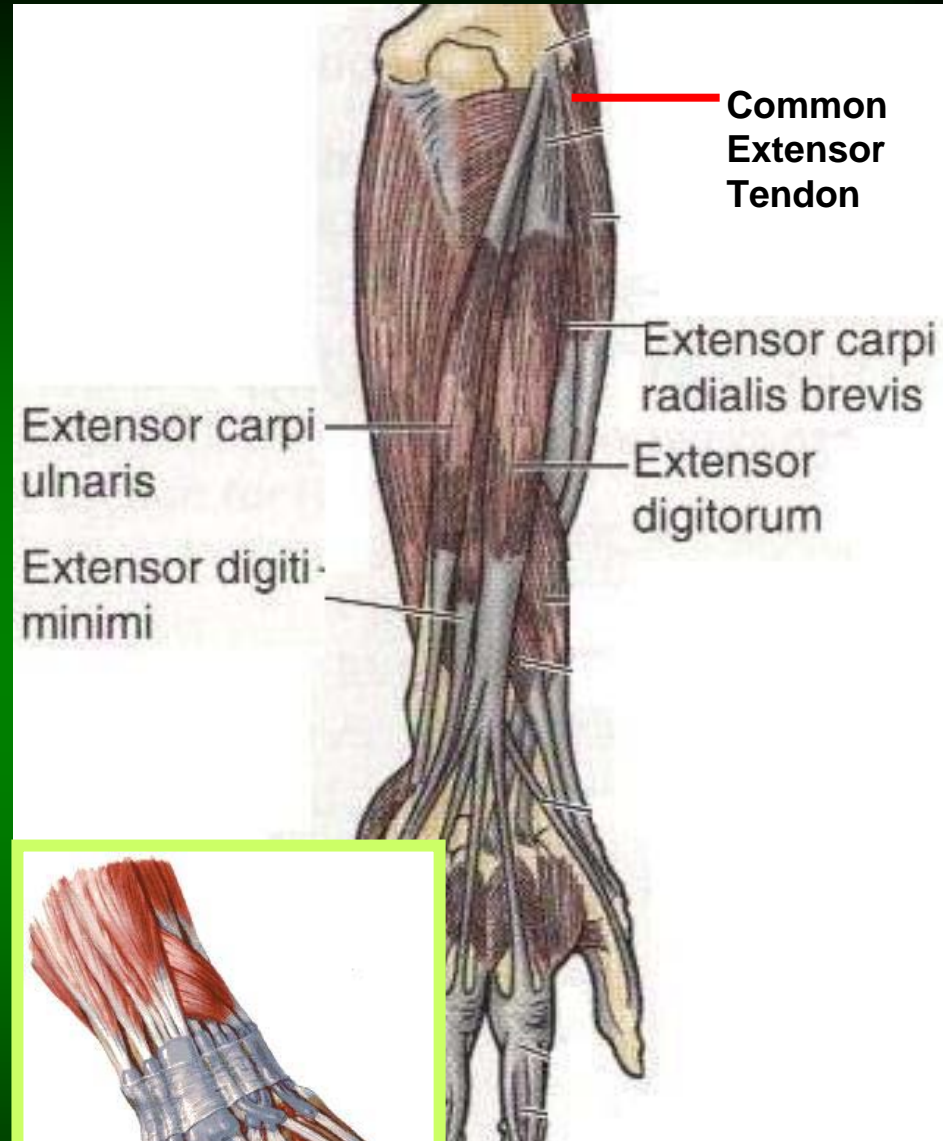


Dr. Mohammad Saeed Vohra

Posterior/Extensor Fascial

Compartment of fore arm

Dorsum of the Hand



Contents of the Posterior Fascial Compartment of the Forearm

Muscles: The *superficial group* includes the extensor carpi radialis brevis, extensor digitorum, extensor digiti minimi, extensor carpi ulnaris, and anconeus. These muscles possess a common tendon of origin, which is attached to the lateral epicondyle of the humerus. The *deep group* includes the supinator, abductor pollicis longus, extensor pollicis brevis, extensor pollicis longus, and extensor indicis.

Blood supply: Posterior and anterior interosseous arteries

Nerve supply: Deep branch of the radial nerve

Muscles

Name them *posterior extensor supinator*

All are innervated by radial nerve

Can be organized in 3 functional groups

**Muscles that extend,
abduct or adduct the
hand at wrist Joint**

Extensor carpi radialis
longus, extensor carpi
radialis brevis
& extensor carpi ulnaris

**Muscles that
extend the medial
four digits**

Extensor digitorum,
extensor indices &
extensor digiti minimi

**Muscles that extend or abduct
thumb**

Abductor pollicis longus/brevis
& extensor pollicis
longus/brevis

**Anconeus
Supinator &
Brachioradialis**

Posterior facial compartment

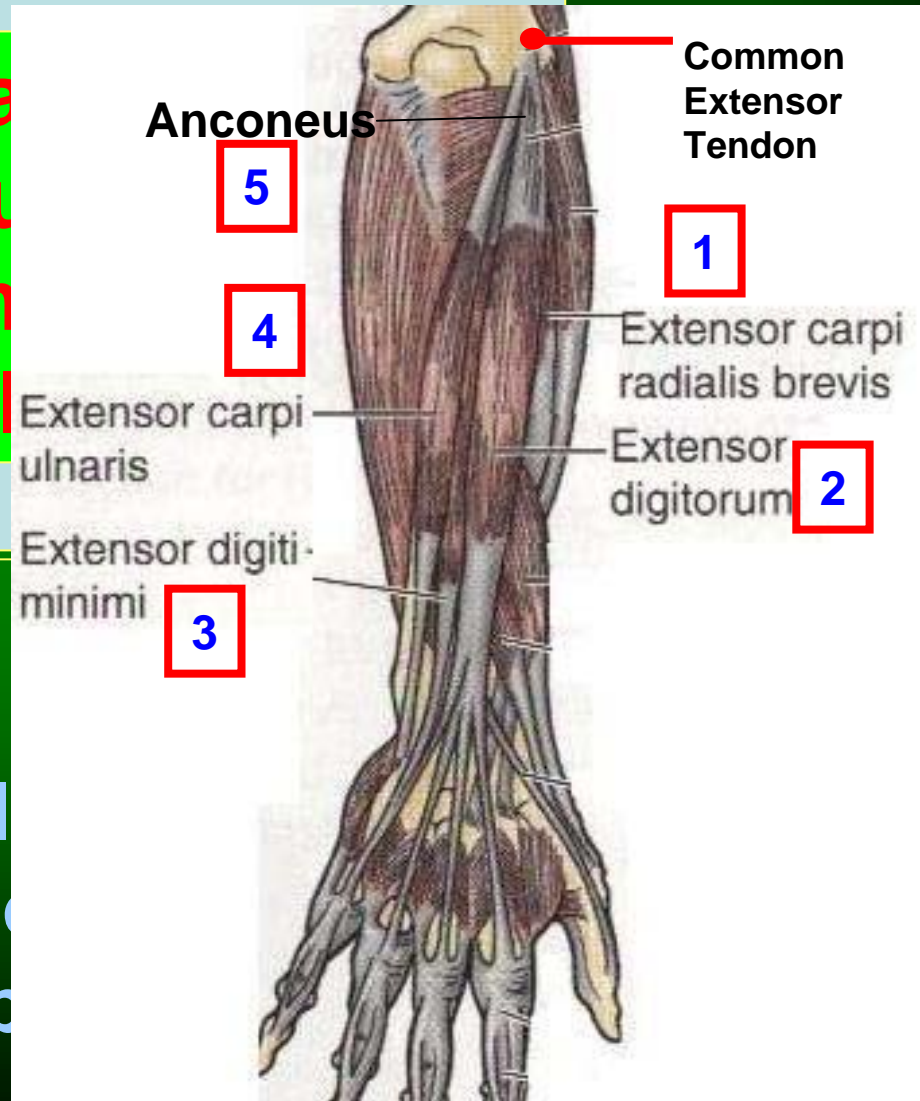
Superficial group

extensor carpi radialis
extensor digitorum
extensor digiti minimi
extensor carpi ulnaris

anconeus

Deep group

Supinator,
abductor pollicis longus
extensor pollicis longus
extensor pollicis brevis
extensor indices



nsor

Superficial group

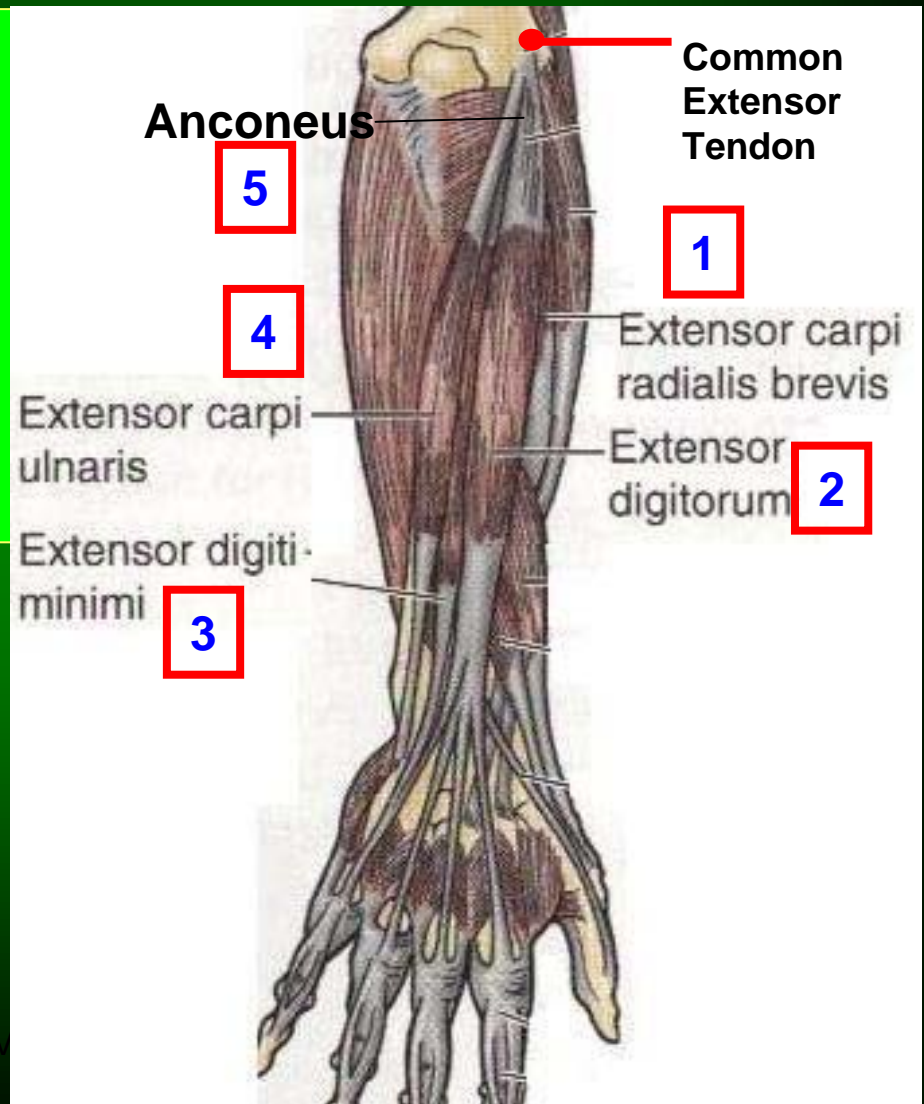
extensor carpi radialis
brevis

extensor digitorum

extensor digiti minimi

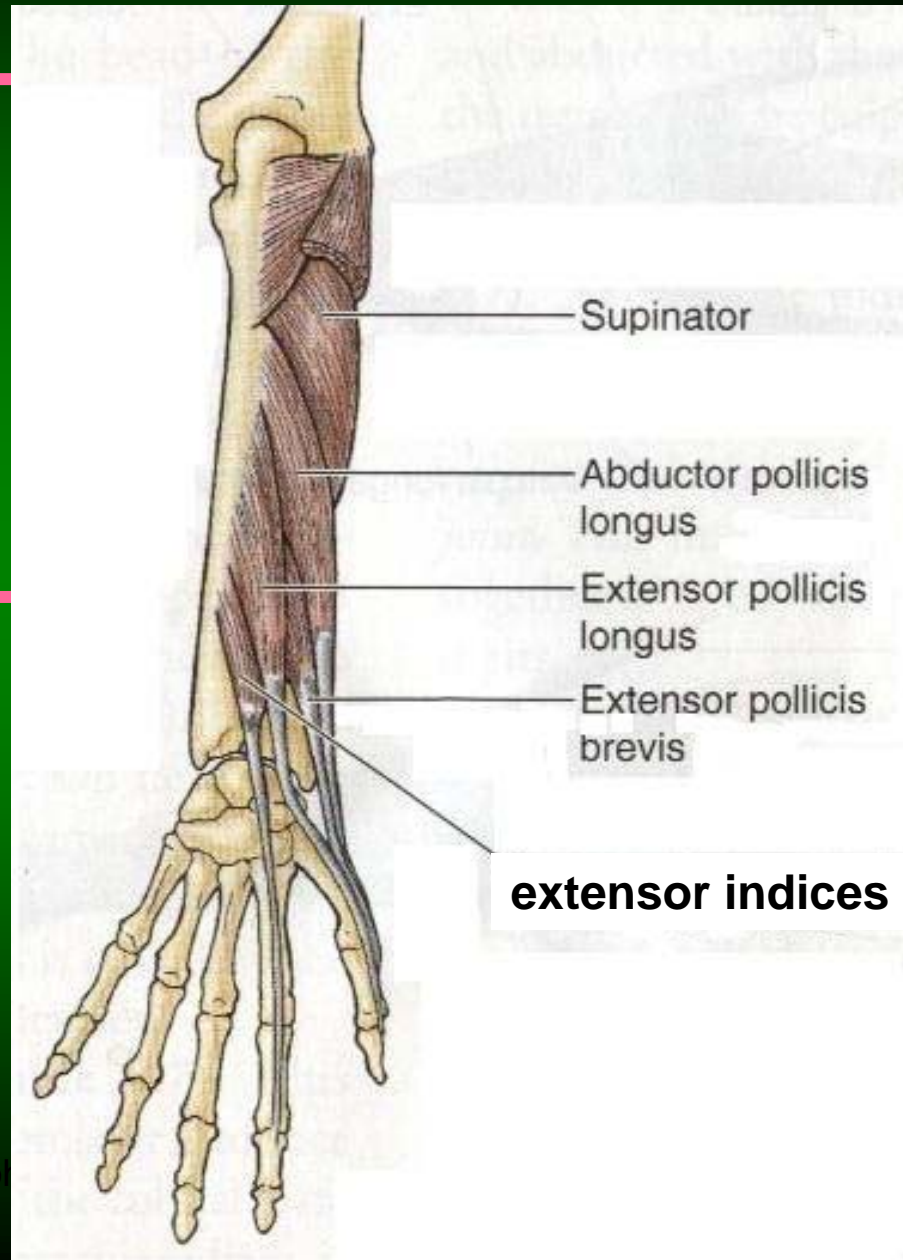
extensor carpi ulnaris

anconeus



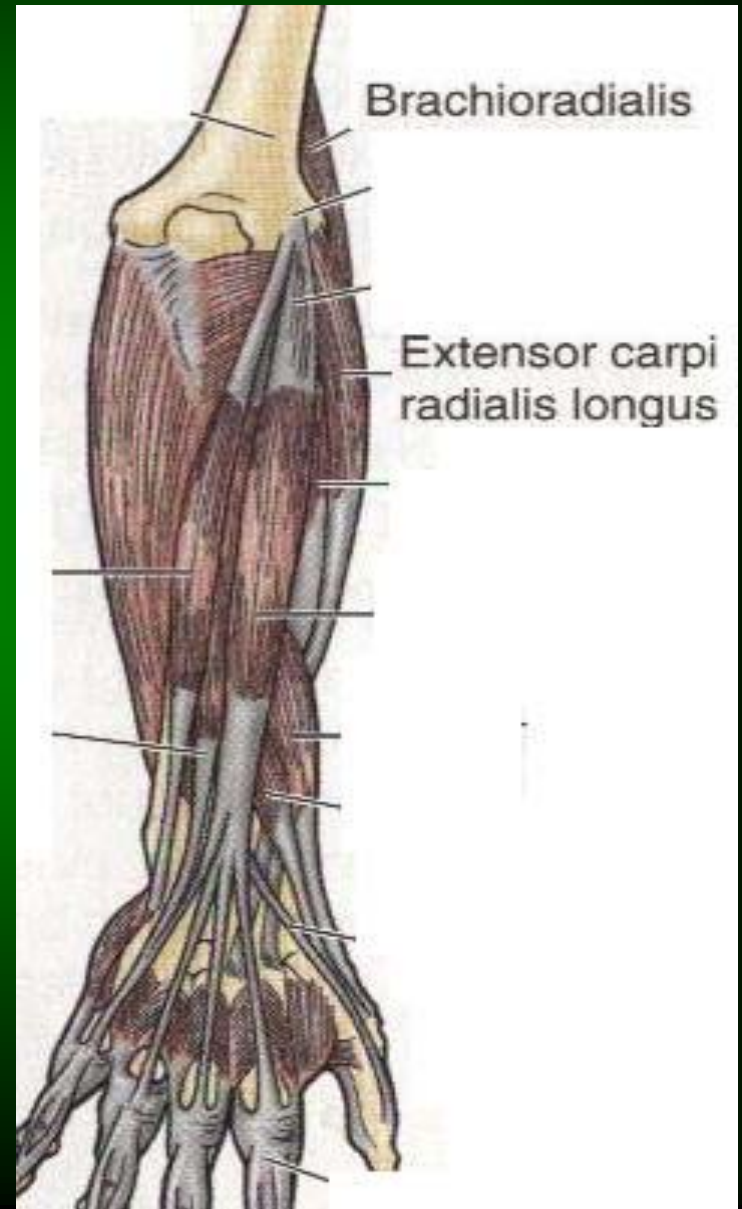
Deep group

supinator
abductor pollicis longus
extensor pollicis longus
extensor pollicis brevis
extensor indices



Lateral Facial Compartment

**Brachioradialis &
extensor carpi
radialis longus**



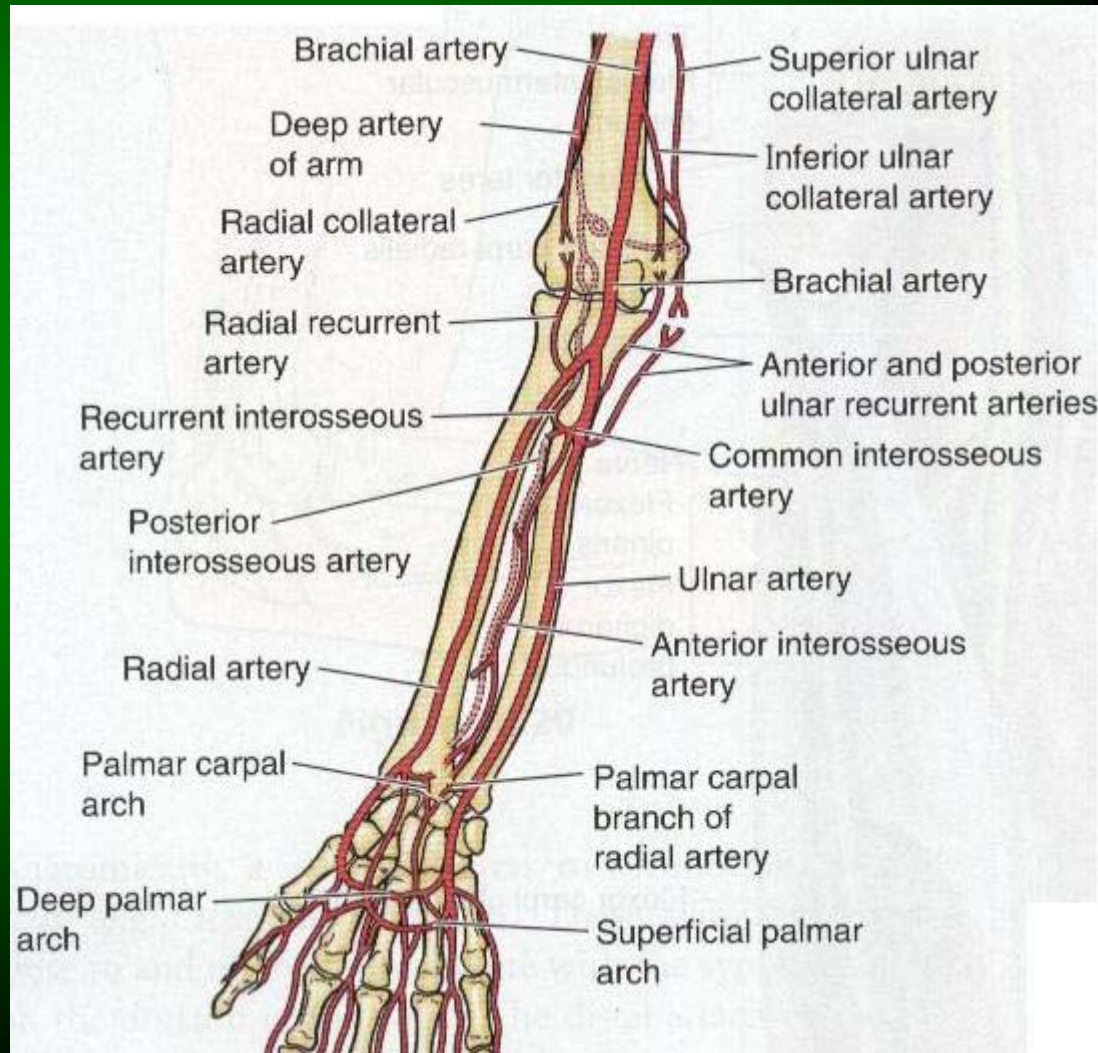
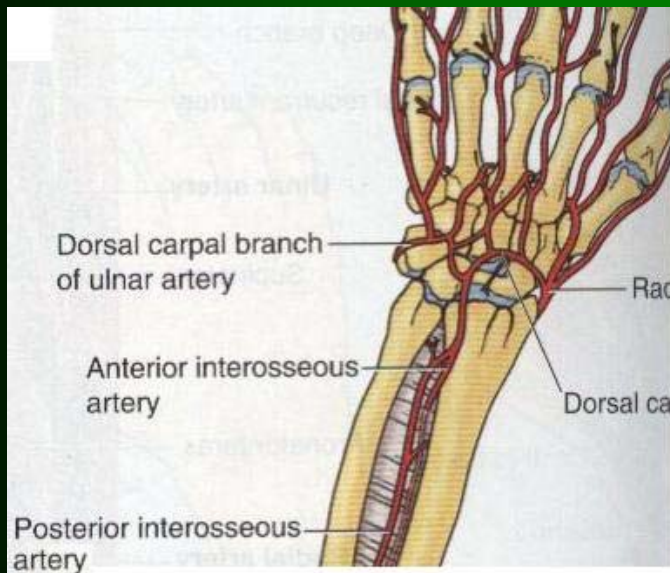
Muscles of posterior compartment of forearm

Muscle	Origin	Insertion	Innervation	Action
Superficial group				
① Extensor digitorum	Common head (lateral epicondyle of humerus)	Dorsal digital expansion of 2nd to 5th digits	Radial n. (C7, C8)	Wrist: extension MCP, PIP, and DIP of 2nd to 5th digits; extension/abduction of fingers
② Extensor digiti minimi		Dorsal digital expansion of 5th digit		Wrist: extension, ulnar abduction of hand MCP, PIP, and DIP of 5th digit; extension and abduction of 5th digit
③ Extensor carpi ulnaris	Common head (lateral epicondyle of humerus) Ulnar head (dorsal surface)	Base of 5th metacarpal		Wrist: extension, adduction (ulnar deviation) of hand
Deep group				
④ Supinator	Olecranon, lateral epicondyle of humerus, radial collateral ligament, annular ligament of radius	Radius (between radial tuberosity and insertion of pronator teres)	Radial n. (C6, C7)	Radioulnar joints: supination
⑤ Abductor pollicis longus	Radius and ulna (dorsal surfaces, interosseous membrane)	Base of 1st metacarpal	Radial n. (C7, C8)	Radiocarpal joint: abduction of the hand Carpometacarpal joint of thumb: abduction
⑥ Extensor pollicis brevis	Radius (posterior surface) and interosseous membrane	Base of proximal phalanx of thumb		Radiocarpal joint: abduction (radial deviation) of hand Carpometacarpal and MCP of thumb: extension
⑦ Extensor pollicis longus	Ulna (posterior surface) and interosseous membrane	Base of distal phalanx of thumb		Wrist: extension and abduction (radial deviation) of hand Carpometacarpal of thumb: adduction MCP and IP of thumb: extension
⑧ Extensor indicis	Ulna (posterior surface) and interosseous membrane	Posterior digital extension of 2nd digit		Wrist: extension MCP, PIP, and DIP of 2nd digit: extension

DIP = distal interphalangeal; IP = interphalangeal; MCP = metacarpophalangeal; PIP = proximal interphalangeal.

Arteries of Posterior Compartment

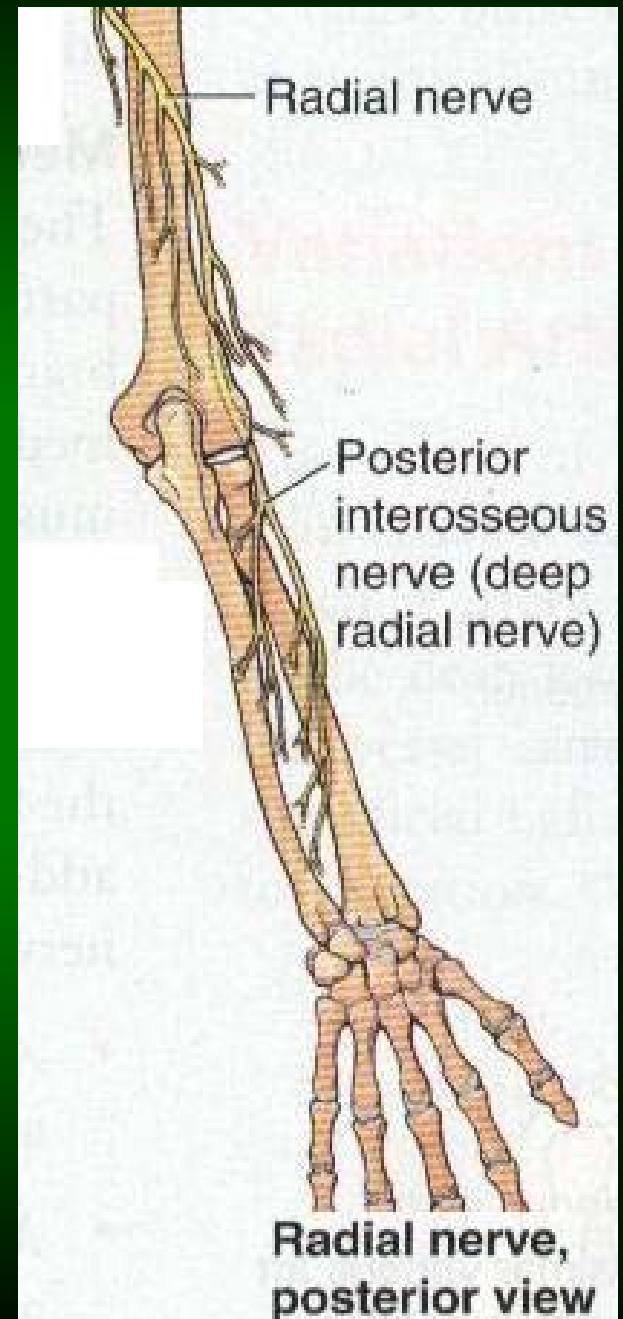
Anterior & posterior interosseous arteries arise from CIA a branch of ulnar artery



Nerves of Posterior Compartment

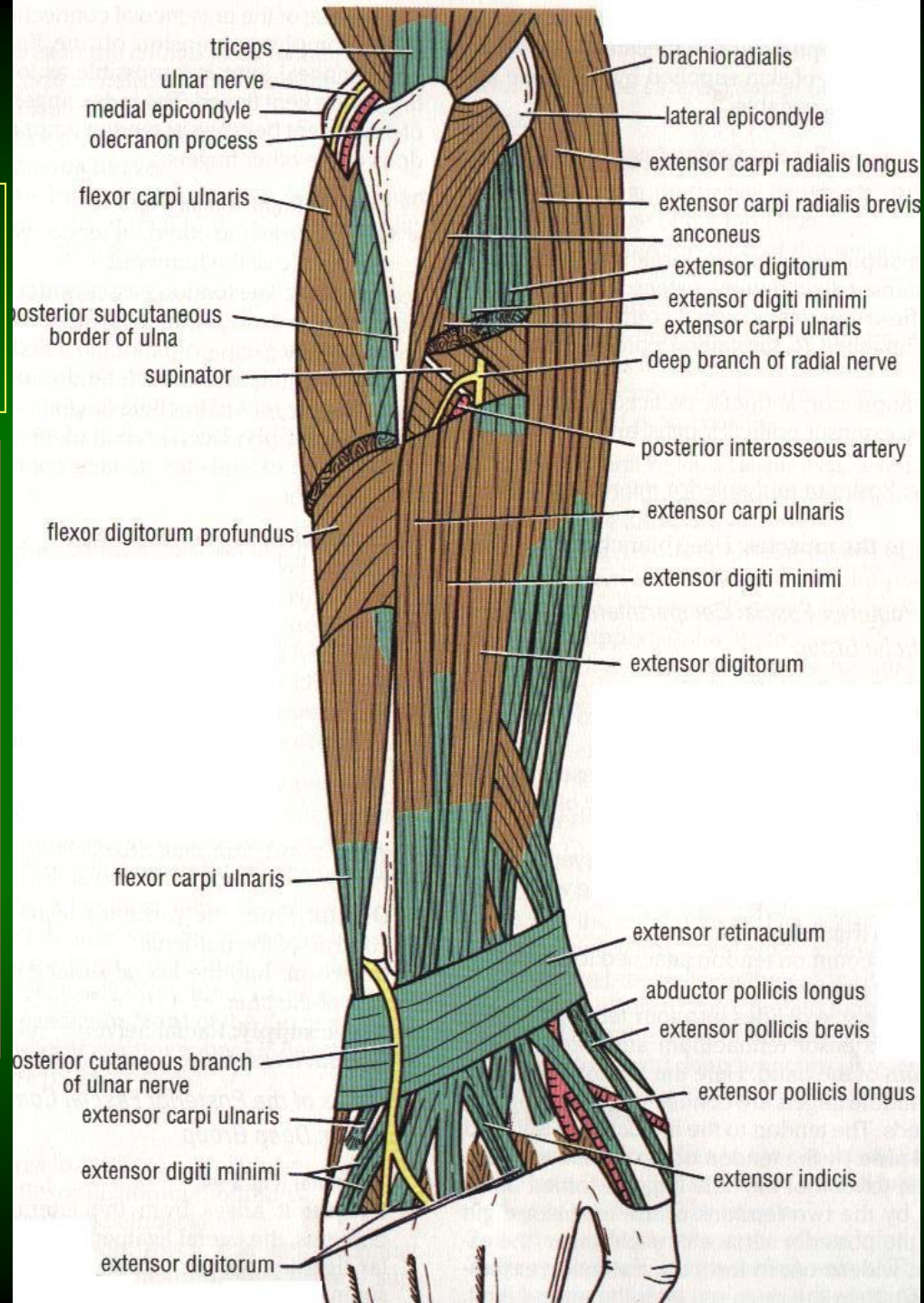
Deep branch arises from radial nerve in front of the lateral epicondyle of humerus pierces the supinator & winds around the neck of the radius, runs between the superficial & deep group.

Gives muscular & articular branches



Extensor retinaculum

Is a thickening of deep fascia that stretches across the back of the wrist & holds the long ext tendons. Attached medially to pisiform & hook of hamate & laterally to the distal end of radius.



Structures pass superficial to the extensor retinaculum from medial to lateral

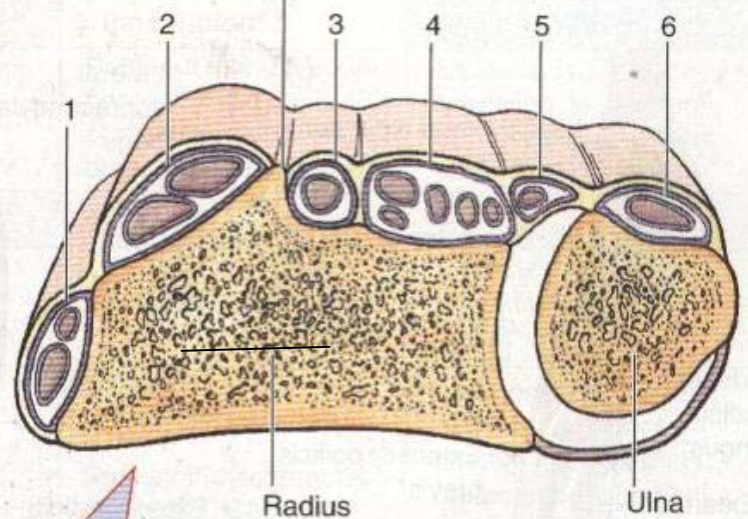
**Dorsal cutaneous br of ulnar nerve
Basilic vein
Cephalic vein
Superficial br of radial nerve**

Structures pass deep to the extensor retinaculum from medial to lateral

The tendons of:

**Ext carpi ulnaris
Ext digiti minimi
Ext digitorum
Ext indicis
Ext pollicis longus
Ext carpi radialis longus
Abductor pollicis longus
Ext pollicis brevis**

Dorsal radial tubercle



(B) (Oblique) transverse section at level indicated in A

Intertendinous connection

2

Extensor carpi radiales (2)
Longus
Brevis

3

Extensor pollicis longus (EPL) (3)

1

Abductor pollicis longus (APL) (1)
Extensor pollicis brevis (EPB) (1)

Dorsal radial tubercle

Posterior view

Extensor digiti minimi (5)

5

Extensor carpi ulnaris (6)

6

Tendon sheath for Extensor digitorum (4)
Extensor indicis

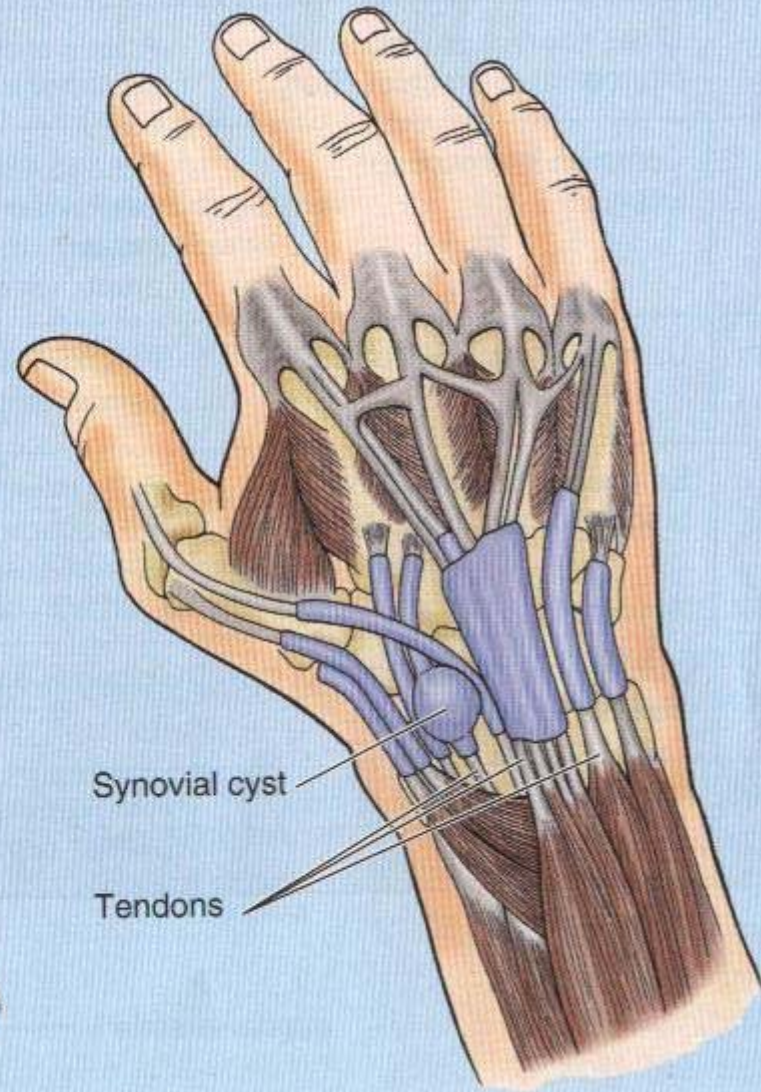
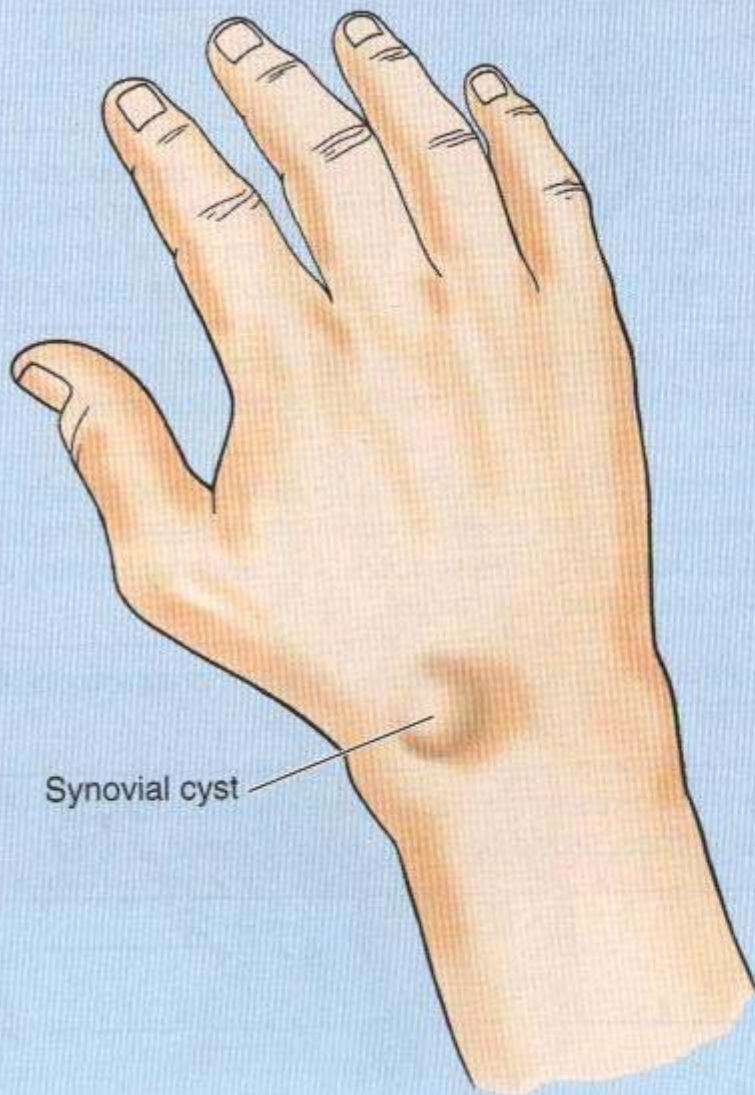
4

Plane of section of B

Extensor retinaculum

Synovial sheath for tendons

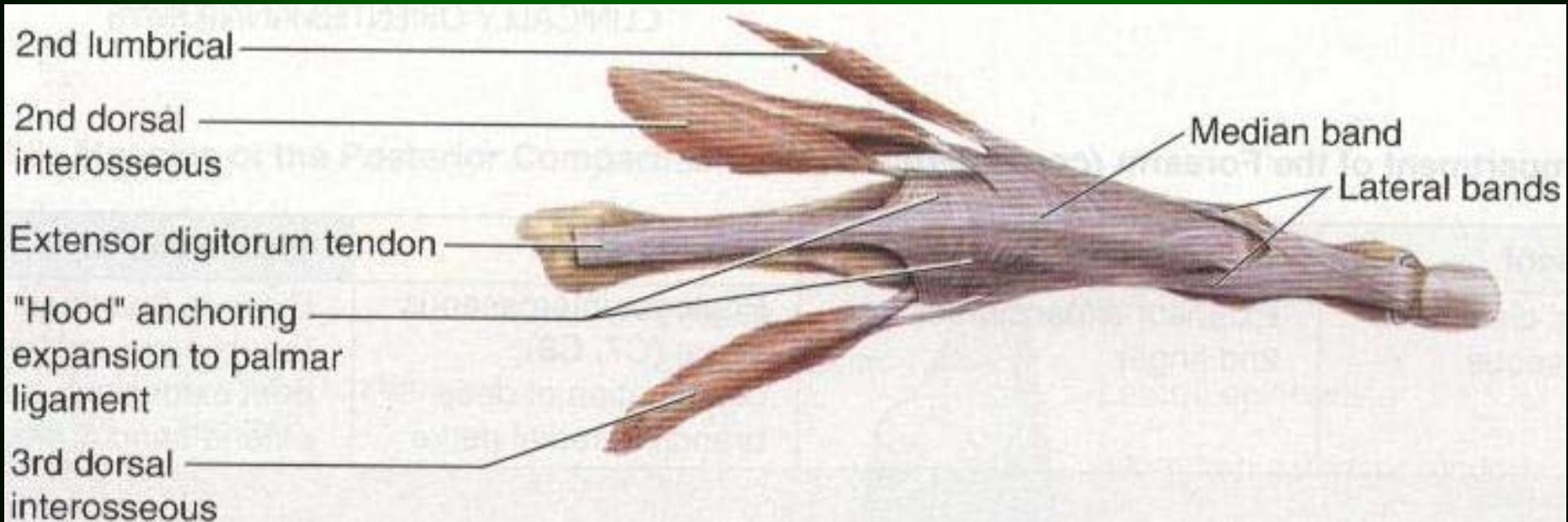
Synovial tendon sheath/cyst



Dorsum of the Hand

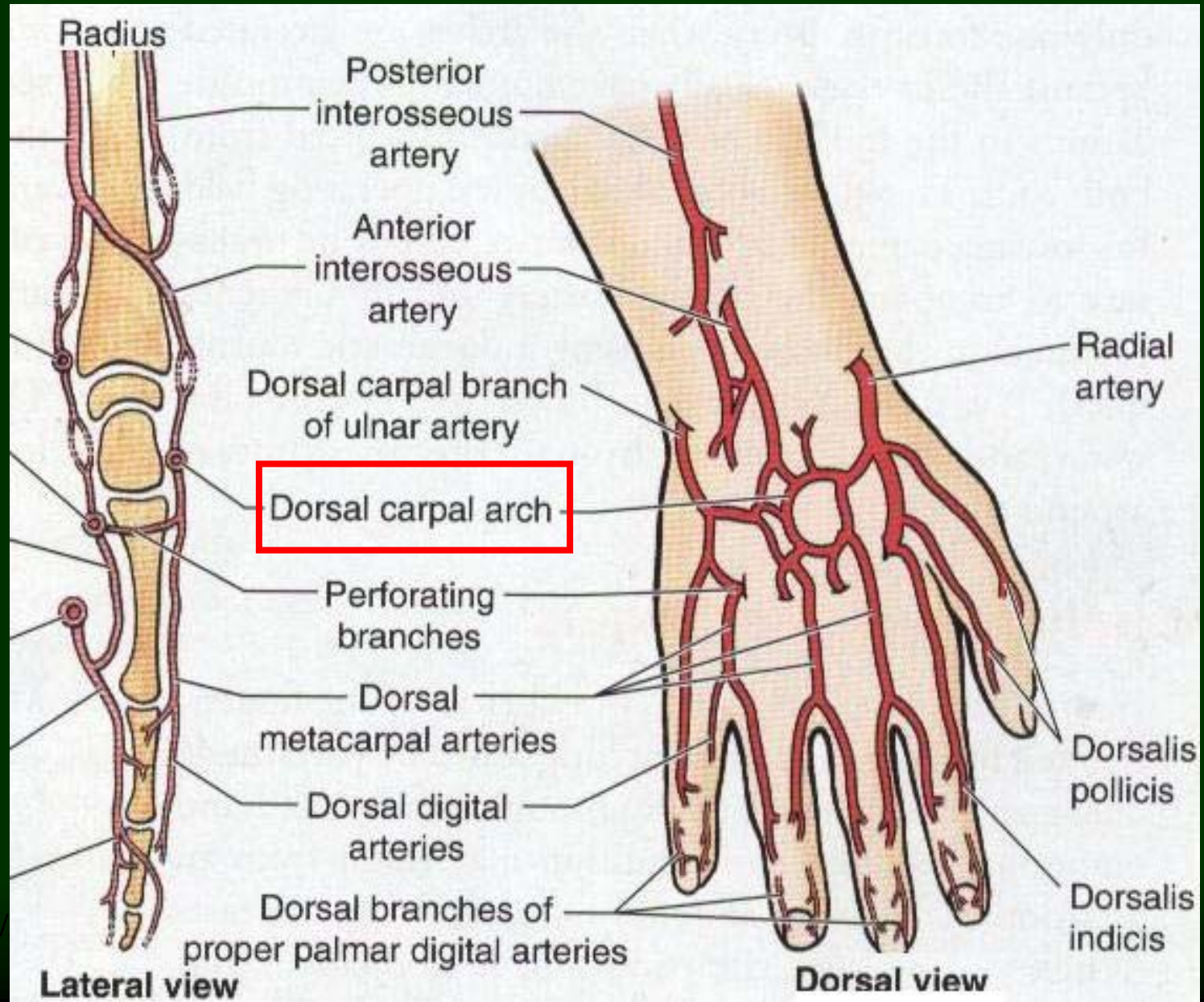
The Dorsum of the Hand

Dorsal expansion

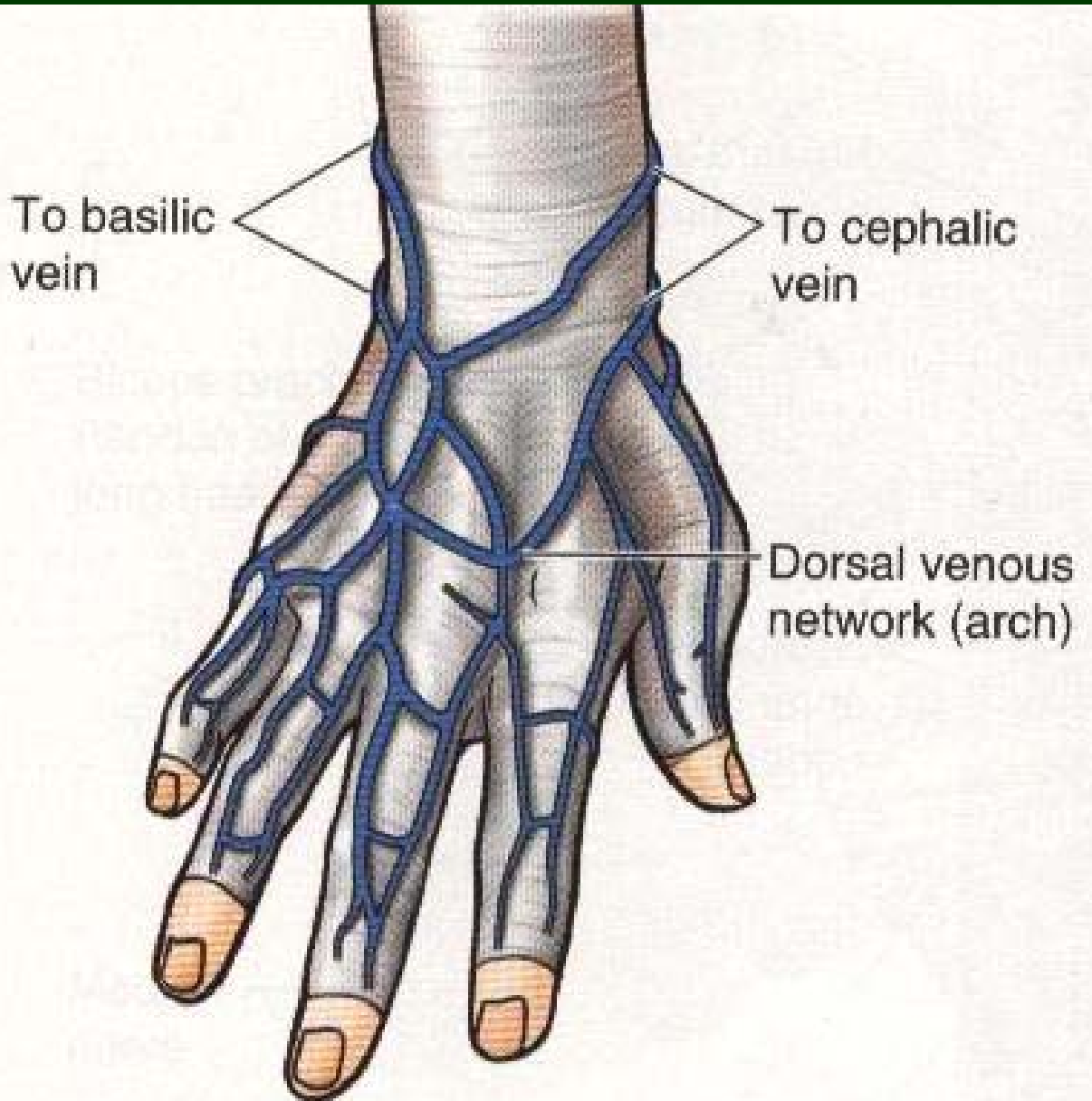


4 tendons of ED fan over the dorsum of the hand. Strong bands connect the tendons of little, ring & middle fingers proximal to the head of metacarpal bones. Each extensor tendon joins the extension expansion. Near the proximal interphalangeal joint extensor expansion split into 3 parts a central & 2 lateral parts, which converge to be inserted into the base of the distal phalanx

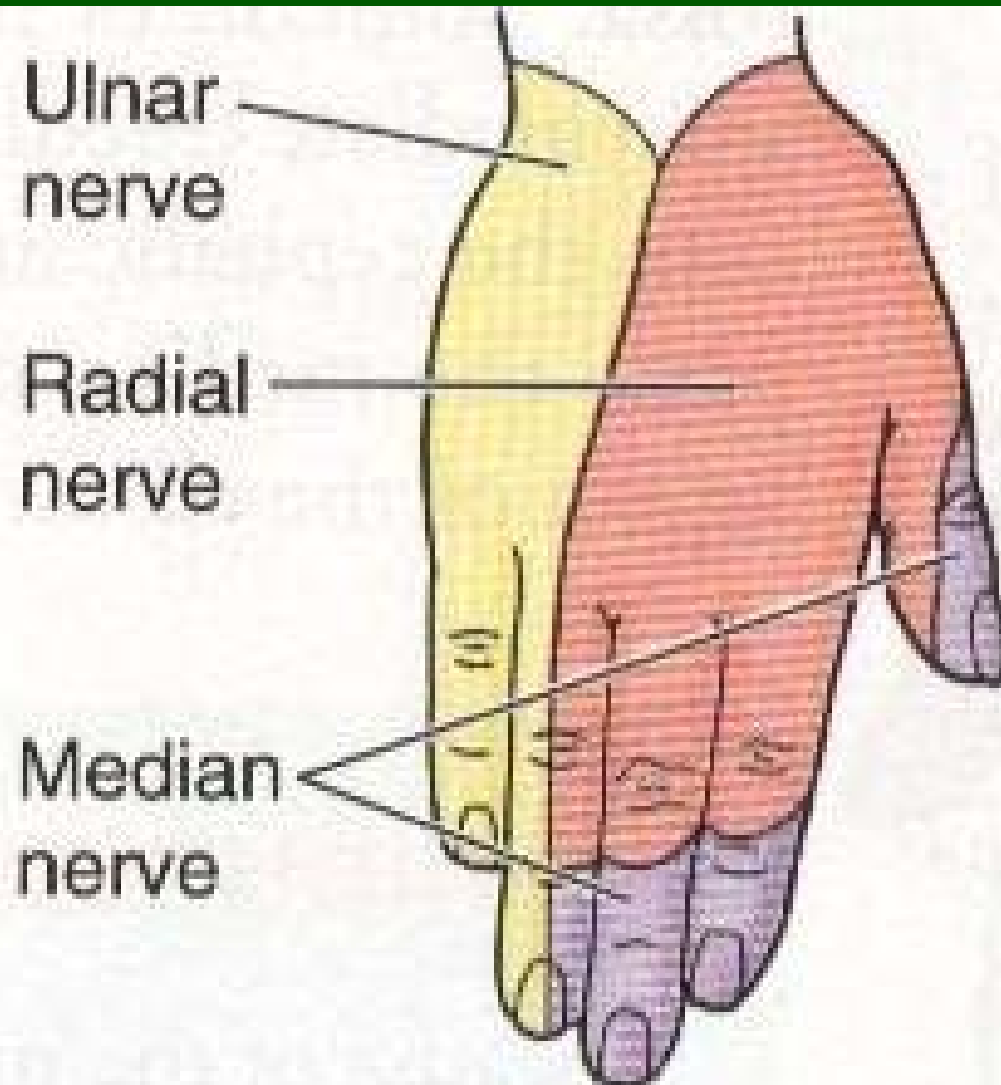
Arterial supply



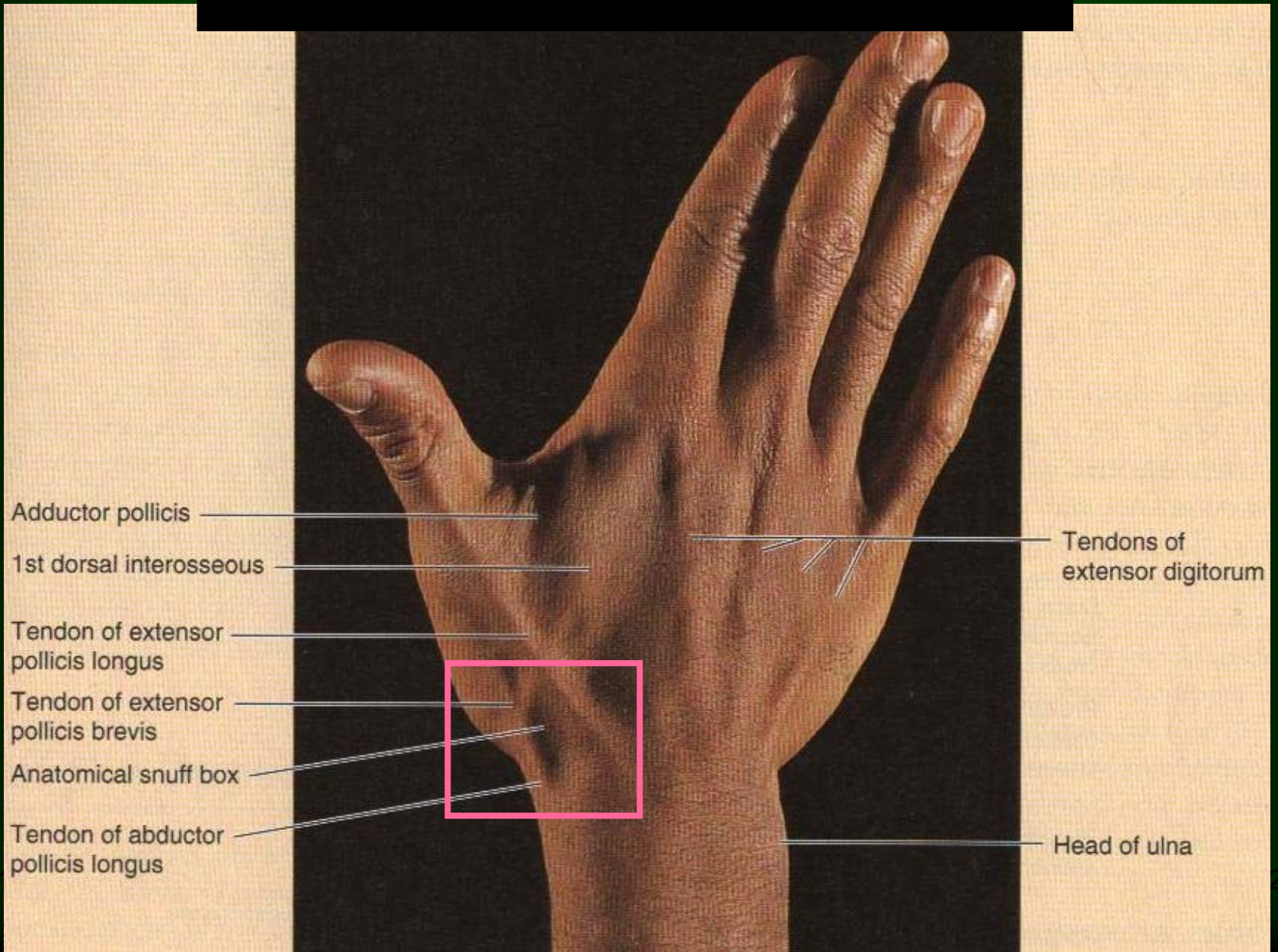
Dorsal Venous Arch



Nerve supply of dorsum of the hand



Anatomical snuff box



Tennis Elbow

Tennis elbow is caused by the partial tearing or degeneration of the origin of the extensor muscles from lateral epicondyle of humerus

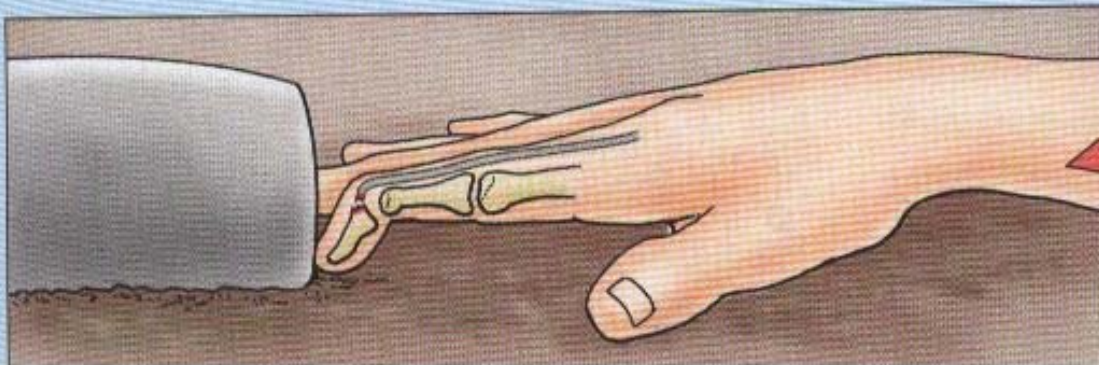
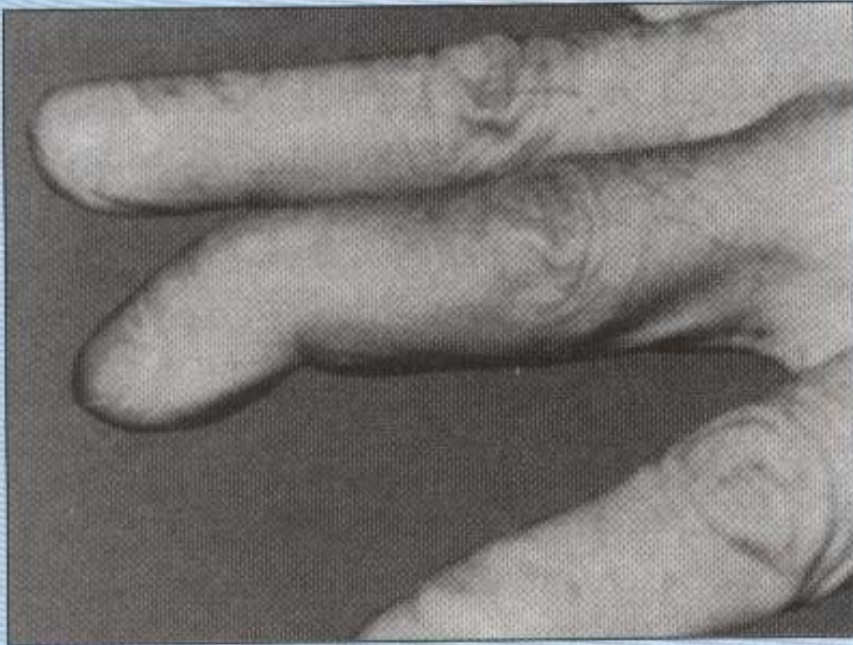
Characteristics

Tenderness over

Pain radiating down the lateral side of the fore arm

Common in tennis players, violinists & housewives

Baseball fracture



Thank you