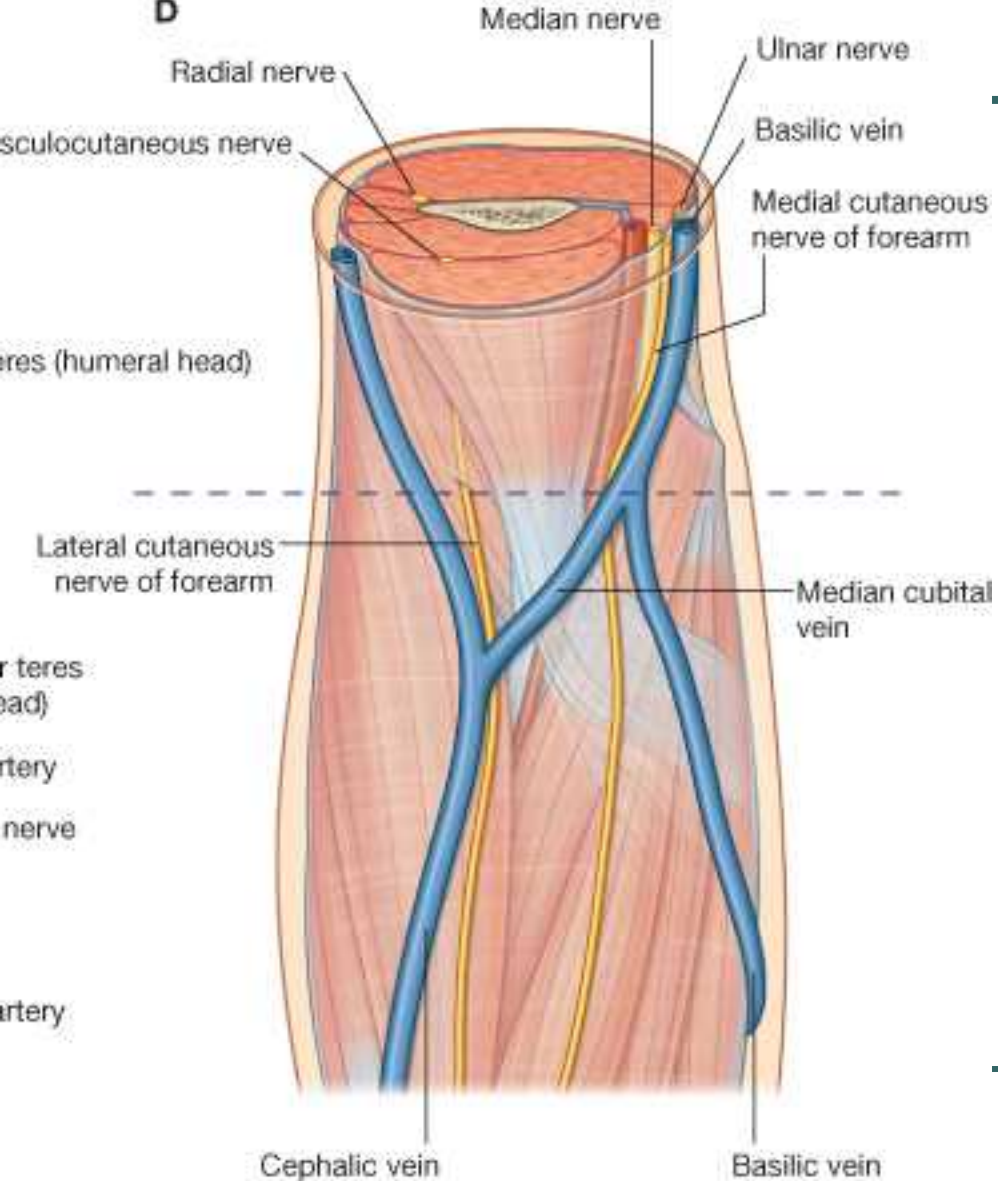
Cubital Fossa



Cubital Fossa



Cubital Fossa



Forearm AKA Antebrachium – Two Compartments

- Anterior = ventral
 - Flexors
 - All but **1 1/2** mm are innervated by median (or a branch called the anterior interosseous nerve), the other **1 1/2** innervated by the ulnar
 - Three layers – superficial, intermediate and deep
 - Most have 1 Point of origin on the medial epicondyle - **CFT**

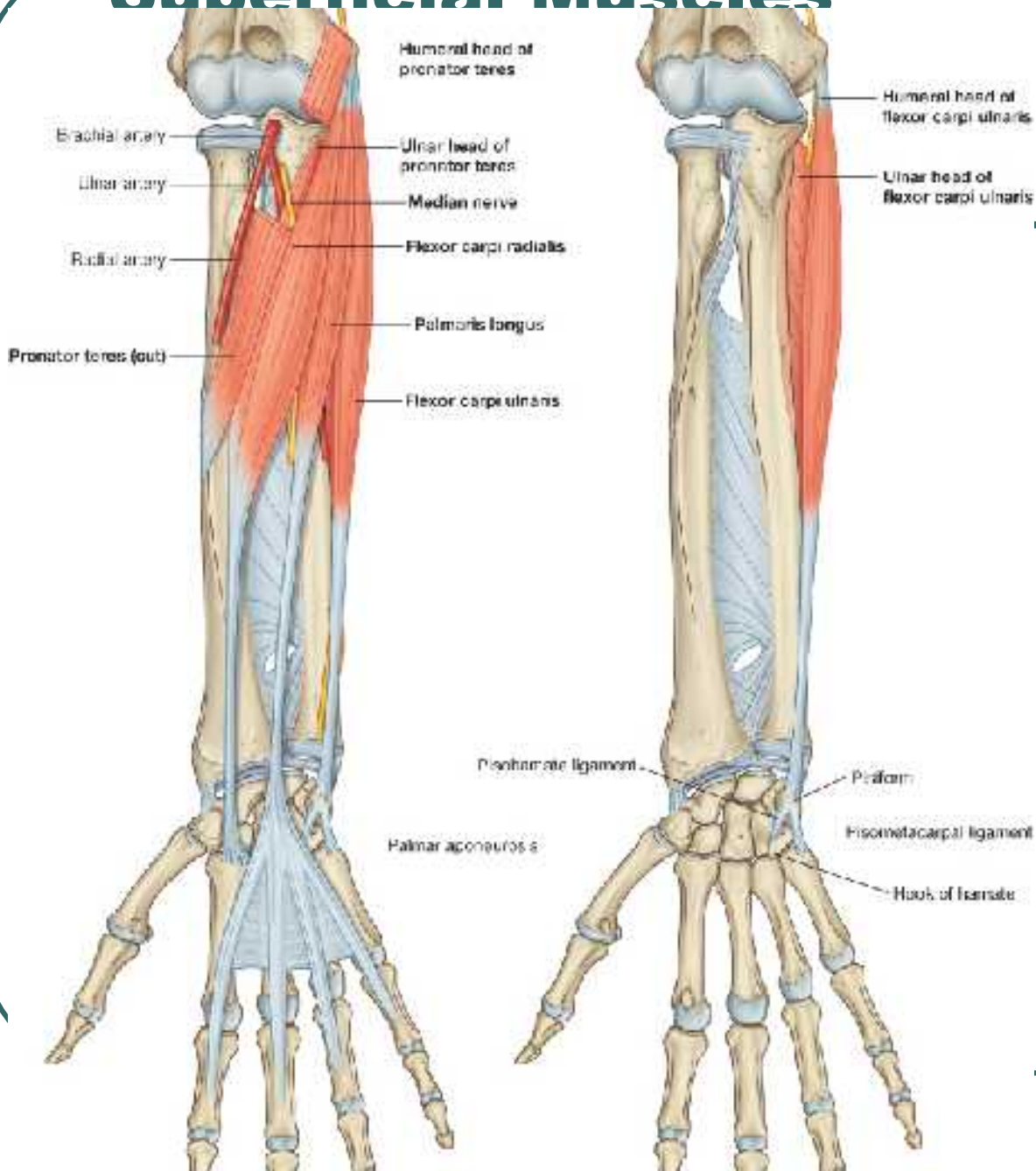
Forearm

- Posterior = dorsal
- Extensors
- Innervated by the radial nerve (or one of two branches called either posterior interosseous nerve or deep radial)
- Three layers = superficial, intermediate and deep
- Most have 1 point of origin on the lateral epicondyle - CET

Anterior Surface

- Superficial
 - P.Teres
 - Flexor Carpi Radialis
 - Flexor Carpi Ulnaris
 - Palmaris Longus

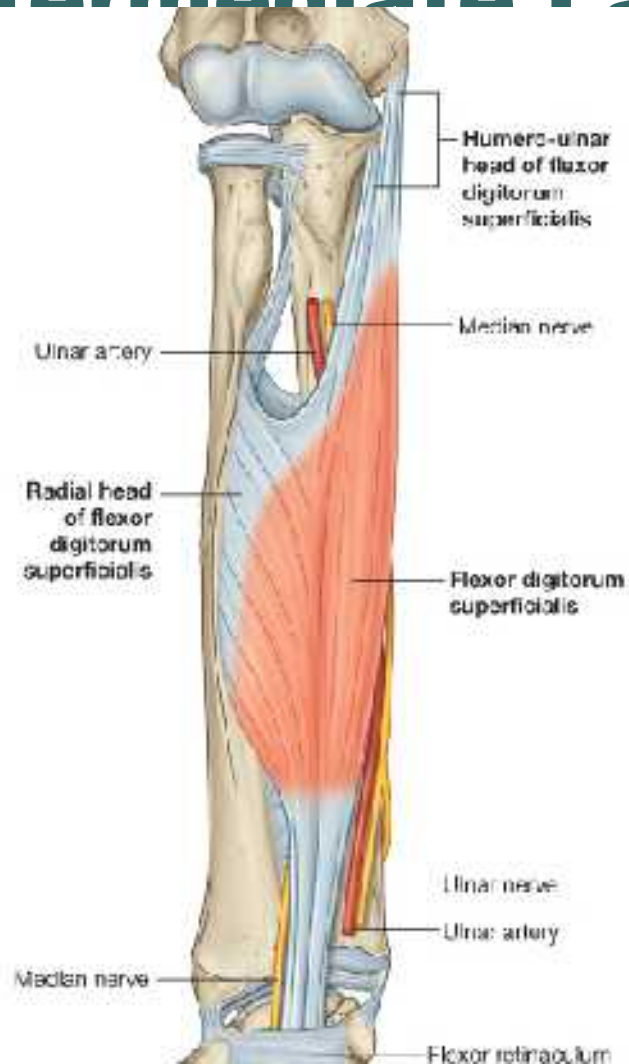
Superficial Muscles



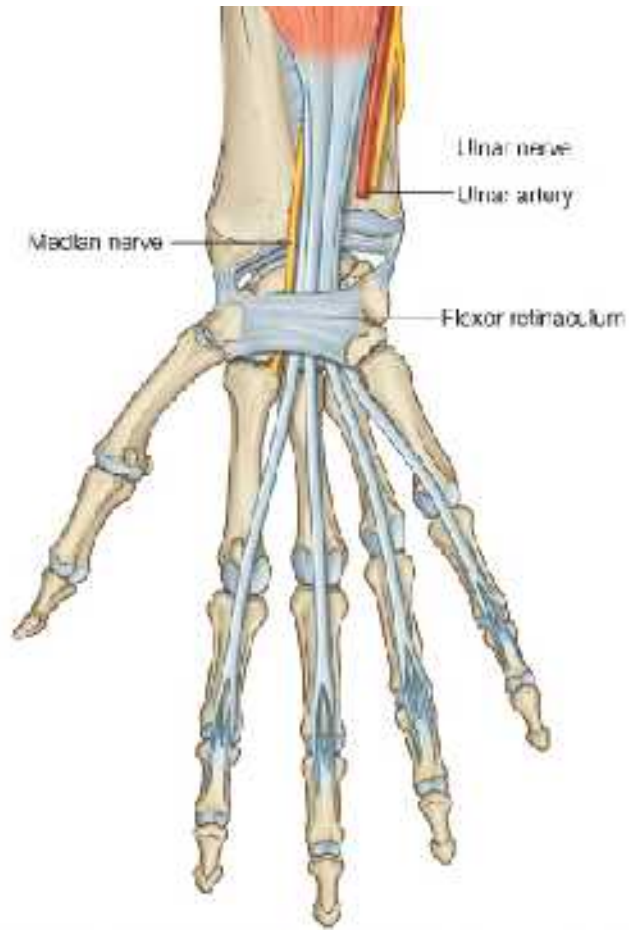
Anterior Surface

- Intermediate
 - Flexor Digitorum Superficialis

Intermediate Layer - Origin



Intermediate Layer - Insertion



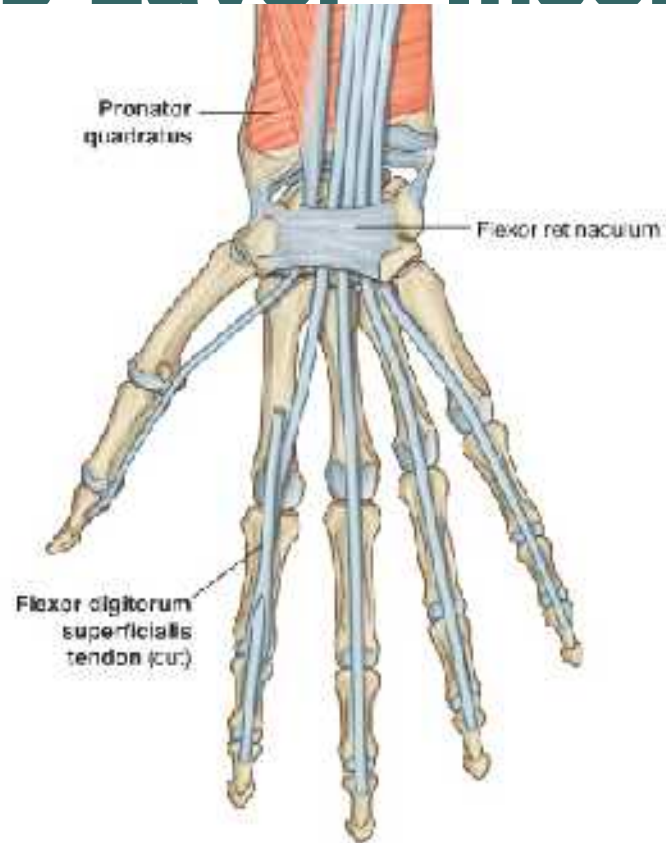
Anterior Surface

- Deep Layer
 - Flexor digitorum profundus (anterior interosseous branch of median nerve)
 - Flexor pollicis longus
 - Pronator quadratus (ant. Interosseous)

Deep Layer - Origins



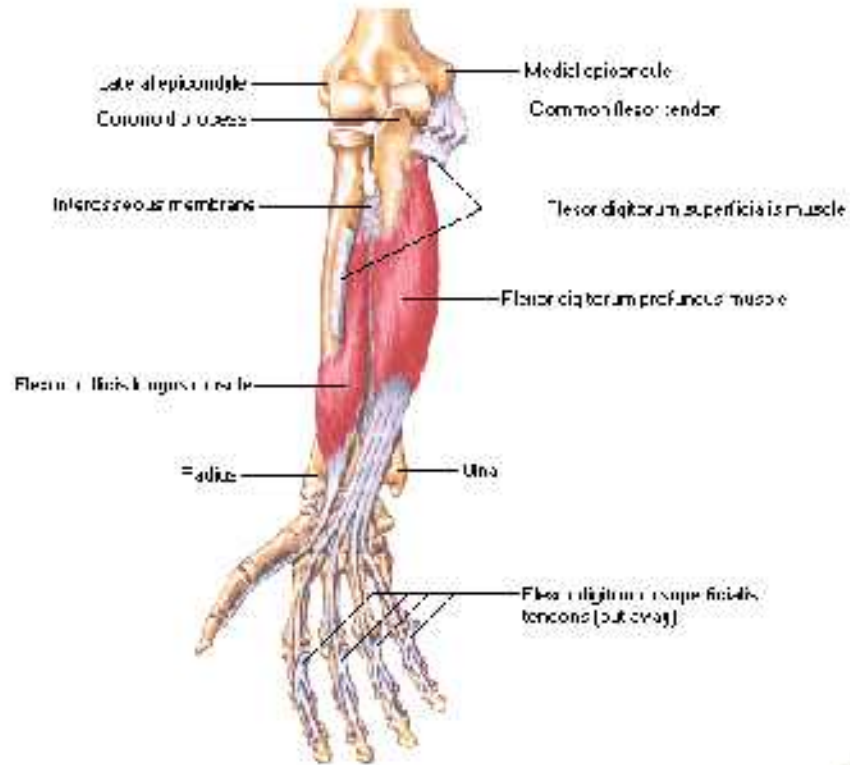
Deep Layer - Insertions



Compare Insertions

Individual Muscles of Forearm [Continued]

Flexors of Digits

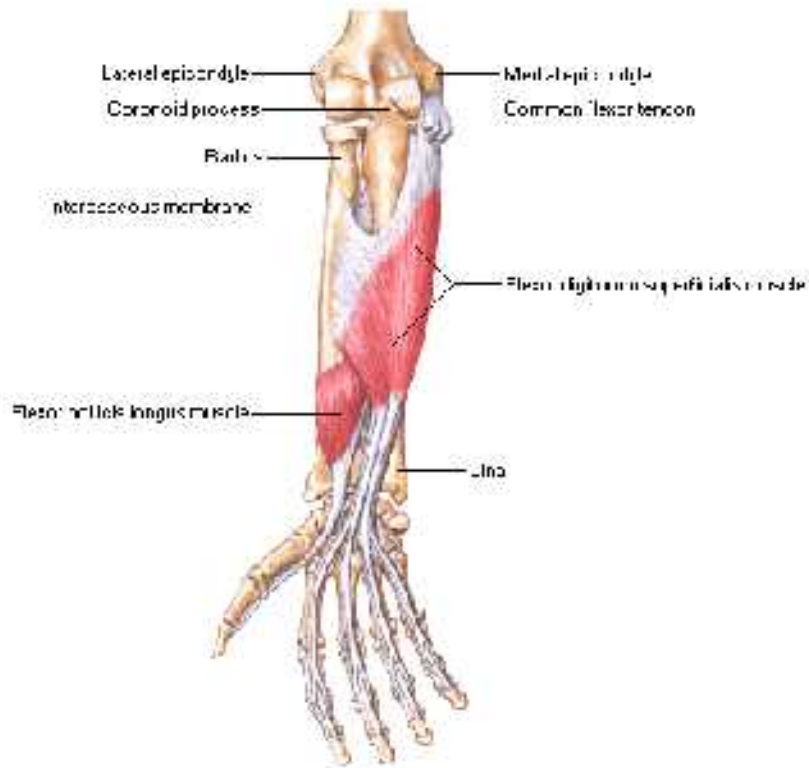


Right forearm: anterior (palmar) view

Compare Insertions

Individual Muscles of Forearm

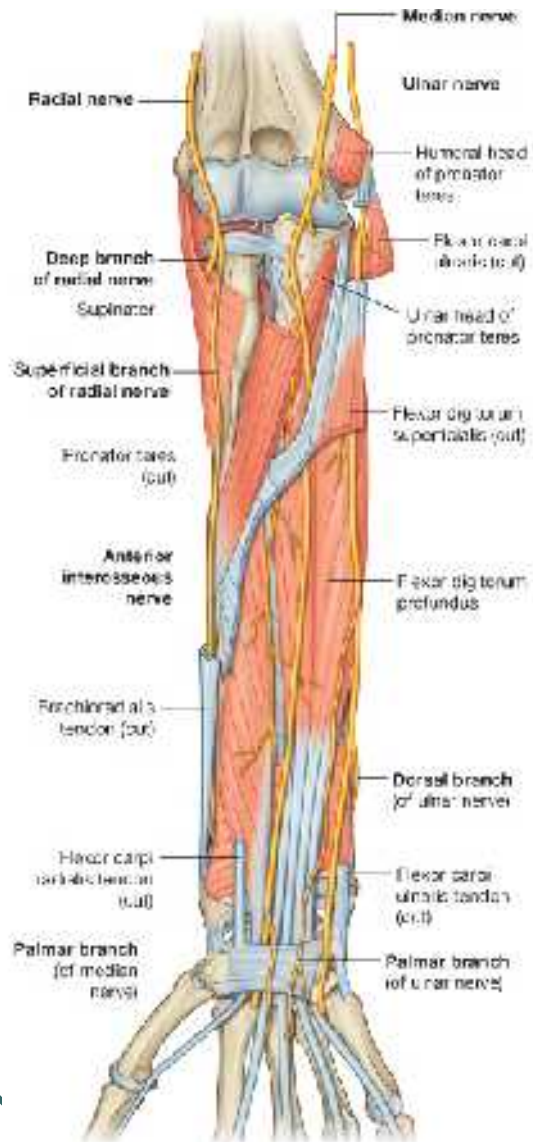
Flexors of Digits



Right forearm: anterior (palmar) view



Nerves of Anterior Forearm

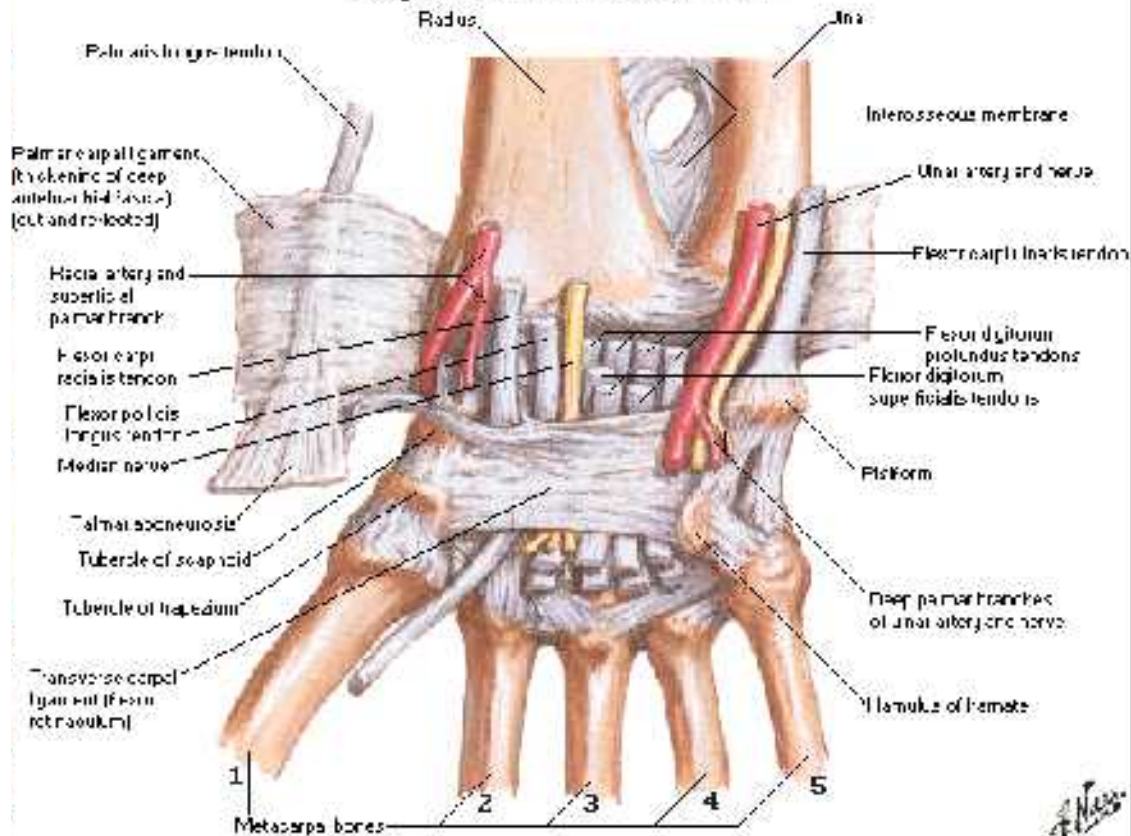


Anterior Surface

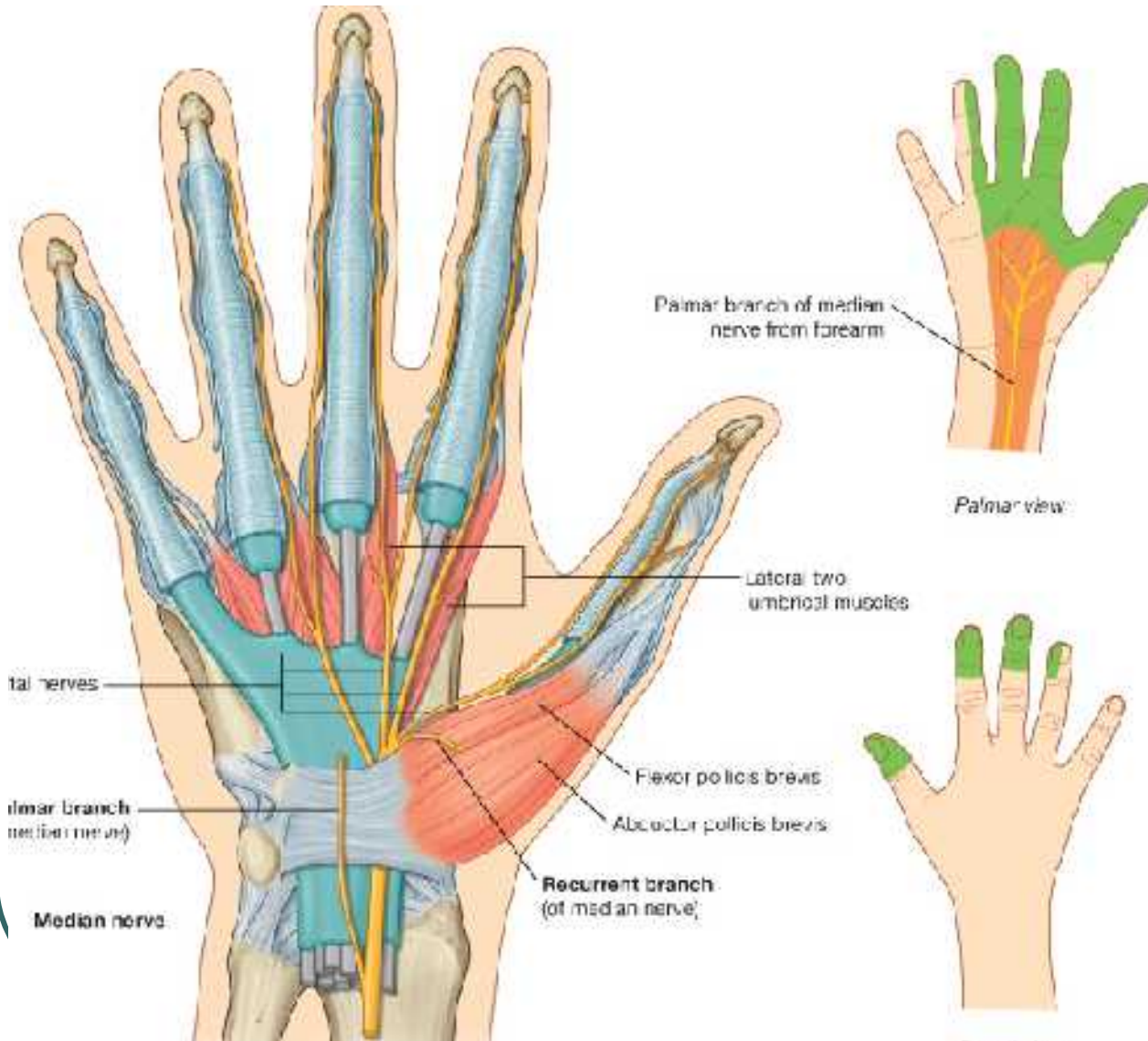
- Transverse Carpal Ligament AKA Flexor Retinaculum
- Guyen's Canal
- Carpal Tunnel Syndrome

TCL

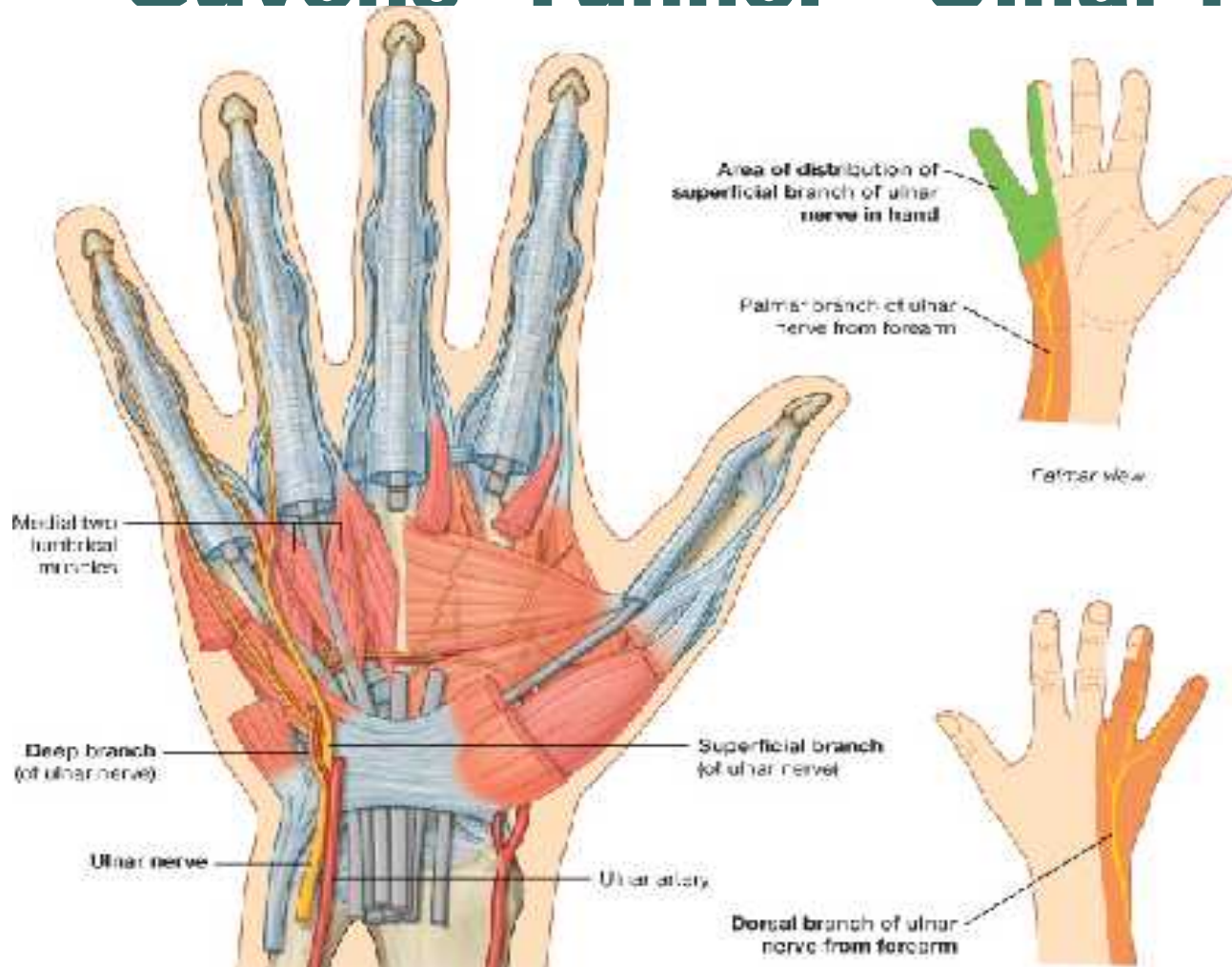
Ligaments of Wrist Carpal Tunnel - Palmar View



TCL – Median N.



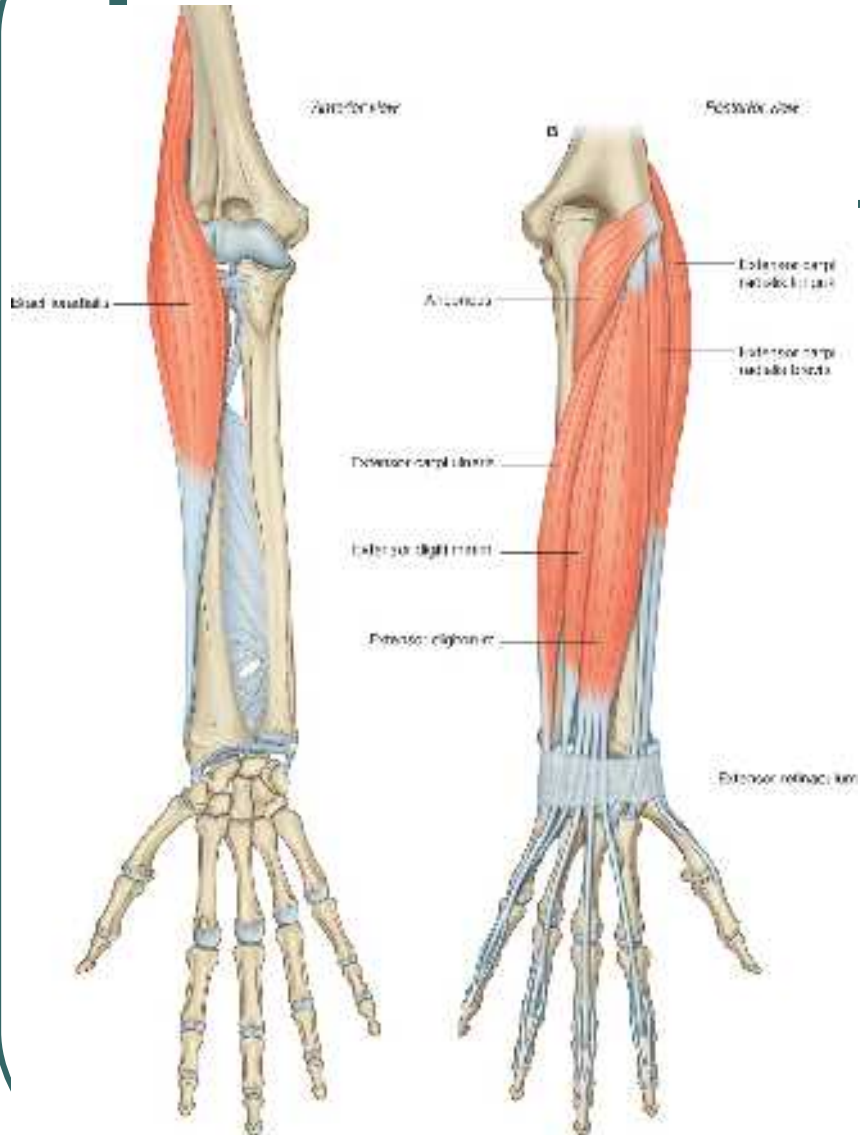
Guvens' Tunnel – Ulnar N.



Posterior Surface

- Superficial
 - Brachioradialis
 - Extensor Carpi Radialis Longus
 - Extensor Carpi Radialis Brevis
 - Extensor Carpi Ulnaris

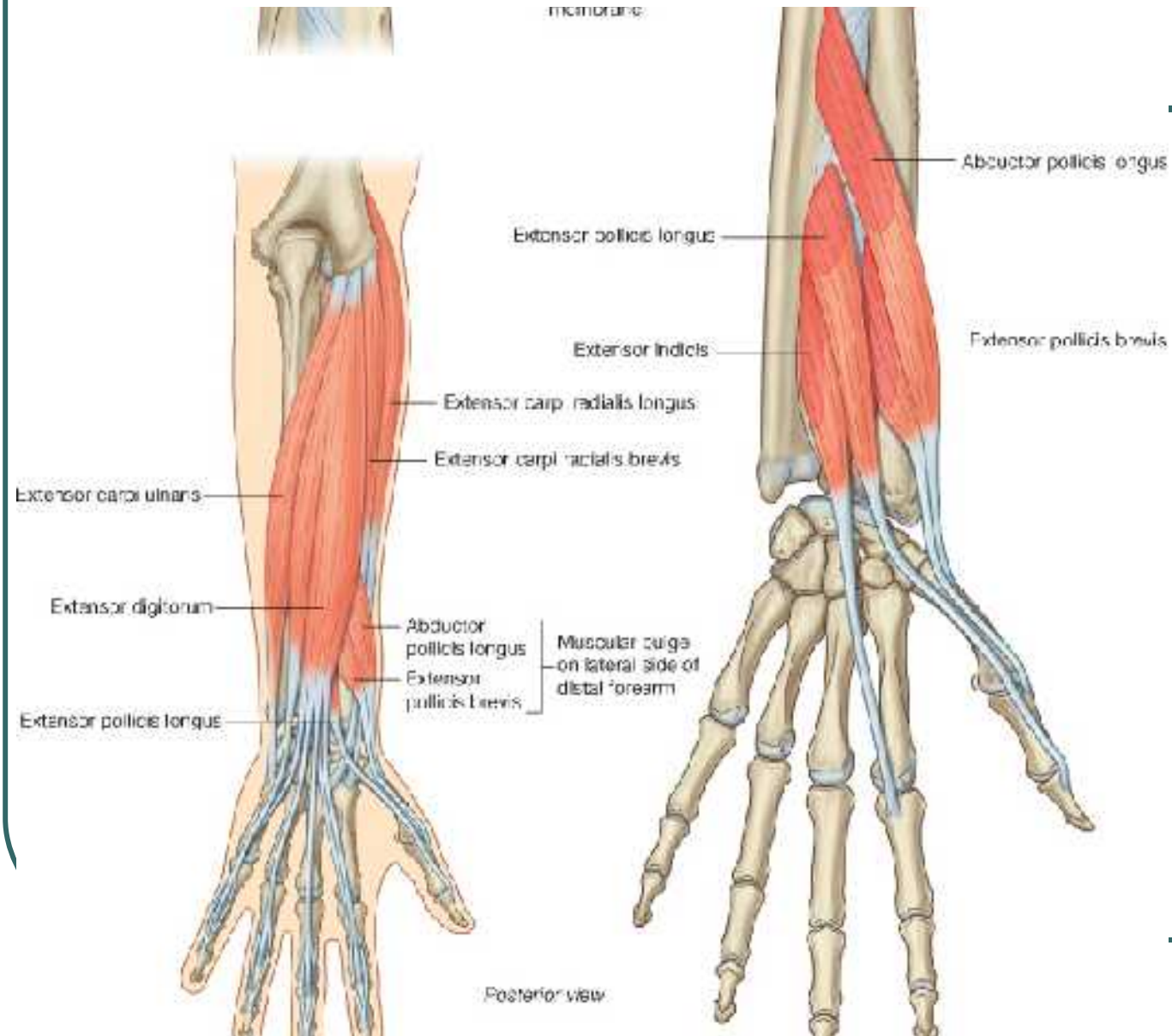
Superficial Muscles



Posterior Surface

- Intermediate Layer
 - Extensor Digitorum Communis
 - Extensor Indicus Proprius
 - Extensor Digit Minimi

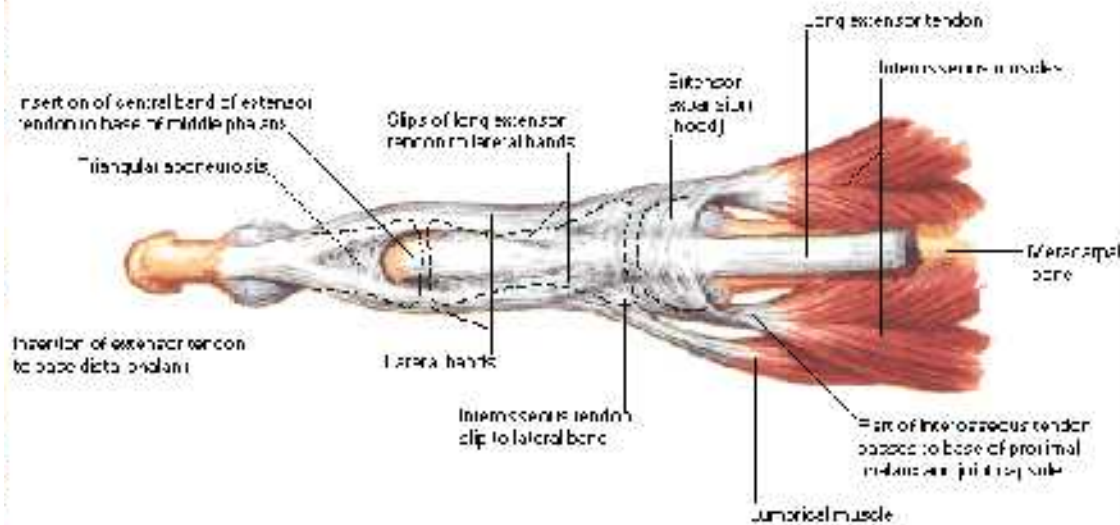
Intermediate Muscles



EDC Insertion

Flexor and Extensor Tendons in Fingers

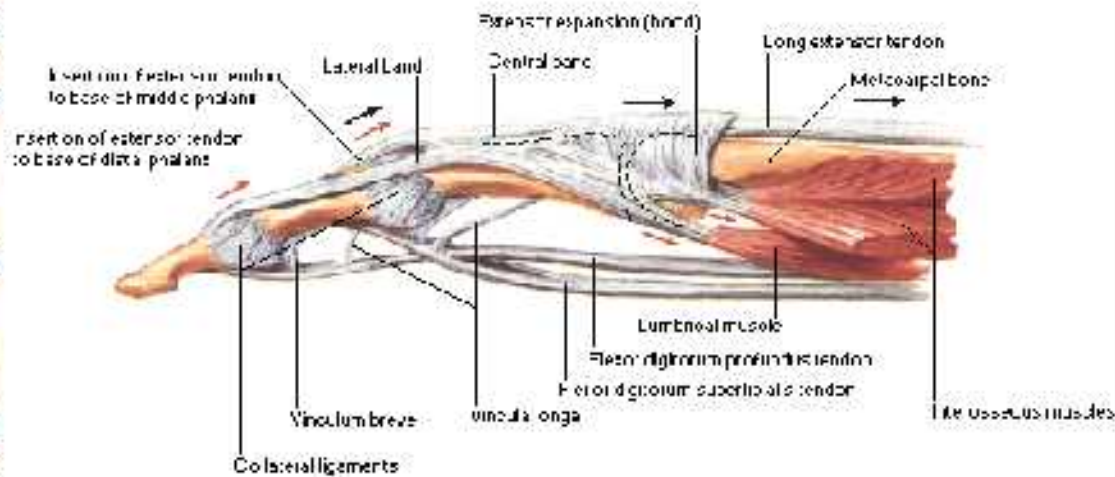
Posterior [Dorsal] View



EDC Insertion

Flexor and Extensor Tendons in Fingers

Extended - Lateral View

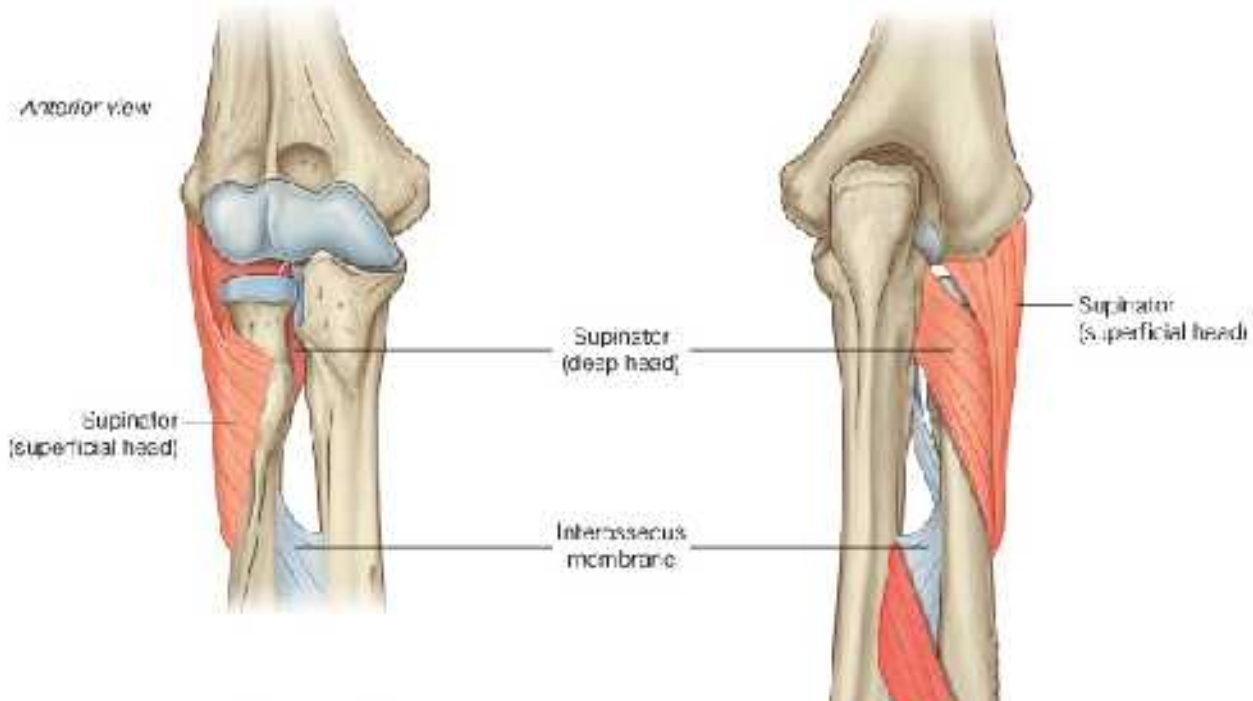


Note: black arrows indicate pull of long extensor tendon; red arrows indicate pull of interossei and ulnar muscles

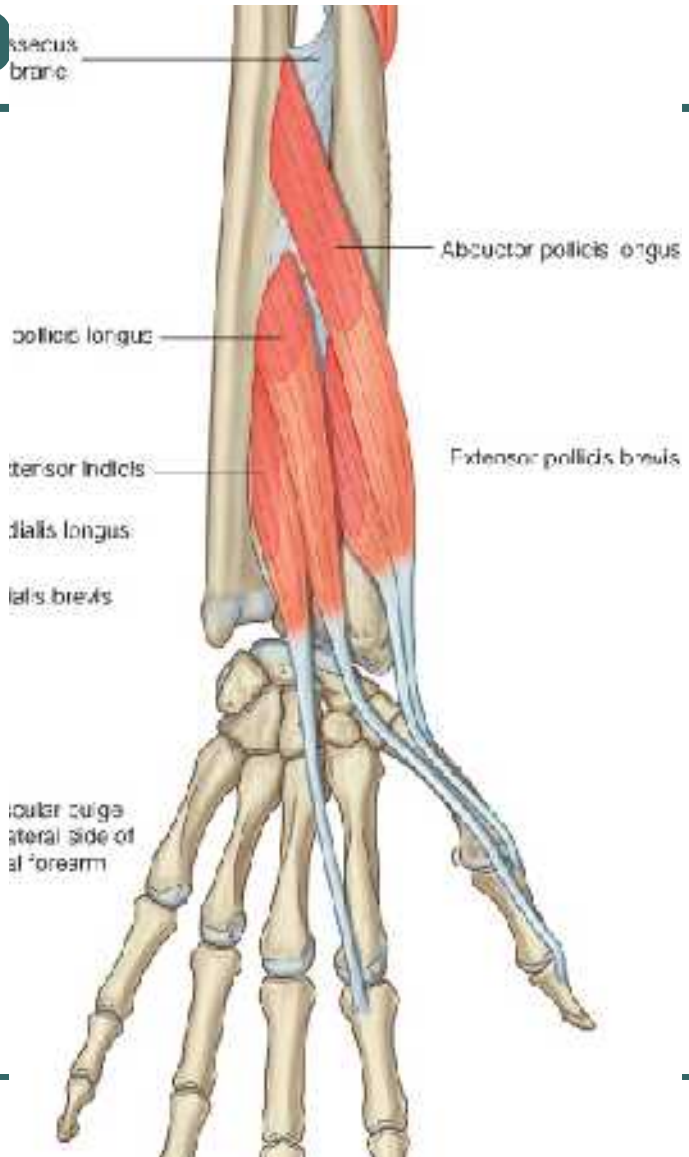
Posterior Surface

- Deep
 - Supinator
 - Abductor Pollicis Longus
 - Extensor Pollicis Longus
 - Extensor Pollicis Brevis
- Anatomical “Snuff” box
- Out-cropper muscles

Deep Muscles



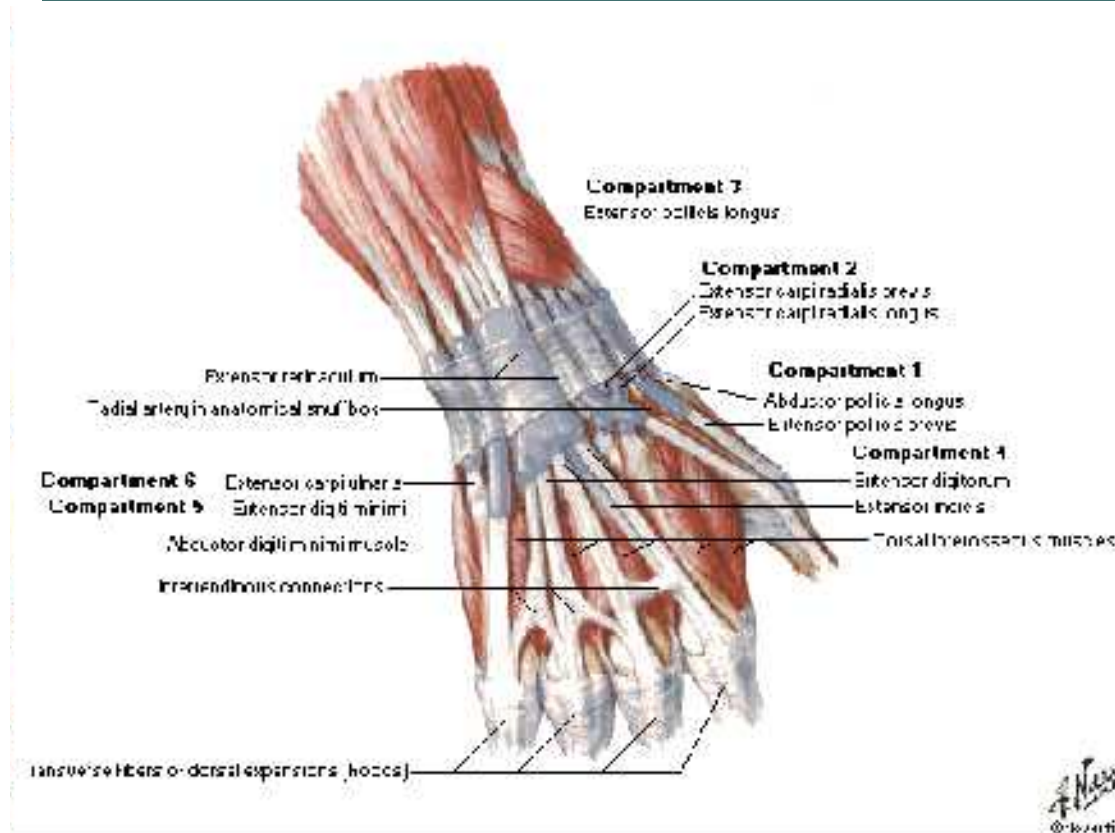
Dissectus
brachii



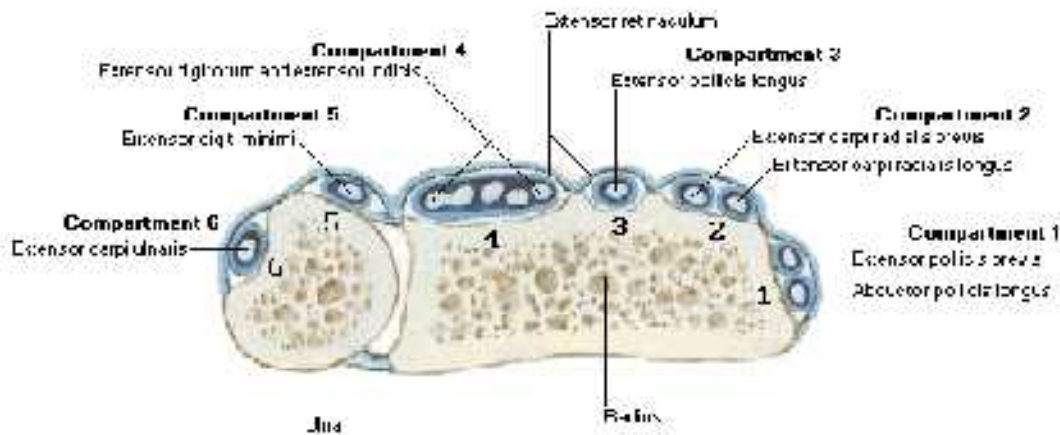
Posterior Surface

- Extensor Retinaculum
- Compartments
 - 1 epb and apl
 - 2 ecrb, ecrl
 - 3 epl
 - 4 edc and eip
 - 5 edm
 - 6 ecu

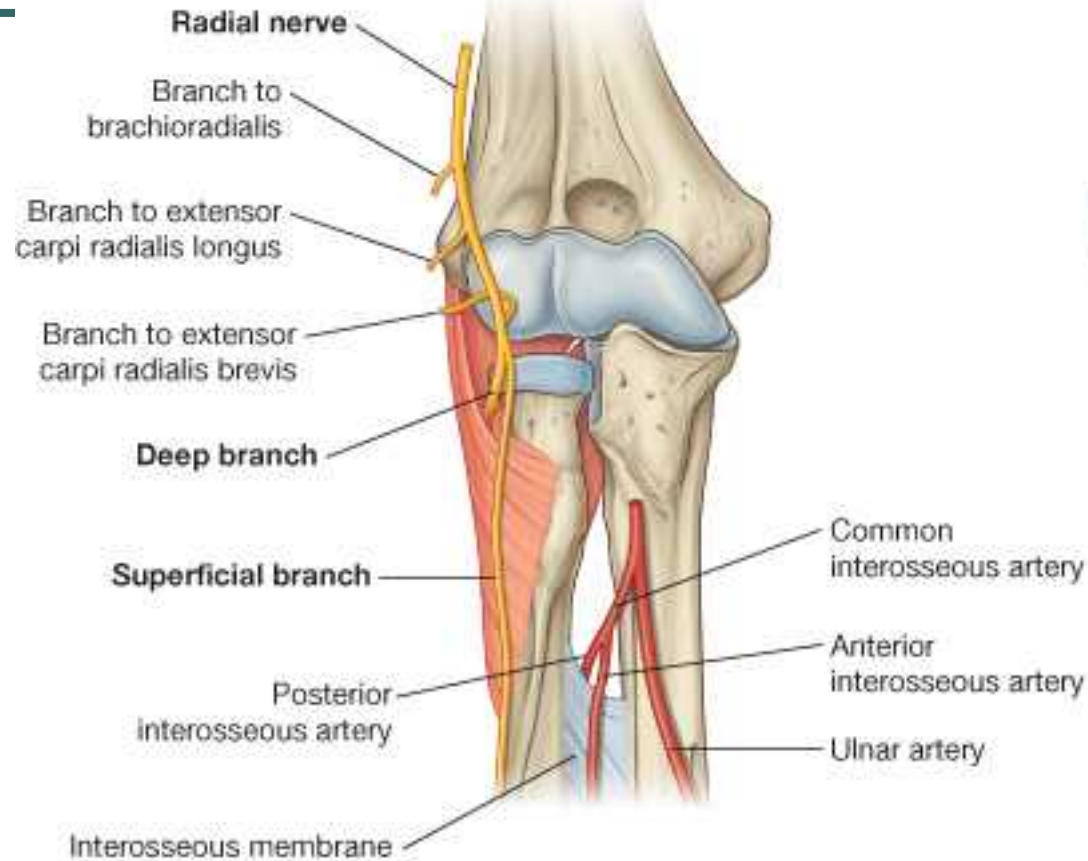
Extensor Tendons



Extensor Tendons at Wrist

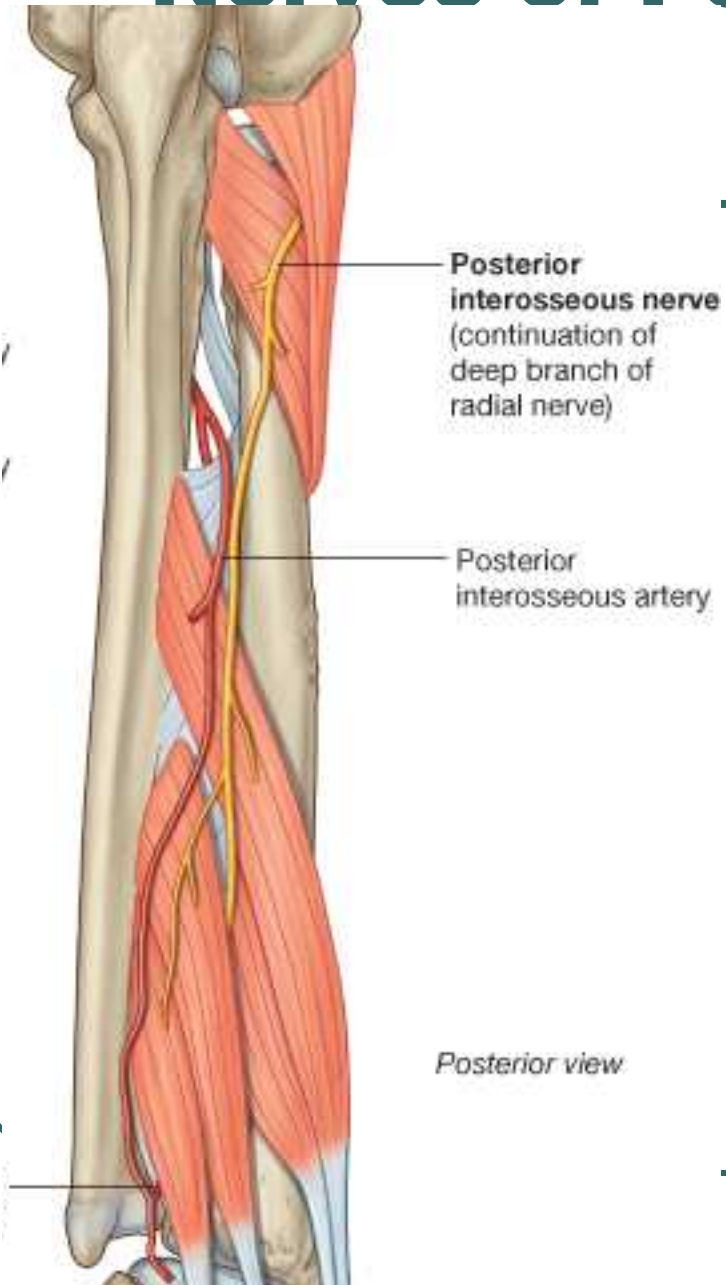


Nerves of Posterior Forearm



Anterior view

Nerves of Posterior Forearm



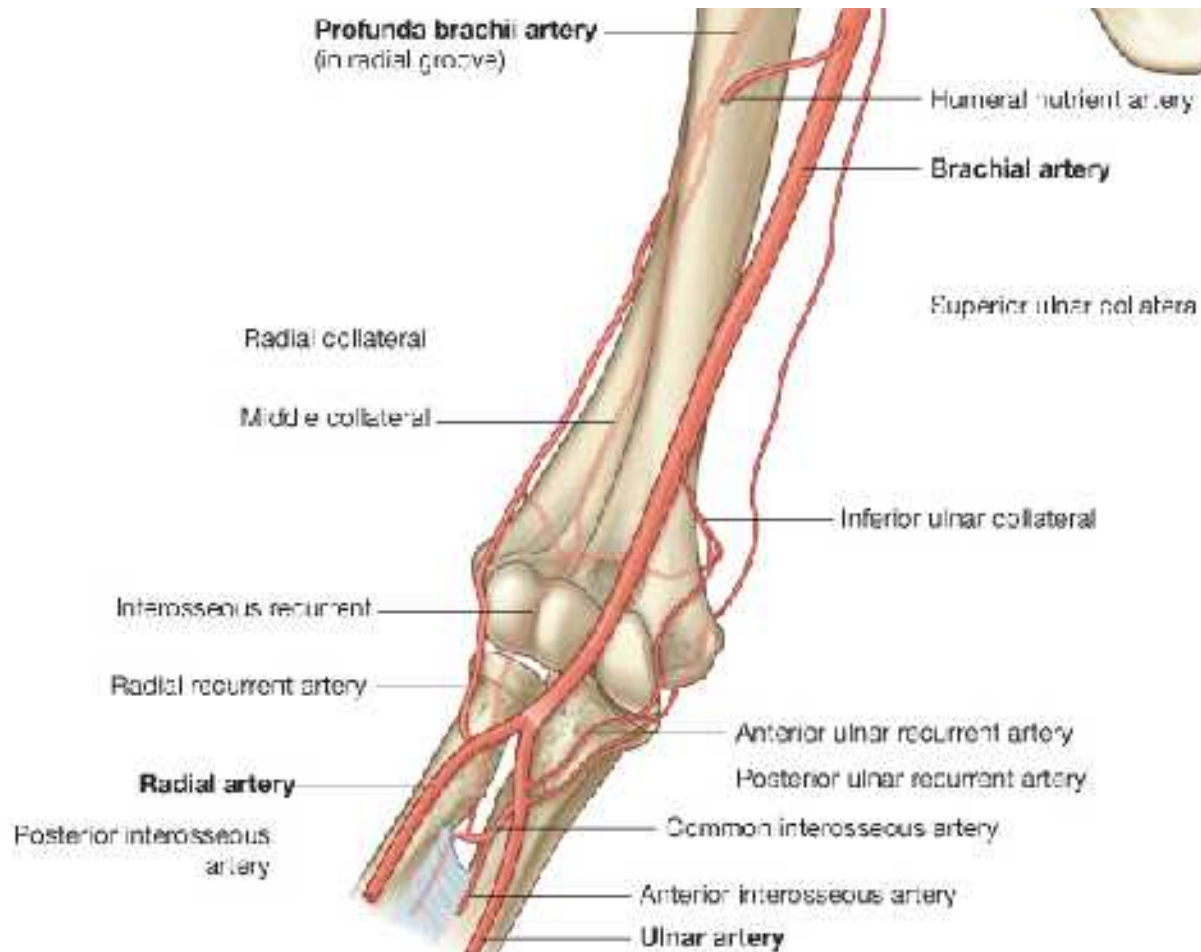
Common Injuries

- Radial Nerve Above wrist extensor innervation= “Dropped Wrist”
- Colle’s fracture
- Compression syndromes
- Epicondylitis – AKA “Tennis Elbow”
“Golfer’s Elbow”

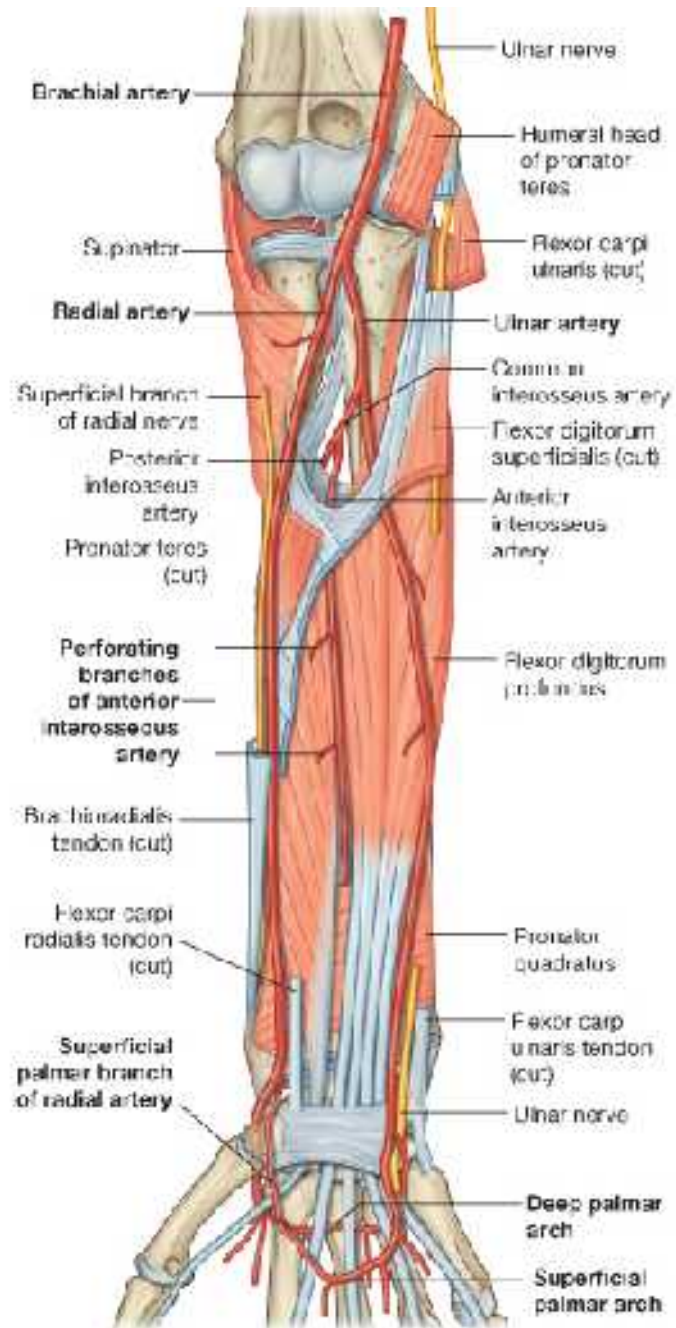
Regional Blood Supply

- Ulnar
 - Ant. Ulnar Recurrent
 - Post. Ulnar Recurrent
- Radial
 - Radial Recurrent
 - Common Interosseous
 - Interosseous Recurrent
 - Ant. Interosseous
 - Post. Interosseous

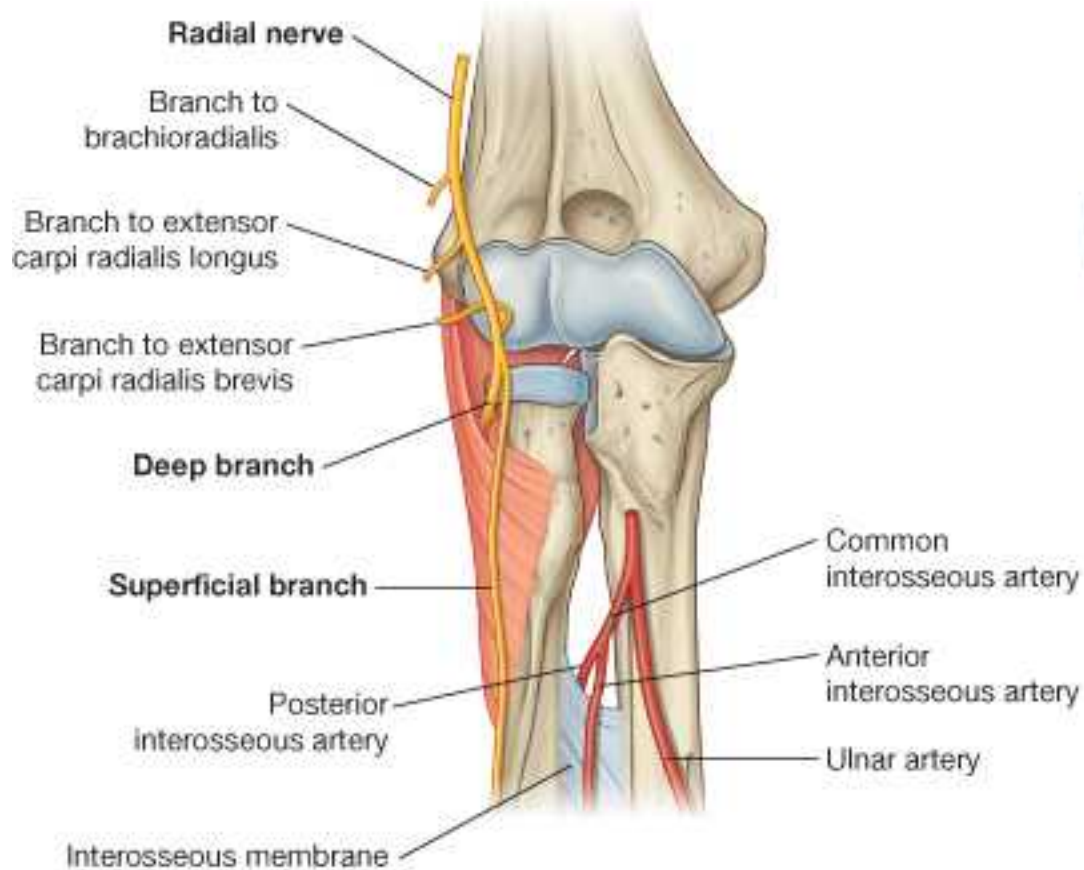
Blood Supply



Blood Supply



Blood Supply



Blood Supply

