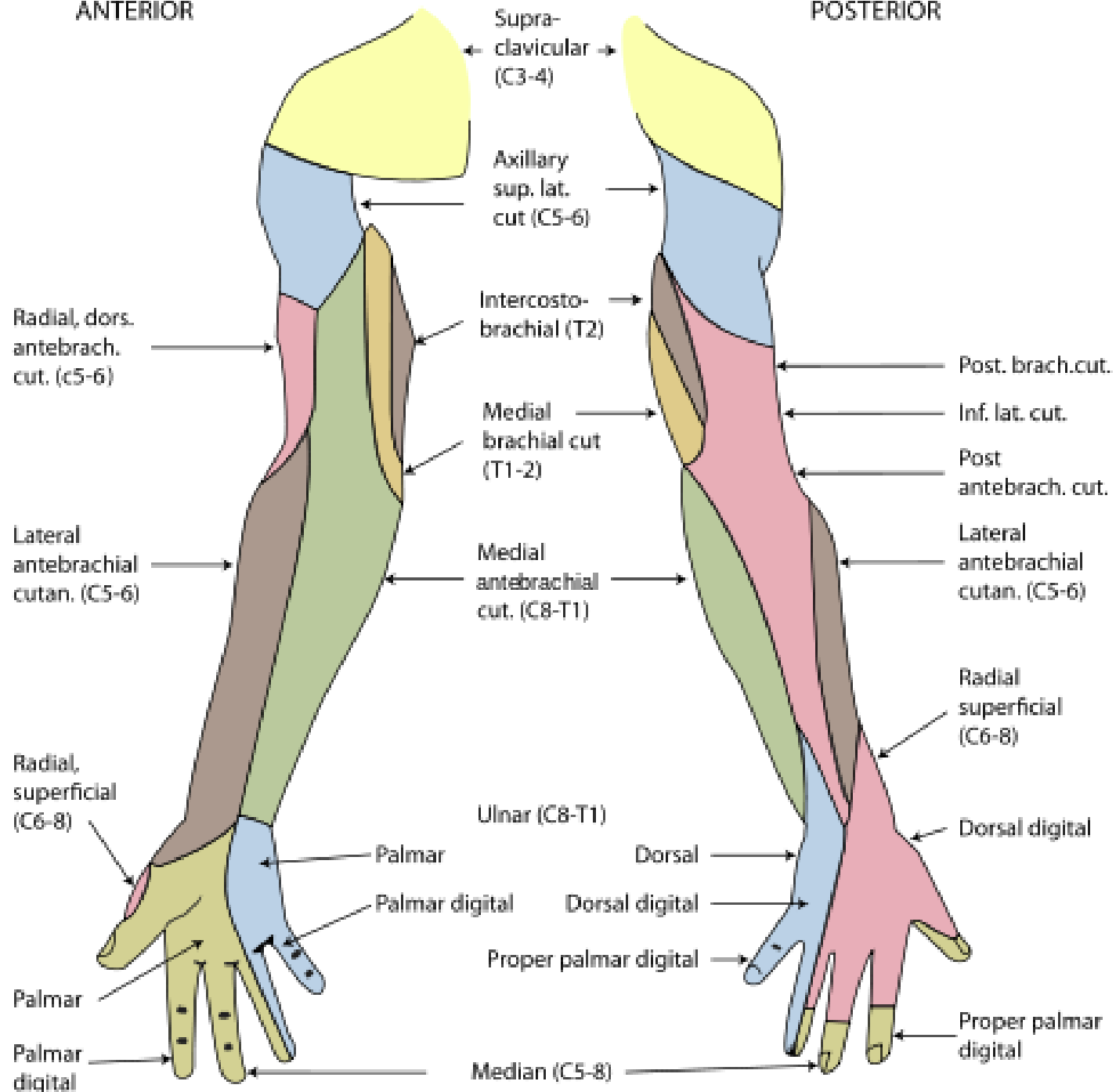


# Upper limb forearm region and Hand

By Dr Qaisar Afridi

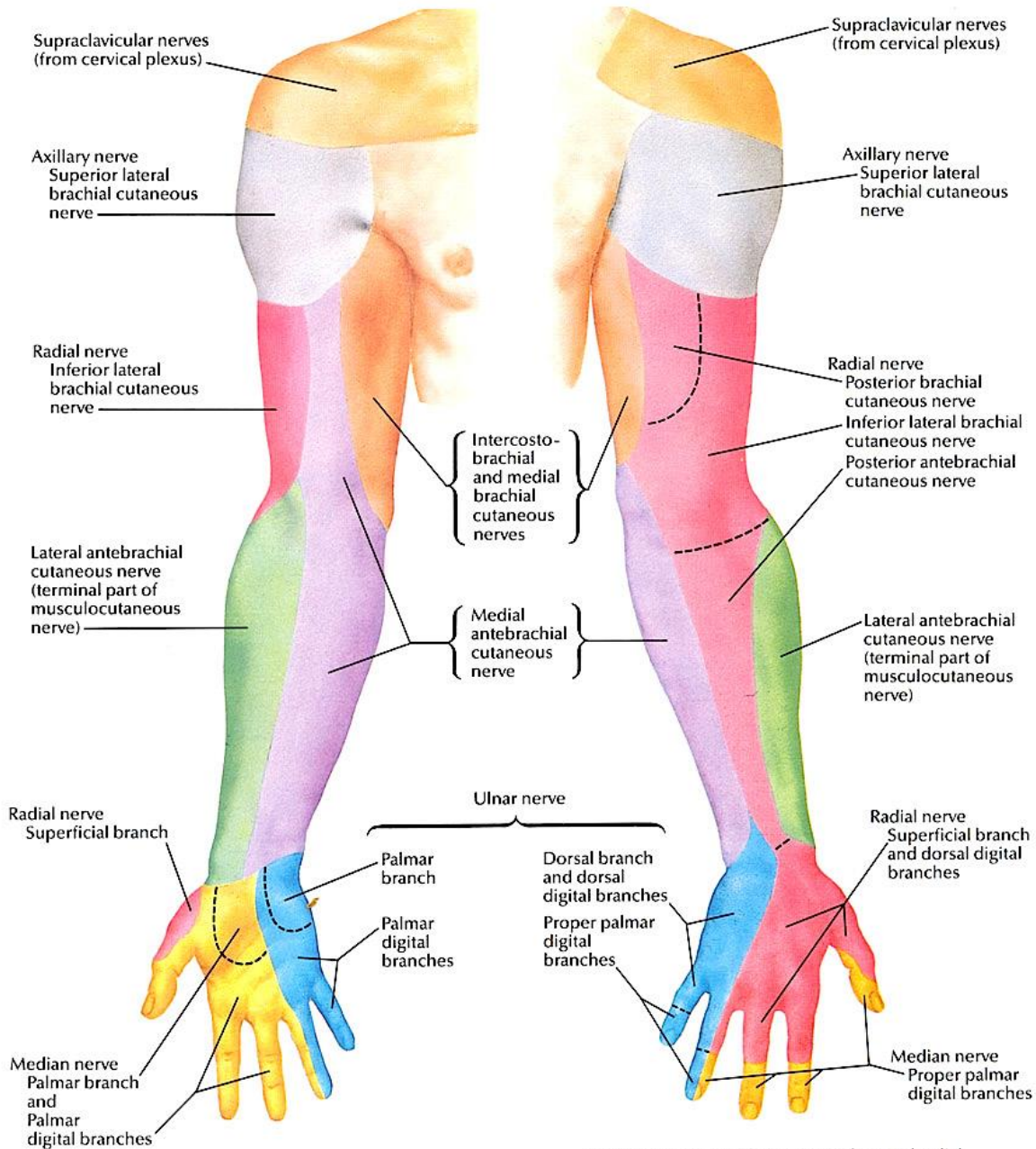
ANTERIOR

POSTERIOR

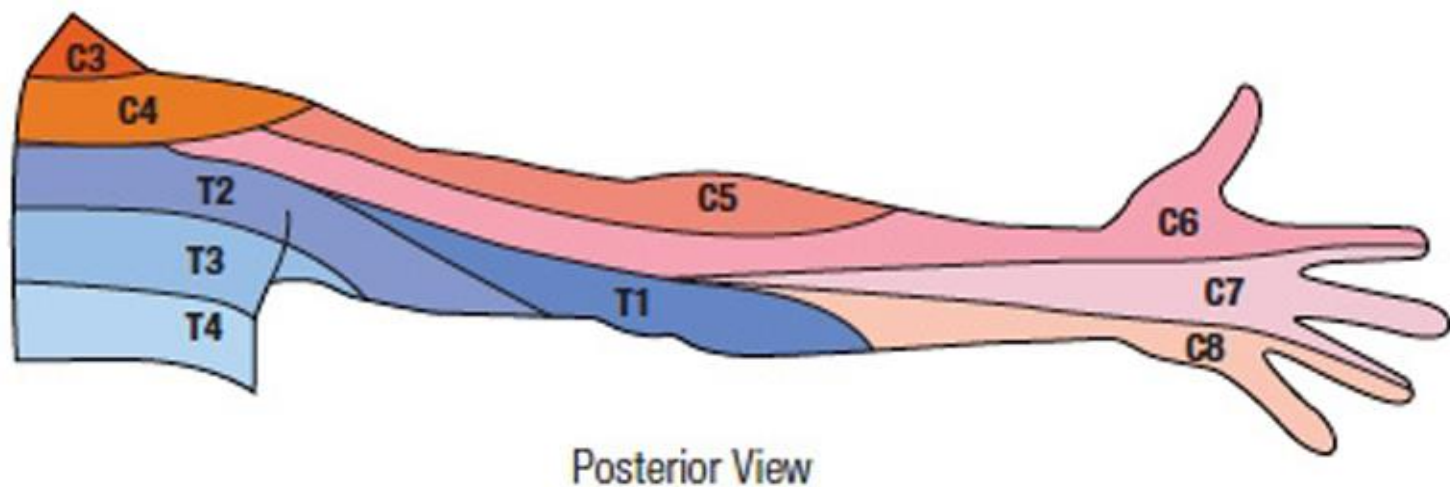
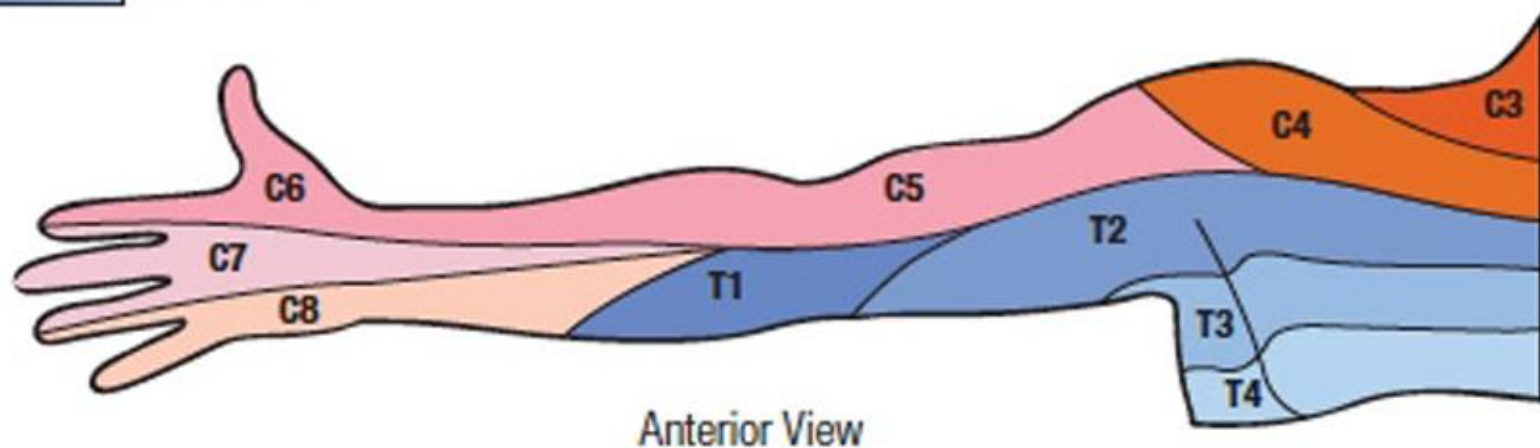


**Anterior (palmar) view**

**Posterior (dorsal) view**

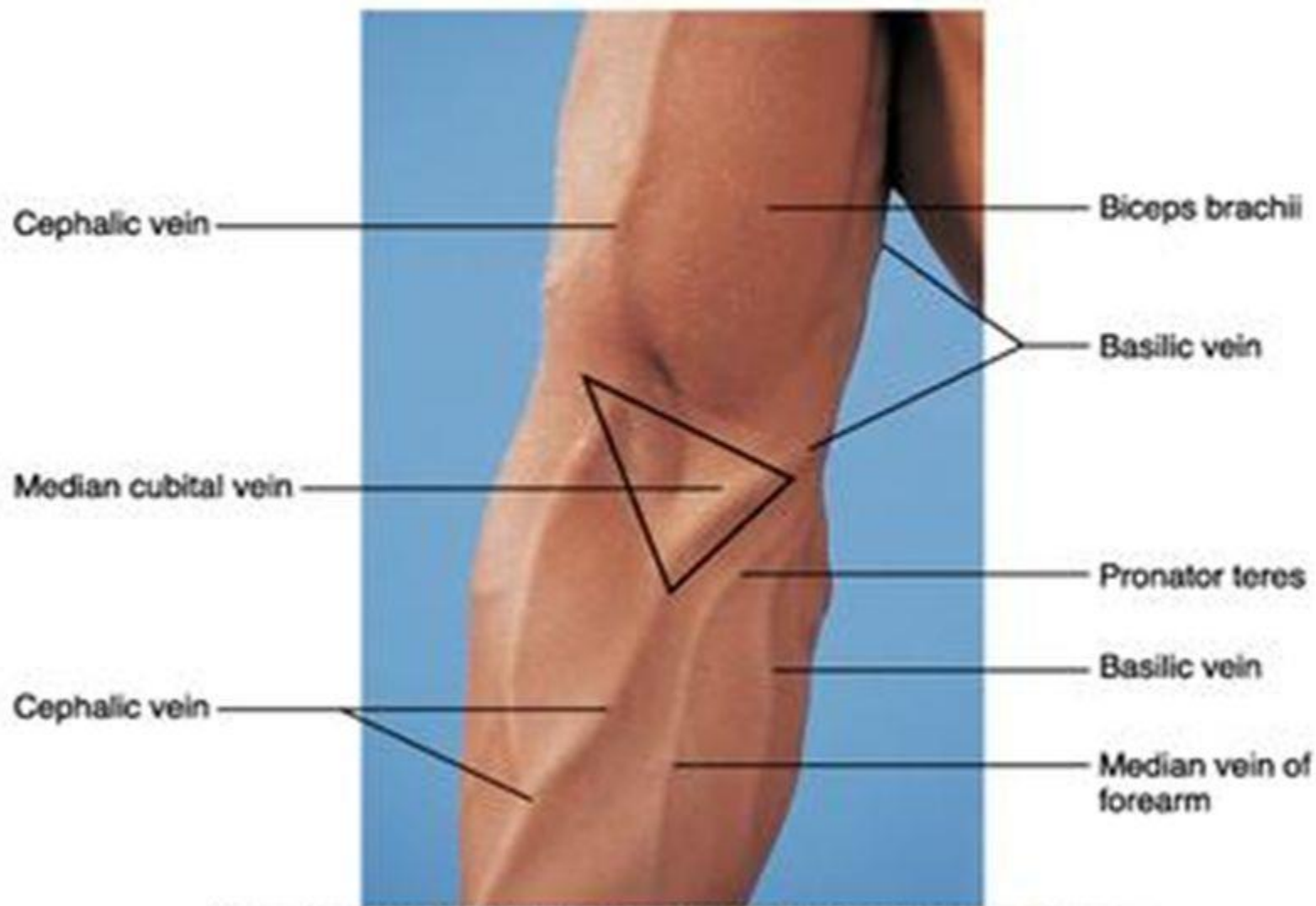


Note: division variable between ulnar and radial innervation on dorsum of hand and often aligns with middle of 3rd digit instead of 4th digit as shown



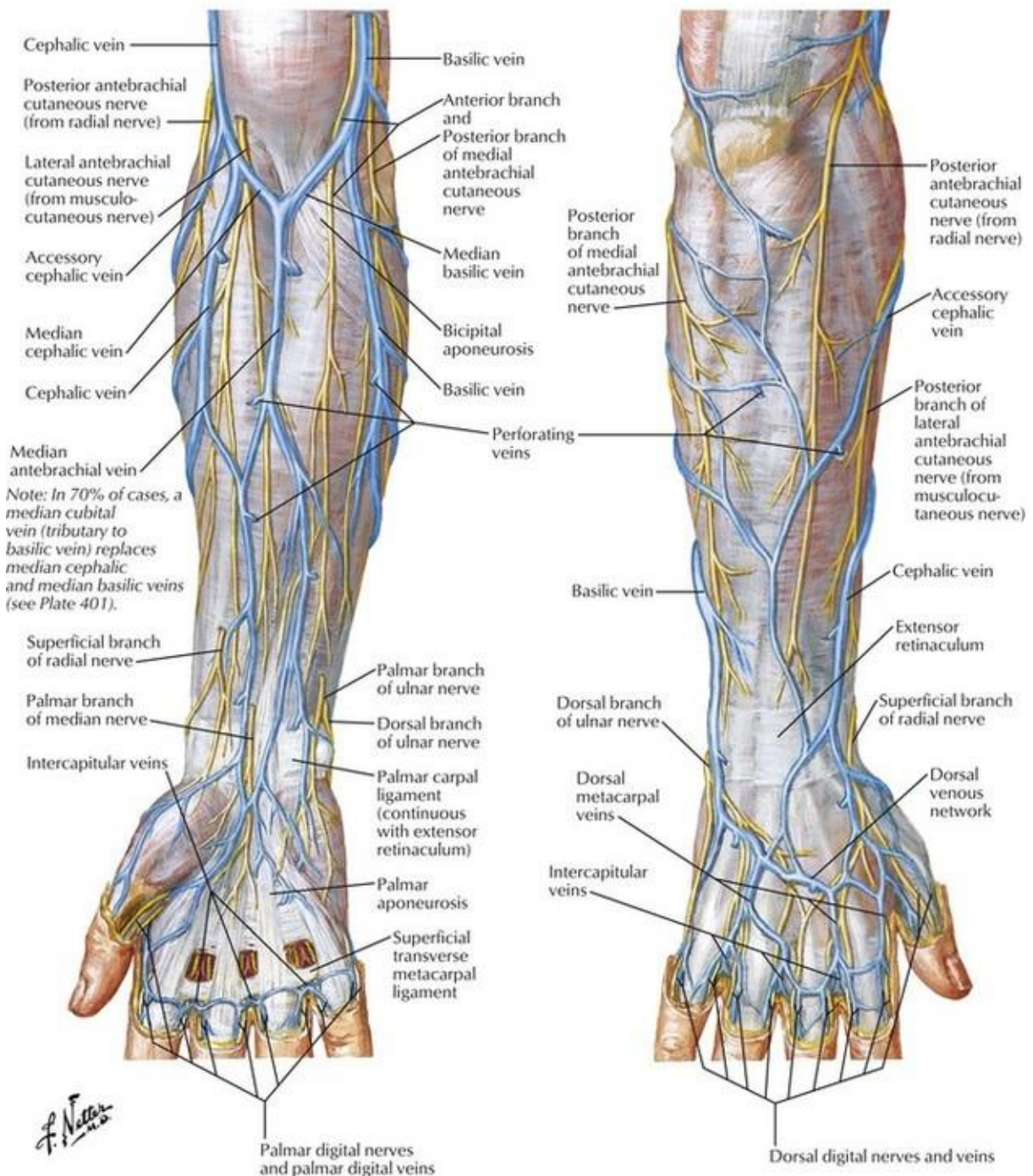
**Figure 2.** A map of dermatomal innervation of the shoulder and upper extremity.

# Cubital Fossa (Site for IV injection)



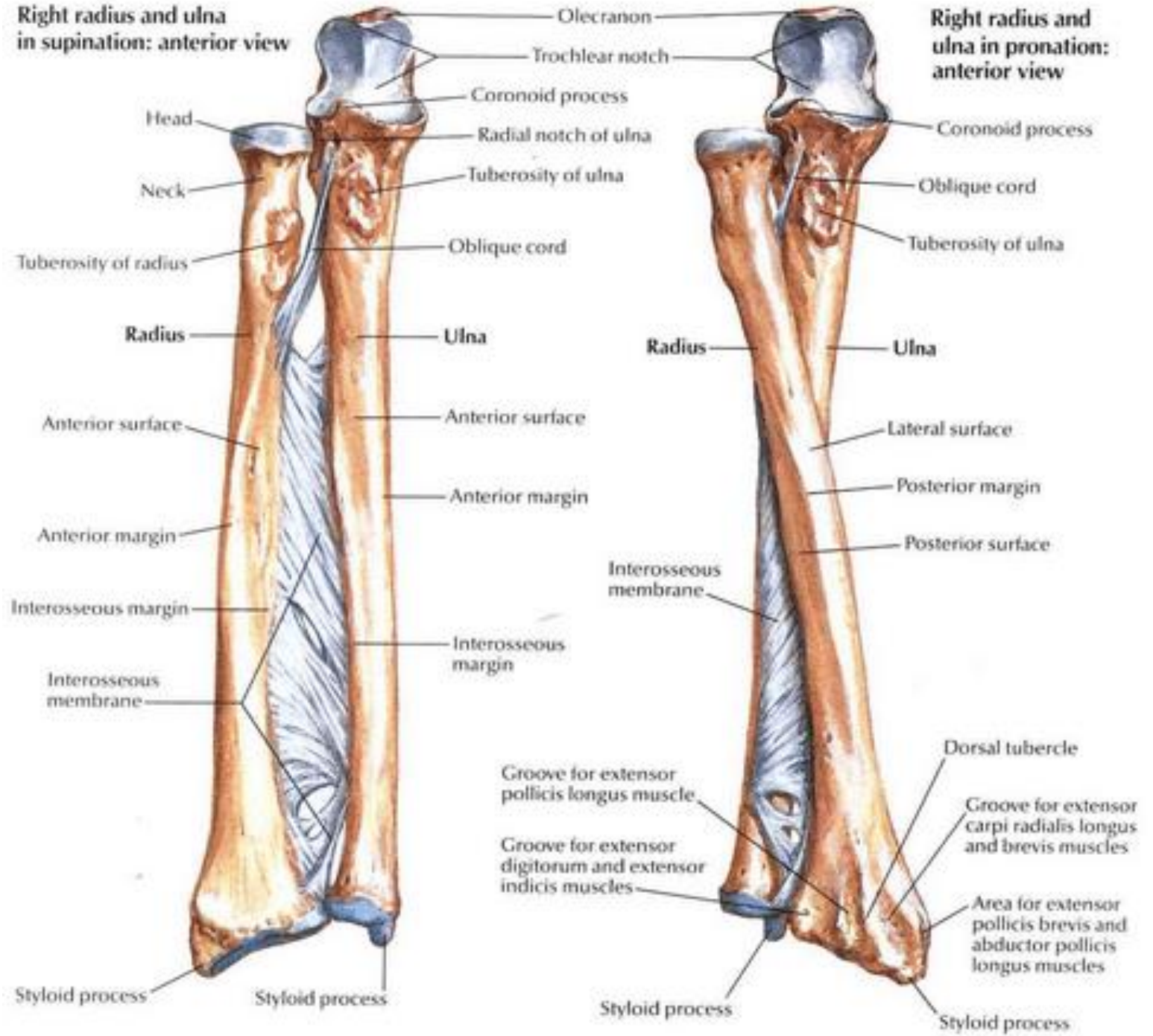
Anterior (palmar) view

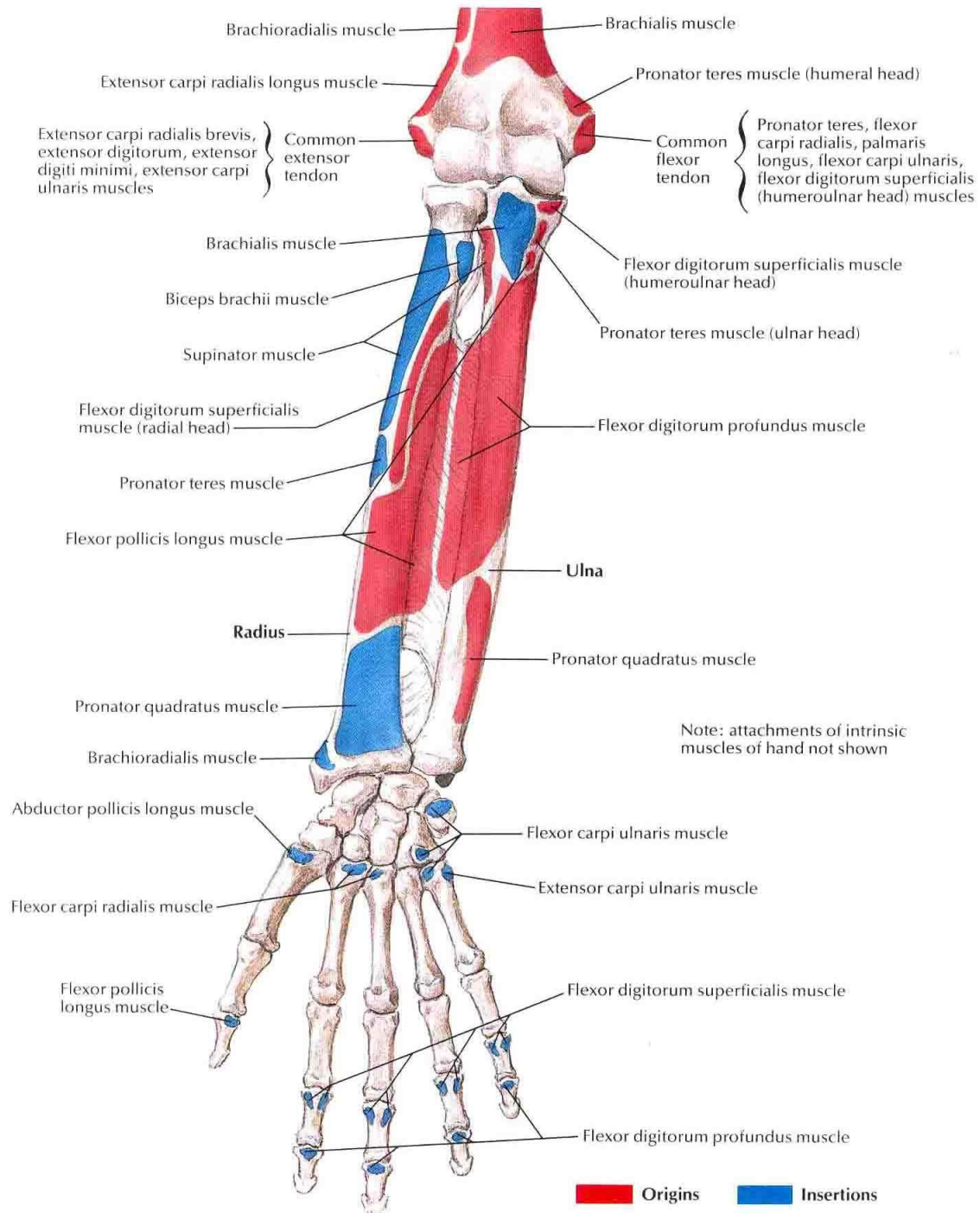
Posterior (dorsal) view



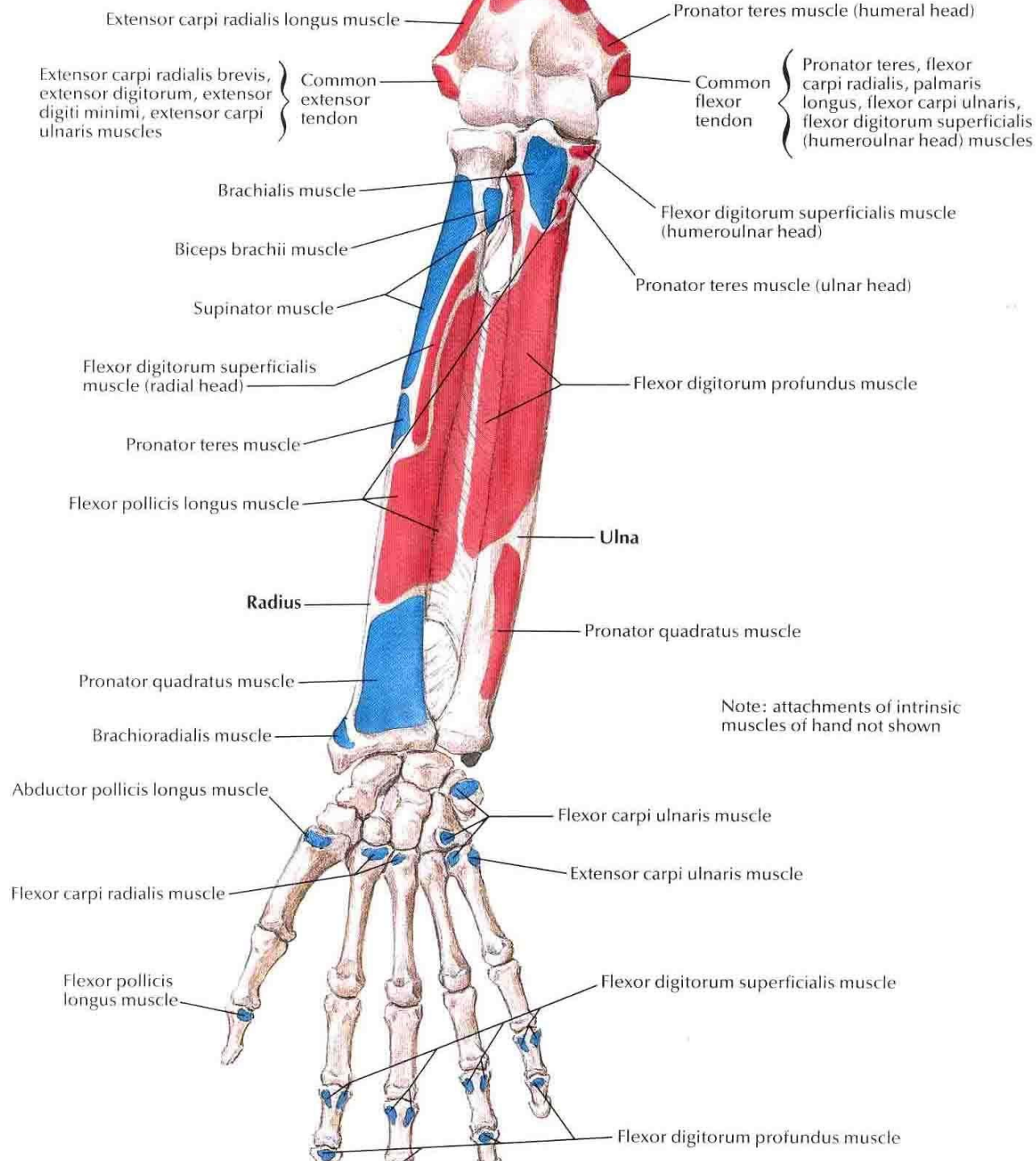
Right radius and ulna in supination: anterior view

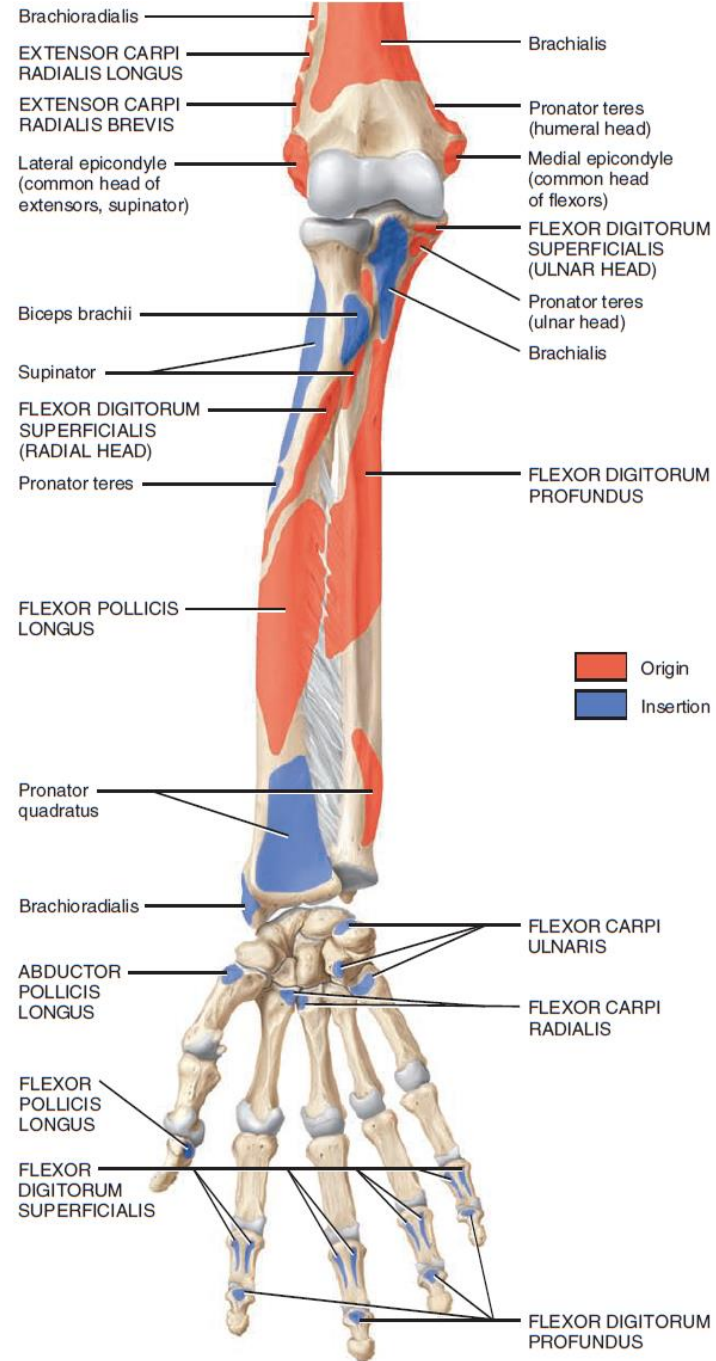
Right radius and ulna in pronation: anterior view

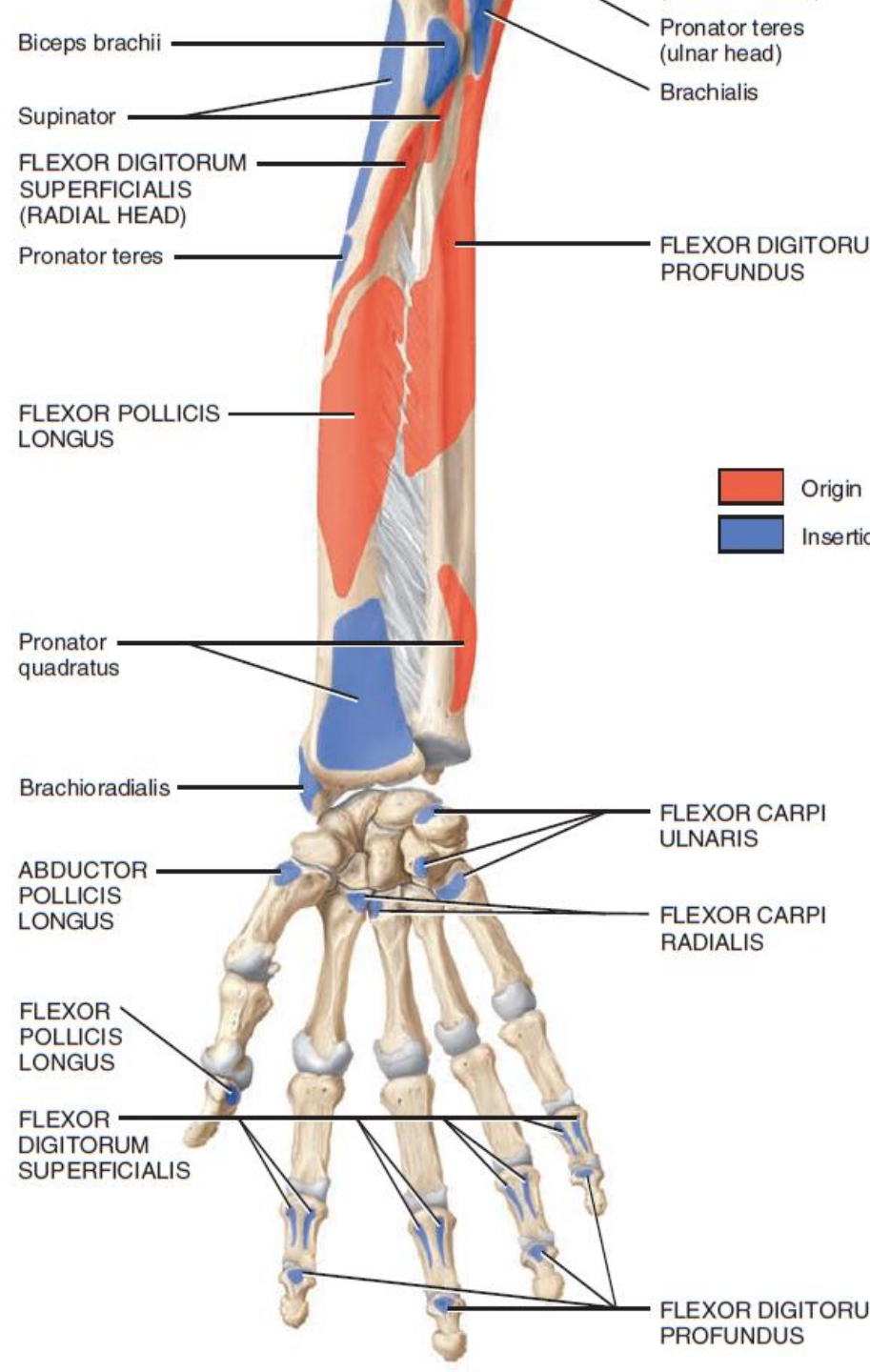
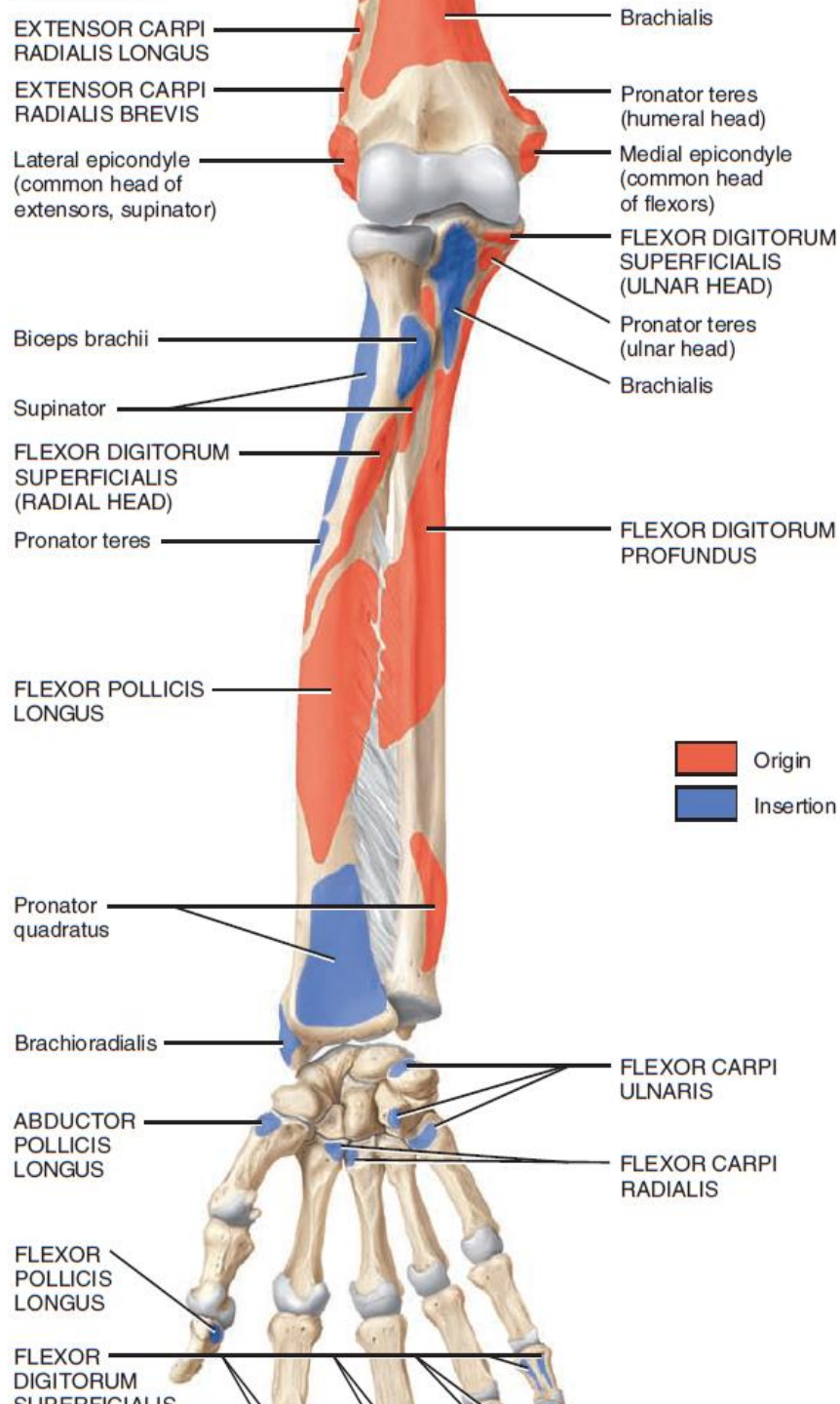


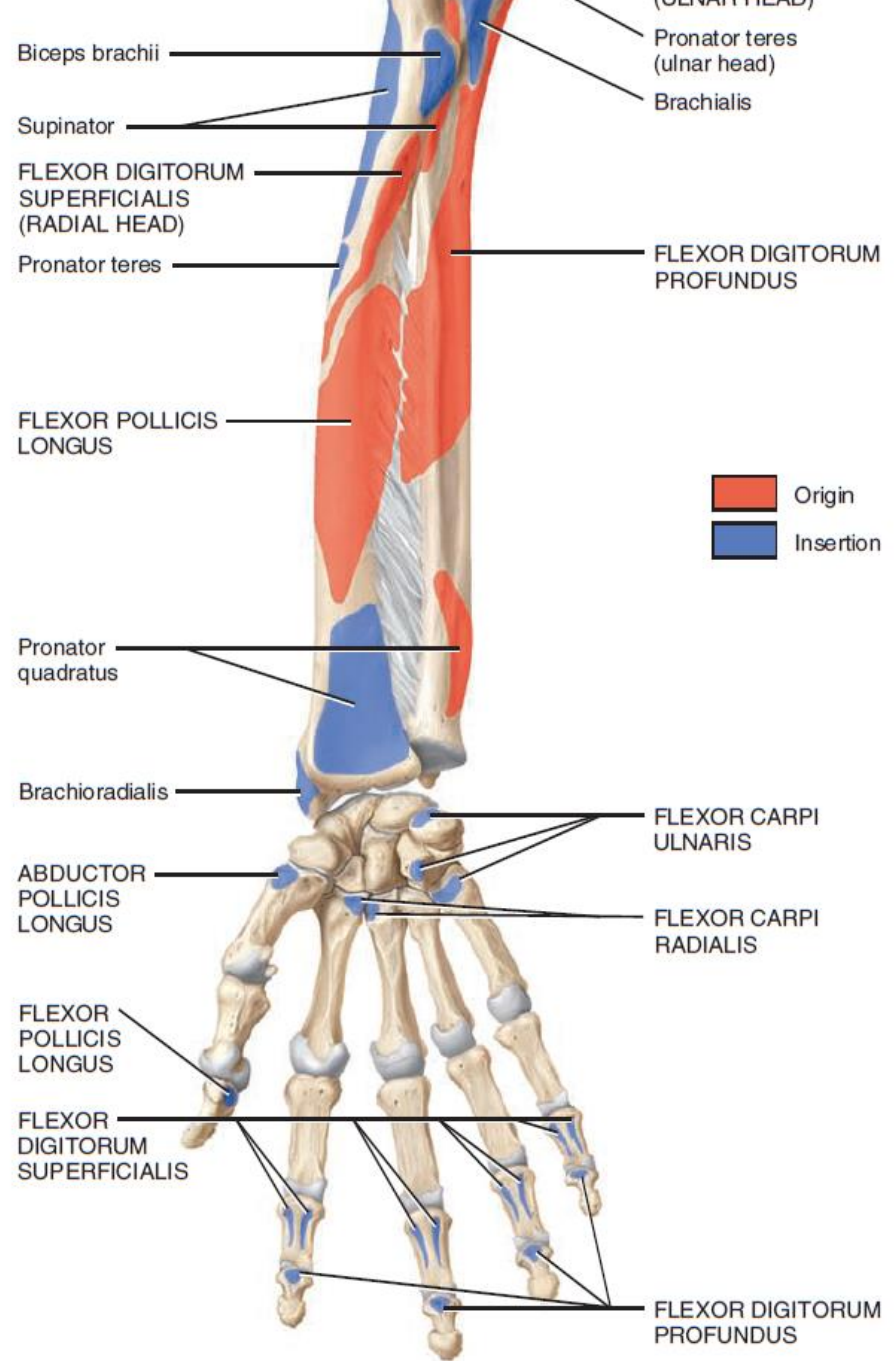
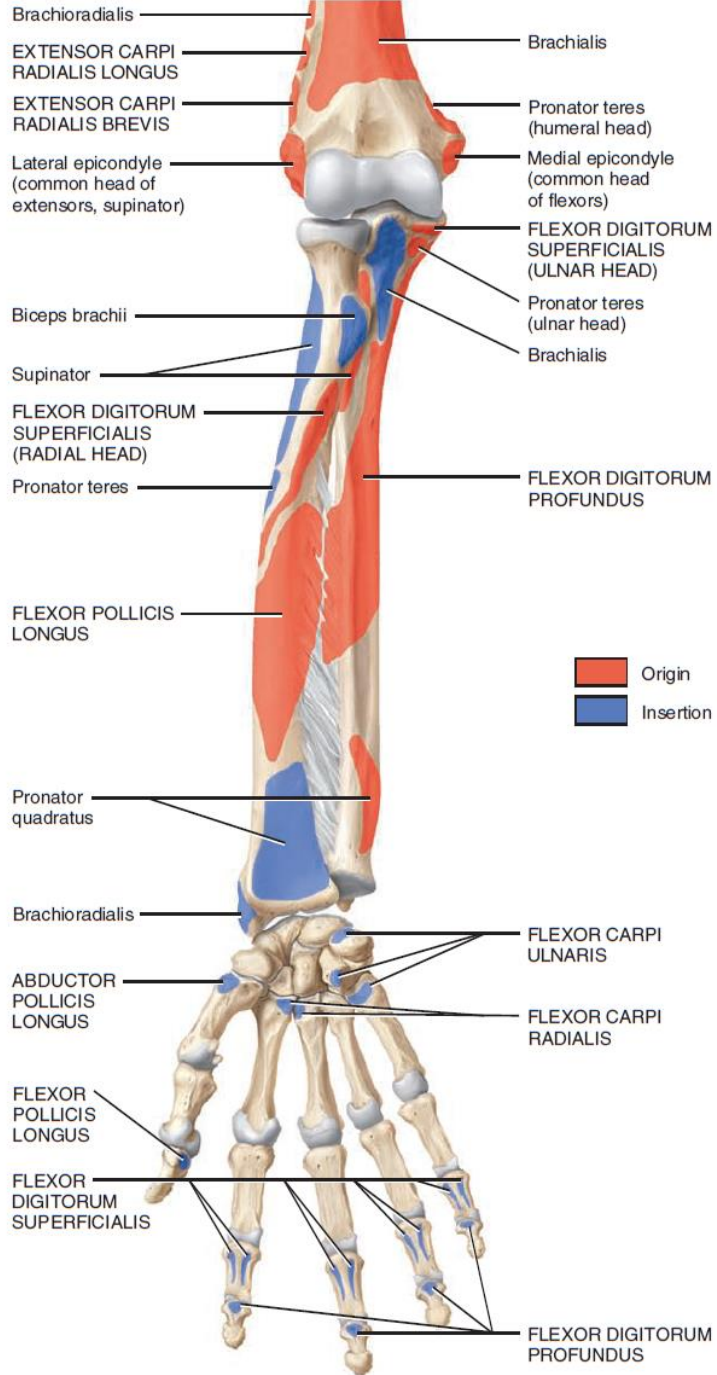


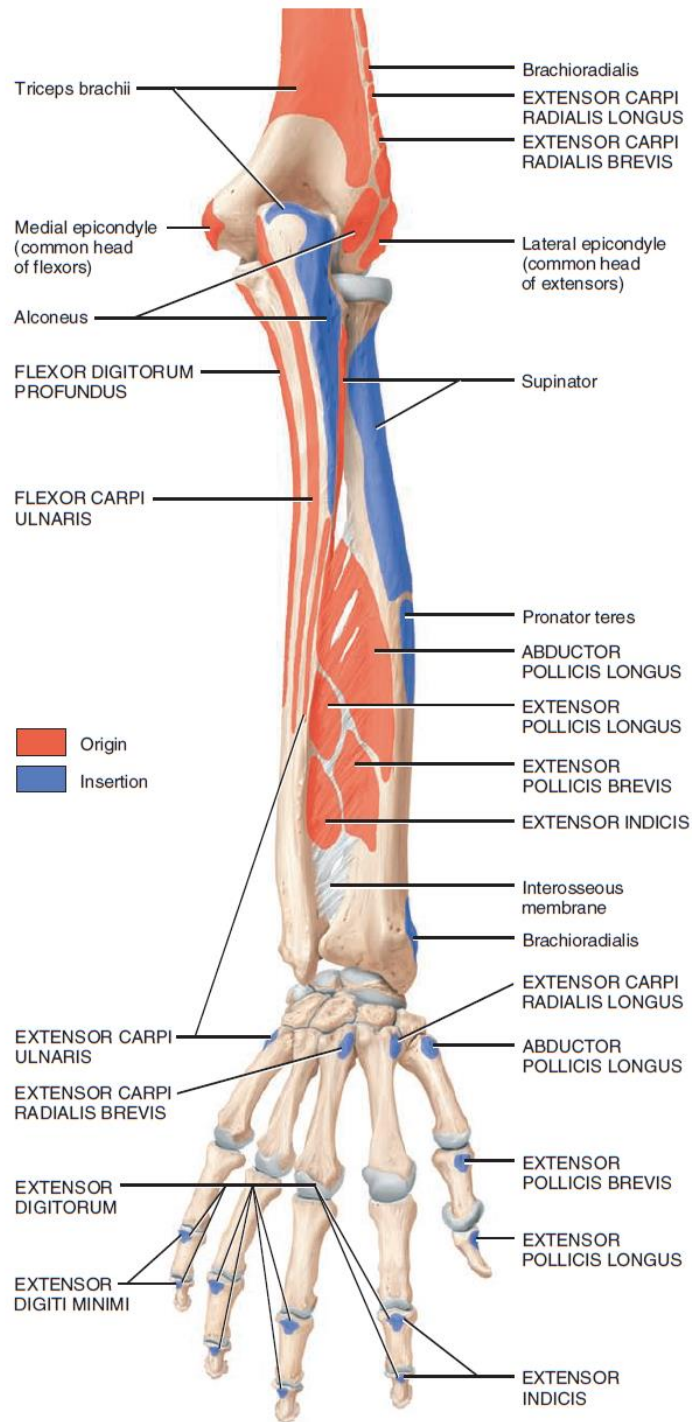












PROFUNDUS

Supinator

FLEXOR CARPI  
ULNARIS

 Origin  
 Insertion

Pronator teres

ABDUCTOR  
POLLICIS LONGUS

EXTENSOR  
POLLICIS LONGUS

EXTENSOR  
POLLICIS BREVIS

EXTENSOR INDICIS

Interosseous  
membrane

Brachioradialis

EXTENSOR CARPI  
RADIALIS LONGUS

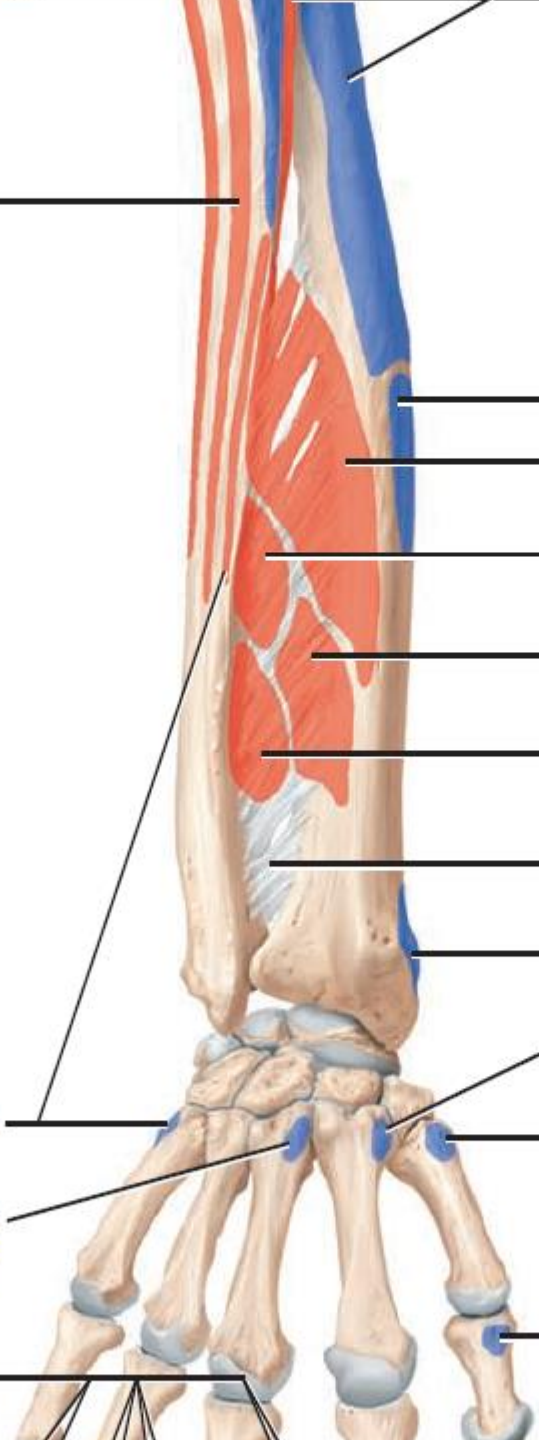
ABDUCTOR  
POLLICIS LONGUS

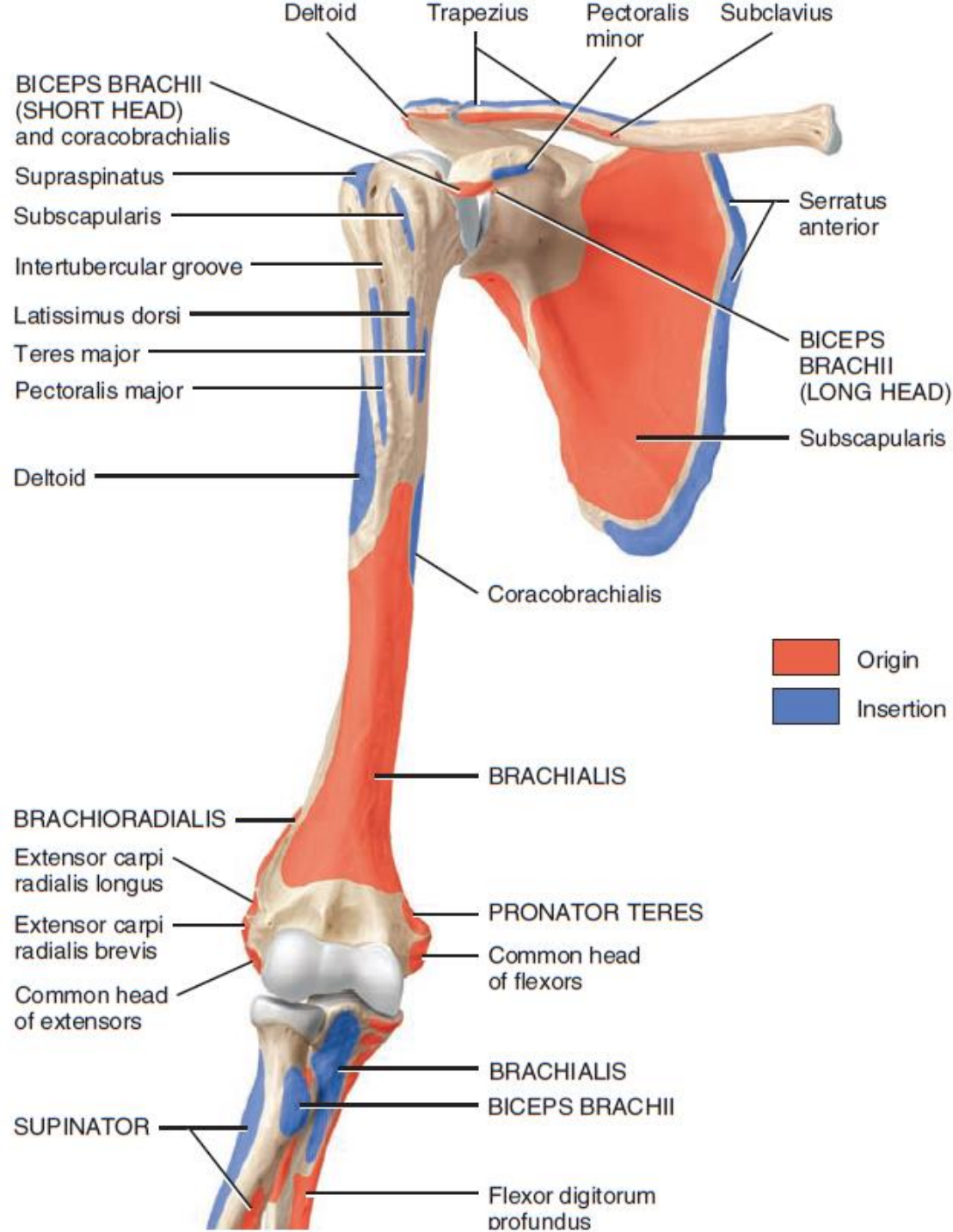
EXTENSOR CARPI  
ULNARIS

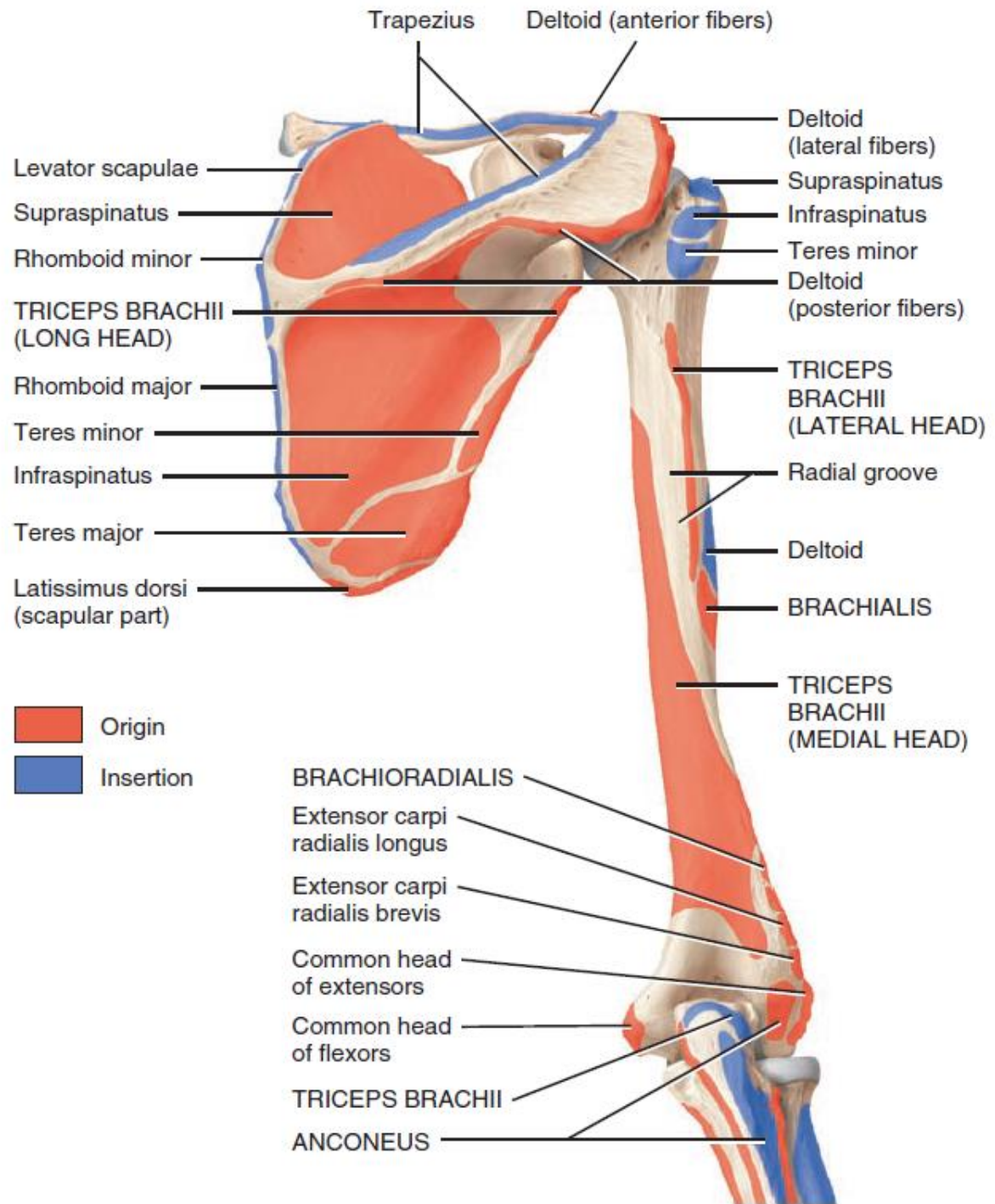
EXTENSOR CARPI  
RADIALIS BREVIS

EXTENSOR  
POLLICIS BREVIS

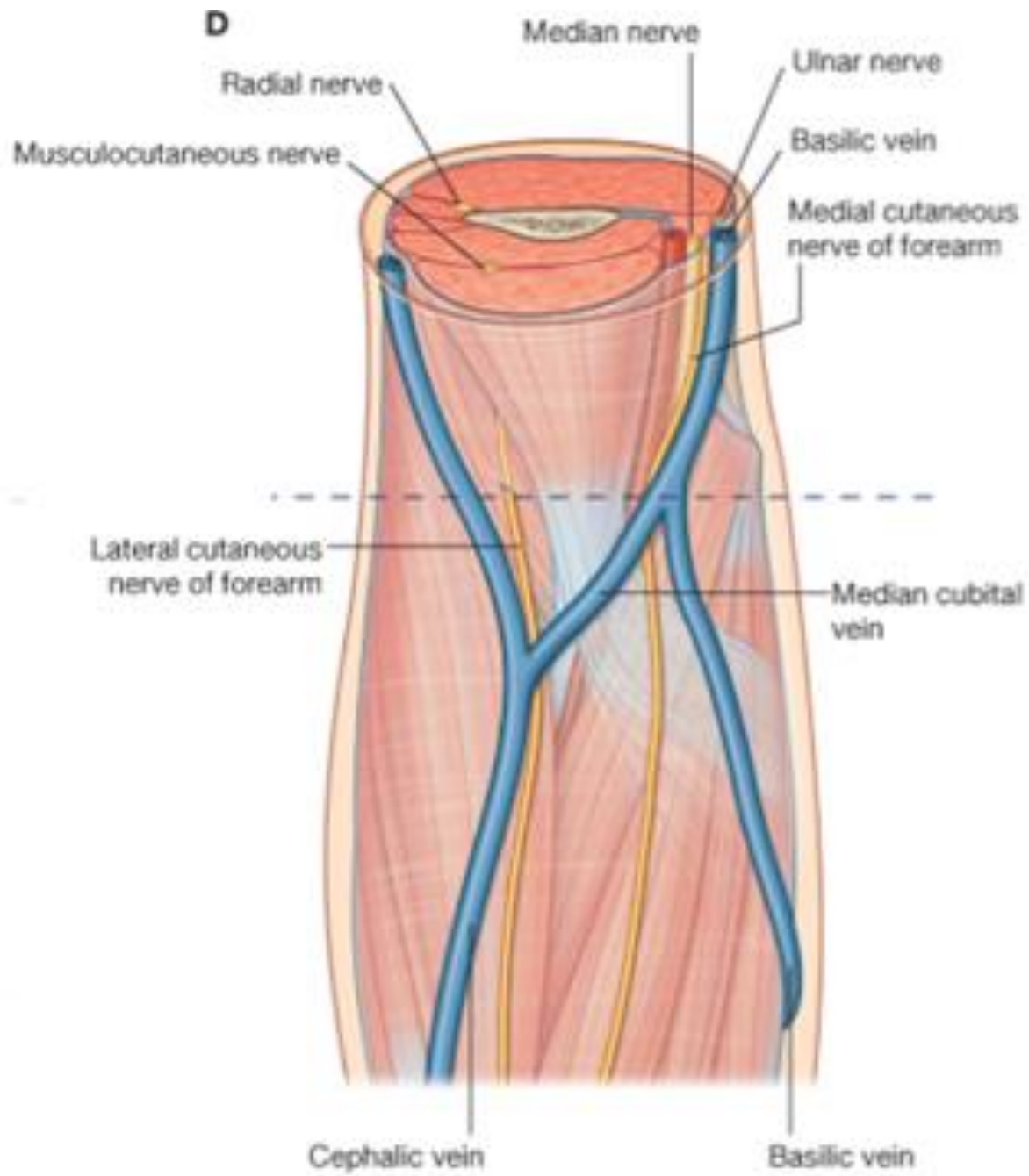
EXTENSOR  
DIGITORUM

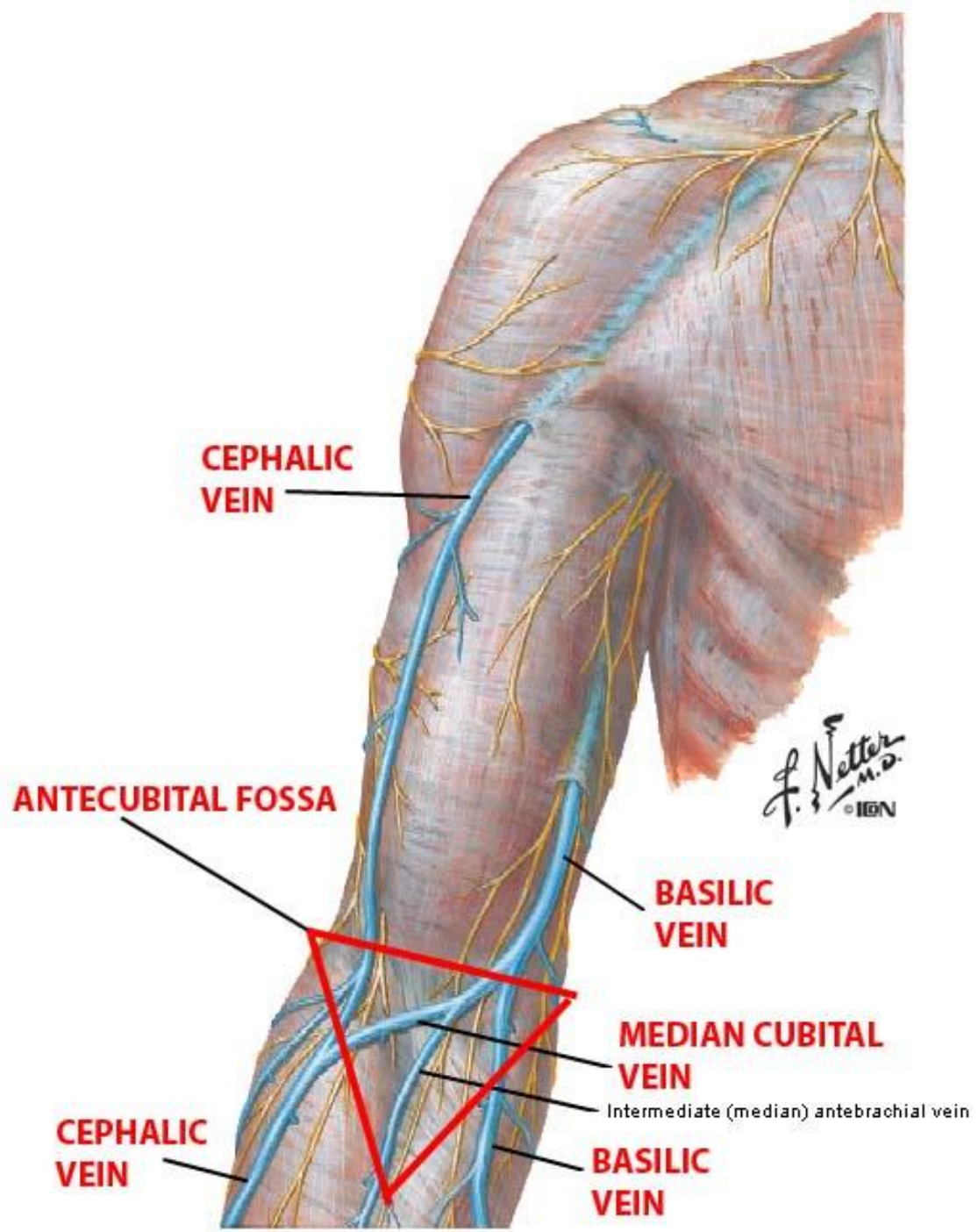


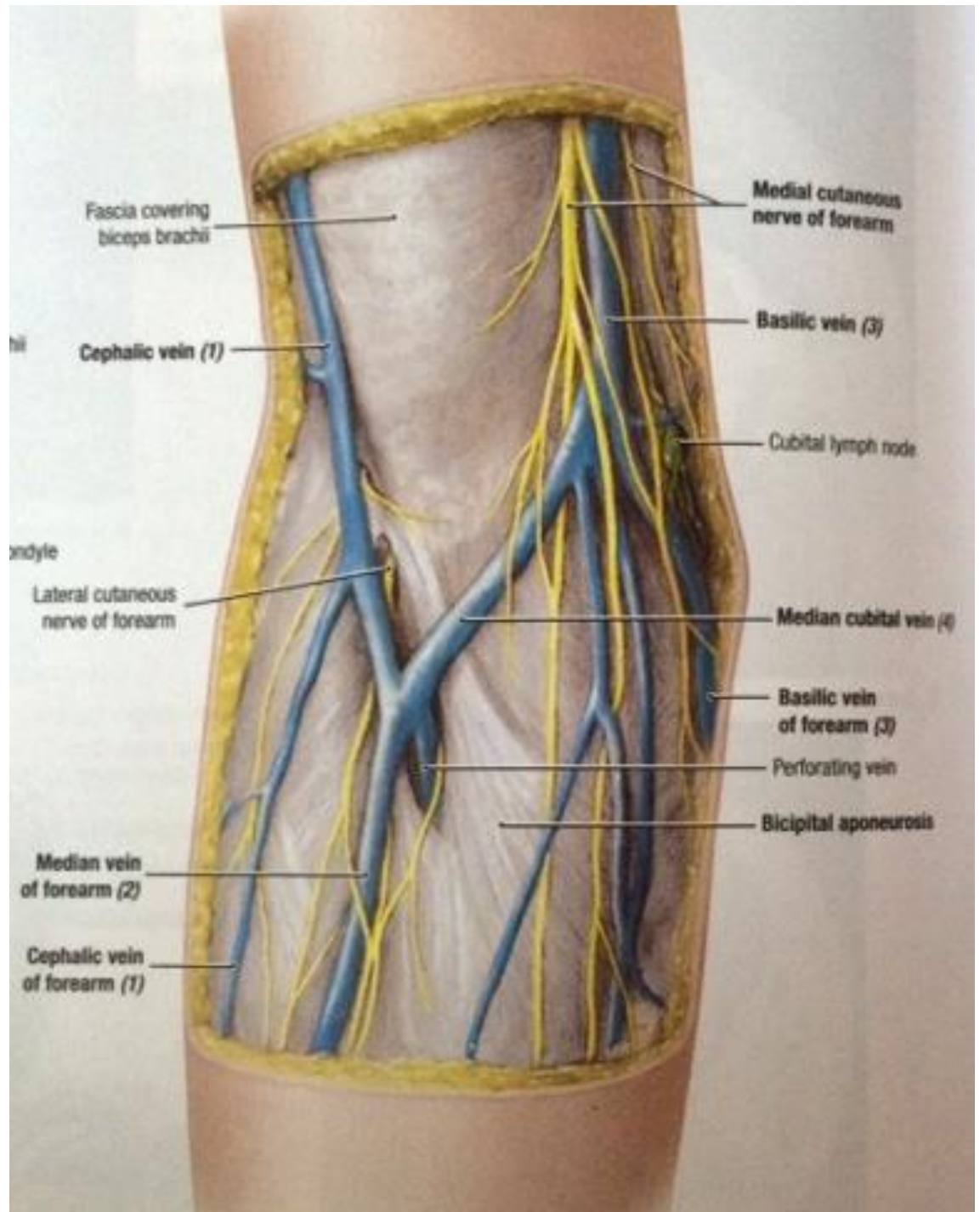


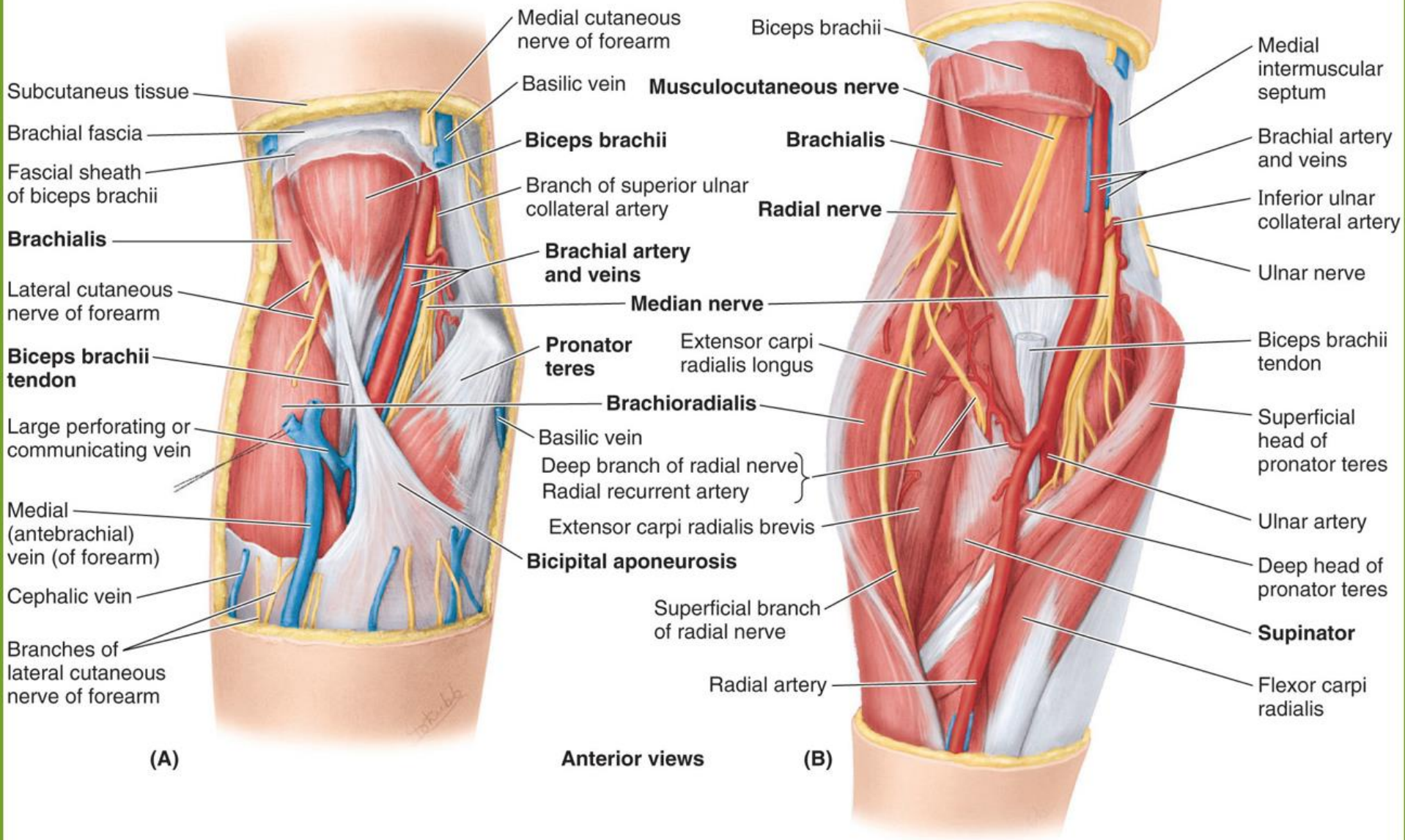












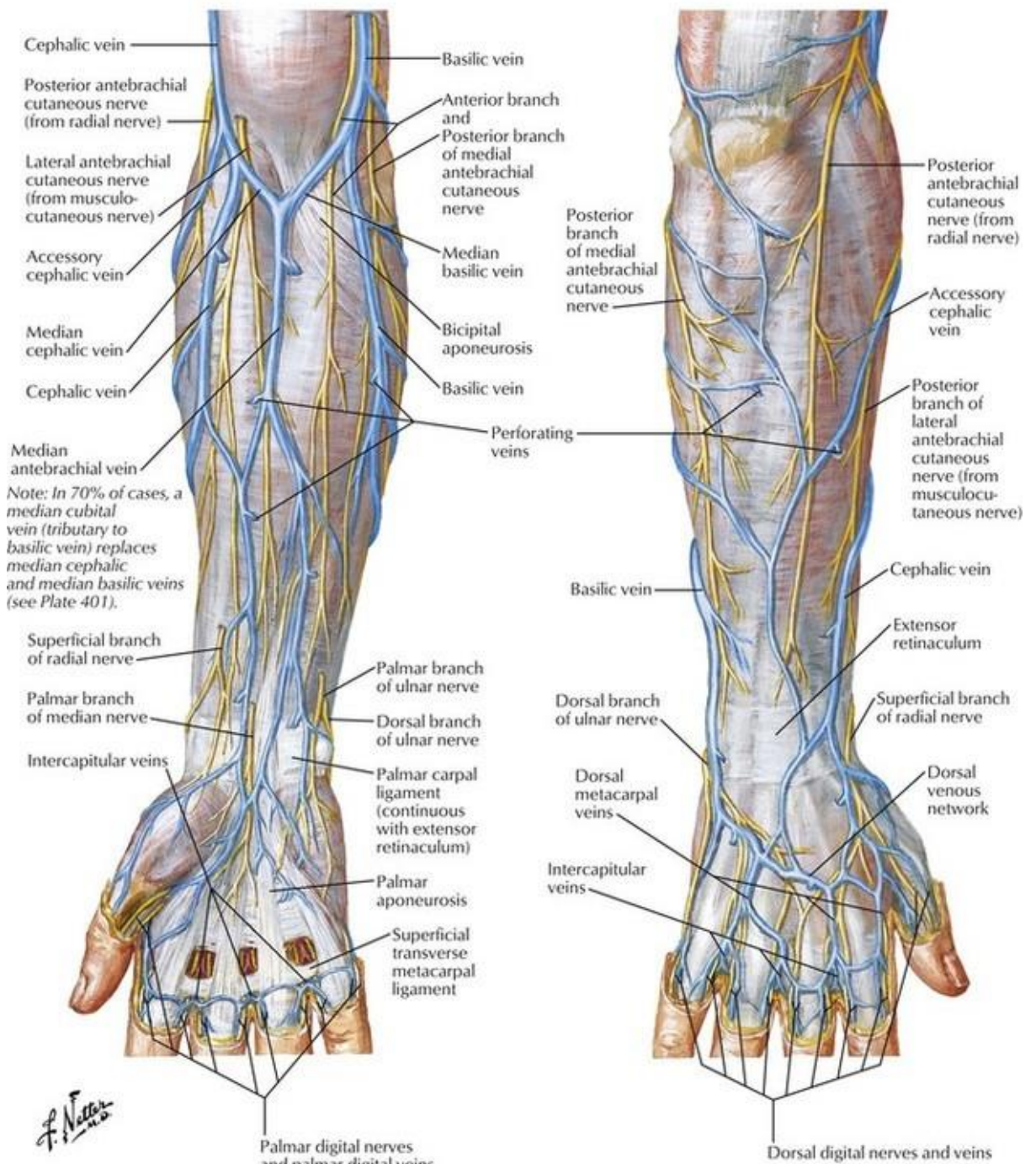
(A)

Anterior views

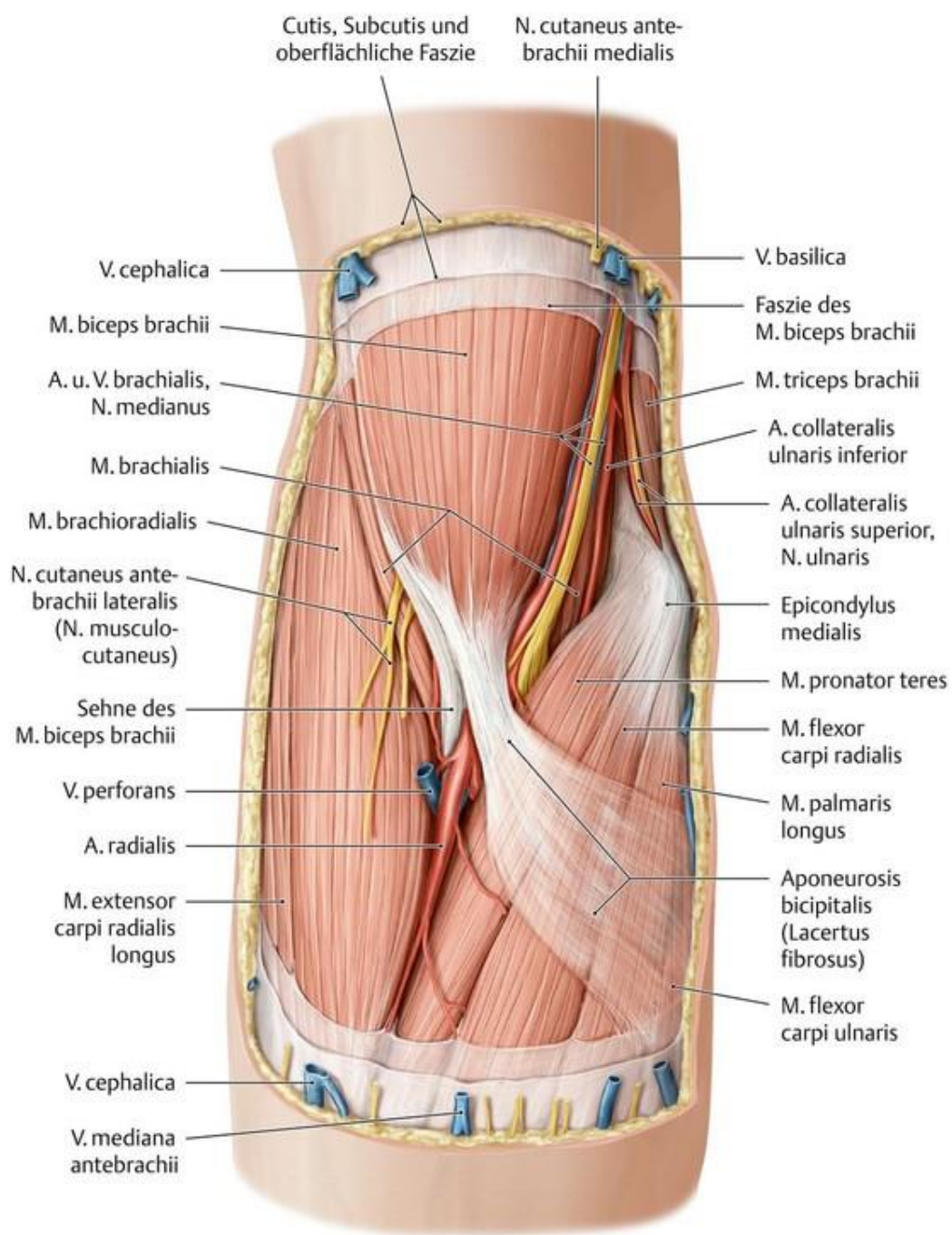
(B)

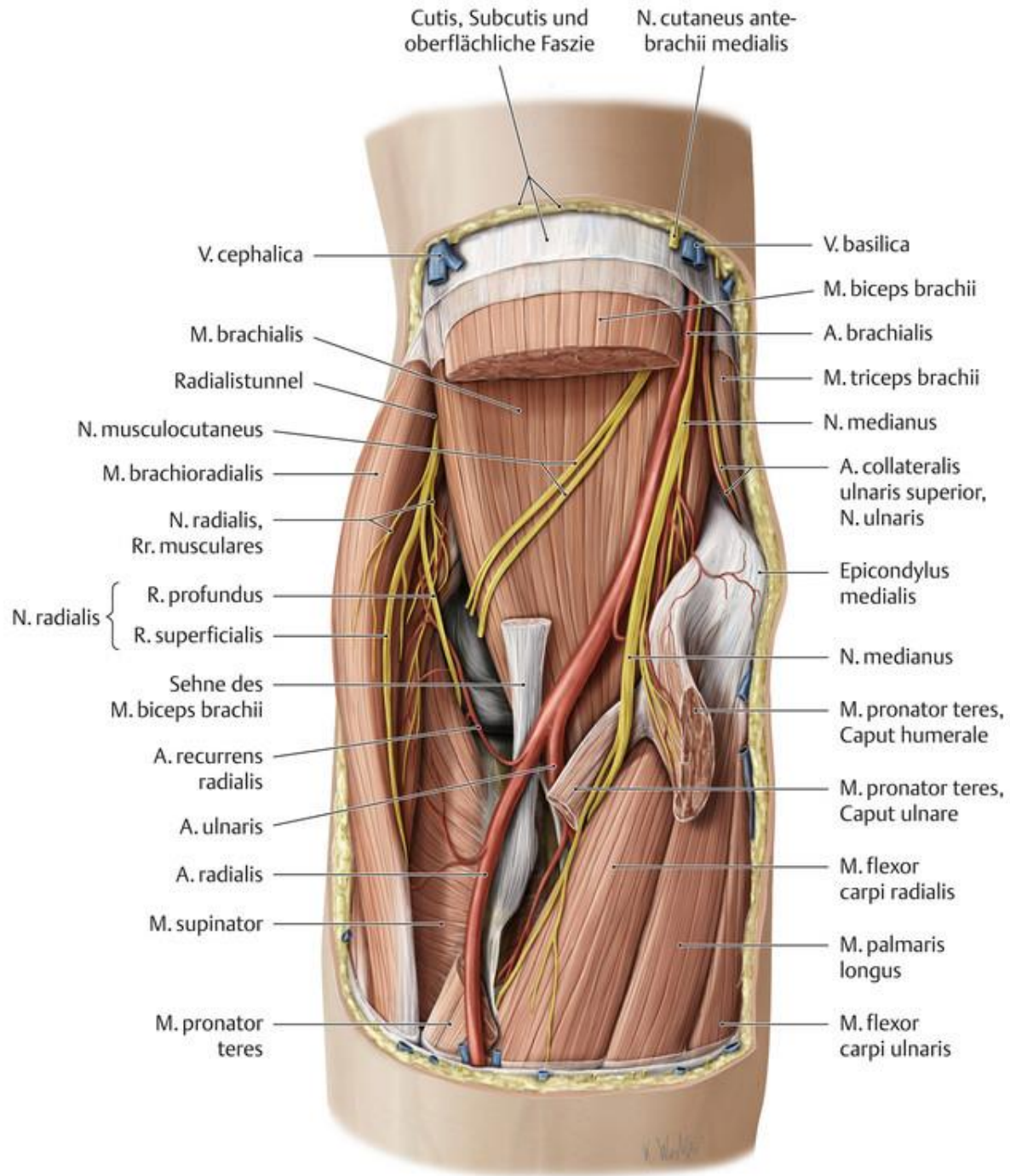
Anterior (palmar) view

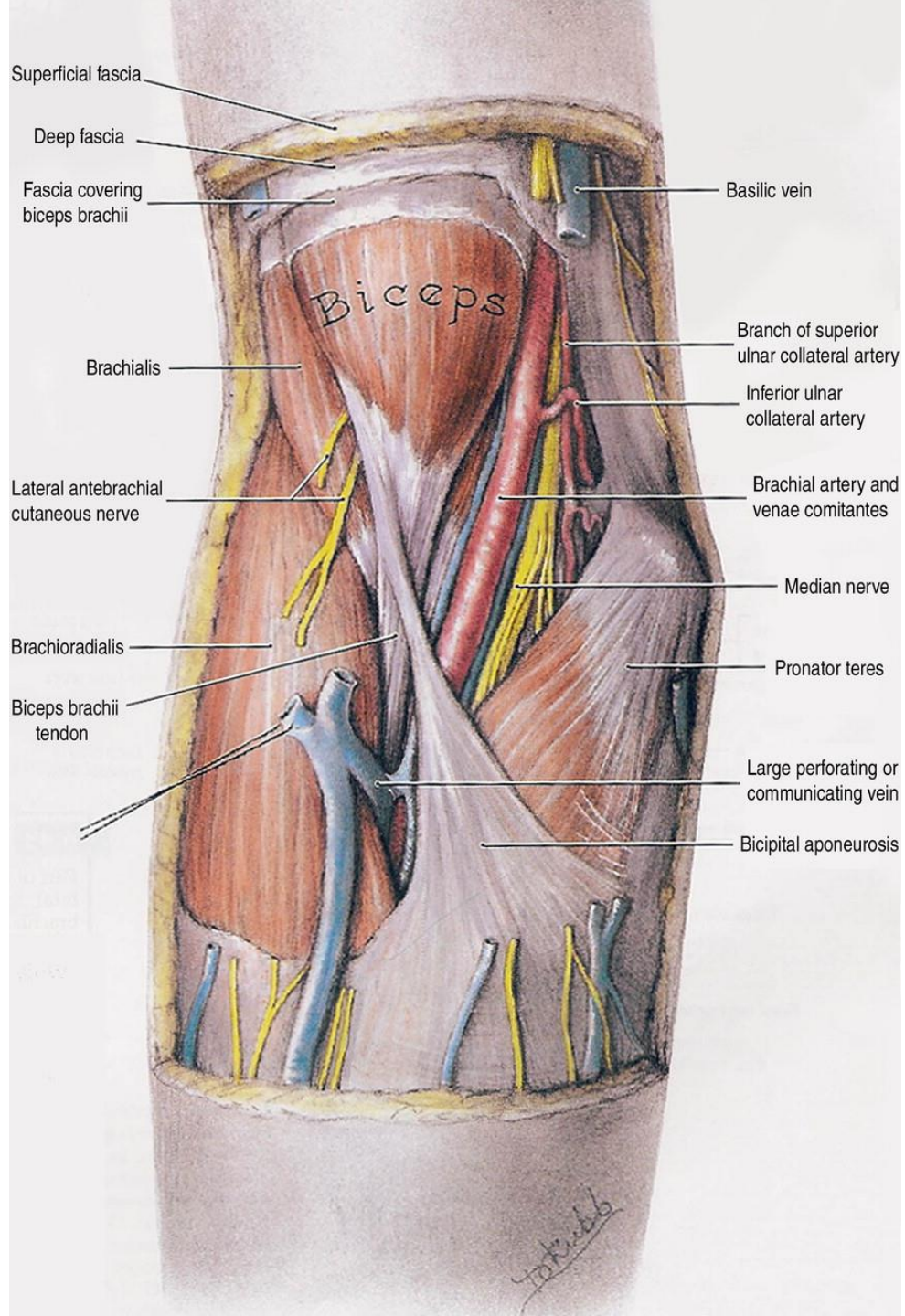
Posterior (dorsal) view



F. Netter M.D.









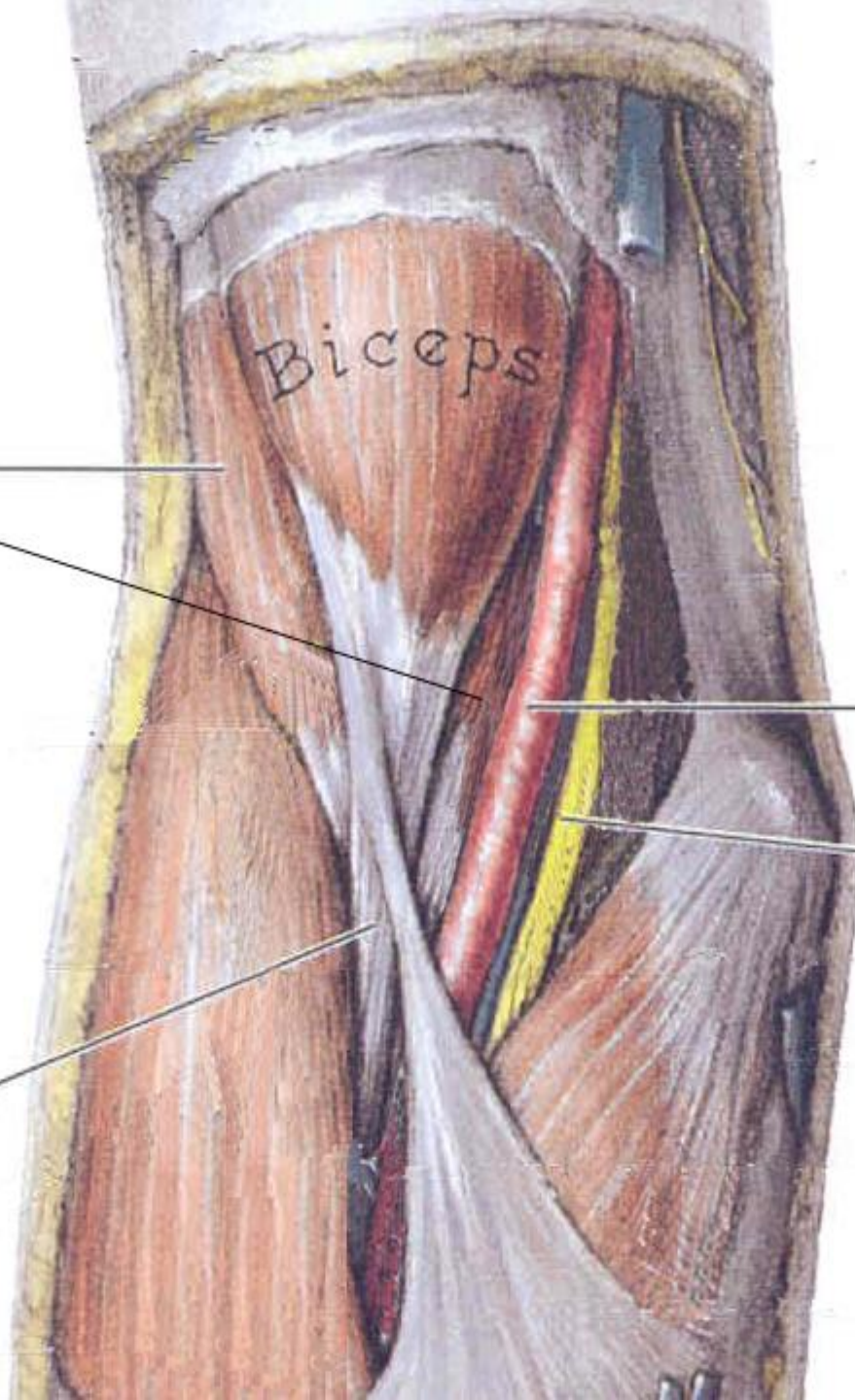
**Brachialis**

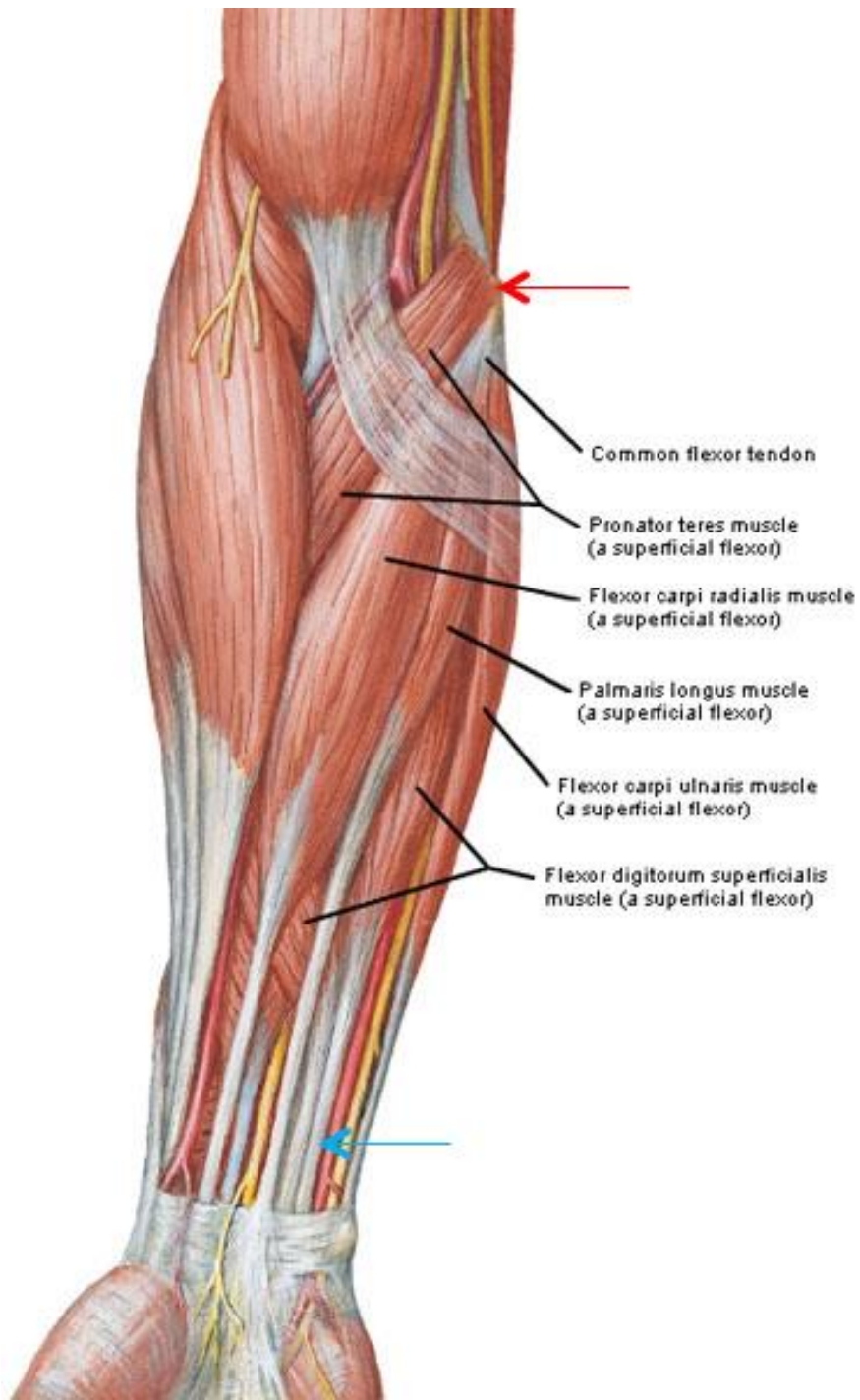
Biceps

**Brachial artery**

**Median nerve**

**Biceps brachii  
tendon**





Common flexor tendon

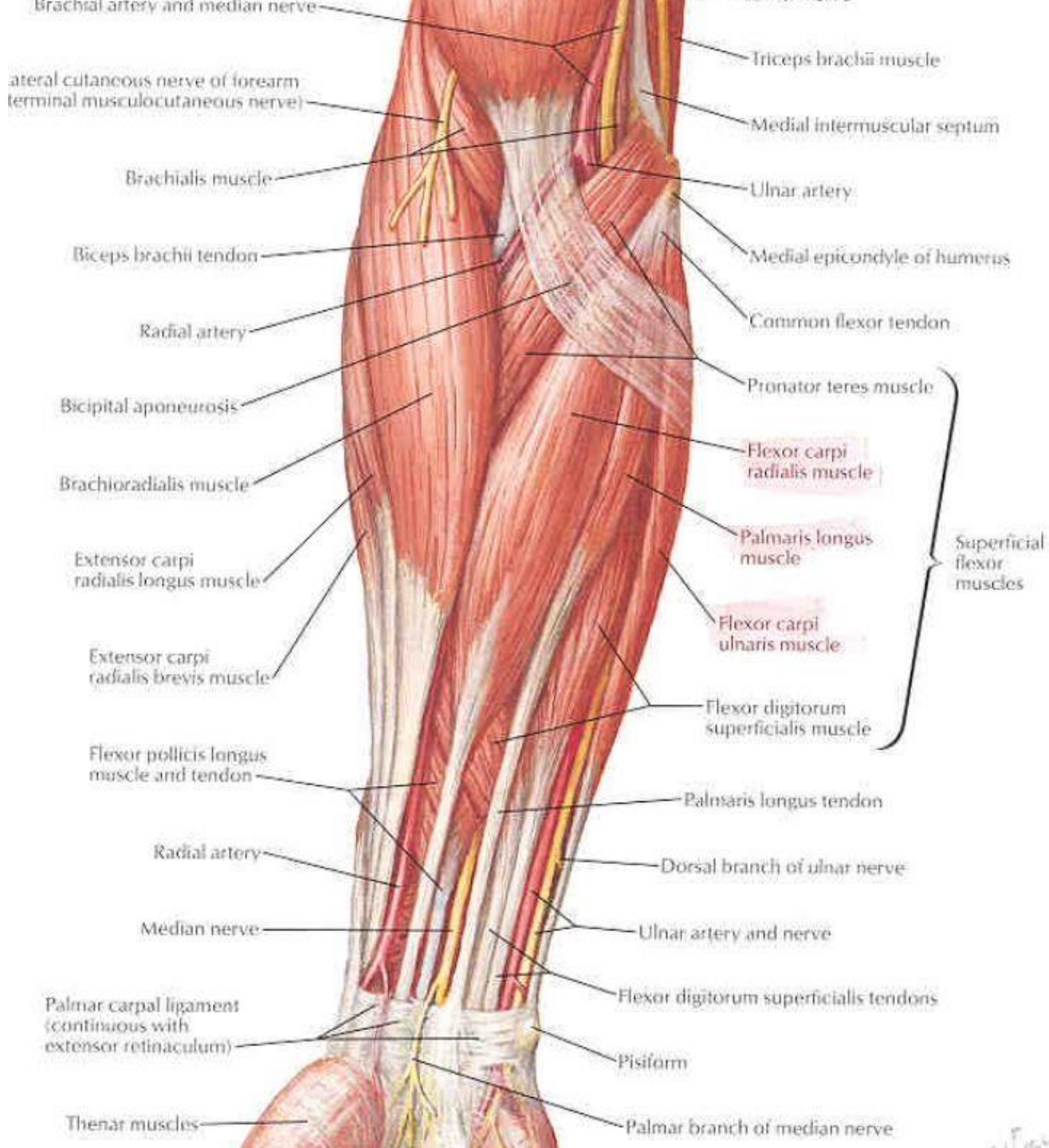
Pronator teres muscle  
(a superficial flexor)

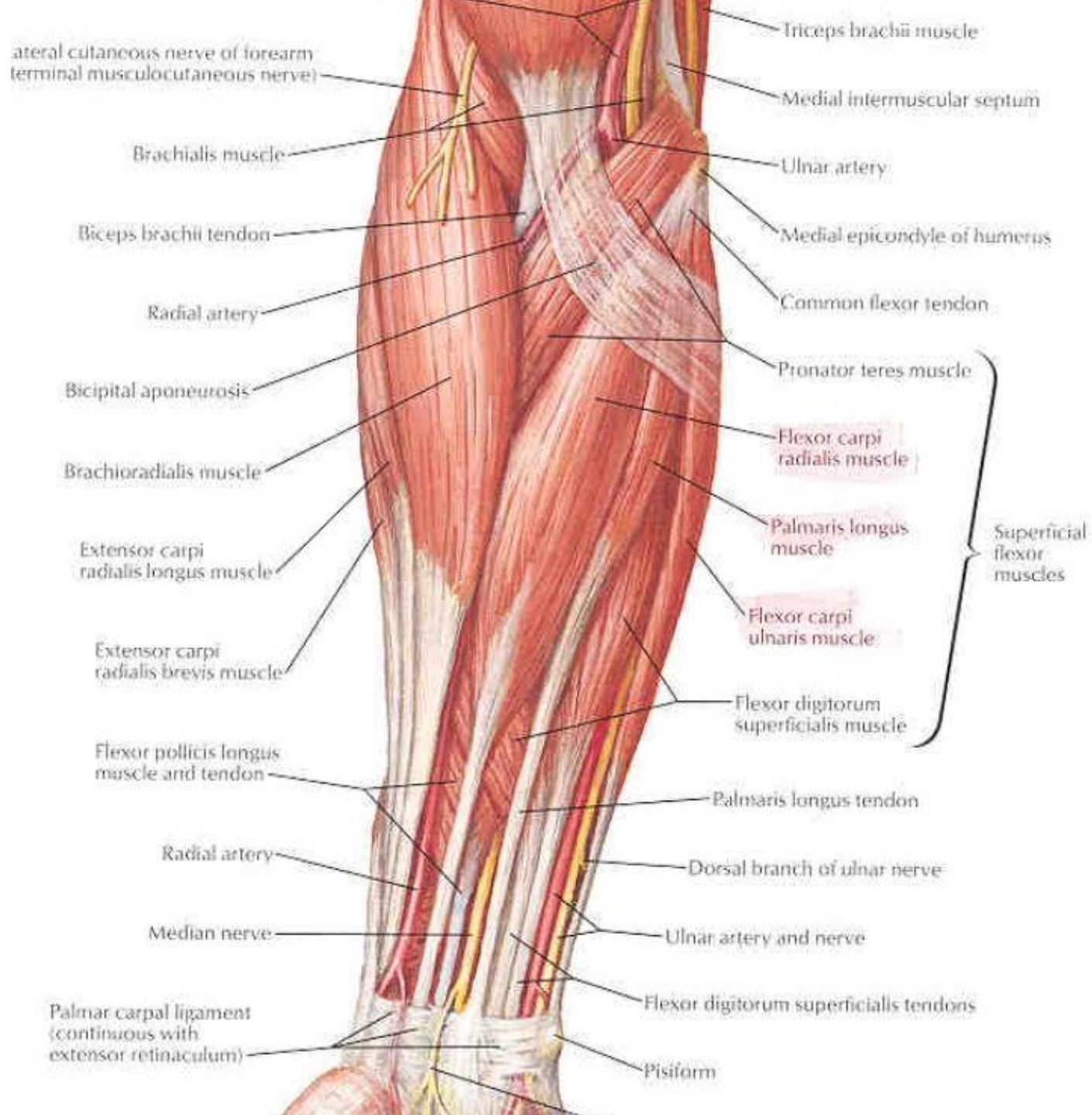
Flexor carpi radialis muscle  
(a superficial flexor)

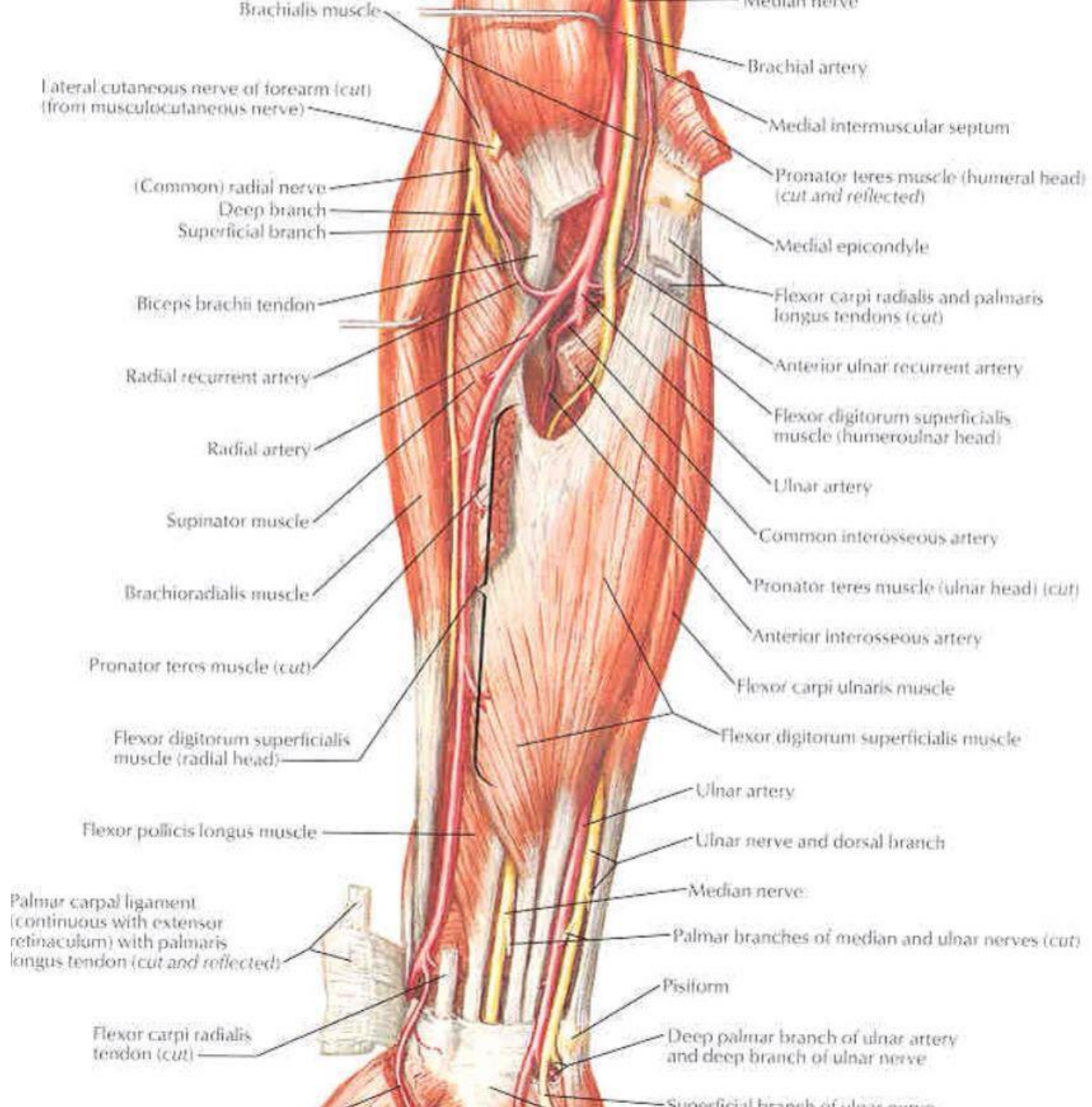
Palmaris longus muscle  
(a superficial flexor)

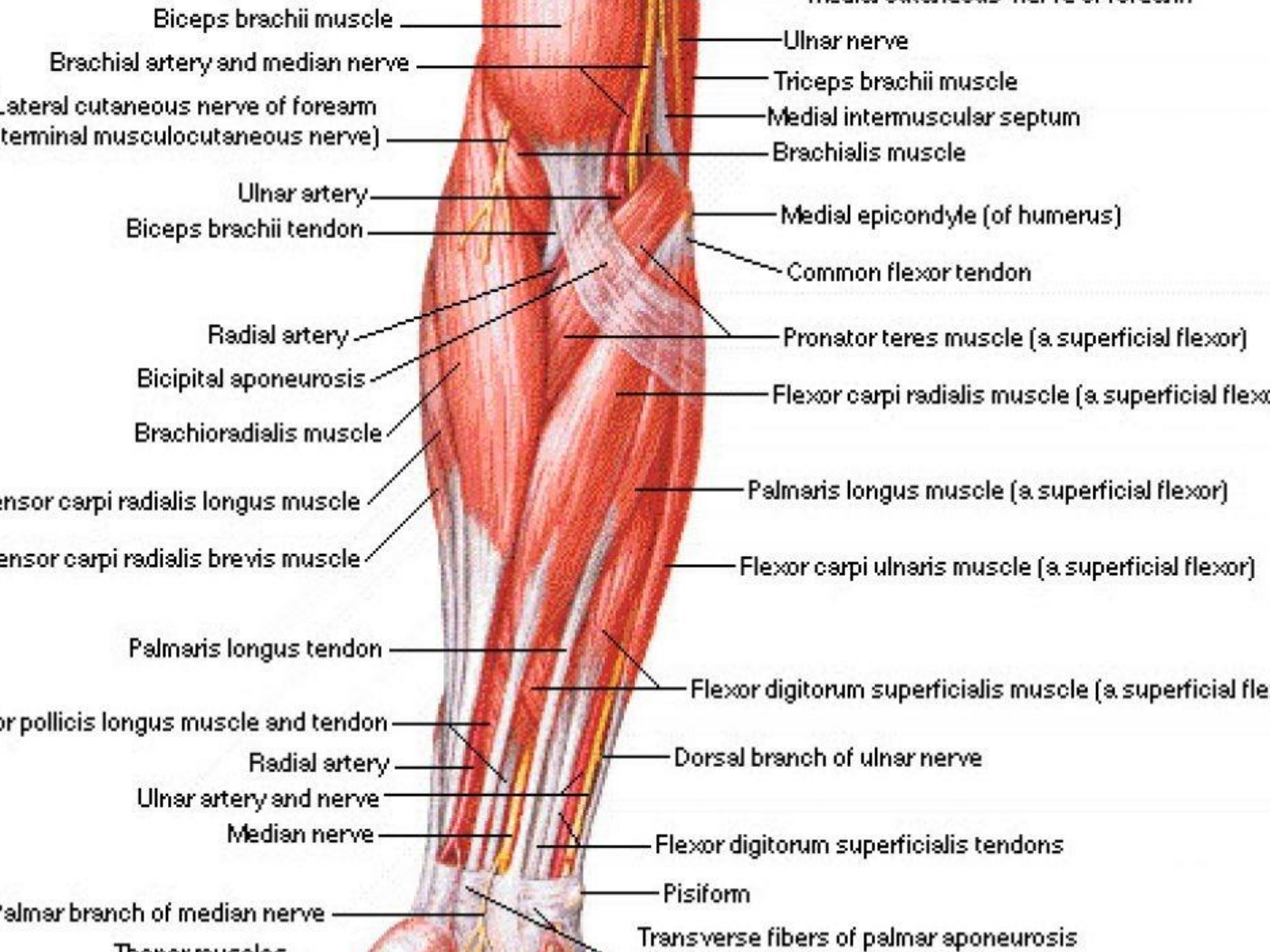
Flexor carpi ulnaris muscle  
(a superficial flexor)

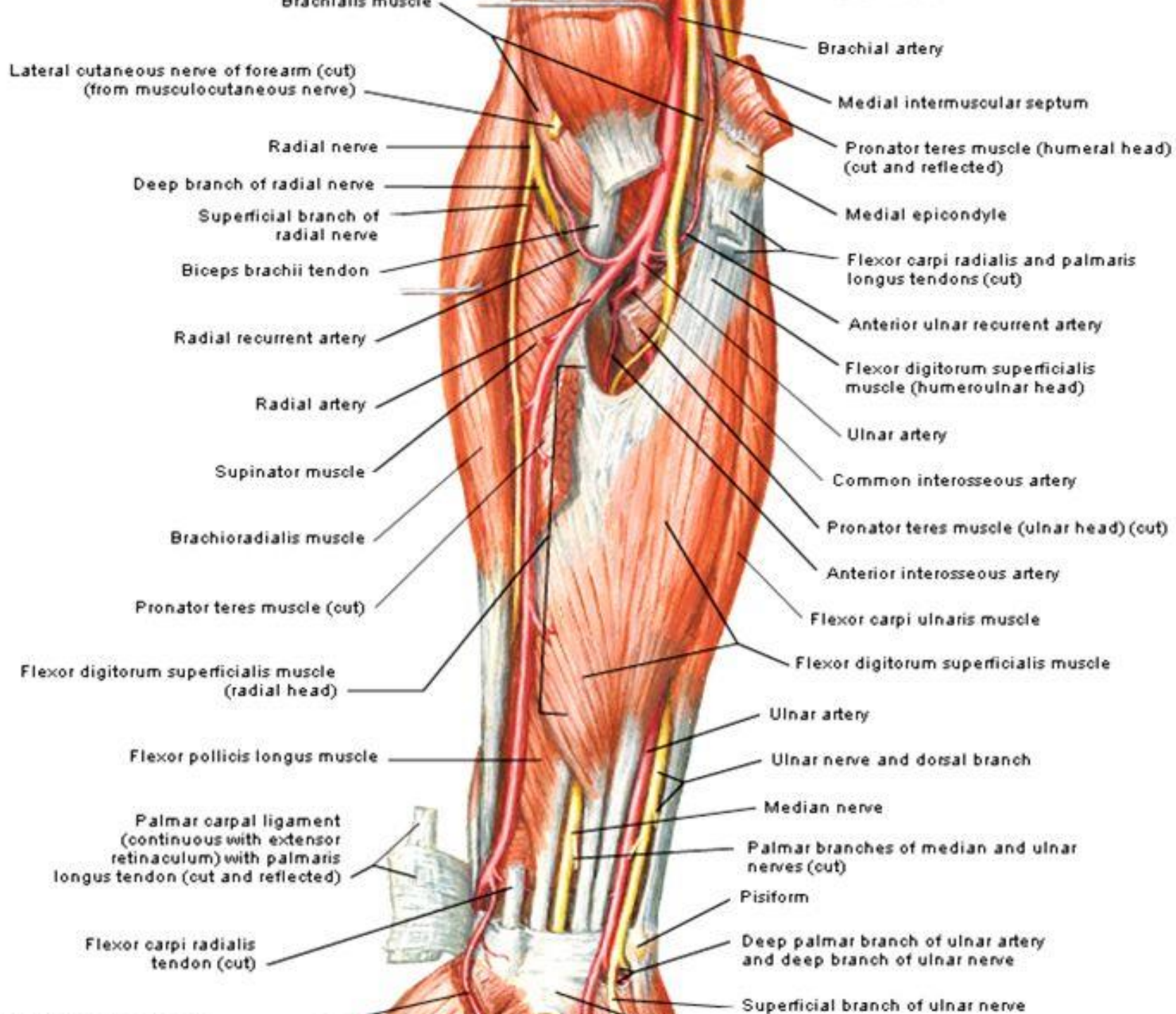
Flexor digitorum superficialis  
muscle (a superficial flexor)

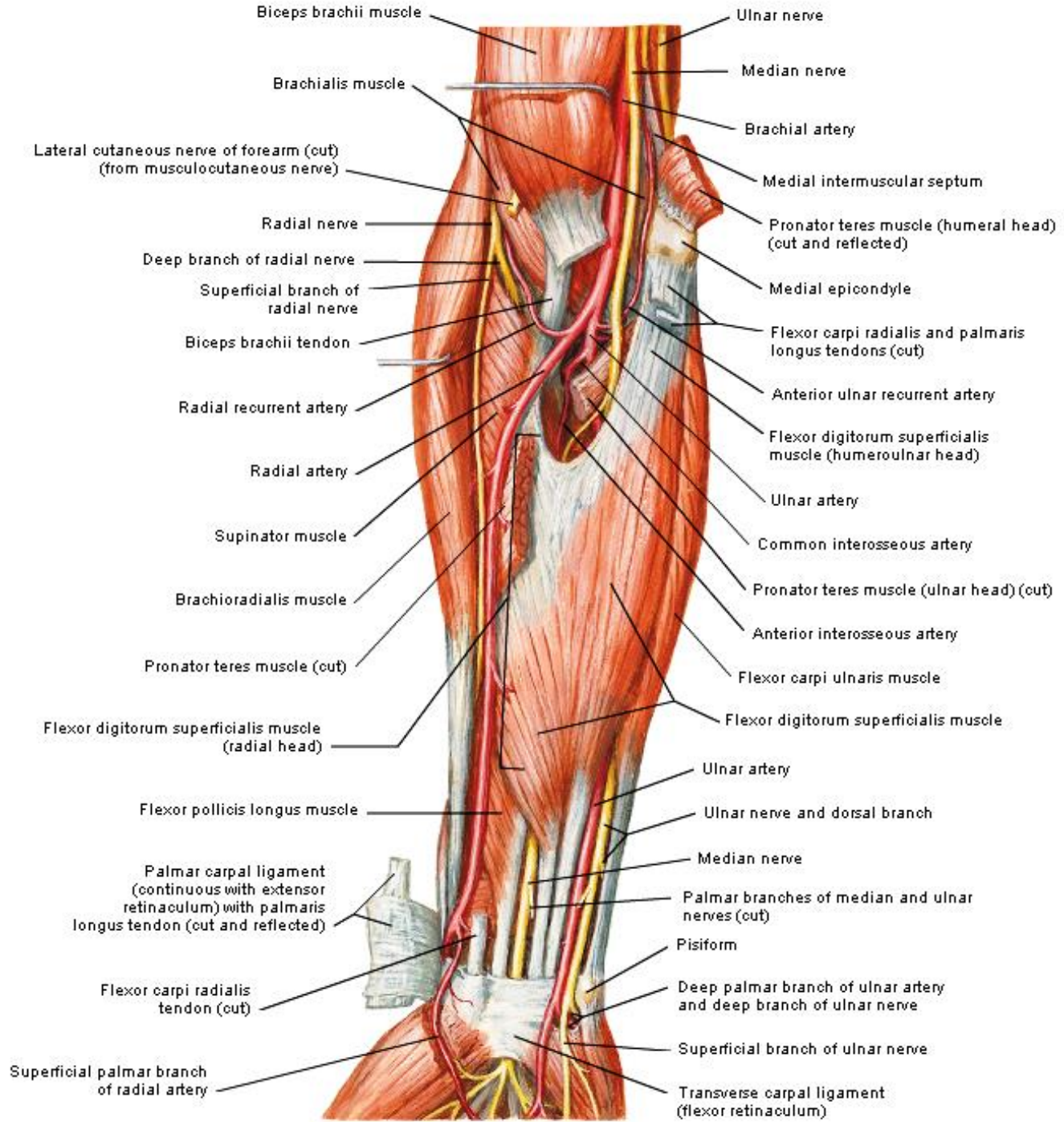




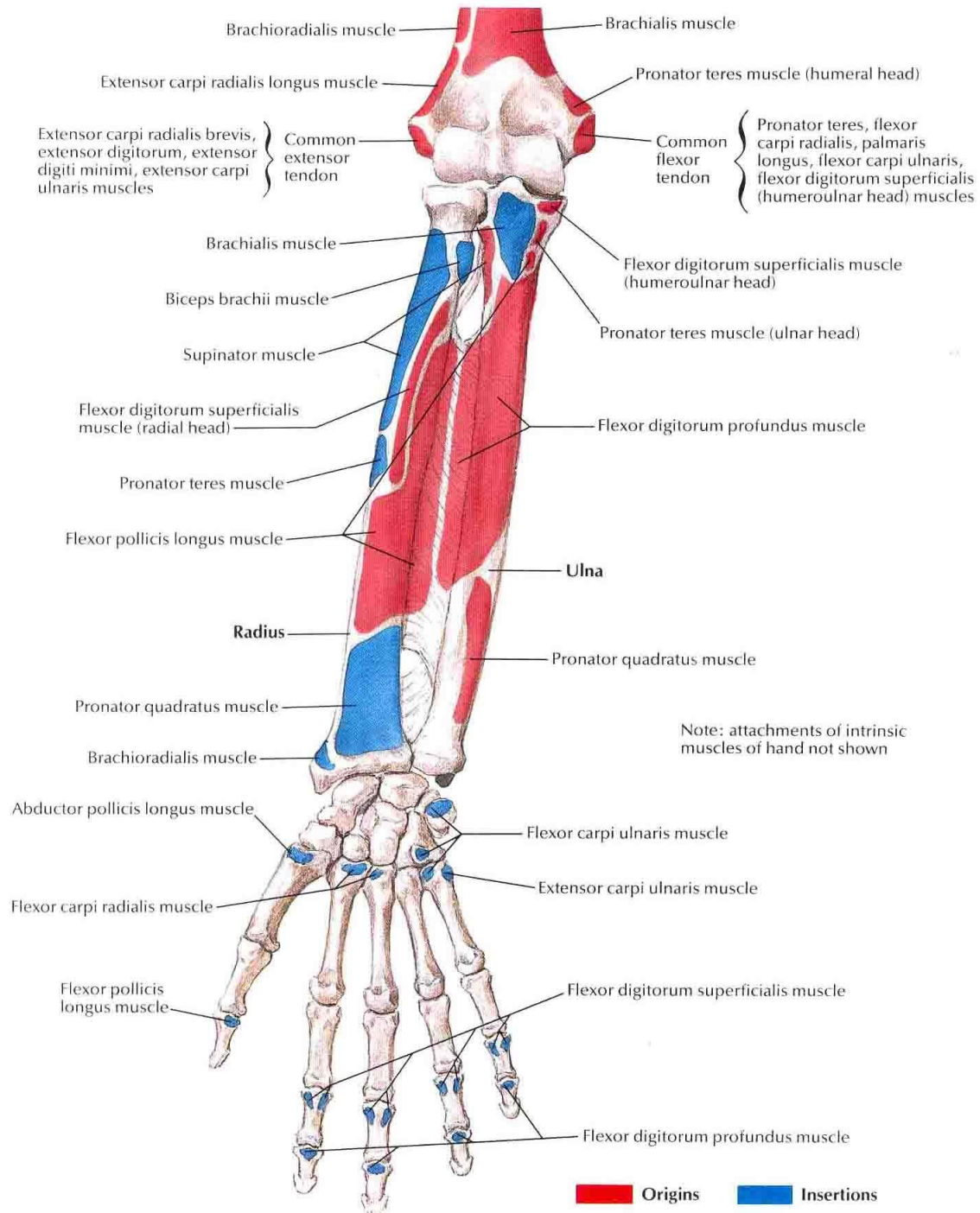


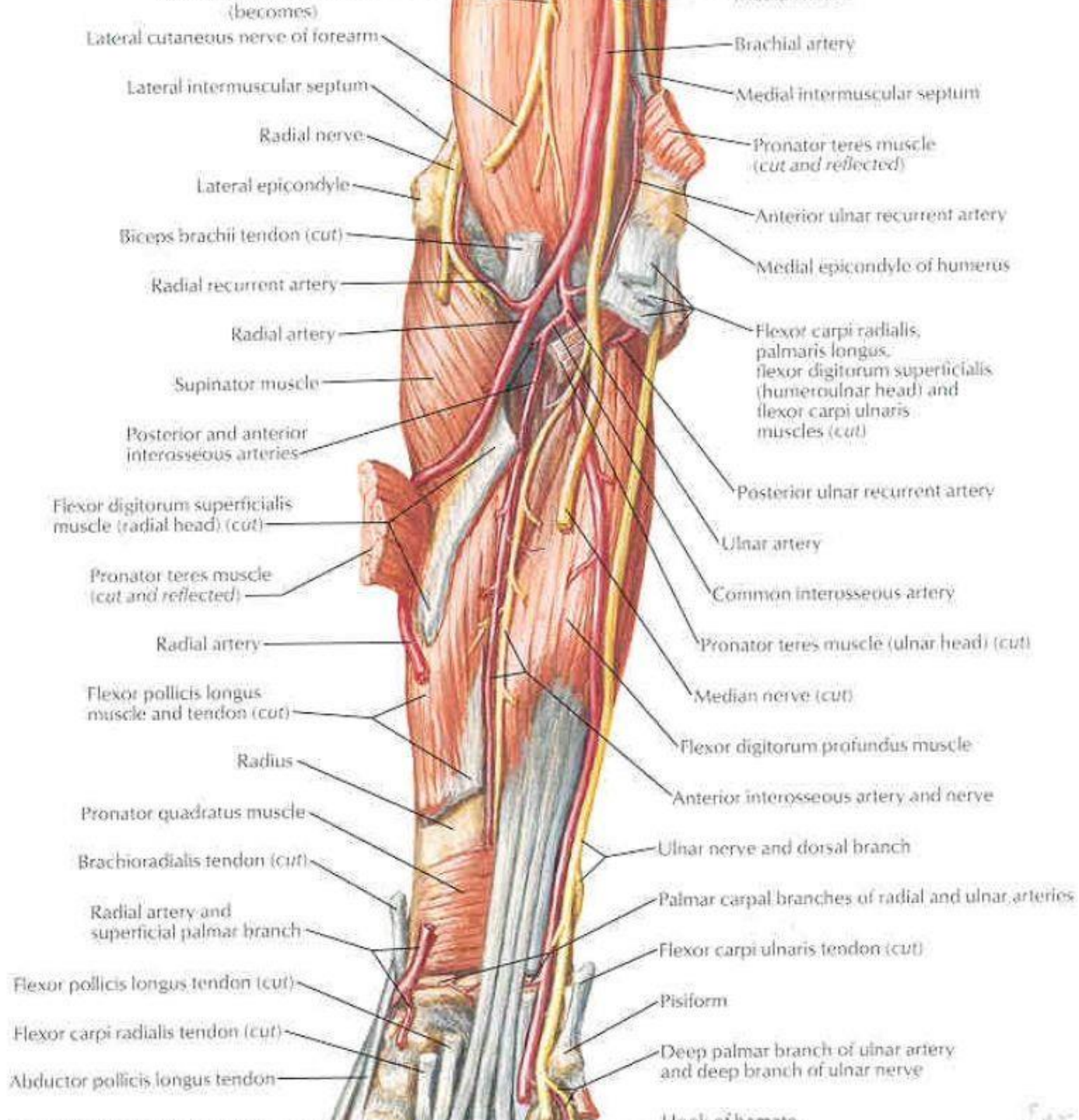


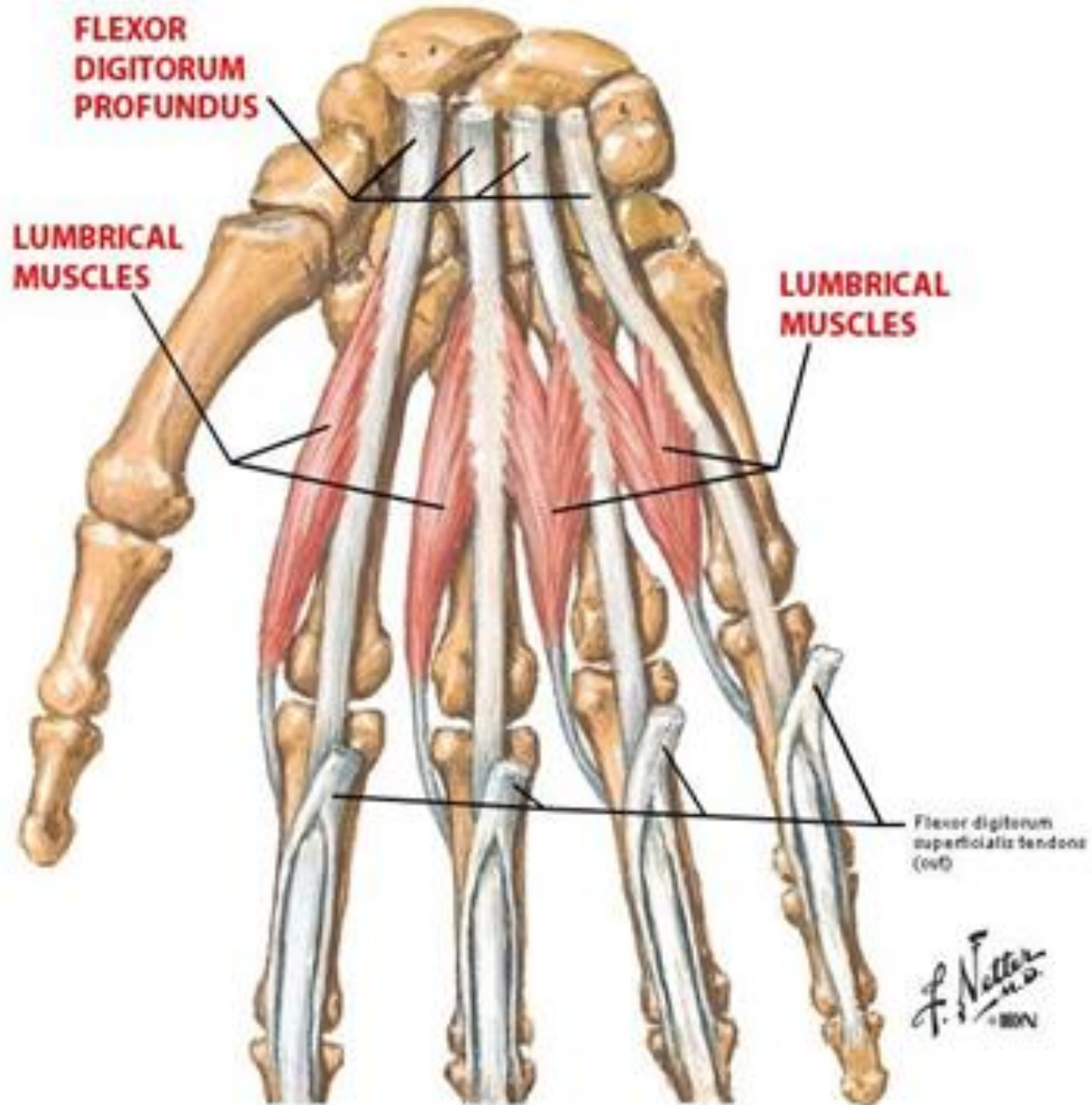




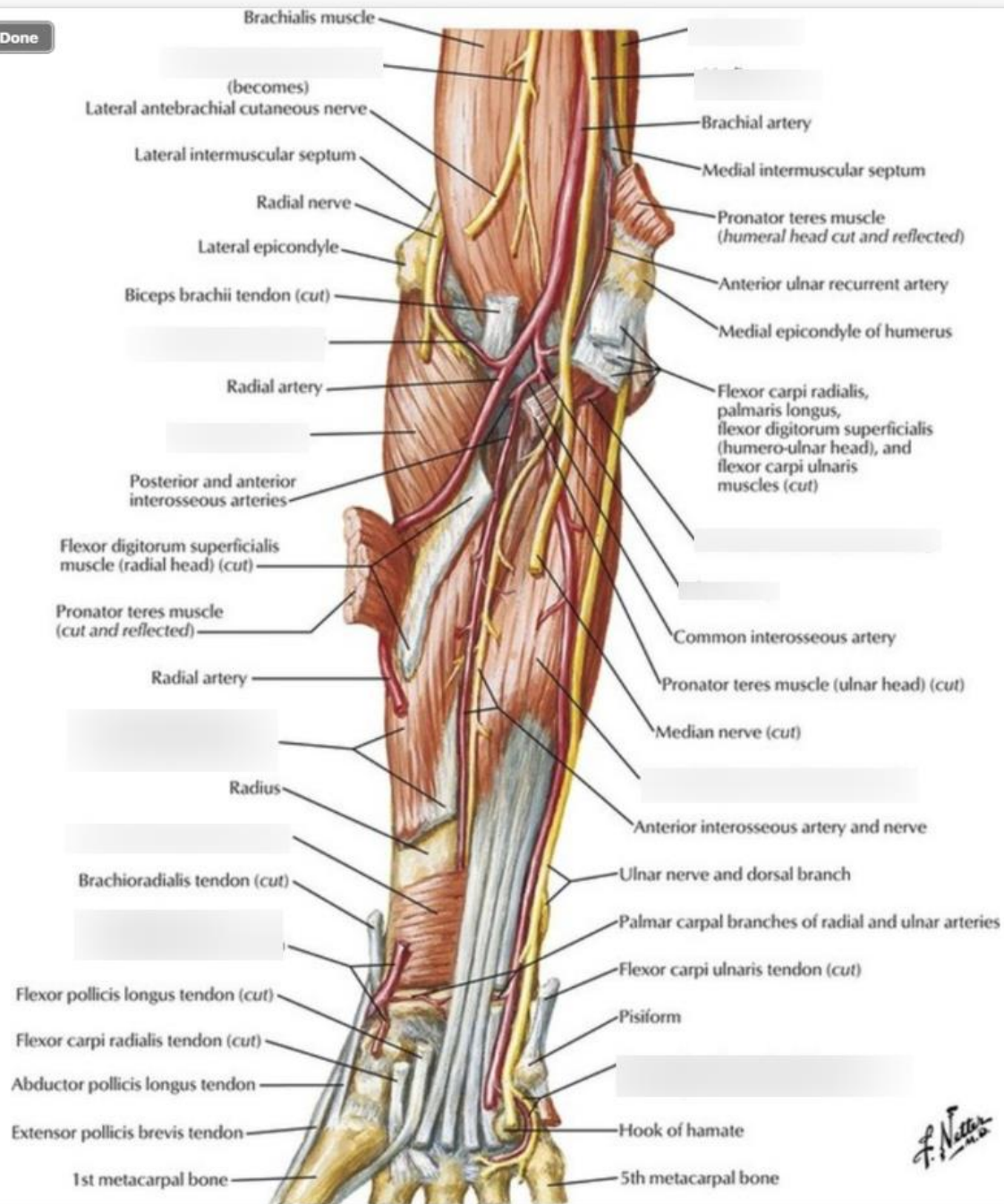






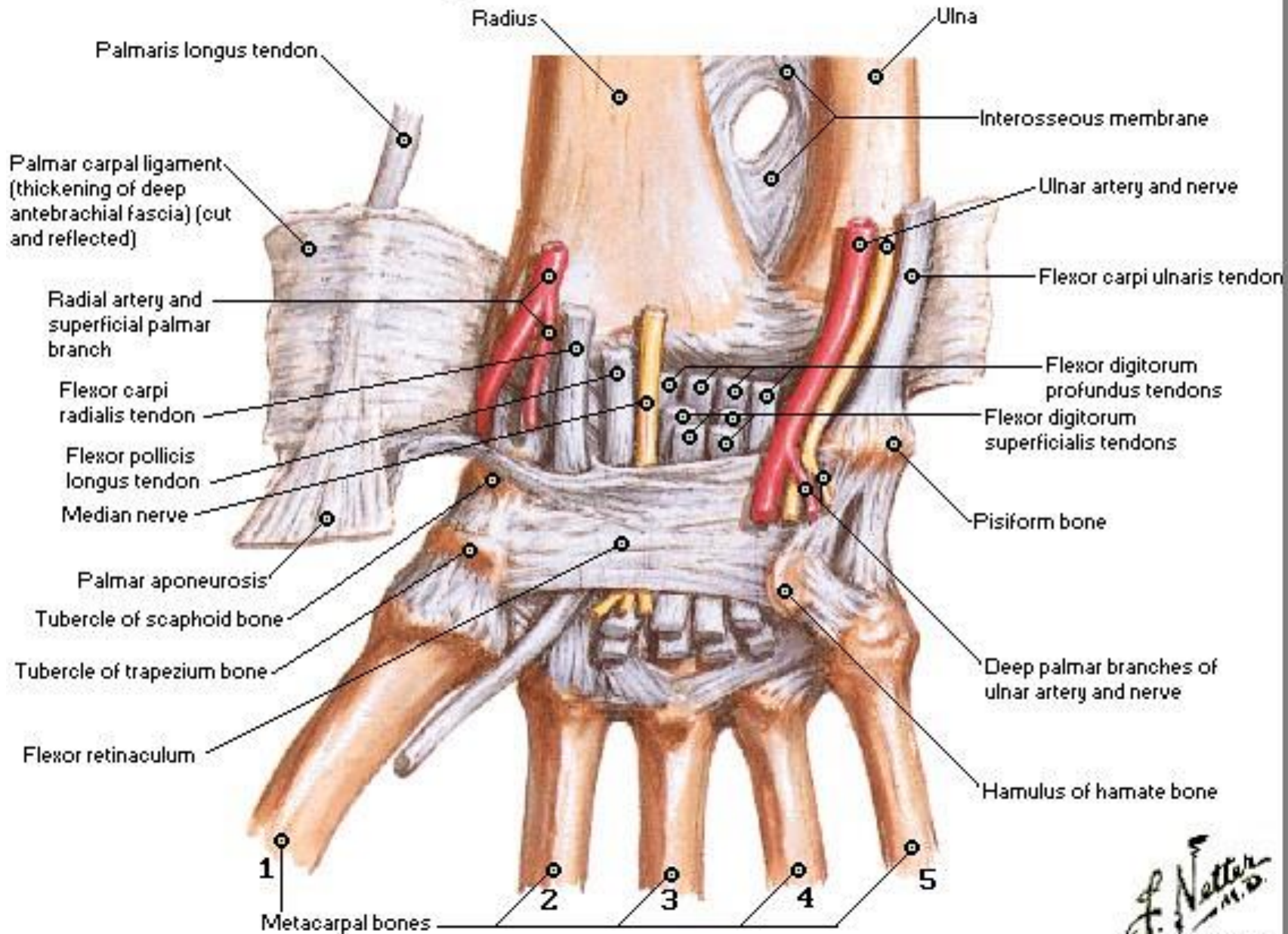


Done

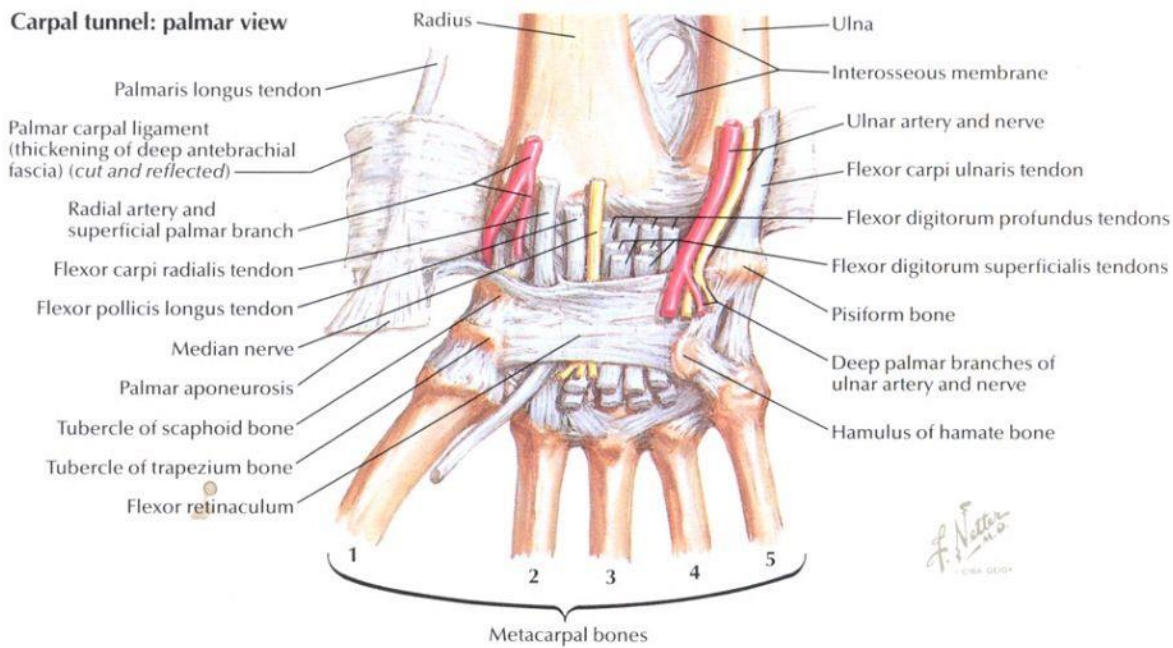


# Ligaments of Wrist

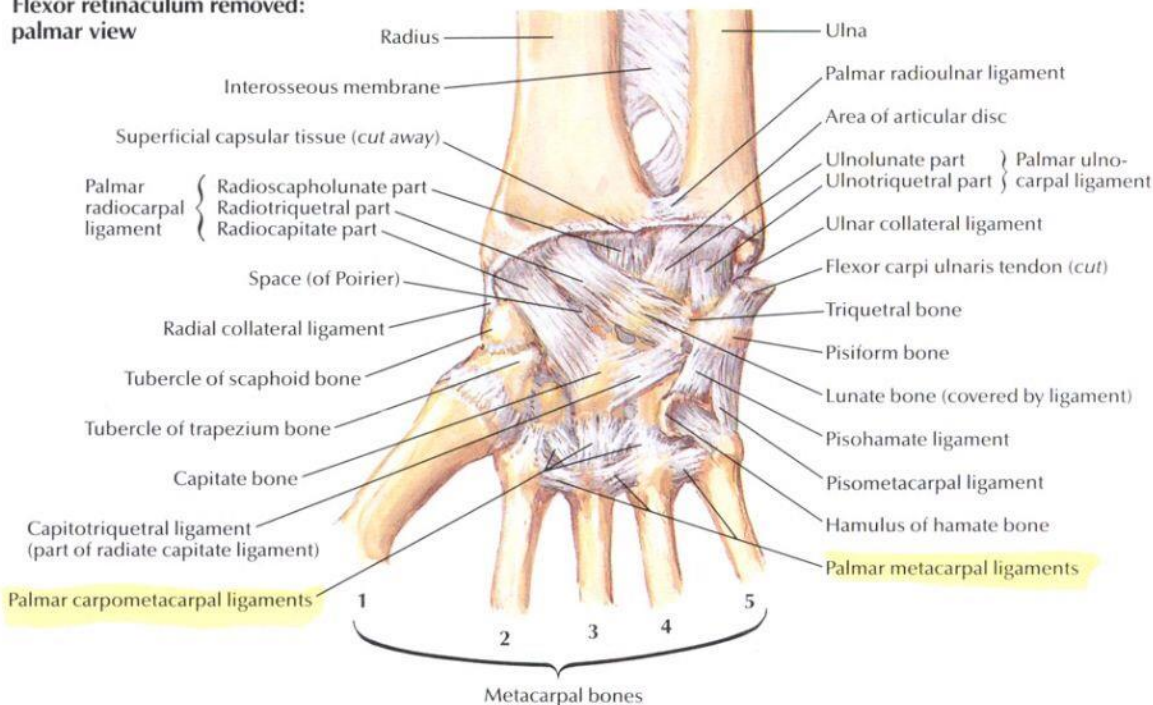
## Carpal Tunnel - Palmar View

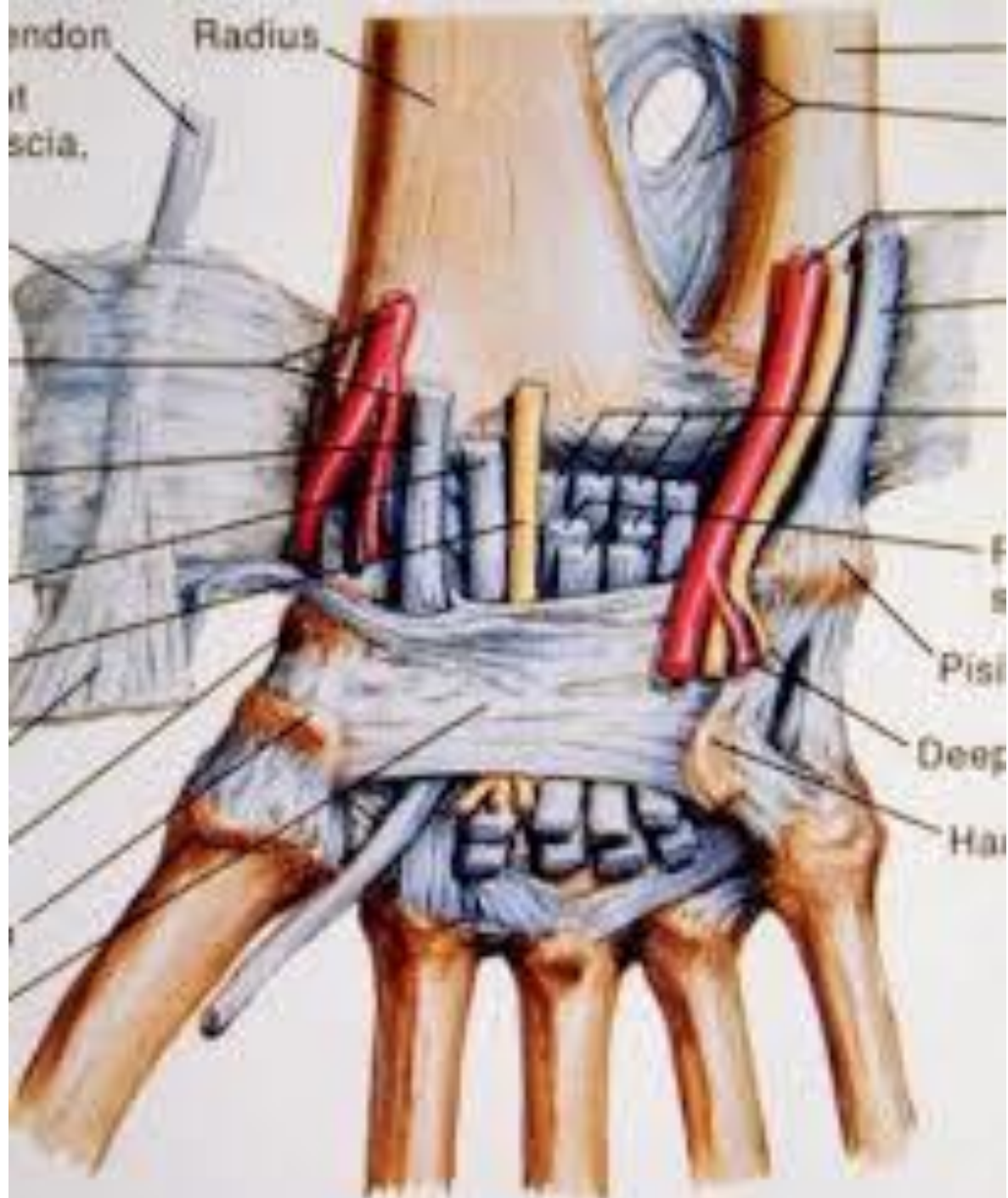


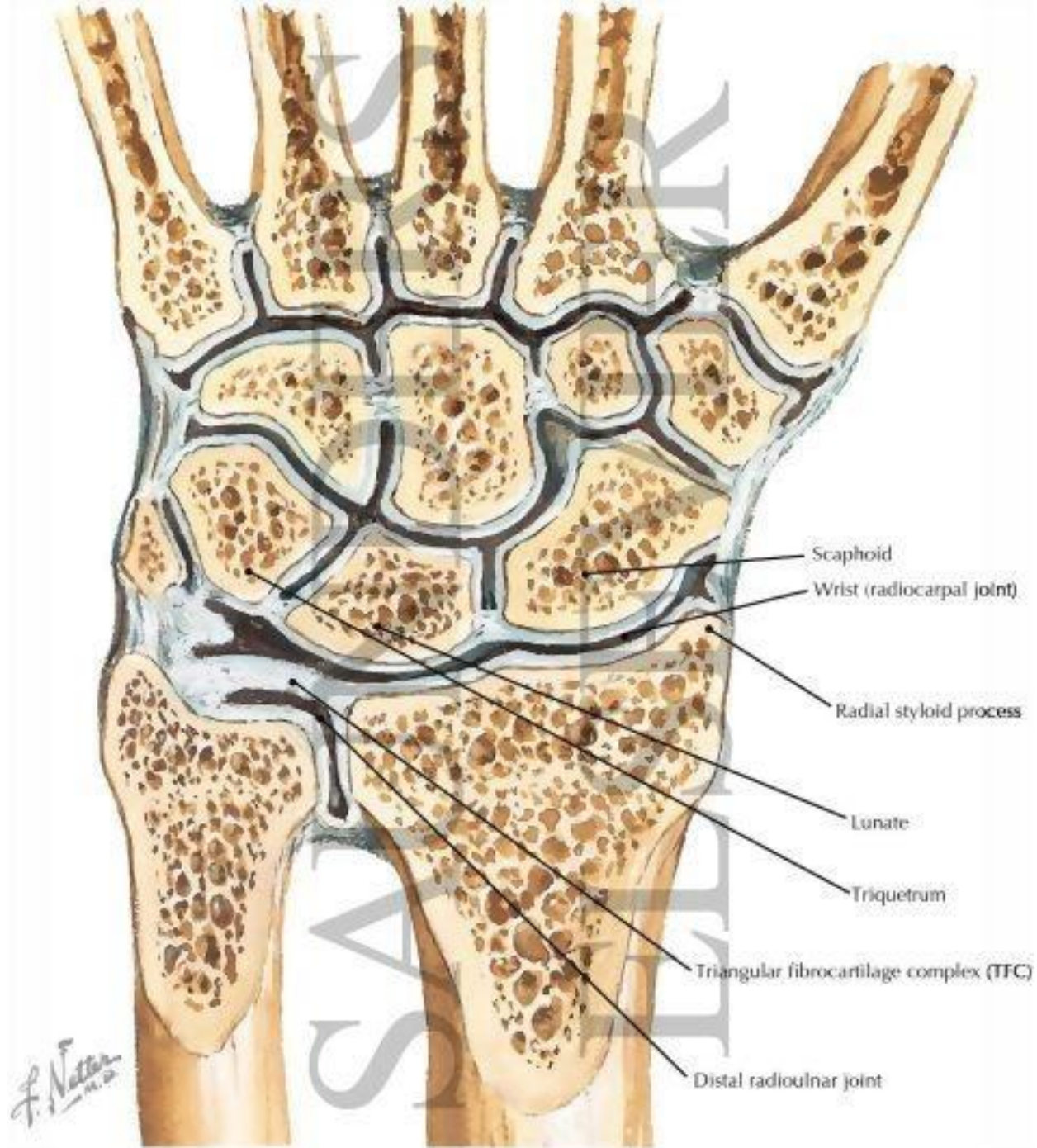
**Carpal tunnel: palmar view**



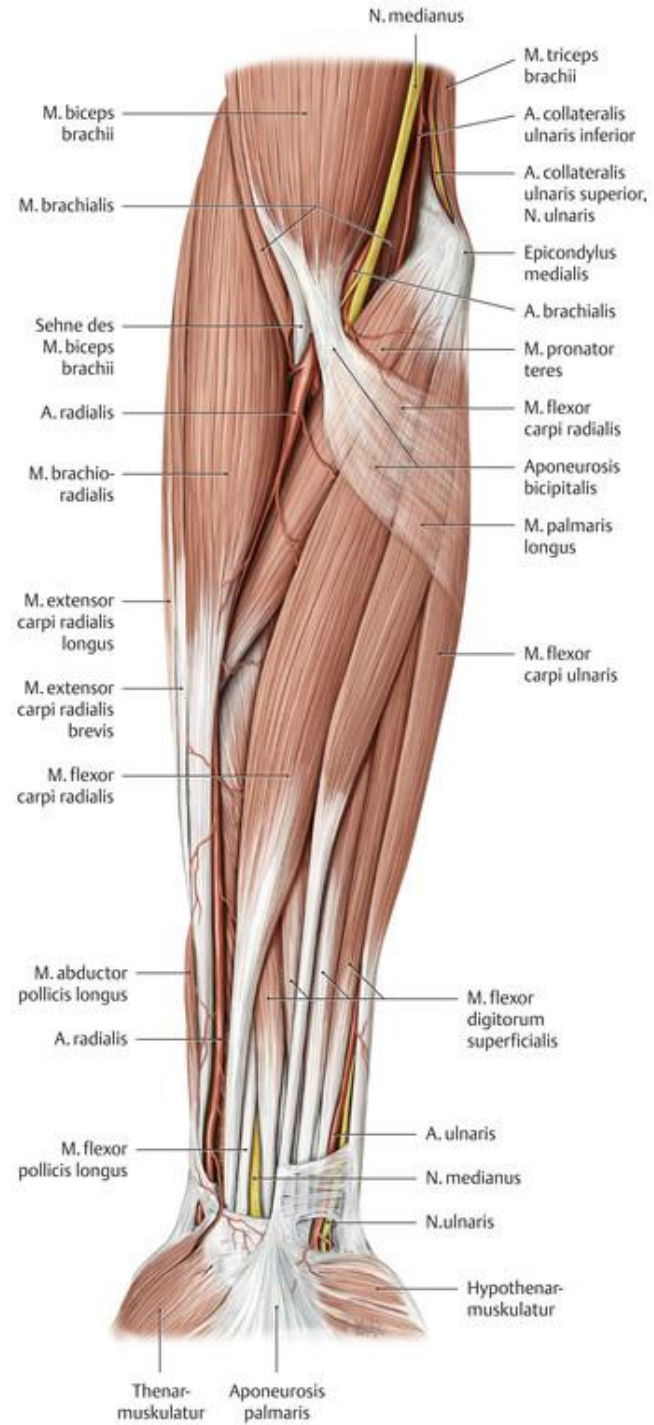
**Flexor retinaculum removed: palmar view**

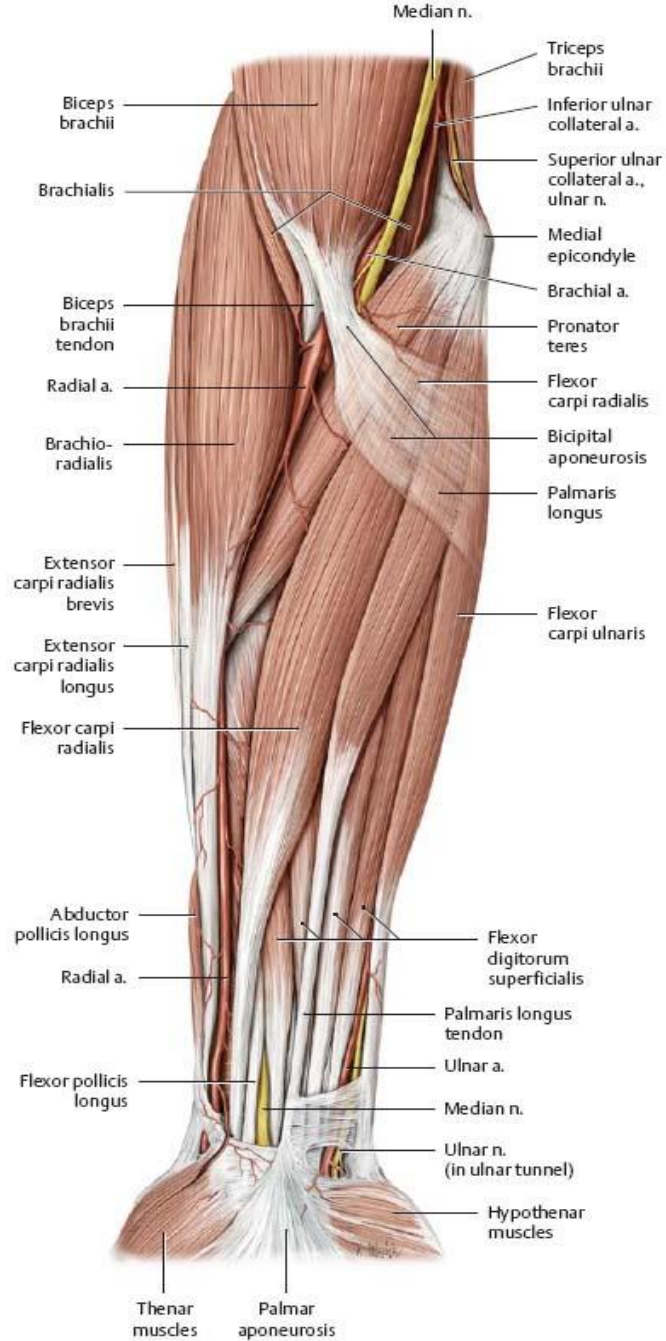




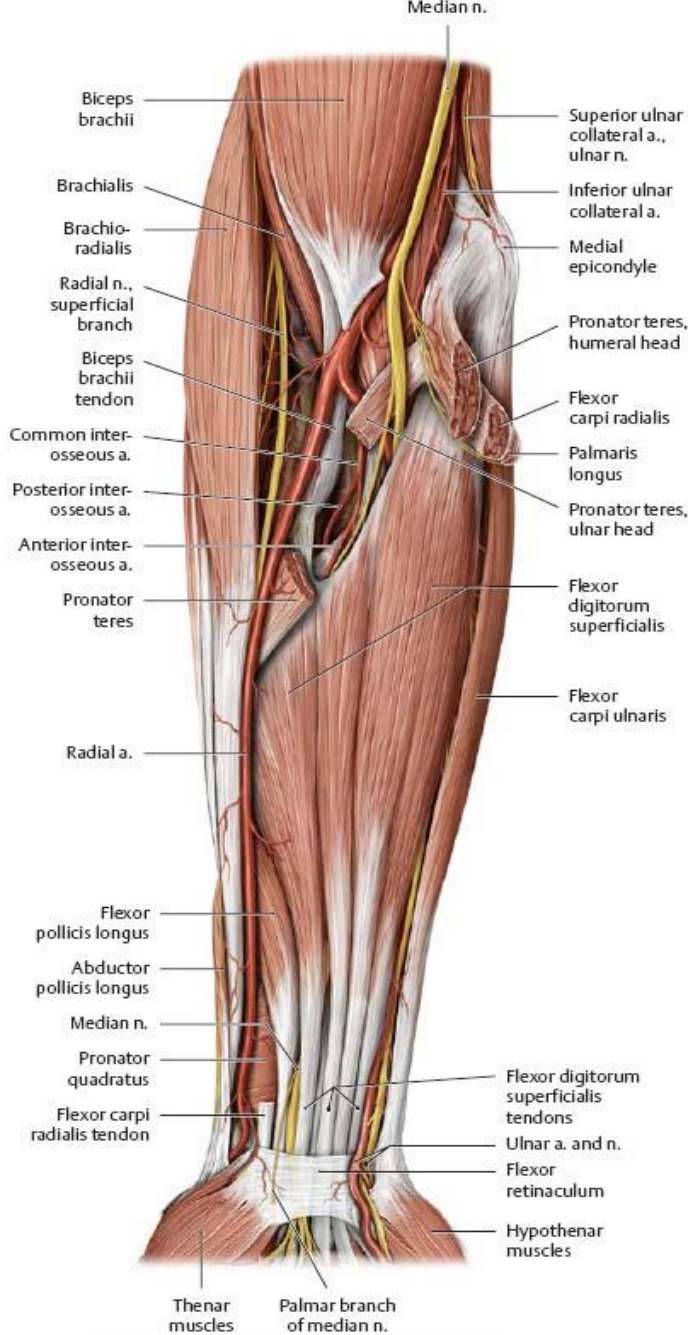




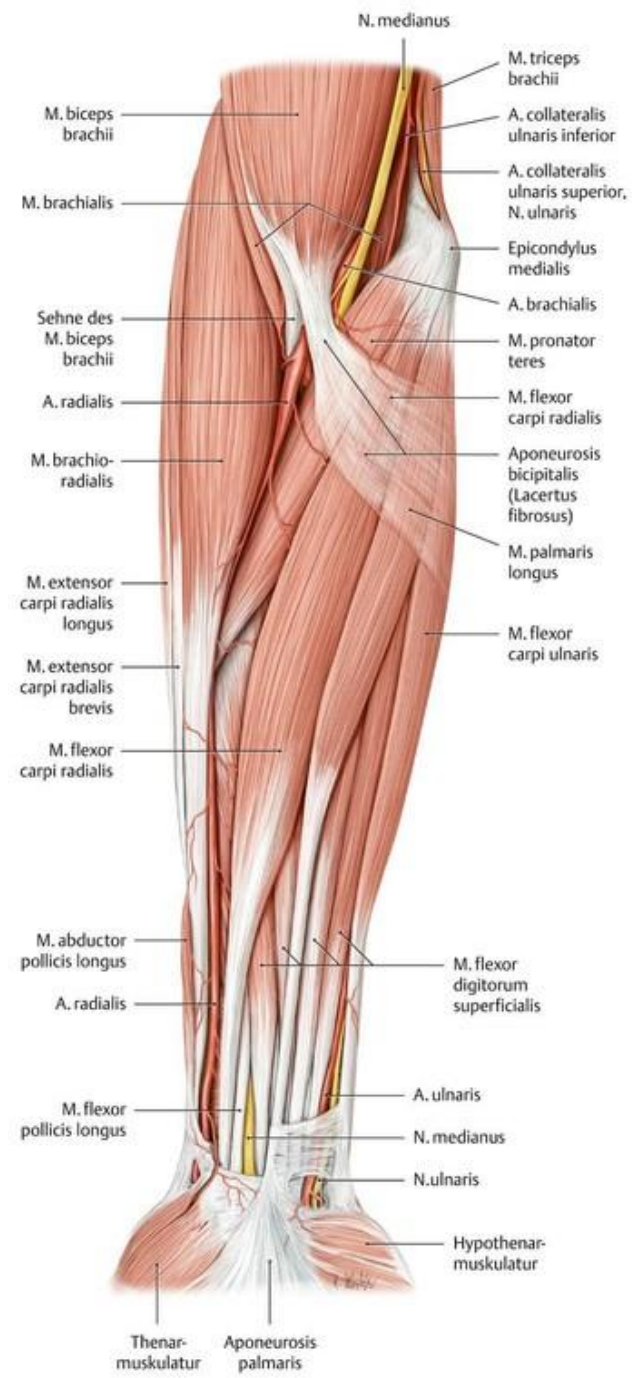
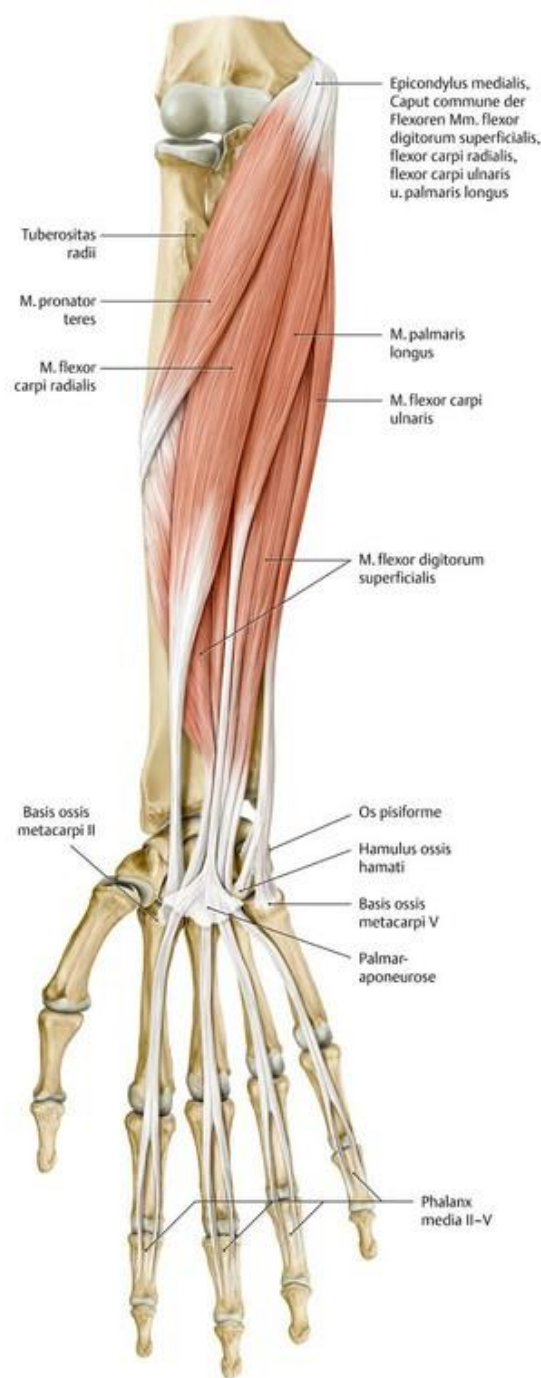
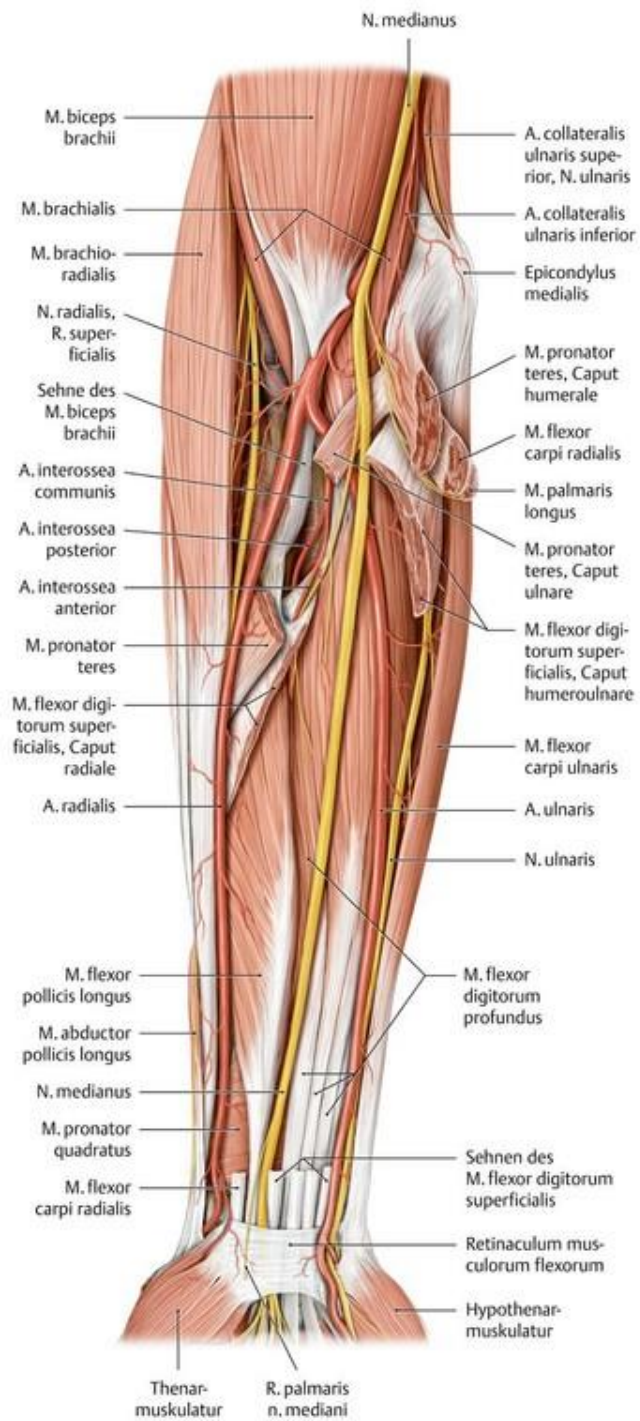


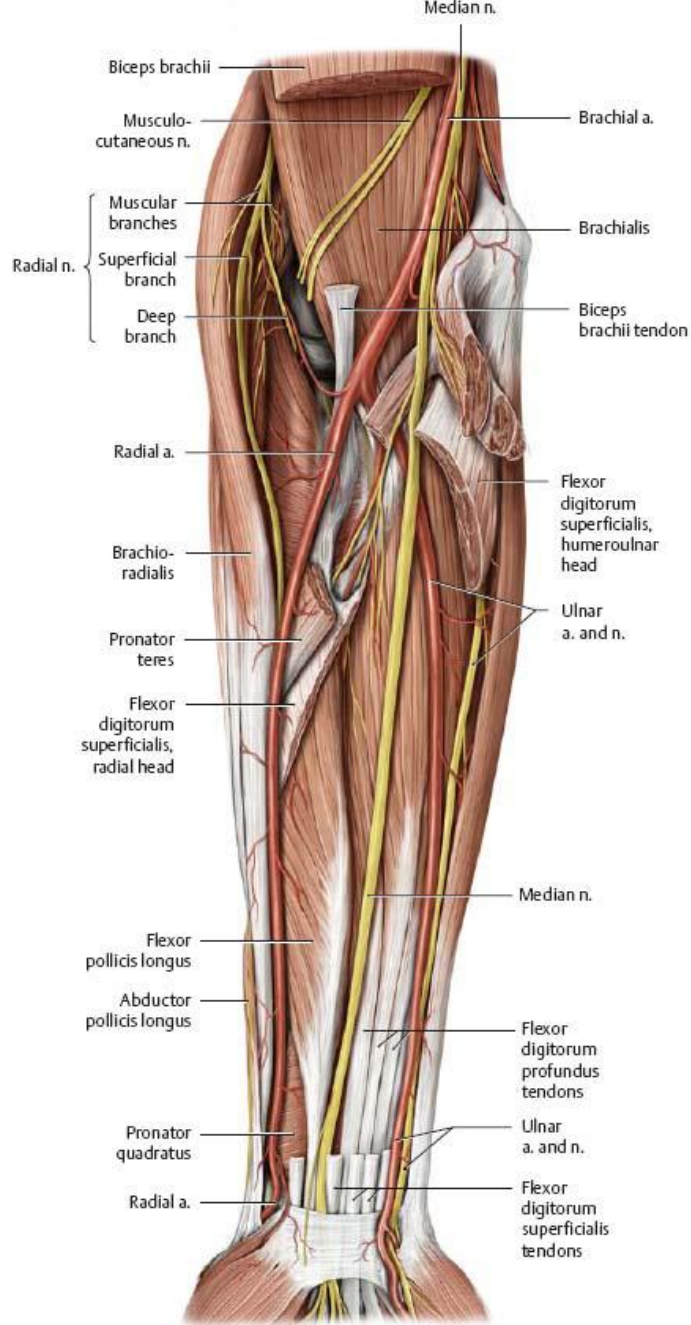


**A** Superficial layer. *Removed:* Fasciae and superficial neurovasculature.

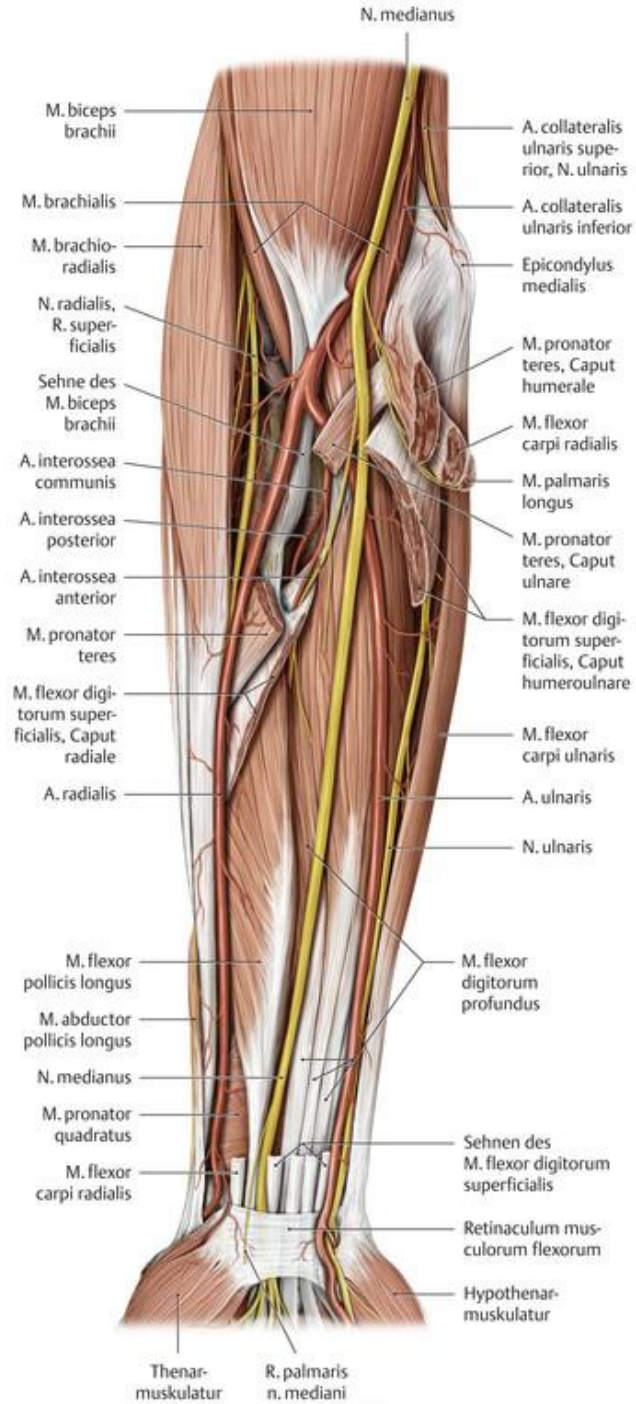


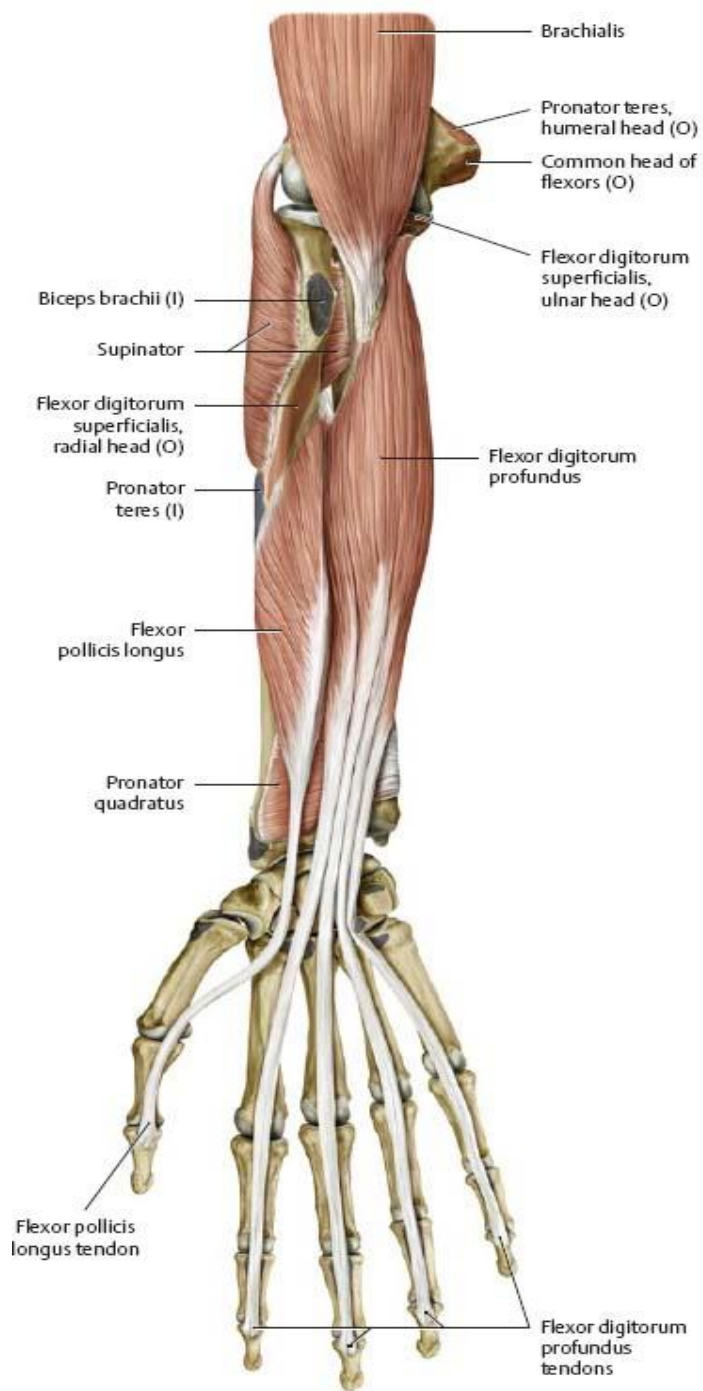
**B** Middle layer. *Partially removed:* Superficial flexors (pronator teres, flexor digitorum superficialis, palmaris longus, and flexor carpi radialis).



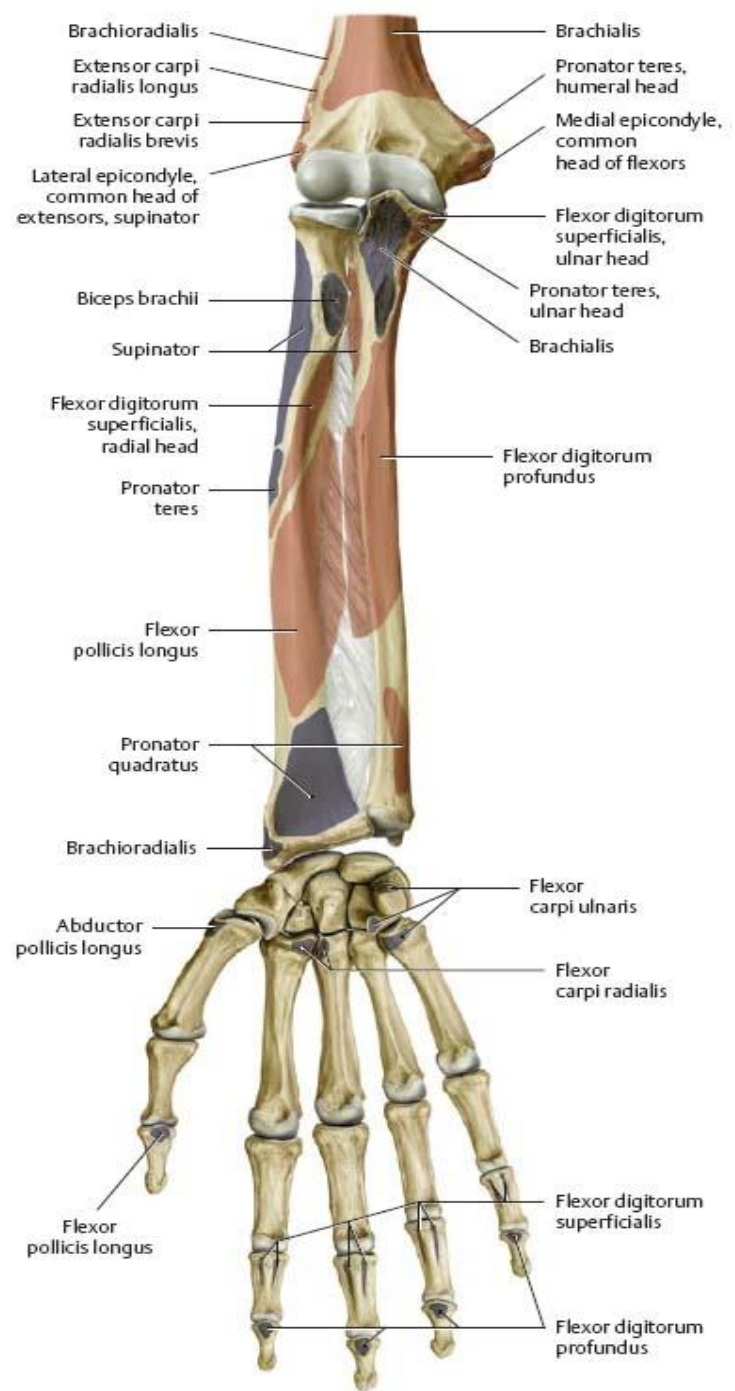


C Deep layer. Removed: Deep flexors.

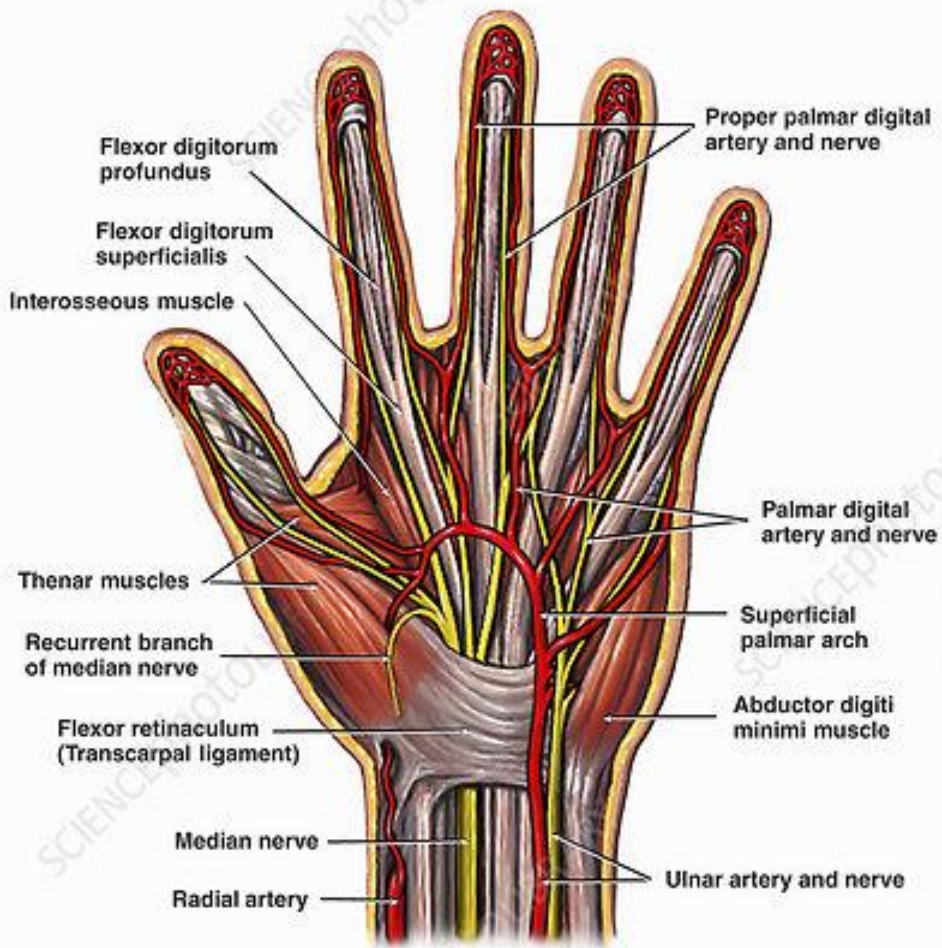




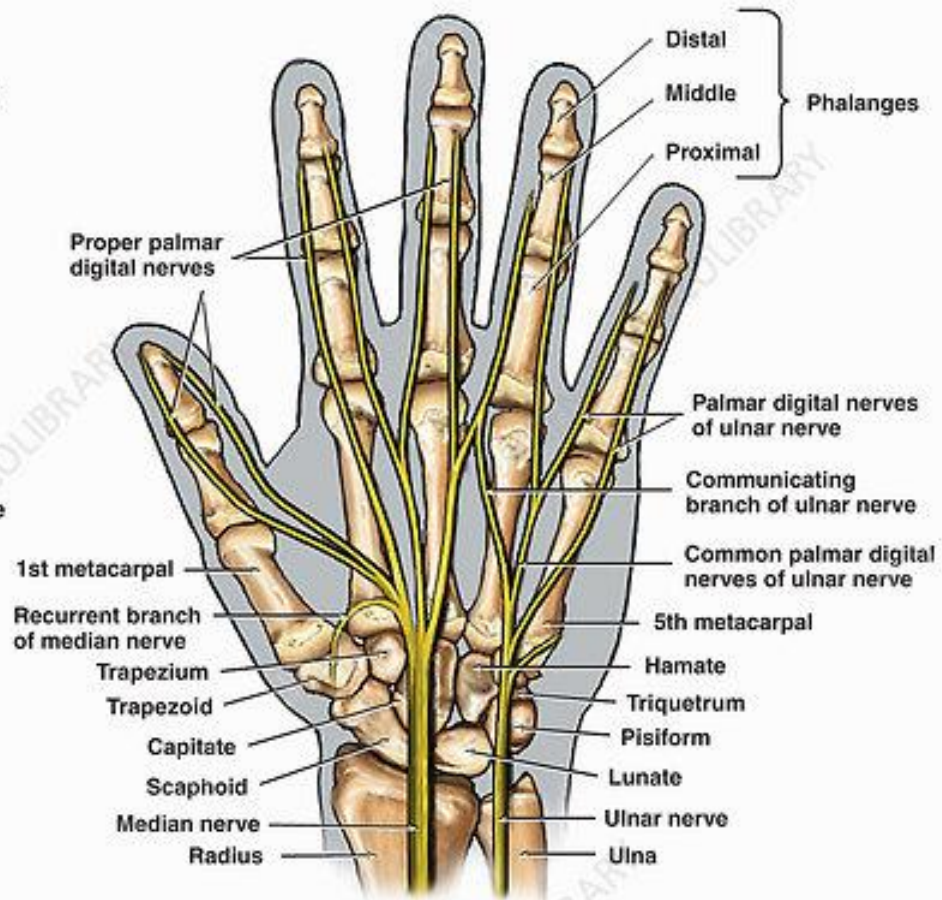
C Removed: Pronator teres and flexor digitorum superficialis.



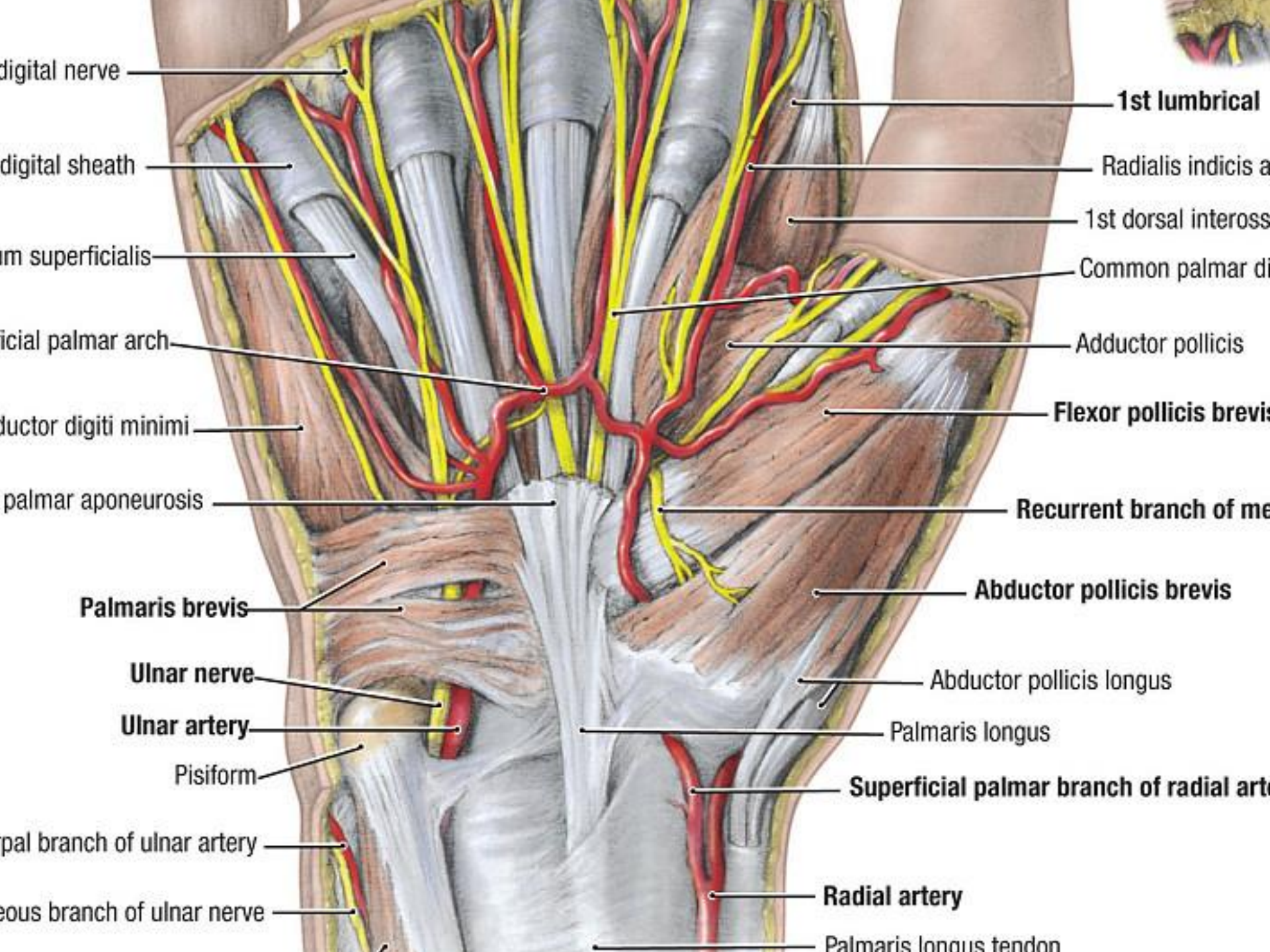
D Removed: Brachialis, supinator, pronator quadratus, and deep flexors.



Palmar view

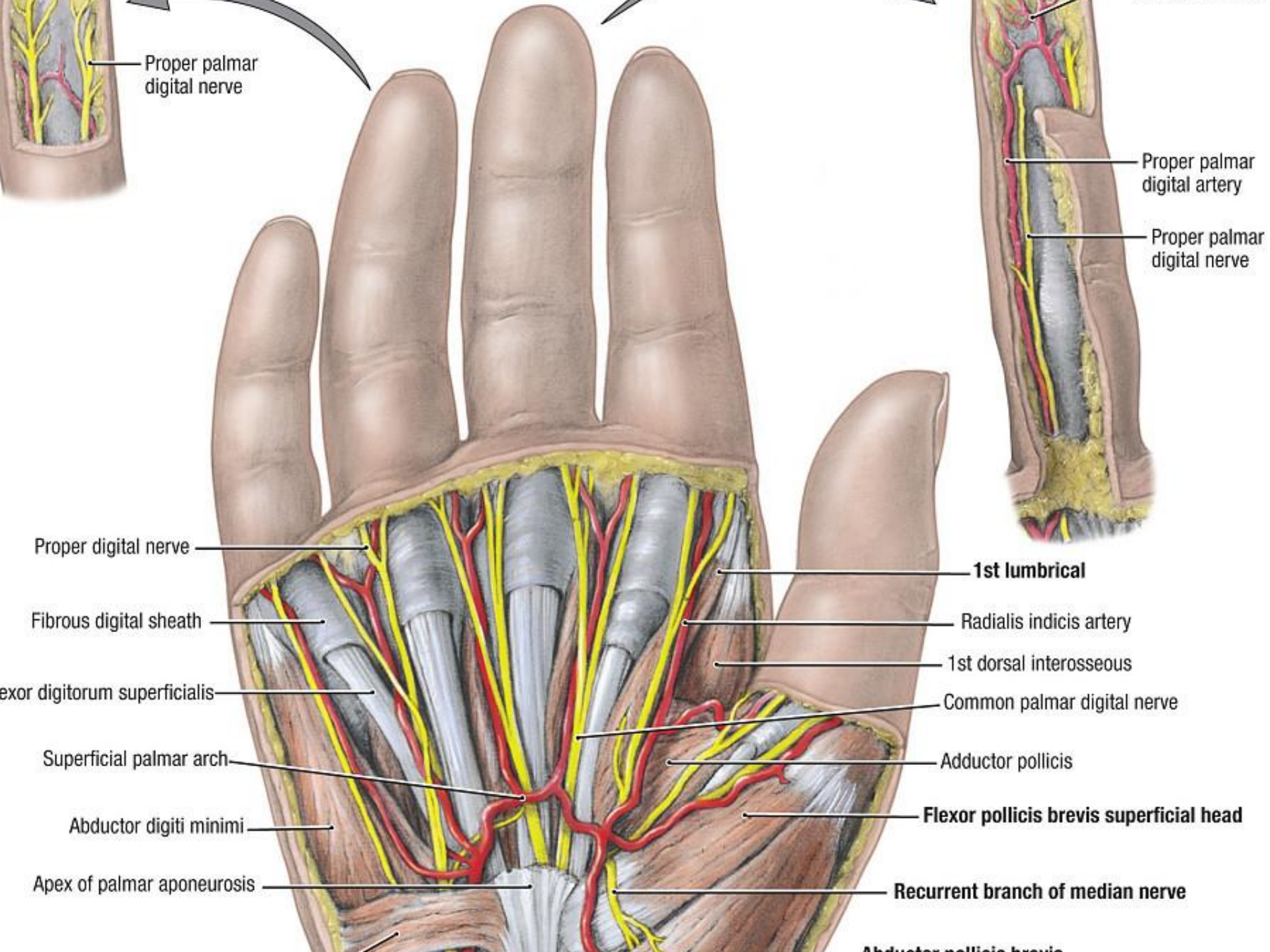


Palmar view



- digital nerve
- digital sheath
- lumbrical superficialis
- superficial palmar arch
- abductor digiti minimi
- palmar aponeurosis
- Palmaris brevis**
- Ulnar nerve**
- Ulnar artery**
- Pisiform
- main branch of ulnar artery
- recurrent branch of ulnar nerve
- 1st lumbrical**
- Radialis indicis a
- 1st dorsal interos
- Common palmar di
- Adductor pollicis
- Flexor pollicis brevis**
- Recurrent branch of me**
- Abductor pollicis brevis**
- Abductor pollicis longus
- Palmaris longus
- Superficial palmar branch of radial art**
- Radial artery**
- Palmaris longus tendon





Proper palmar digital nerve

Proper palmar digital artery

Proper palmar digital nerve

Proper digital nerve

1st lumbrical

Fibrous digital sheath

Radialis indicis artery

Flexor digitorum superficialis

1st dorsal interosseous

Superficial palmar arch

Common palmar digital nerve

Abductor digiti minimi

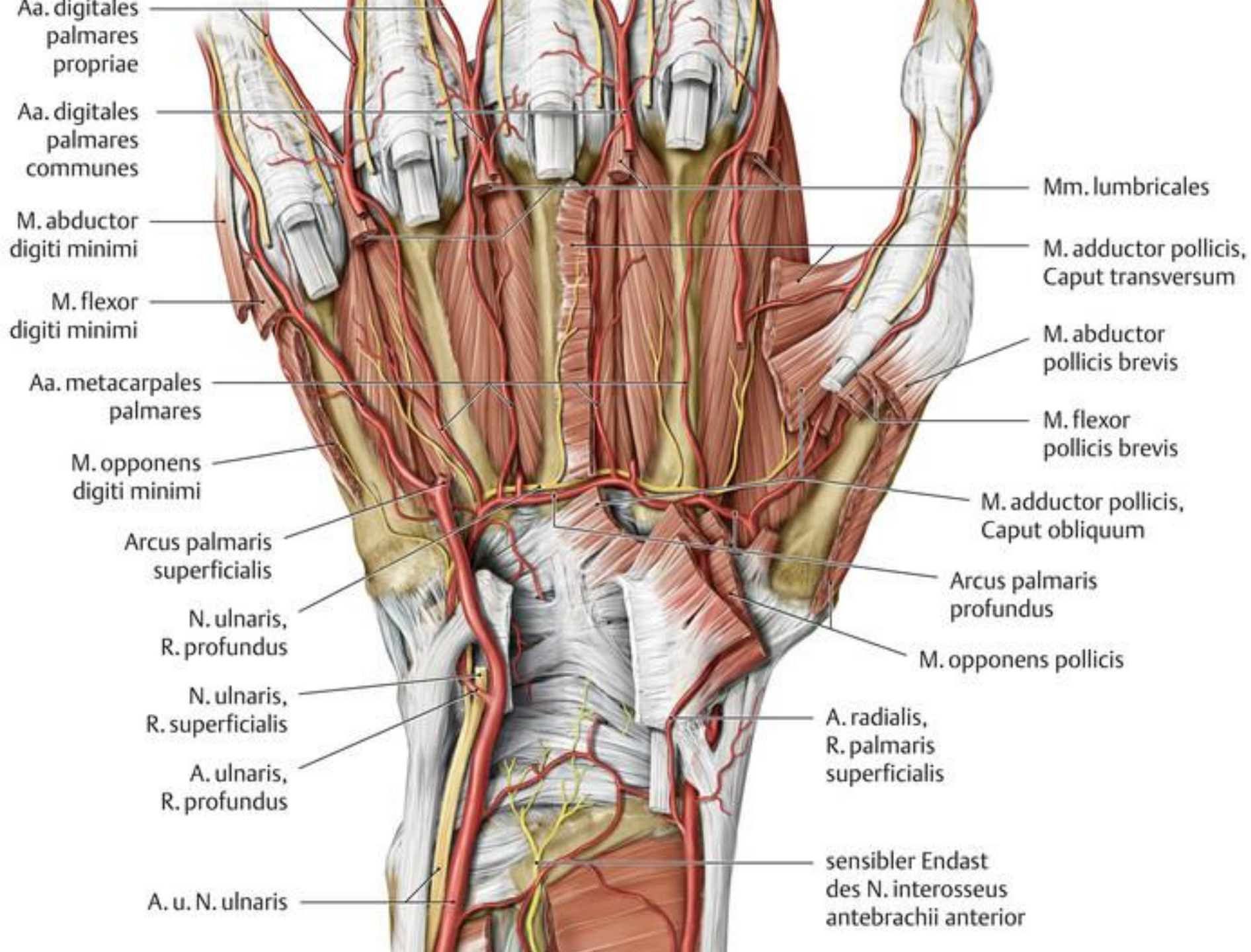
Adductor pollicis

Apex of palmar aponeurosis

Flexor pollicis brevis superficial head

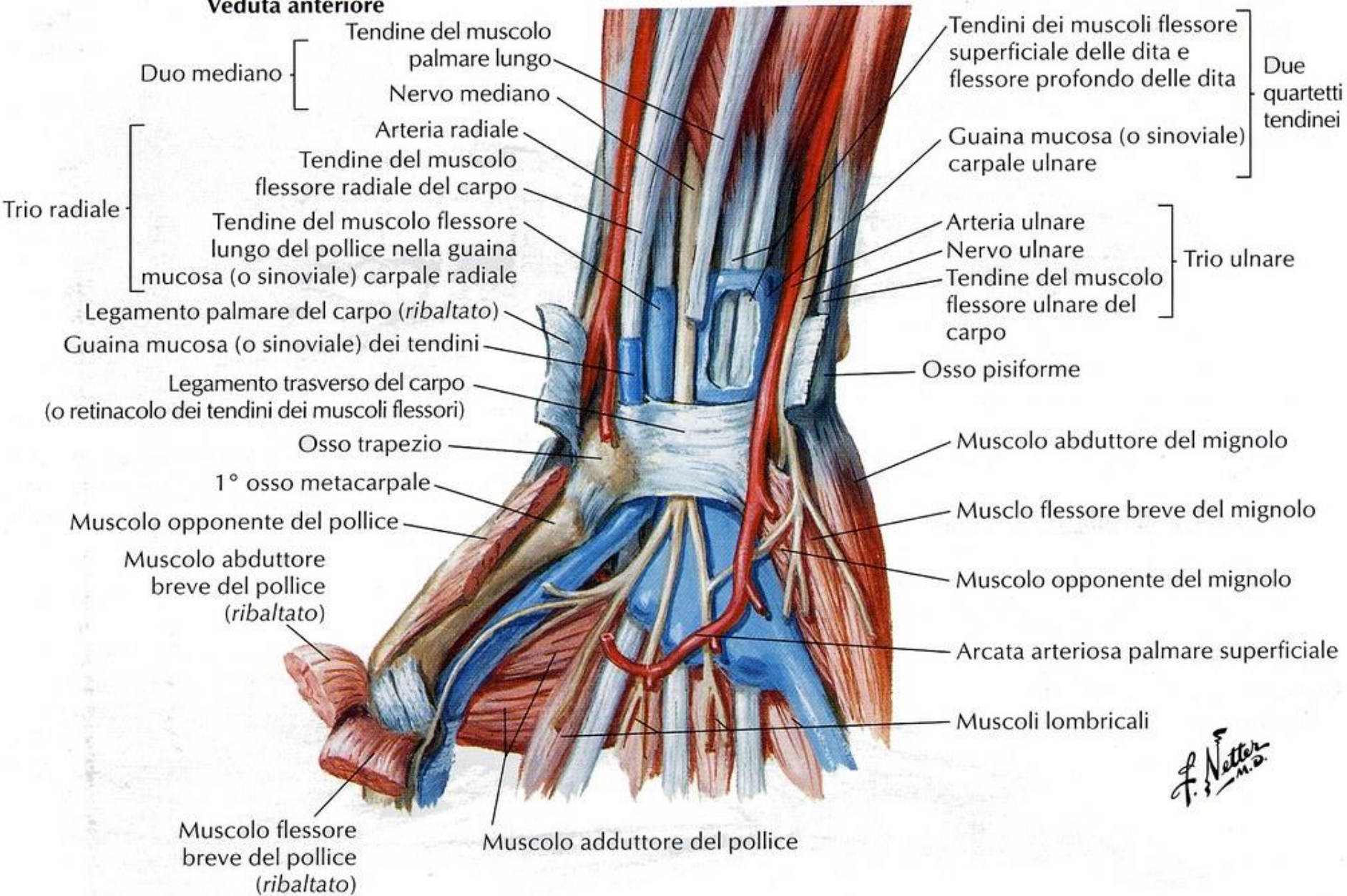
Recurrent branch of median nerve

Abductor pollicis brevis



# Figura 16-3: Tendini dei muscoli flessori, arterie e nervi al polso

Veduta anteriore



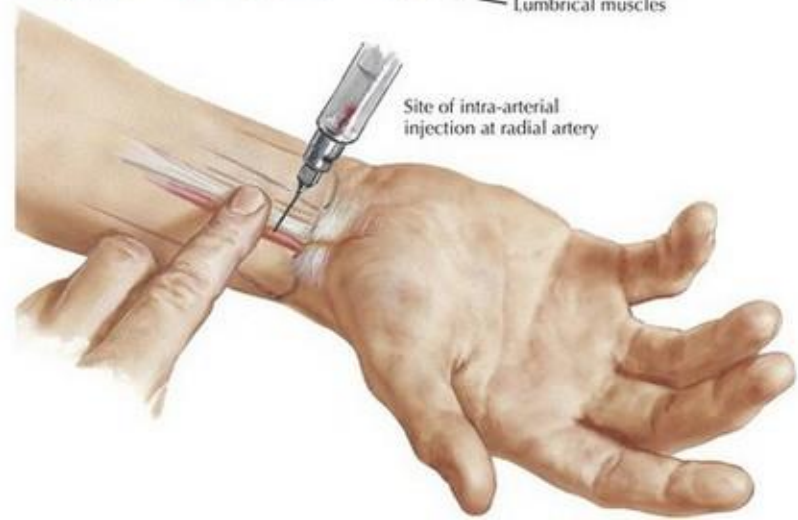
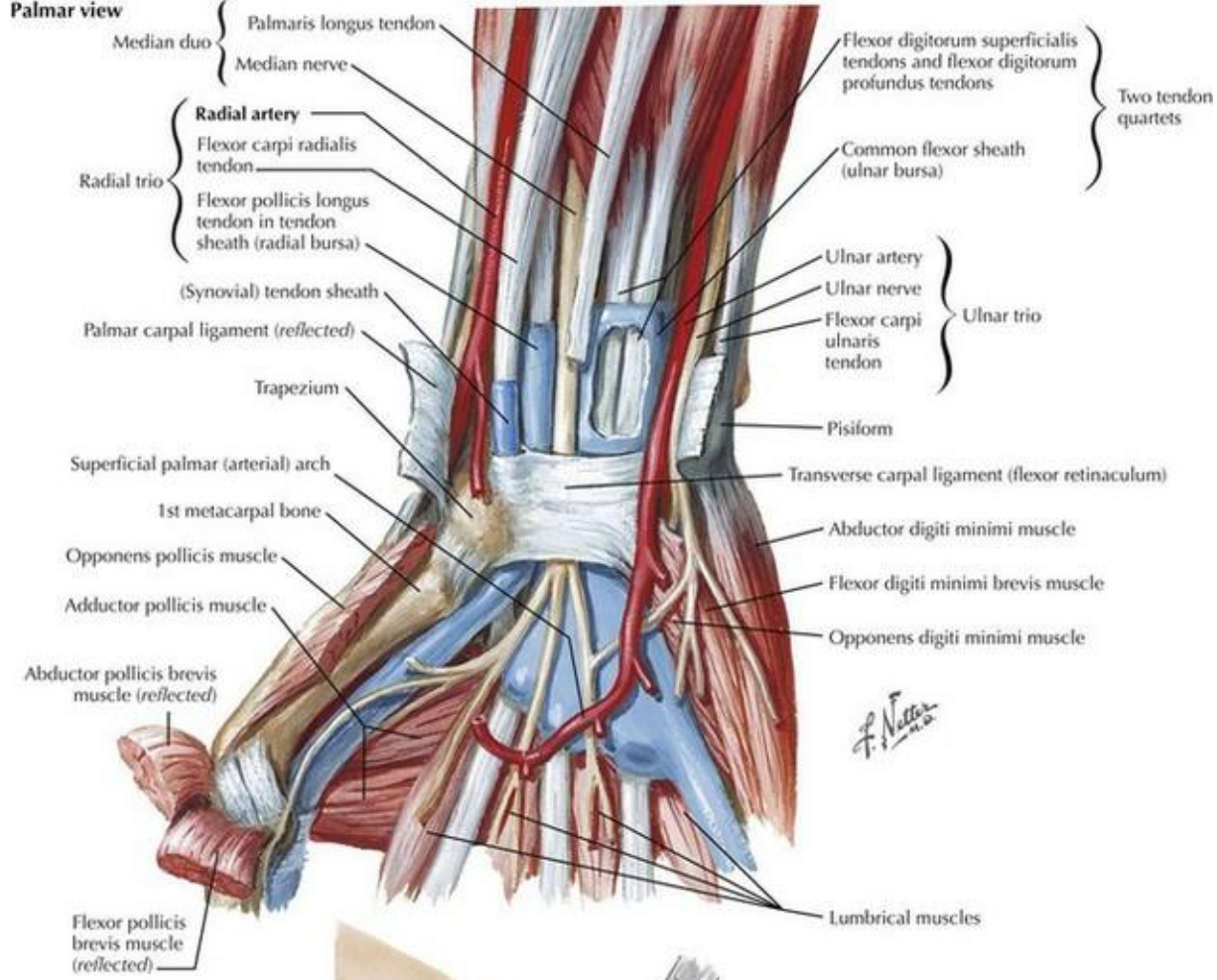
Duo mediano

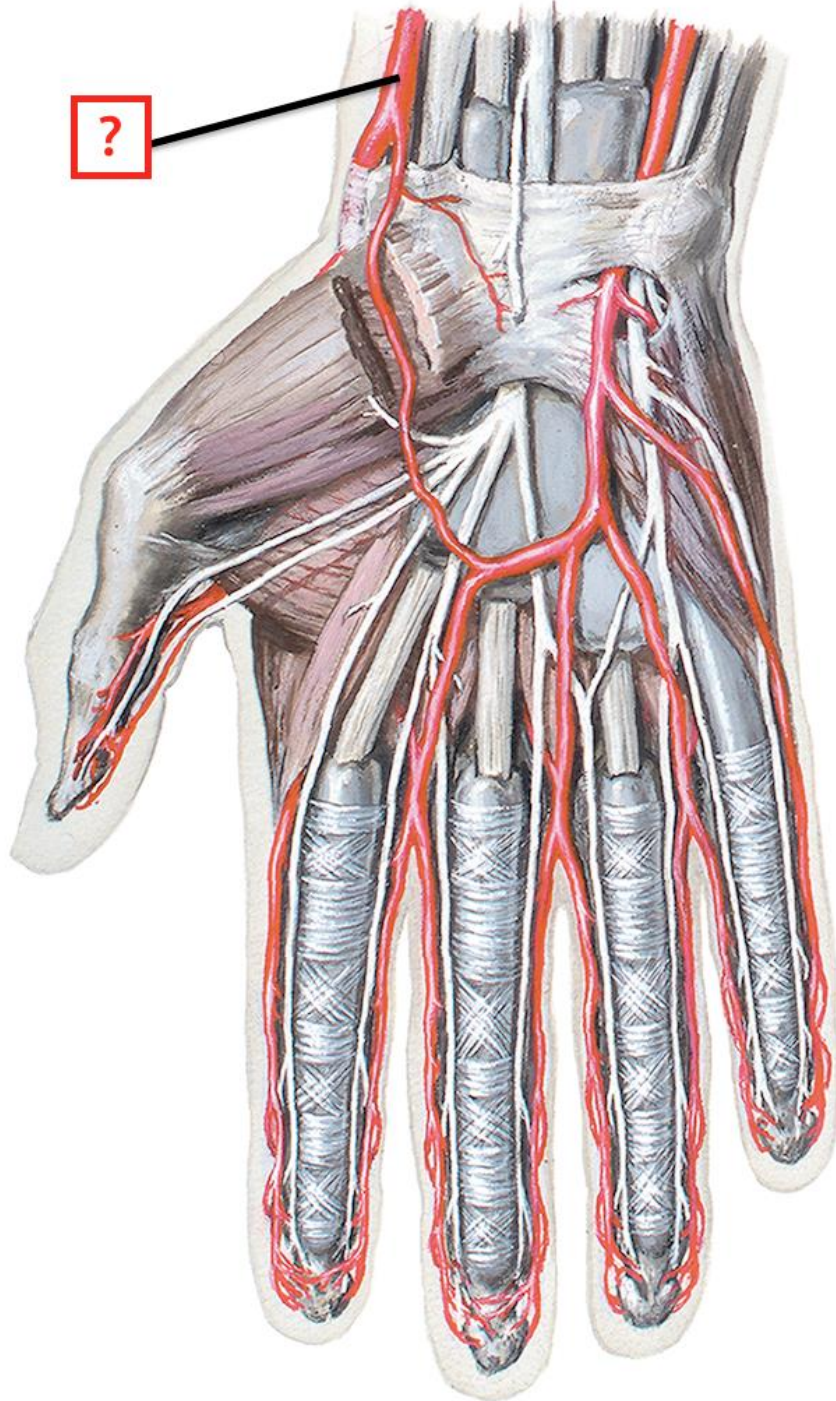
Trio radiale

Due quartetti tendinei

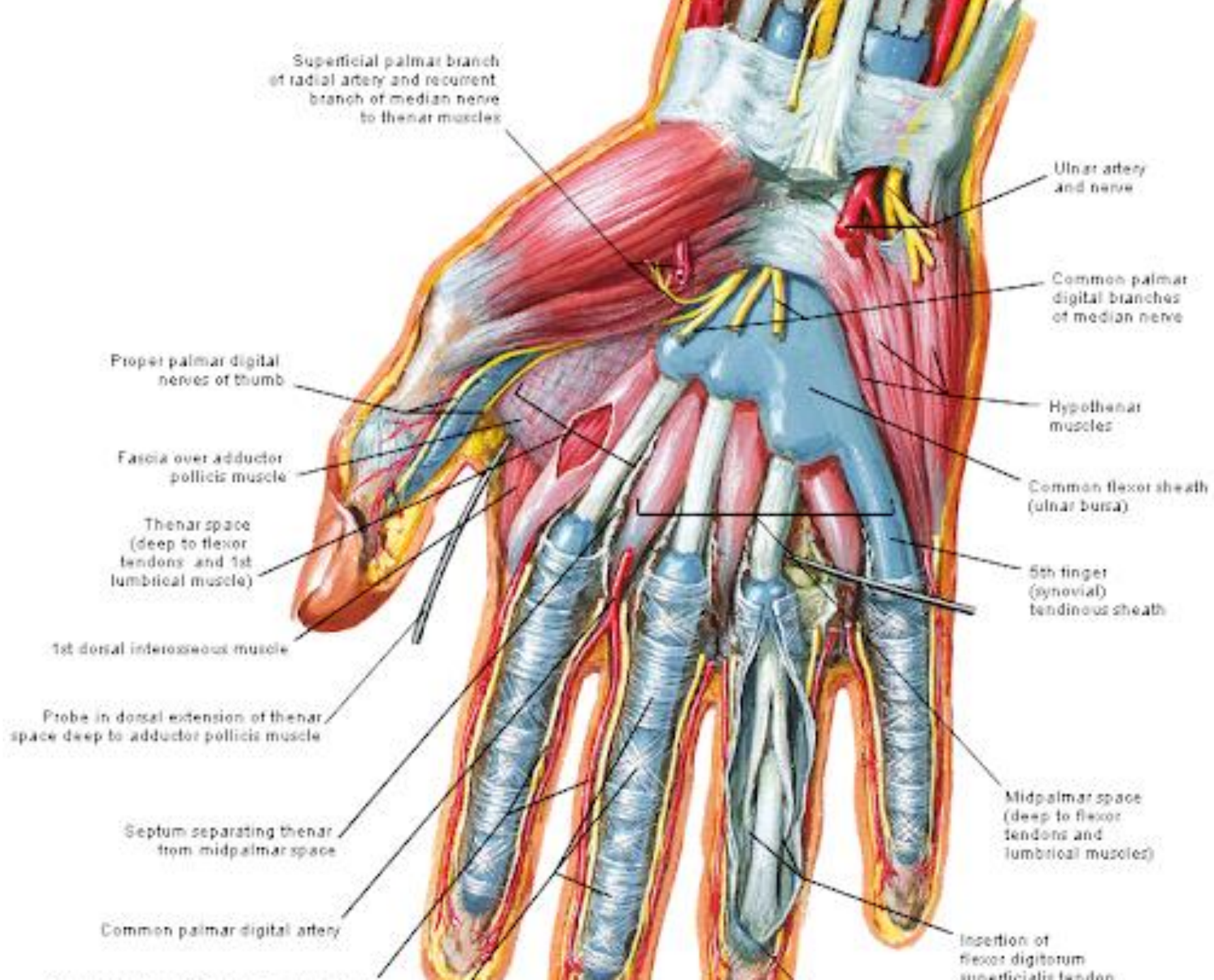
Trio ulnare

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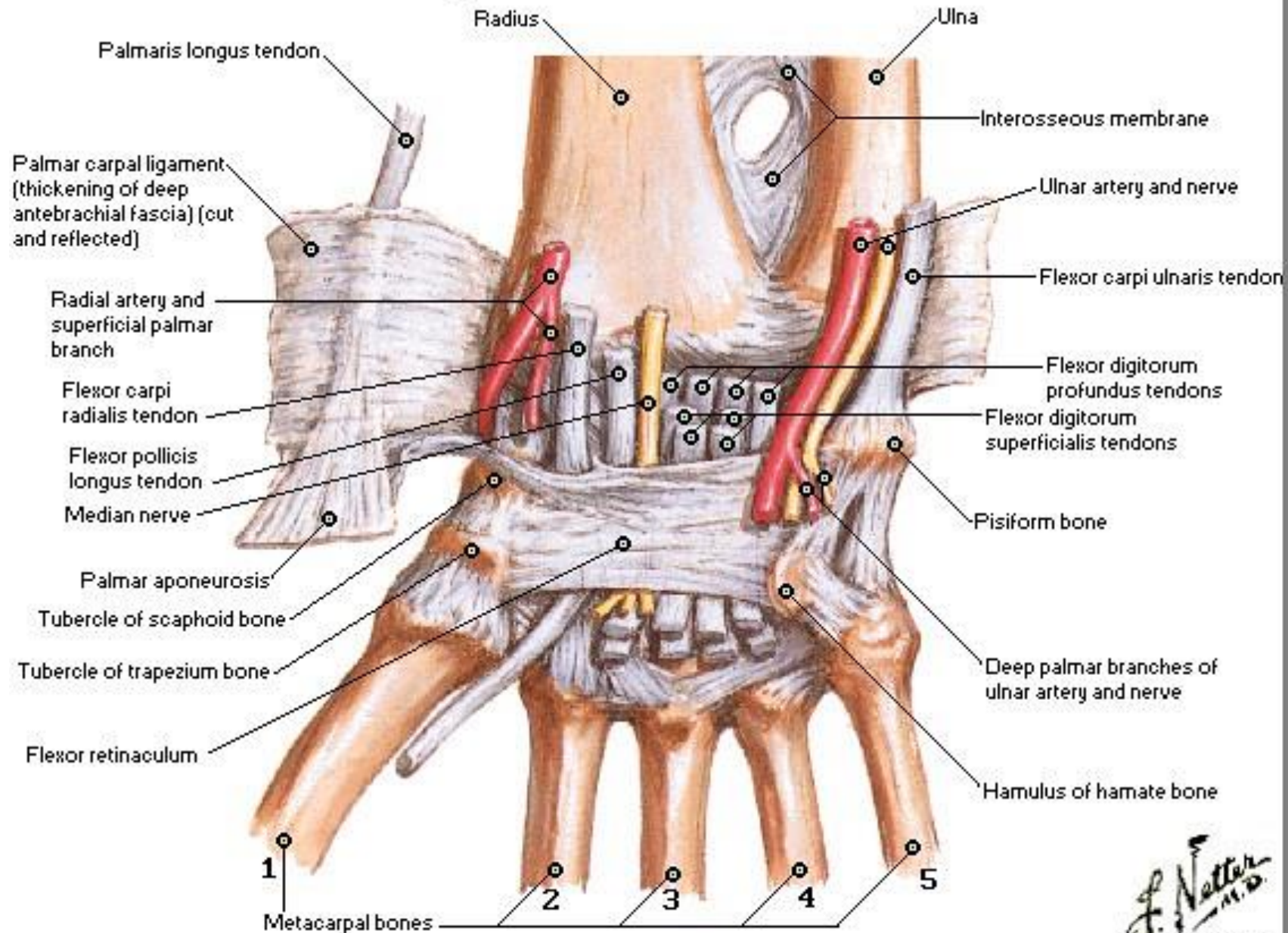


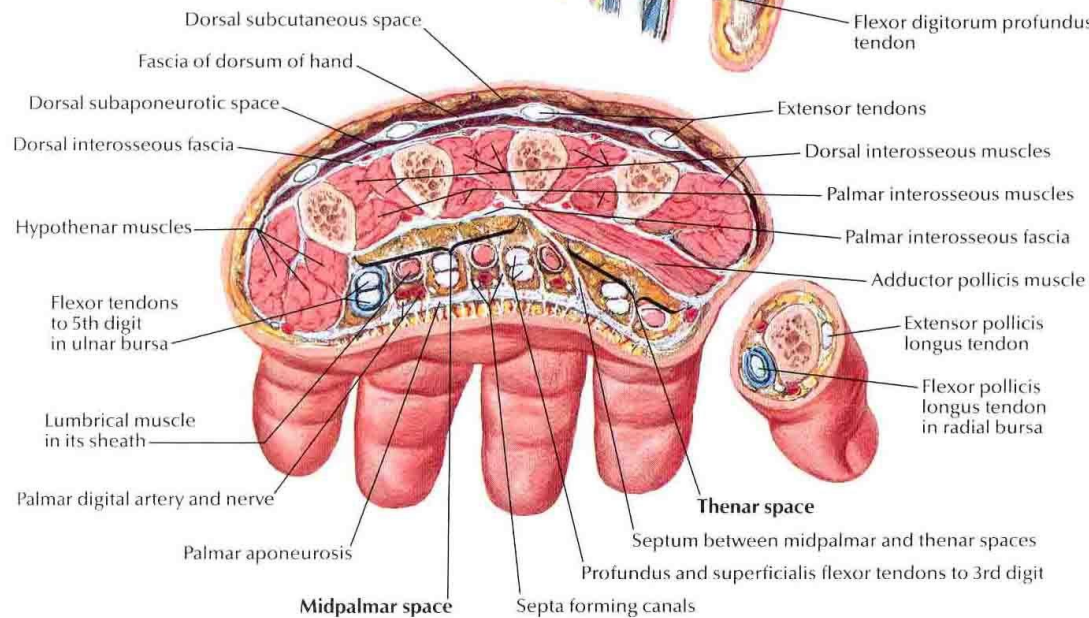
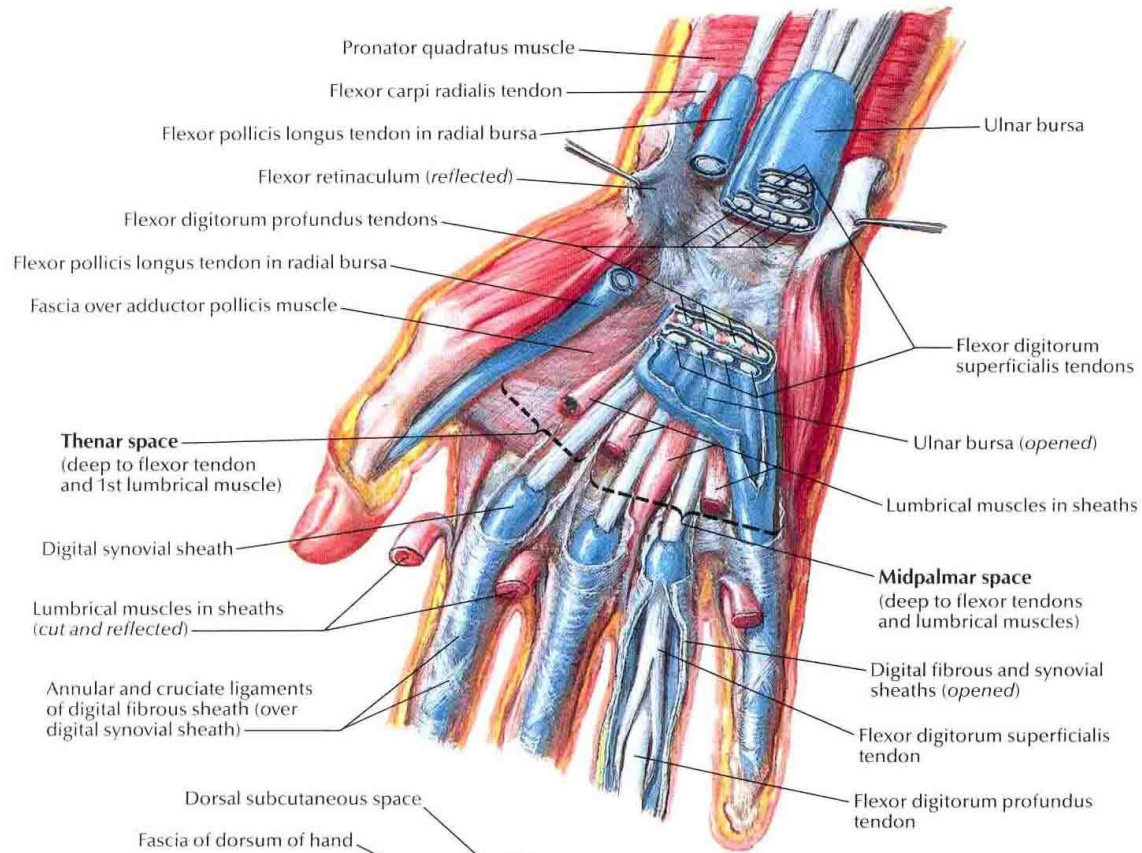
F. Netter  
M.D.



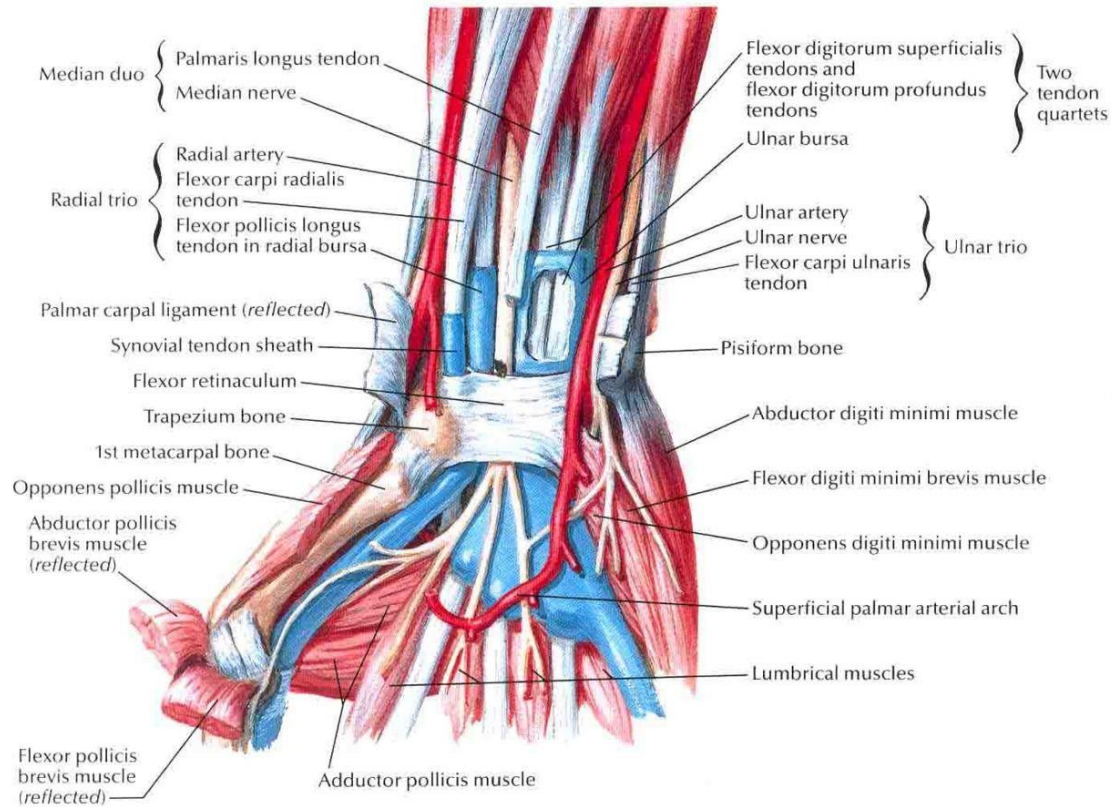
# Ligaments of Wrist

## Carpal Tunnel - Palmar View

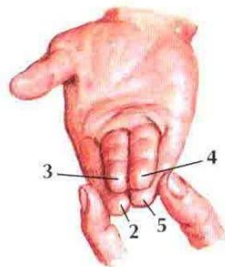
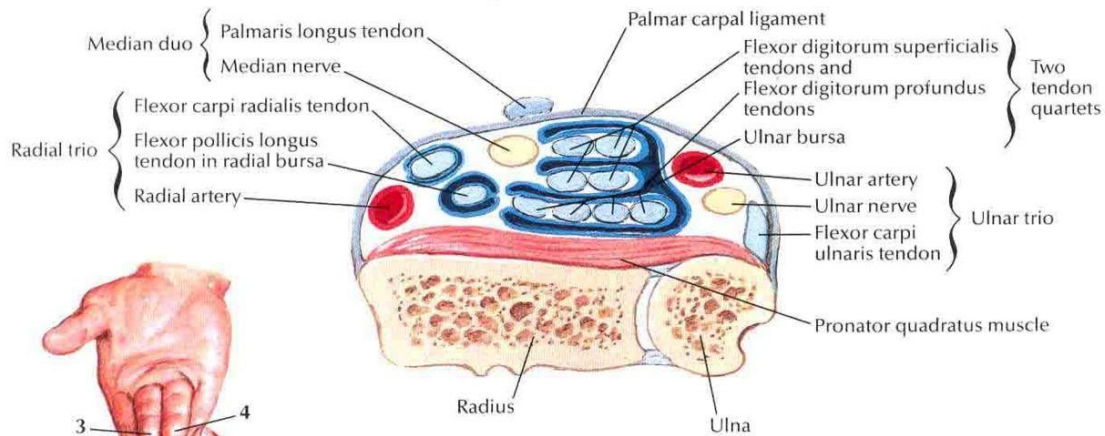




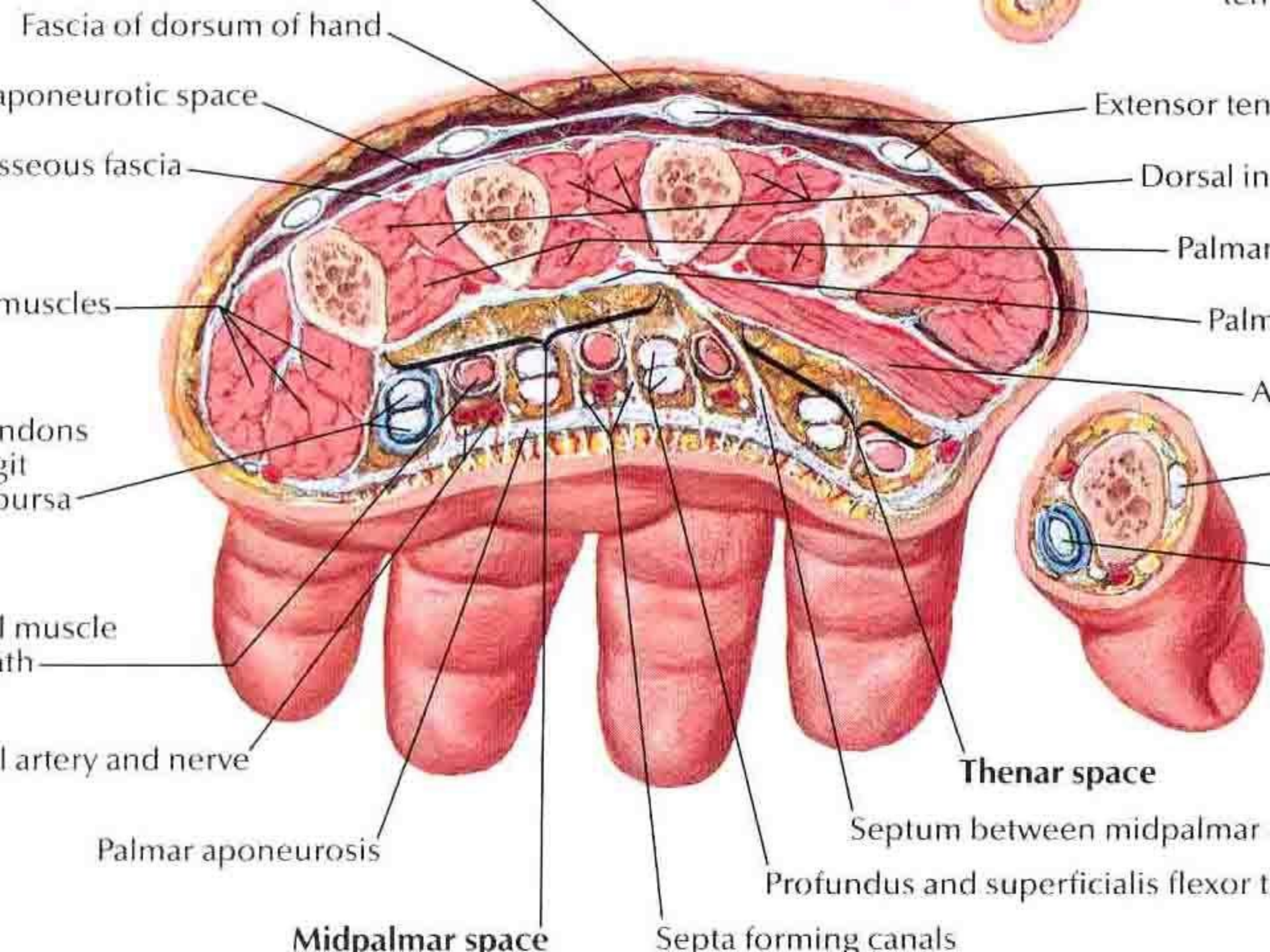




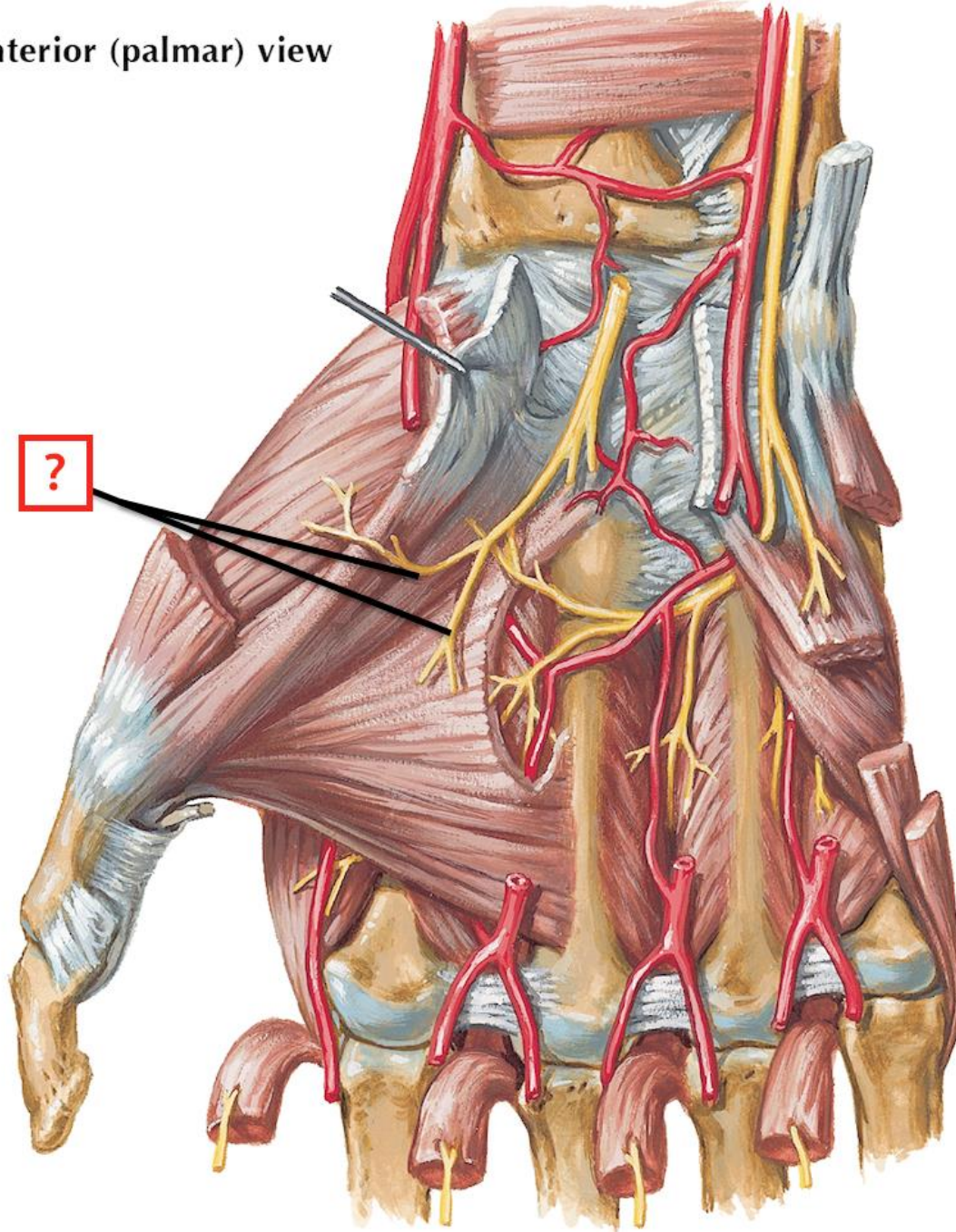
**Schematic cross section proximal to flexor retinaculum**

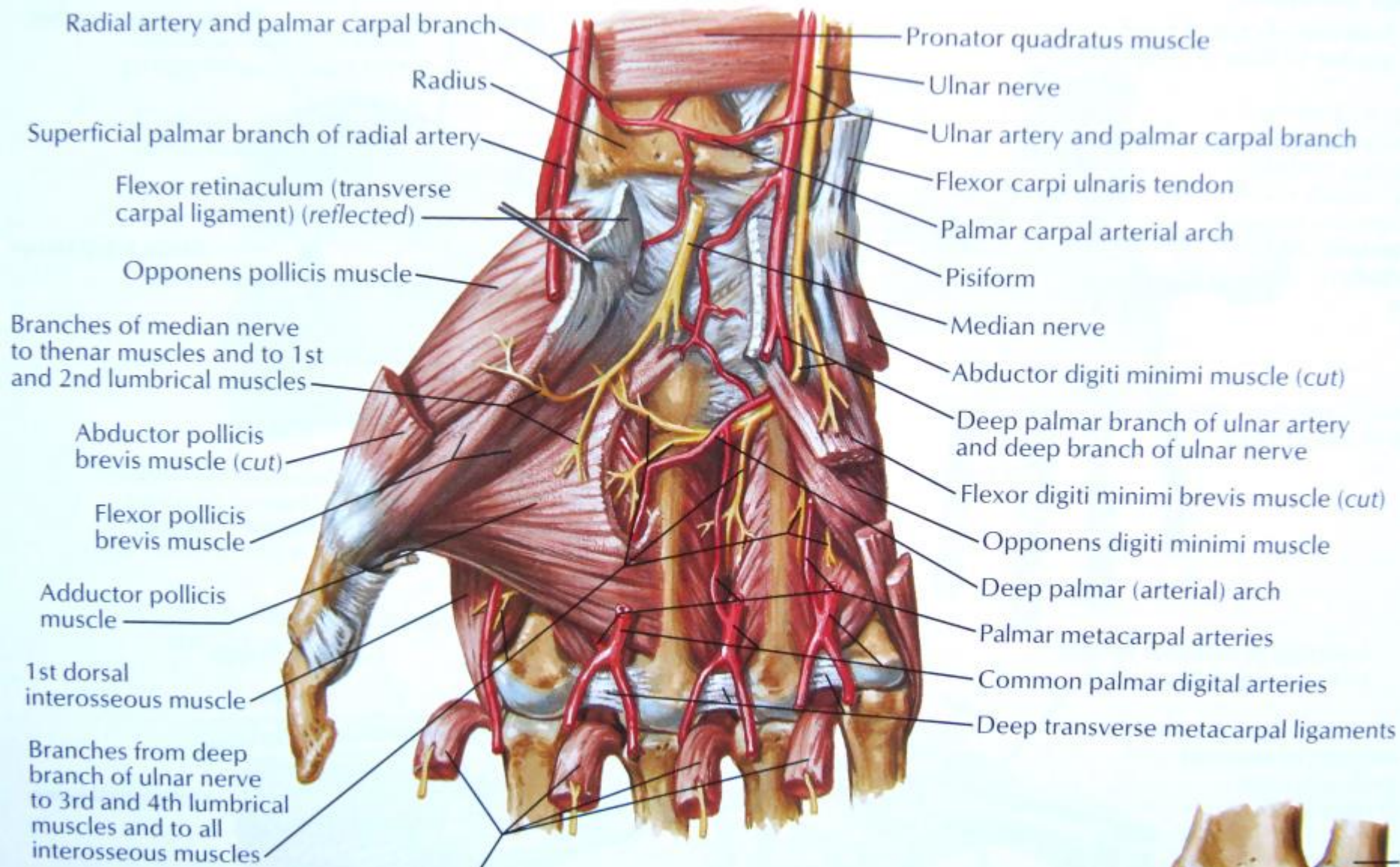


Simple method of demonstrating arrangement of flexor digitorum superficialis tendons at wrist

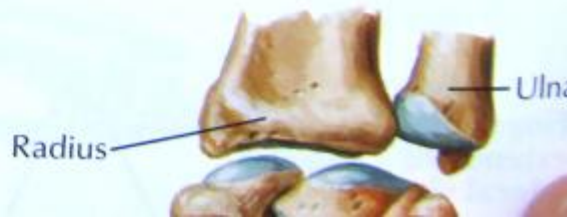


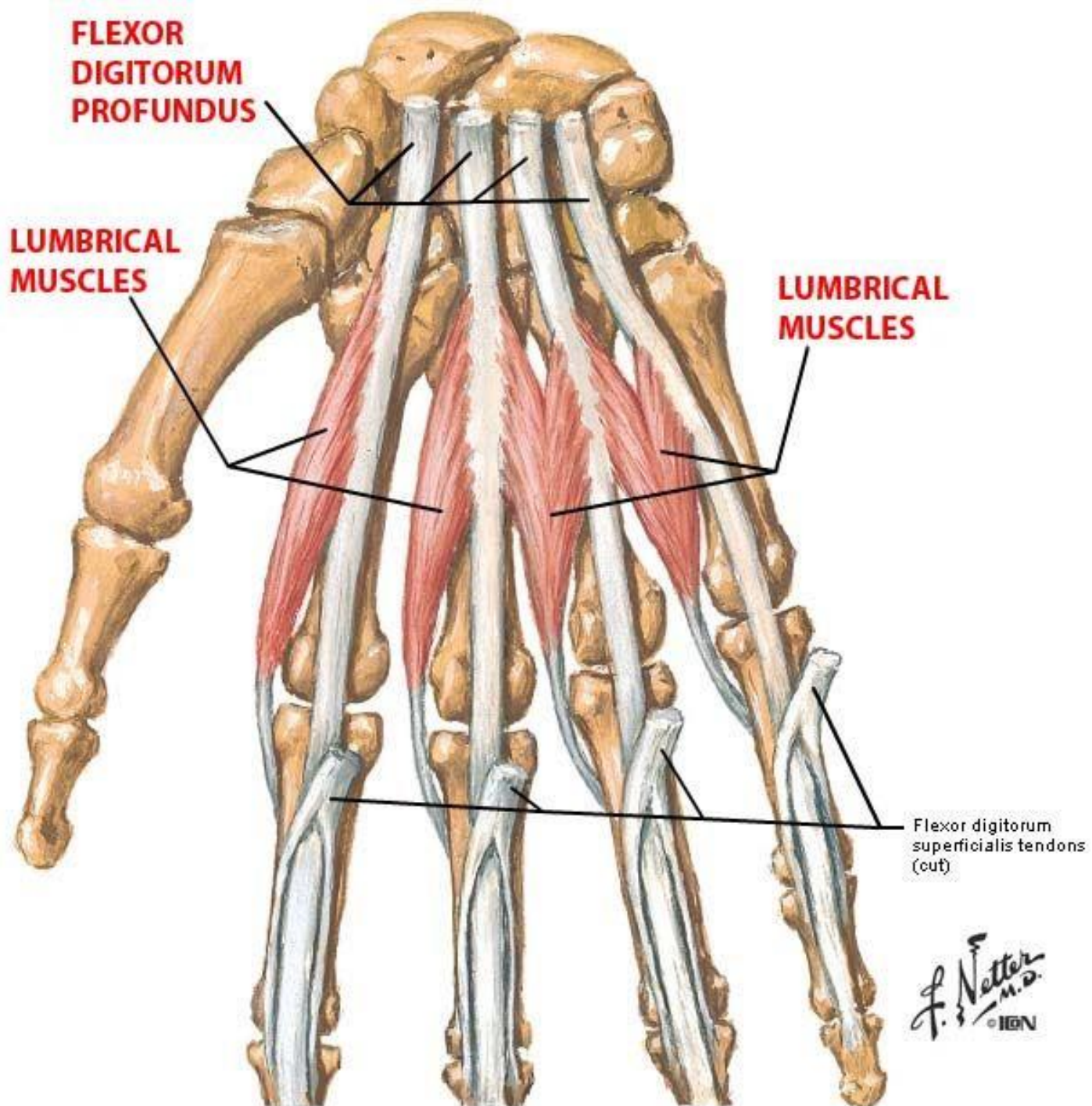
Anterior (palmar) view

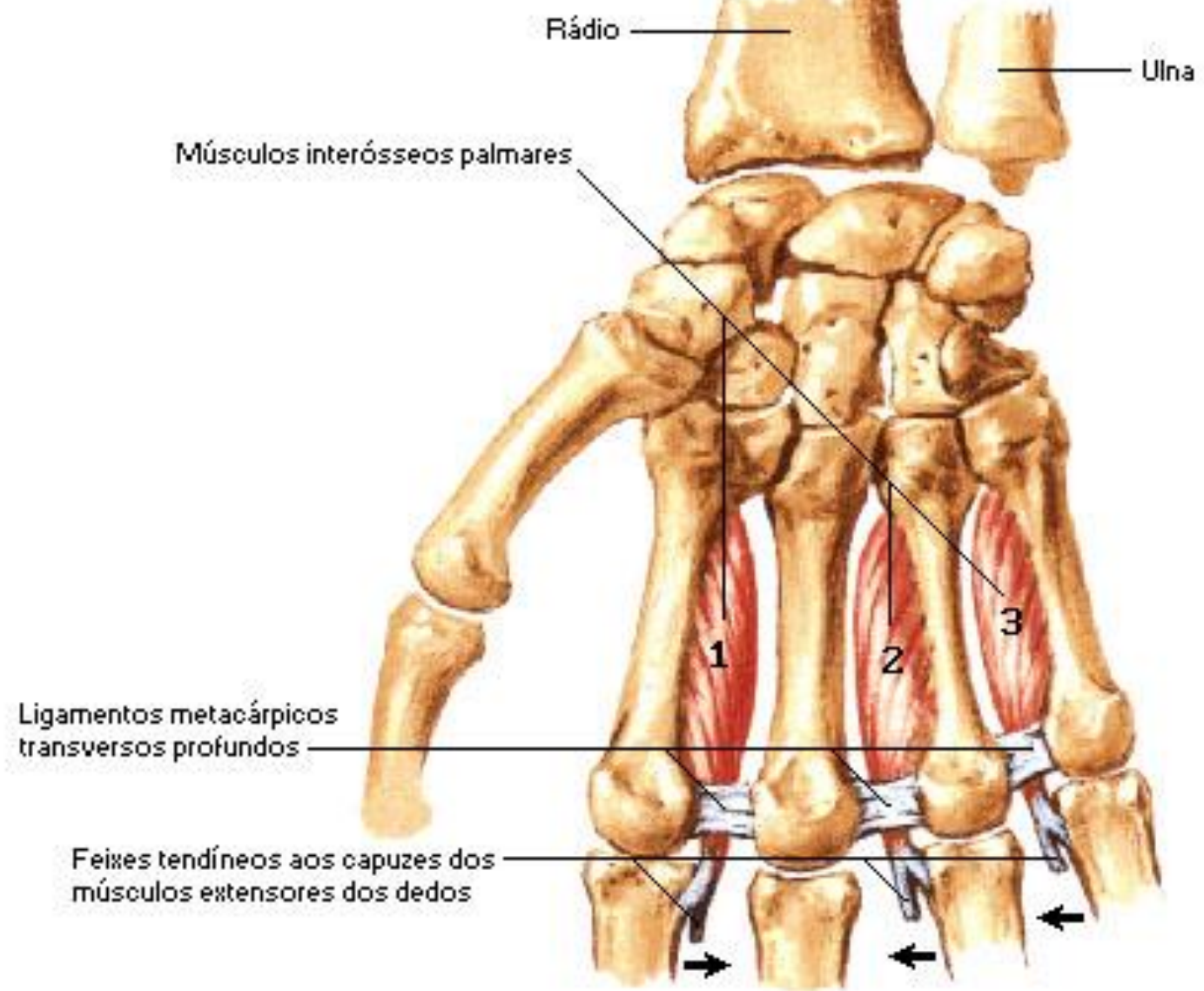


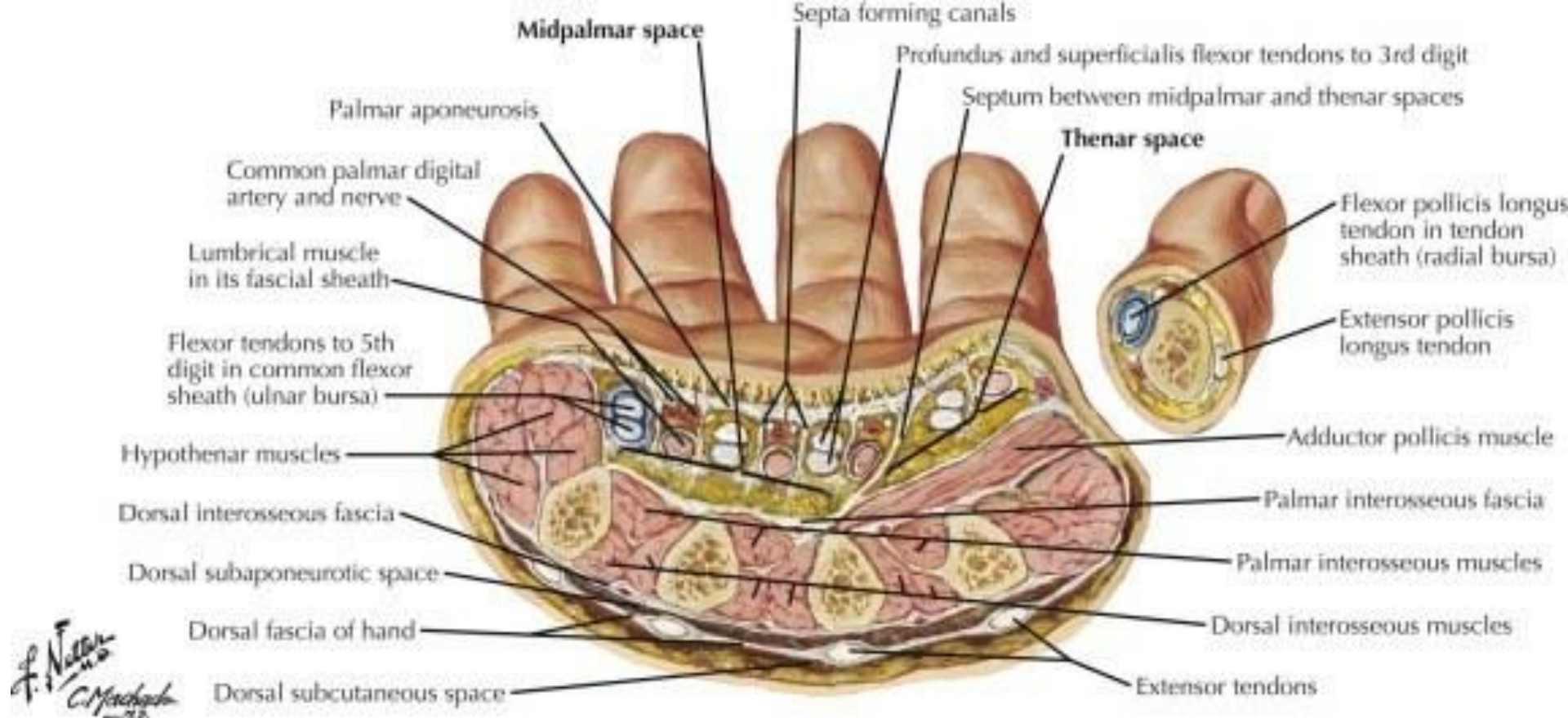


**Anterior (palmar) view**

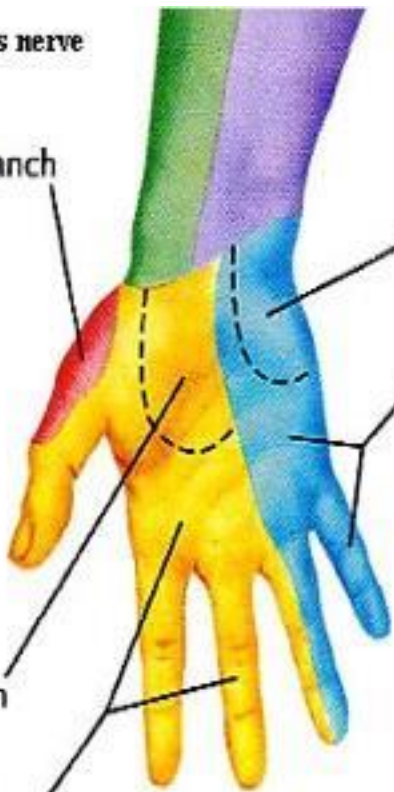








Lateral cutaneous nerve  
(C5, 6 [7])  
Radial nerve  
Superficial branch  
(C6, 7, 8)



Median nerve  
Palmar branch  
and  
Palmar  
digital branches  
(C6, 7, 8)

Medial cutaneous nerve (C8, T1)  
Ulnar nerve (C8, T1)

Palmar branch  
Palmar digital branches

Dorsal branch  
and dorsal  
digital branches  
Proper palmar  
digital branches



Radial nerve  
Superficial branch  
and dorsal digital  
branches (C6, 7, 8)

Median nerve  
Proper palmar  
digital branches

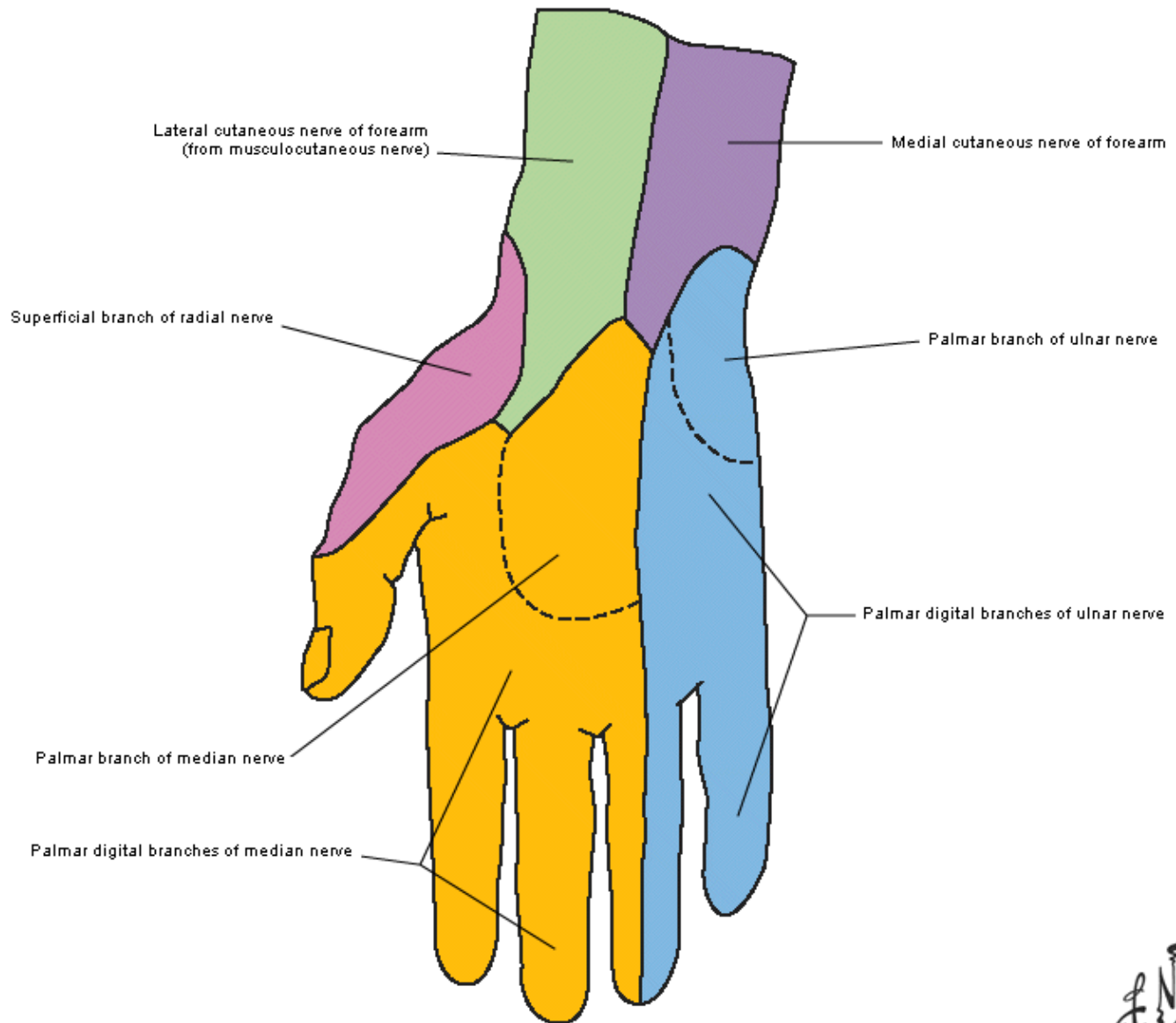
*F. Netter M.D.*  
© Novartis

Note: Division variable between ulnar and radial innervation on dorsum of hand and often aligns with middle of 3rd digit instead of 4th digit as shown



# Cutaneous Innervation of Wrist and Hand

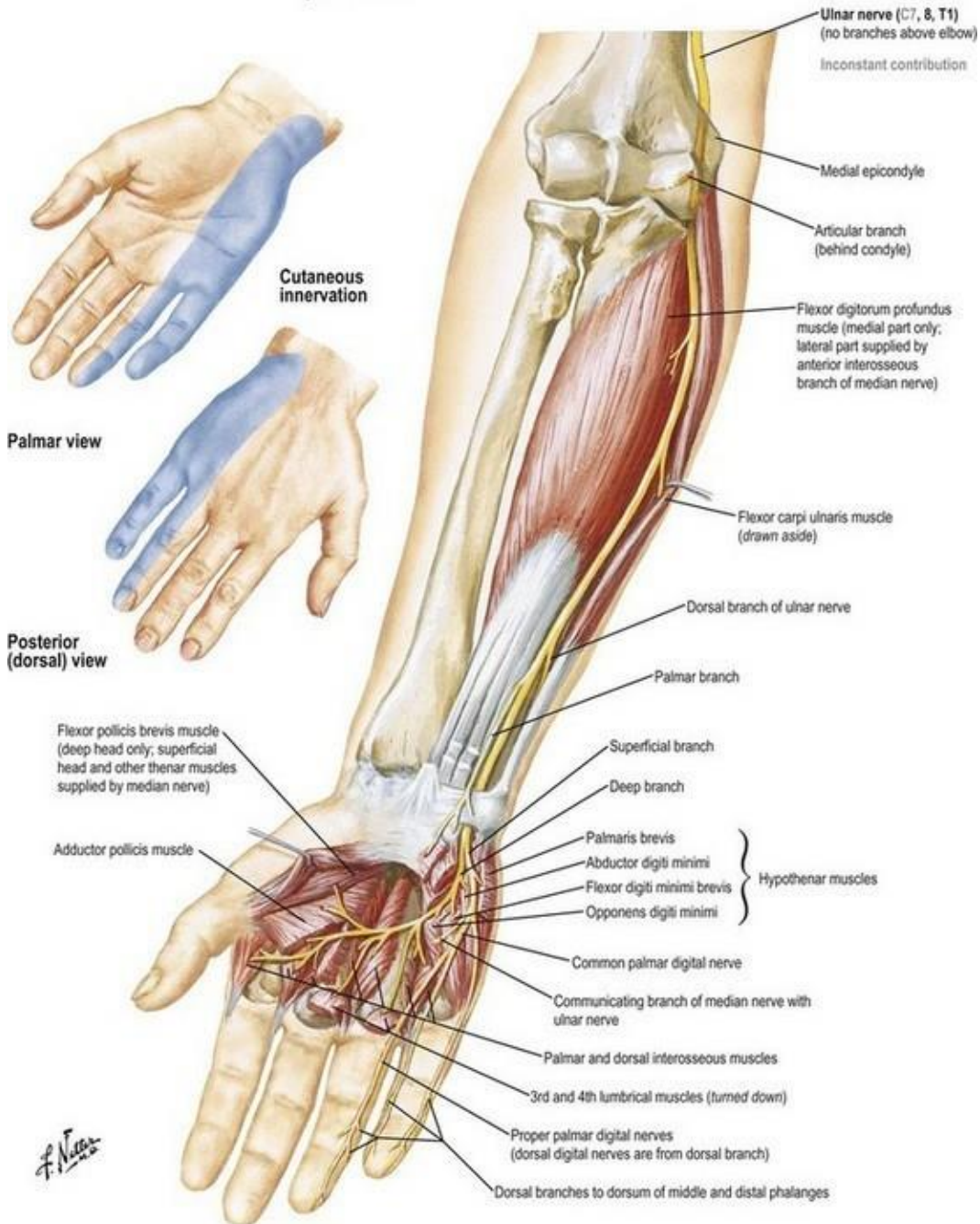
## Anterior (Palmar) View



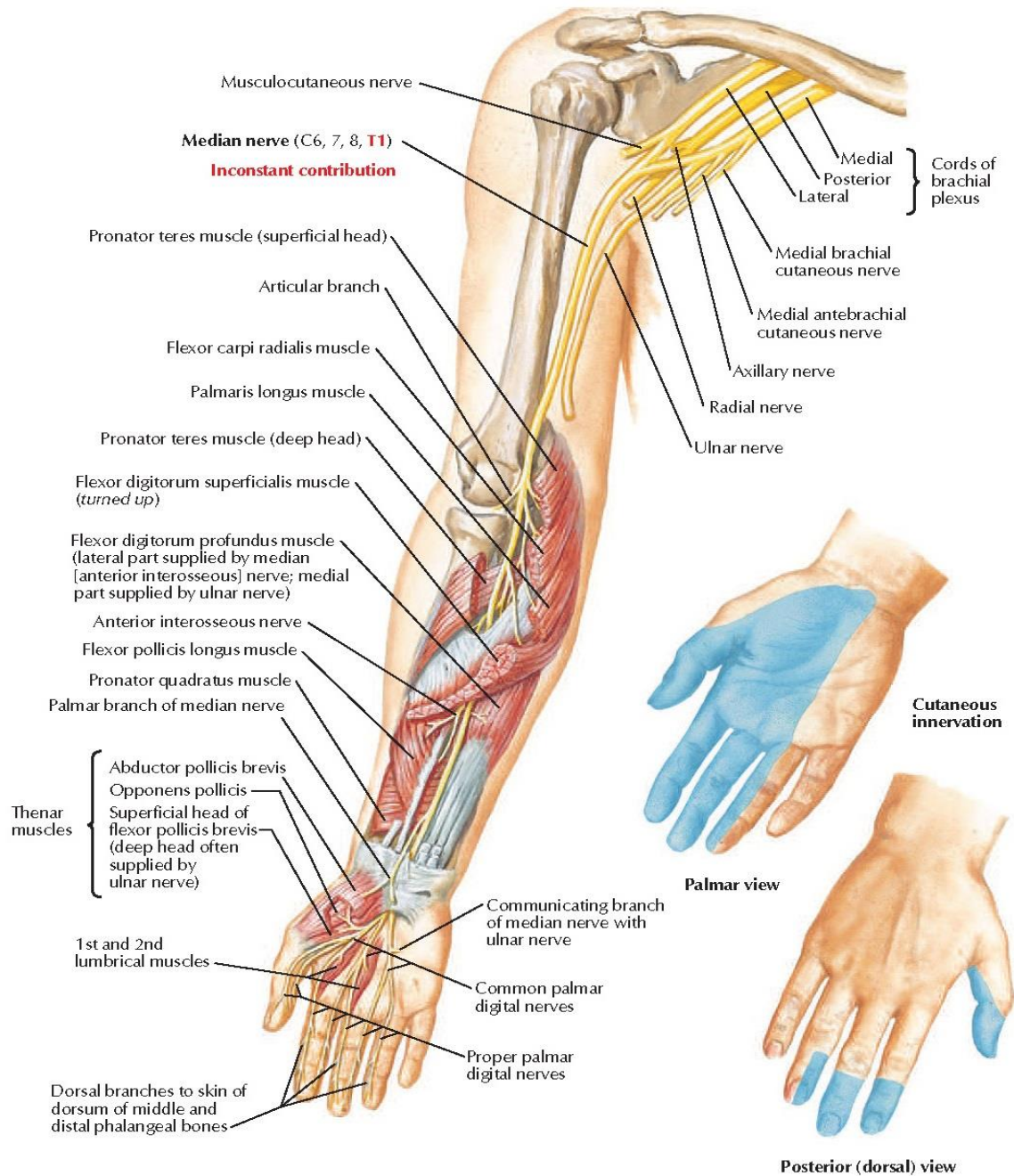
# Ulnar Nerve

Anterior view

Note: Only muscles innervated by ulnar nerve shown

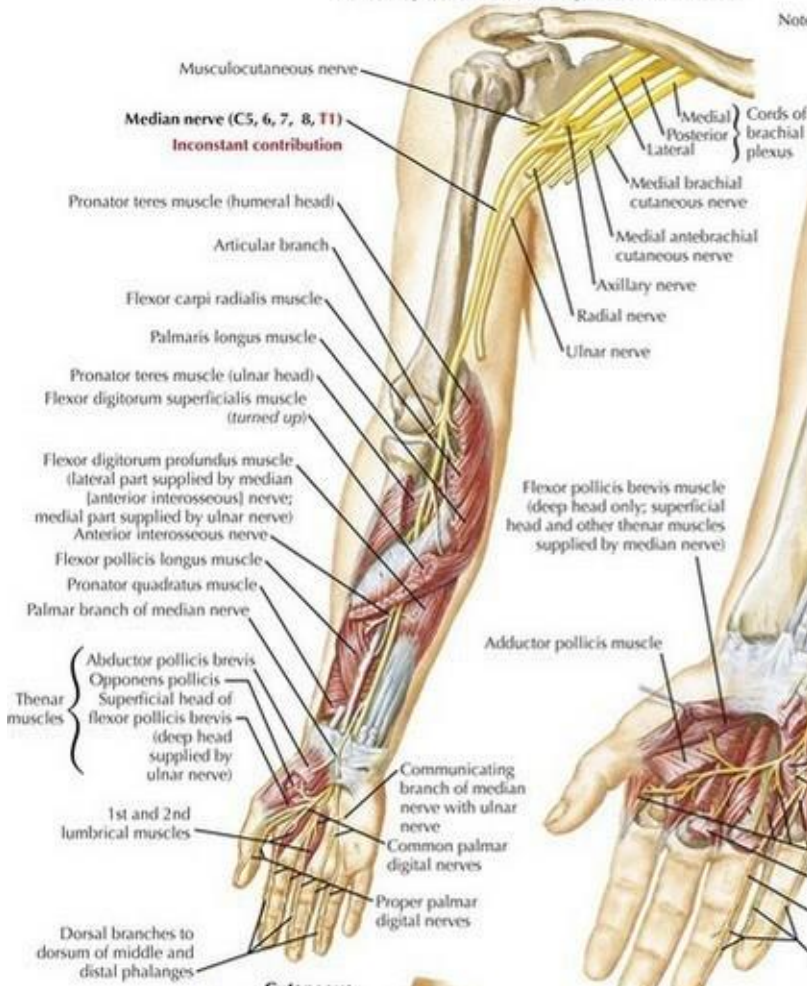


Note: Only muscles innervated by median nerve shown.



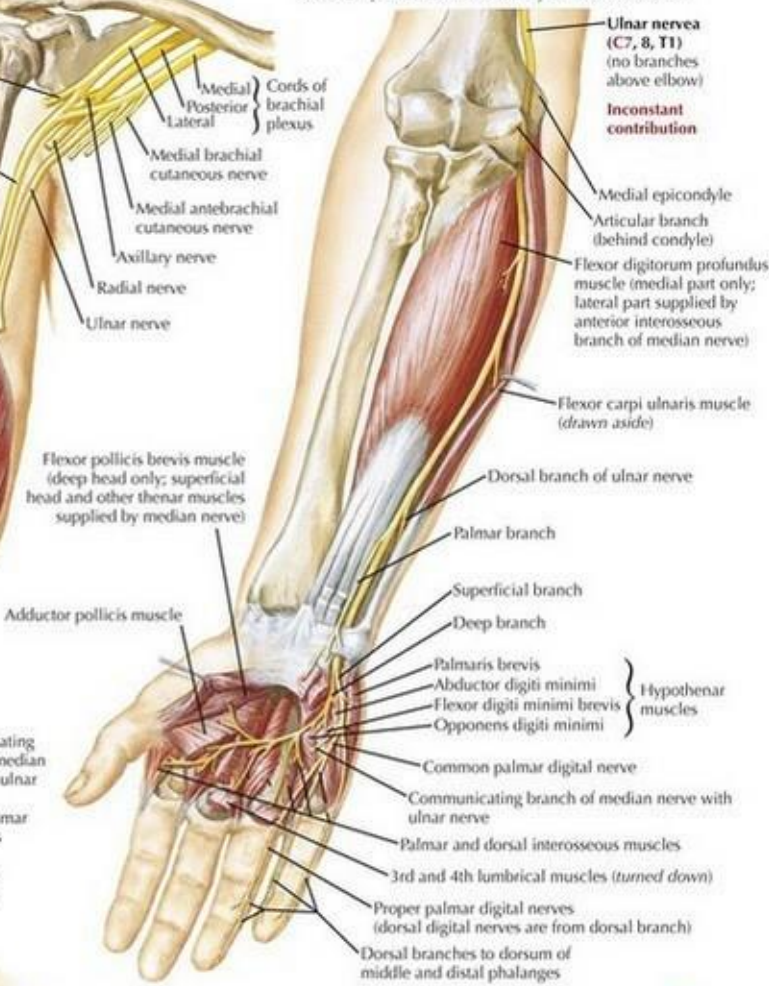
**Median nerve: anterior view**

Note: Only muscles innervated by median nerve shown



**Ulnar nerve: anterior view**

Note: Only muscles innervated by ulnar nerve shown



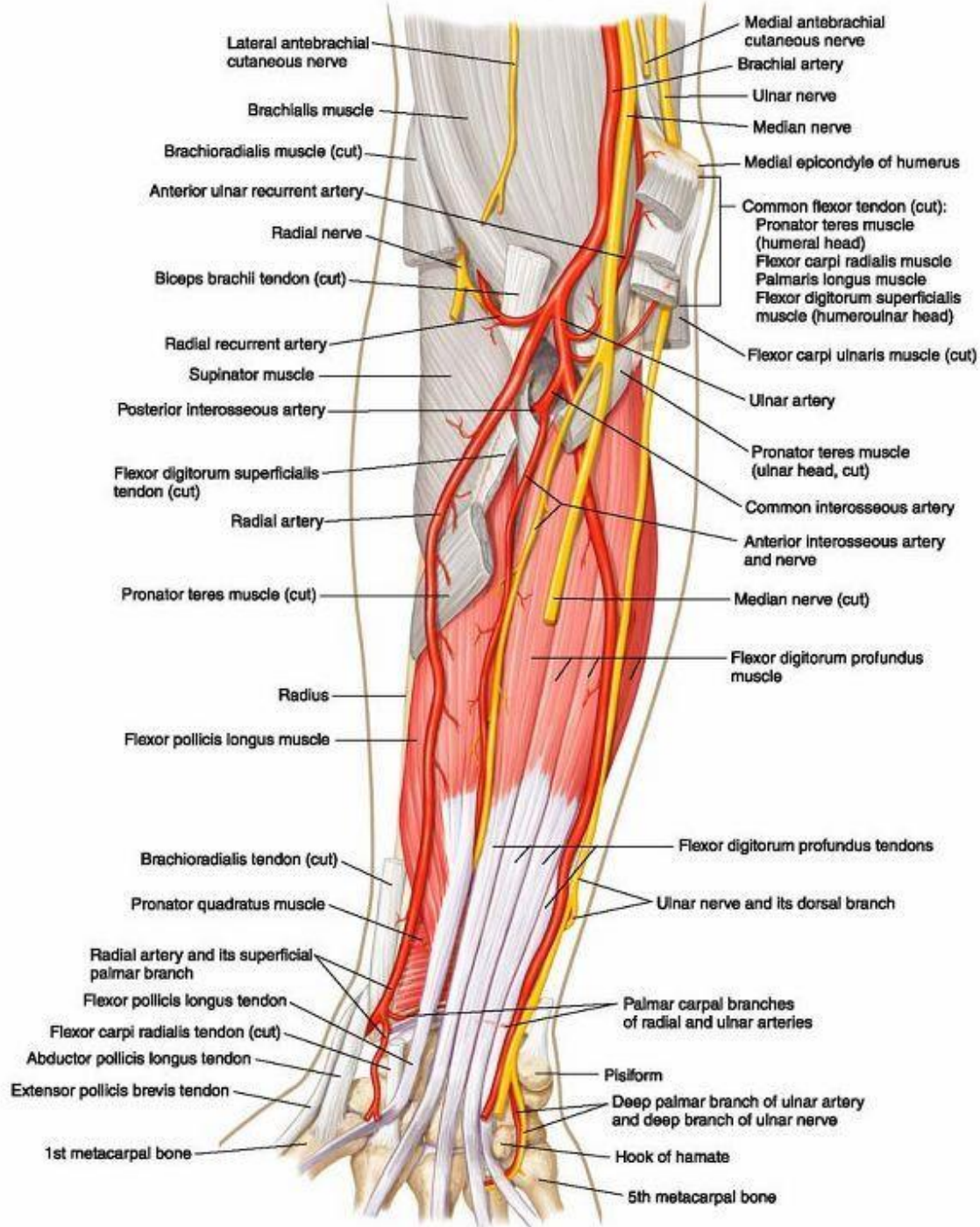
**Cutaneous innervation**

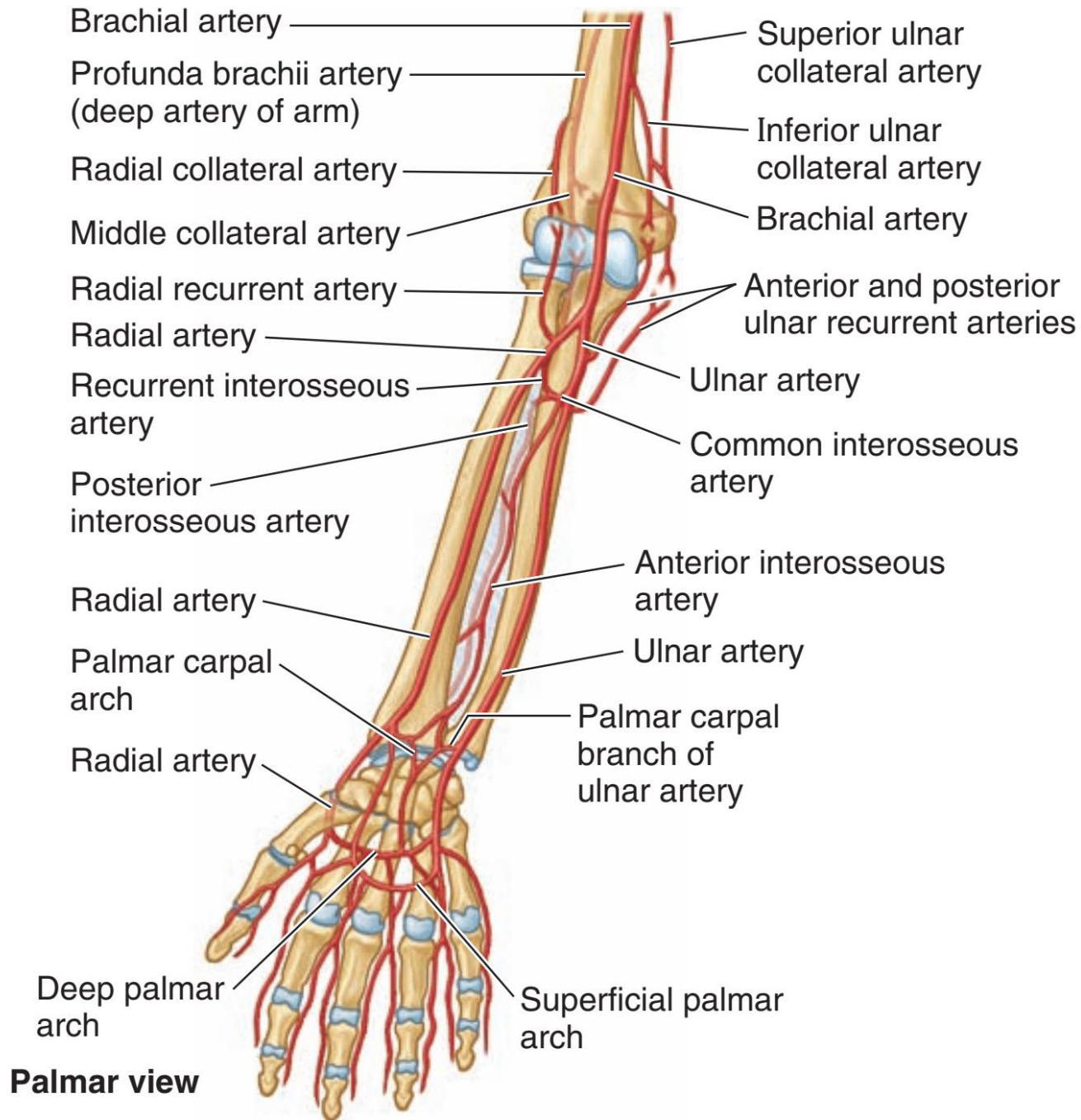


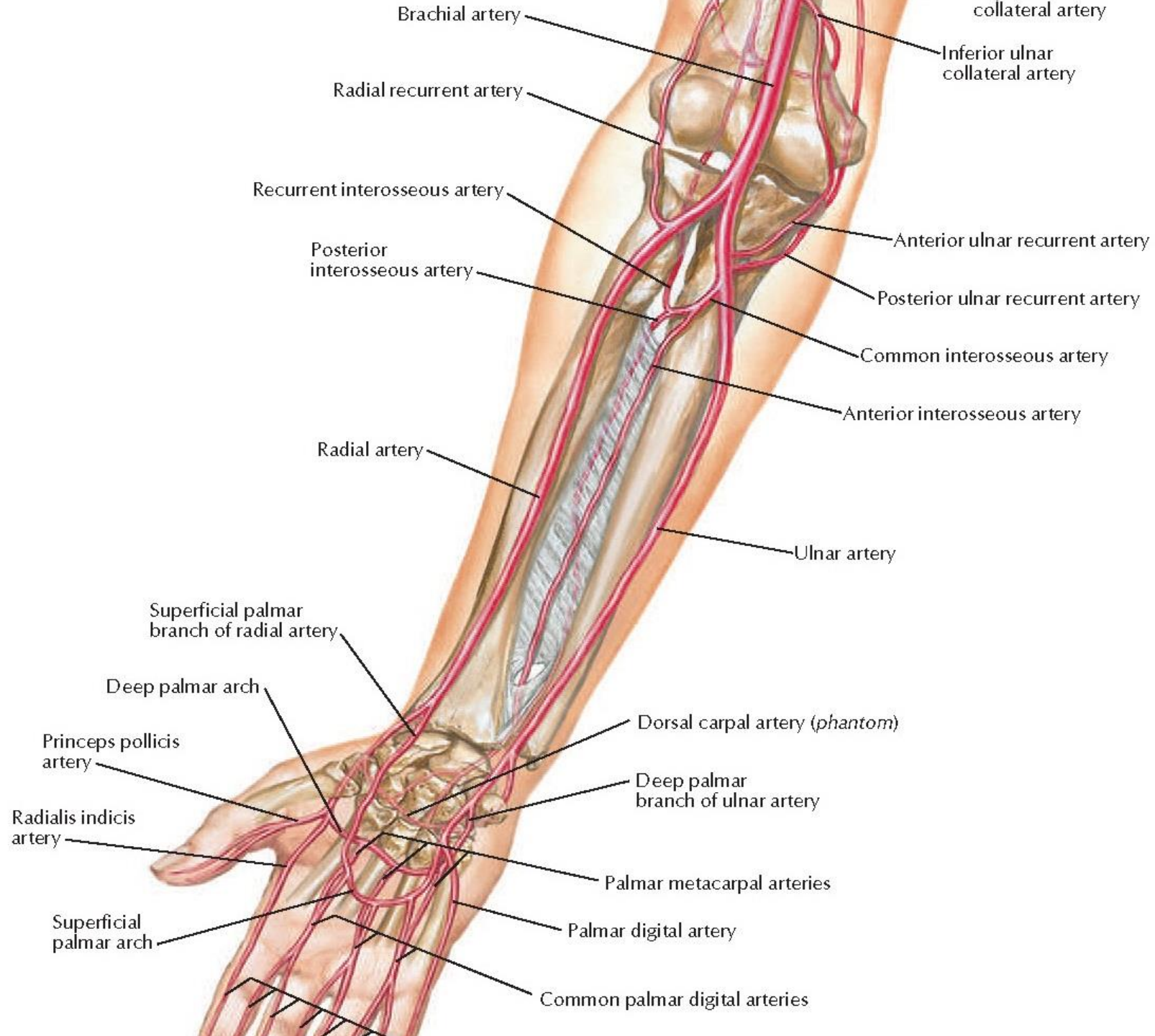
**Cutaneous innervation**

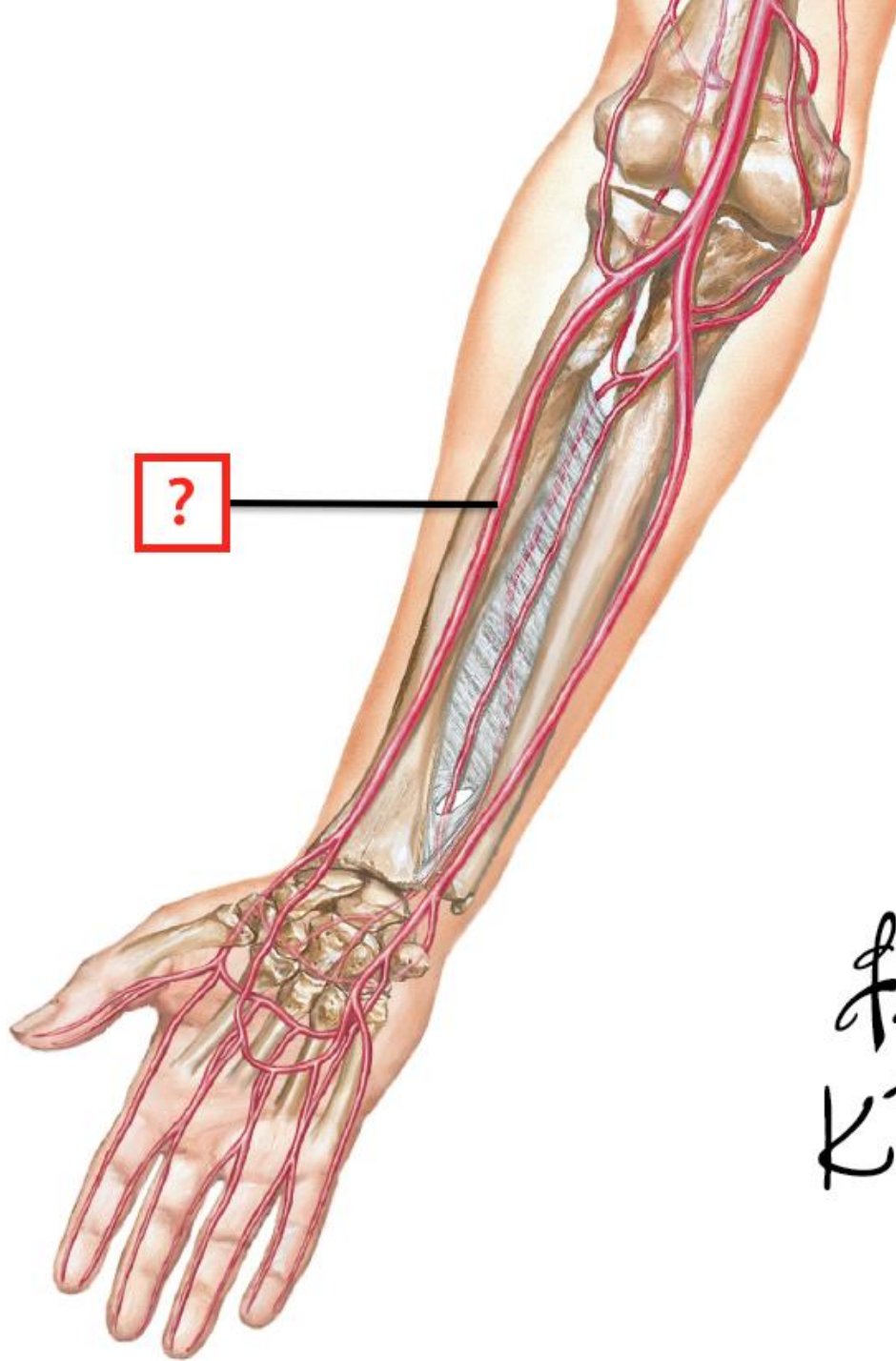


F. Netter M.D.



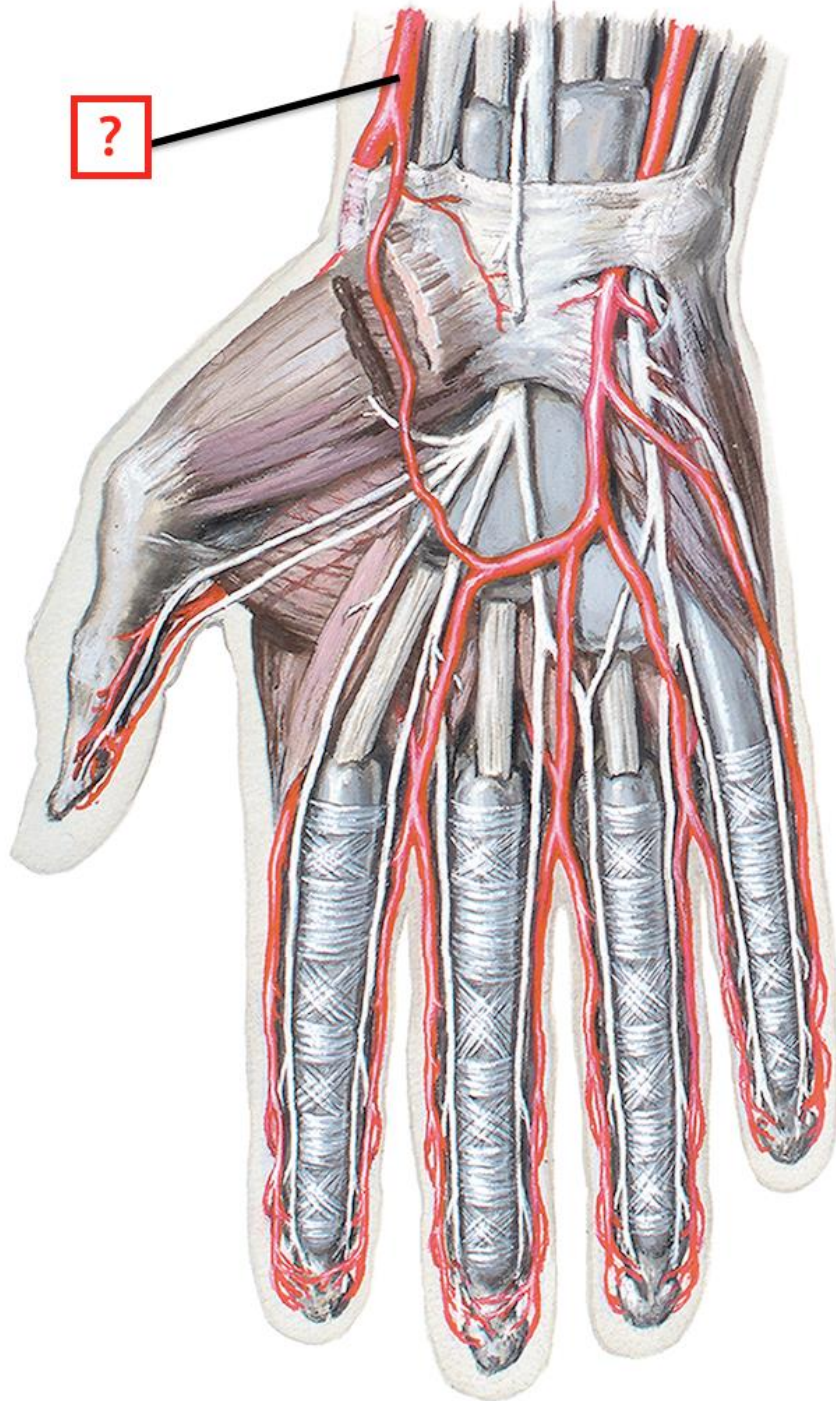






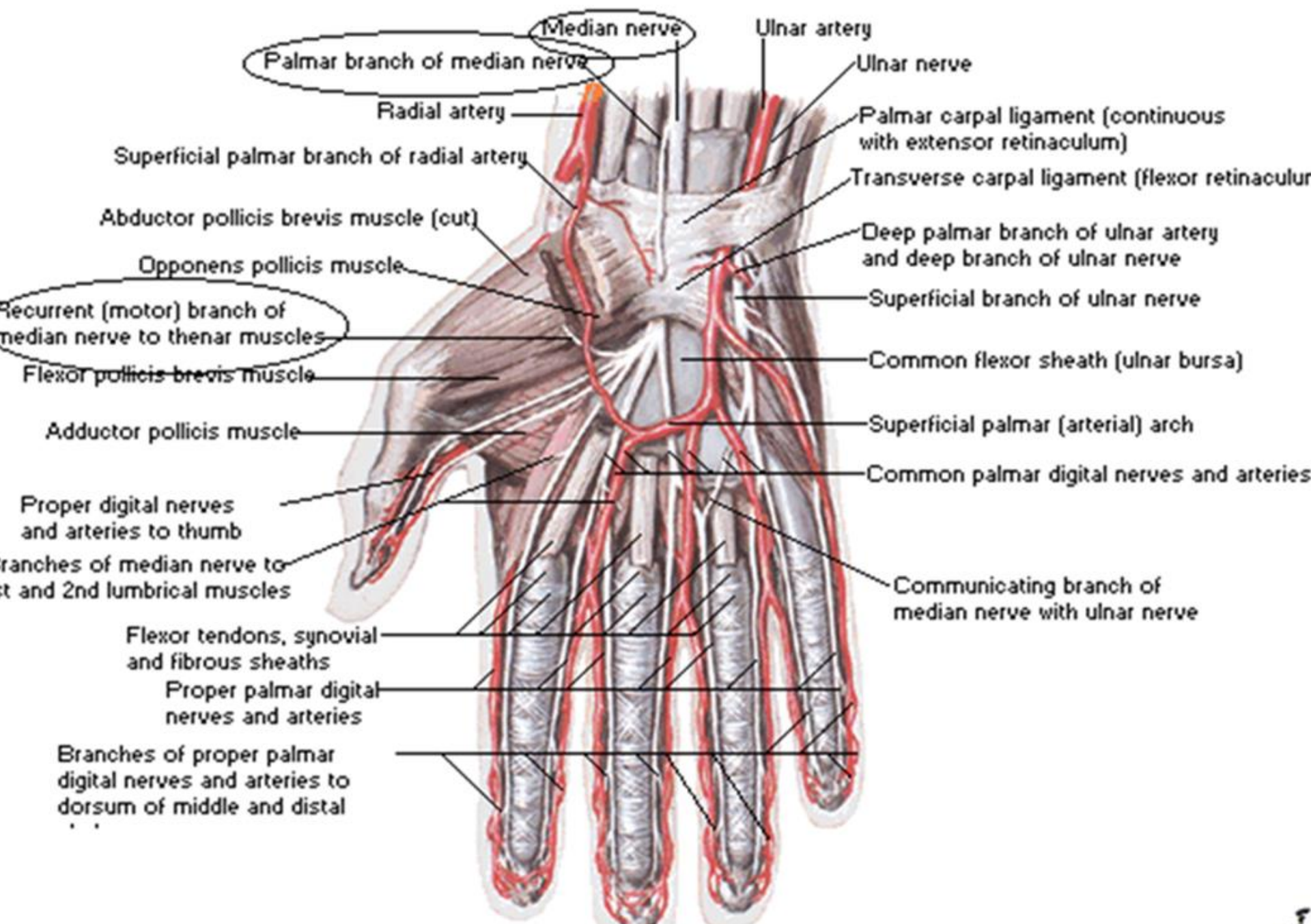
*F. Netter  
M.D.  
K. Marzjin*





F. Netter  
M.D.

# Palmar View

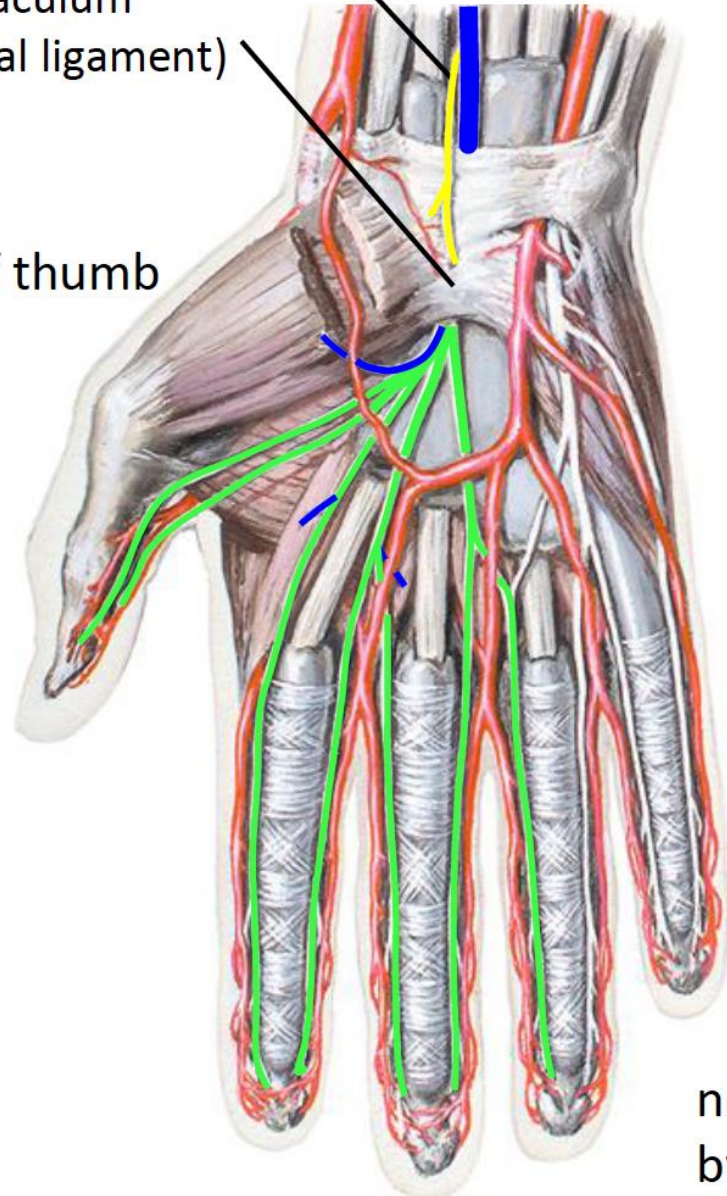


palmar cutaneous branch

flexor retinaculum  
(transverse carpal ligament)

Recurrent branch: —

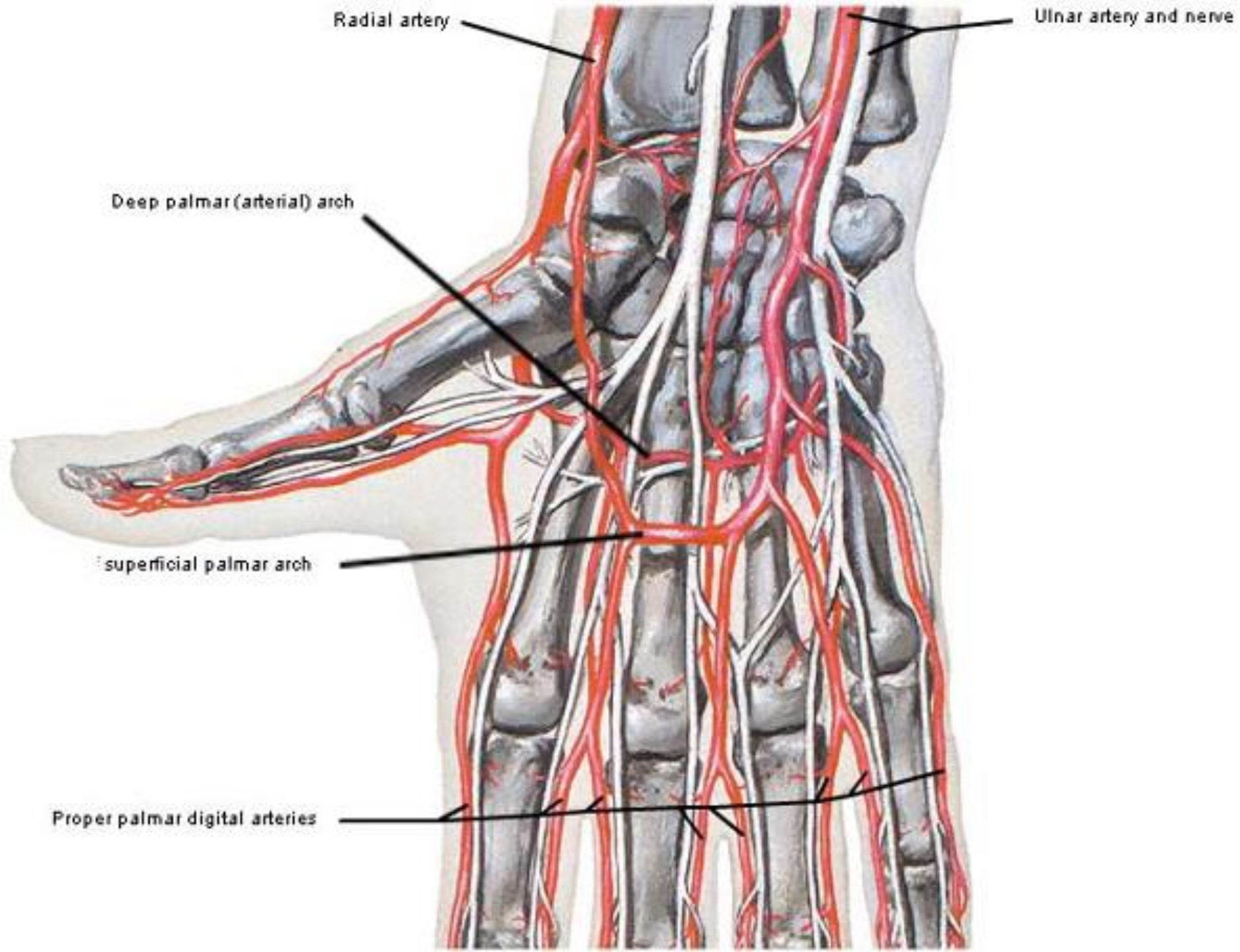
- motor test: opposition of thumb

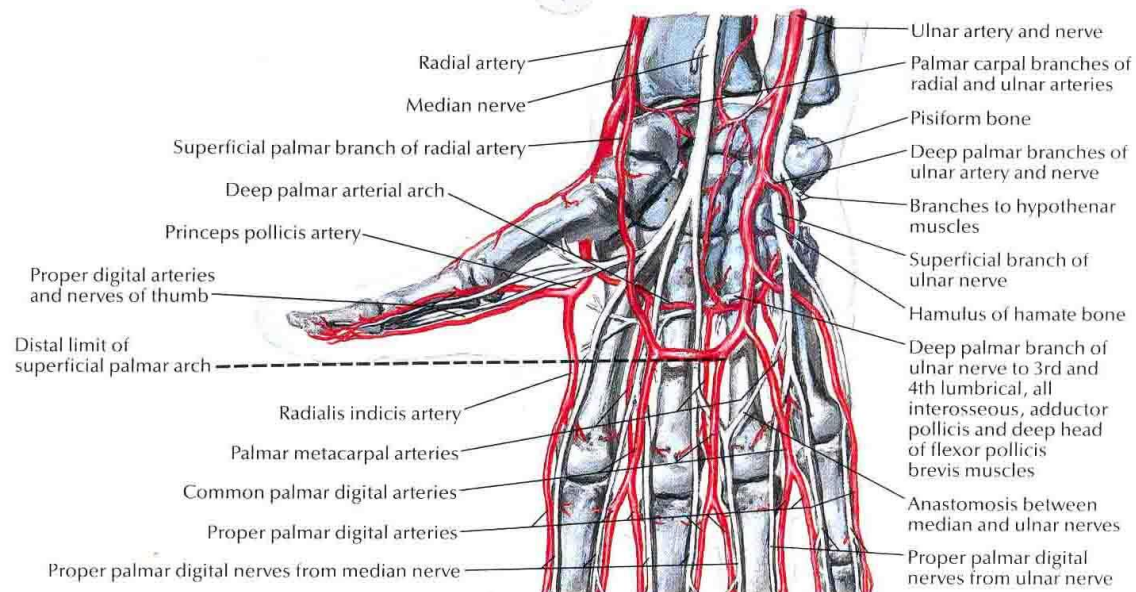
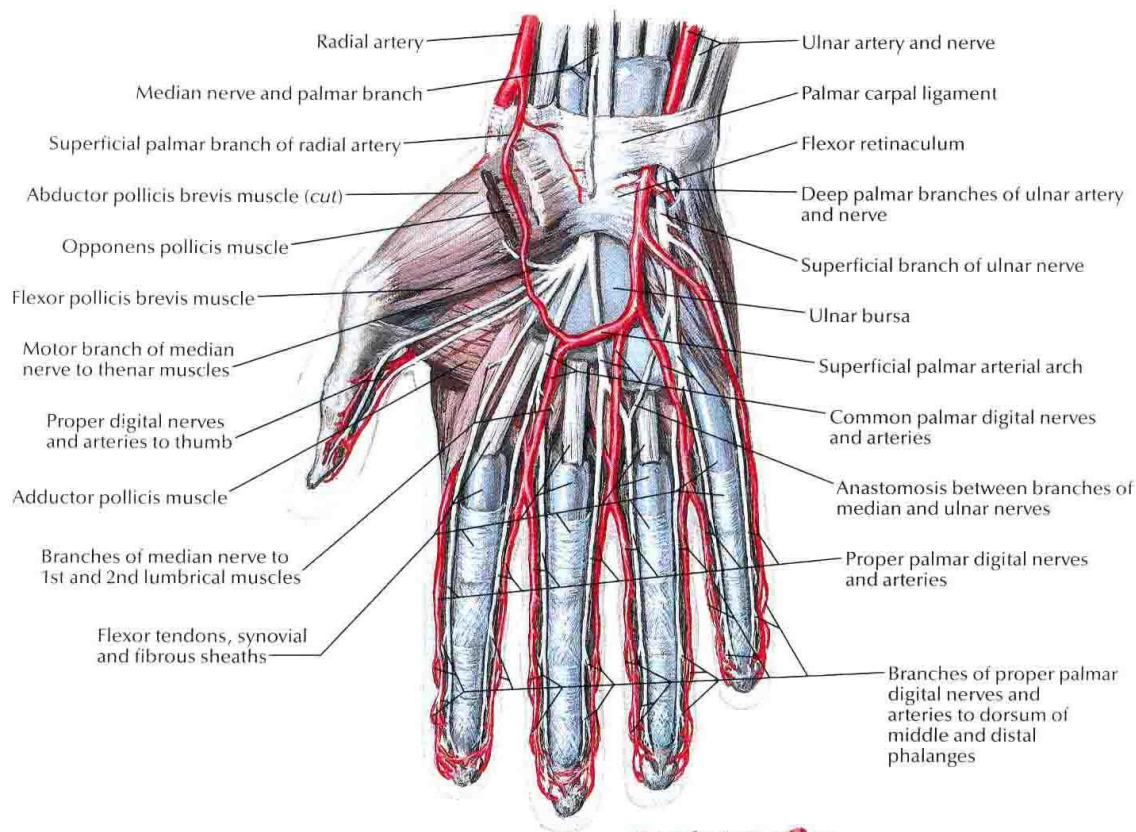


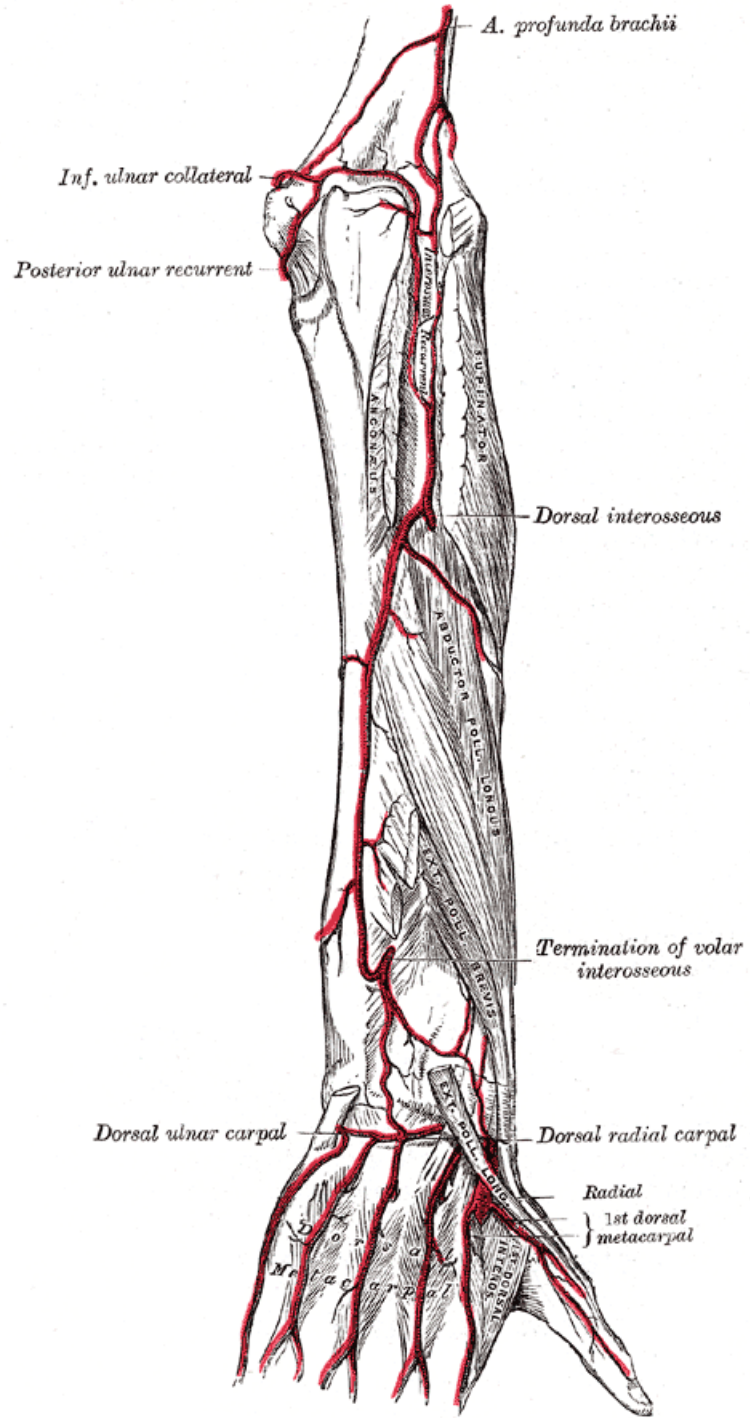
'ape hand' deformity:  
atrophy of thenar eminence;  
reflects loss of thenar mm

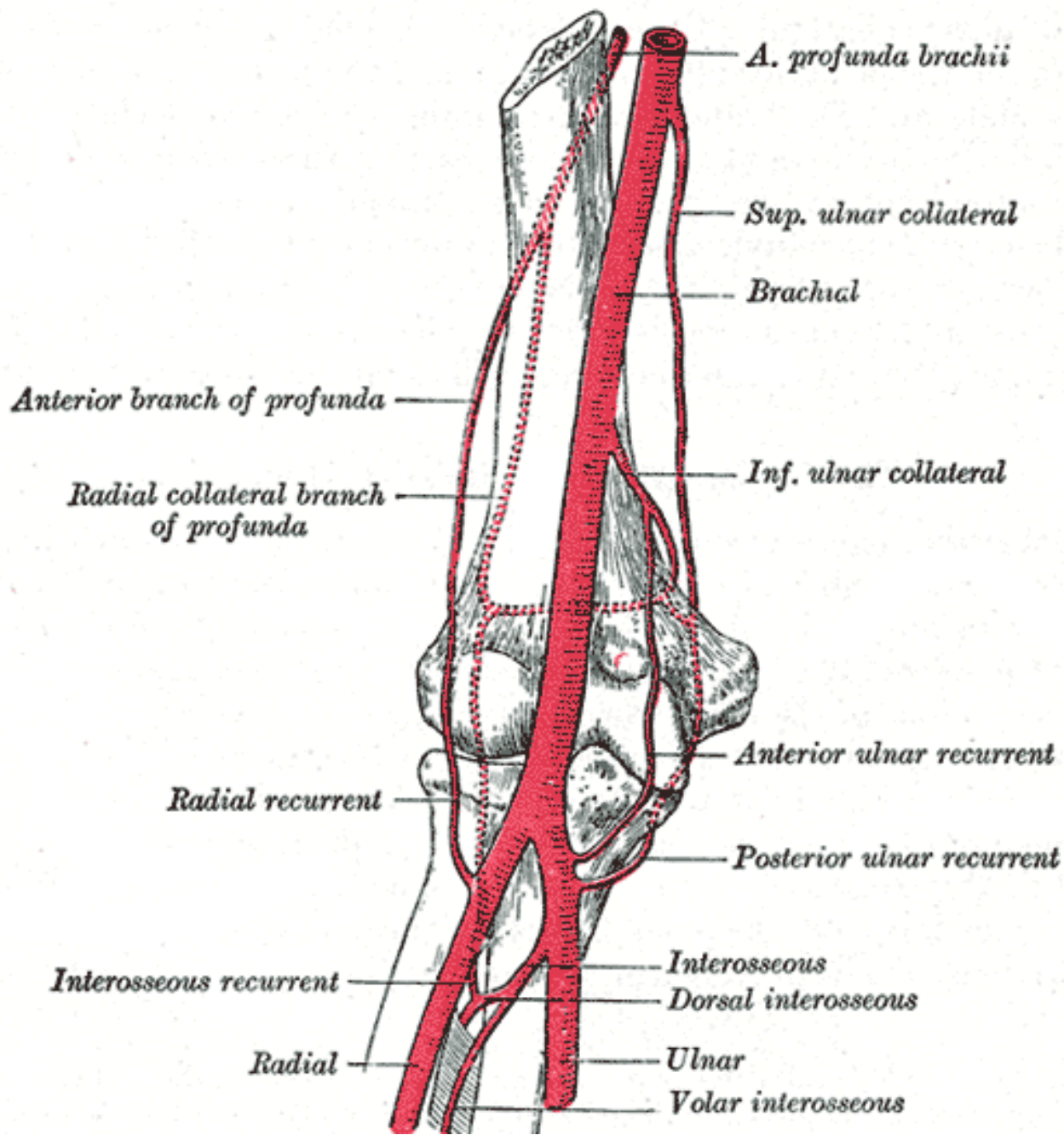


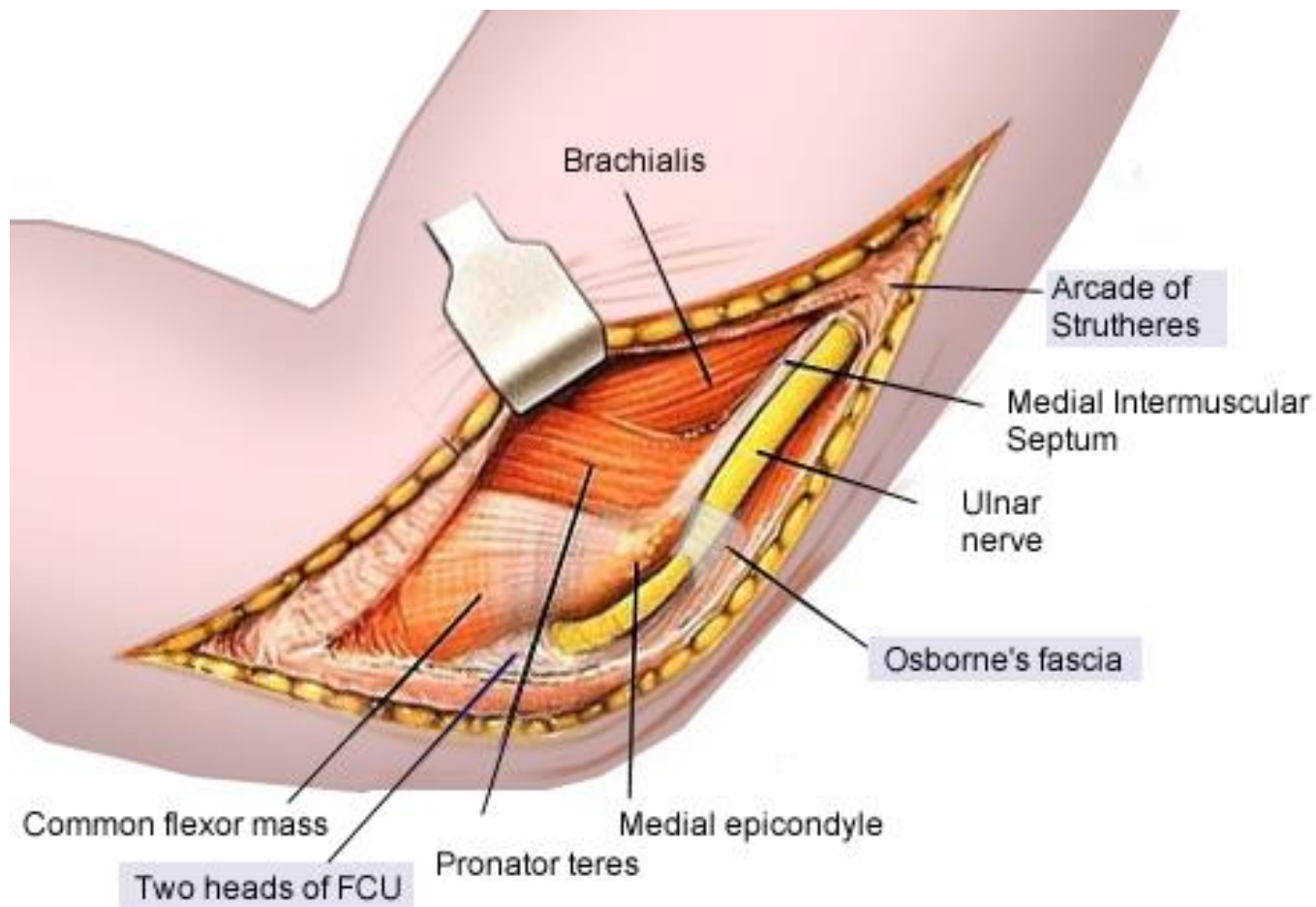
no  
by  
ca





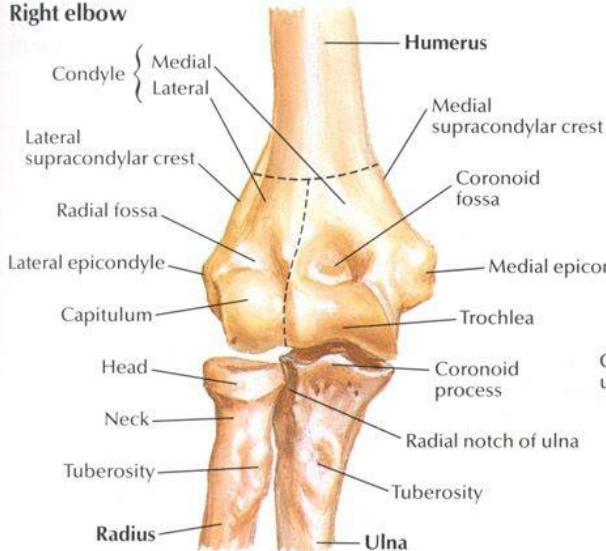




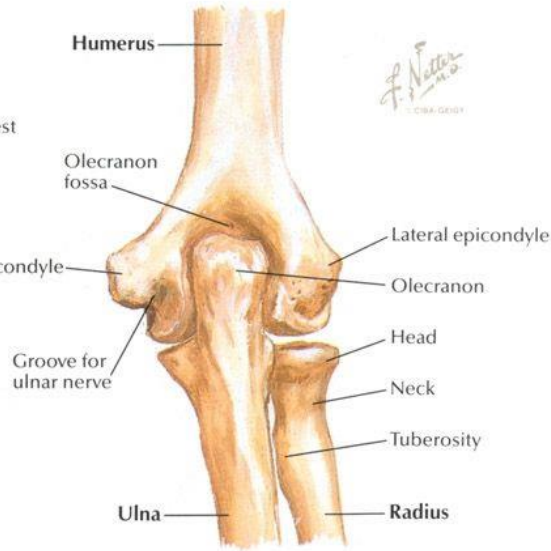




**Right elbow**



**In extension: anterior view**



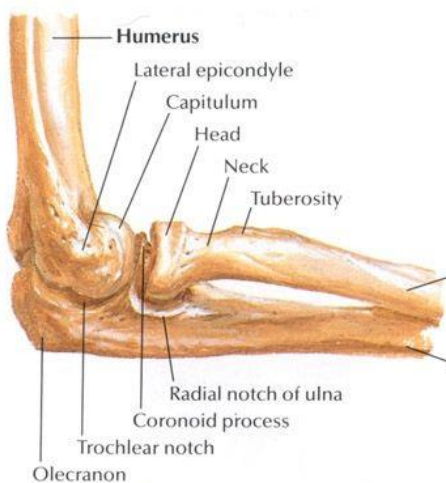
**In extension: posterior view**



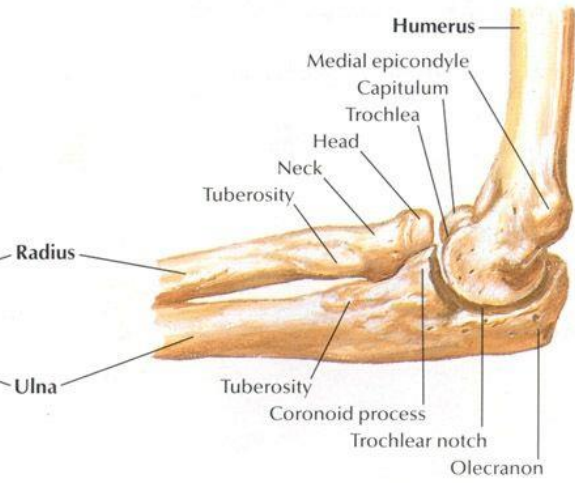
**In extension: lateral view**



**In extension: medial view**



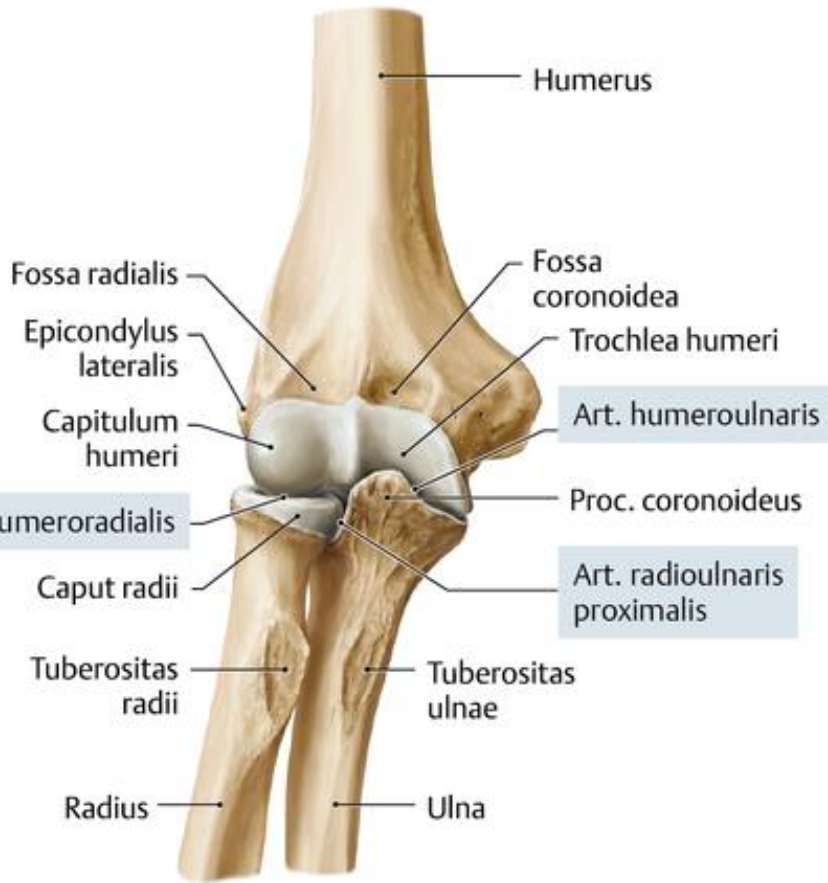
**In 90° flexion: lateral view**



**In 90° flexion: medial view**

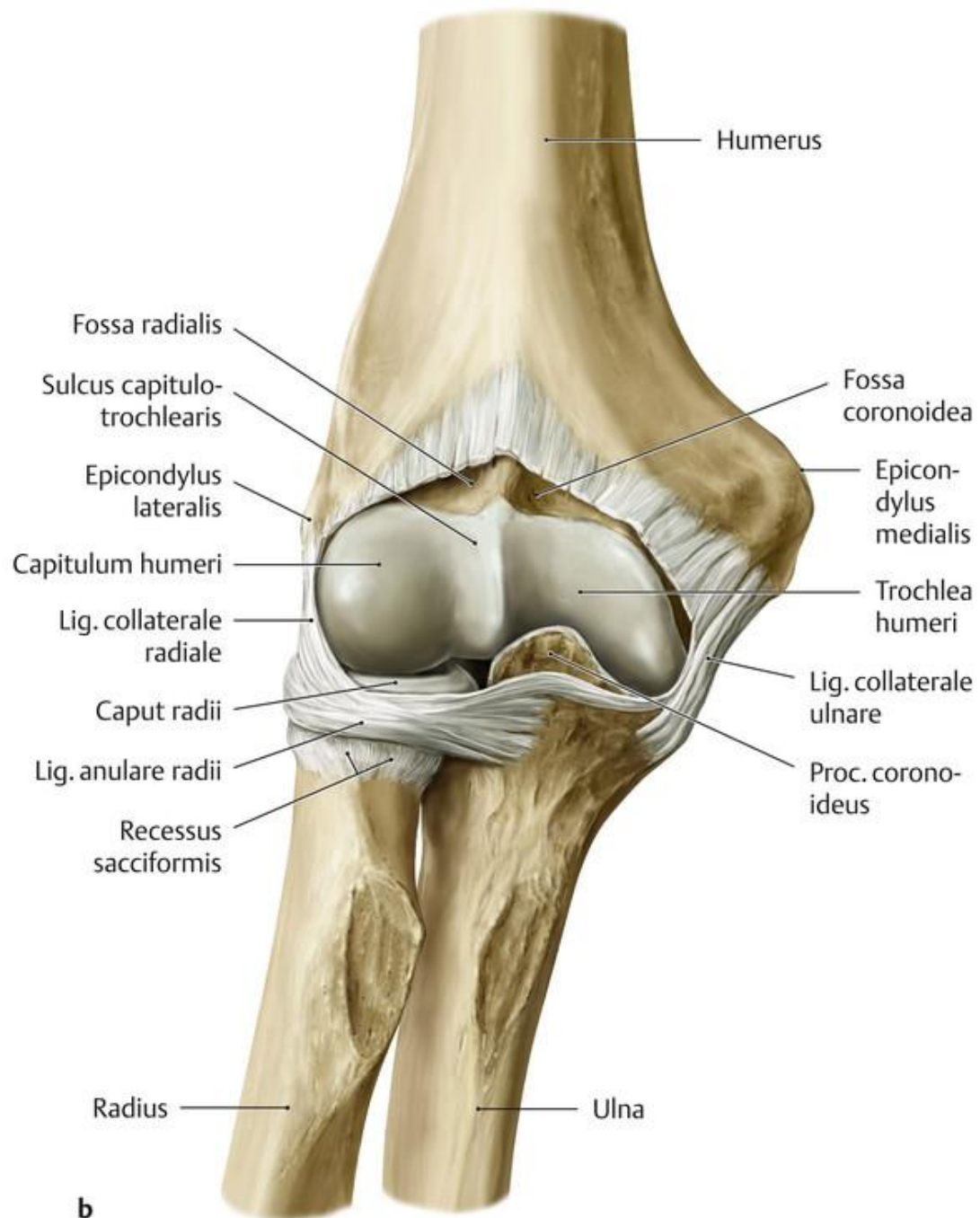


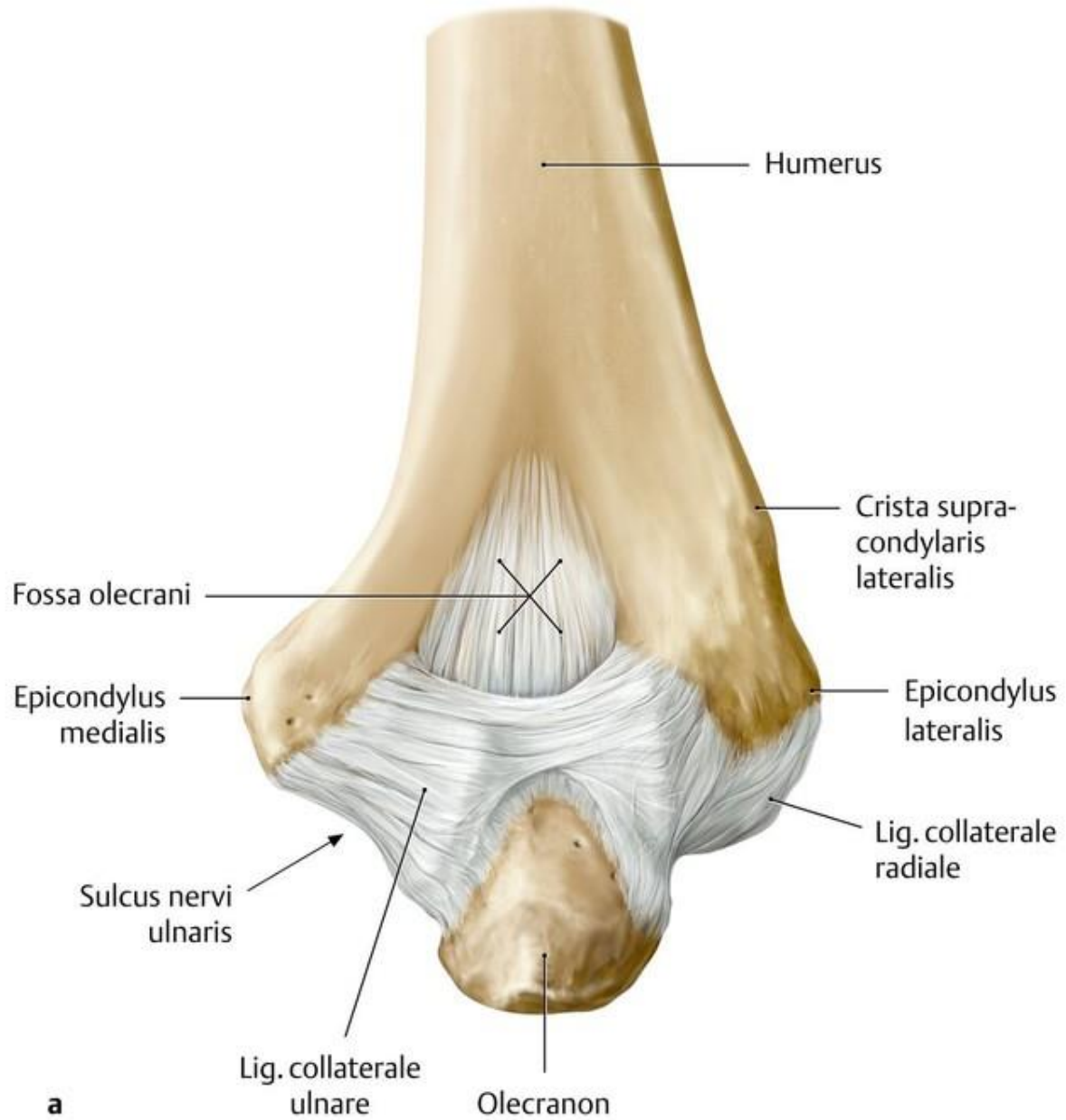
### Ansicht von ventral

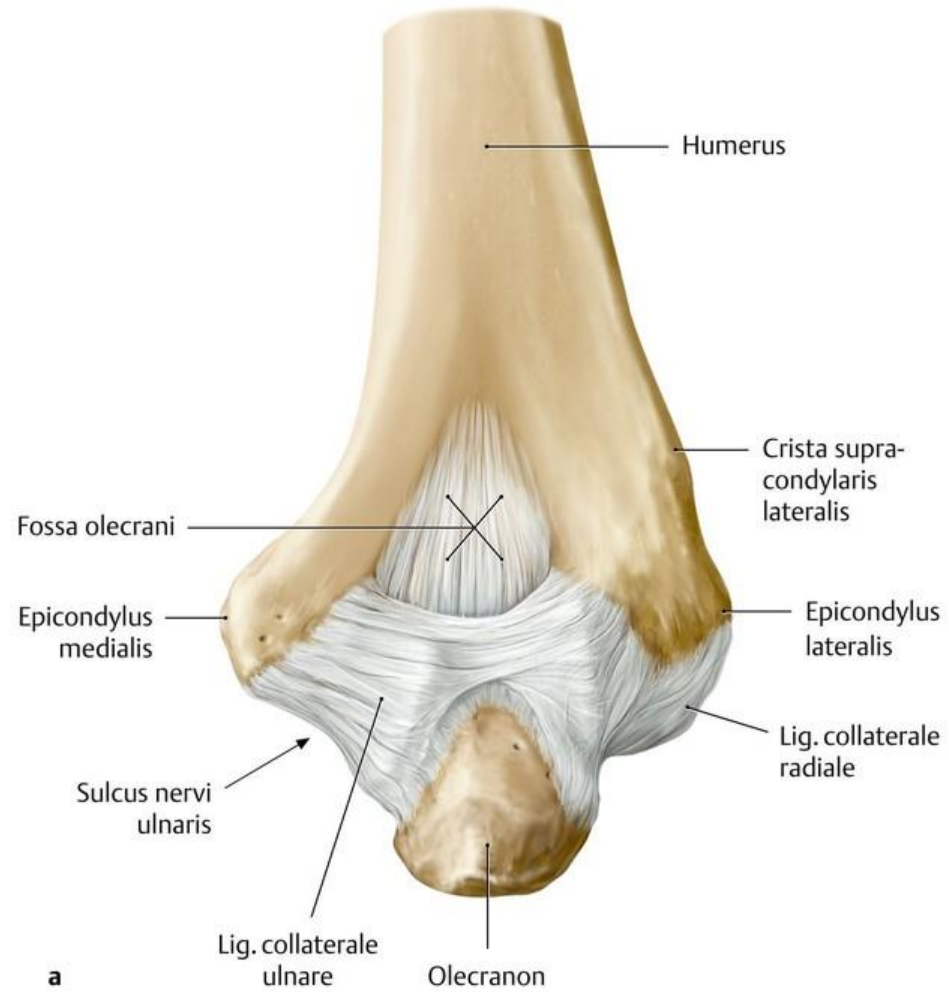
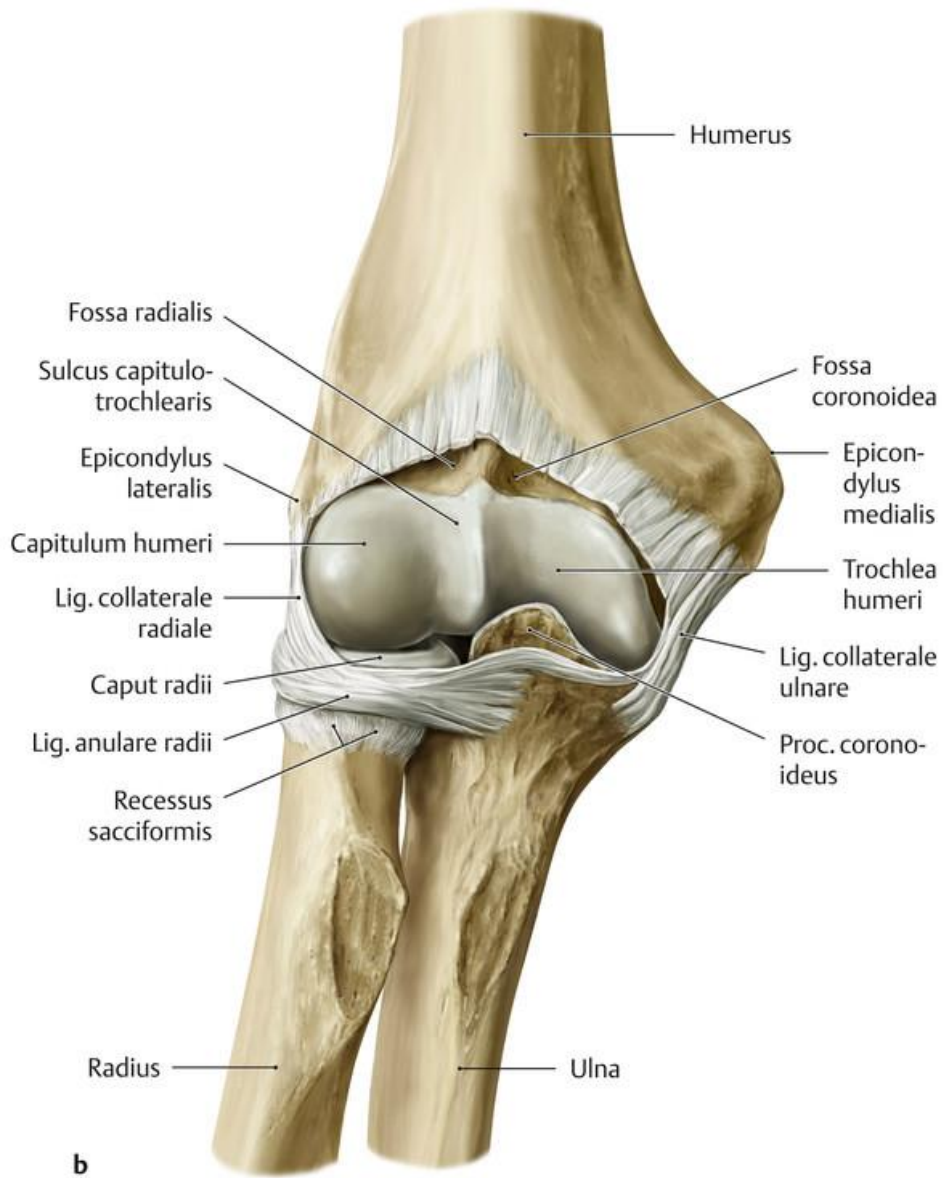


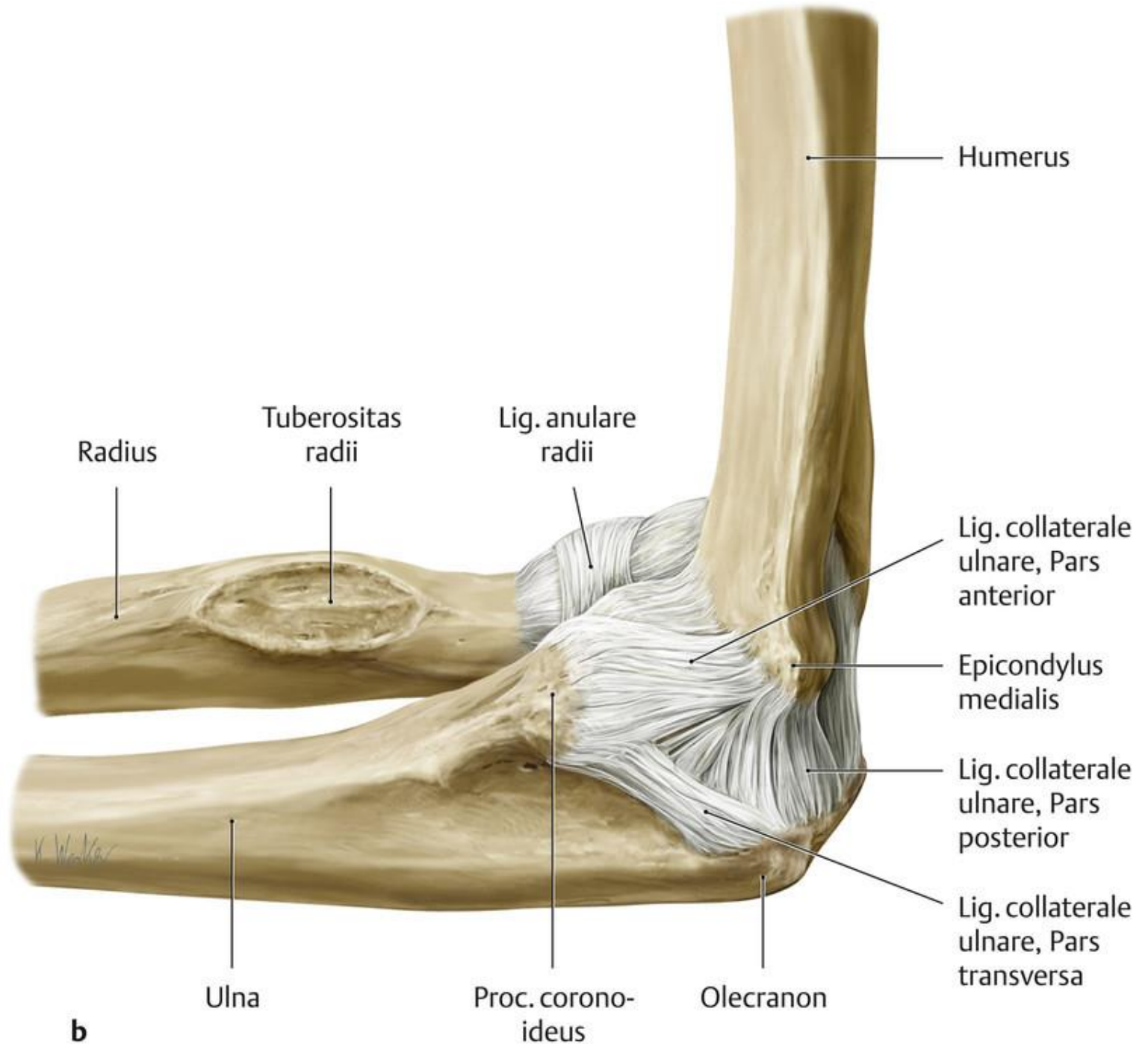
### Ansicht von dorsal











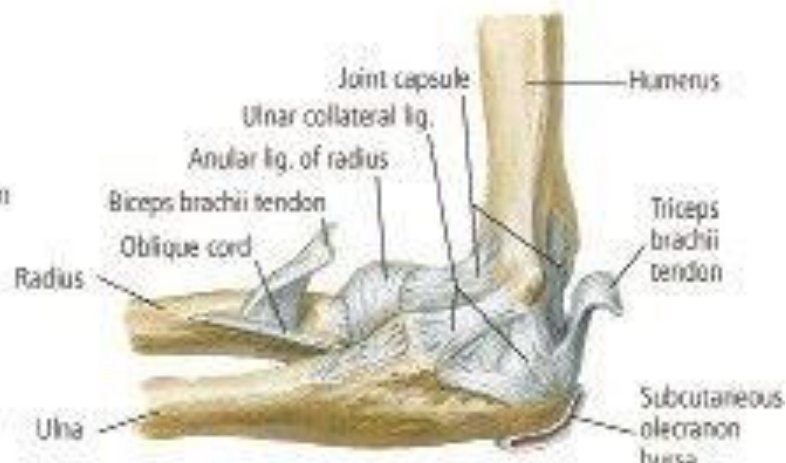
**b**



*F. Nasser*

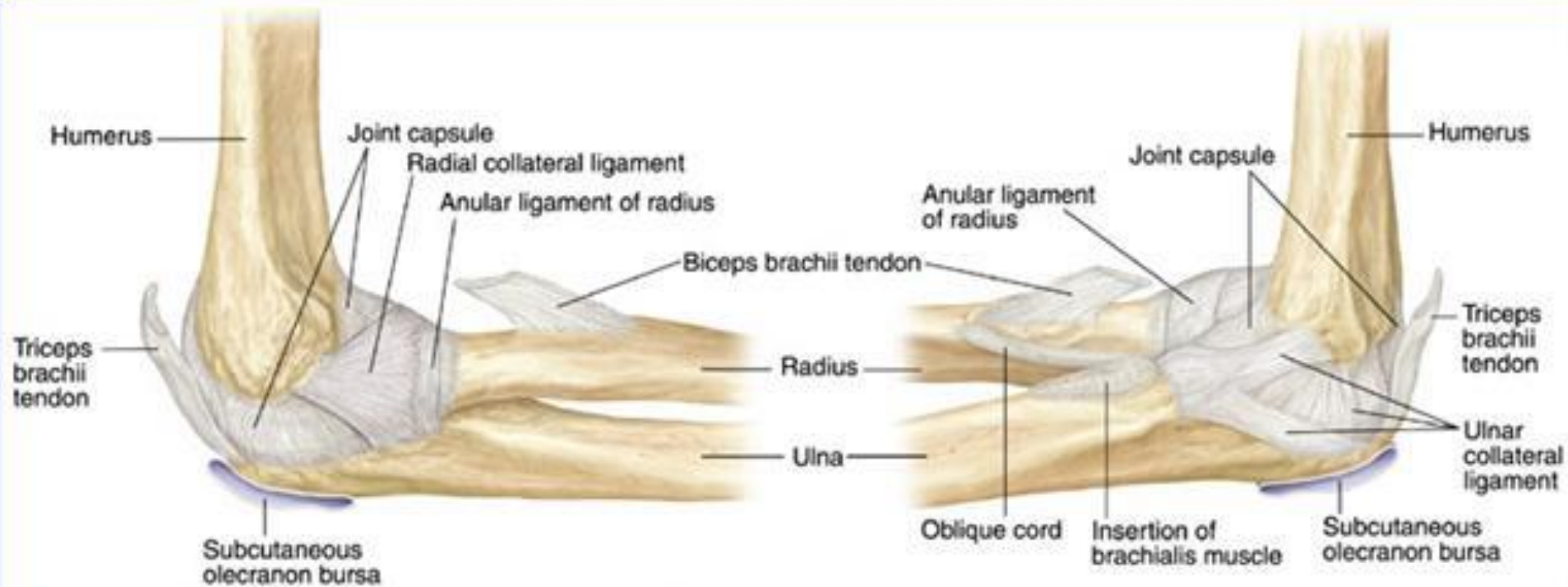


**In 90° flexion: lateral view**

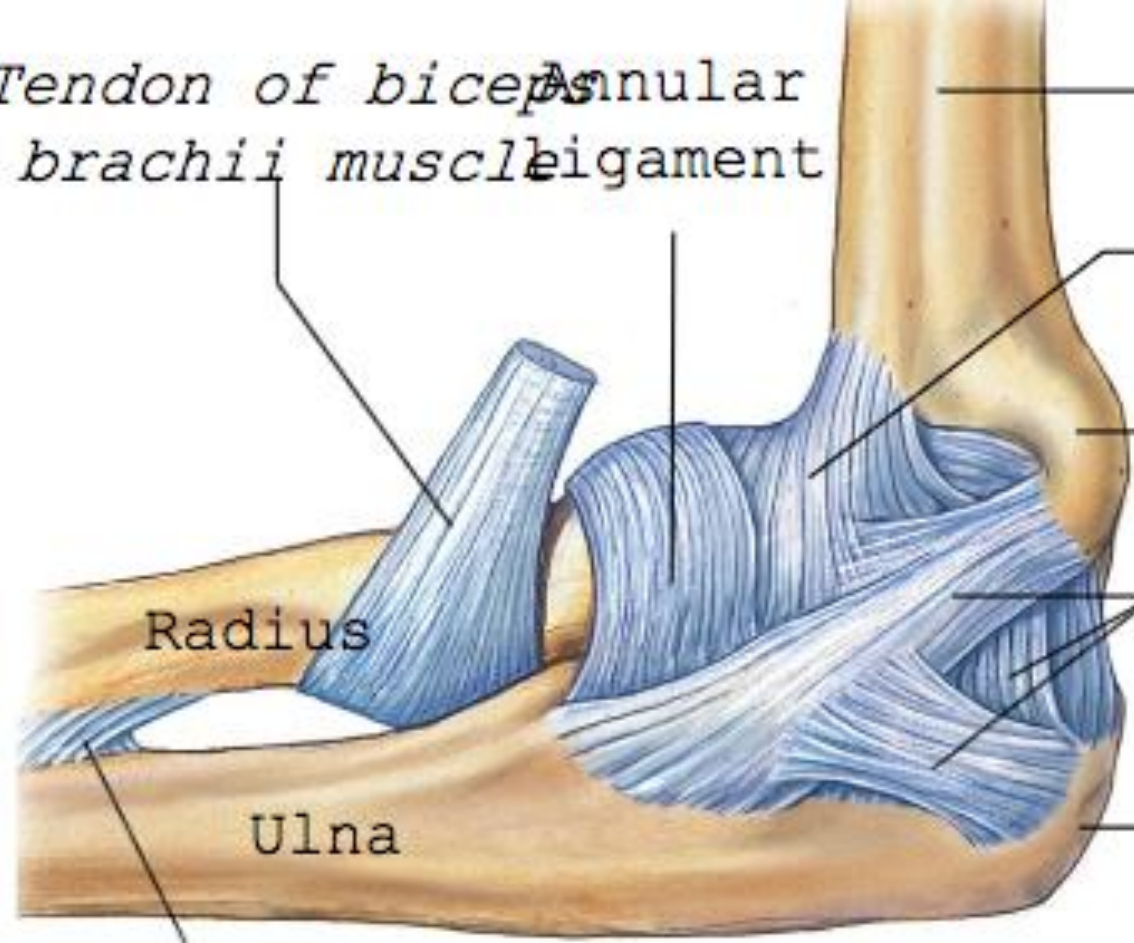


**In 90° flexion: medial view**





*Tendon of biceps  
brachii muscle*

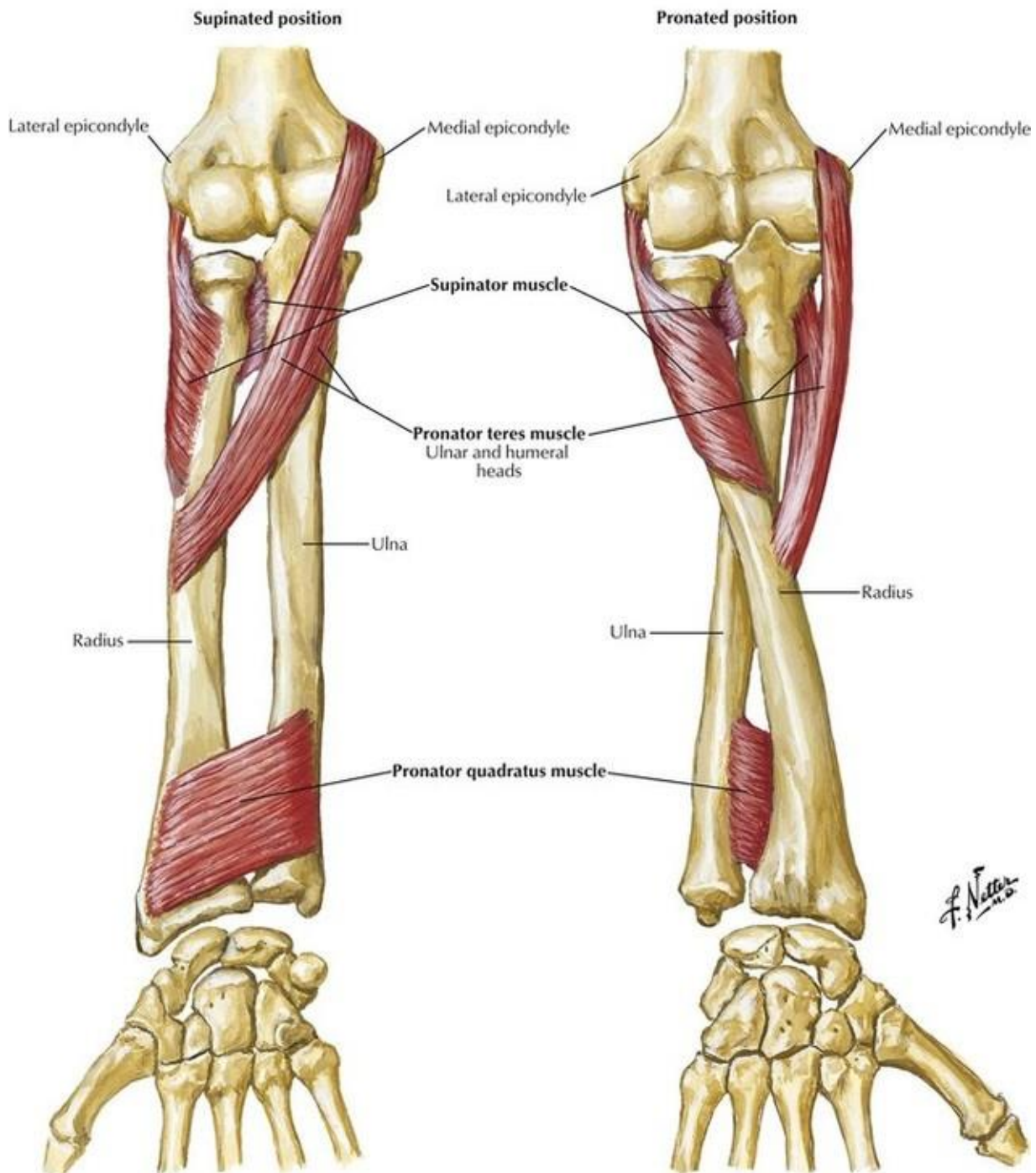


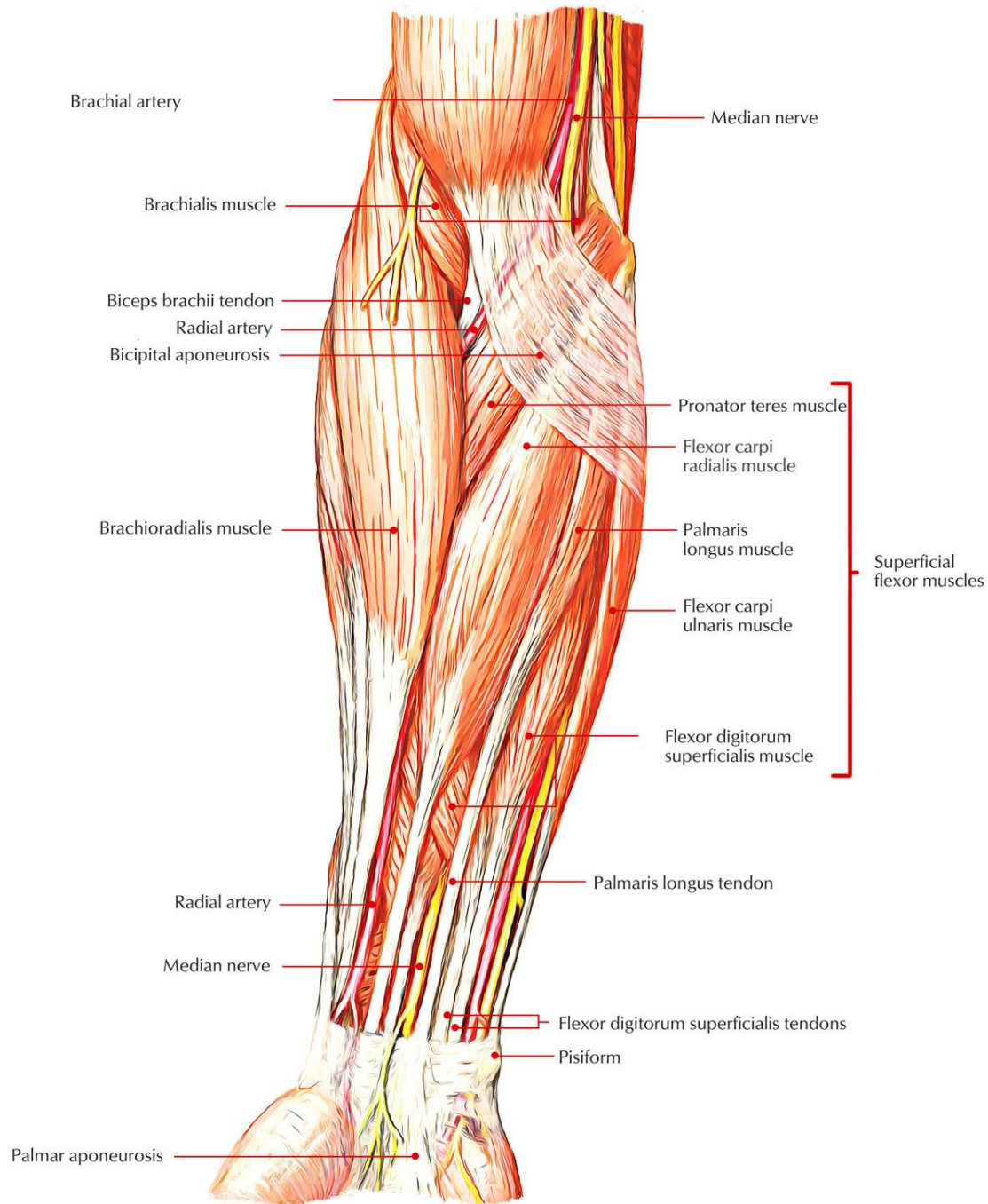
Humerus  
Articula  
capsule  
Medial  
epicondy  
Ulnar  
collater  
ligament  
Olecrano  
of ulna

1 interosseous  
ity membrane

Medial view

Right forearm: anterior view





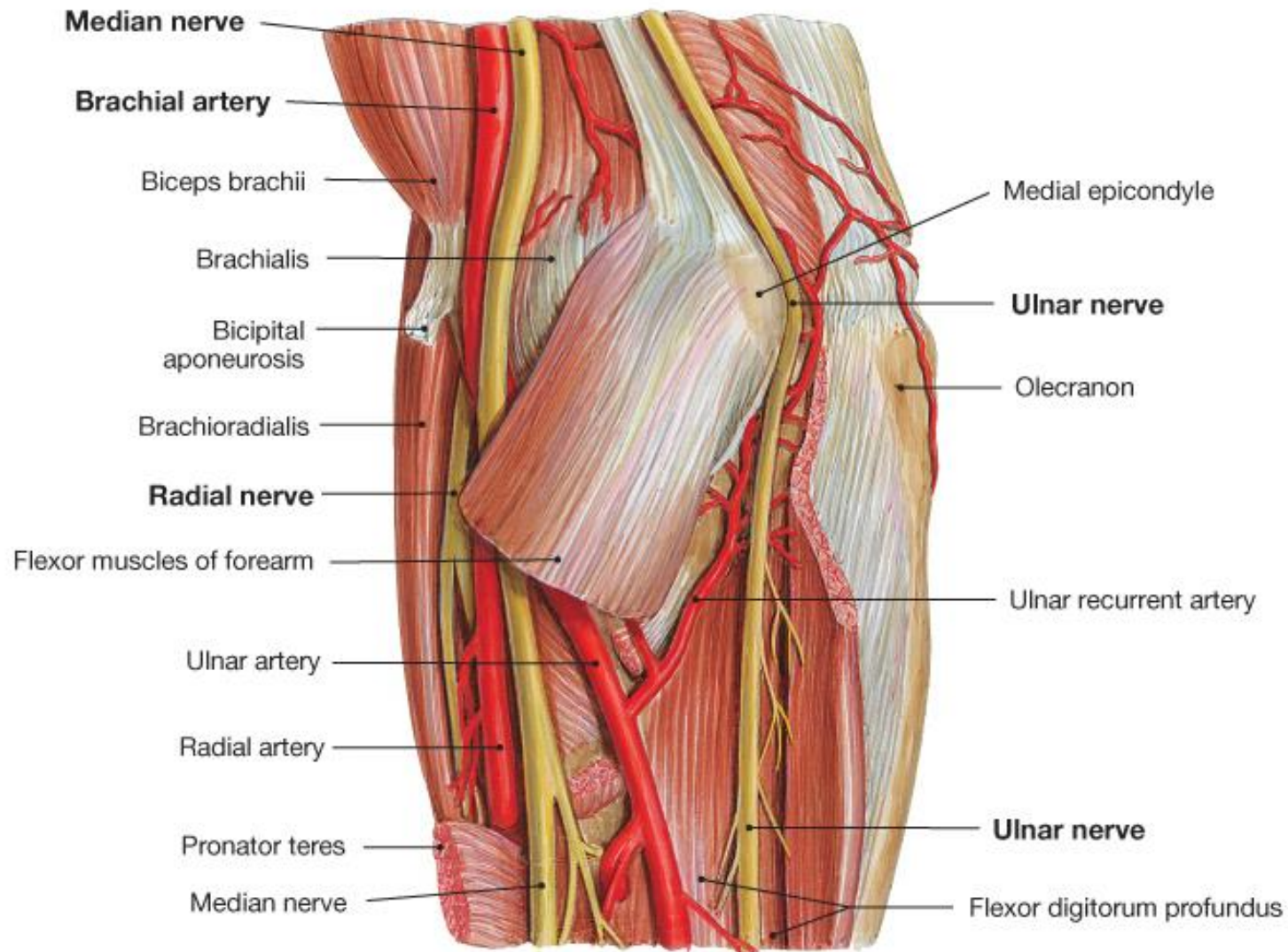
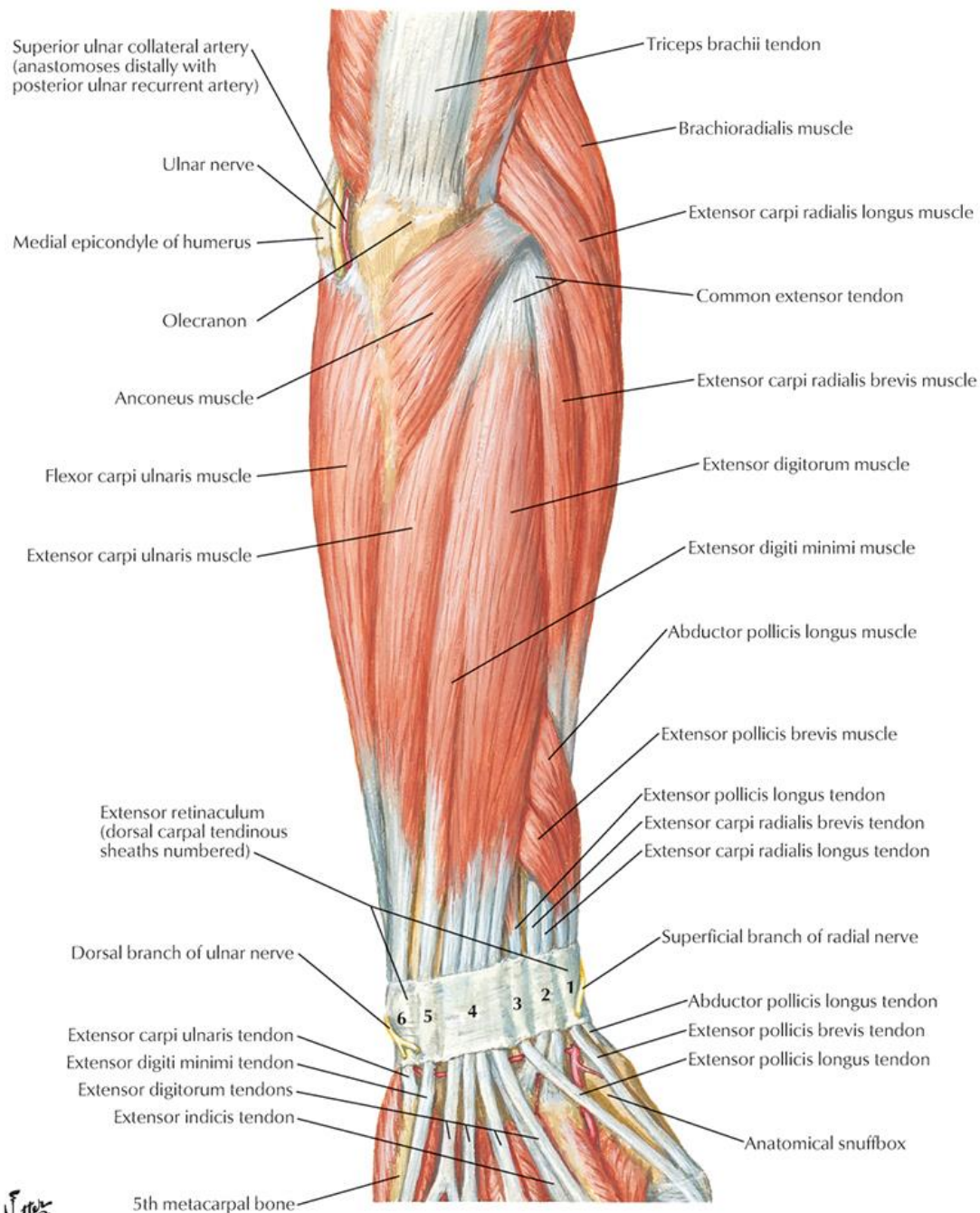
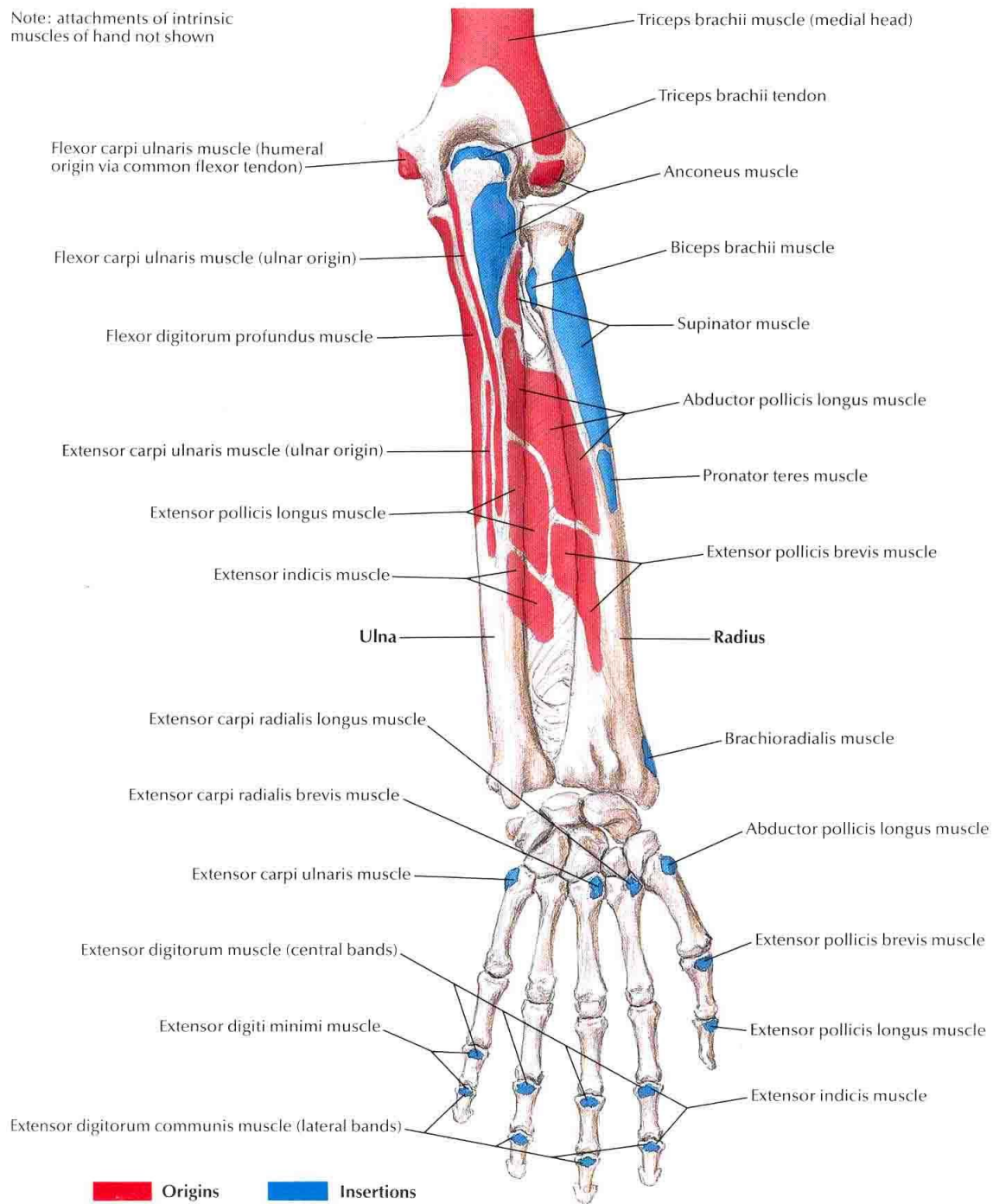


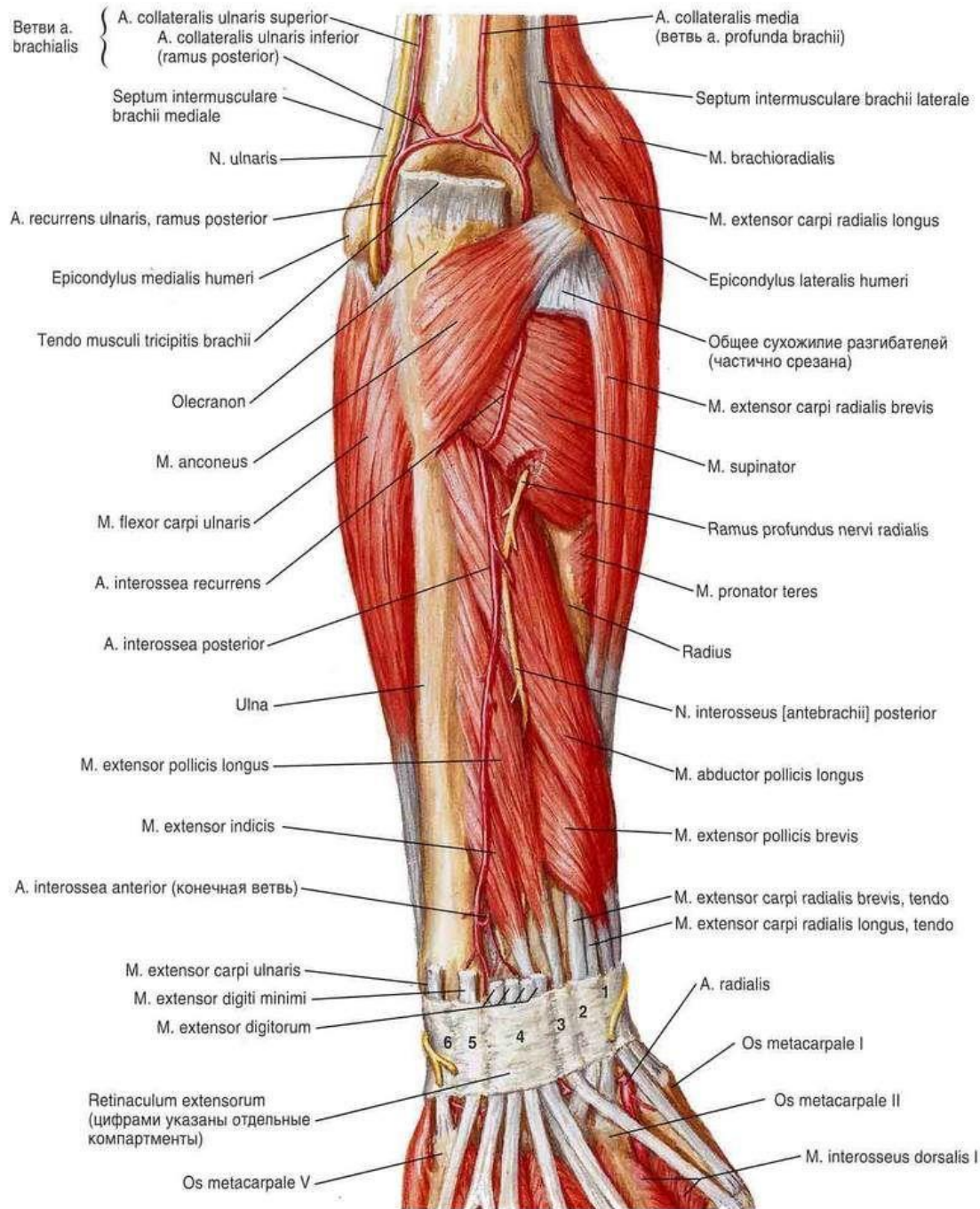
Fig. 410 Branching pattern of the thoraco-acromial artery.



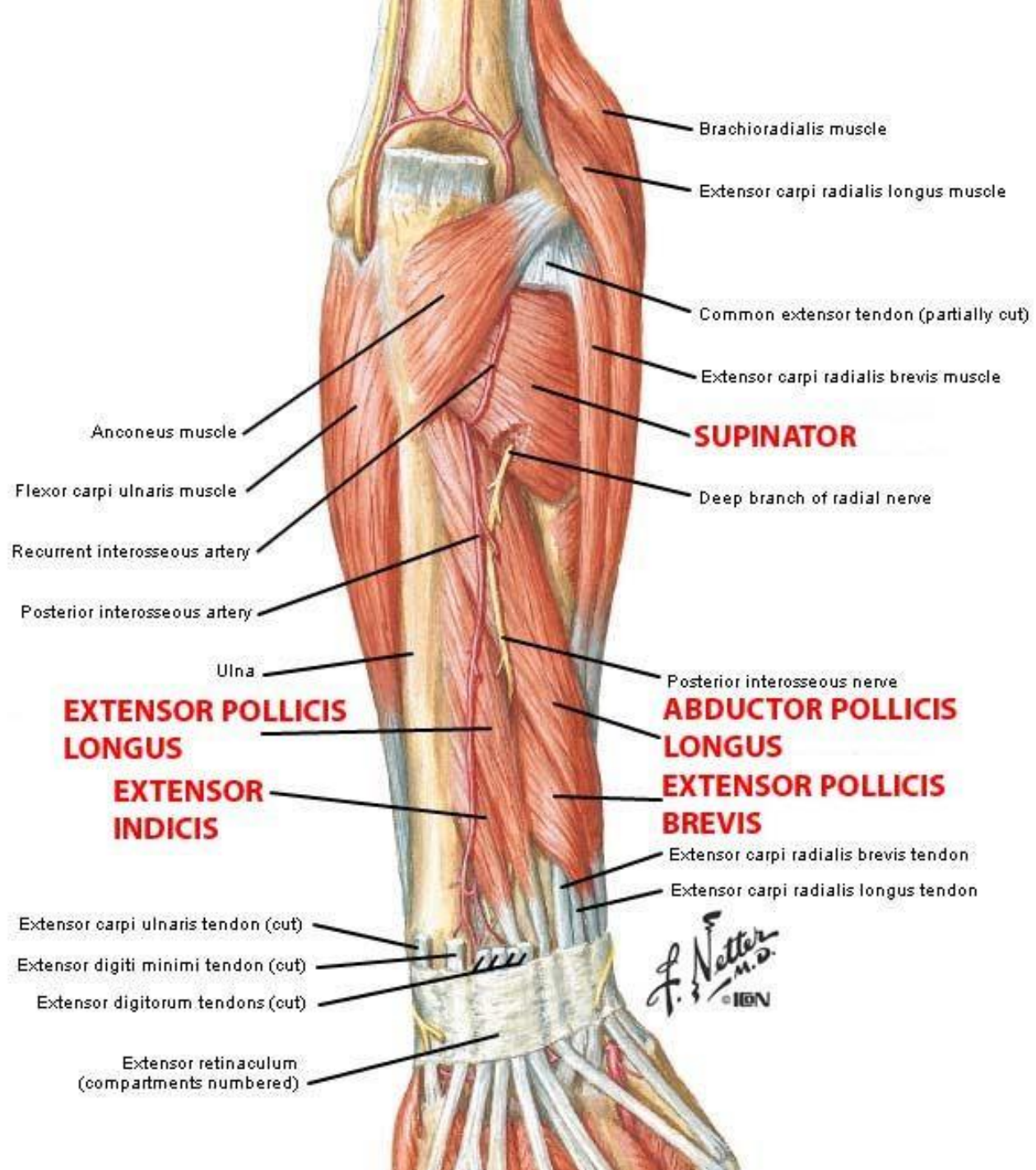
*F. Netter M.D.*

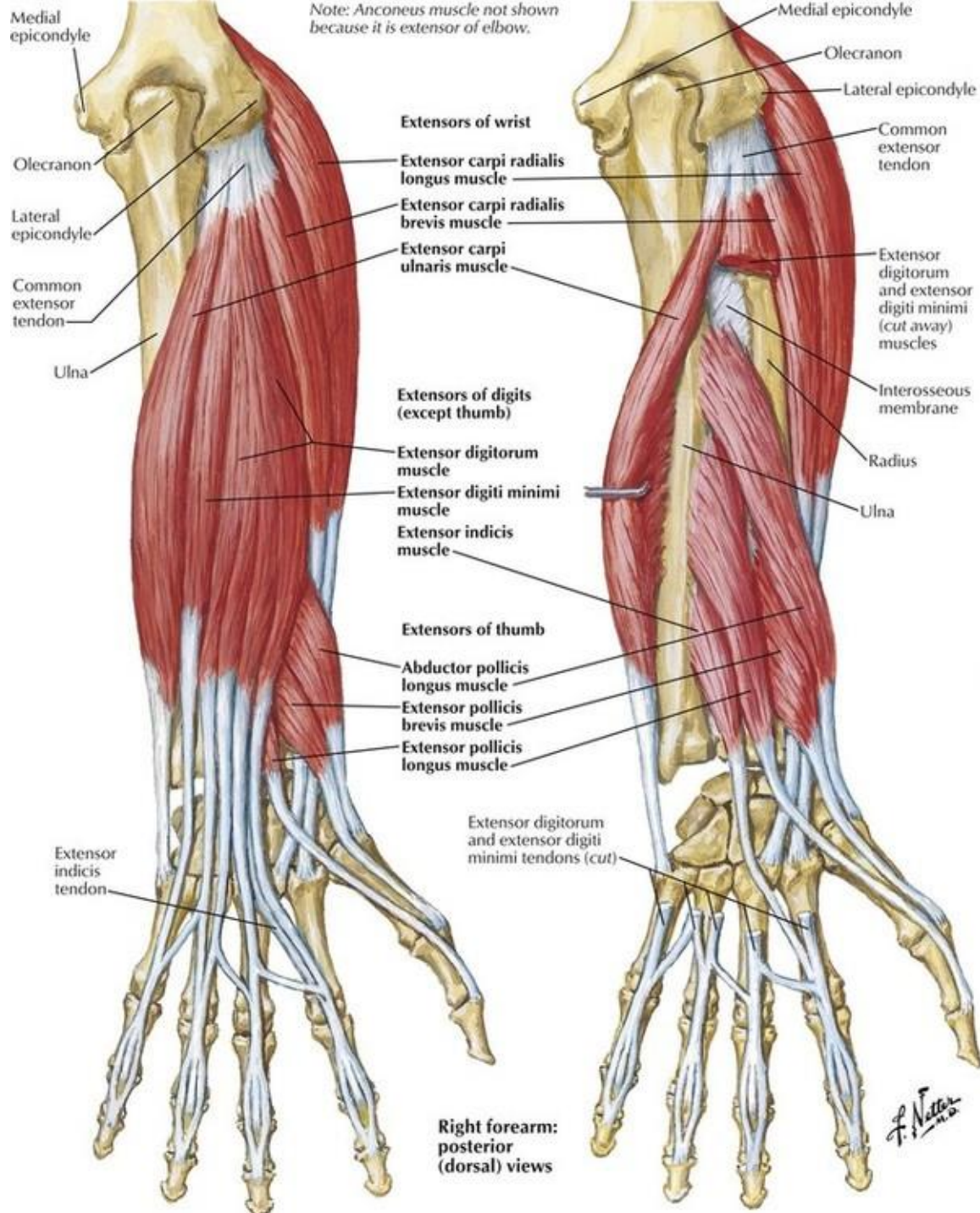
Note: attachments of intrinsic muscles of hand not shown

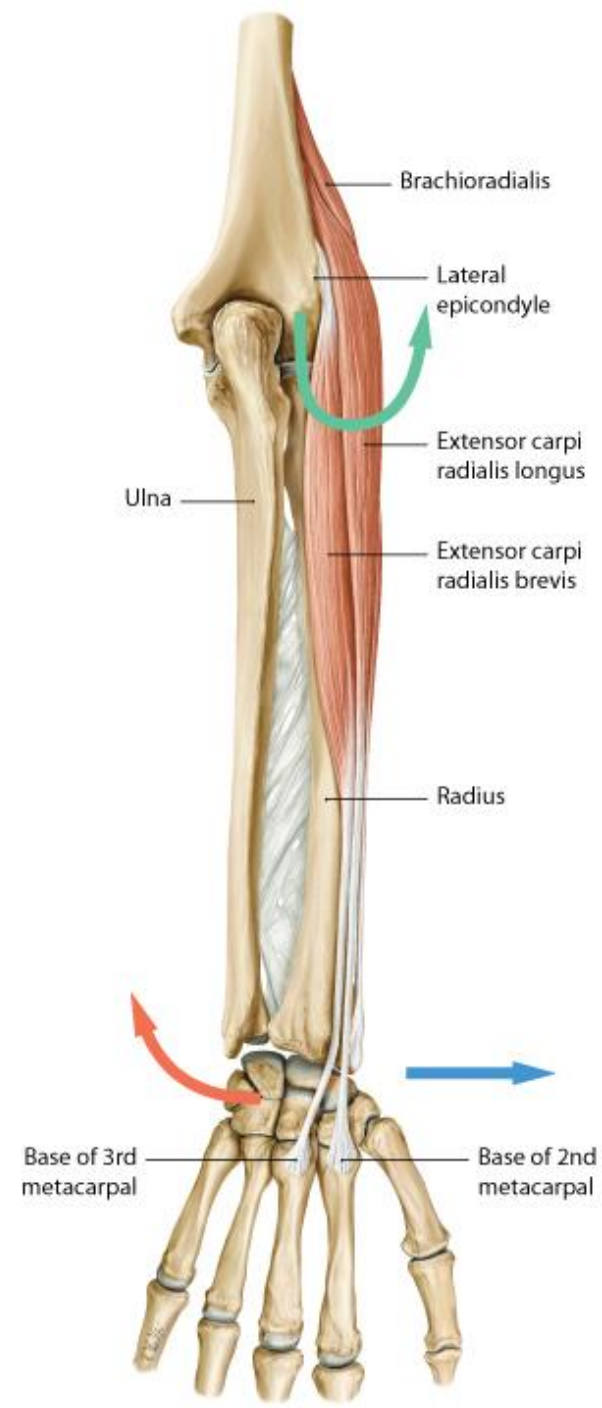
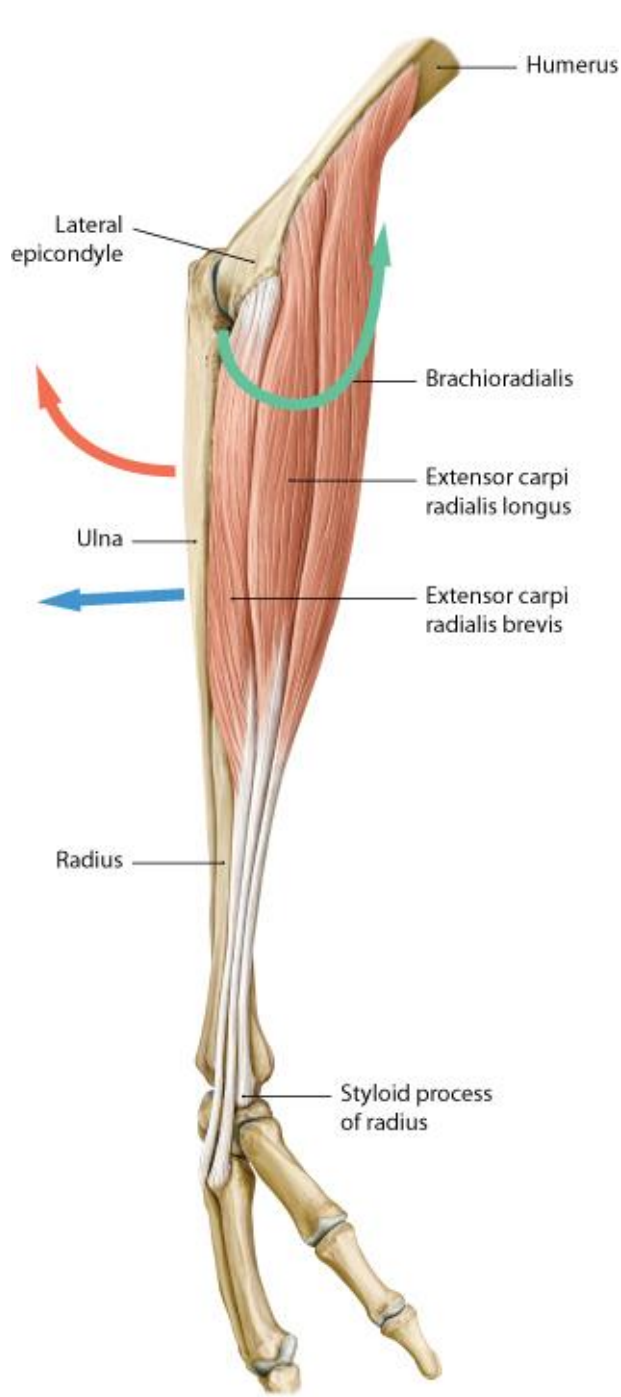
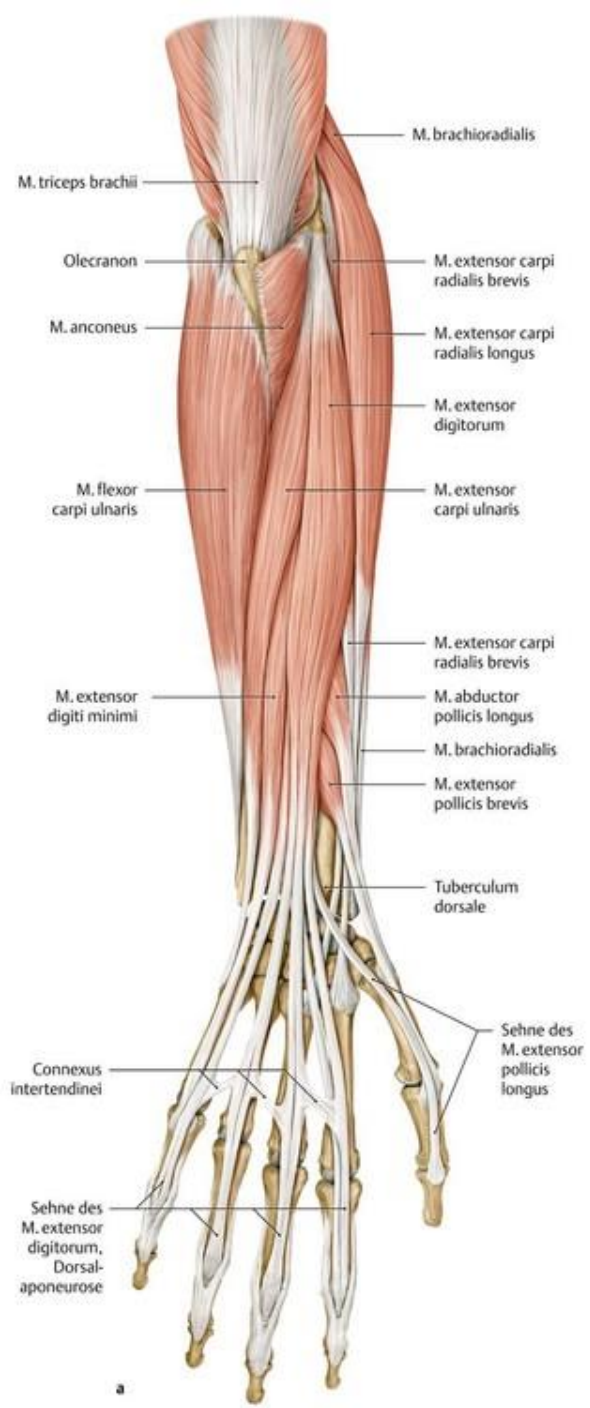


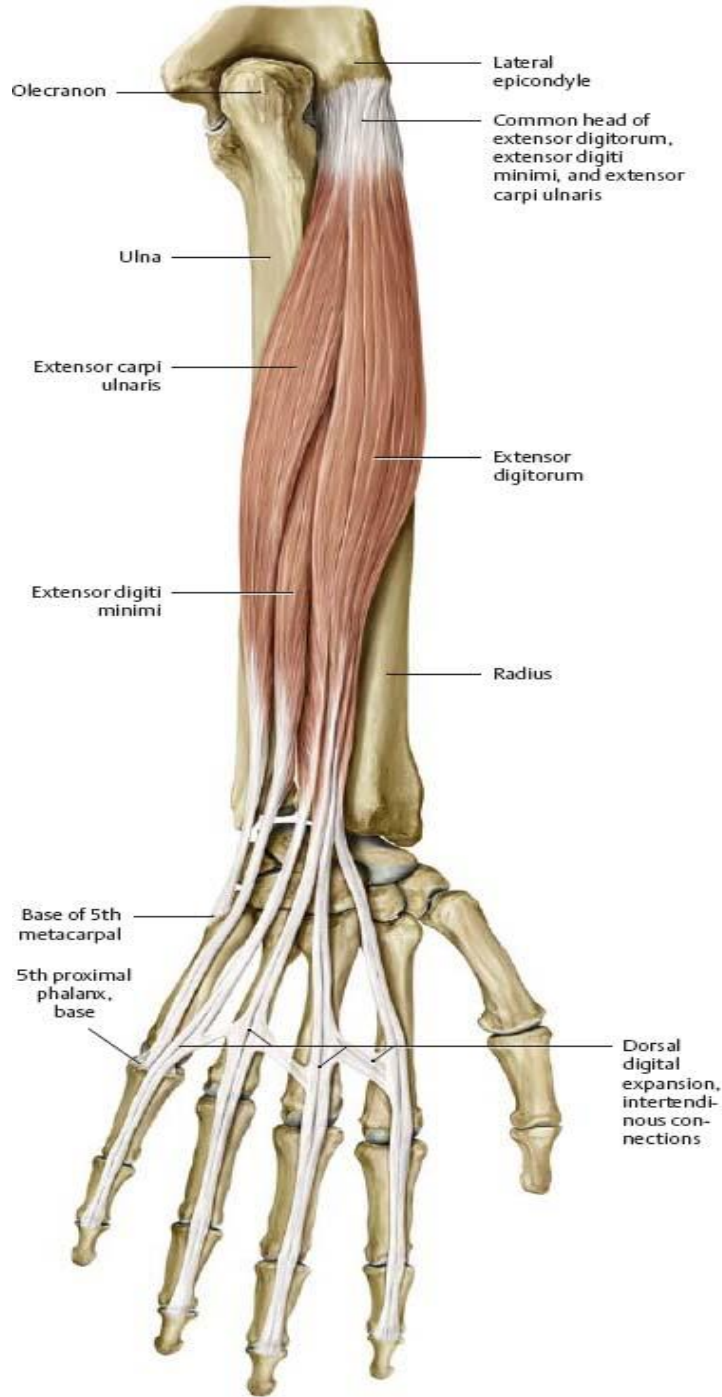




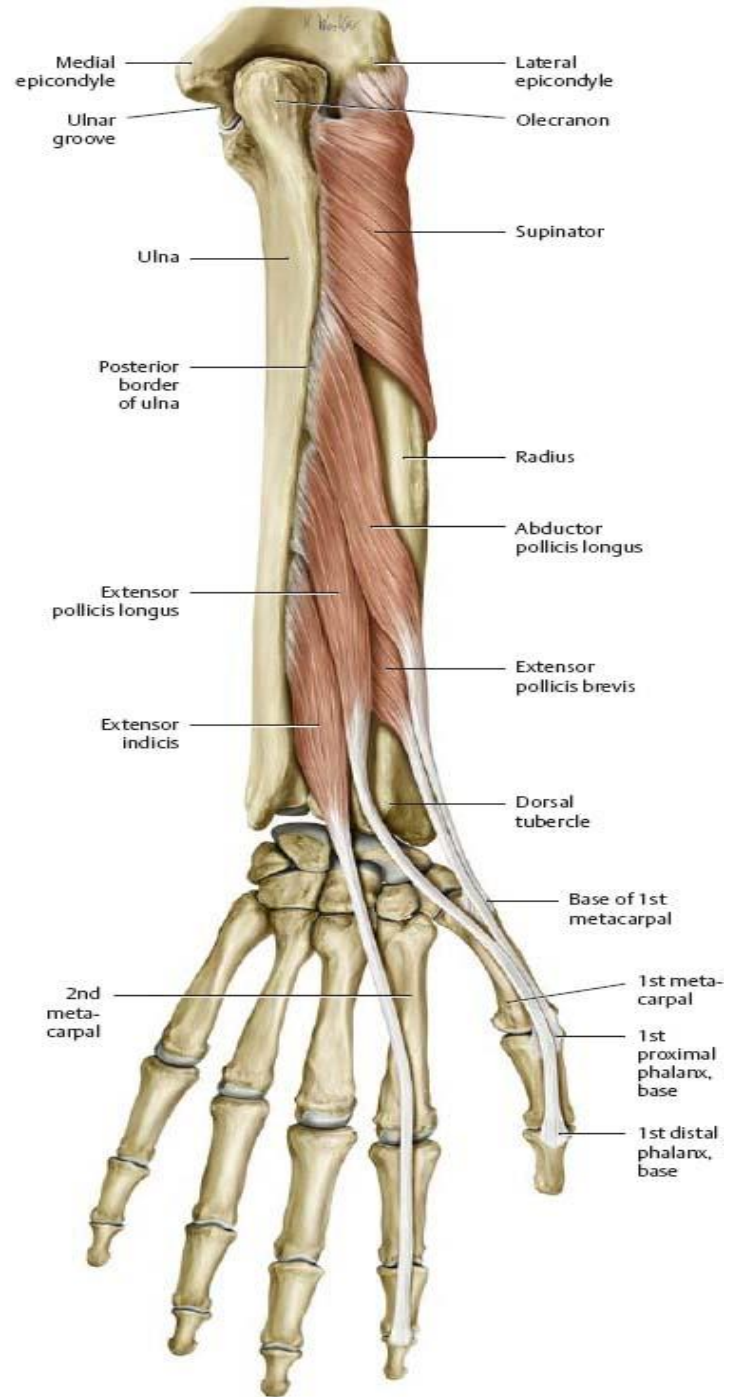




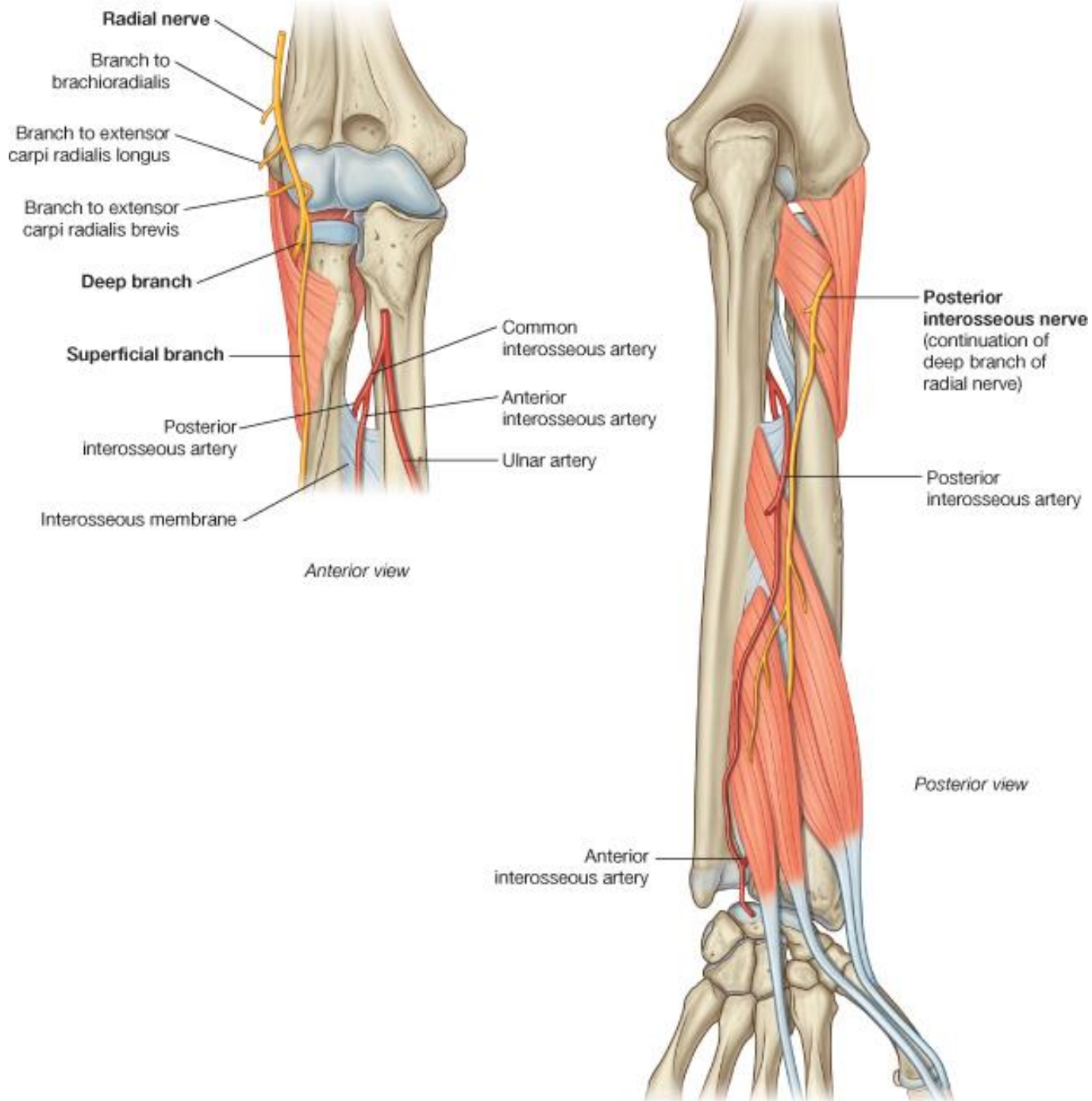


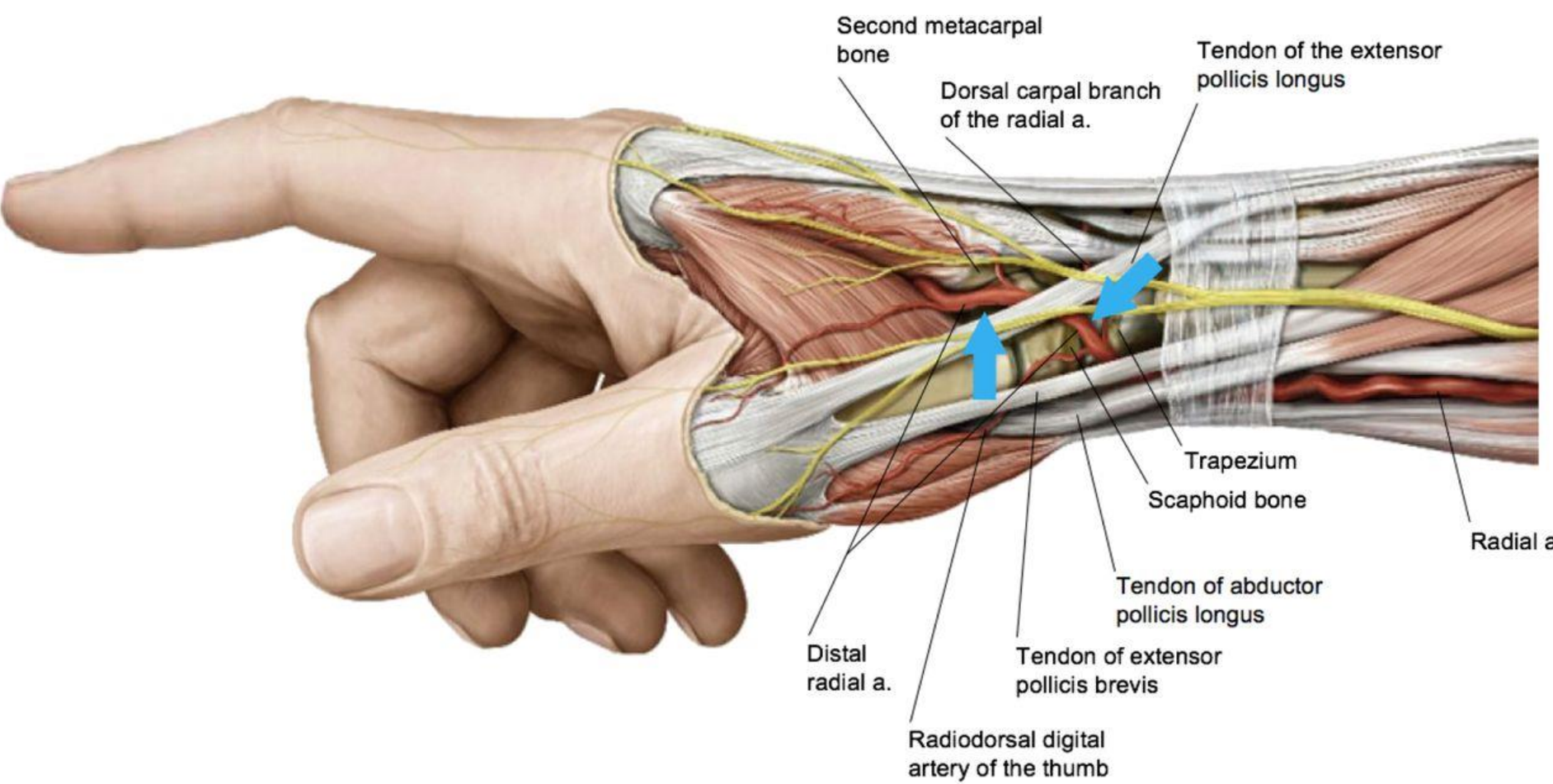


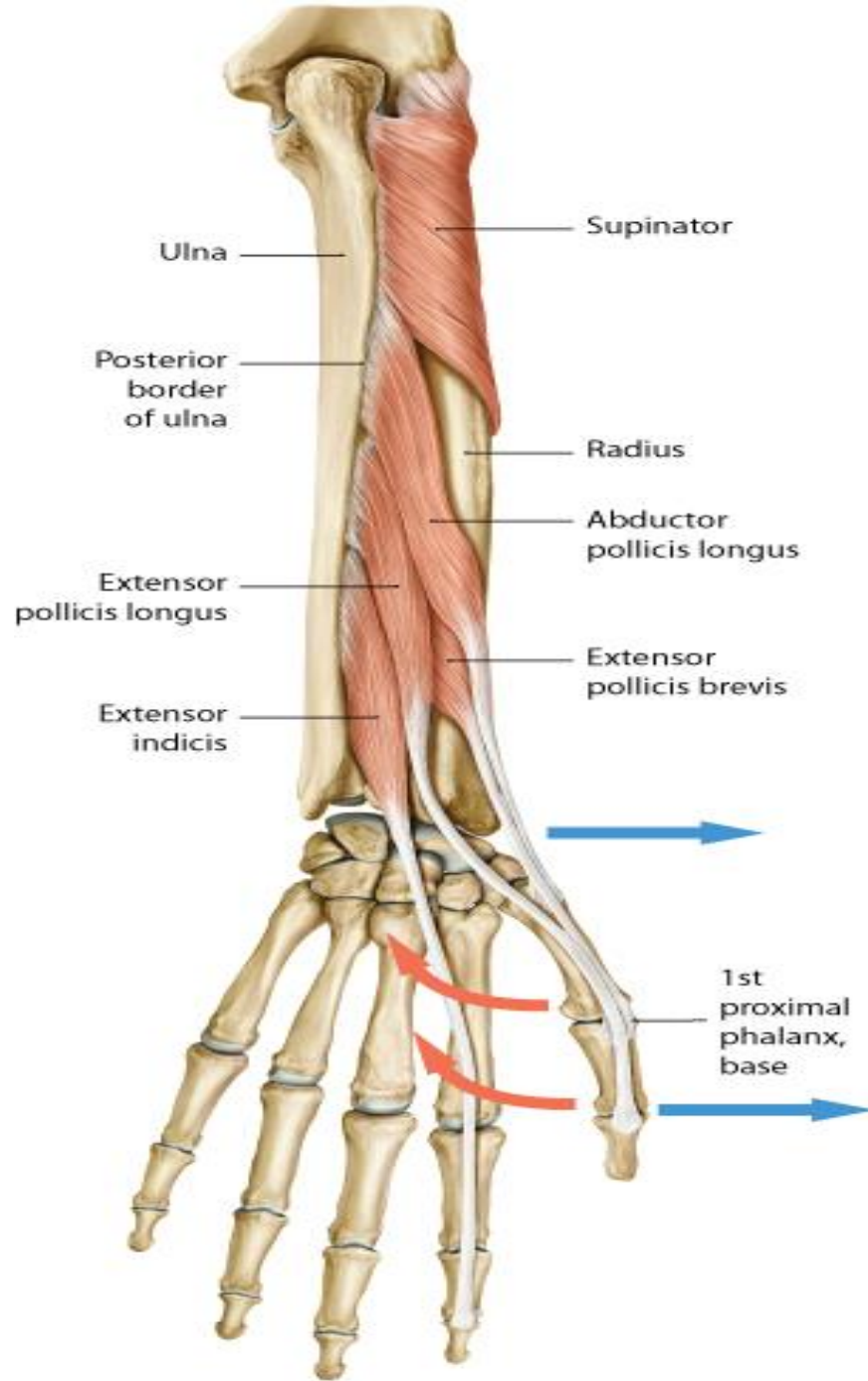
**A** Superficial extensors.

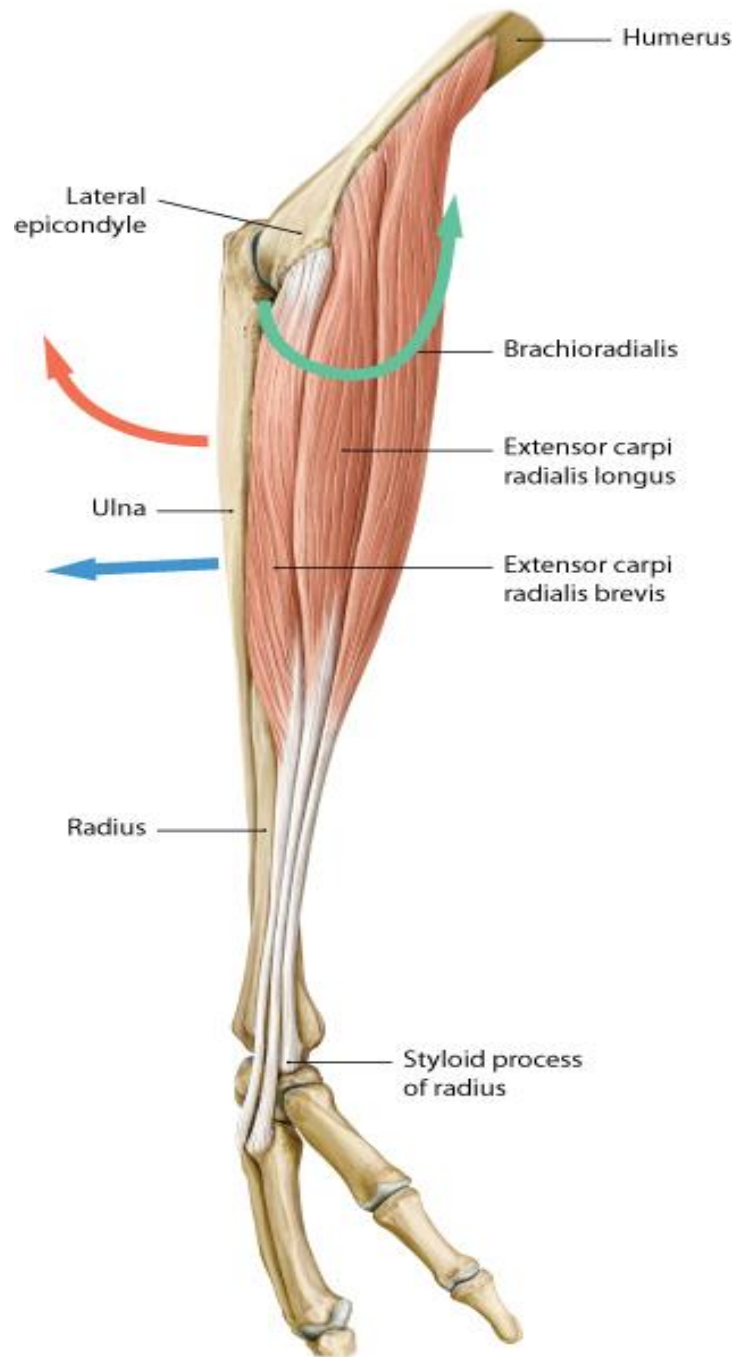


**B** Deep extensors with supinator.

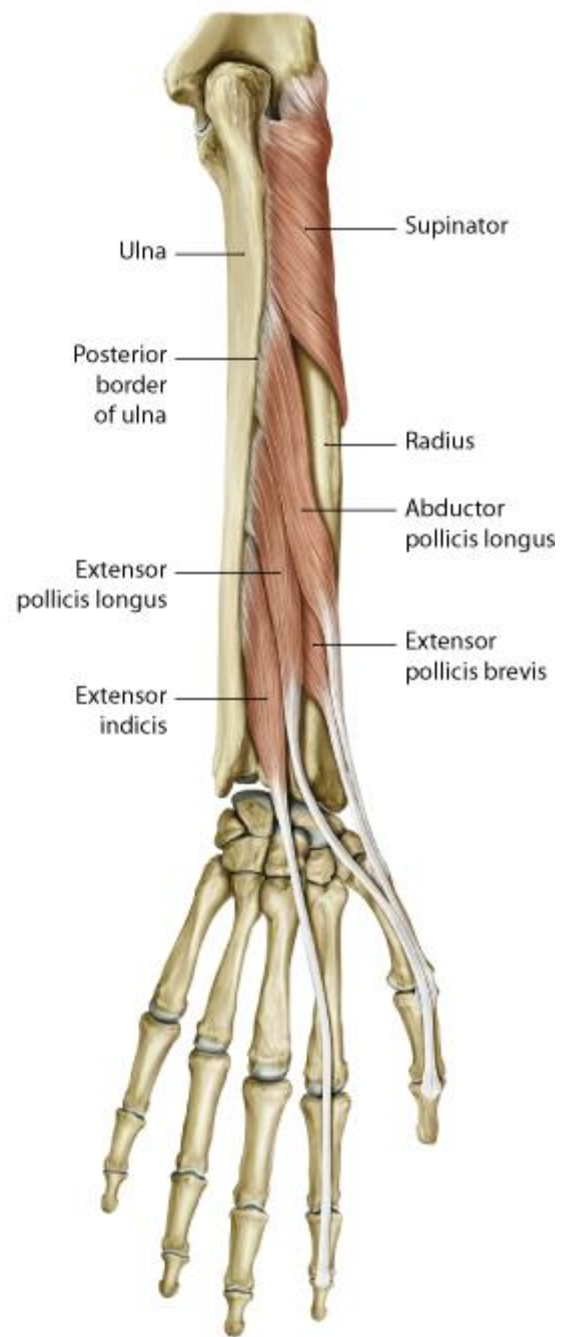


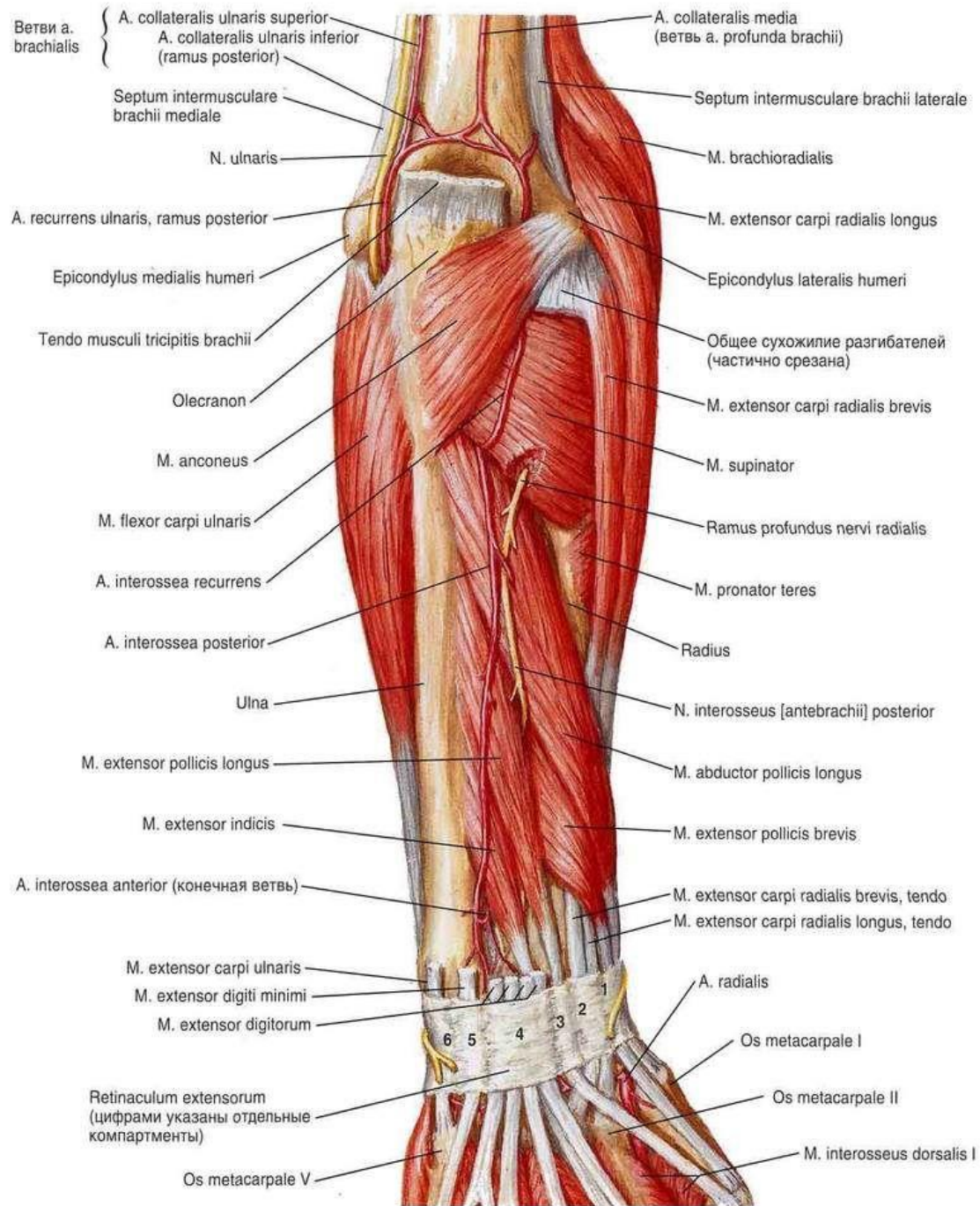


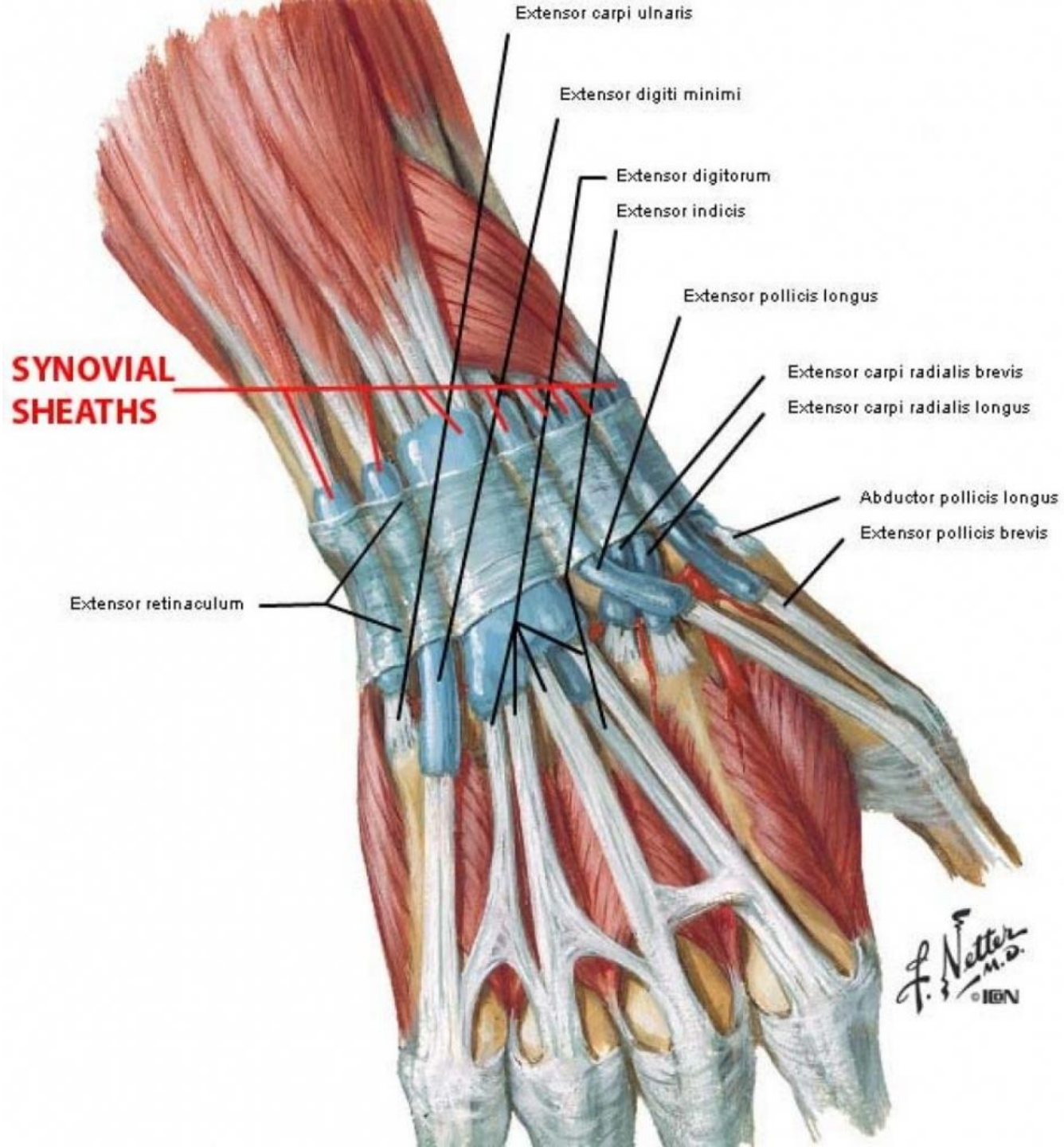






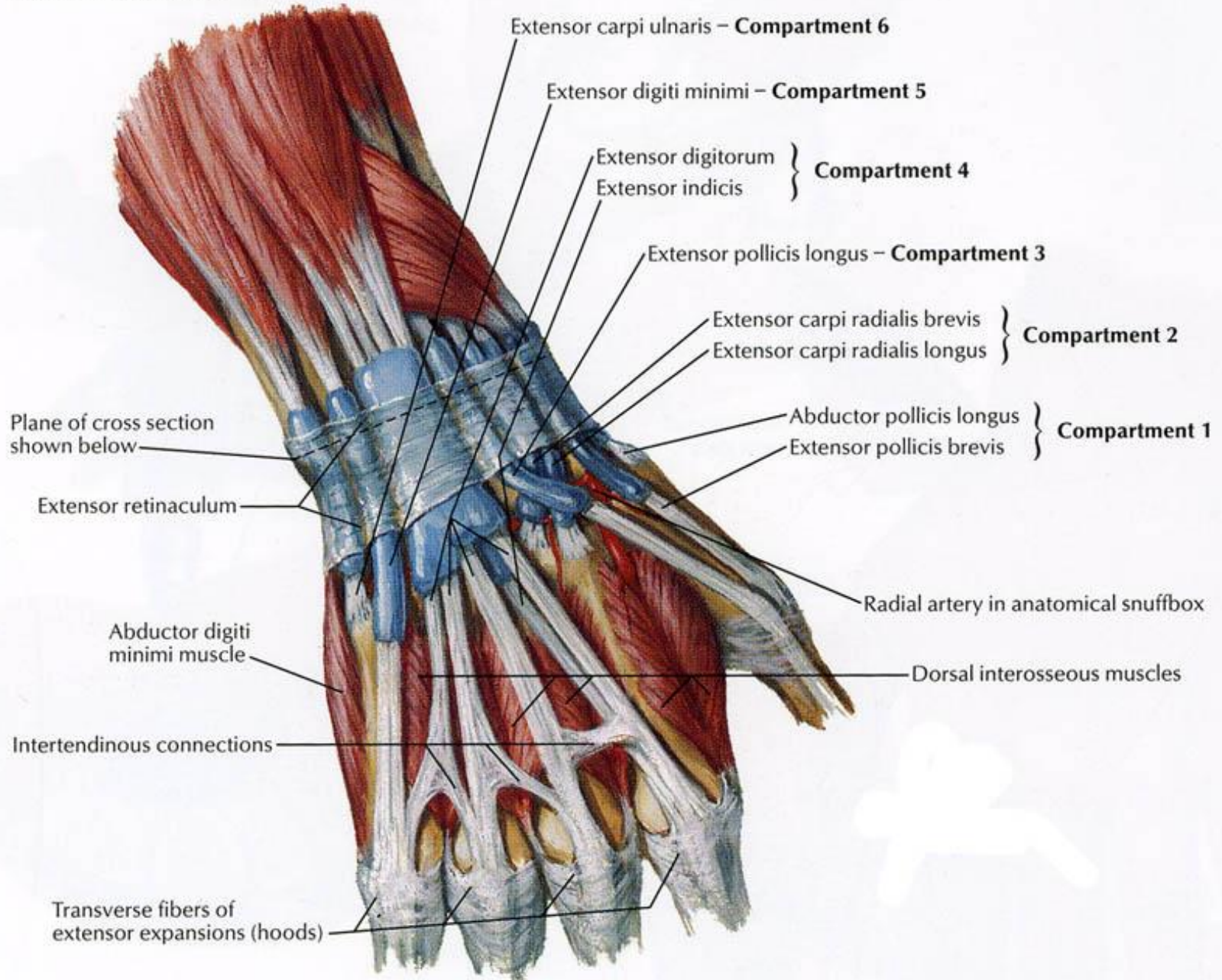


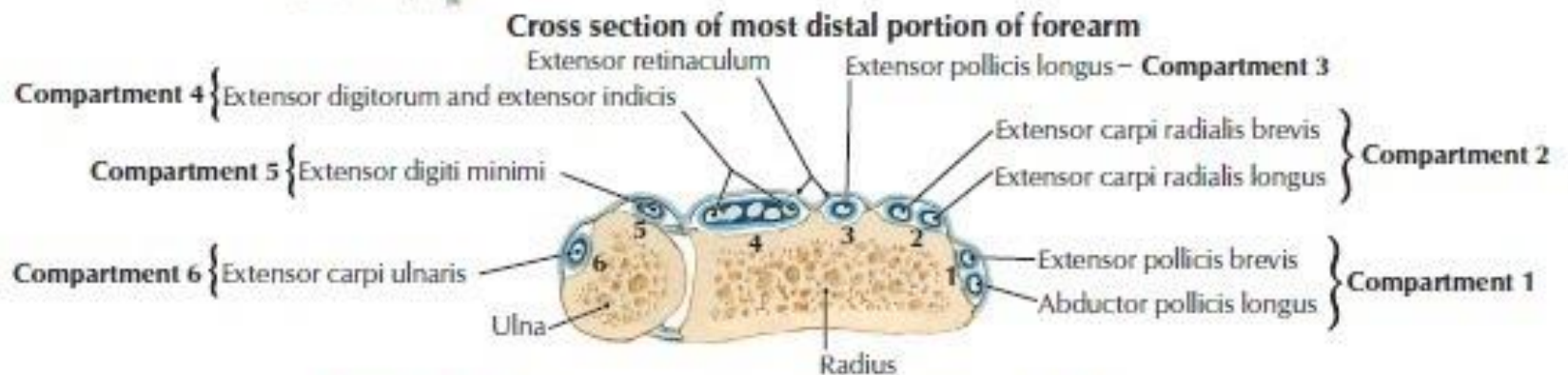
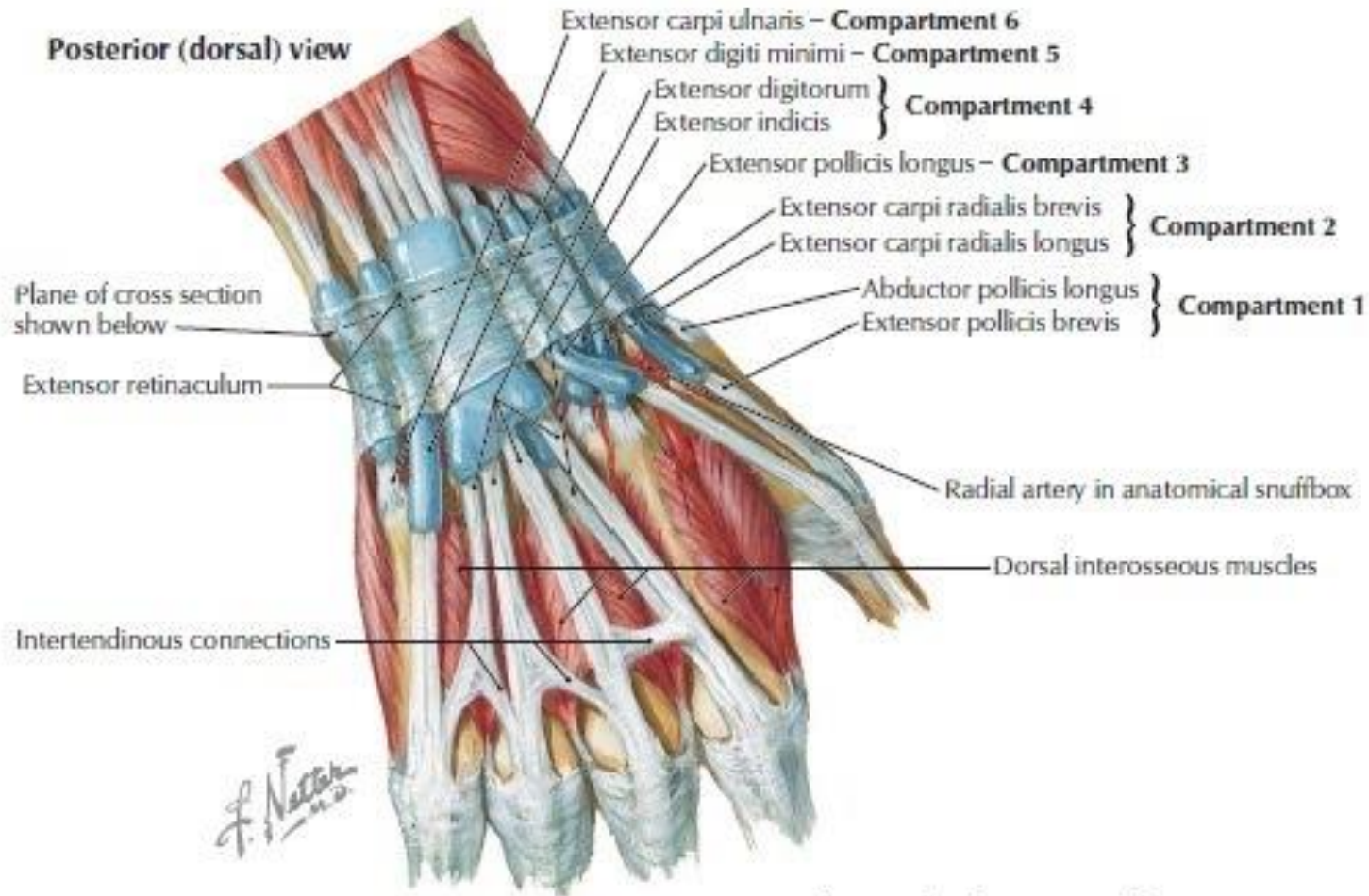




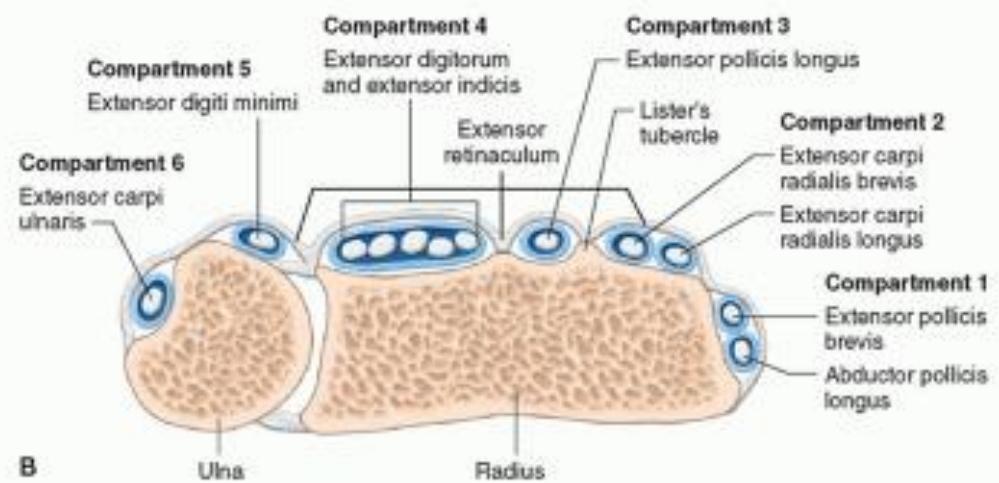
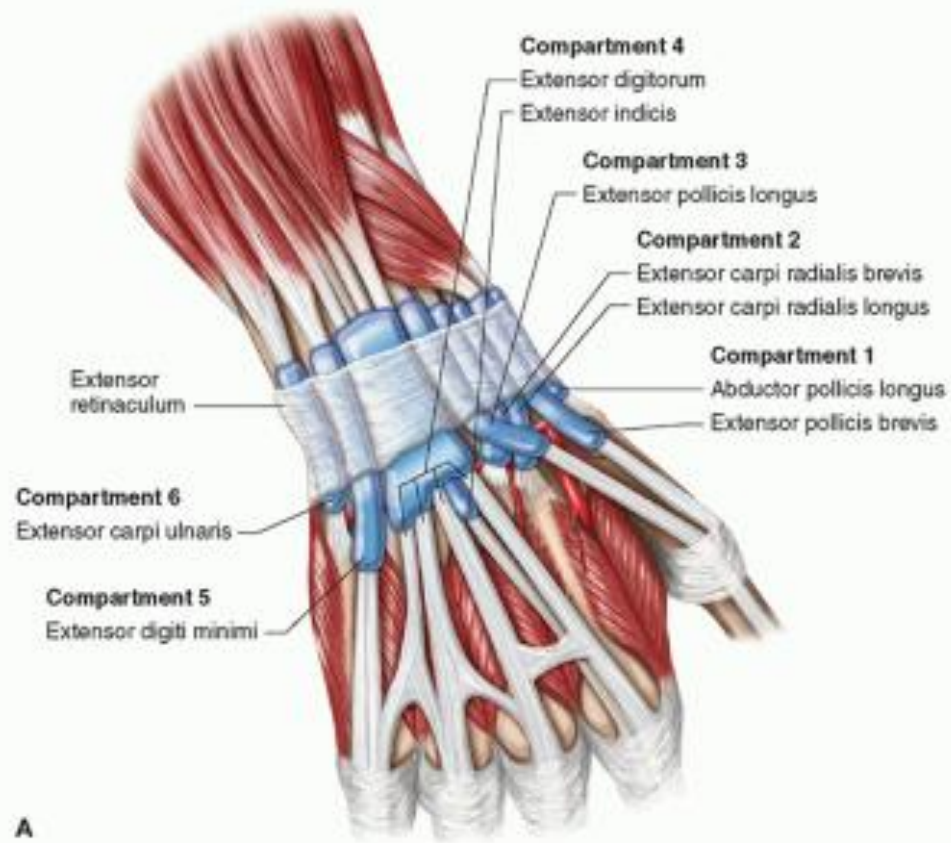
# Extensor compartments

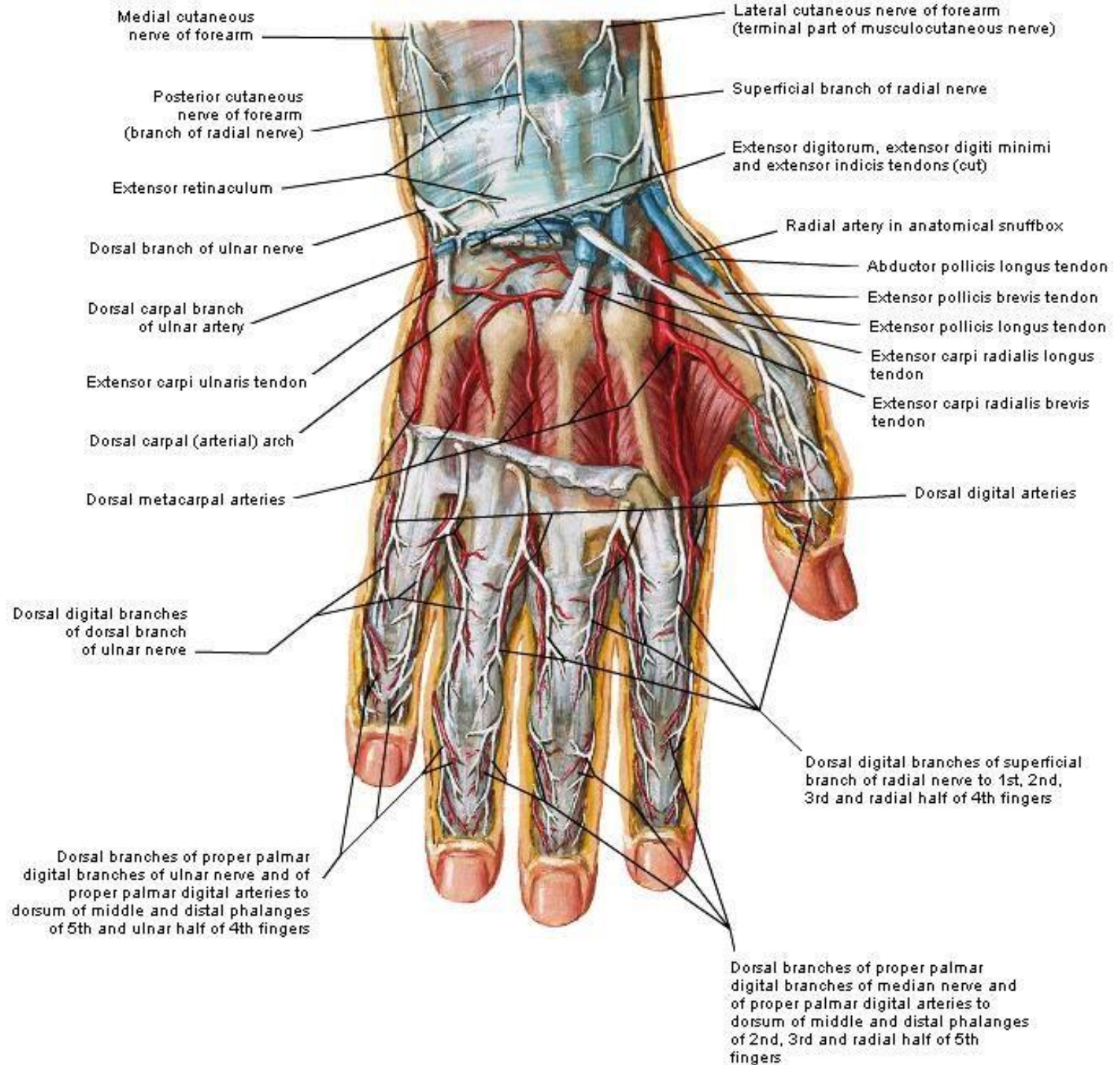
Posterior (dorsal) view

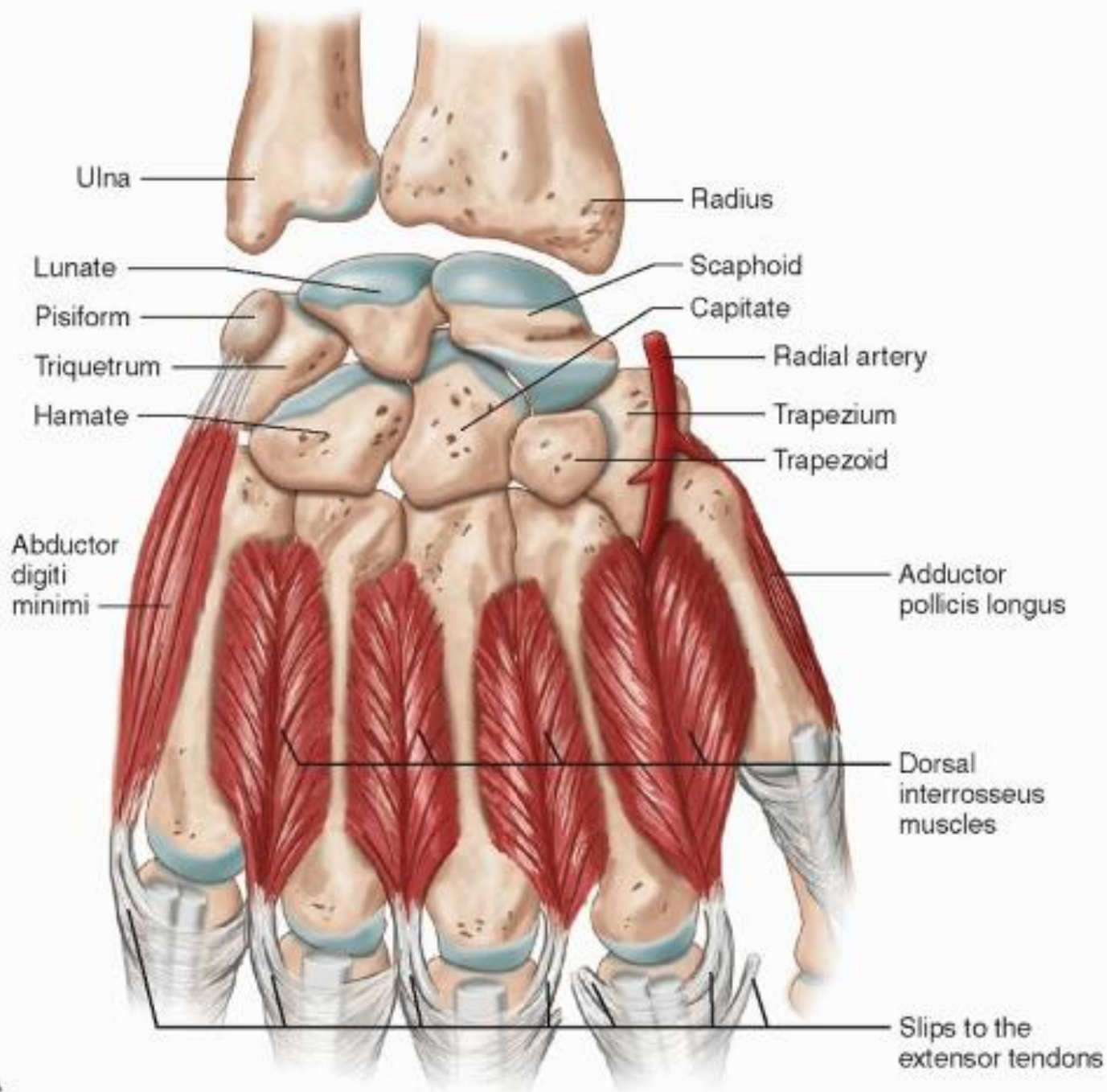




**FIGURE 7-28** Extensor Tendons and Sheaths of the Wrist



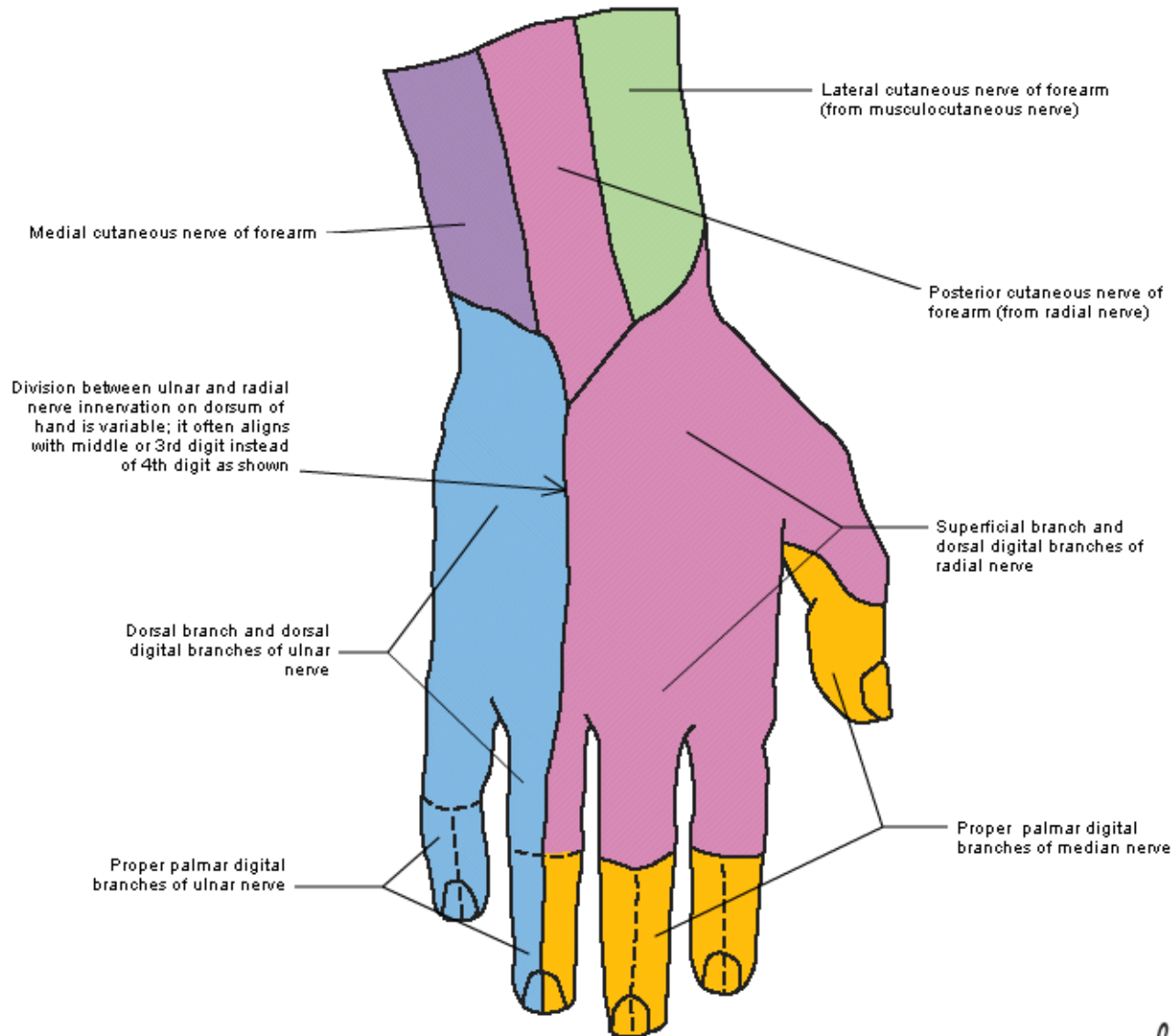




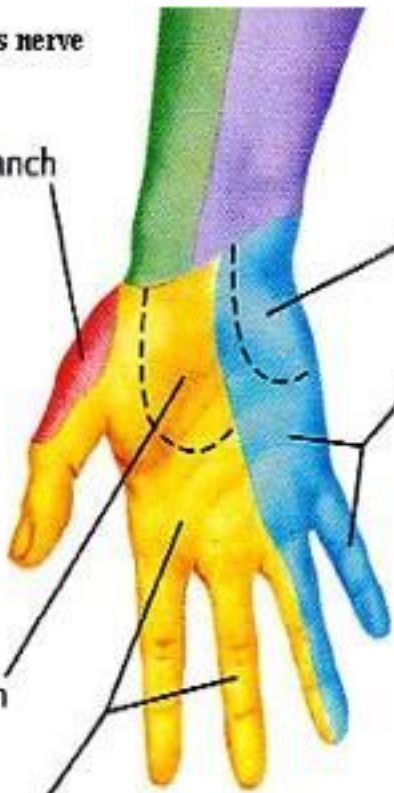


# Cutaneous Innervation of Wrist and Hand

## Posterior (Dorsal) View



Lateral cutaneous nerve (C5, 6 [7])  
Radial nerve Superficial branch (C6, 7, 8)



Median nerve Palmar branch and Palmar digital branches (C6, 7, 8)

Medial cutaneous nerve (C8, T1)  
Ulnar nerve (C8, T1)

Palmar branch  
Palmar digital branches  
Dorsal branch and dorsal digital branches  
Proper palmar digital branches

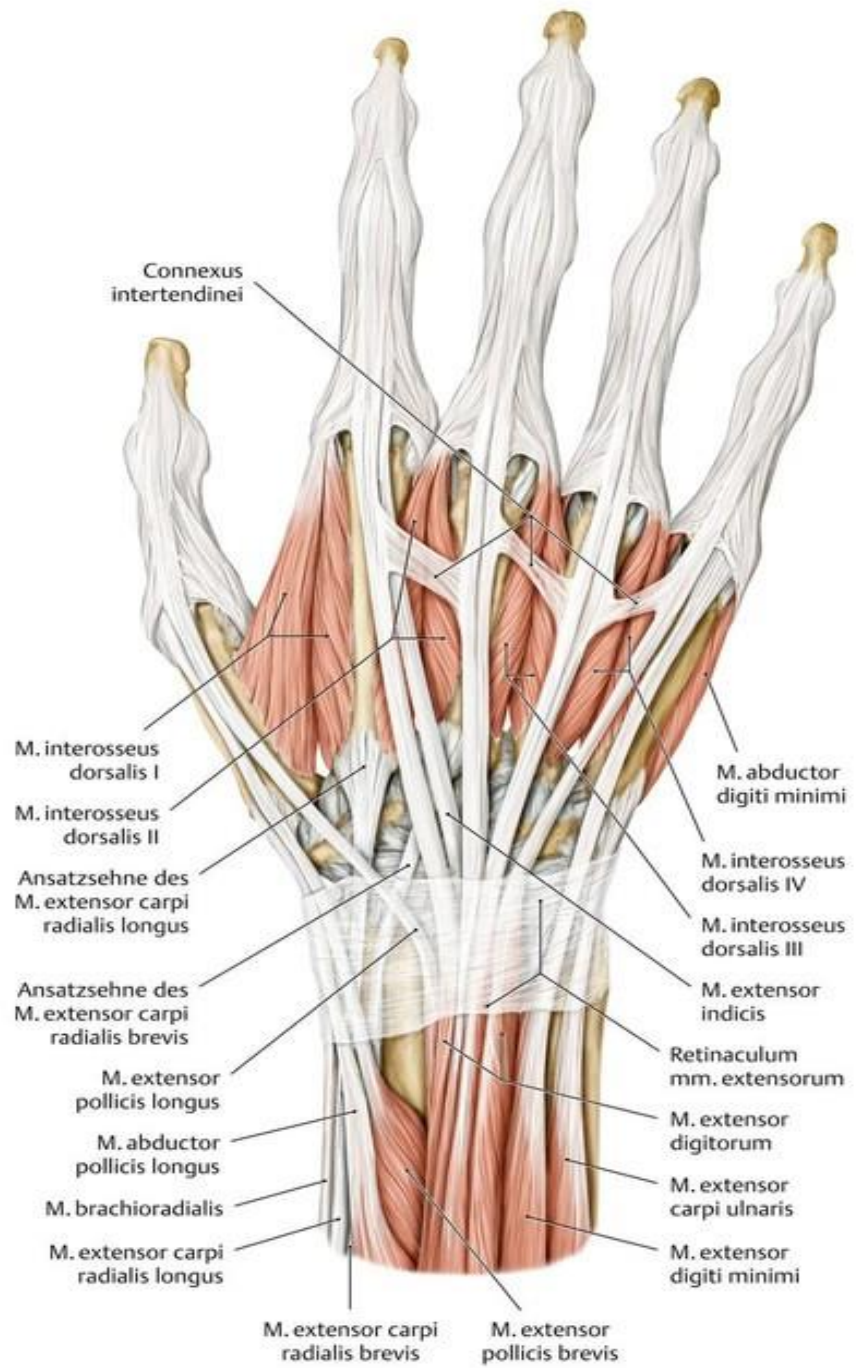
*F. S. Netter M.D.*  
© Novartis

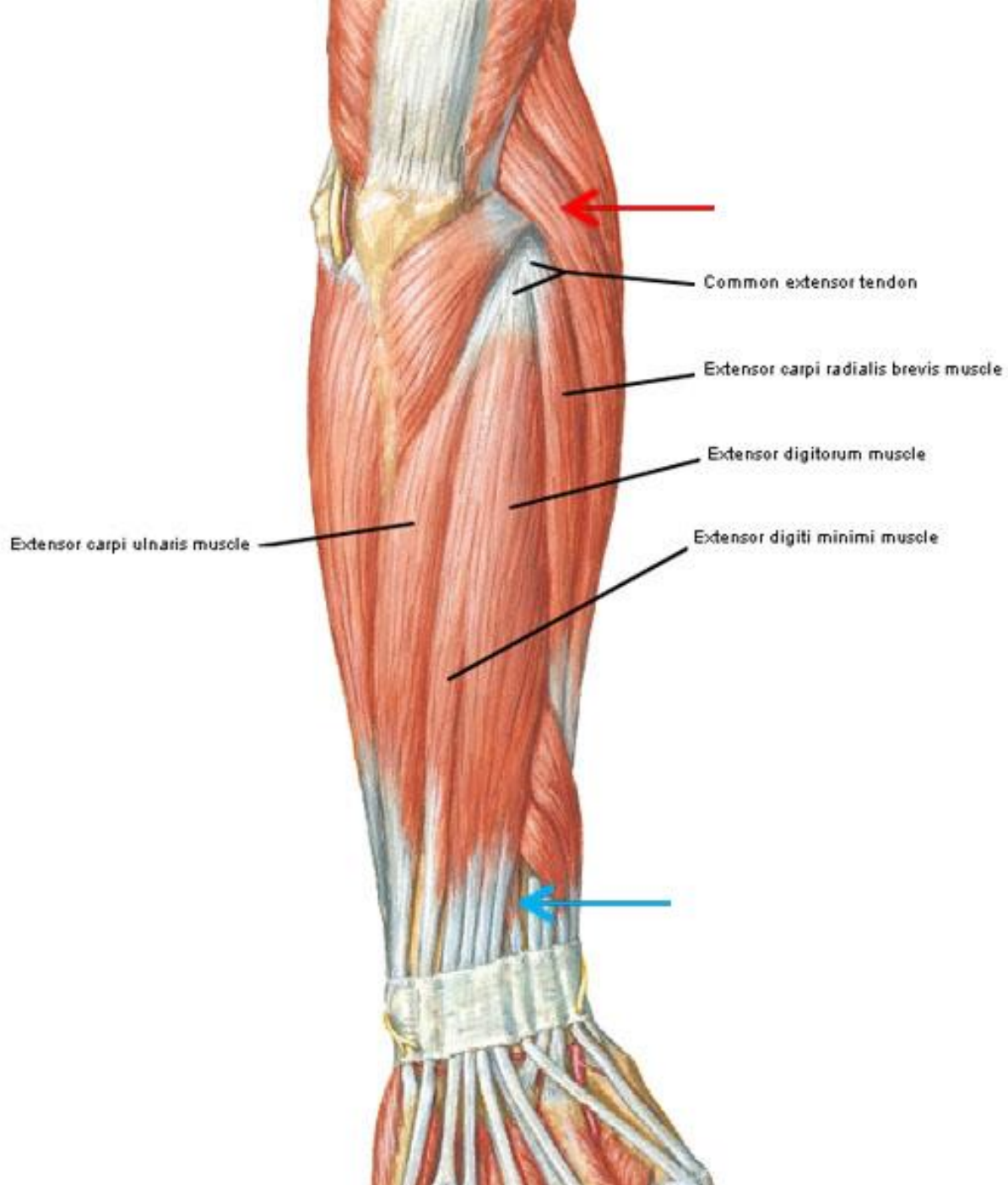


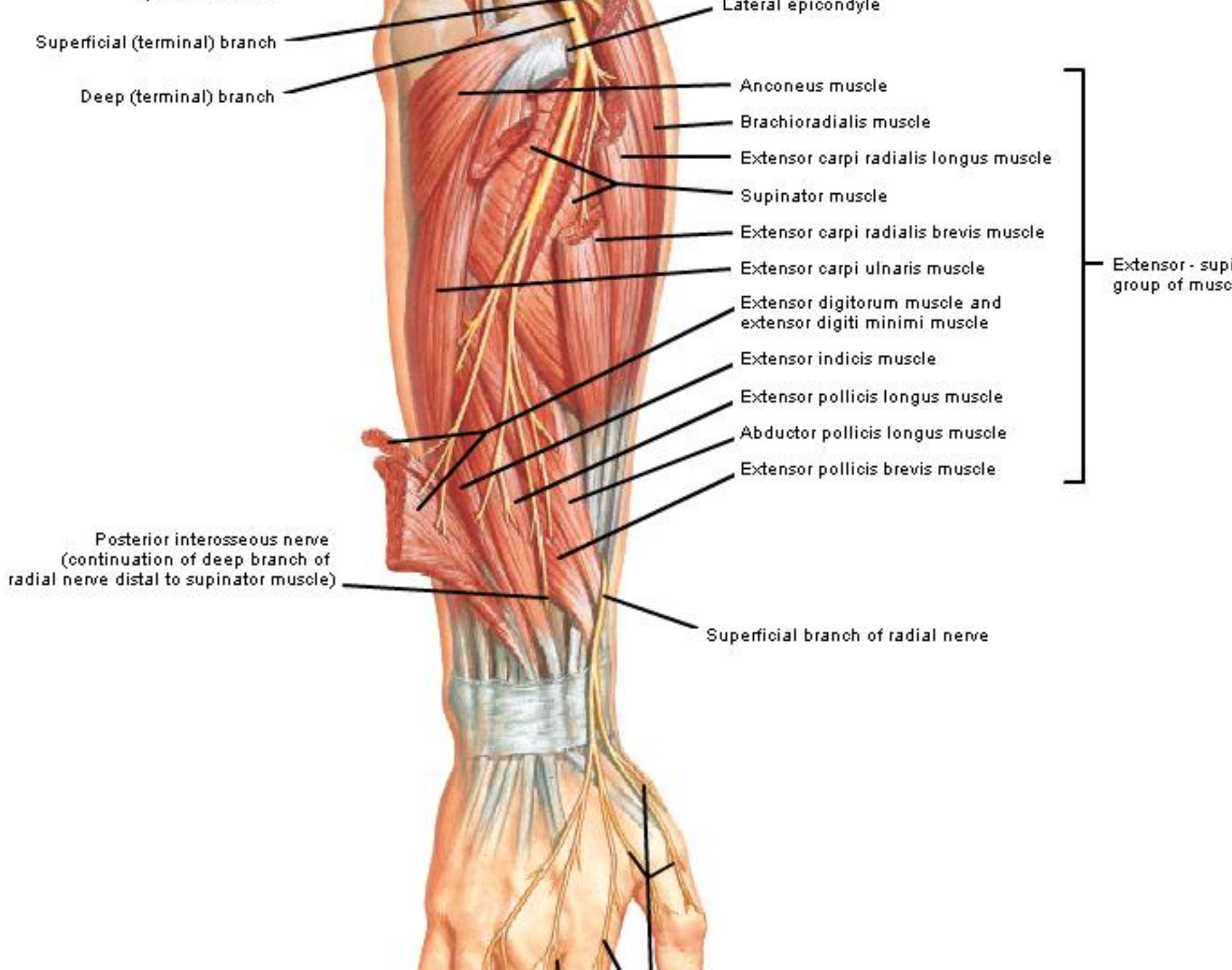
Radial nerve Superficial branch and dorsal digital branches (C6, 7, 8)

Median nerve Proper palmar digital branches

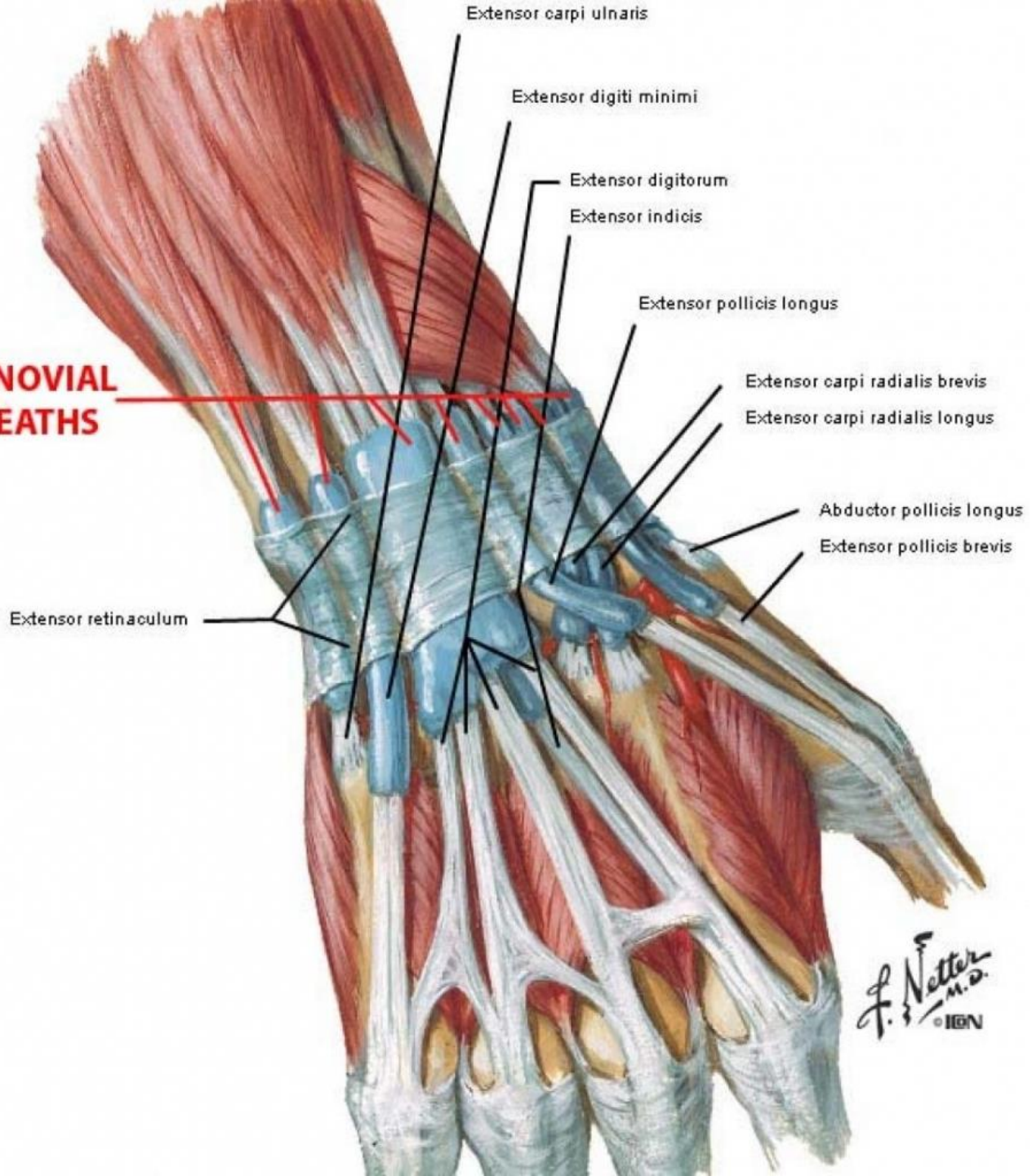
Note: Division variable between ulnar and radial innervation on dorsum of hand and often aligns with middle of 3rd digit instead of 4th digit as shown





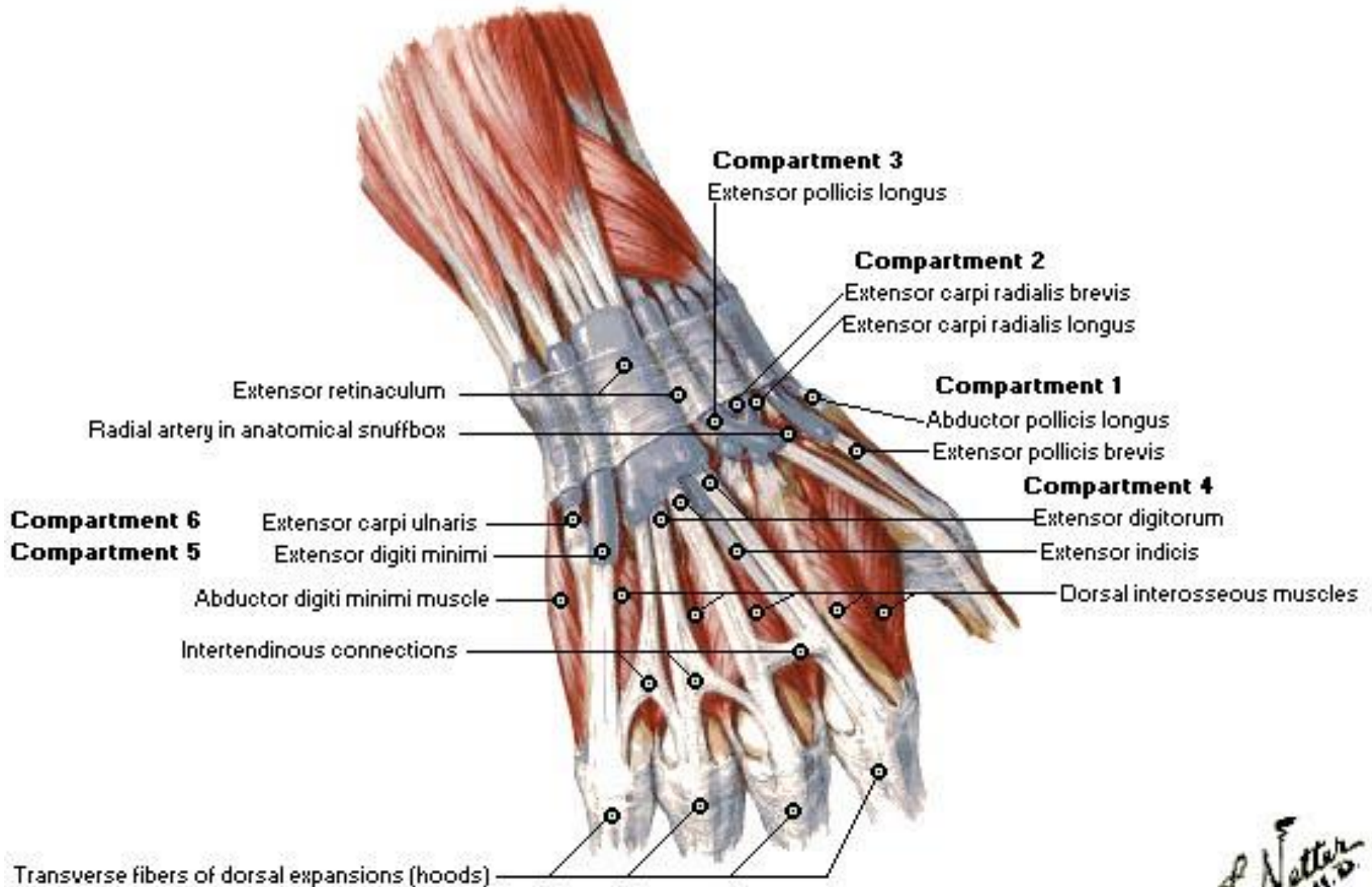


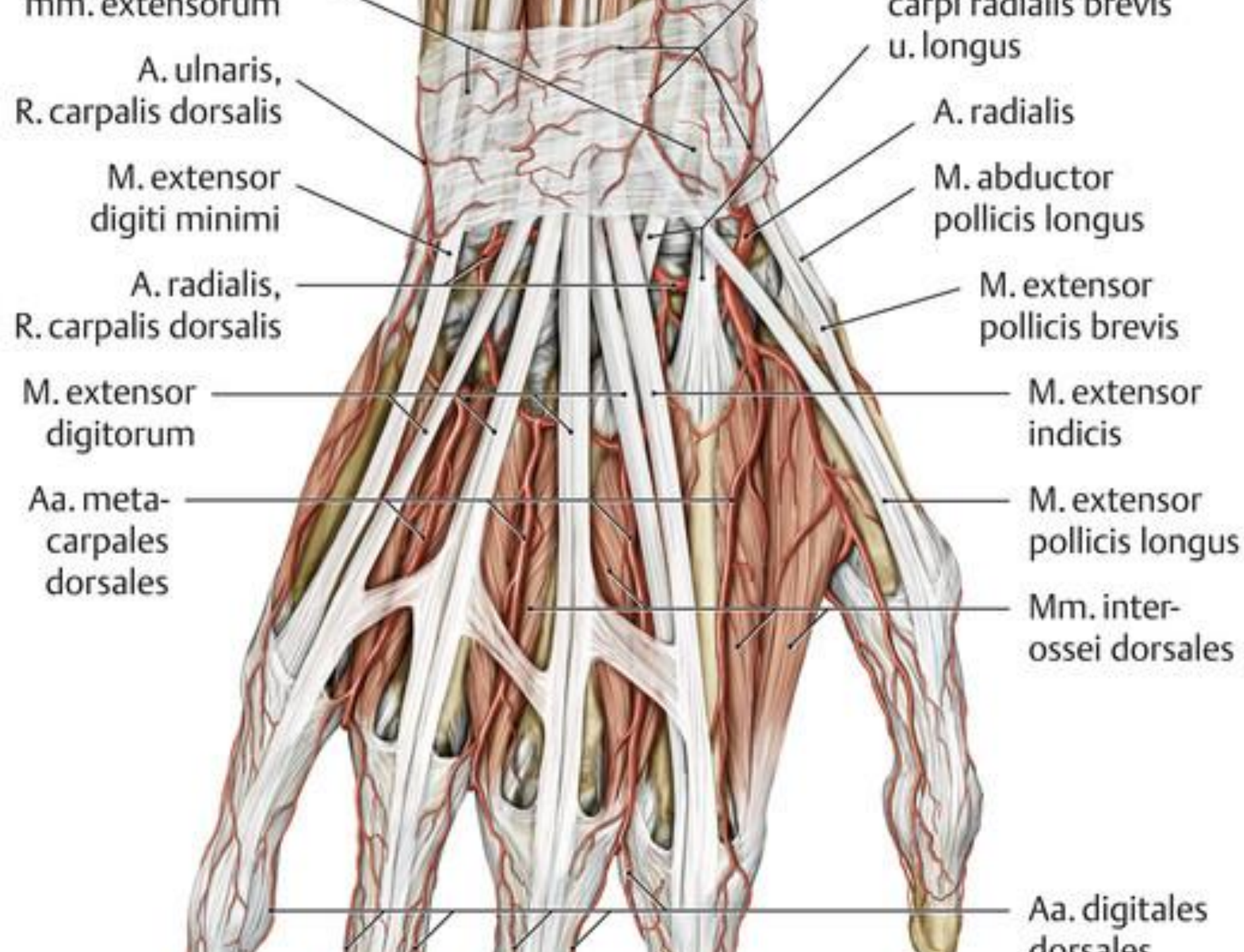
**SYNOVIAL SHEATHS**



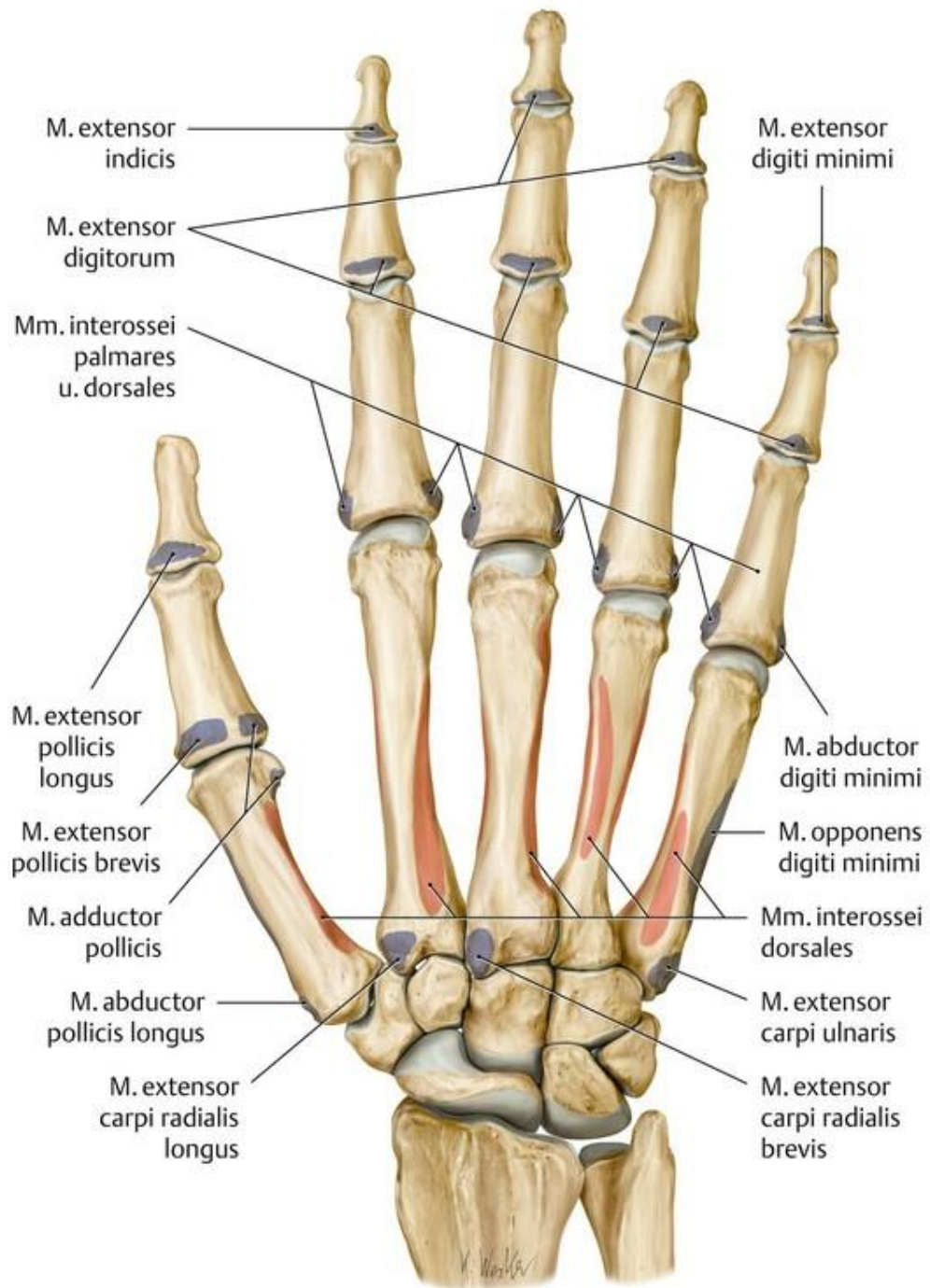
# Extensor Tendons at Wrist

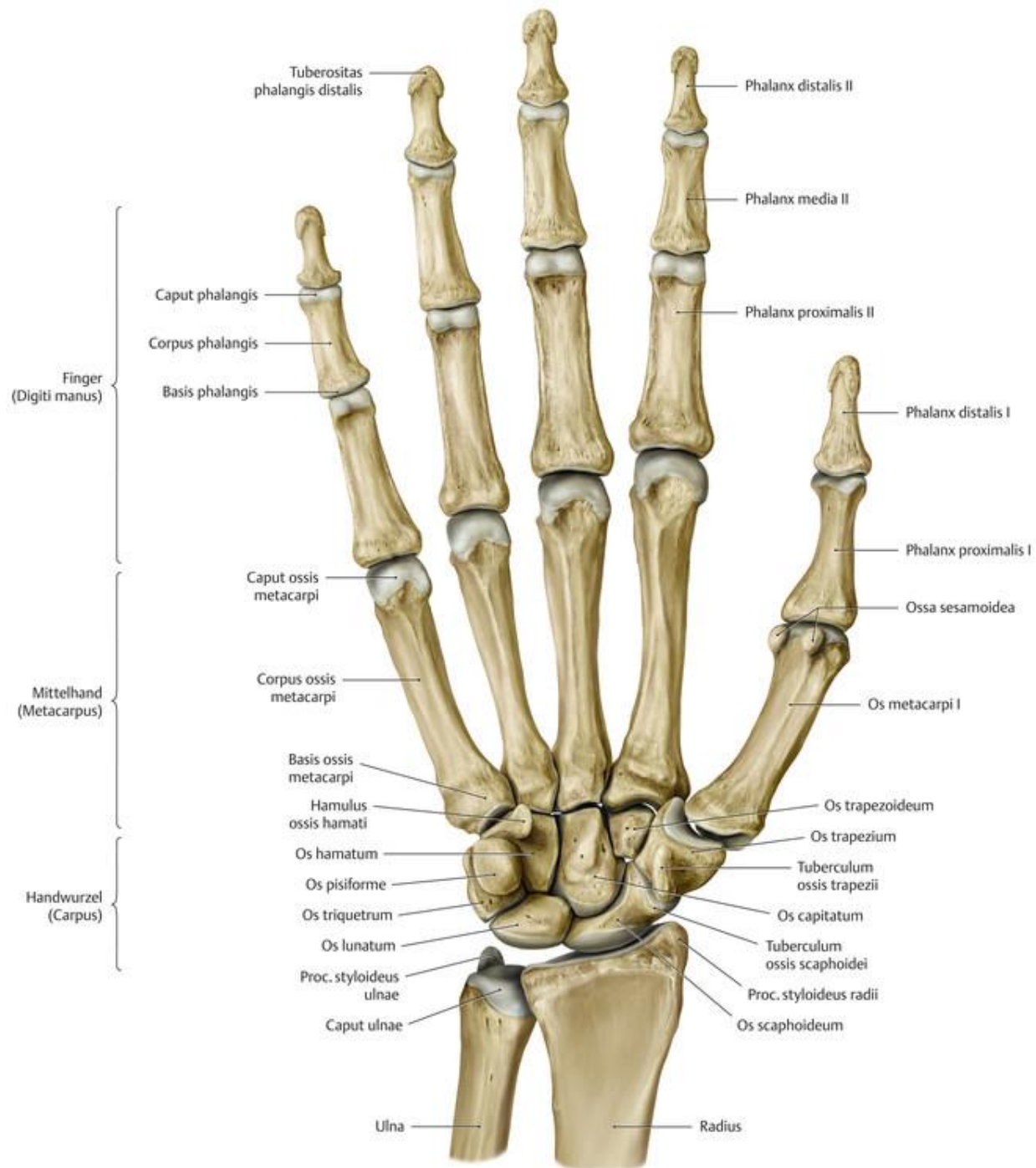
## Posterior [Dorsal] View



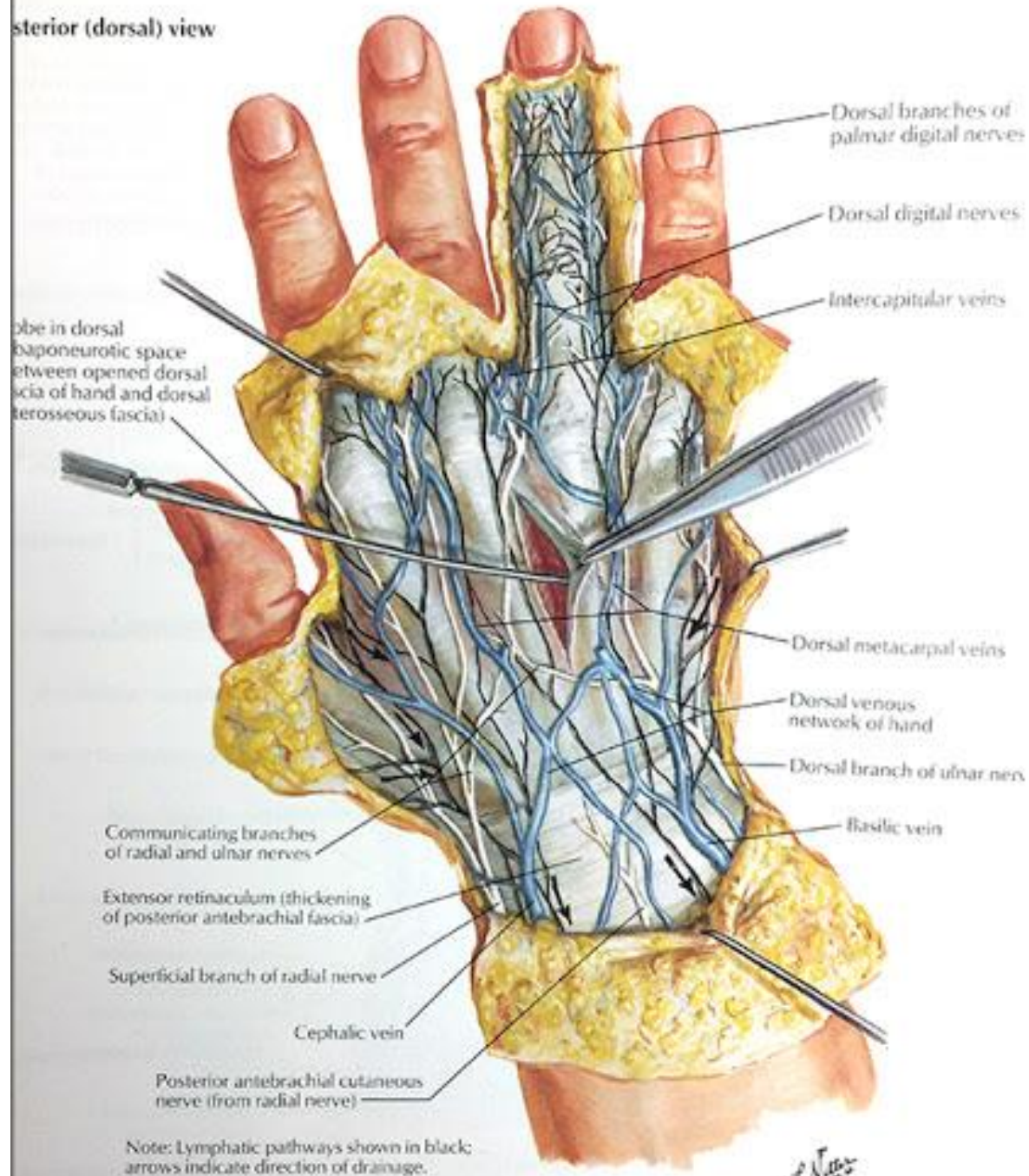




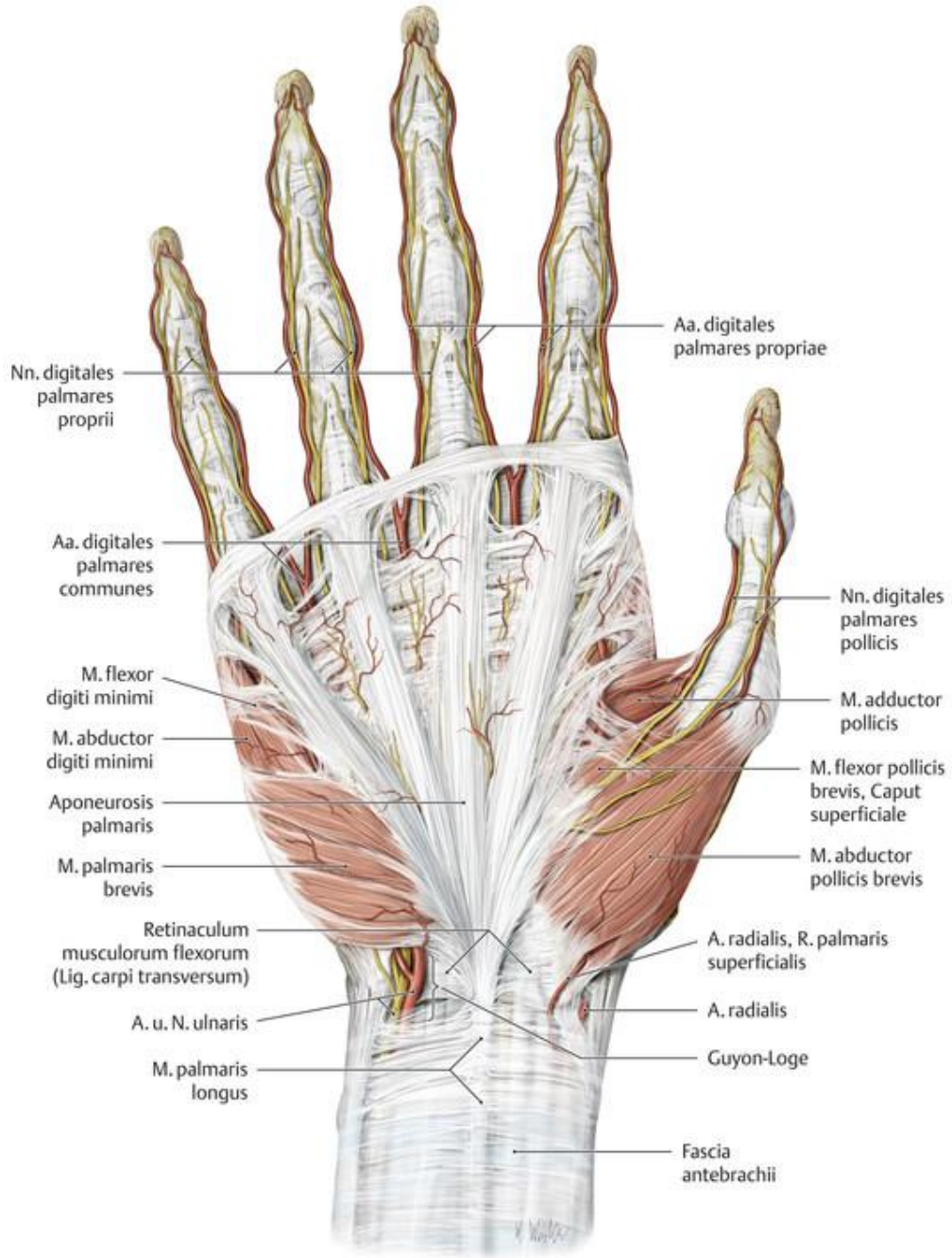


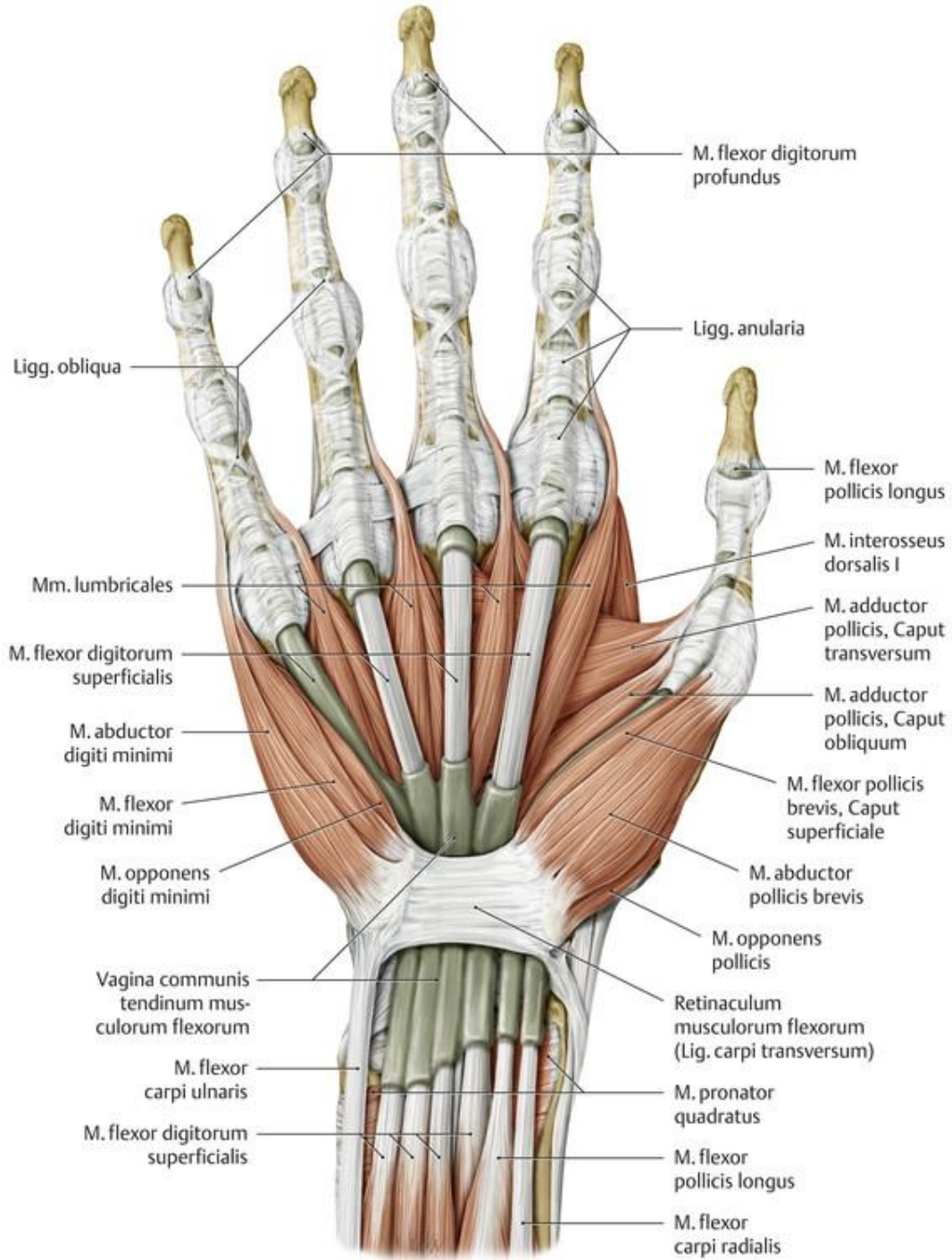


Anterior (dorsal) view

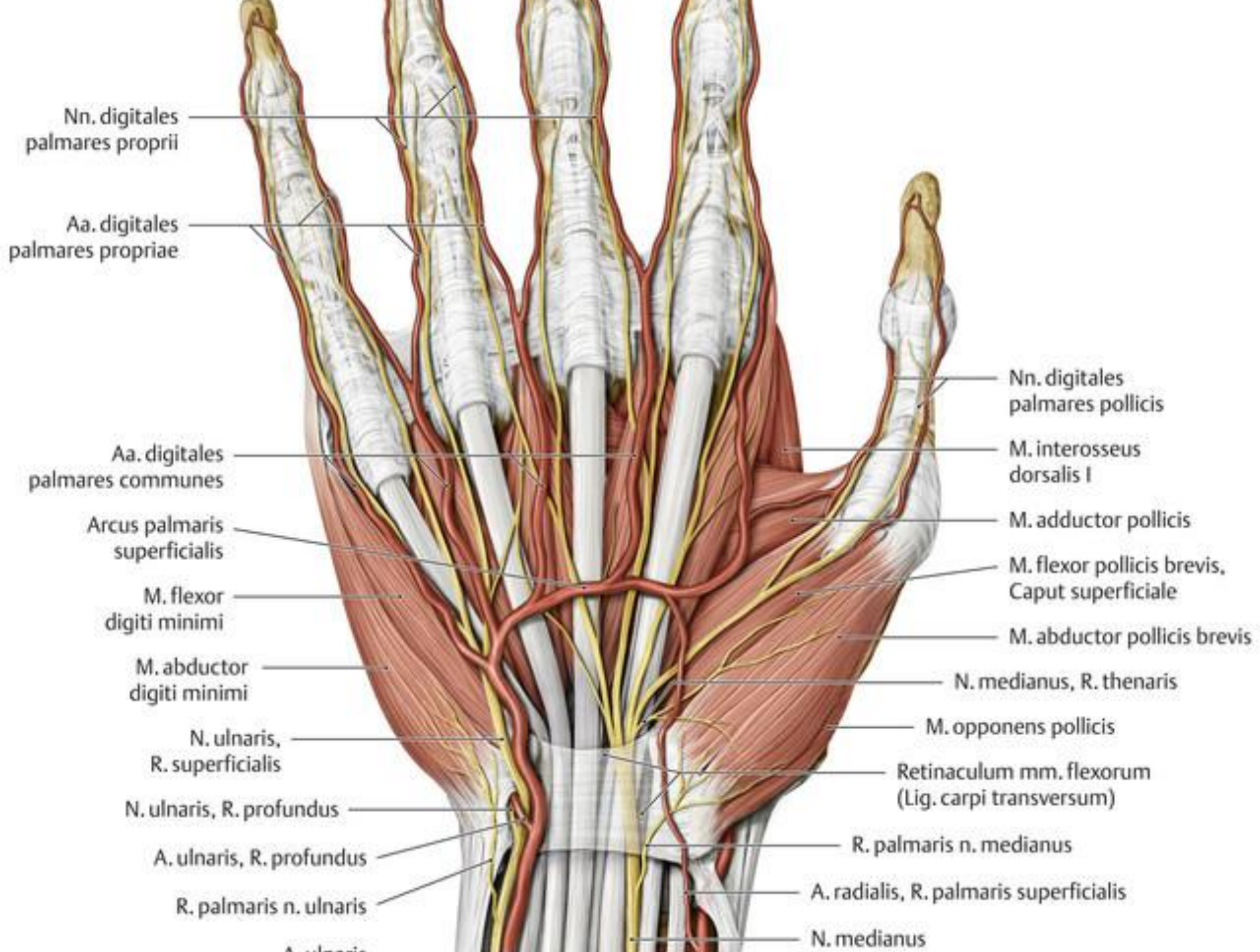




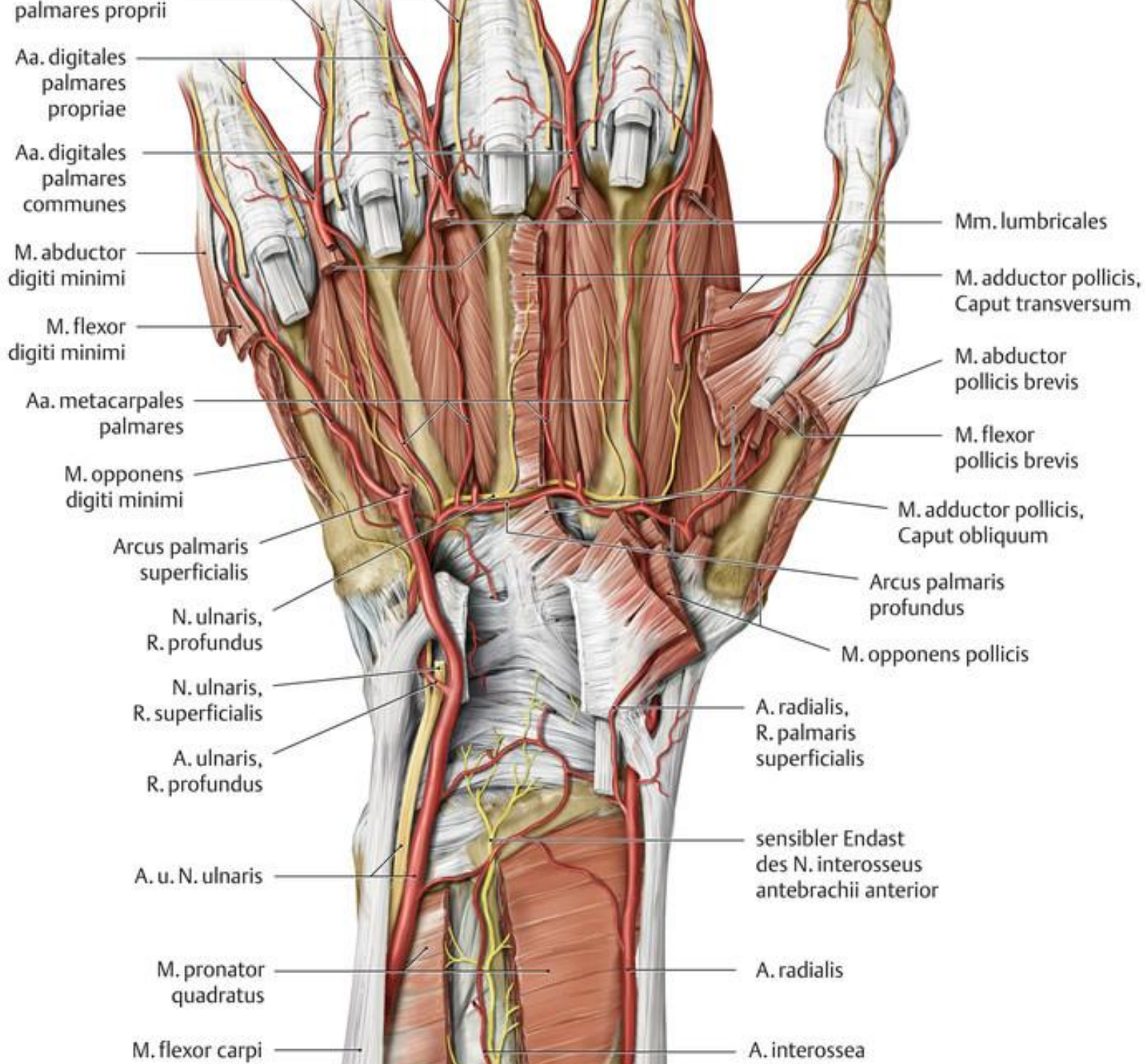












palmares proprii

Aa. digitales  
palmares  
propriae

Aa. digitales  
palmares  
communes

M. abductor  
digiti minimi

M. flexor  
digiti minimi

Aa. metacarpales  
palmares

M. opponens  
digiti minimi

Arcus palmaris  
superficialis

N. ulnaris,  
R. profundus

N. ulnaris,  
R. superficialis

A. ulnaris,  
R. profundus

A. u. N. ulnaris

M. pronator  
quadratus

M. flexor carpi

Mm. lumbricales

M. adductor pollicis,  
Caput transversum

M. abductor  
pollicis brevis

M. flexor  
pollicis brevis

M. adductor pollicis,  
Caput obliquum

Arcus palmaris  
profundus

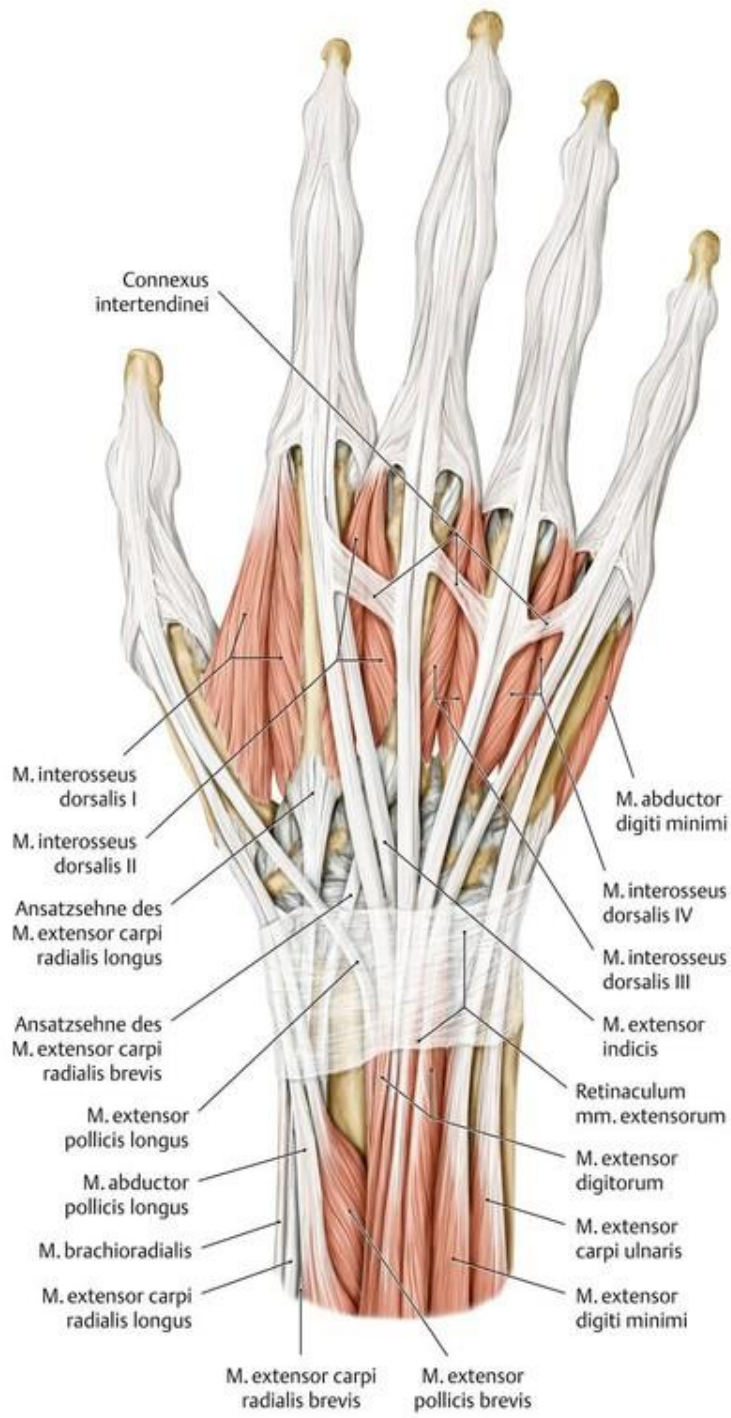
M. opponens pollicis

A. radialis,  
R. palmaris  
superficialis

sensibler Endast  
des N. interosseus  
antebrachii anterior

A. radialis

A. interossea



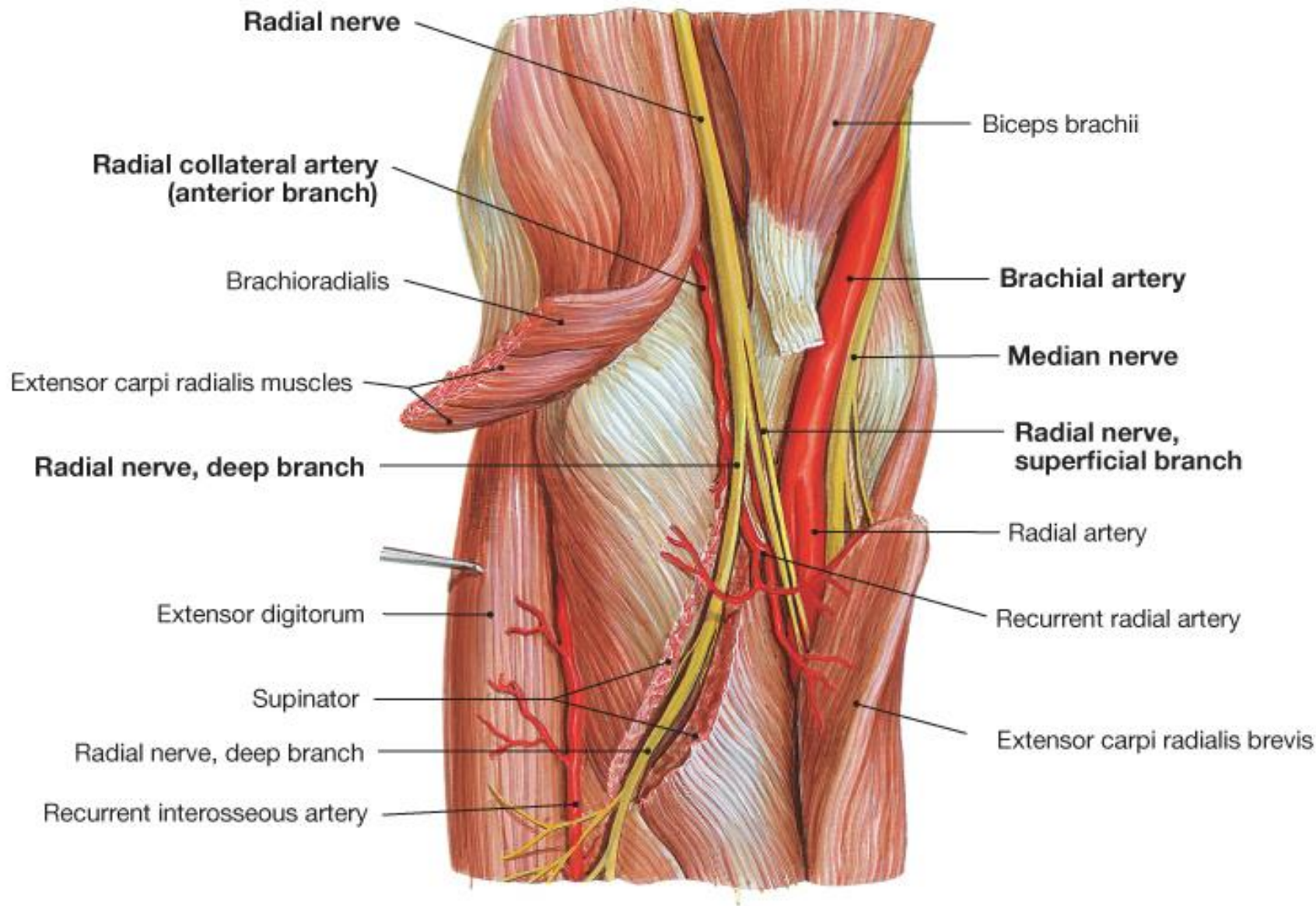
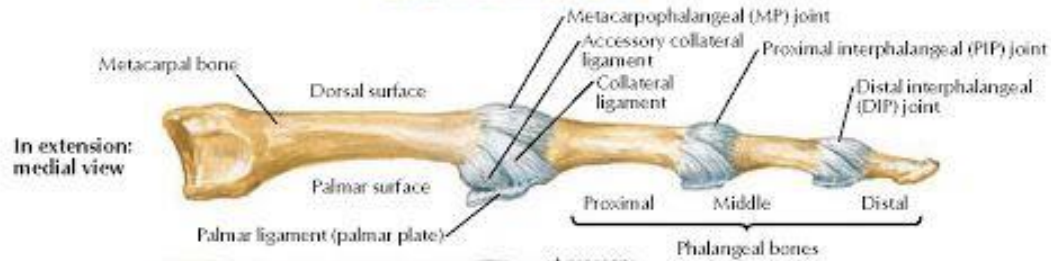
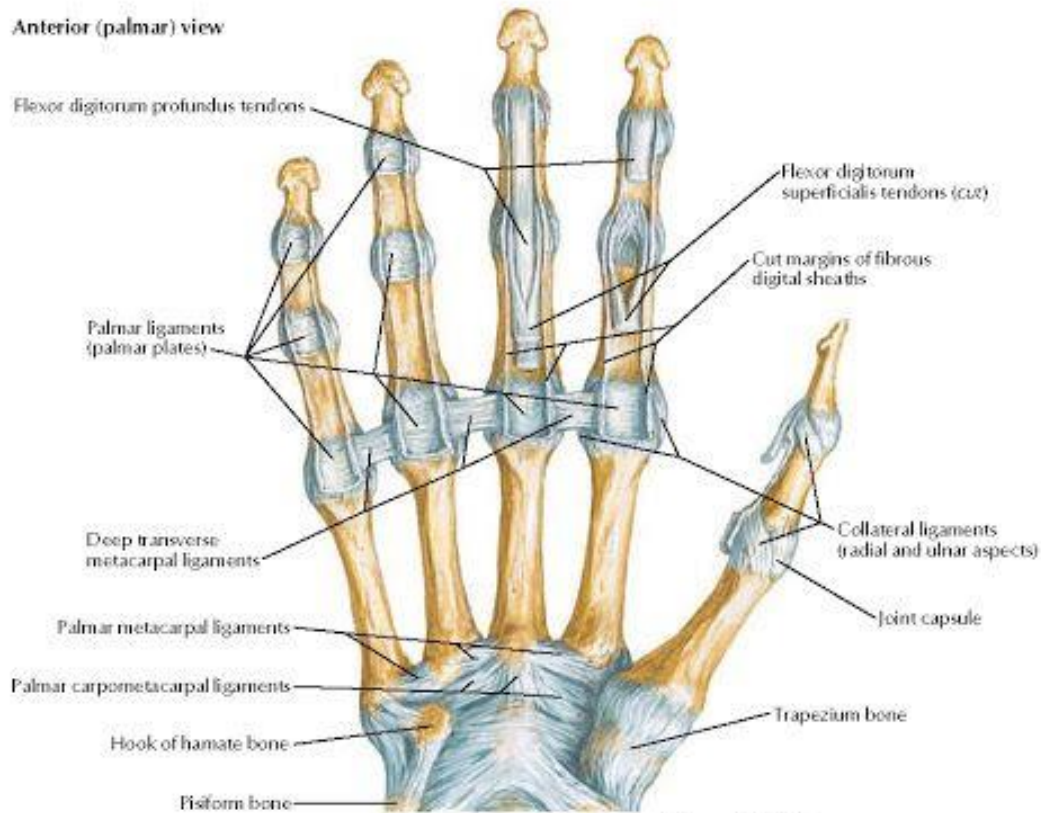
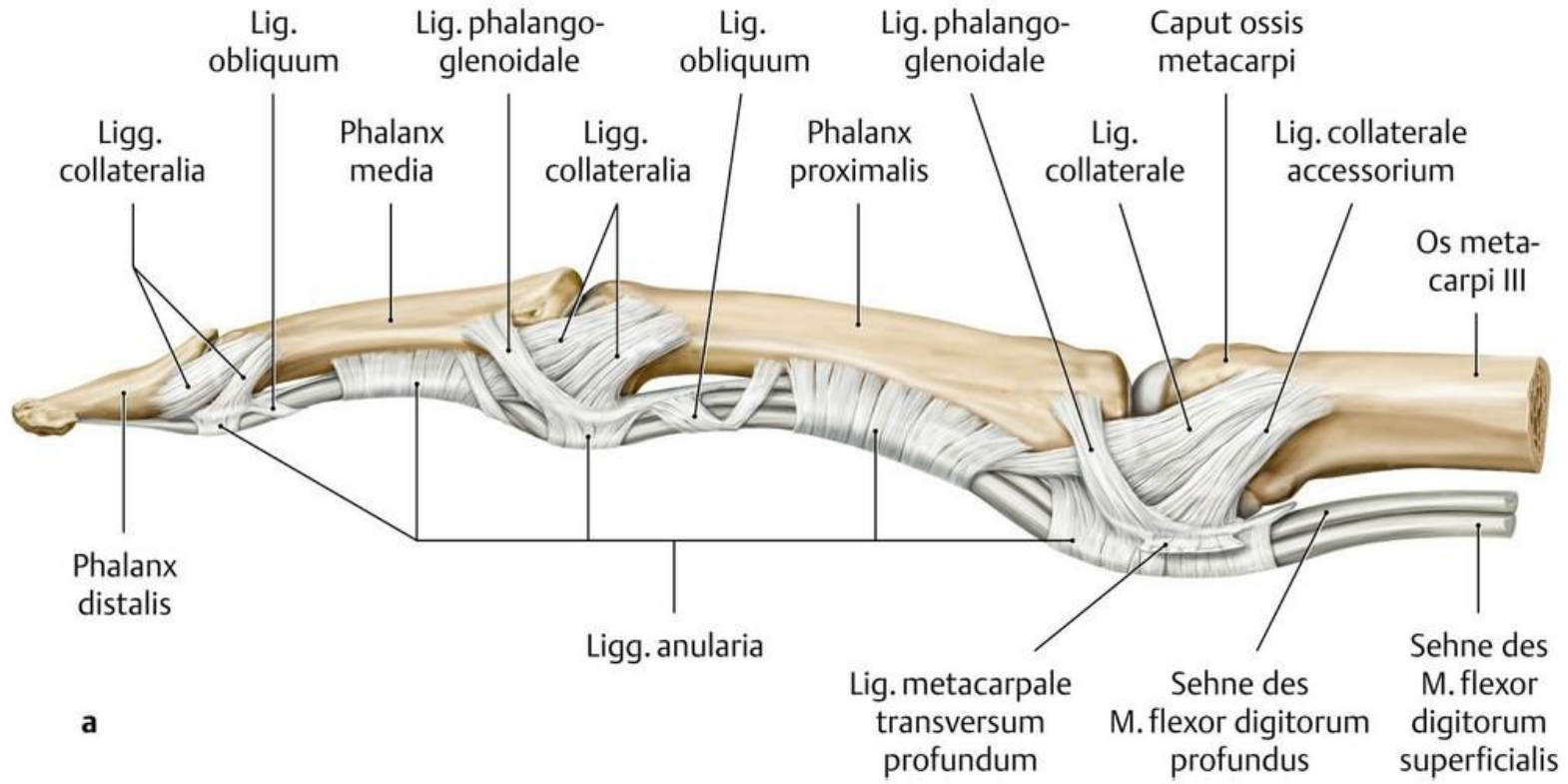


Fig. 411 Axillary fossa.

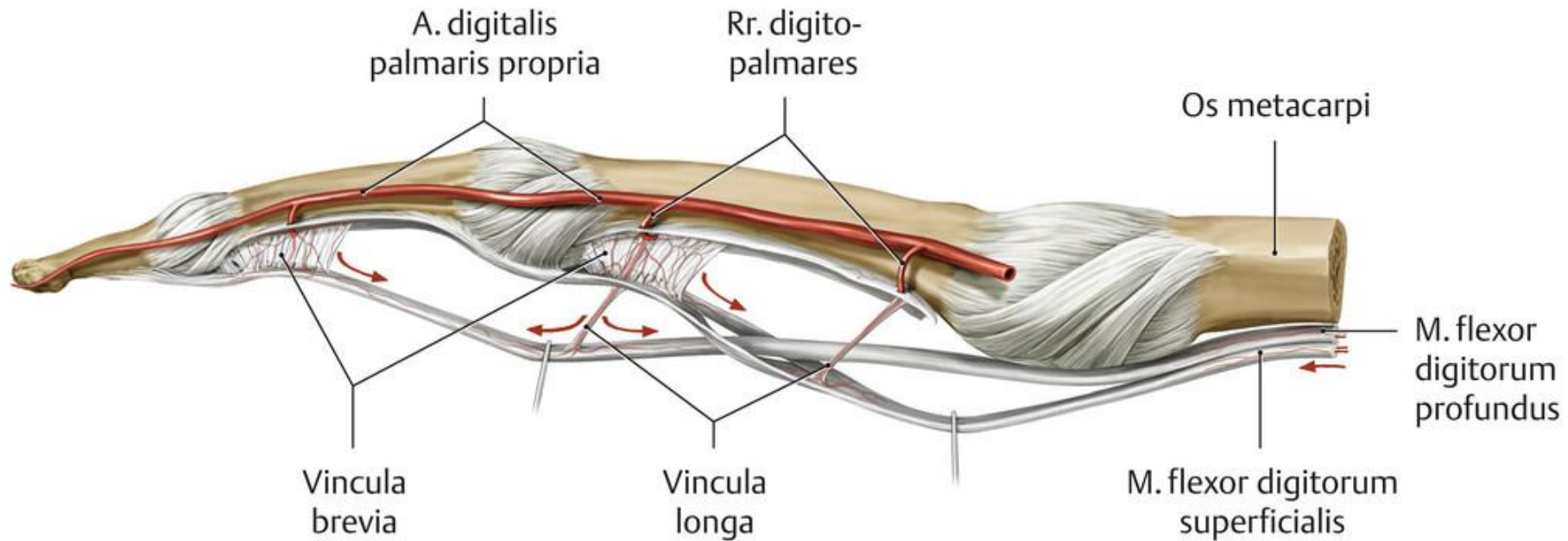
**Anterior (palmar) view**



*Note: Ligaments of metacarpophalangeal and interphalangeal joints are similar.*



**a**



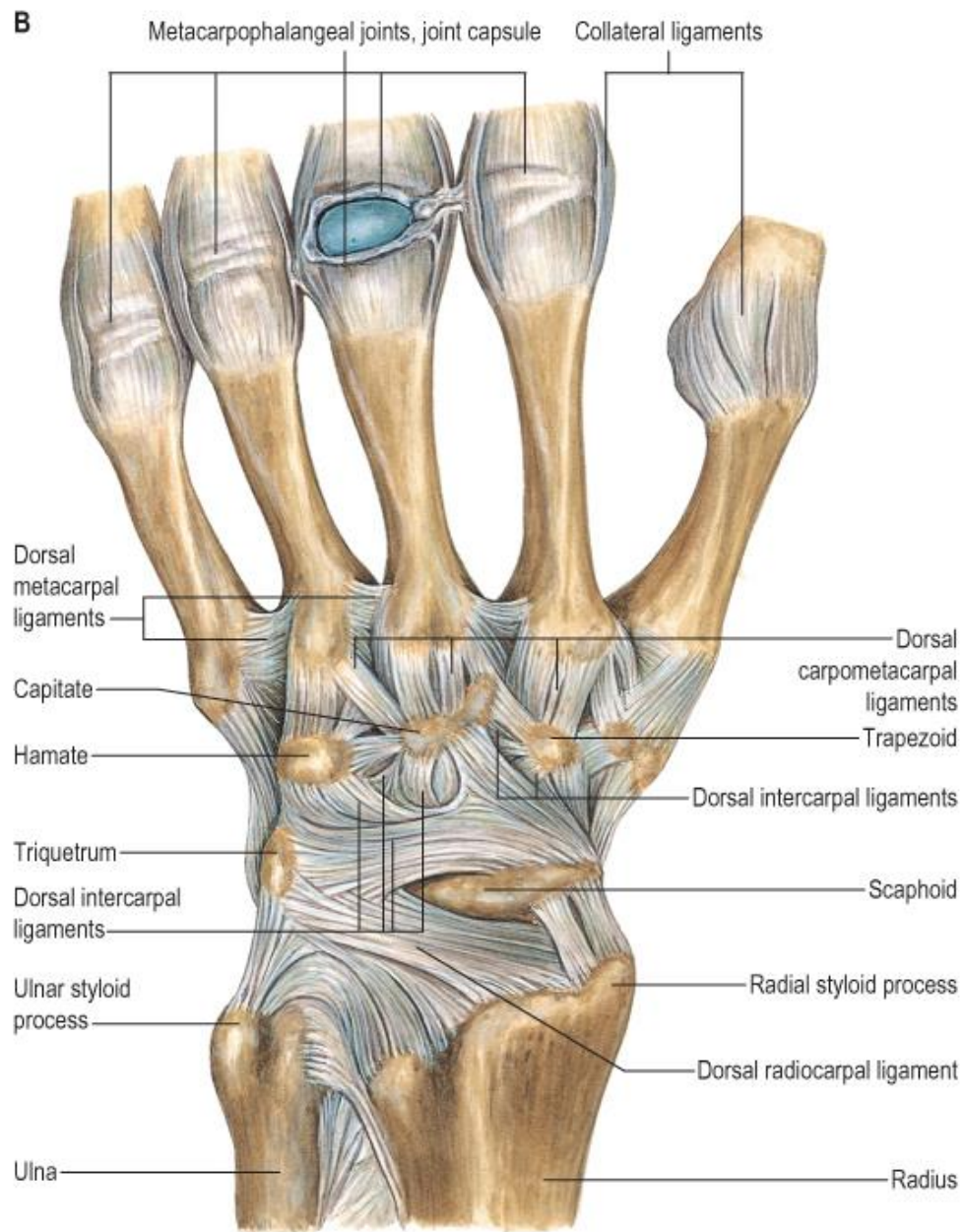
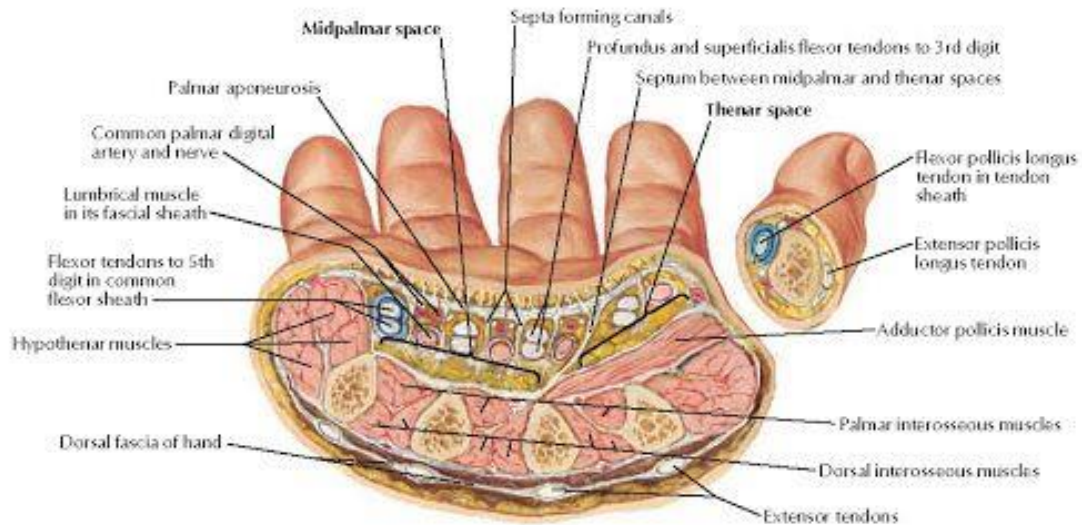
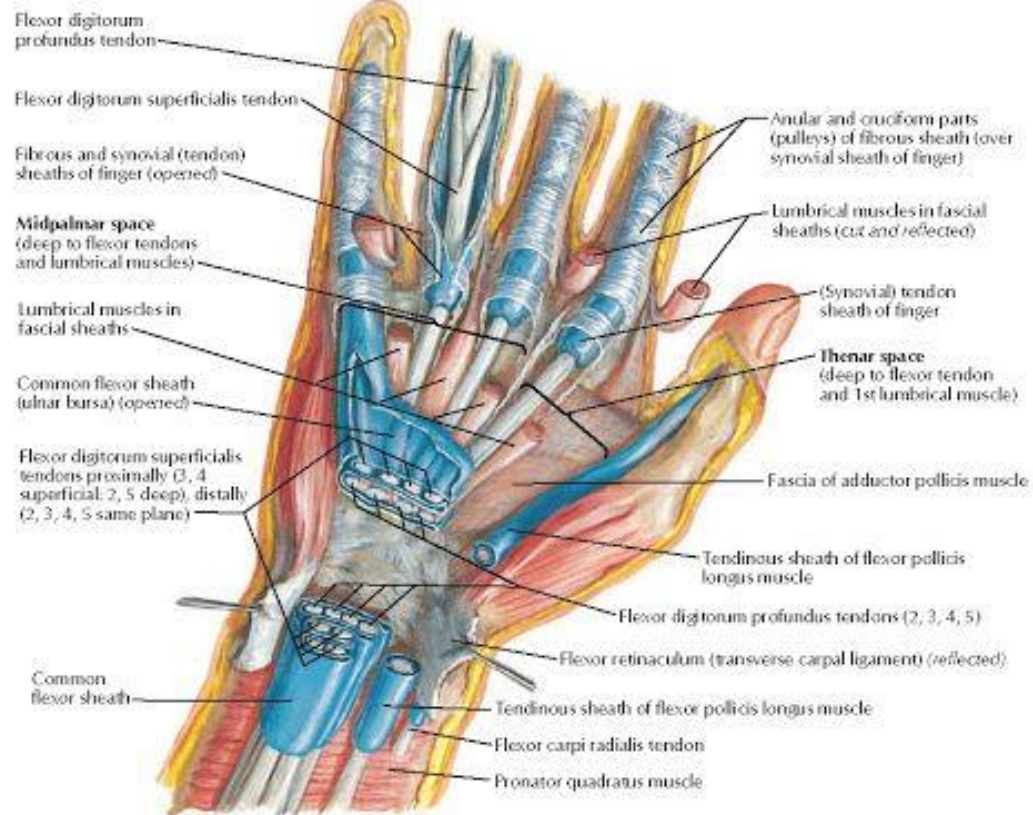
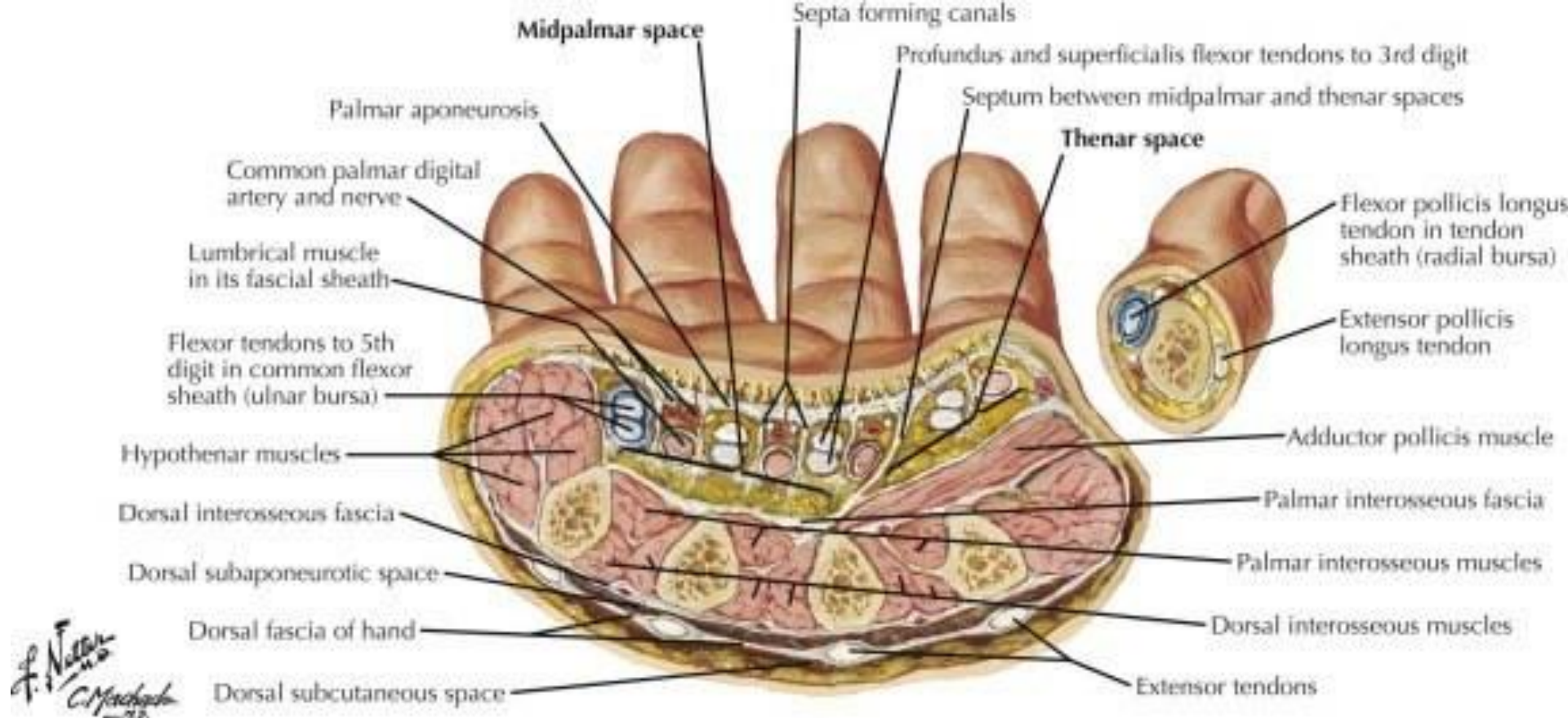
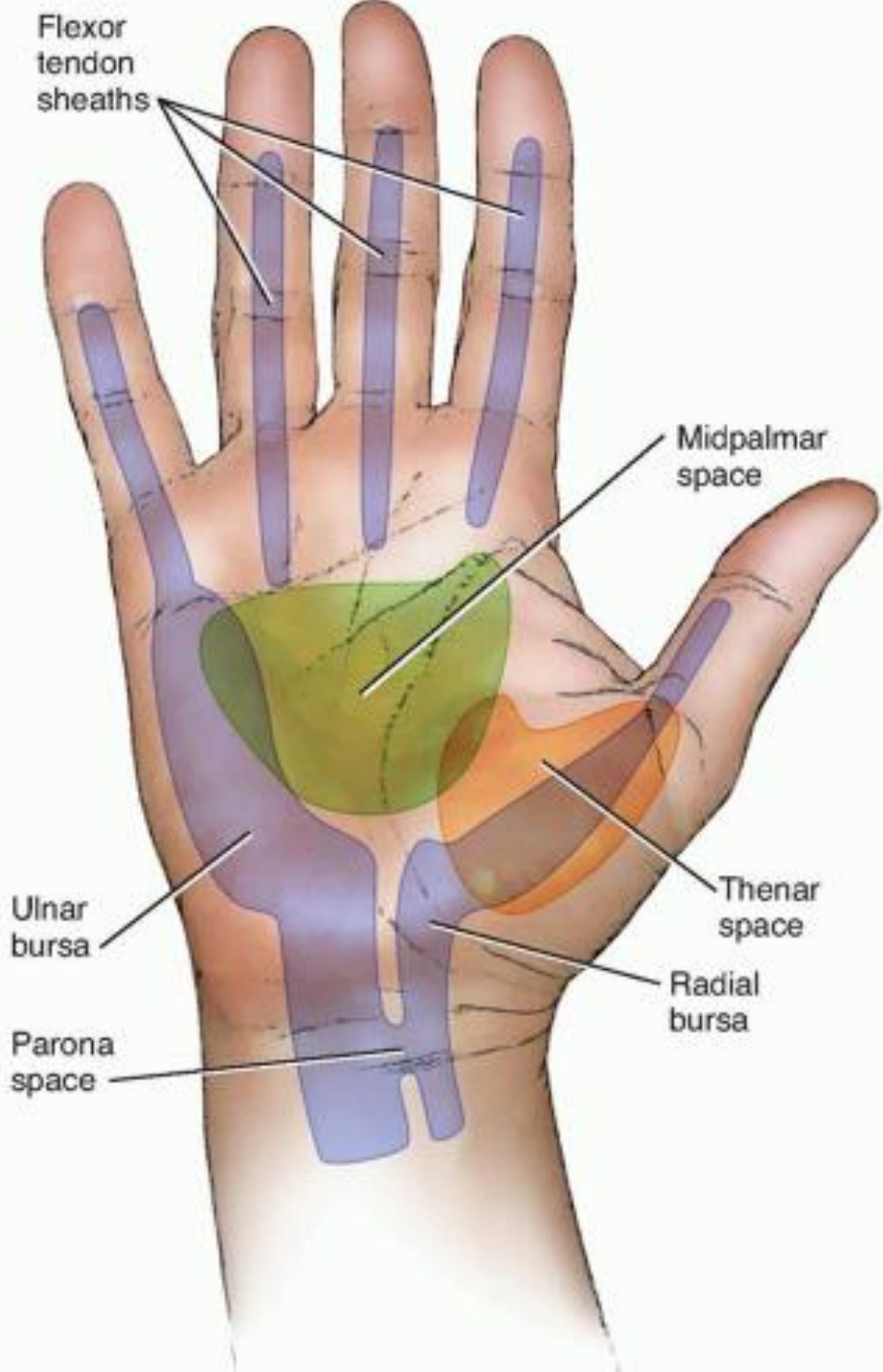


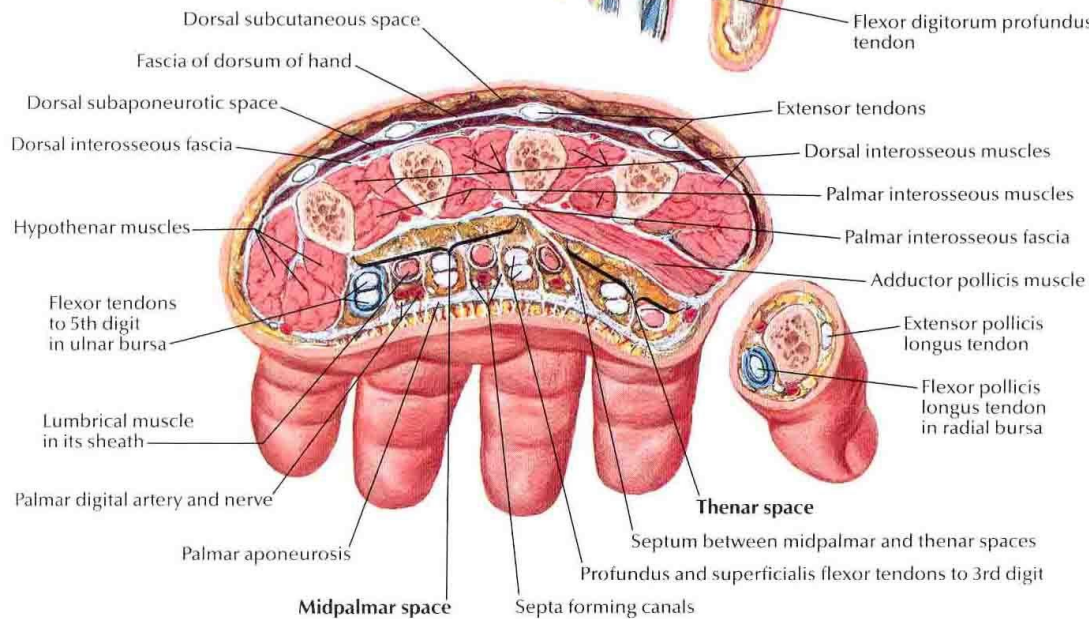
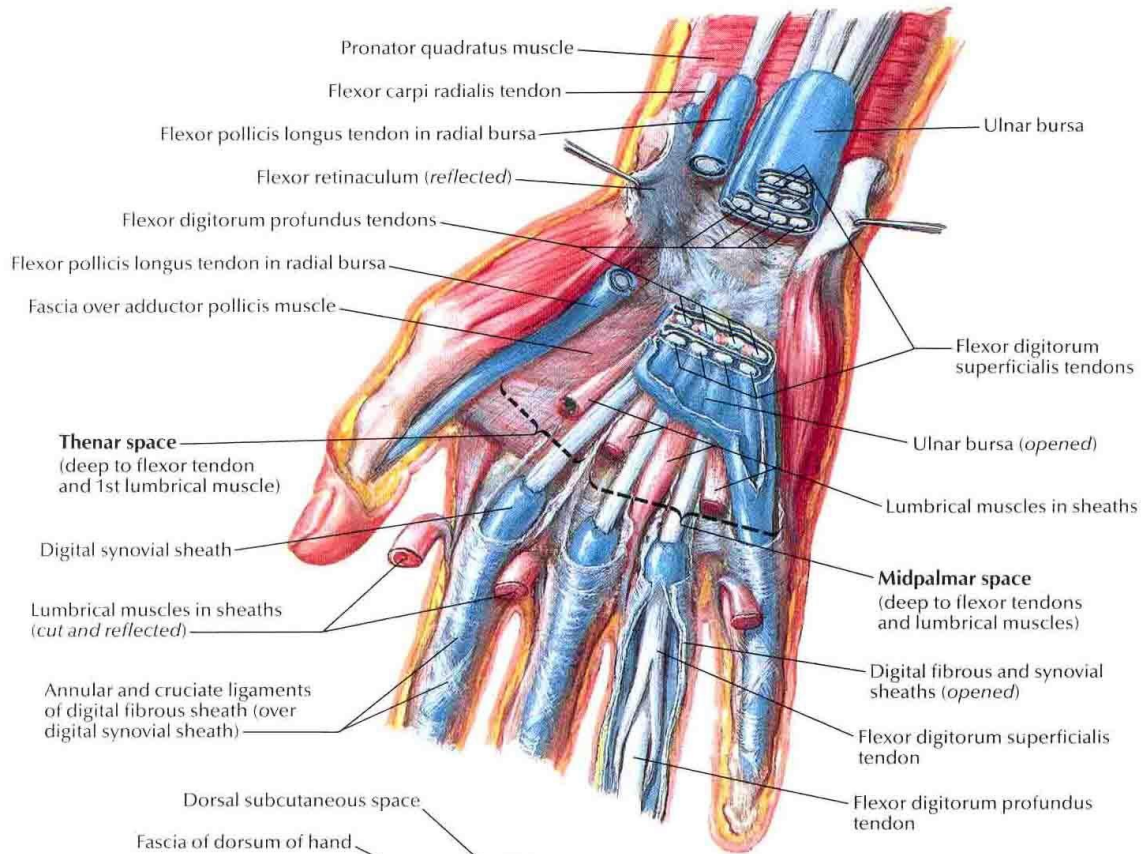
Fig. 50.15 Joints and ligaments of the left hand B, Dorsal aspect.









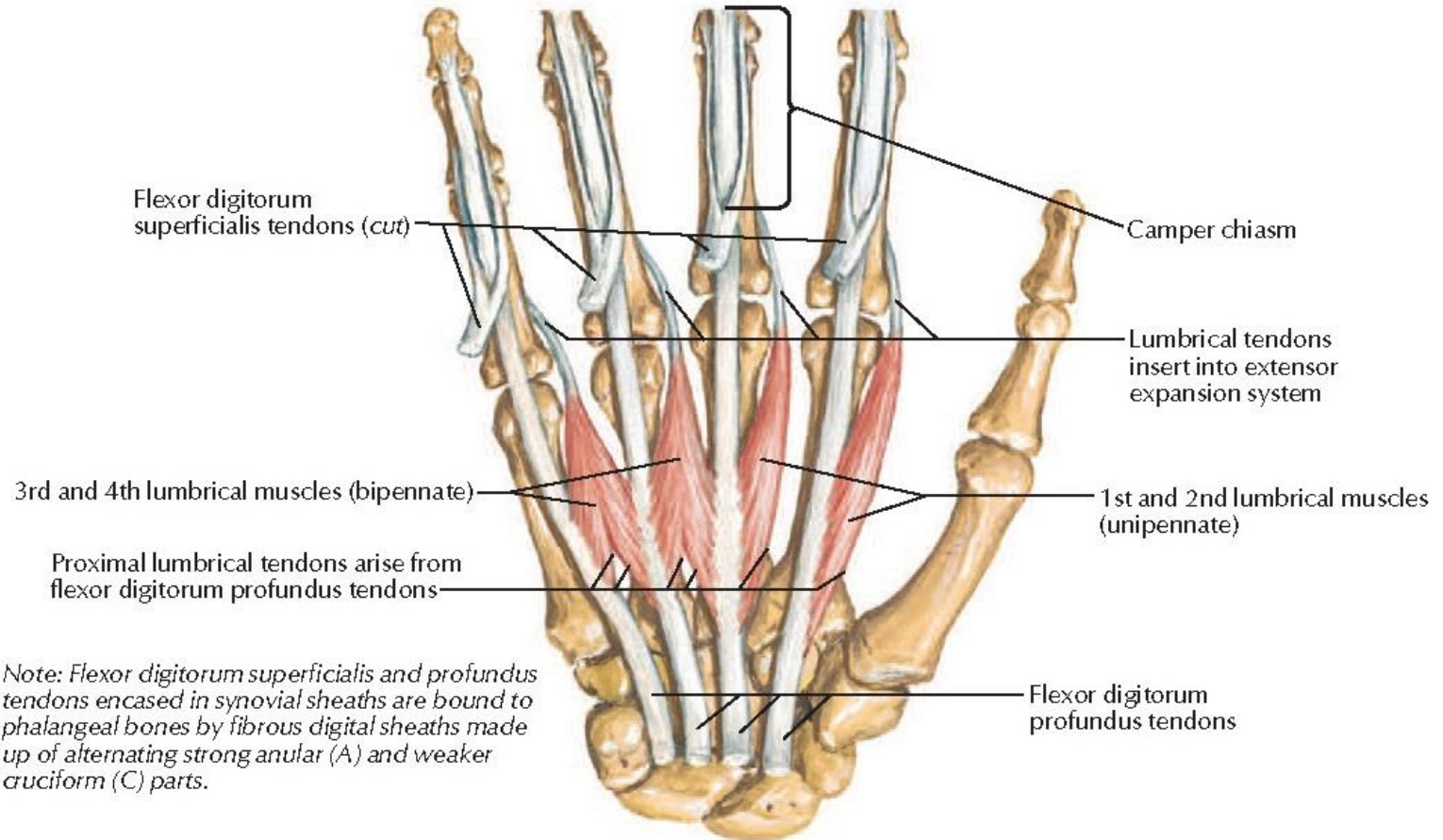


longus (radial nerve),

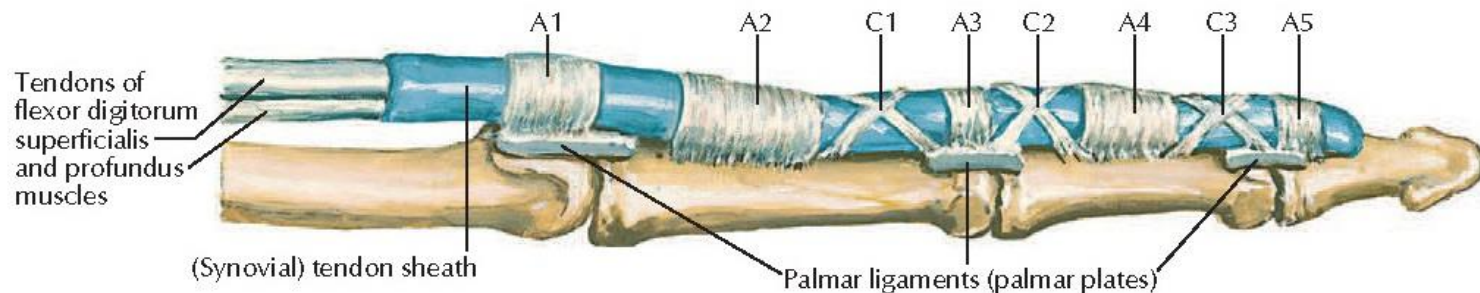


Tendinous sheath of flexor pollicis longus muscle

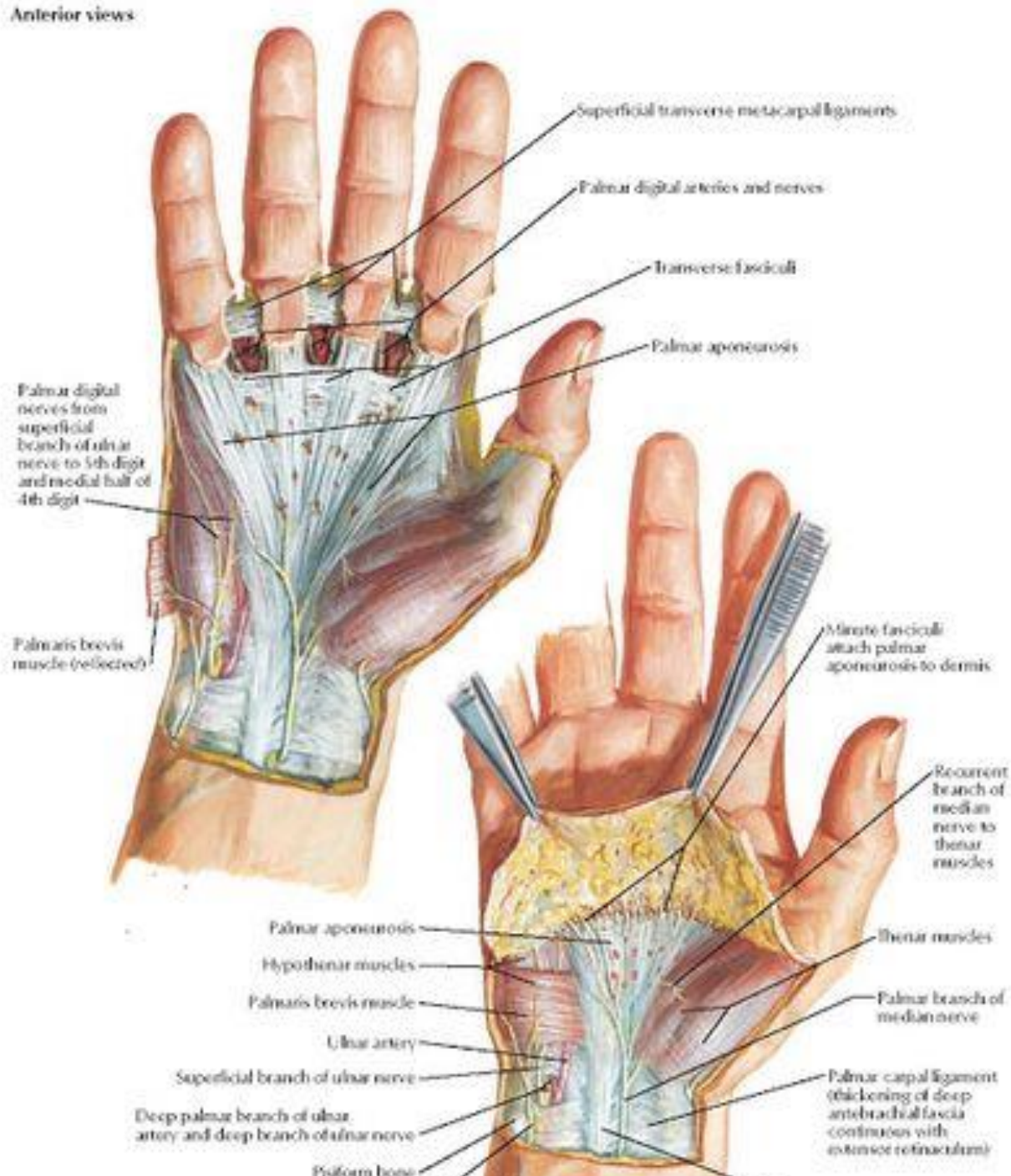
### Lumbrical muscles: schema

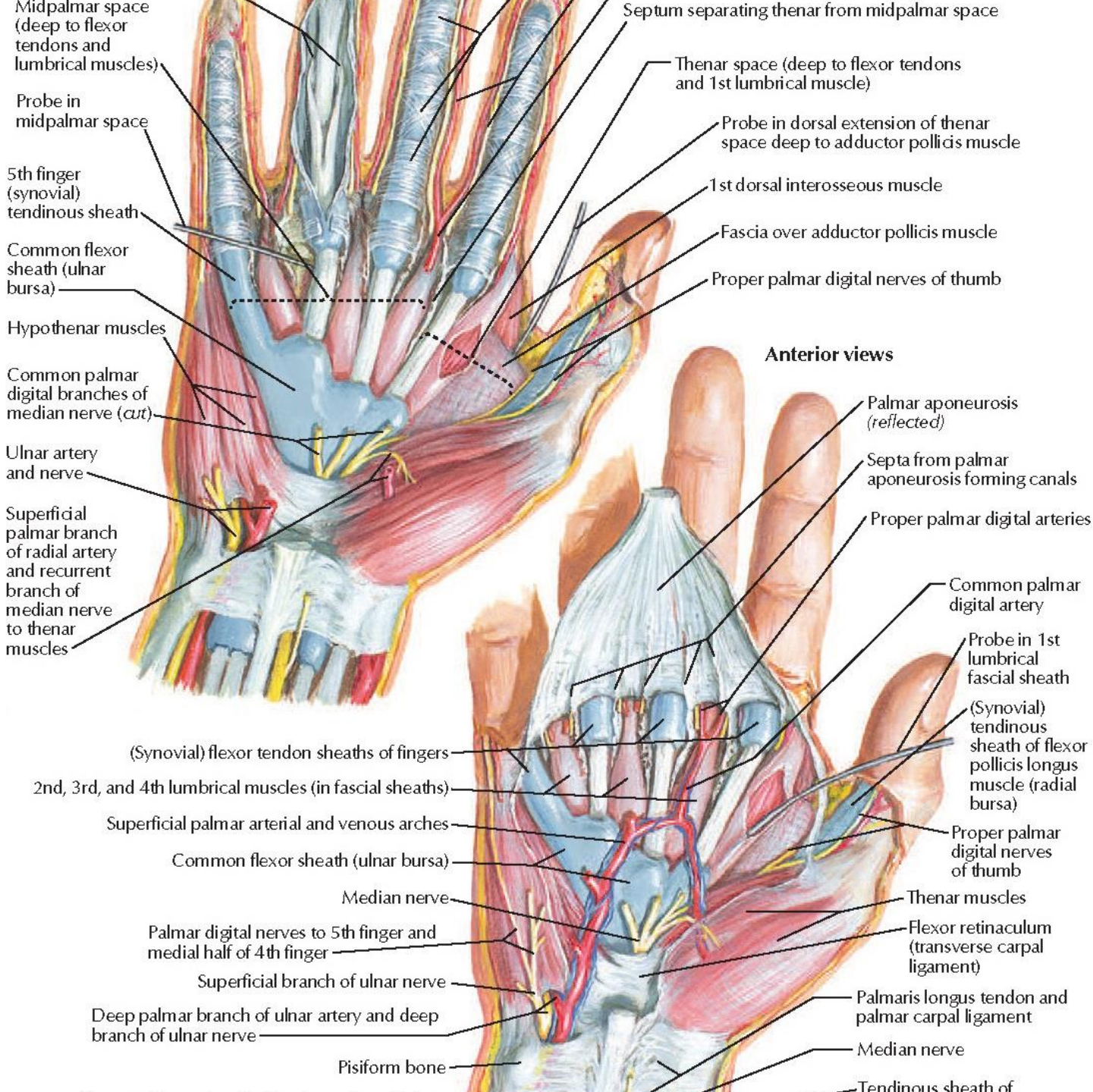


*Note: Flexor digitorum superficialis and profundus tendons encased in synovial sheaths are bound to phalangeal bones by fibrous digital sheaths made up of alternating strong anular (A) and weaker cruciform (C) parts.*



Anterior views





Midpalmar space (deep to flexor tendons and lumbrical muscles)

Probe in midpalmar space

5th finger (synovial) tendinous sheath

Common flexor sheath (ulnar bursa)

Hypothenar muscles

Common palmar digital branches of median nerve (*cut*)

Ulnar artery and nerve

Superficial palmar branch of radial artery and recurrent branch of median nerve to thenar muscles

Septum separating thenar from midpalmar space

Thenar space (deep to flexor tendons and 1st lumbrical muscle)

Probe in dorsal extension of thenar space deep to adductor pollicis muscle

1st dorsal interosseous muscle

Fascia over adductor pollicis muscle

Proper palmar digital nerves of thumb

**Anterior views**

(Synovial) flexor tendon sheaths of fingers

2nd, 3rd, and 4th lumbrical muscles (in fascial sheaths)

Superficial palmar arterial and venous arches

Common flexor sheath (ulnar bursa)

Median nerve

Palmar digital nerves to 5th finger and medial half of 4th finger

Superficial branch of ulnar nerve

Deep palmar branch of ulnar artery and deep branch of ulnar nerve

Pisiform bone

Palmar aponeurosis (*reflected*)

Septa from palmar aponeurosis forming canals

Proper palmar digital arteries

Common palmar digital artery

Probe in 1st lumbrical fascial sheath

(Synovial) tendinous sheath of flexor pollicis longus muscle (radial bursa)

Proper palmar digital nerves of thumb

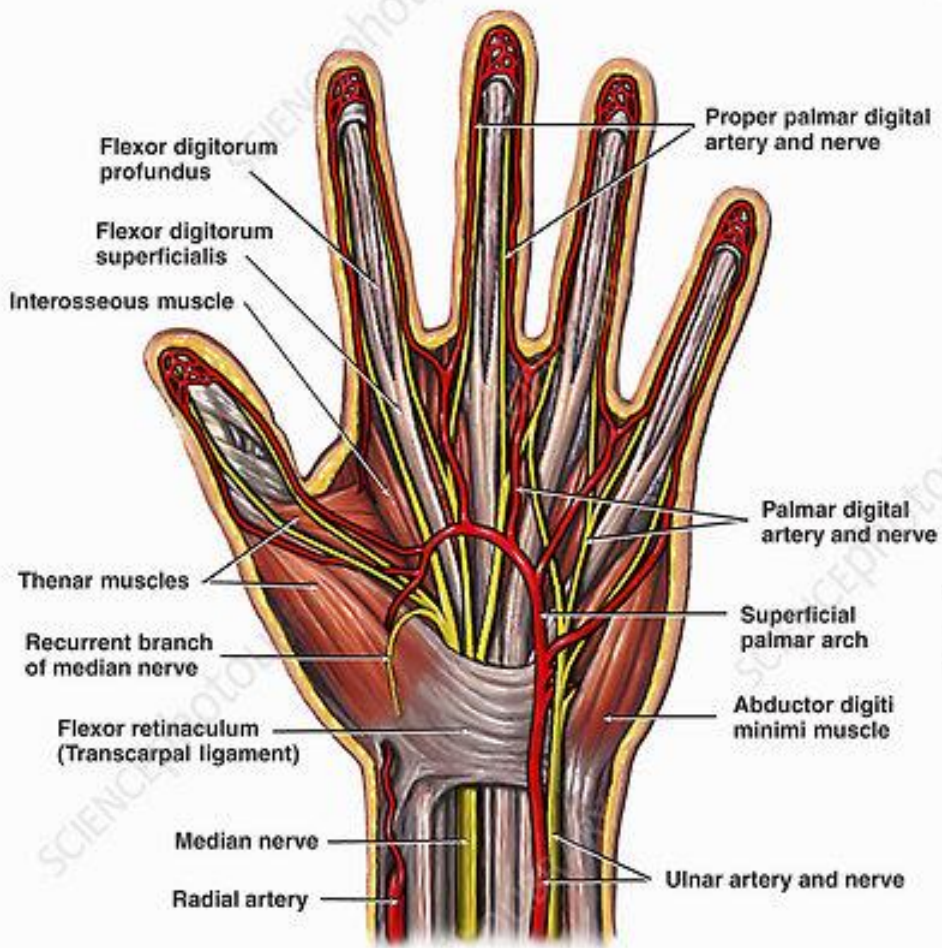
Thenar muscles

Flexor retinaculum (transverse carpal ligament)

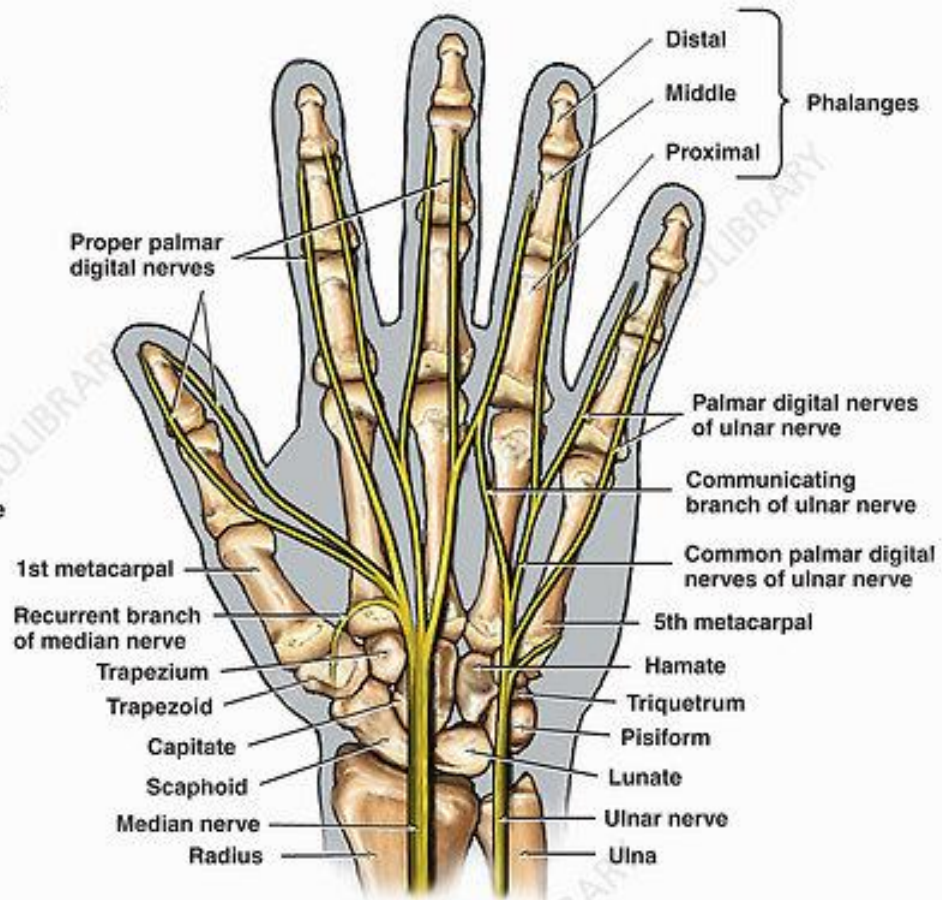
Palmaris longus tendon and palmar carpal ligament

Median nerve

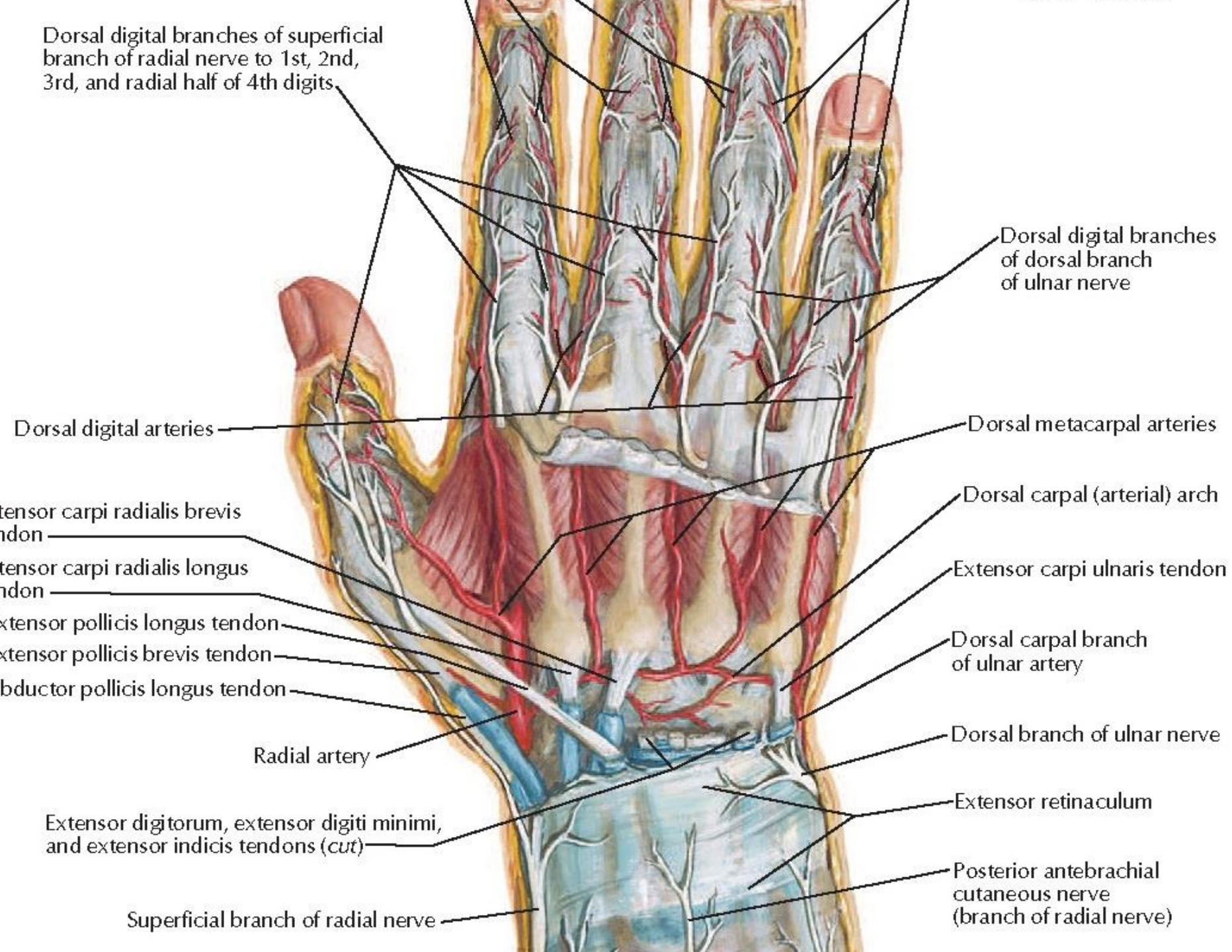
Tendinous sheath of



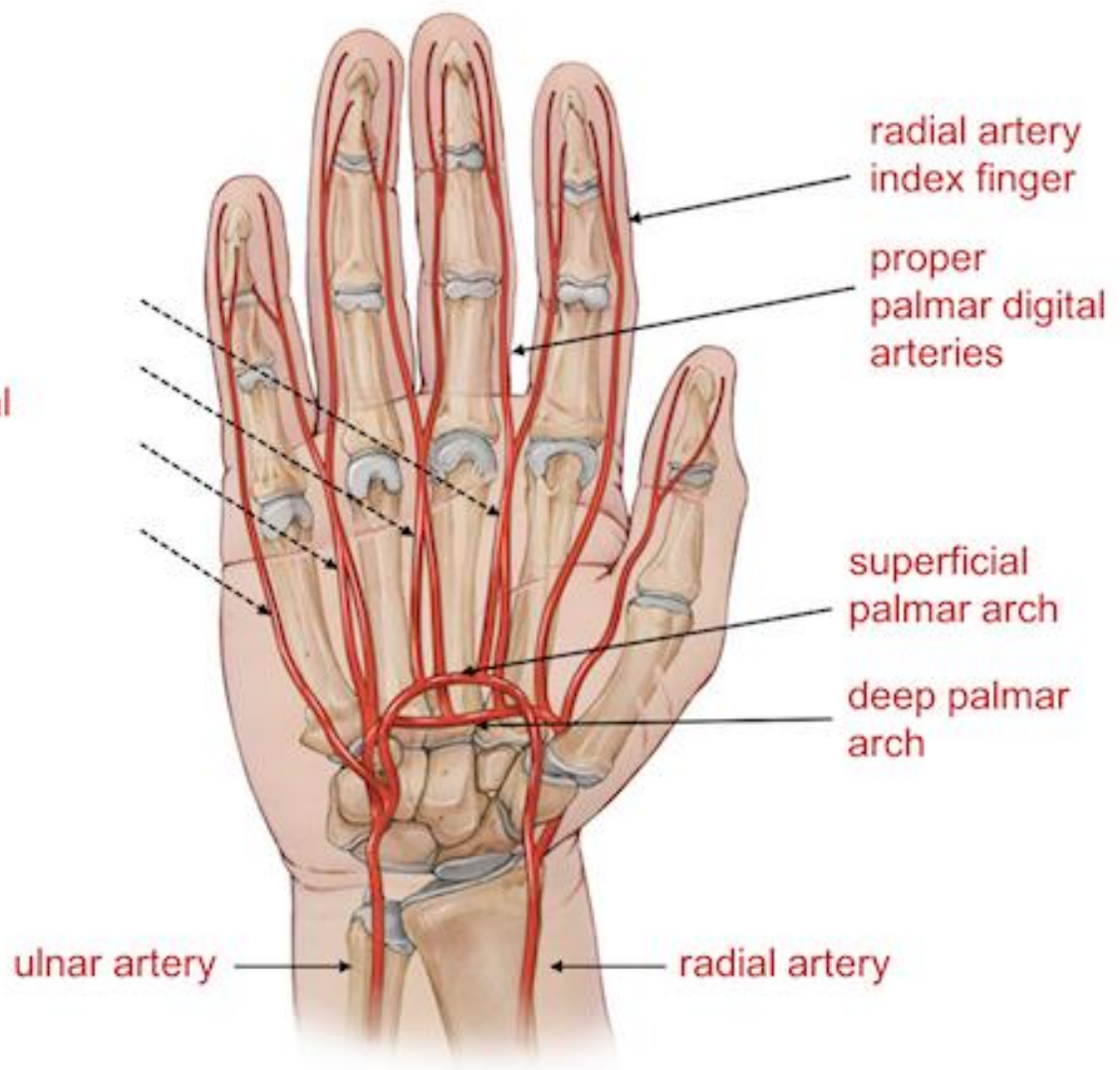
Palmar view



Palmar view



common  
palmar digital  
arteries



radial artery  
index finger

proper  
palmar digital  
arteries

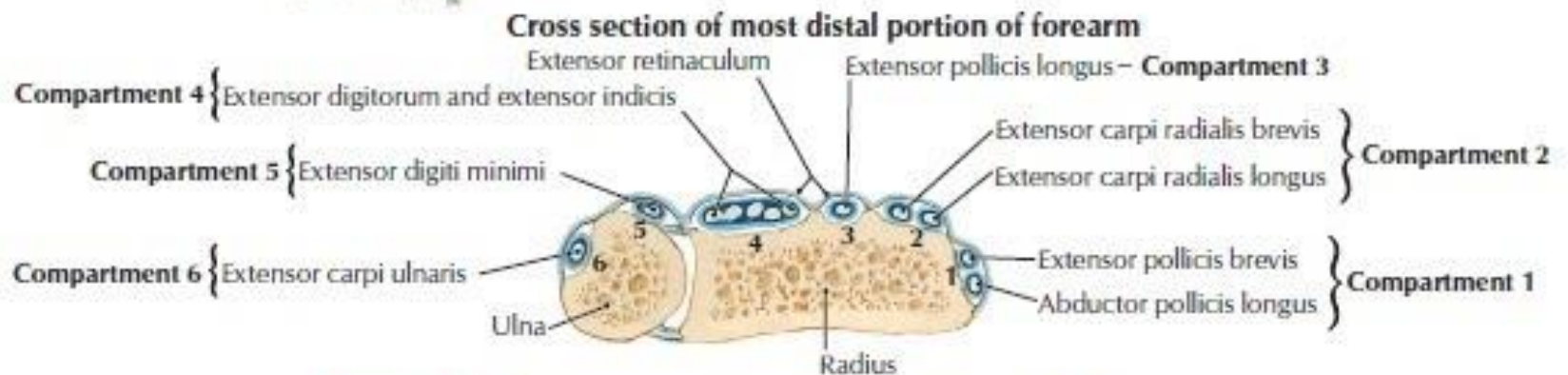
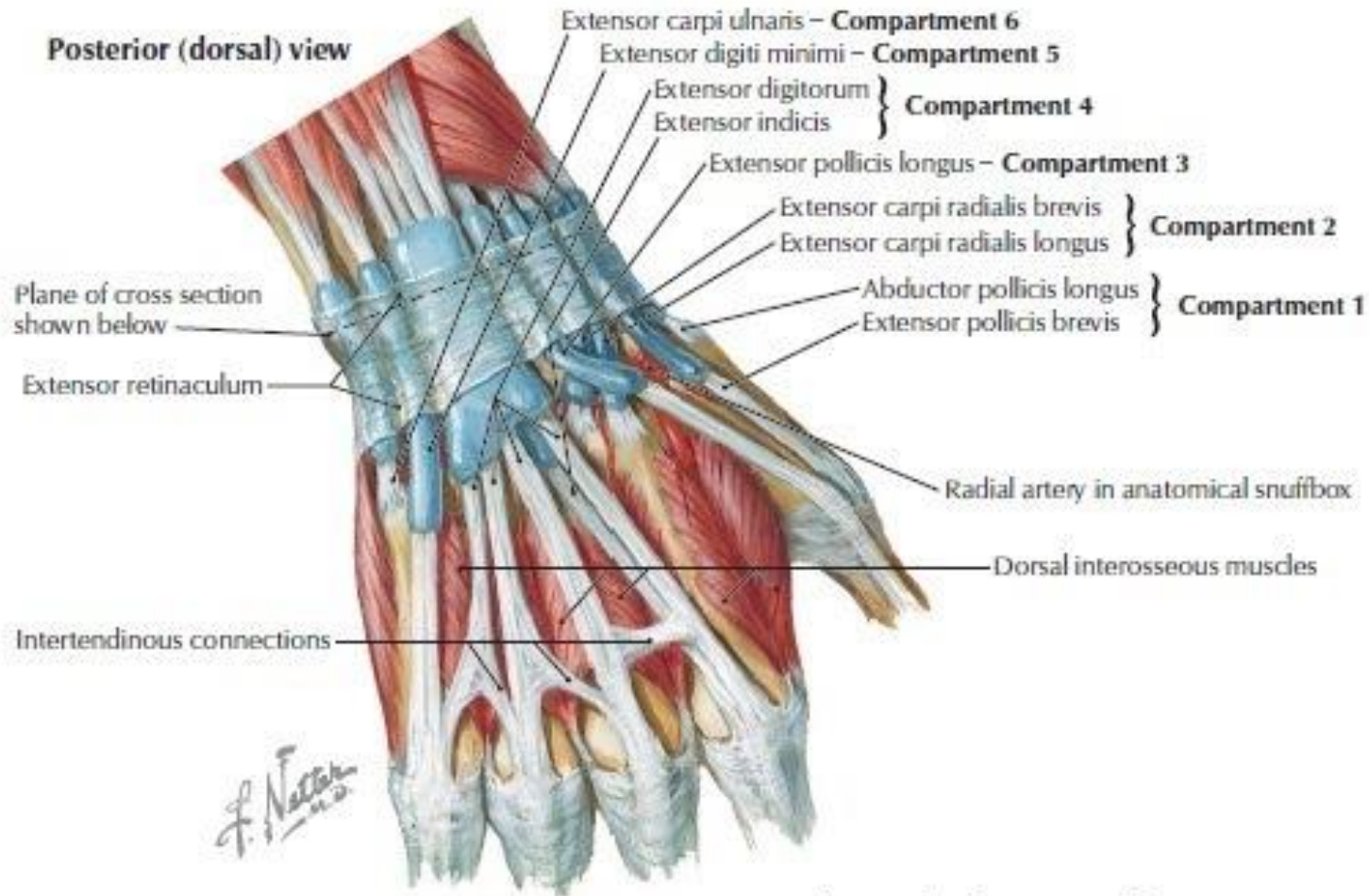
superficial  
palmar arch

deep palmar  
arch

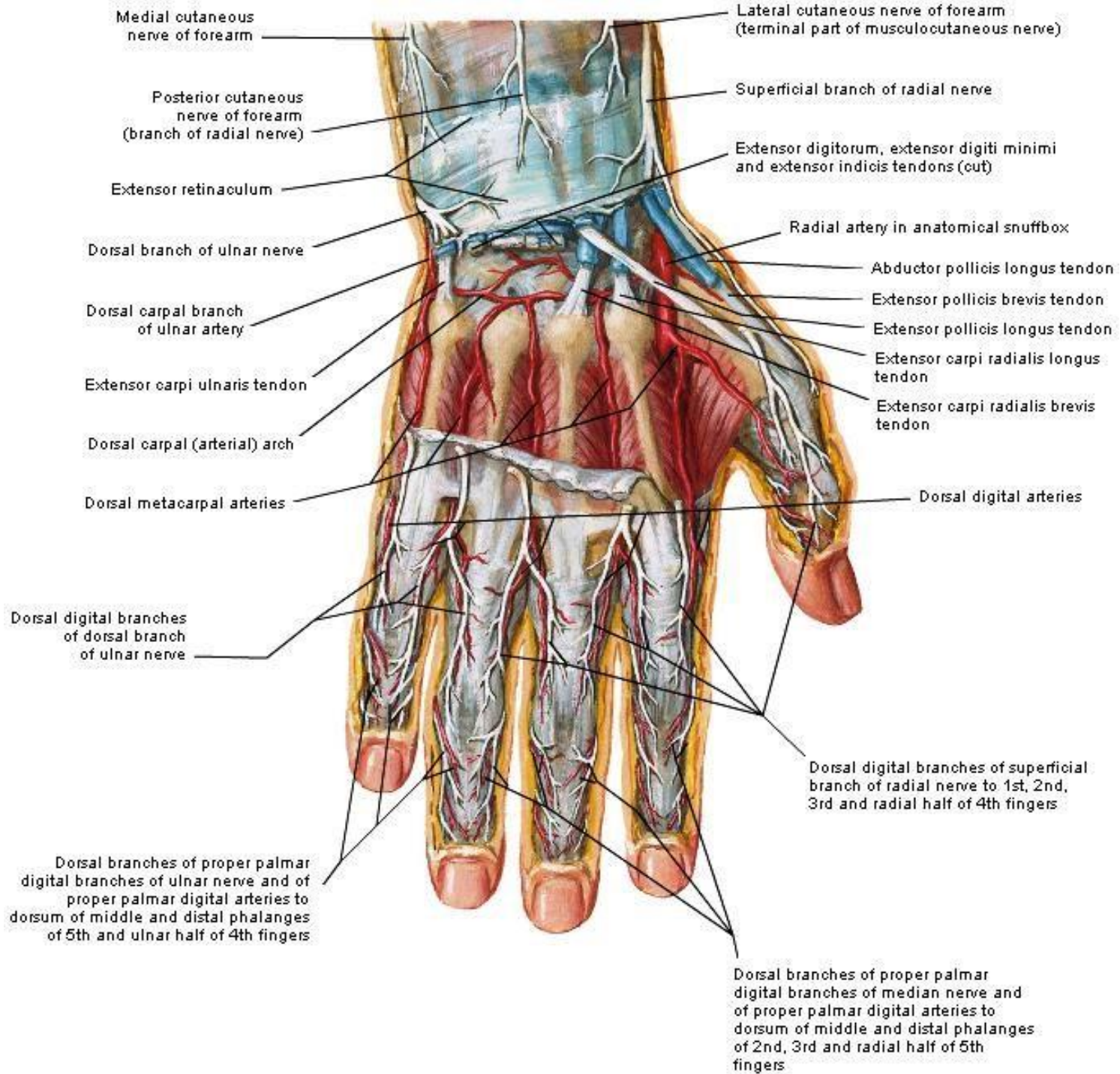
ulnar artery

radial artery





**FIGURE 7-28** Extensor Tendons and Sheaths of the Wrist



Medial cutaneous nerve of forearm

Lateral cutaneous nerve of forearm (terminal part of musculocutaneous nerve)

Posterior cutaneous nerve of forearm (branch of radial nerve)

Superficial branch of radial nerve

Extensor retinaculum

Extensor digitorum, extensor digiti minimi and extensor indicis tendons (cut)

Dorsal branch of ulnar nerve

Radial artery in anatomical snuffbox

Dorsal carpal branch of ulnar artery

Abductor pollicis longus tendon

Extensor carpi ulnaris tendon

Extensor pollicis brevis tendon

Dorsal carpal (arterial) arch

Extensor pollicis longus tendon

Dorsal metacarpal arteries

Extensor carpi radialis longus tendon

Extensor carpi radialis brevis tendon

Dorsal digital arteries

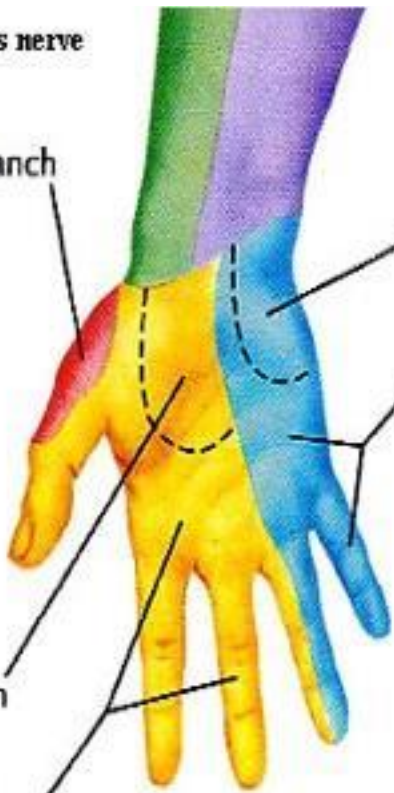
Dorsal digital branches of dorsal branch of ulnar nerve

Dorsal digital branches of superficial branch of radial nerve to 1st, 2nd, 3rd and radial half of 4th fingers

Dorsal branches of proper palmar digital branches of ulnar nerve and of proper palmar digital arteries to dorsum of middle and distal phalanges of 5th and ulnar half of 4th fingers

Dorsal branches of proper palmar digital branches of median nerve and of proper palmar digital arteries to dorsum of middle and distal phalanges of 2nd, 3rd and radial half of 5th fingers

Lateral cutaneous nerve (C5, 6 [7])  
Radial nerve Superficial branch (C6, 7, 8)



Median nerve Palmar branch and Palmar digital branches (C6, 7, 8)

Medial cutaneous nerve (C8, T1)  
Ulnar nerve (C8, T1)

Palmar branch  
Palmar digital branches  
Dorsal branch and dorsal digital branches  
Proper palmar digital branches

*F. S. Netter M.D.*  
© Novartis



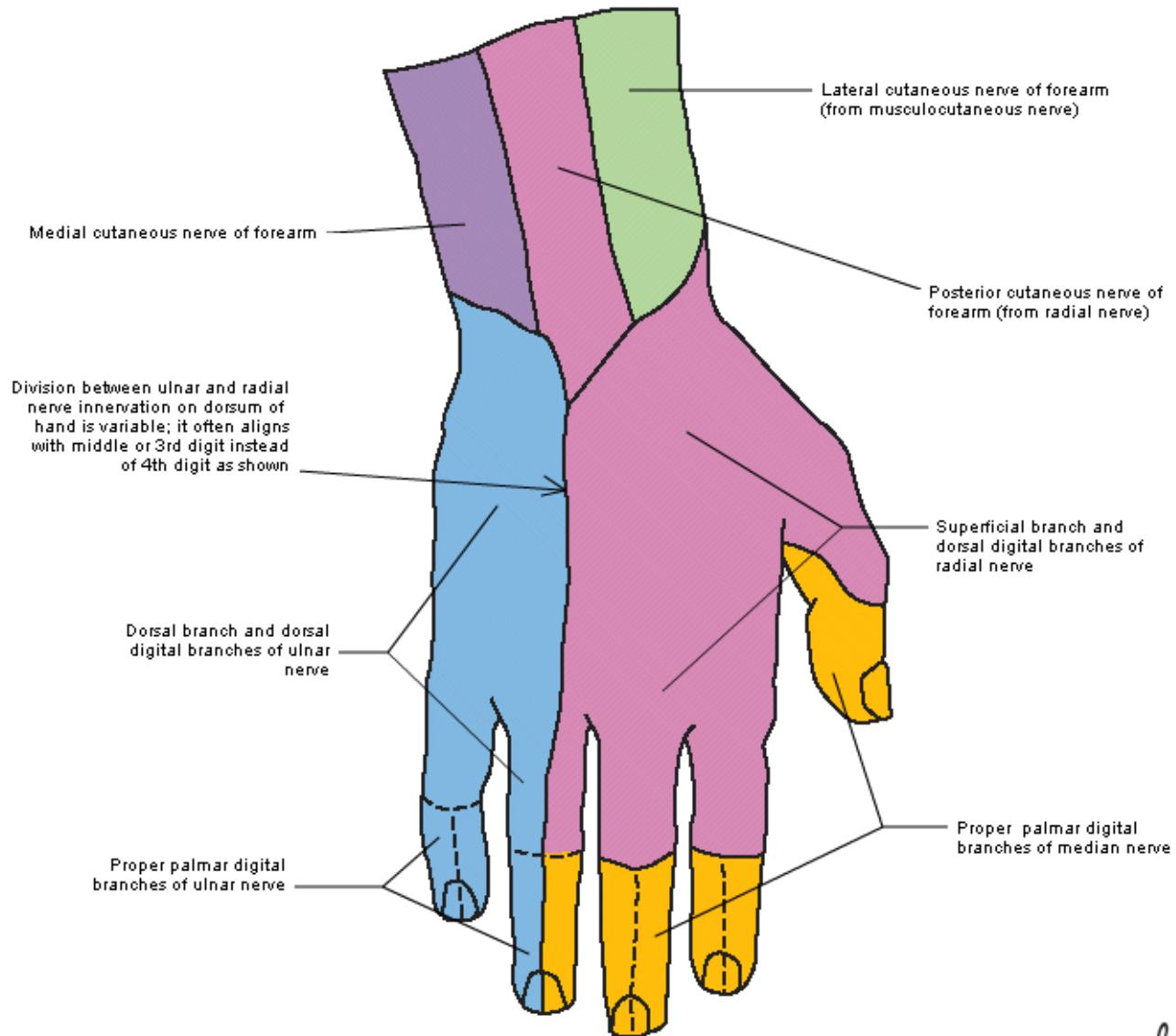
Radial nerve Superficial branch and dorsal digital branches (C6, 7, 8)

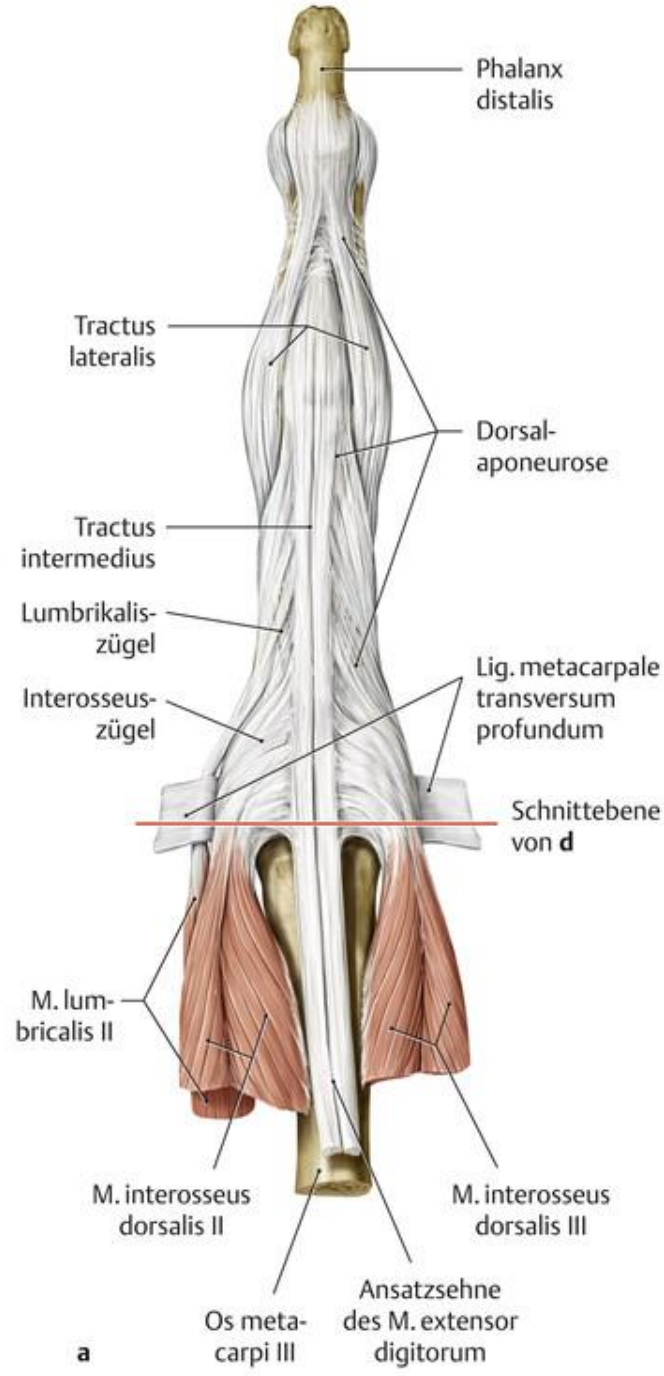
Median nerve Proper palmar digital branches

Note: Division variable between ulnar and radial innervation on dorsum of hand and often aligns with middle of 3rd digit instead of 4th digit as shown

# Cutaneous Innervation of Wrist and Hand

## Posterior (Dorsal) View



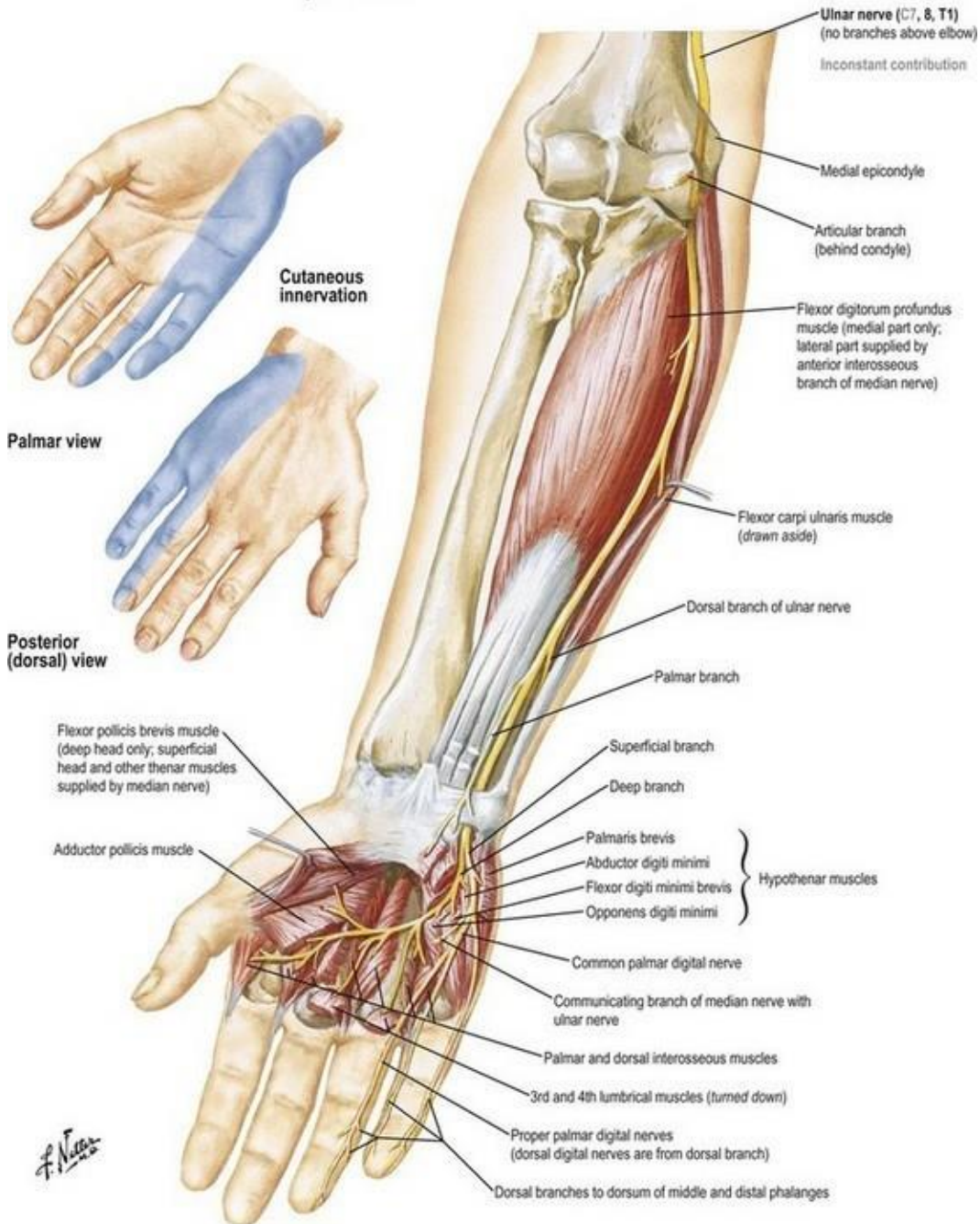


a

# Ulnar Nerve

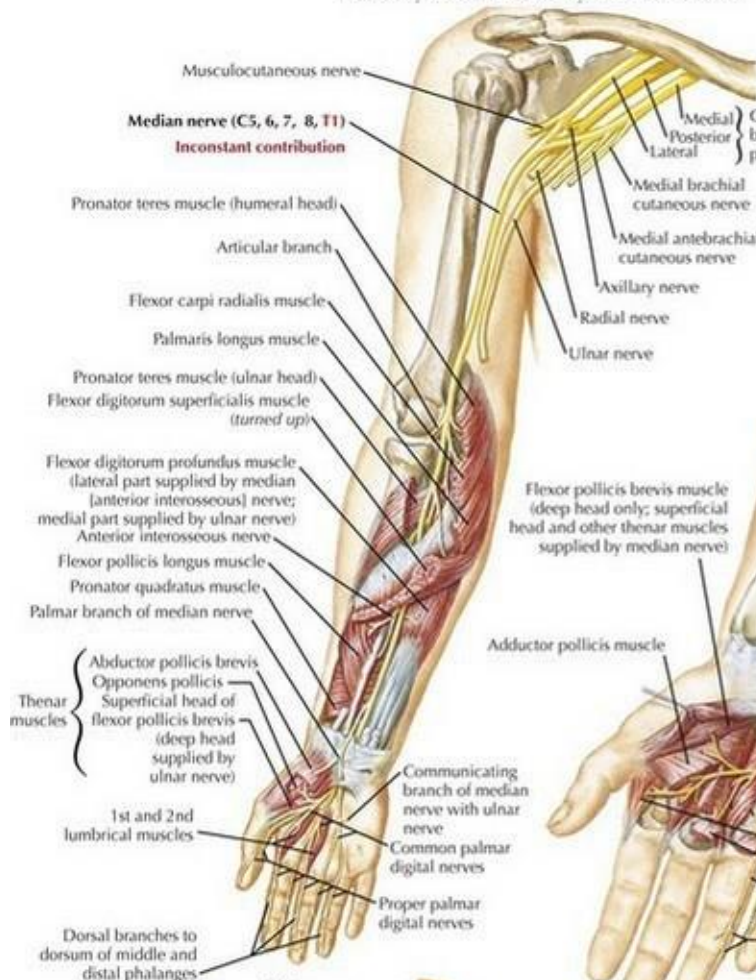
Anterior view

Note: Only muscles innervated by ulnar nerve shown

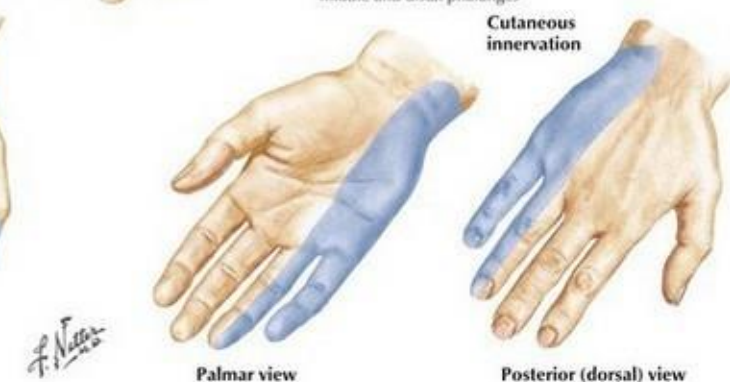
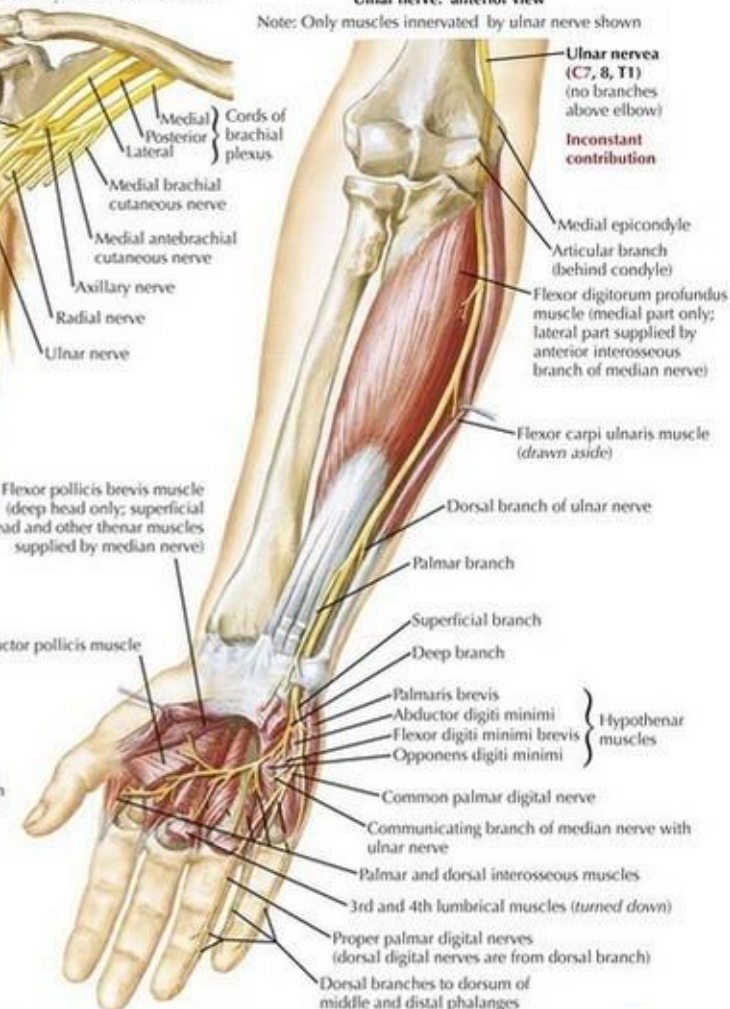


*F. Netter*

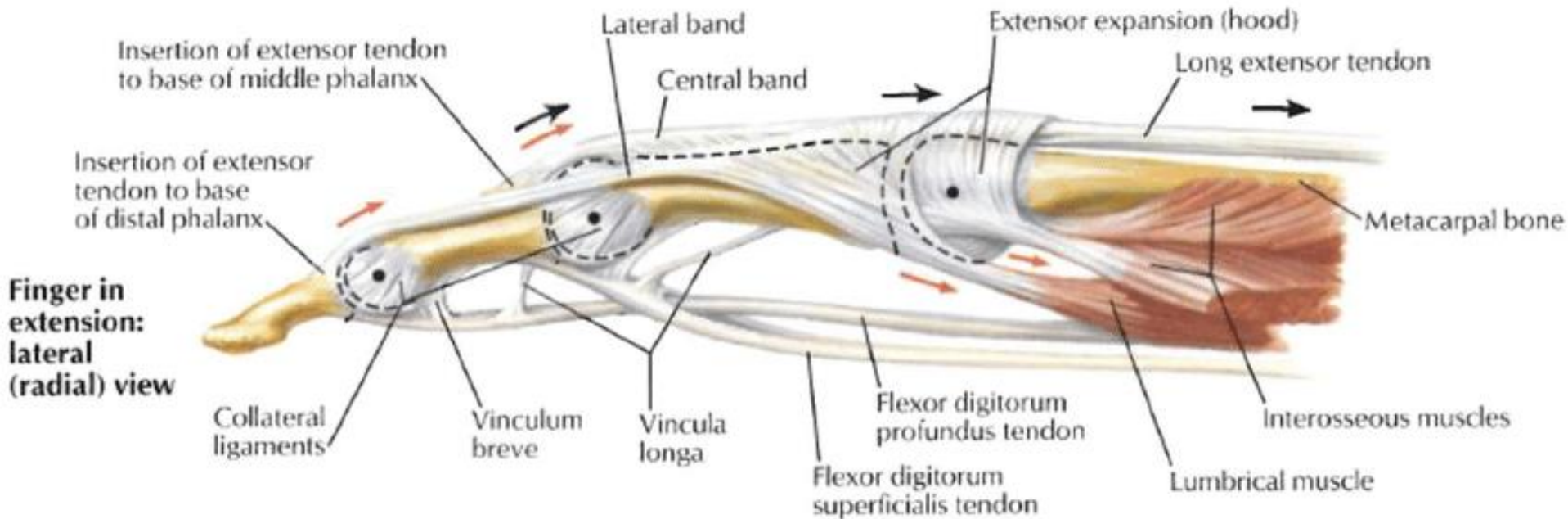
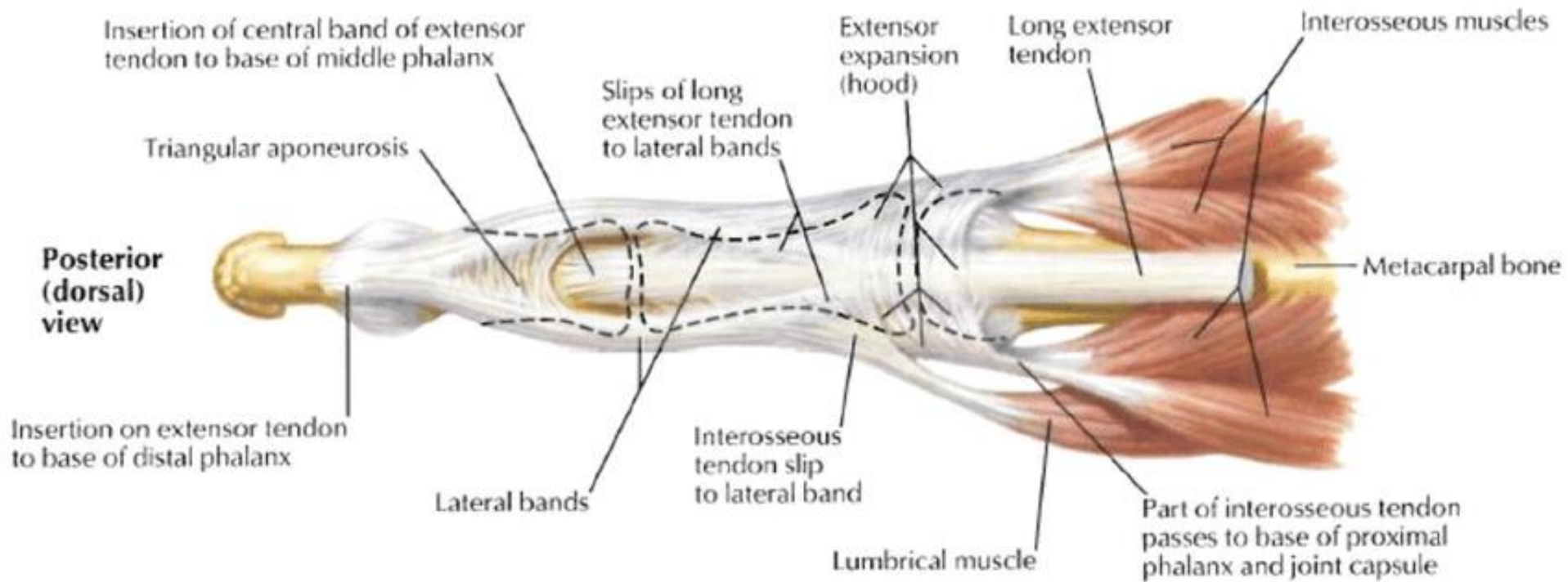
**Median nerve: anterior view**  
 Note: Only muscles innervated by median nerve shown



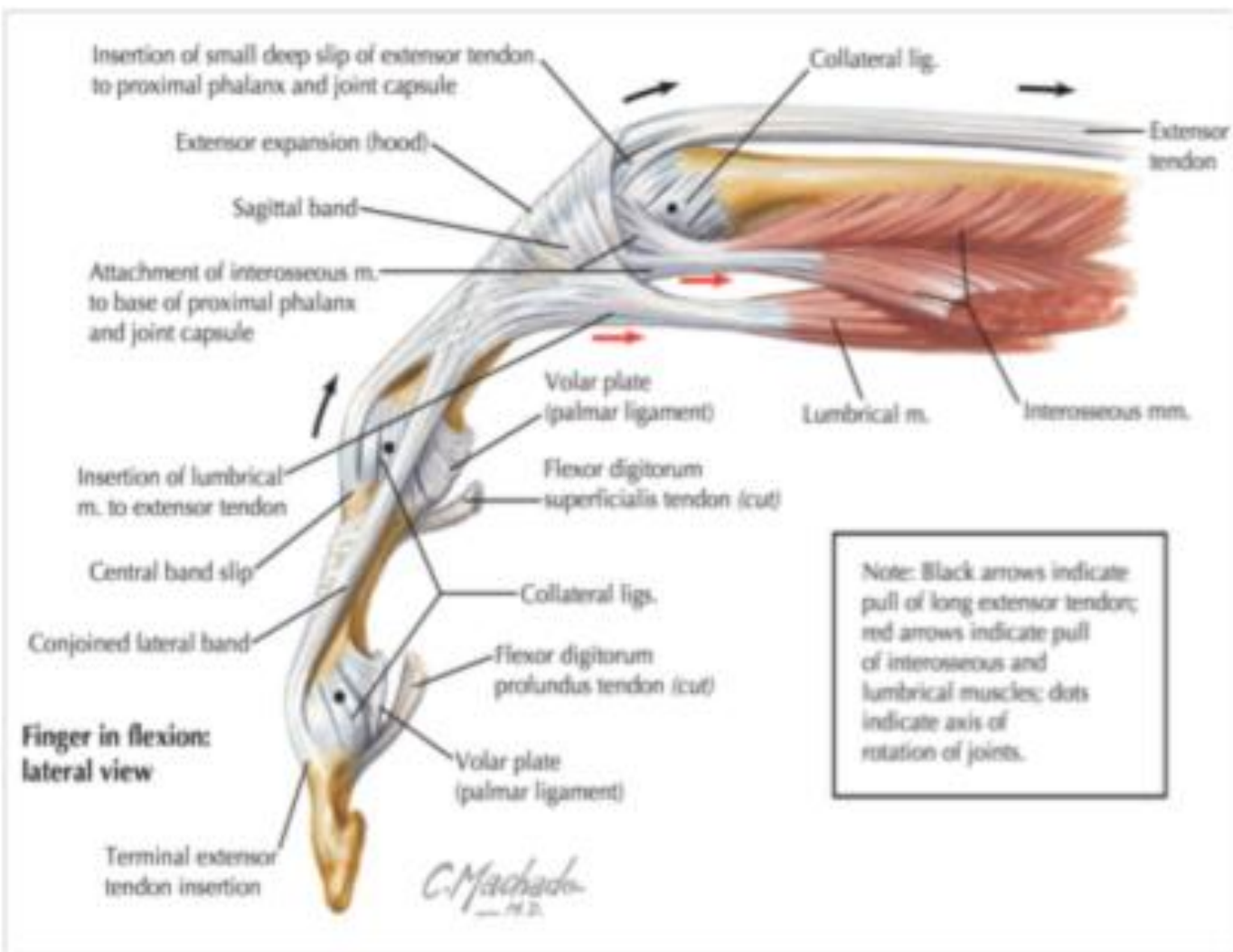
**Ulnar nerve: anterior view**  
 Note: Only muscles innervated by ulnar nerve shown



*F. Netter*







Insertion of small deep slip of extensor tendon to proximal phalanx and joint capsule

Extensor expansion (hood)

Sagittal band

Attachment of interosseous m. to base of proximal phalanx and joint capsule

Volar plate (palmar ligament)

Flexor digitorum superficialis tendon (cut)

Lumbrical m.

Interosseous mm.

Insertion of lumbrical m. to extensor tendon

Central band slip

Collateral lig.

Conjoined lateral band

Flexor digitorum profundus tendon (cut)

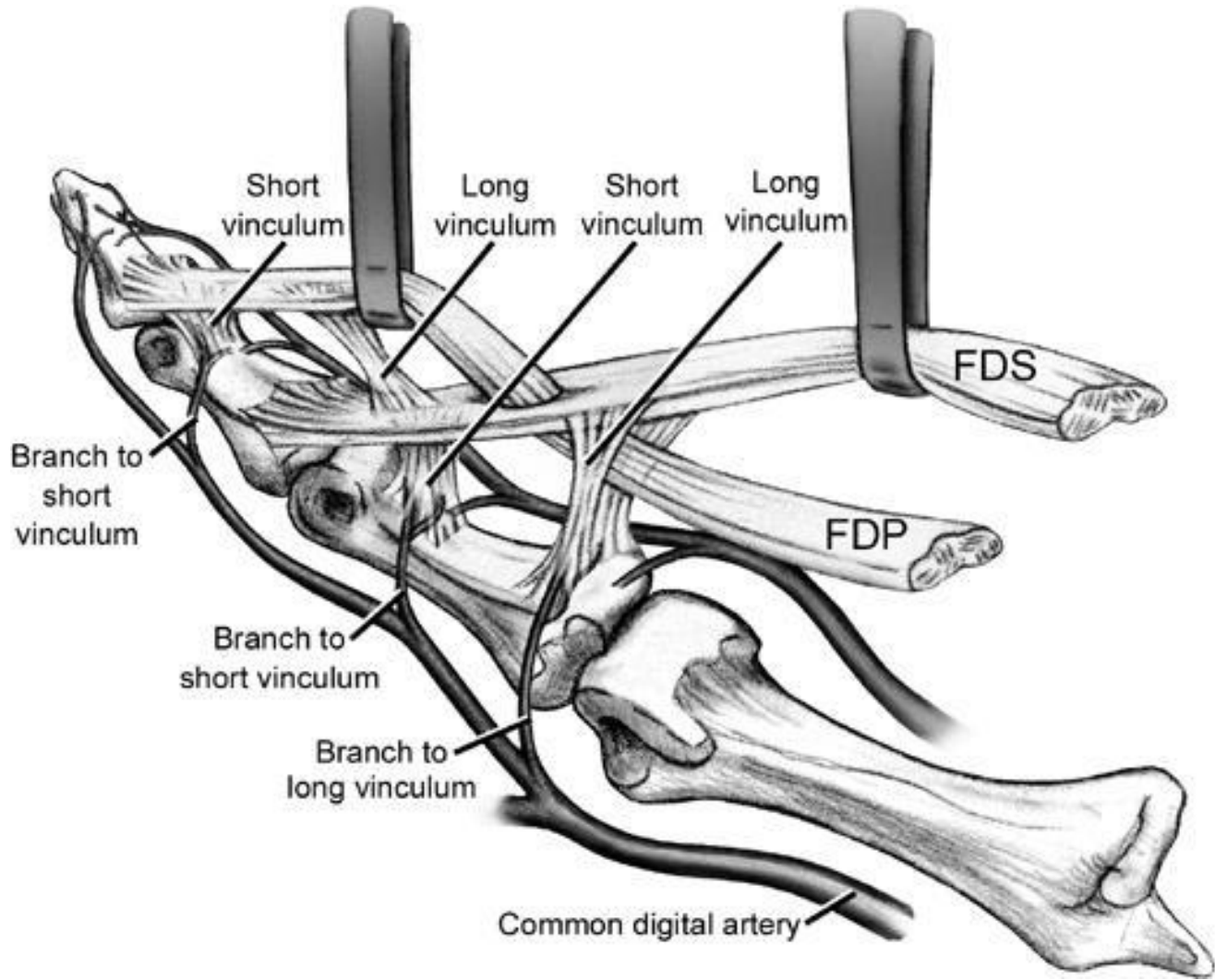
Volar plate (palmar ligament)

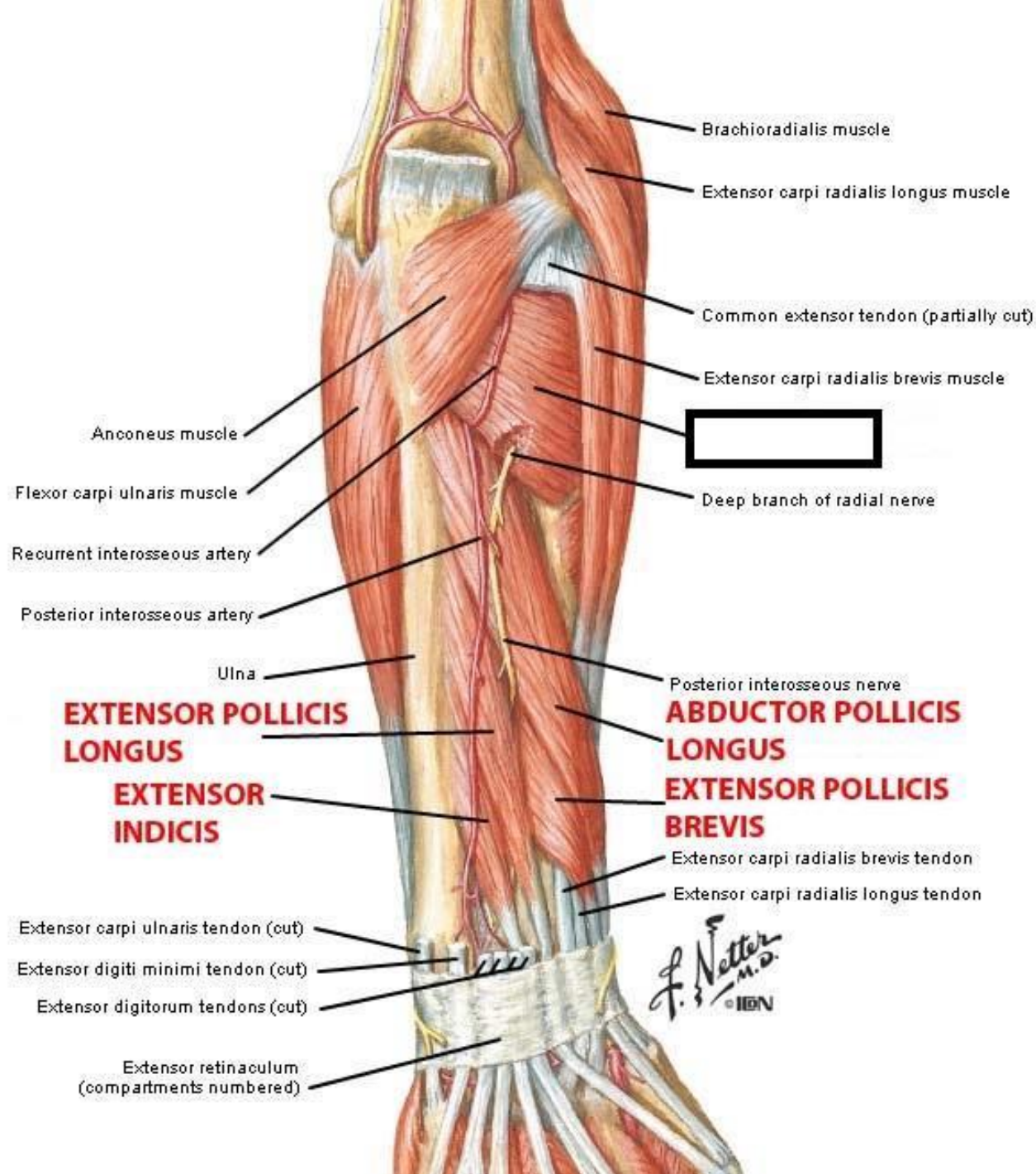
**Finger in flexion:  
lateral view**

Terminal extensor tendon insertion

*C. Machado*  
— M.D.

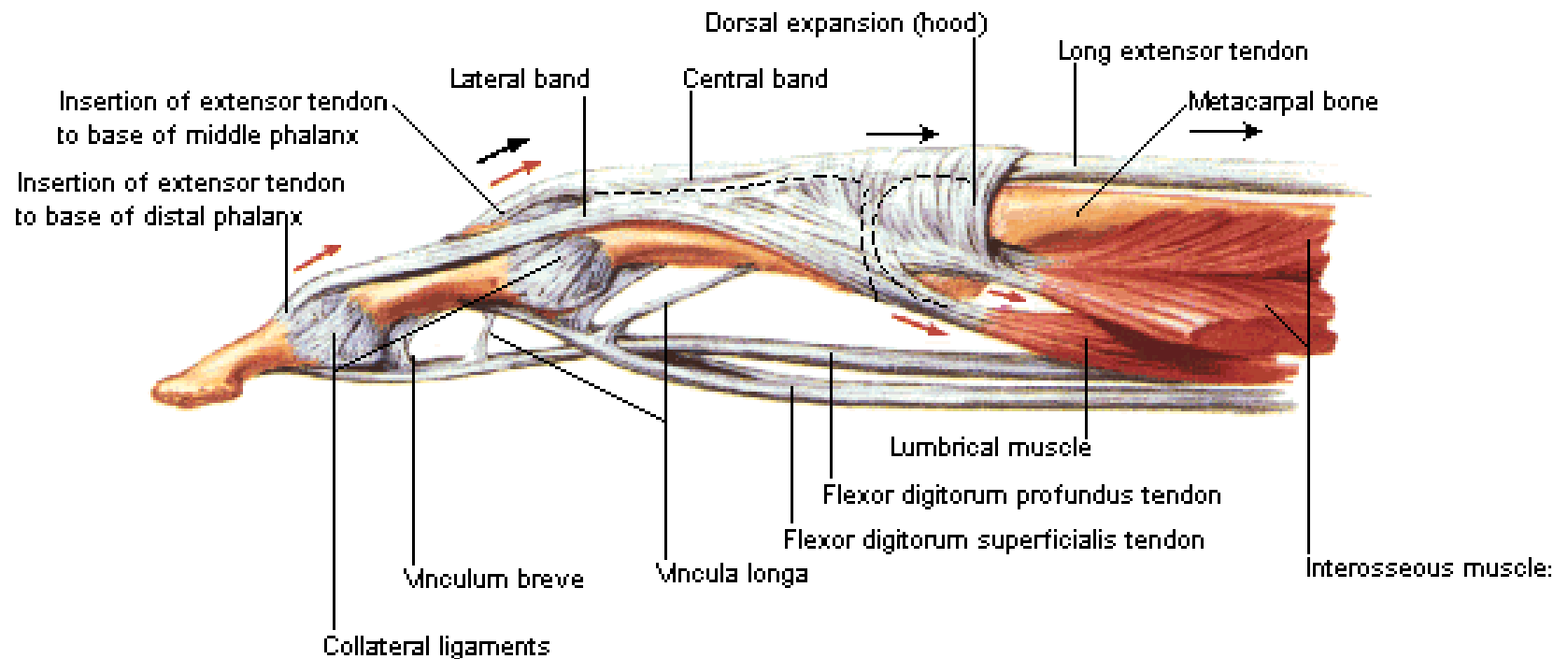
Note: Black arrows indicate pull of long extensor tendon; red arrows indicate pull of interosseous and lumbrical muscles; dots indicate axis of rotation of joints.



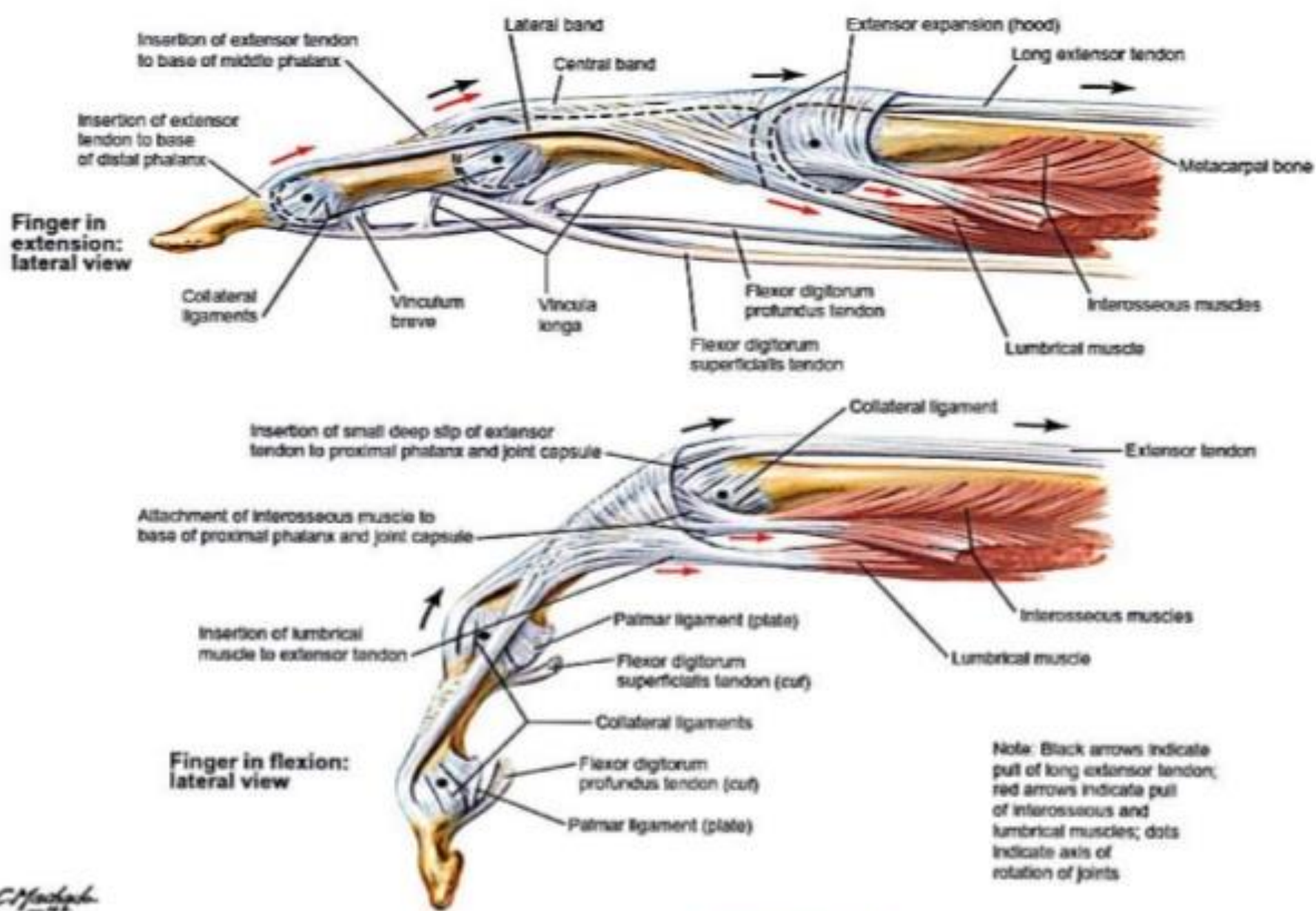


# Flexor and Extensor Tendons in Fingers

## Extended - Lateral View

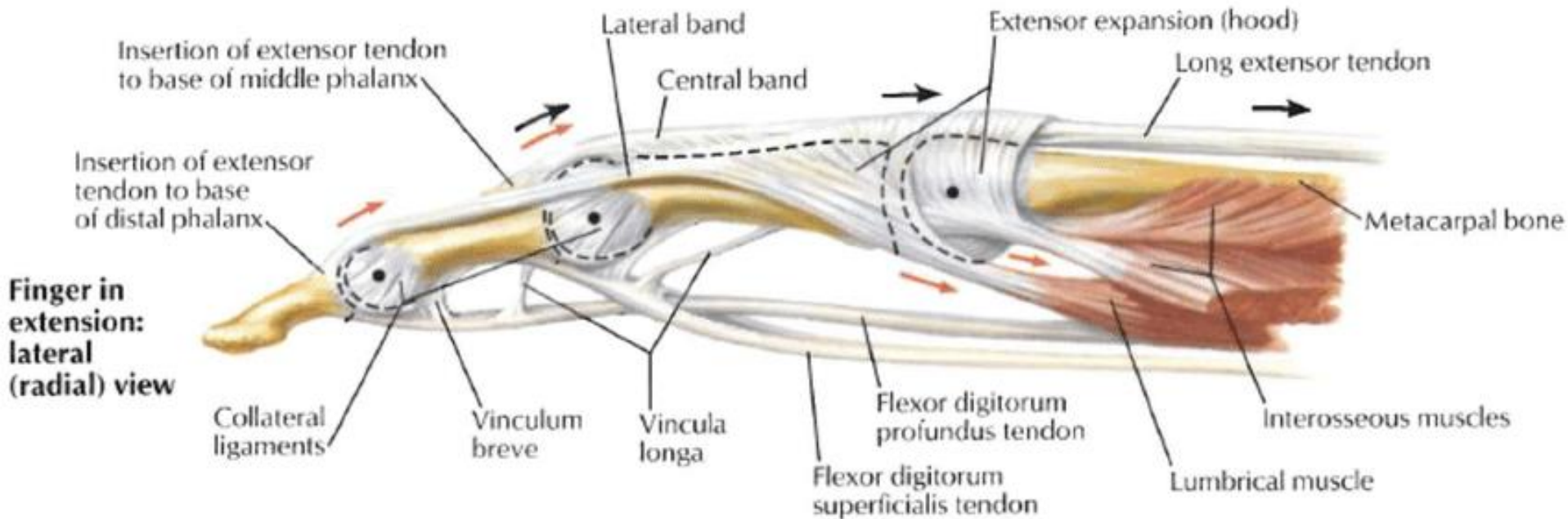
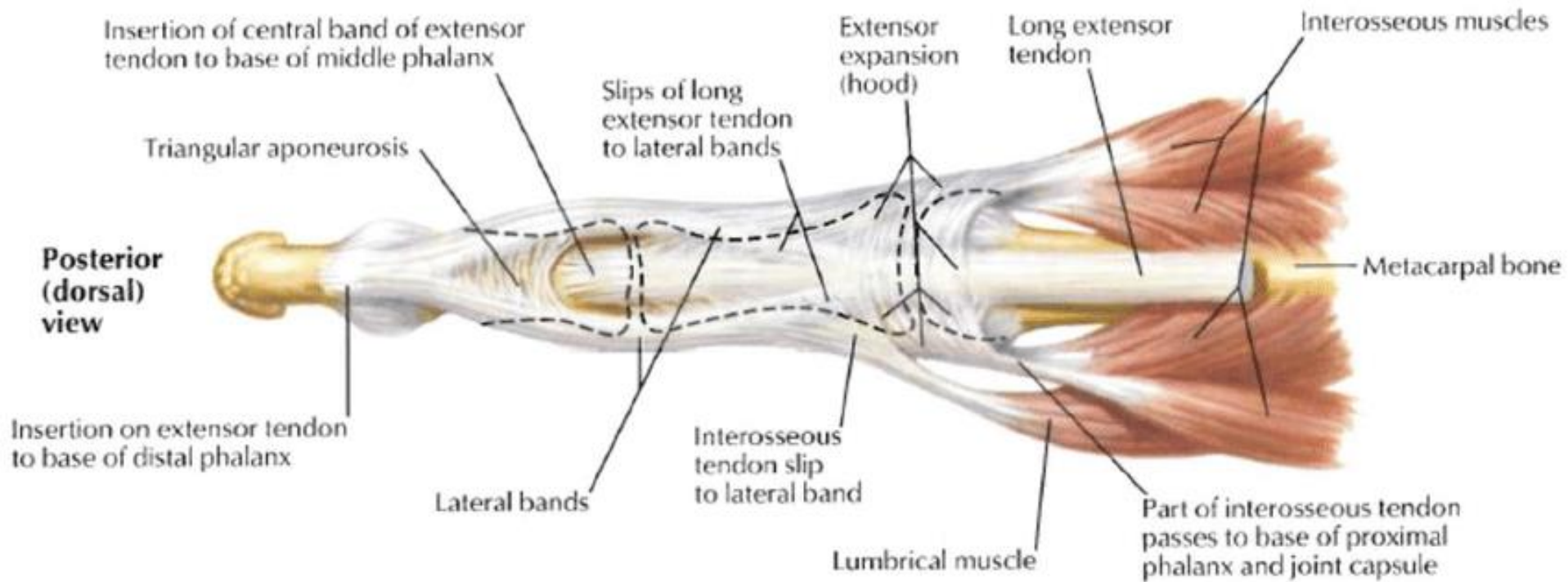


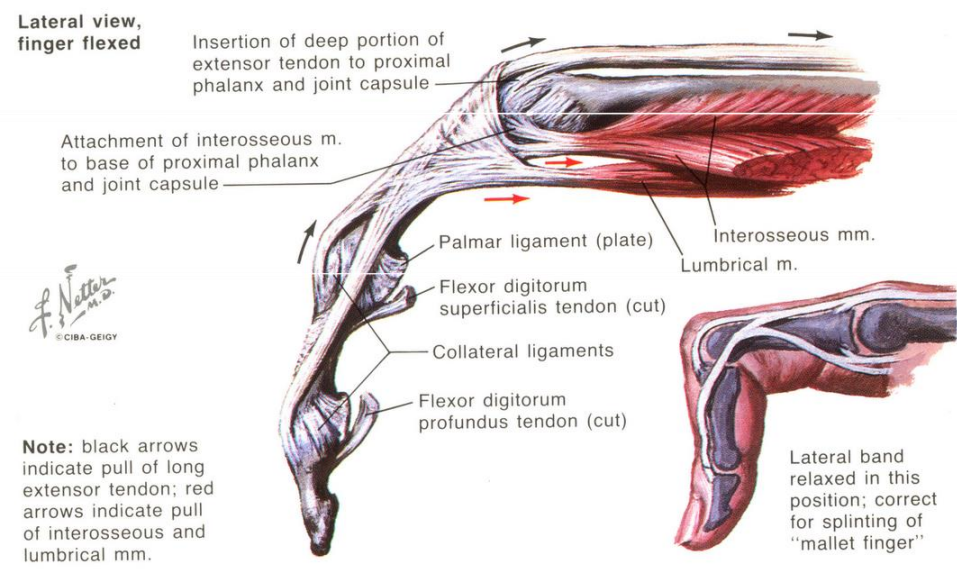
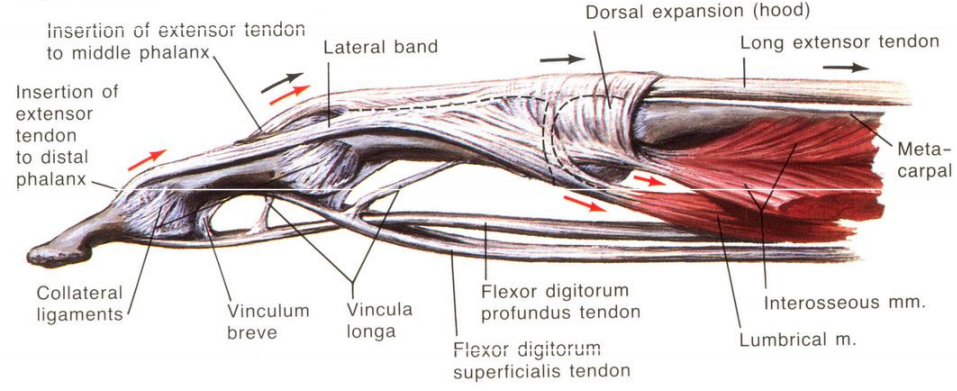
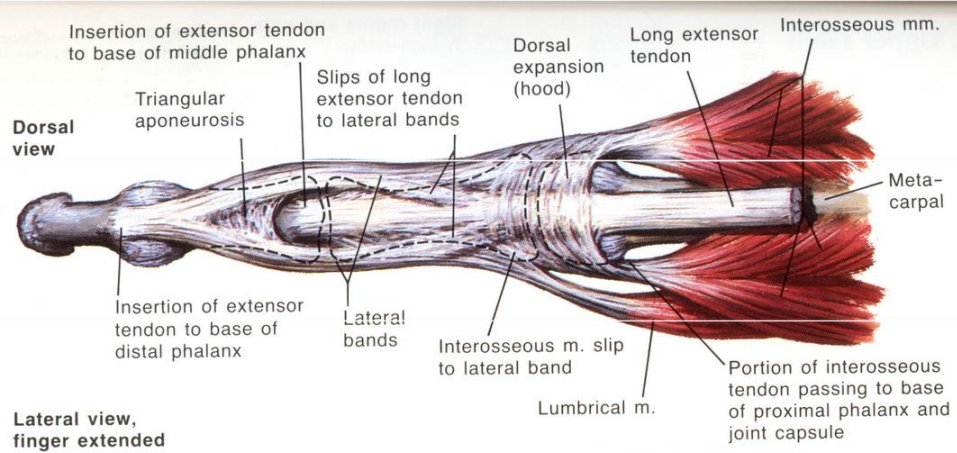
Note: black arrows indicate pull of long extensor tendon; red arrows indicate pull of interosseous and lumbrical muscles



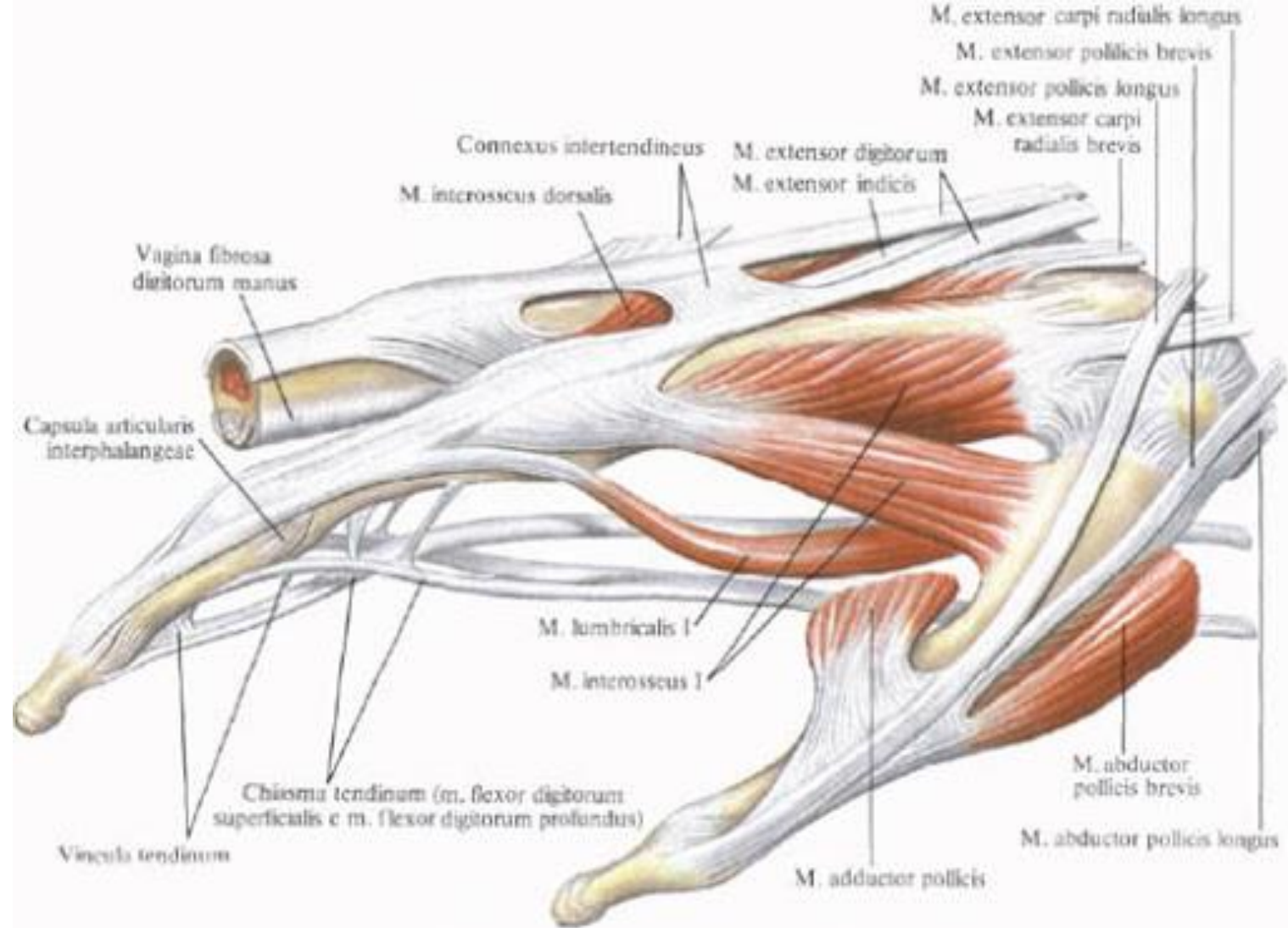
C. Manohar

Fig. 1.23 The extensor mechanism of the fingers. (Reprinted with permission from [www.netterimages.com](http://www.netterimages.com) © Elsevier Inc. All Rights Reserved.)

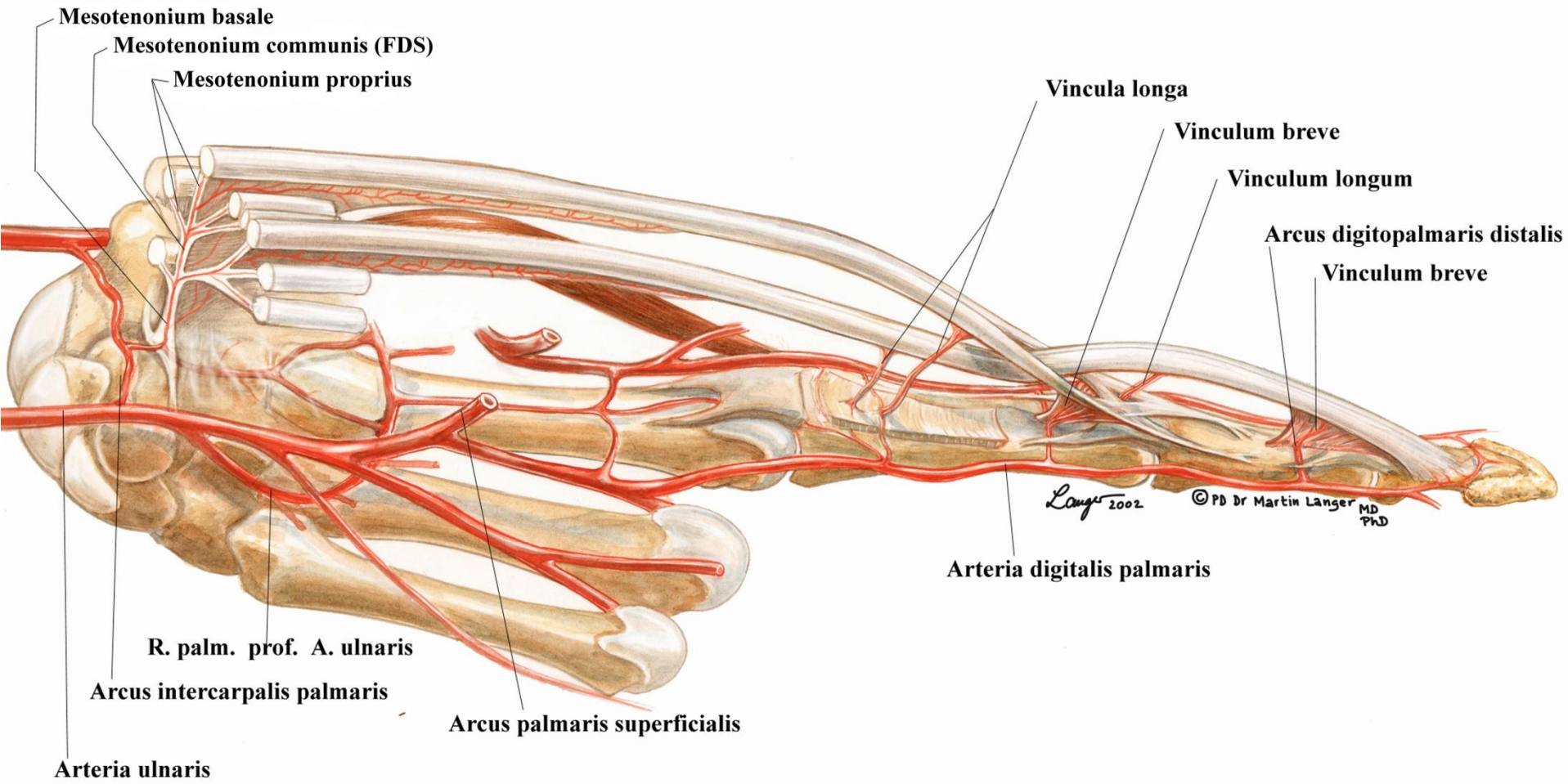




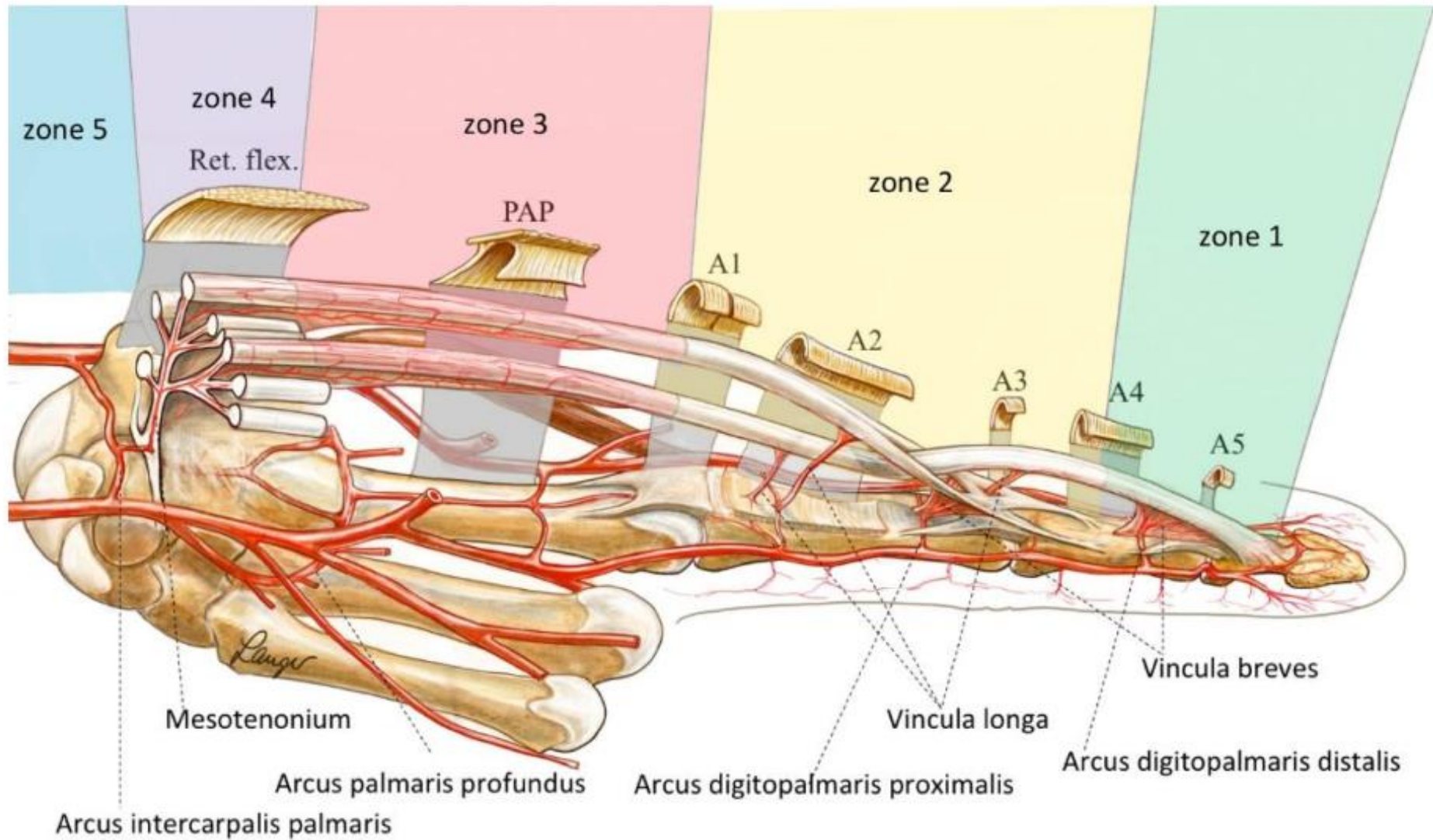
*F. Netter M.D.*  
 © CIBA-GEIGY







, 2015).



## Injury to Fingers

### Fractures of distal phalanx



Types of fractures.  
 A. Longitudinal  
 B. Nondisplaced transverse  
 C. Avulsion fracture  
 D. Comminuted



Drainage of subungual hematoma through hole made with heated paper clip relieves pain



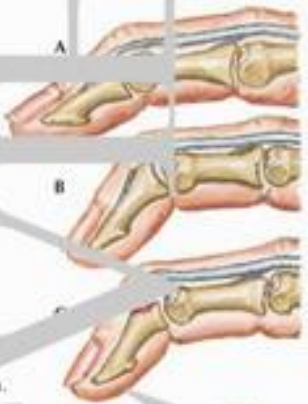
### Mallet finger



Usually caused by direct blow on extended distal phalanx, as in baseball, volleyball

### Degrees of mallet finger injury

A. Extensor tendon stretched but not completely severed; mild flexion deformity. Extensor ability retained.  
 B. Tendon torn from its insertion; one fragment avulsed with tendon. In B and C there is 40°-5° flexion deformity and loss of active extension.



Treatment for mallet finger or avulsion origin. Padded dorsal splint. B. Unpadded volar splint. C. Stack splint. Proximal interphalangeal joint left free for active exercise.

### Mallet finger of bone or fragment and volar subluxation of distal phalanx



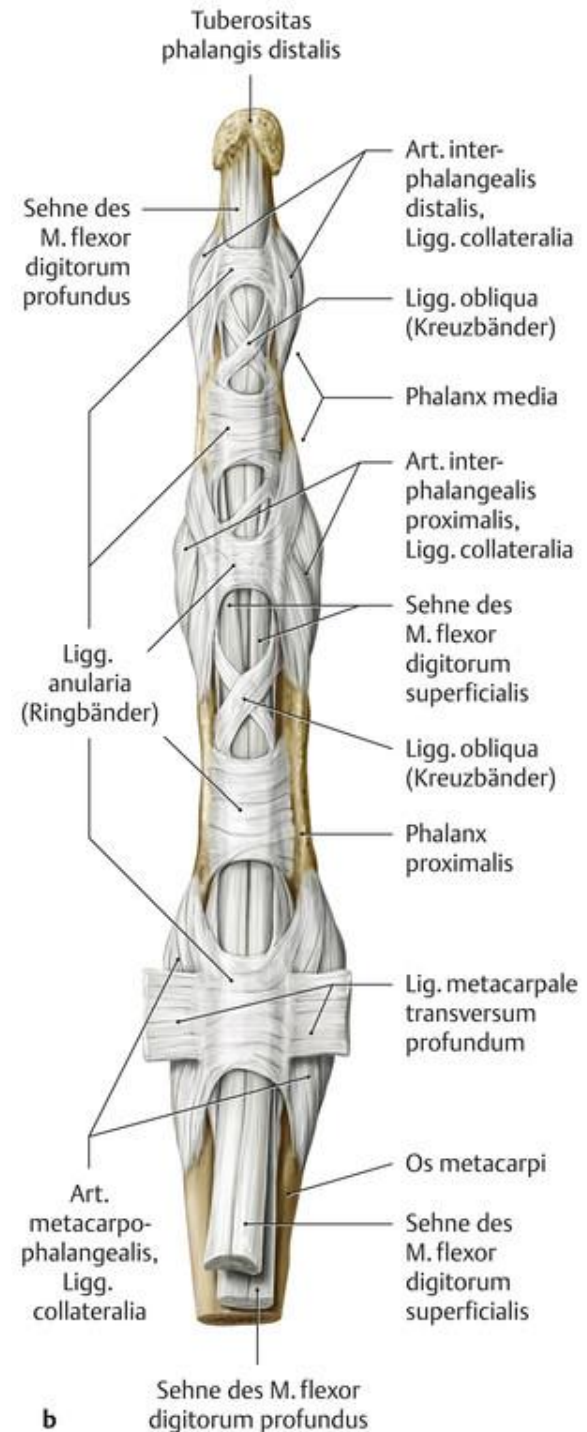
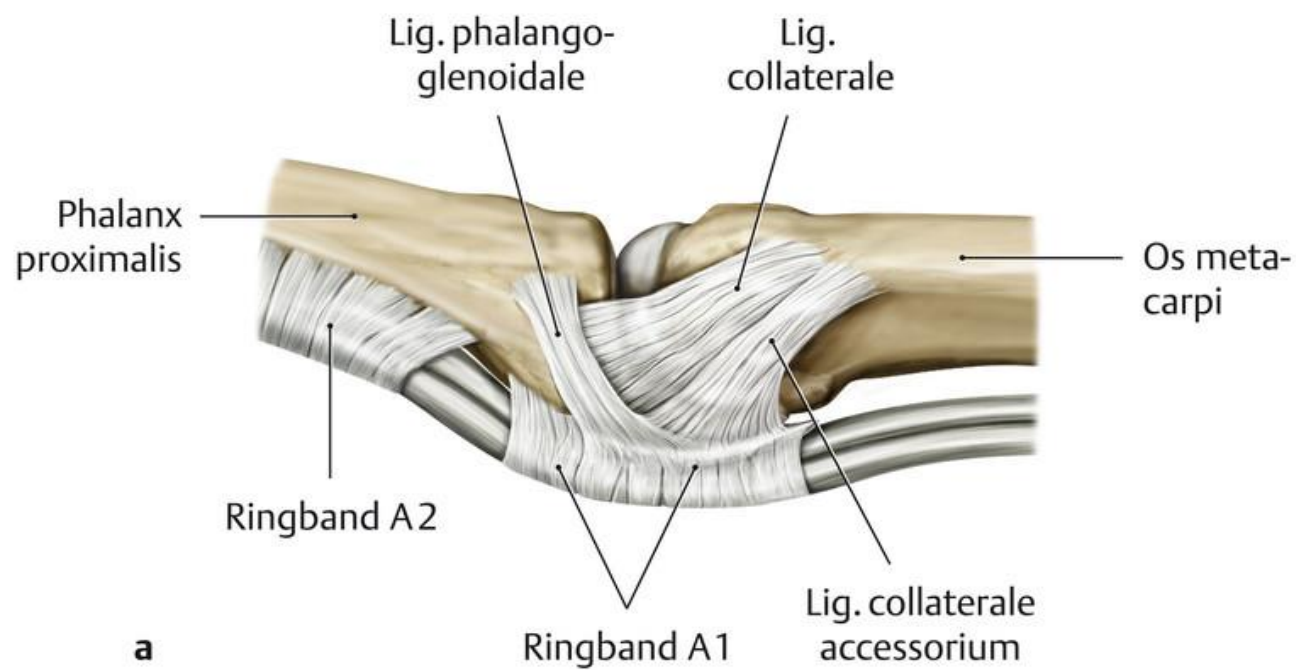
Early open reduction and repair with small Kirschner wire indicated, but difficulty of exposure and small size of fragment present problems. Extensor tendon may be sectioned for better exposure and subsequently repaired. One or both collateral ligaments may also have to be divided and repaired.

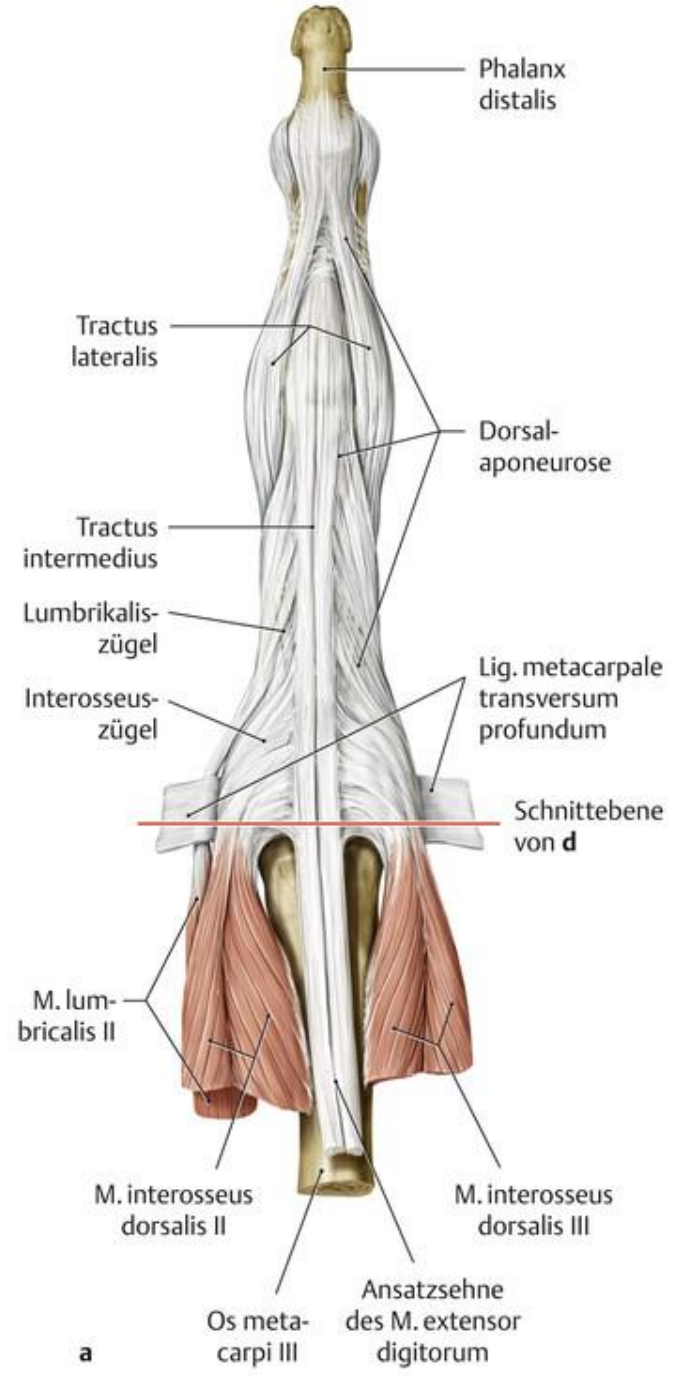
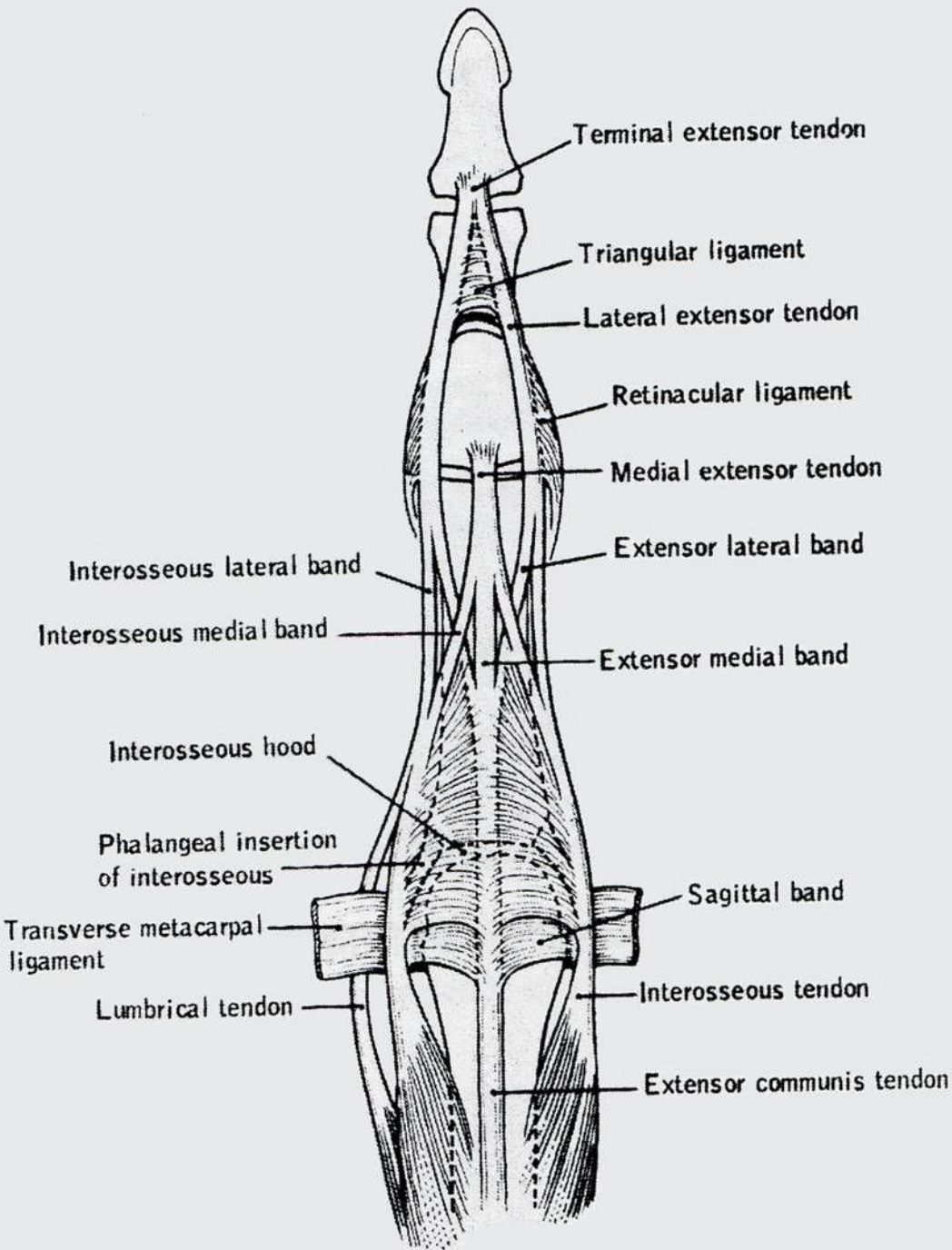
### Avulsion of flexor digitorum profundus tendon



Caused by violent traction on flexor digitorum profundus tendon, as in catching on heel of running football player

Flexor digitorum profundus tendon may be torn directly from distal phalanx or may be avulsed from bone fragment. Tendon usually retracts to about level of proximal interphalangeal joint, where it is stopped at its passage through flexor digitorum superficialis tendon; occasionally, it retracts into palm. Early open repair of tendon and its torn fibrous sheath indicated.





a

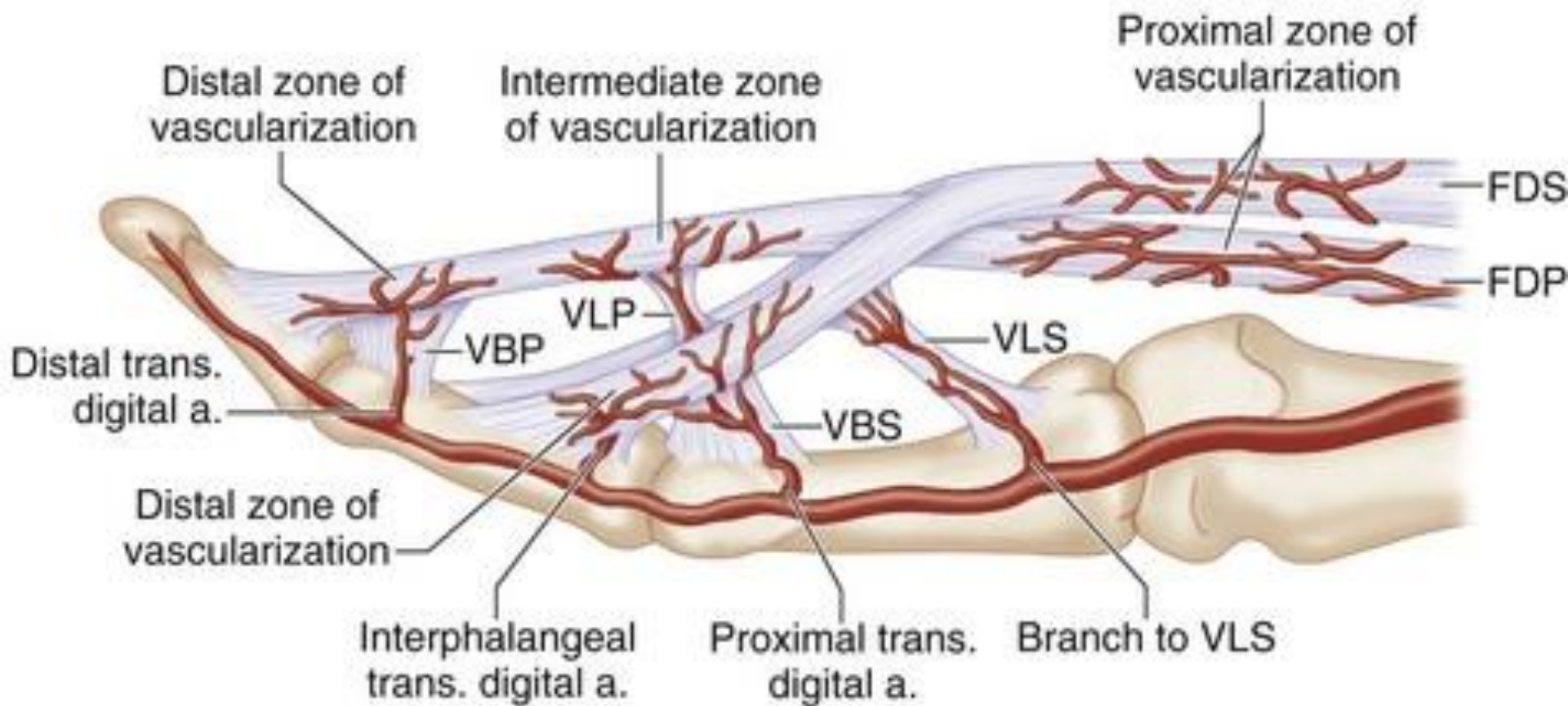














Figure 1. Dorsal and volar views of the hand showing the mass.

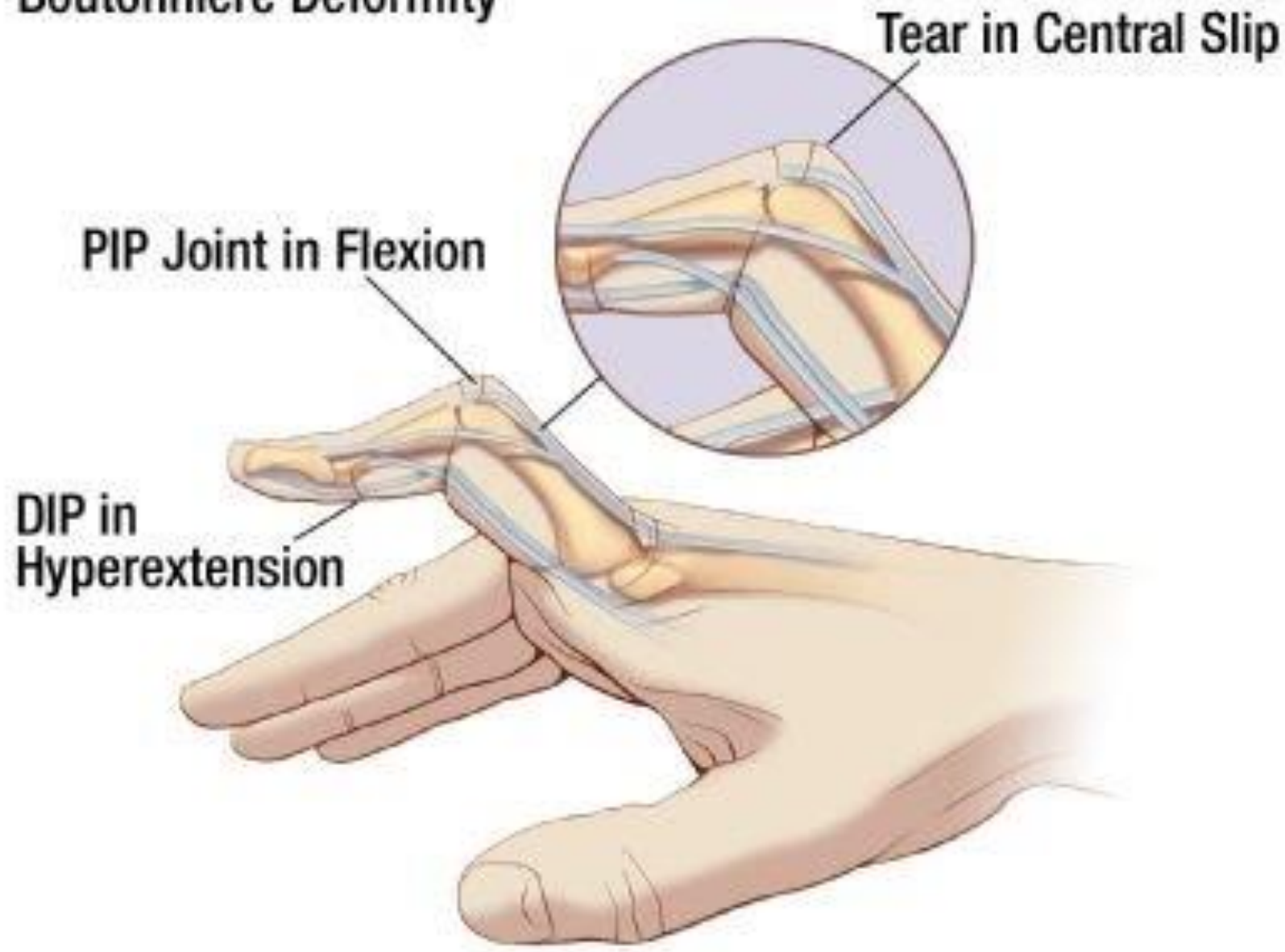






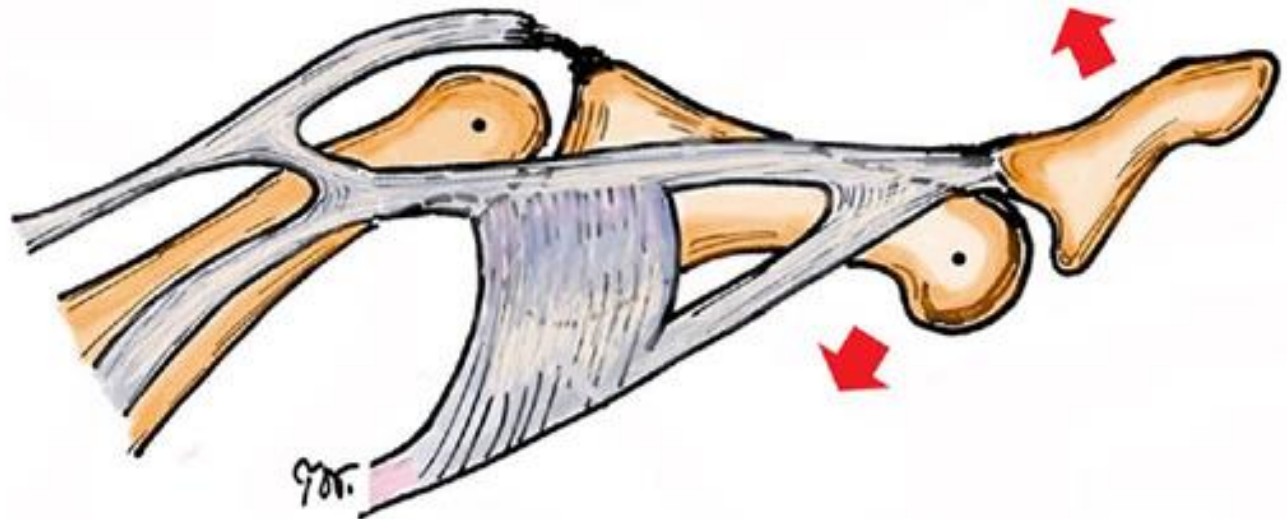
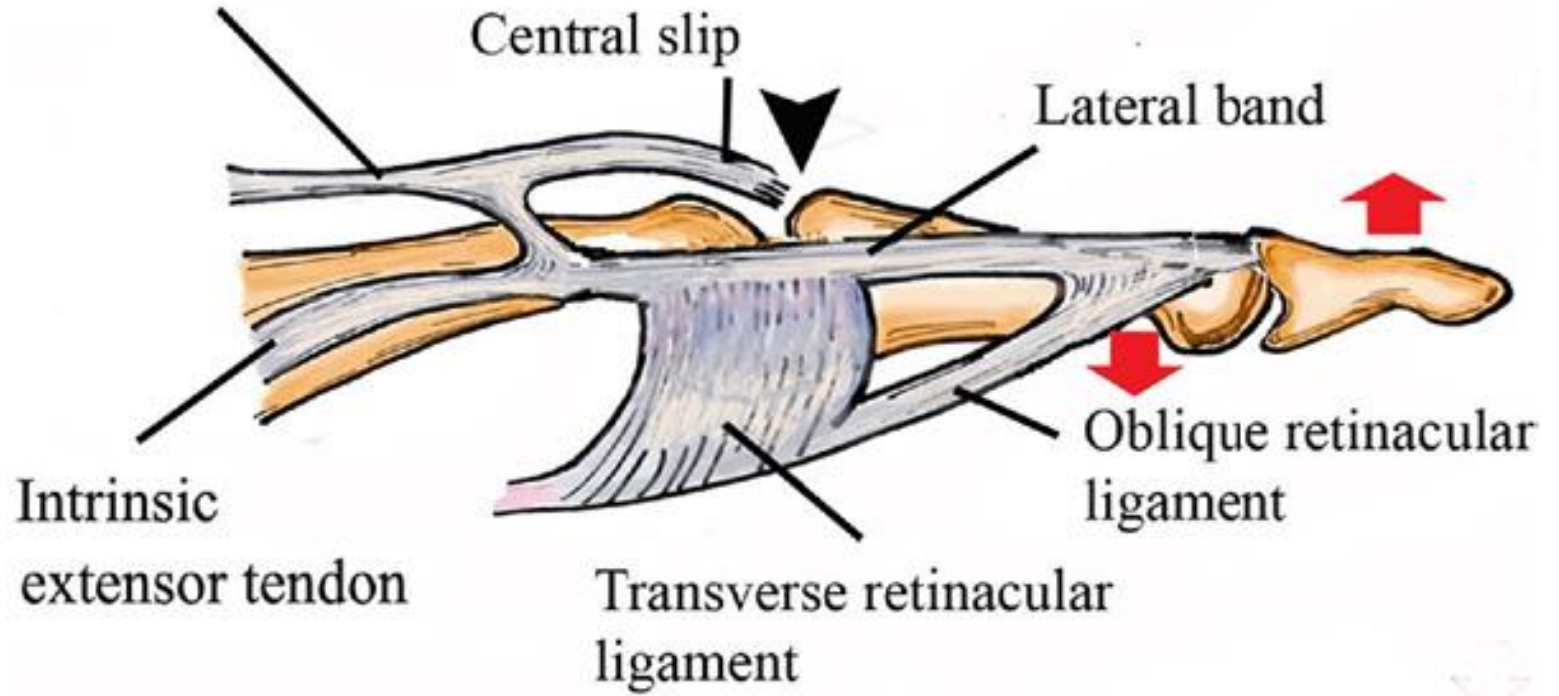


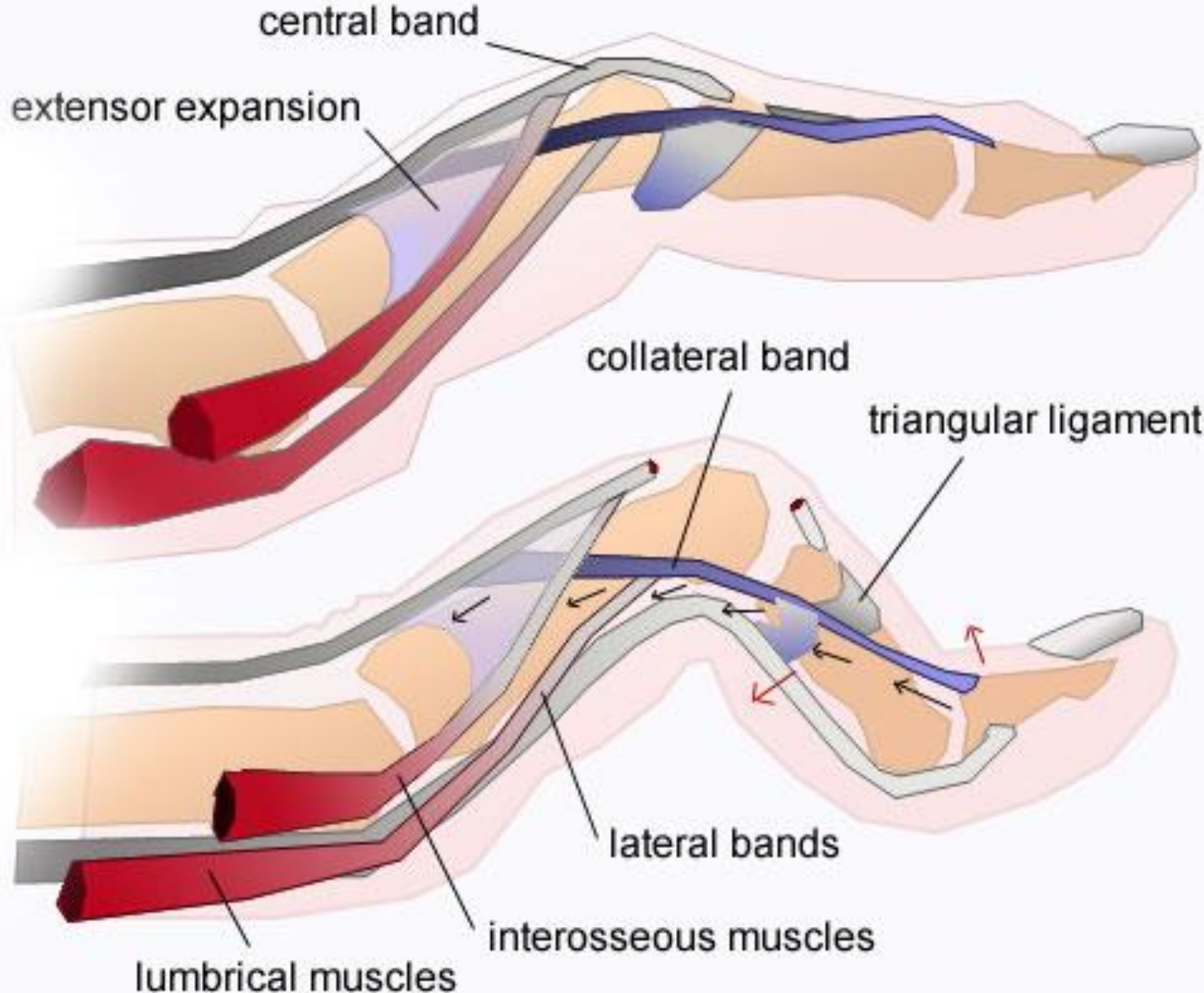
# Boutonniere Deformity





Extrinsic  
extensor tendon





central band

extensor expansion

collateral band

triangular ligament

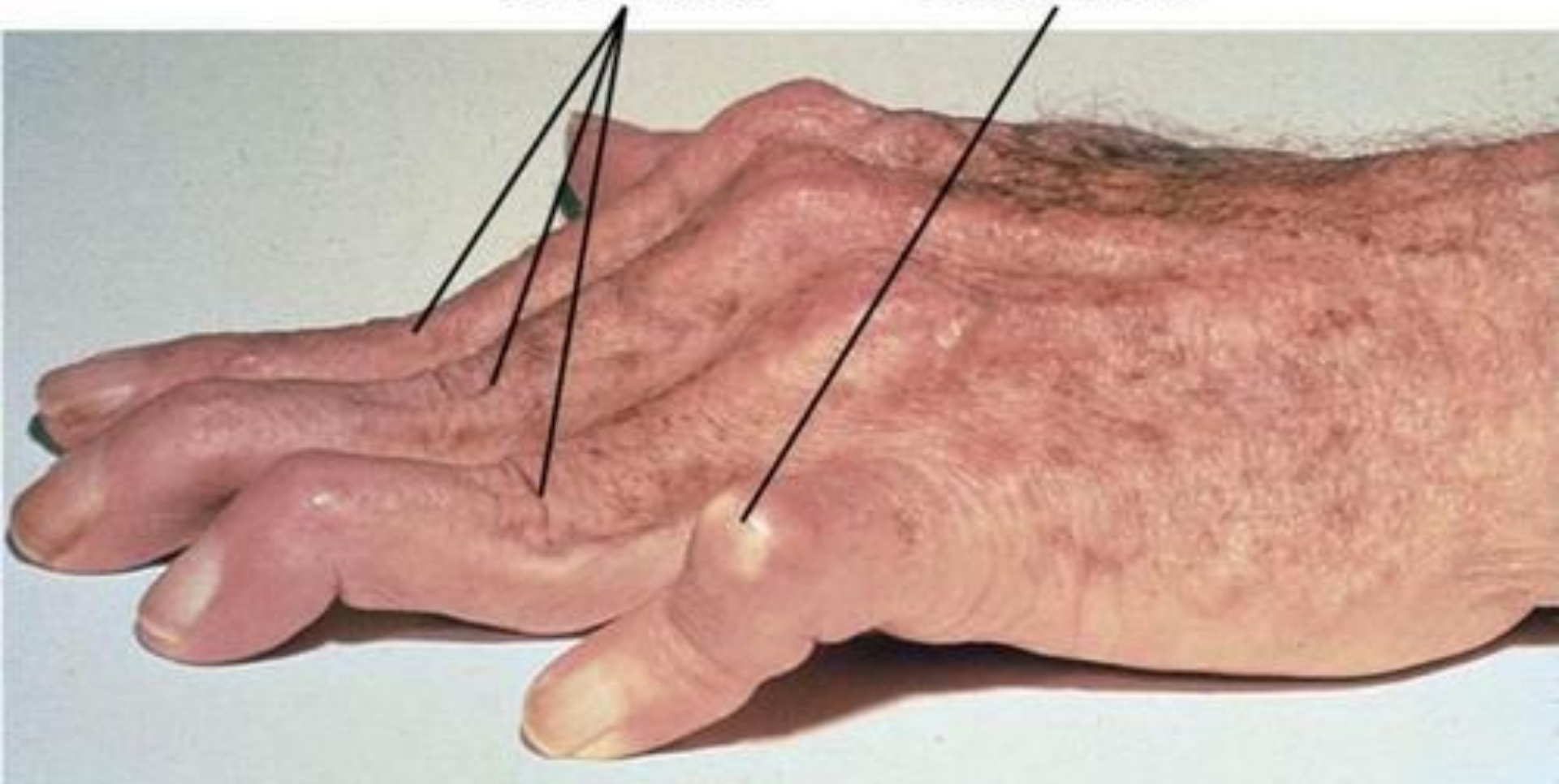
lateral bands

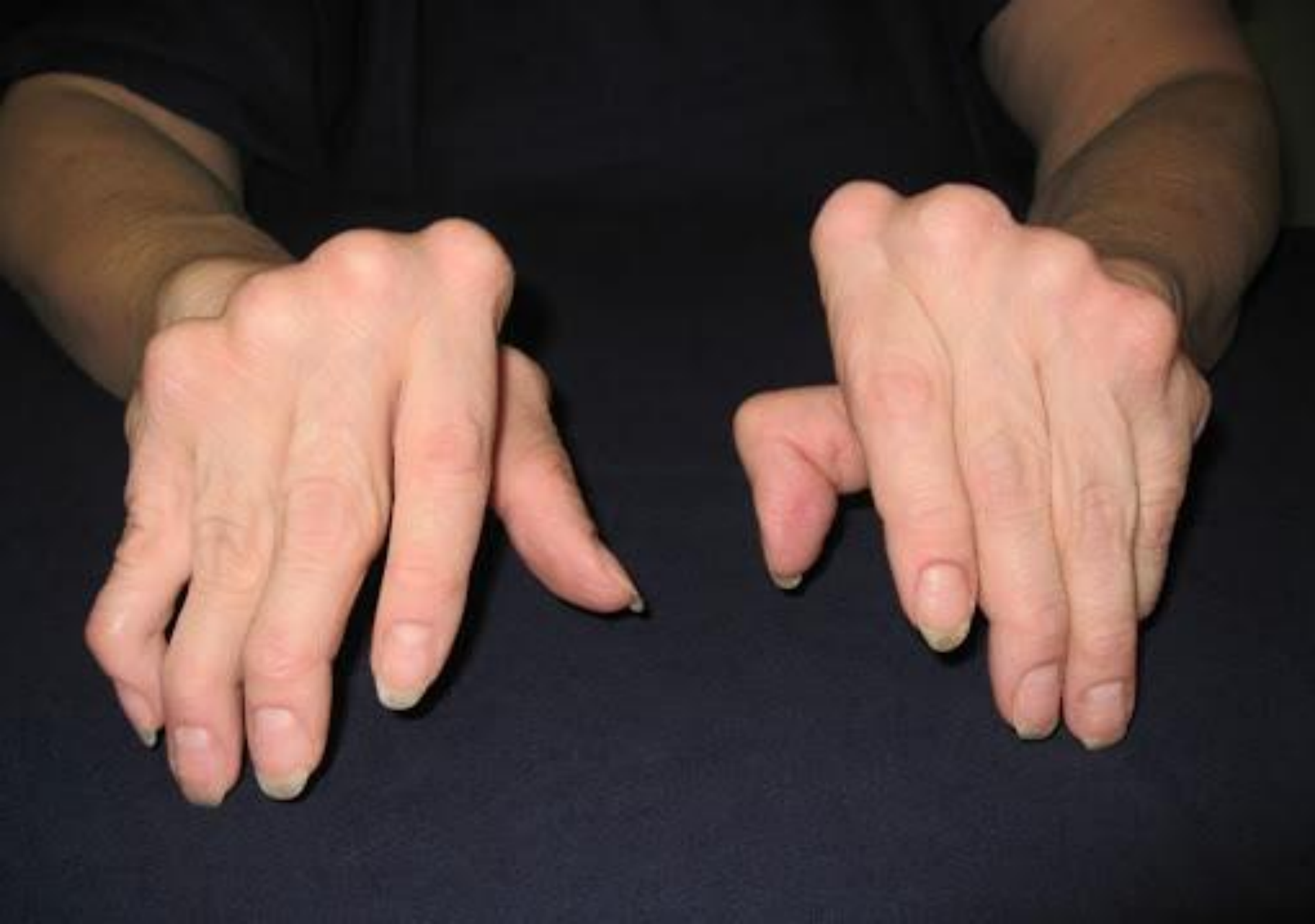
interosseous muscles

lumbrical muscles

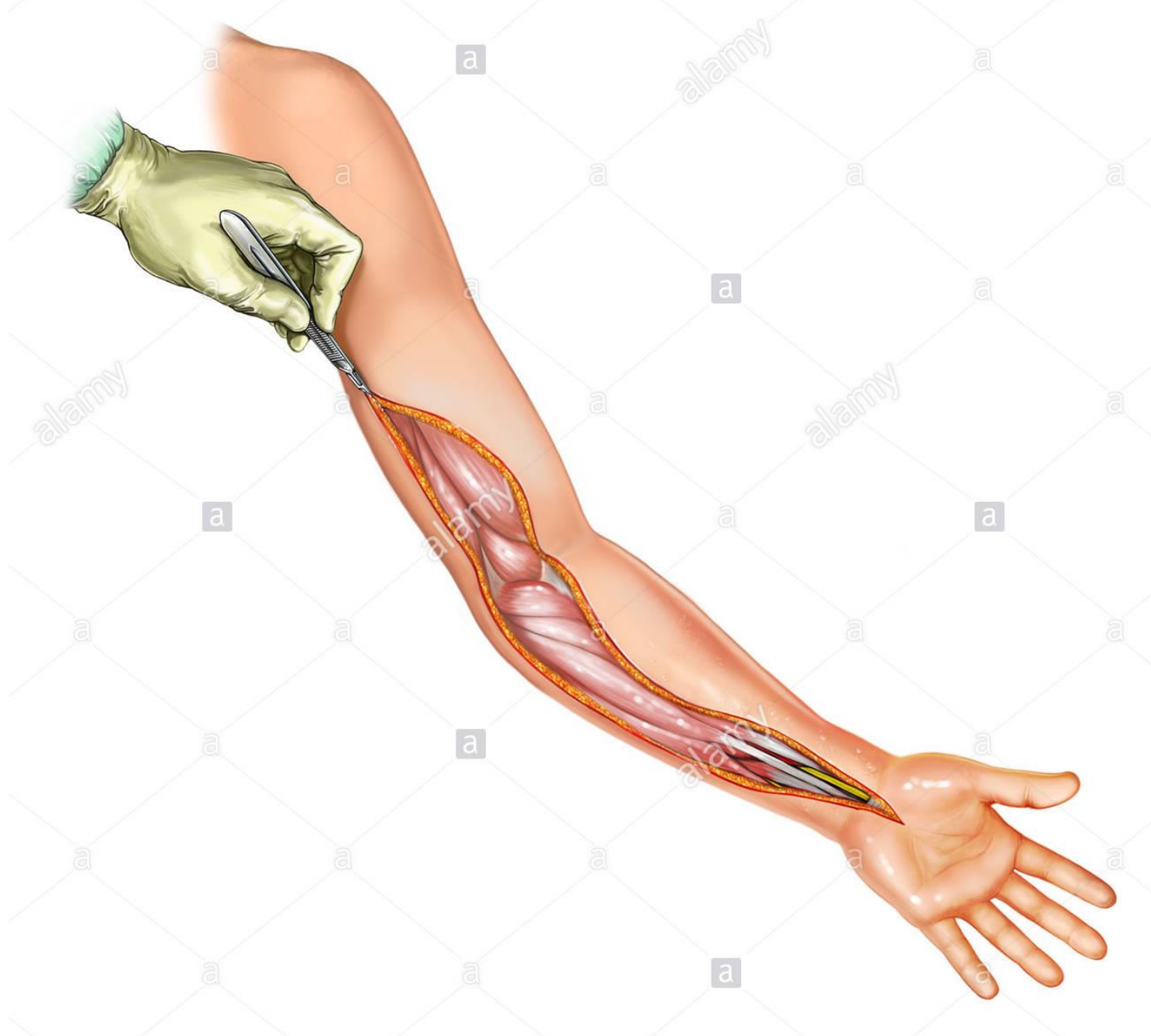
Swan-neck

Boutonnière

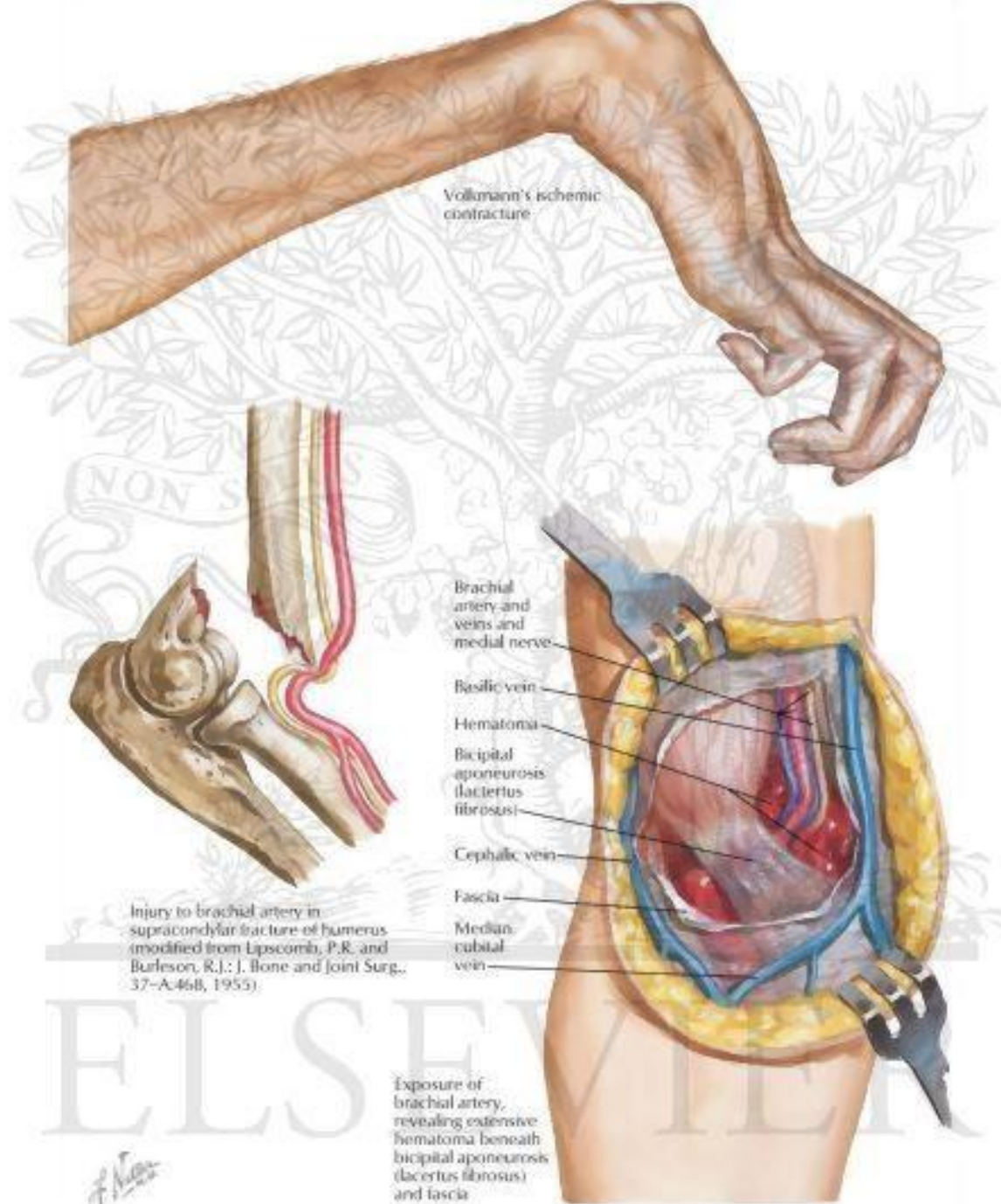












Volkmann's ischemic contracture



Injury to brachial artery in supracondylar fracture of humerus (modified from Lipscomb, P.R. and Burleson, R.J.: J. Bone and Joint Surg., 37-A:468, 1955)

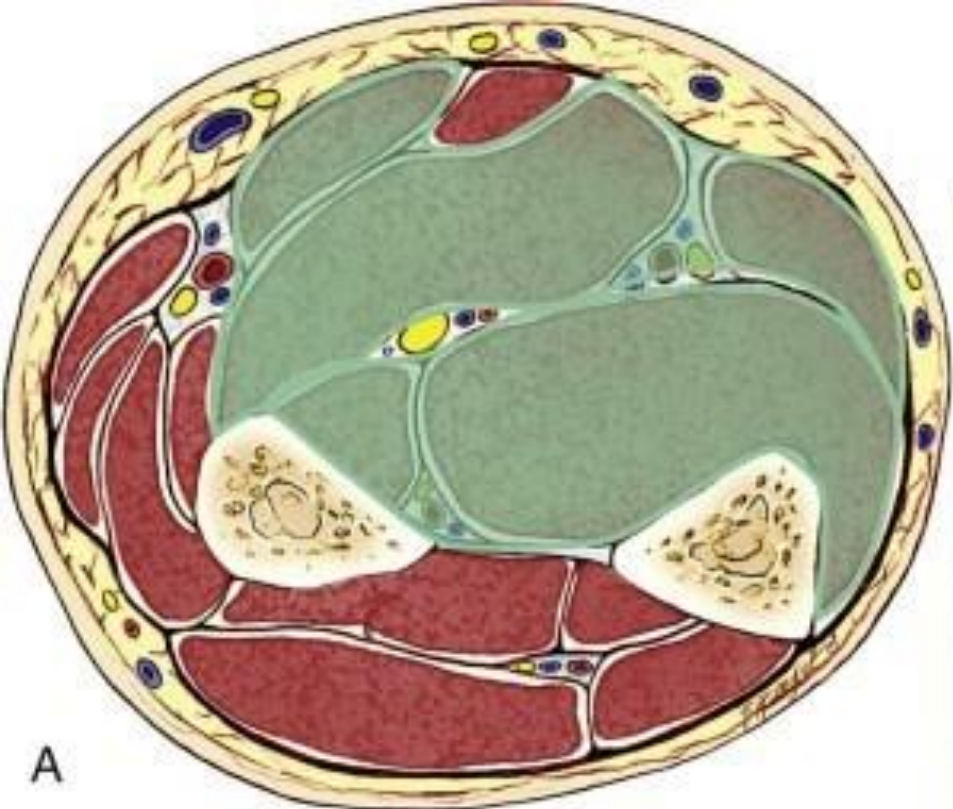
- Brachial artery and veins and medial nerve
- Basilic vein
- Hematoma
- Bicipital aponeurosis (lacertus fibrosus)
- Cephalic vein
- Fascia
- Median cubital vein

Exposure of brachial artery, revealing extensive hematoma beneath bicipital aponeurosis (lacertus fibrosus) and fascia

ELSEVIER







A



B



C



D

Stage A



Stage B



Stage C



































Palmar carpal ligament  
(thickening of deep  
antebrachial fascia  
continuous with  
extensor retinaculum)

Palmar branch of  
median nerve

Thenar muscles

Recurrent  
(motor)  
branch of  
median  
nerve to  
thenar  
muscles

Minute fasciculi  
attach palmar  
aponeurosis to  
dermis

Superficial branch of ulnar nerve

Ulnar artery

Palmaris brevis muscle

Hypothenar muscles

Palmar aponeurosis

Palmaris brevis  
muscle (reflected)

Palmar digital  
nerves from  
superficial  
branch of ulnar  
nerve to 5th and  
medial half of  
4th fingers

**Anterior (palmar) views**

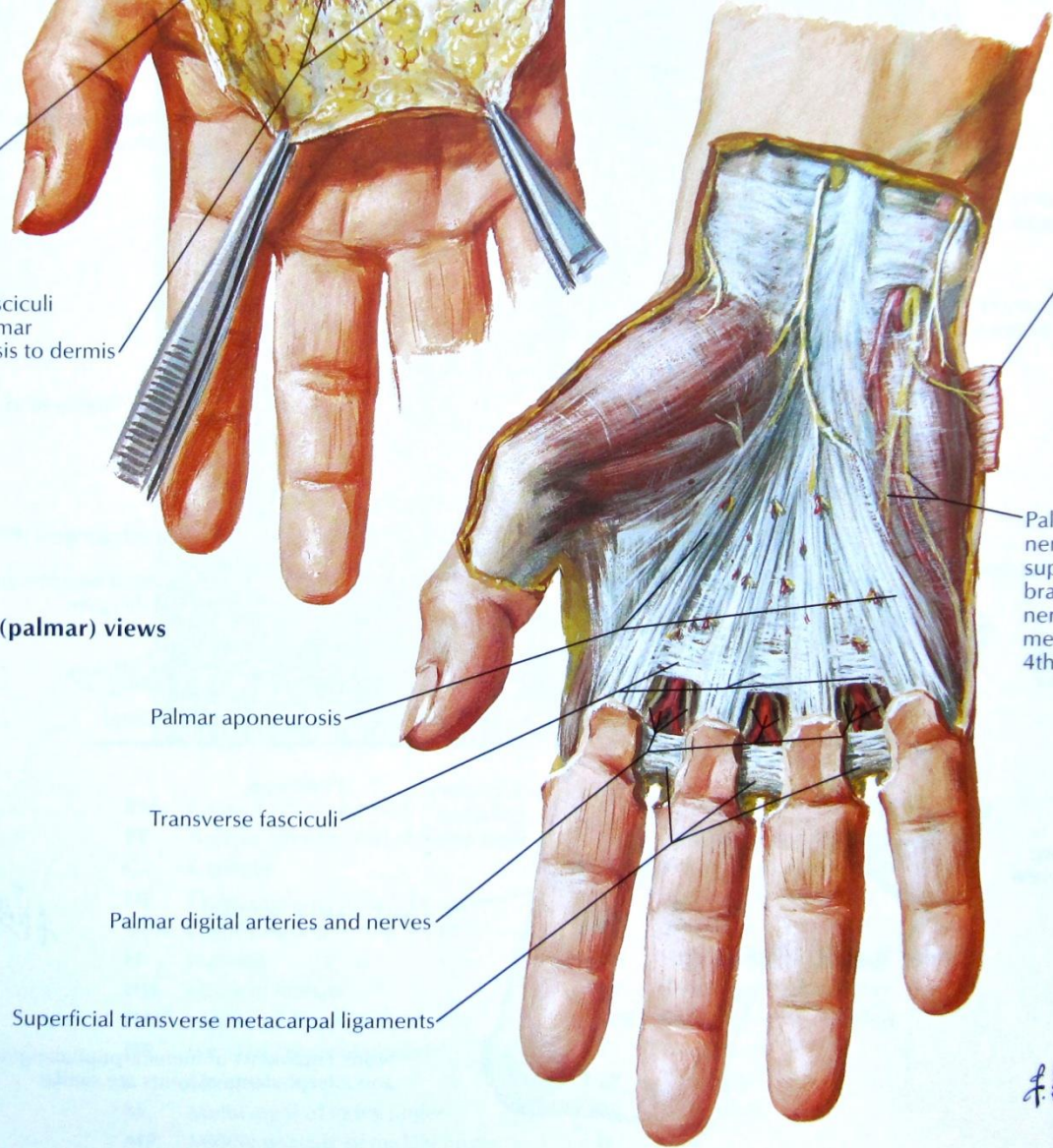
Palmar aponeurosis

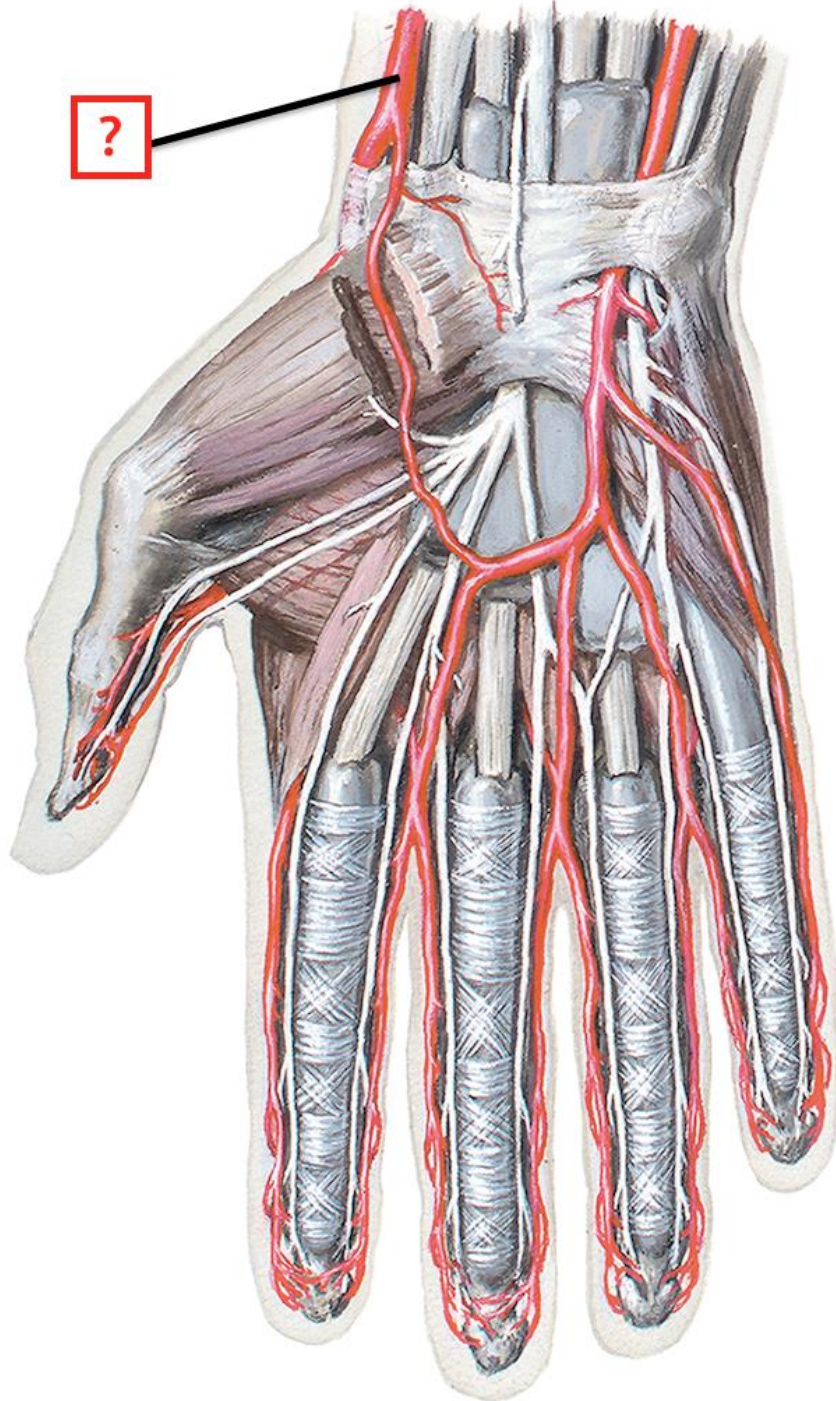
Transverse fasciculi

Palmar digital arteries and nerves

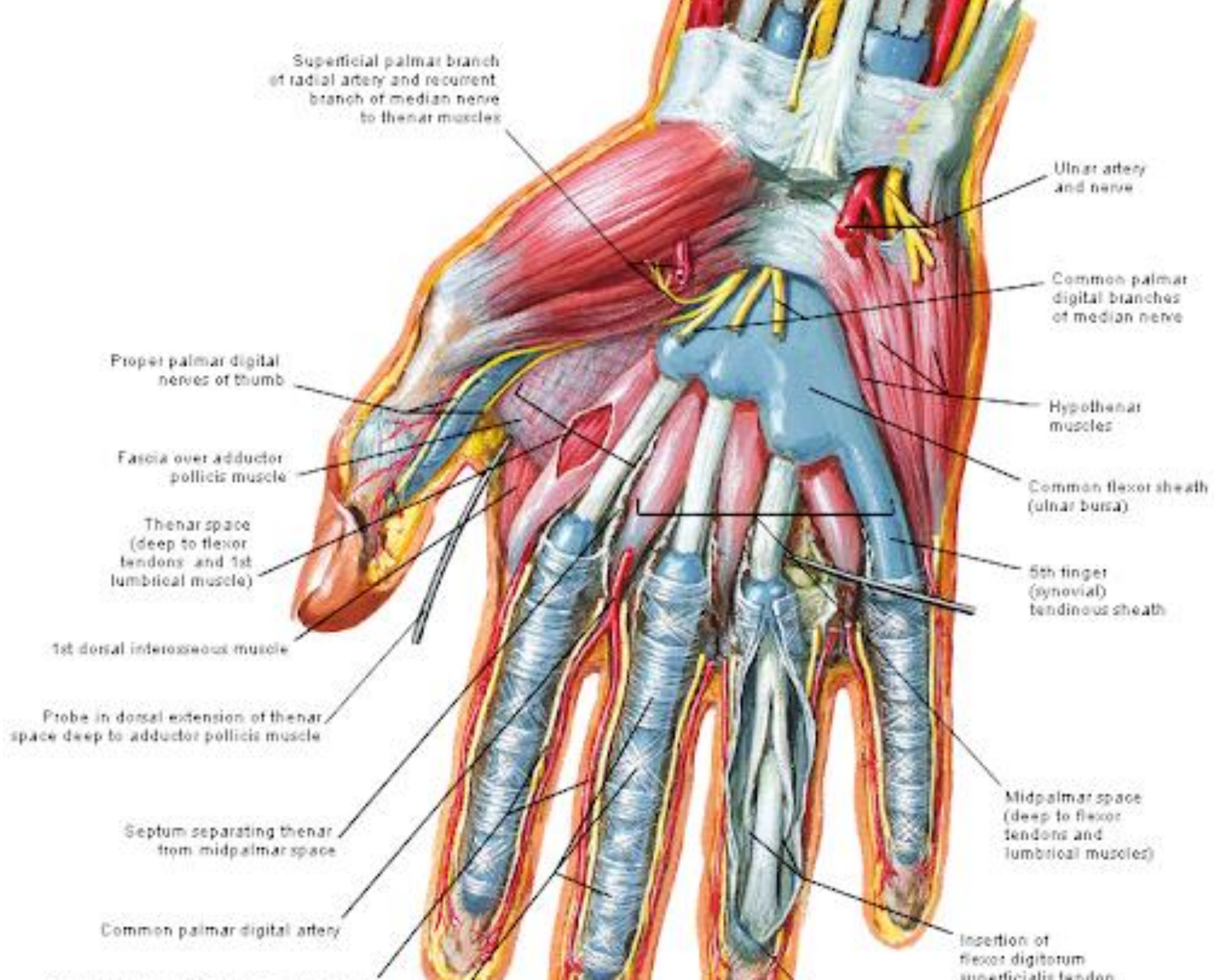
Superficial transverse metacarpal ligaments

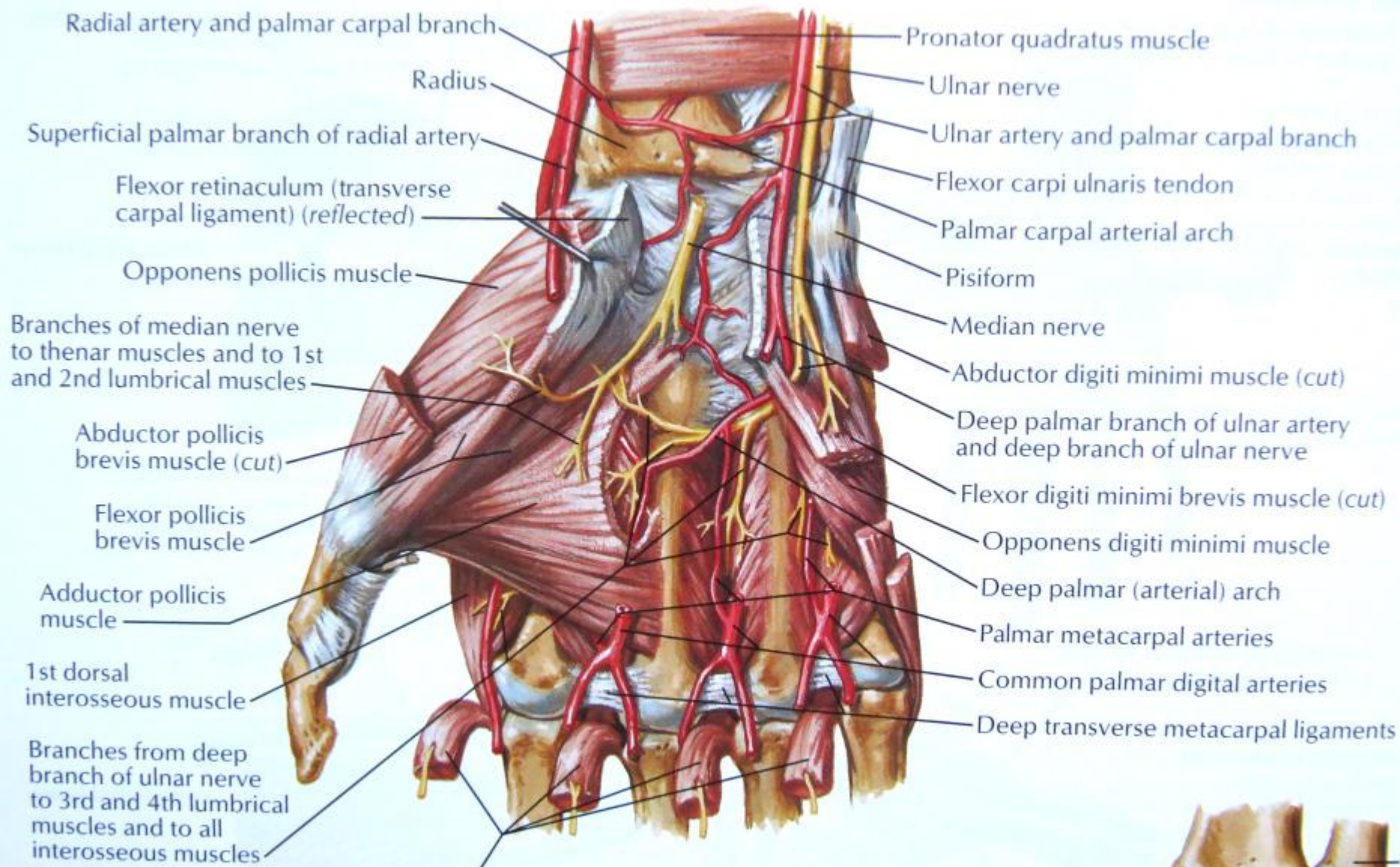
*F. Netter  
M.D.*



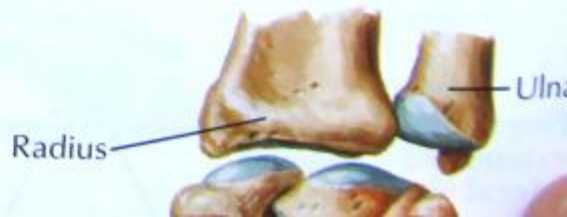


F. Netter  
M.D.

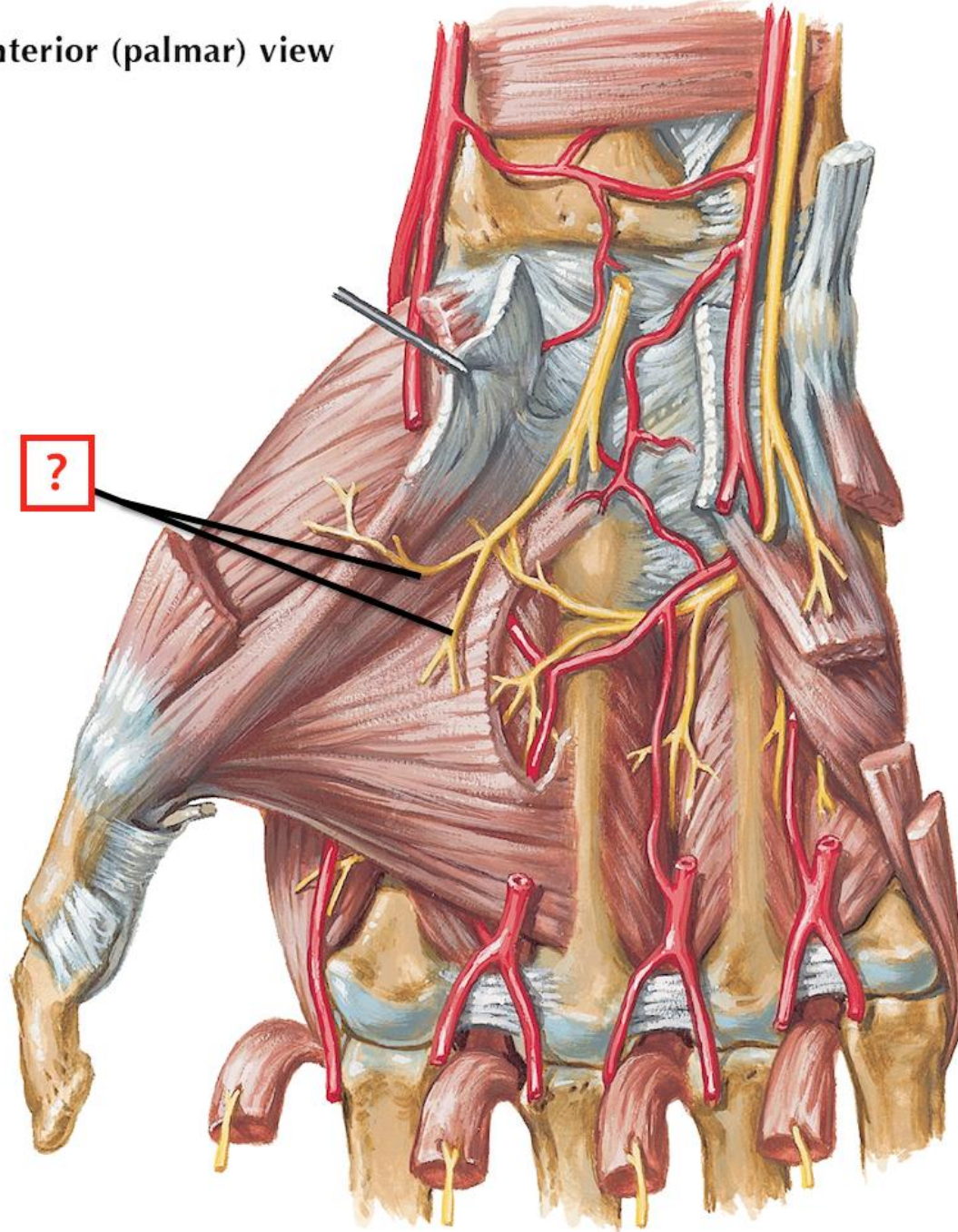


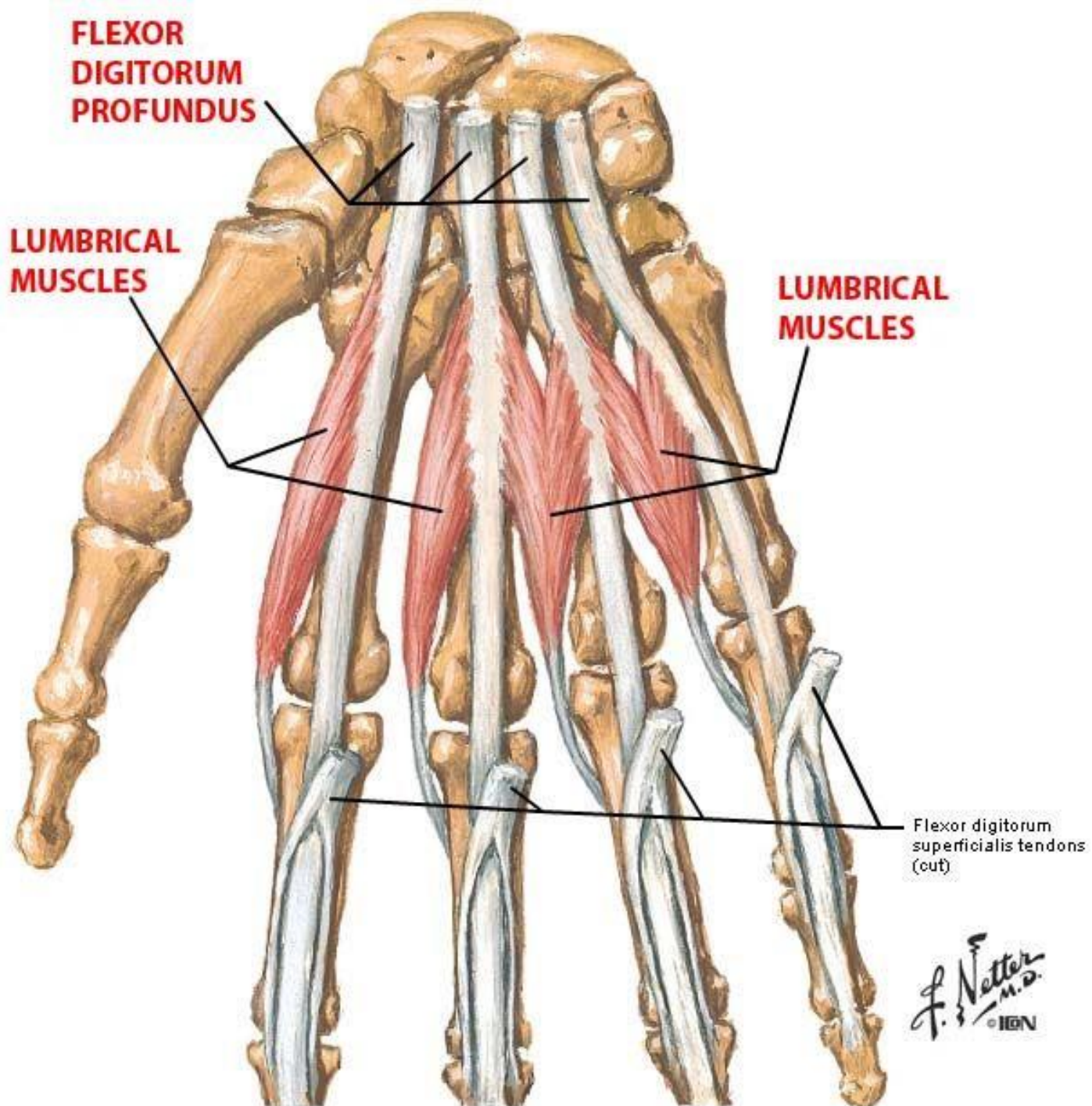


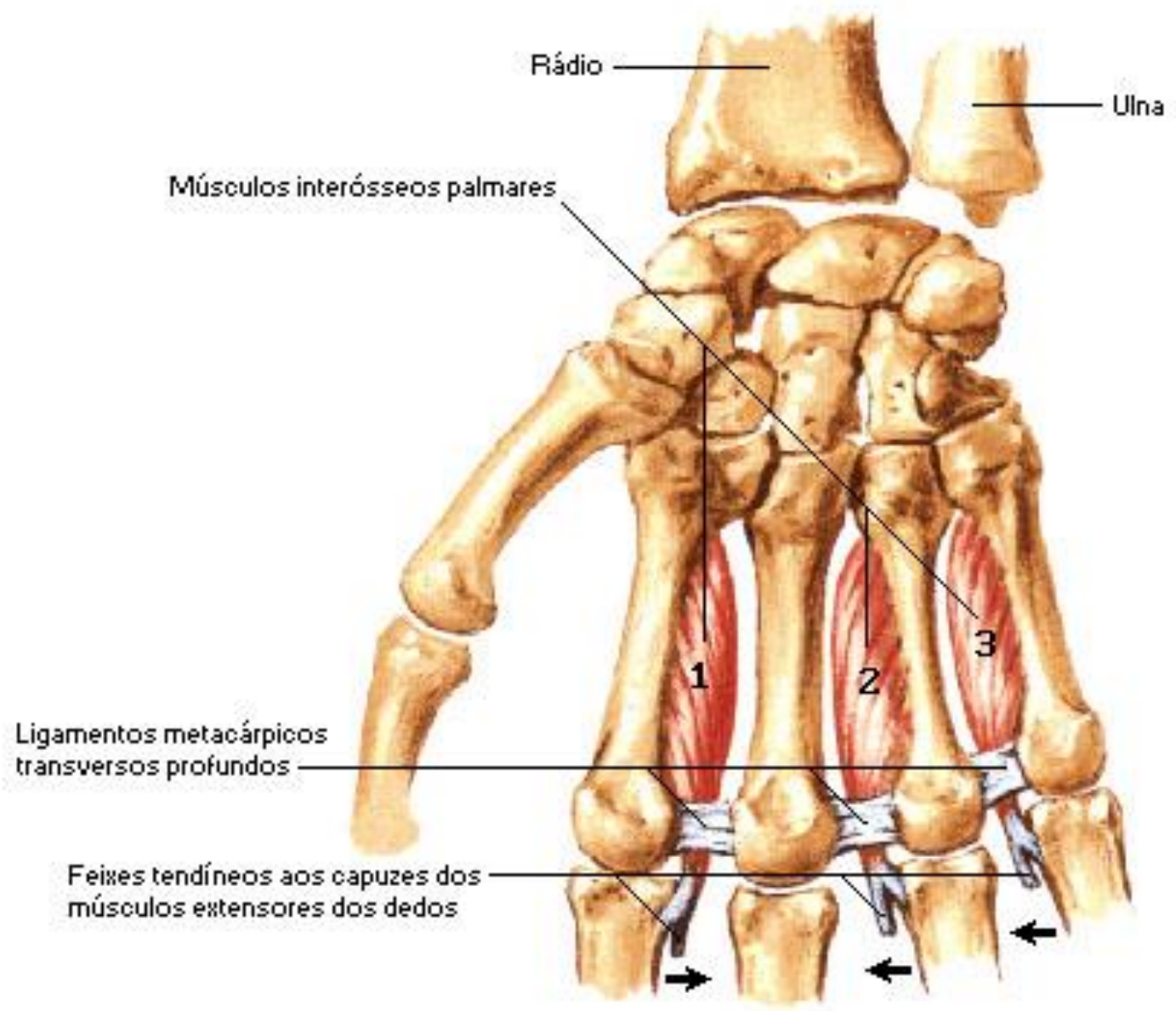
**Anterior (palmar) view**



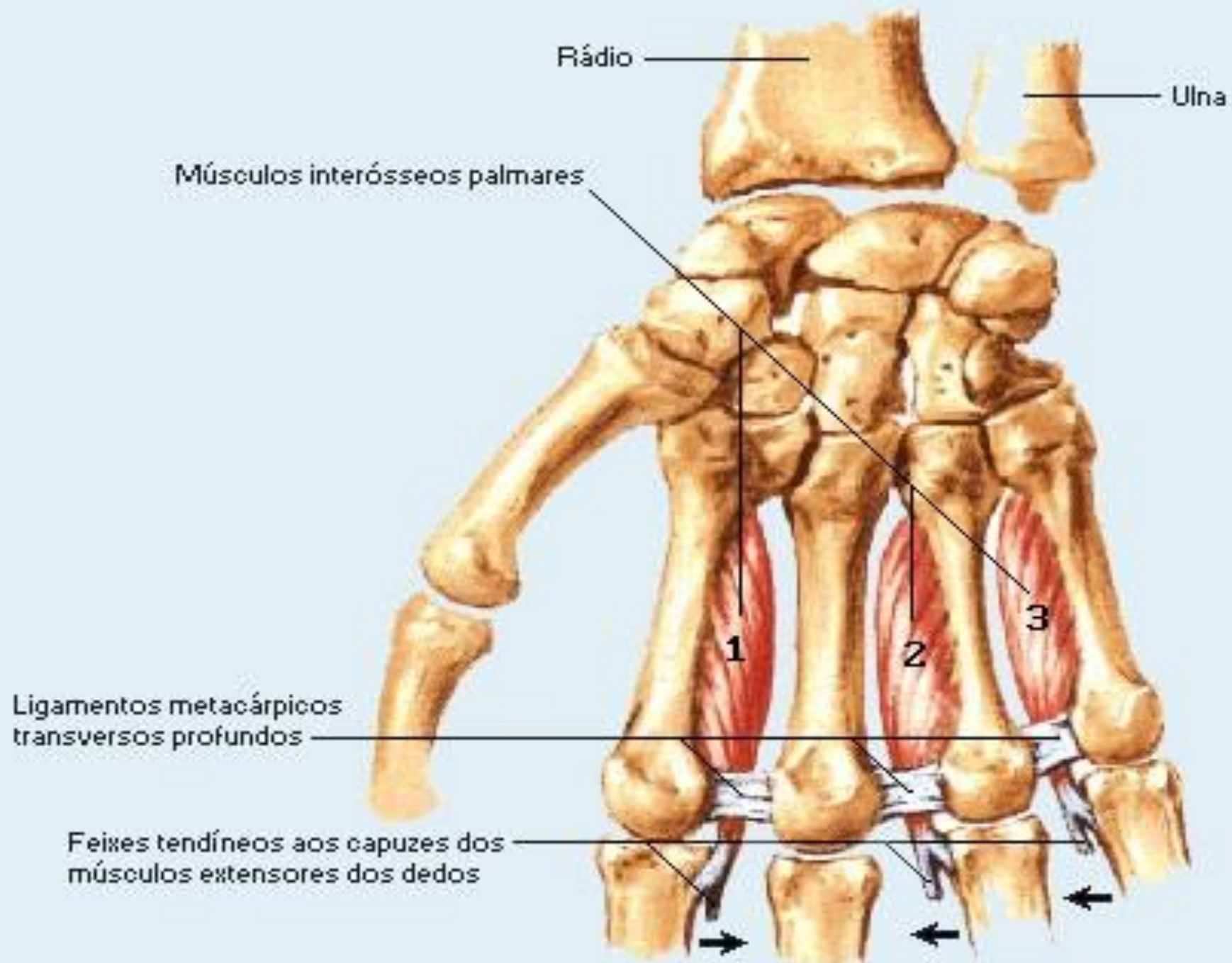
Anterior (palmar) view











Ulna

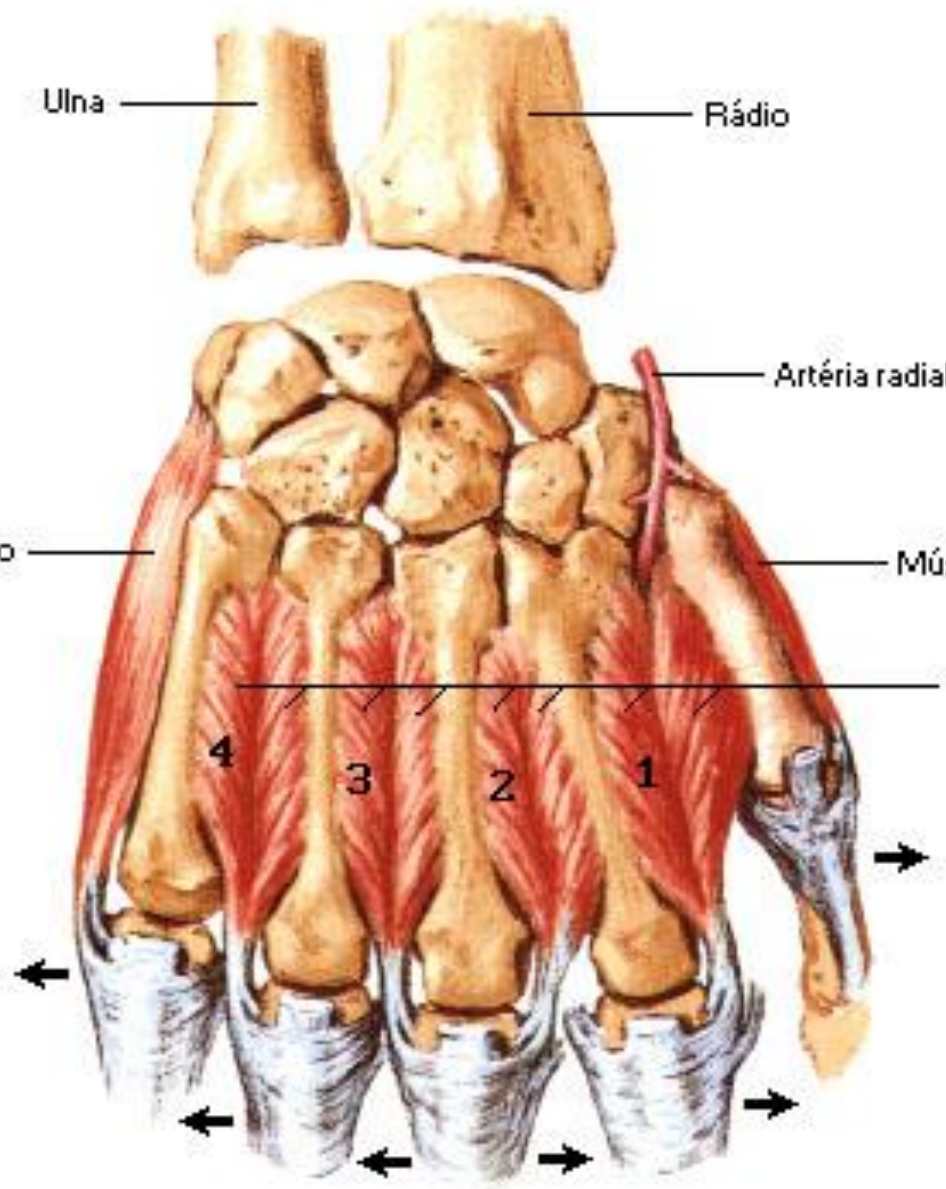
Rádio

Artéria radial

Músculo abductor curto do polegar

Músculos interósseos dorsais

Músculo abductor do dedo mínimo



4

3

2

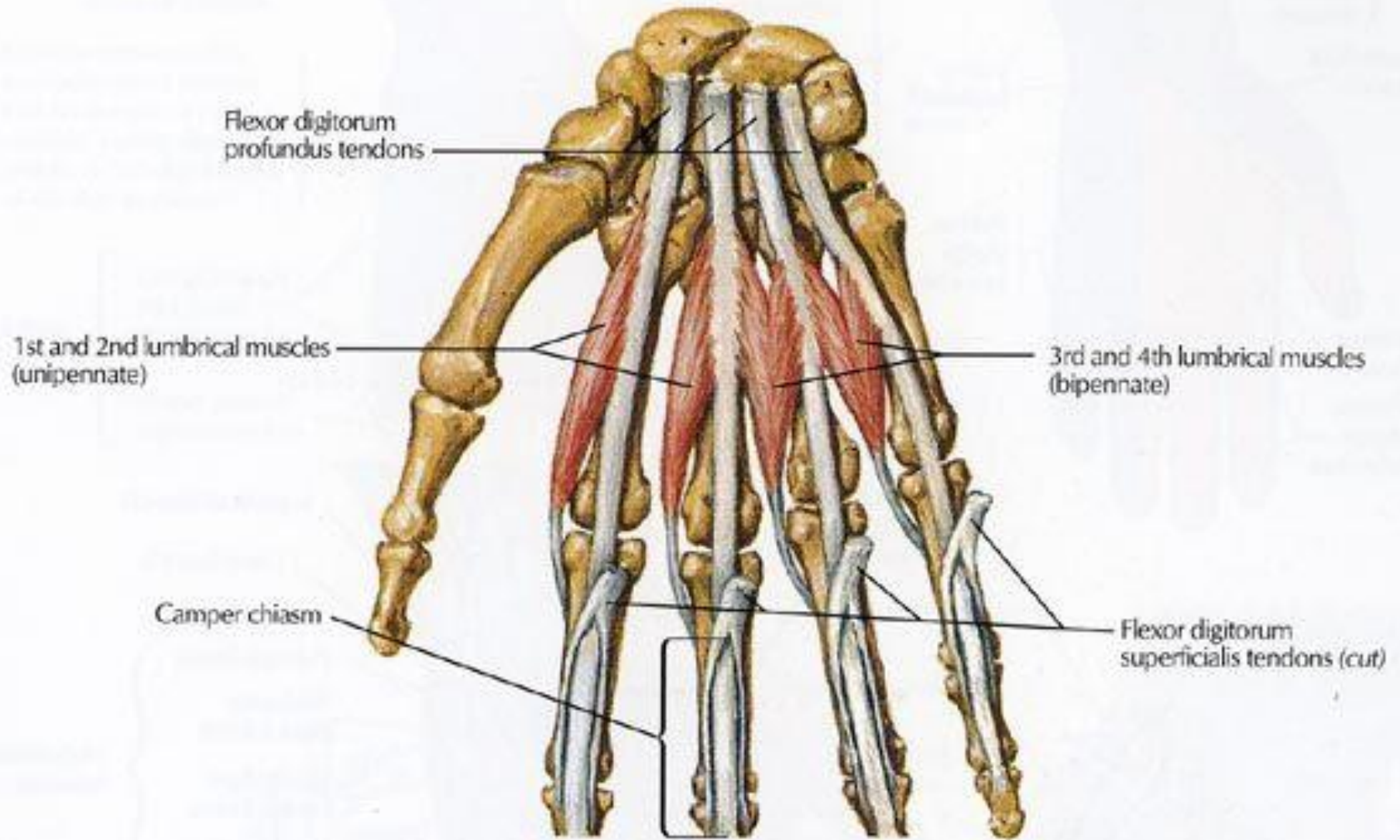
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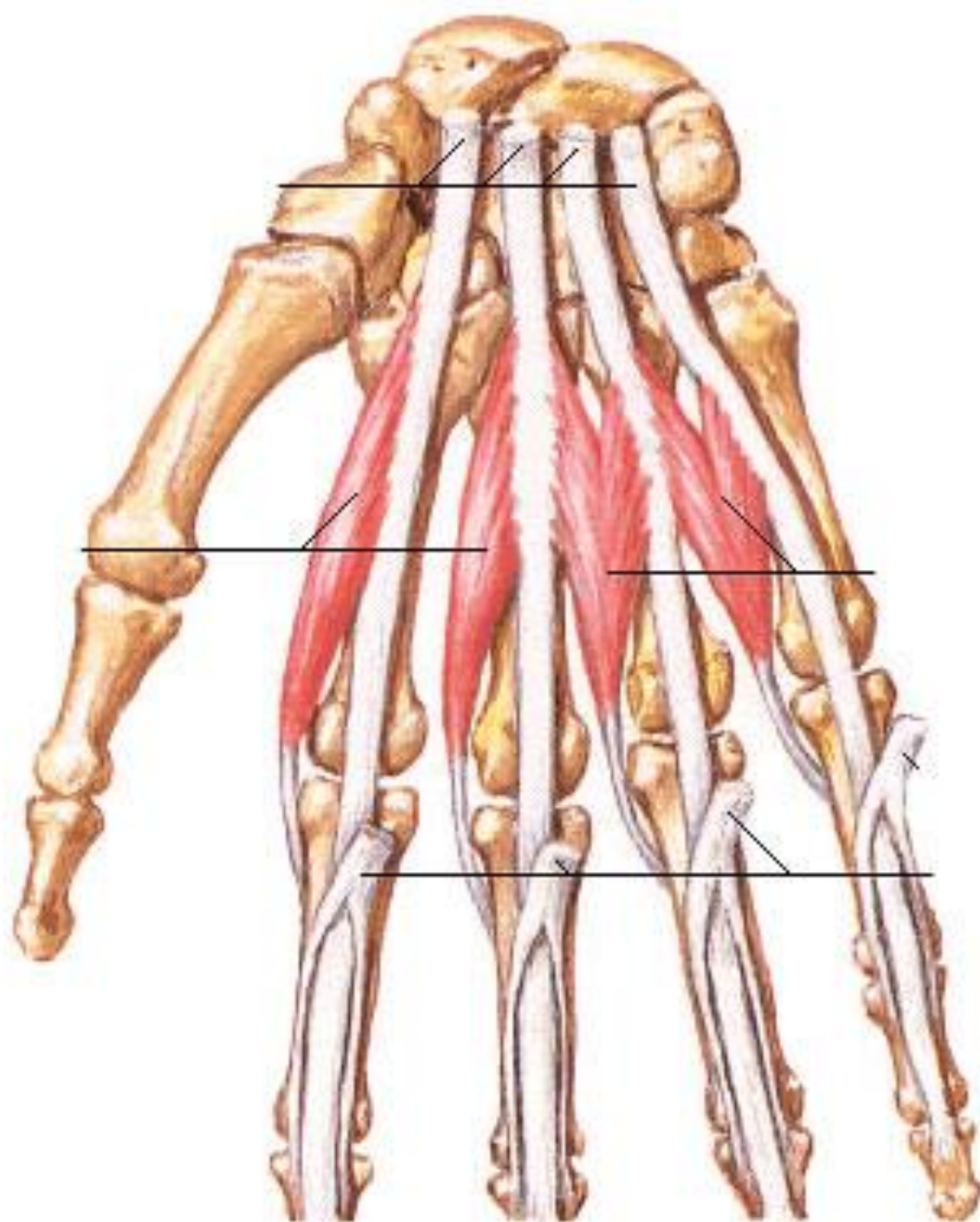


ELSE

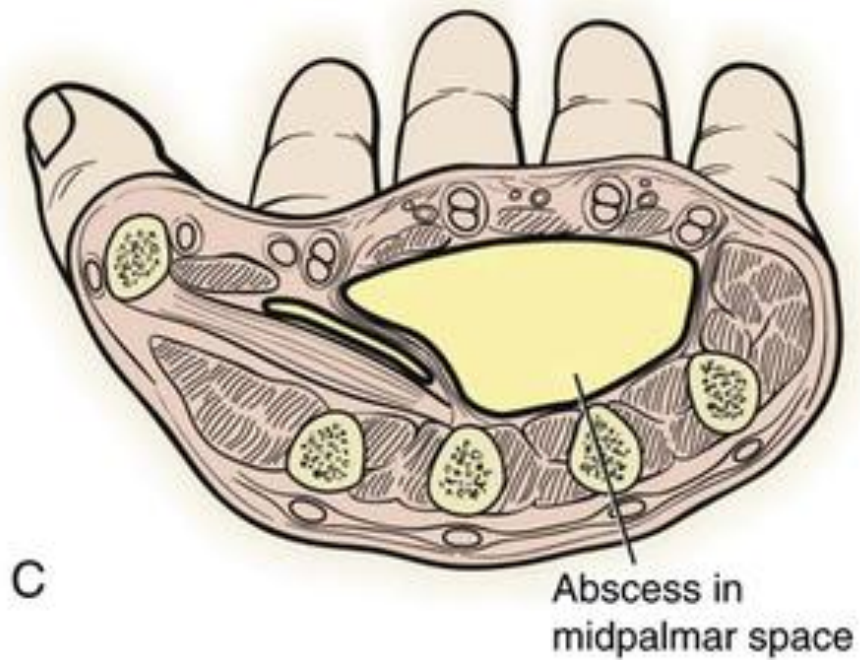
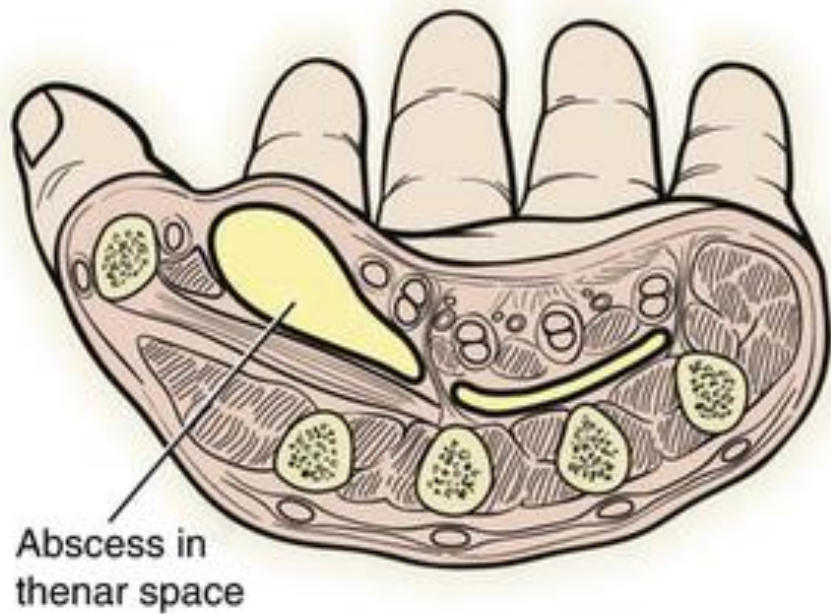
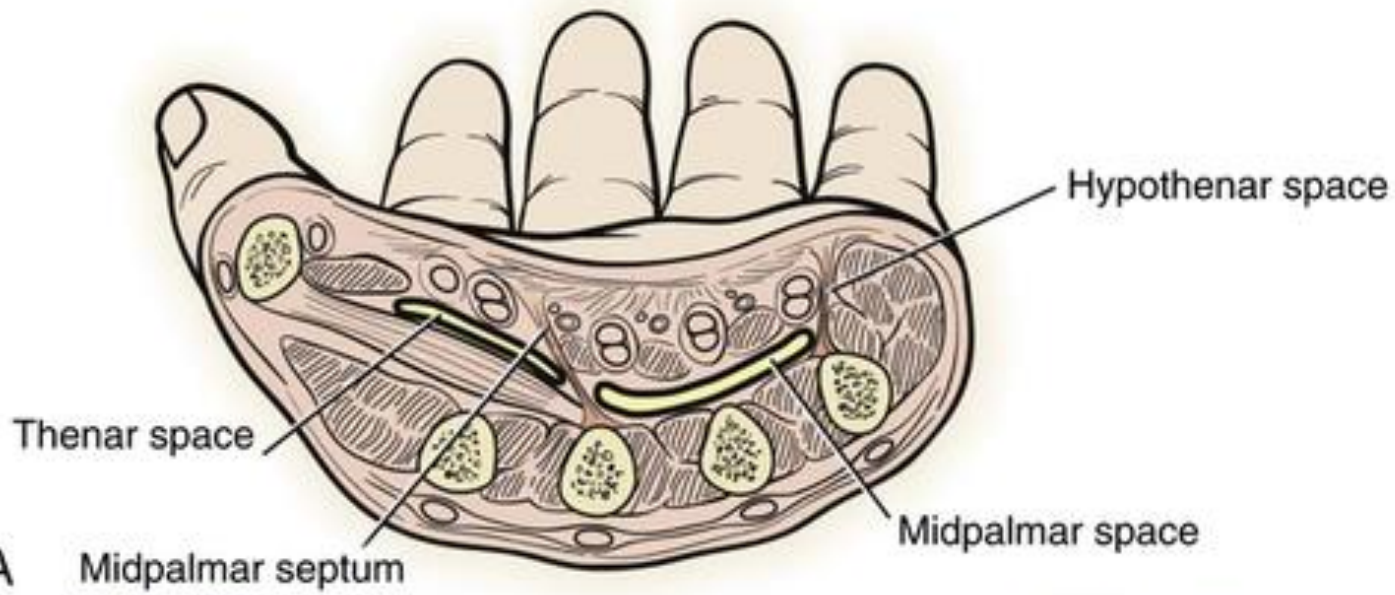
F. Netter

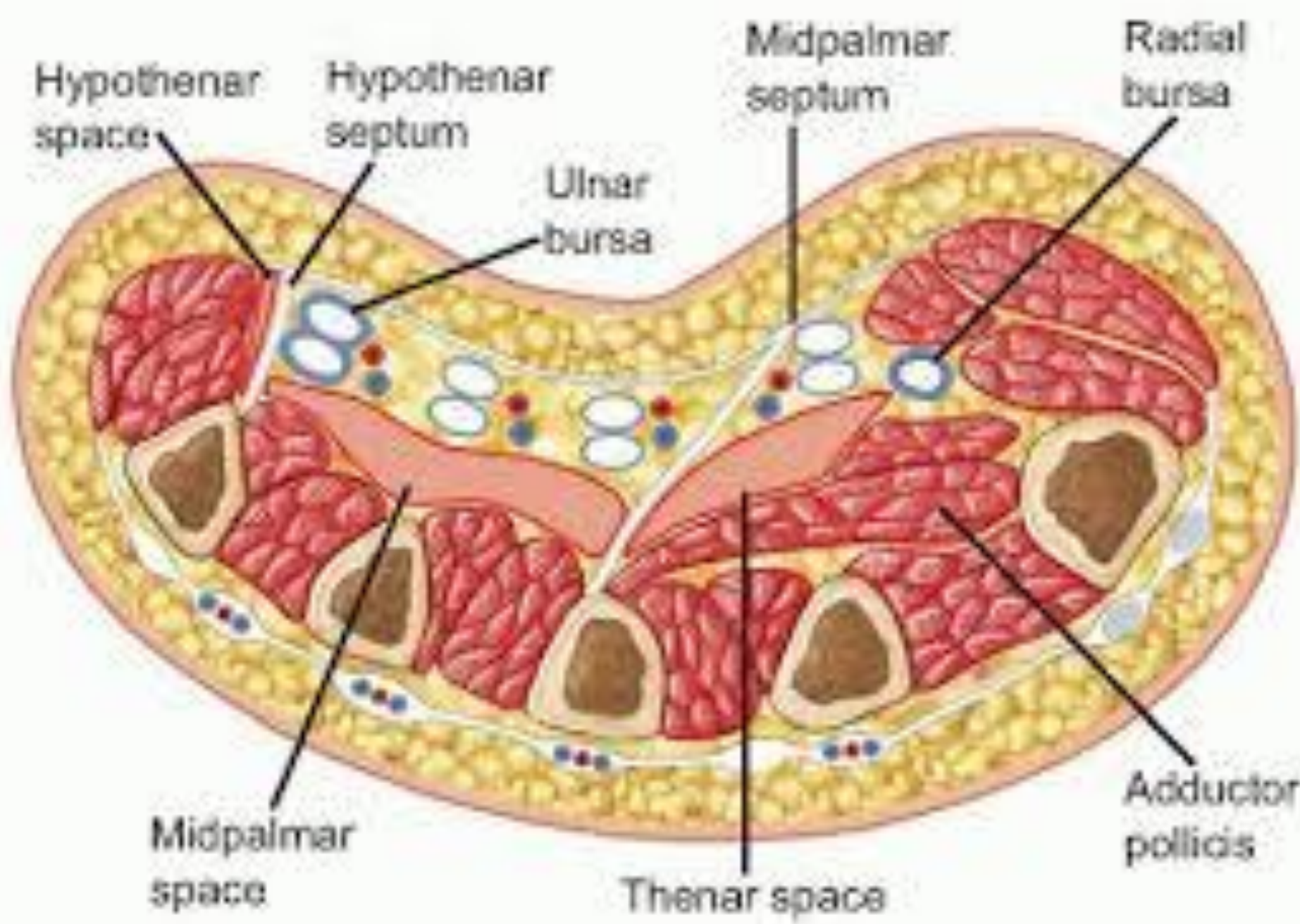
# Lumbrical muscles



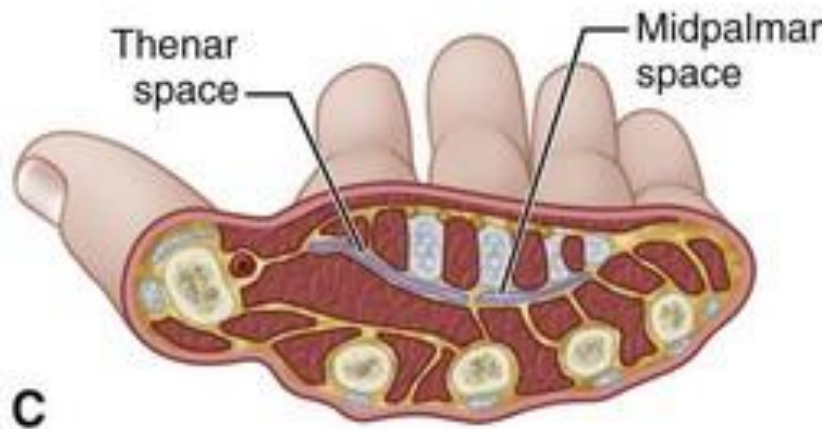
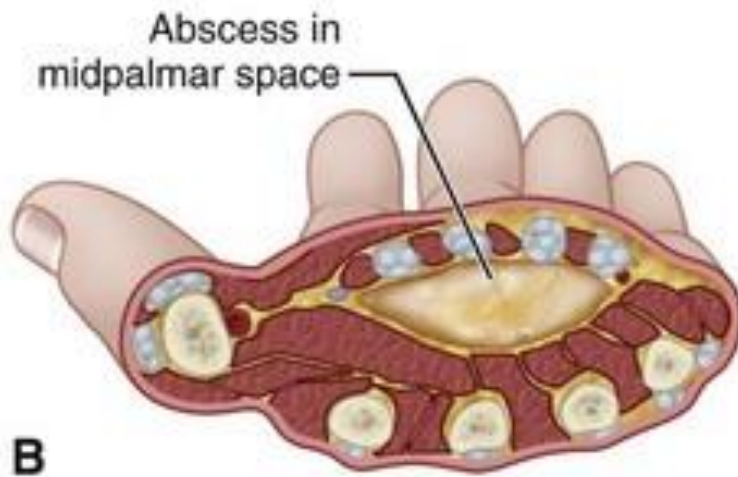
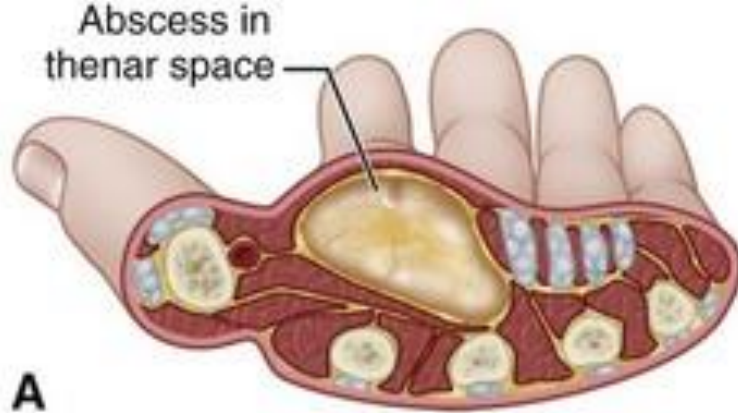


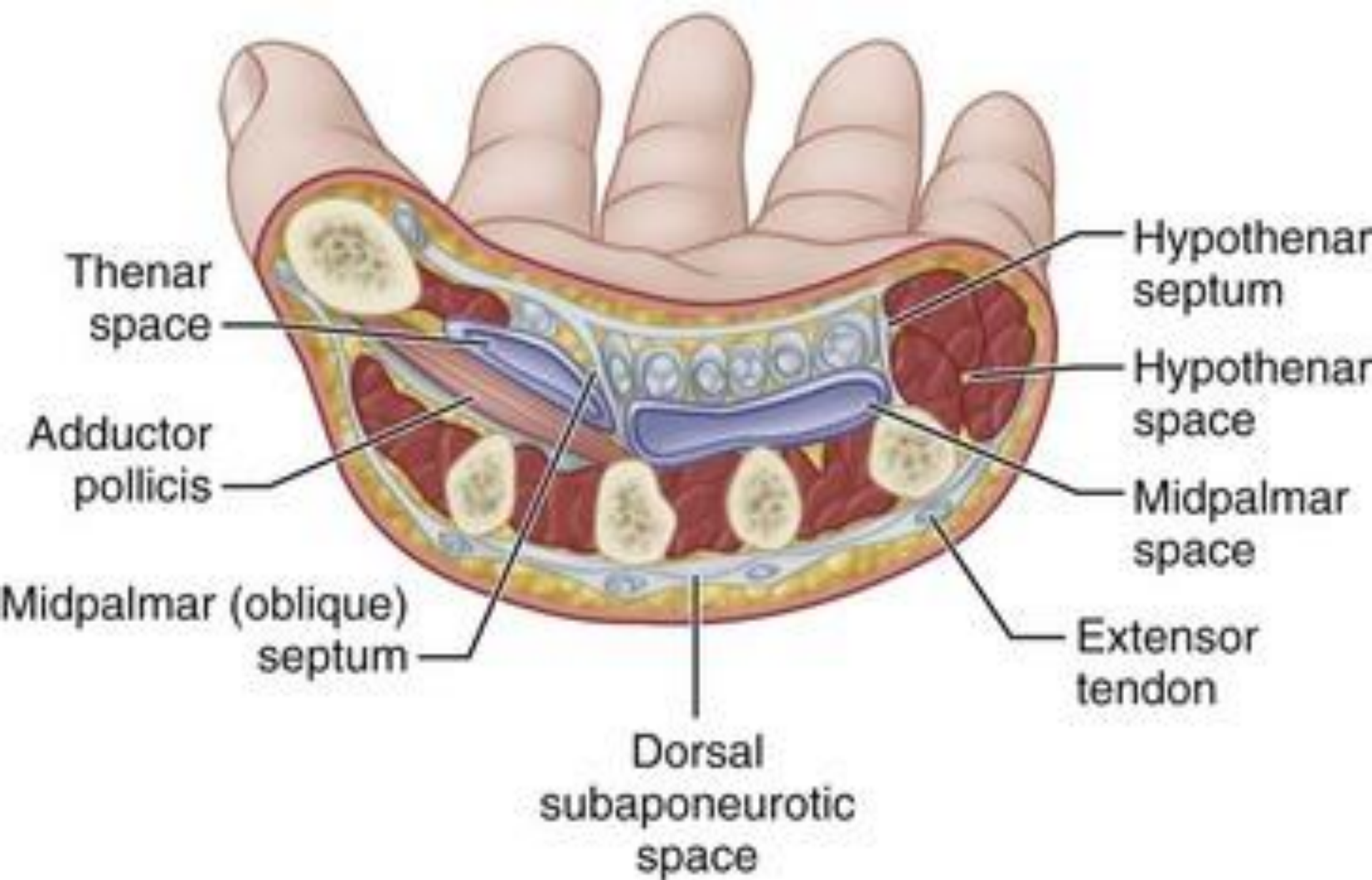


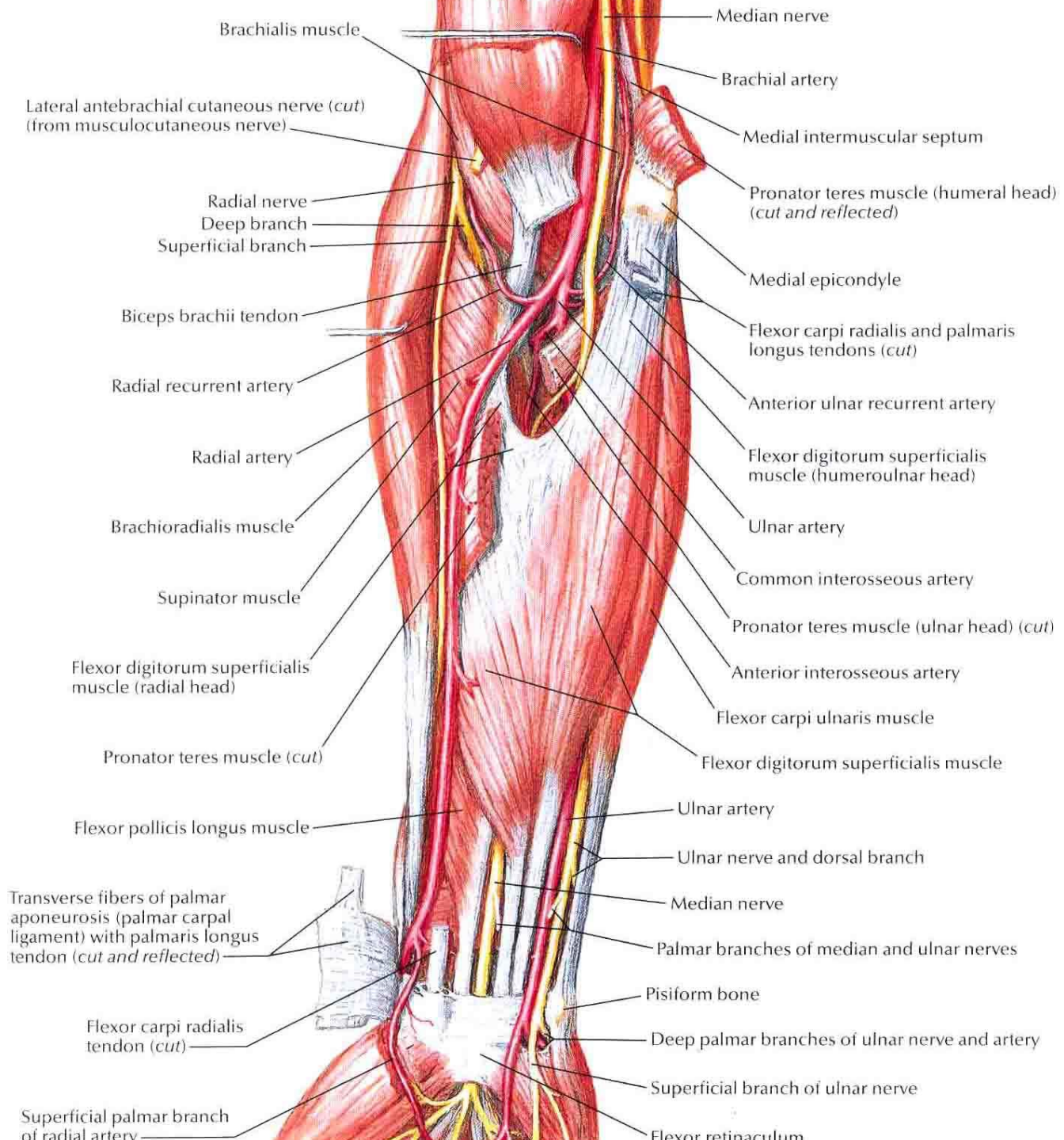


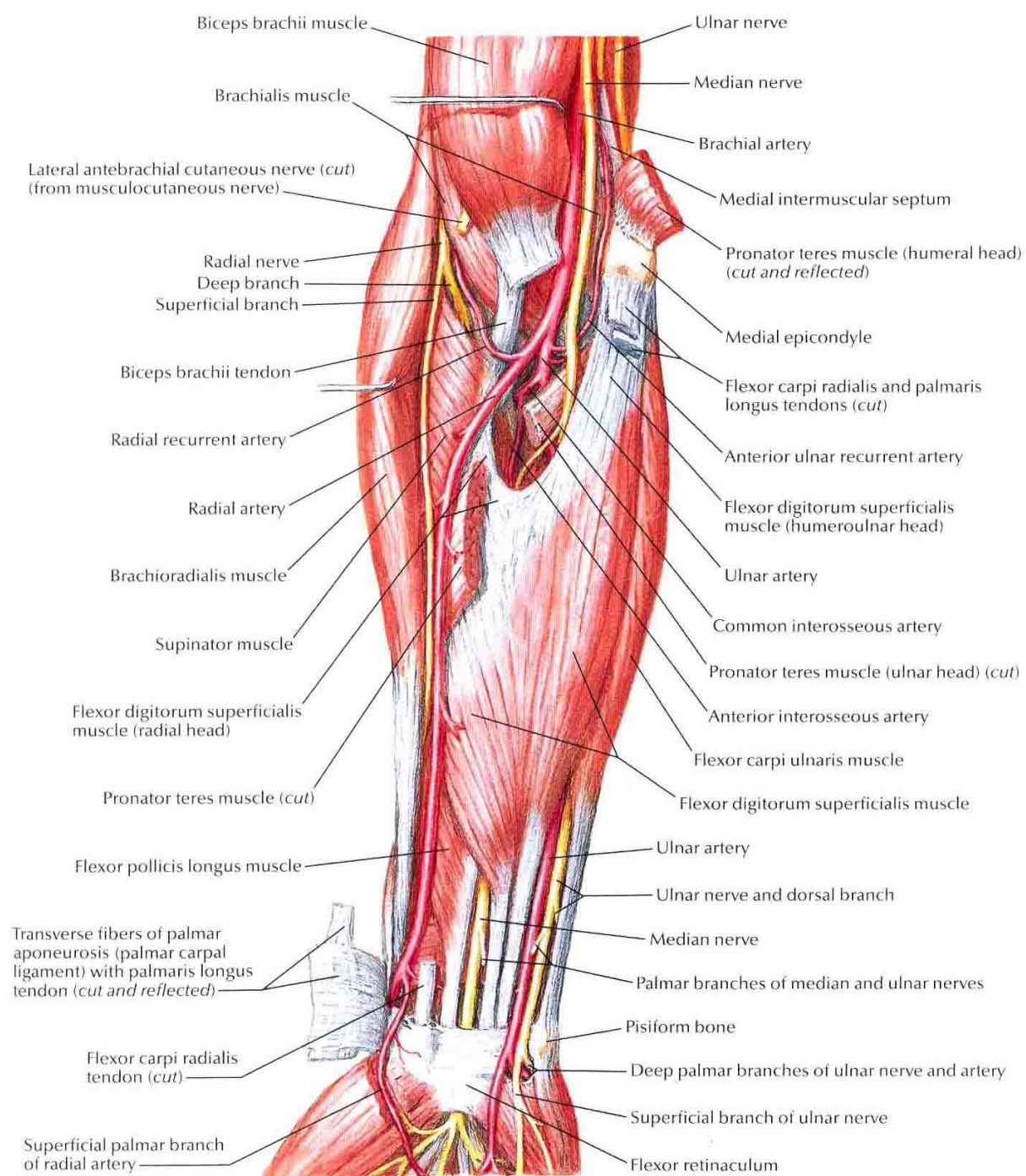


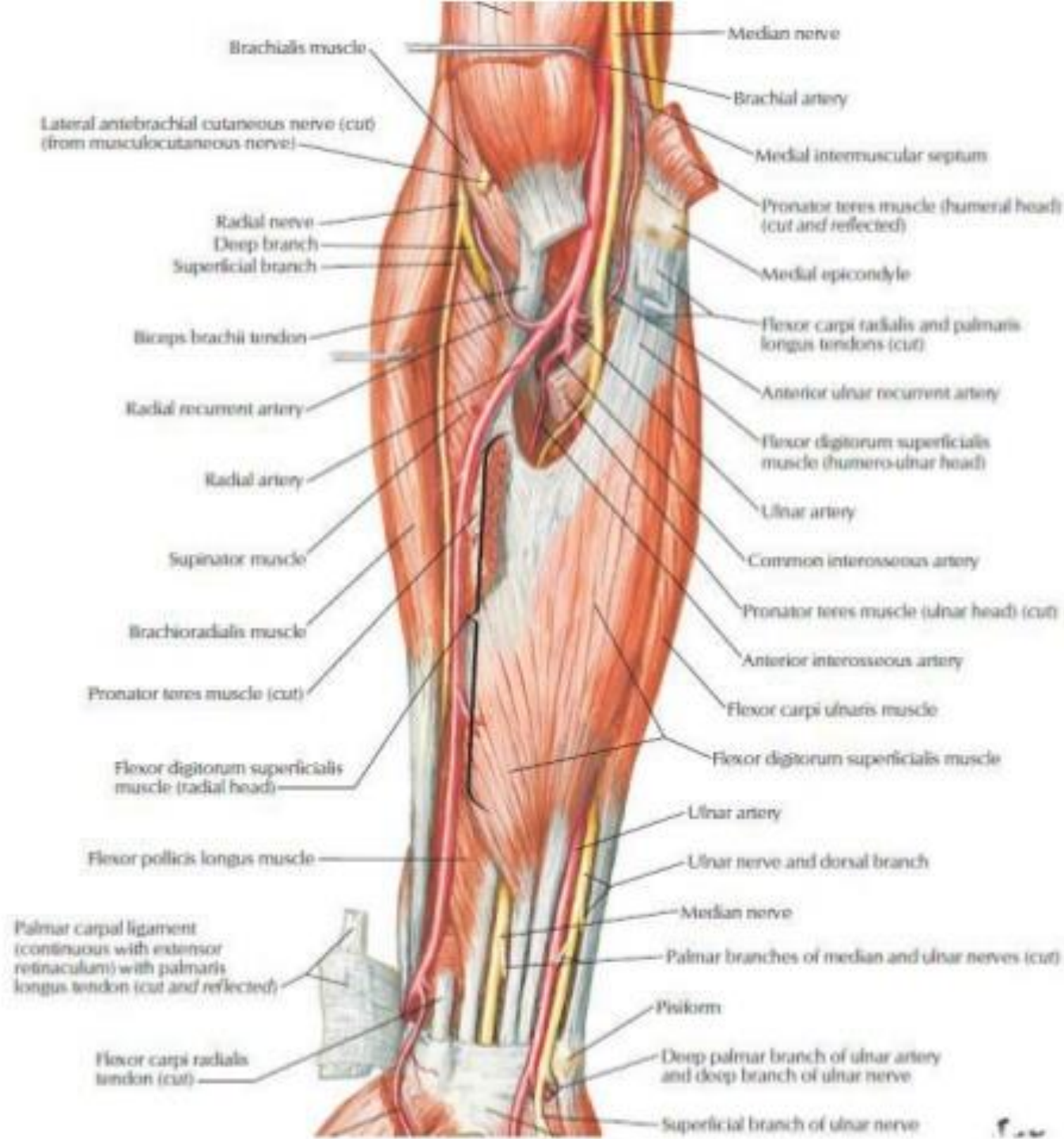


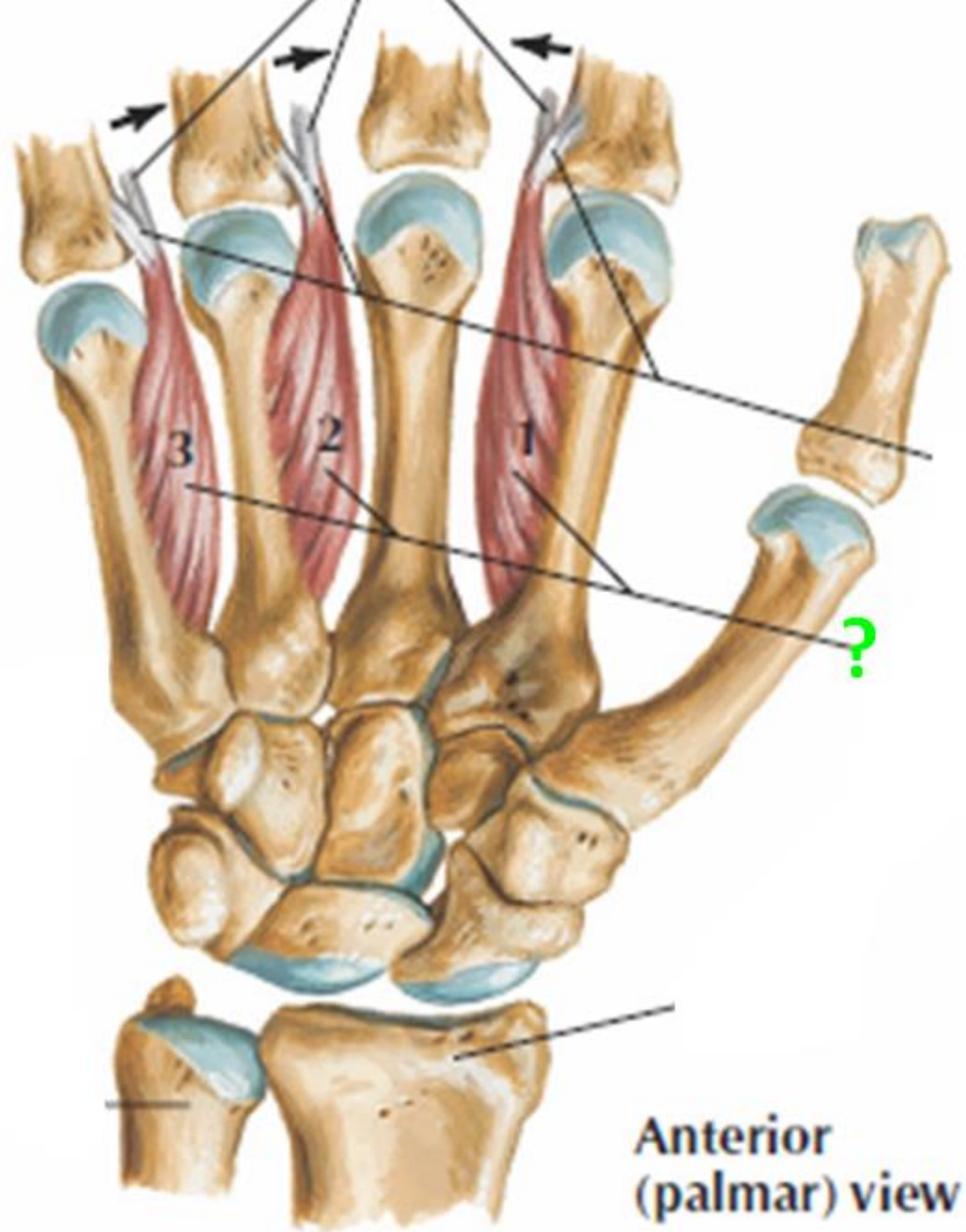




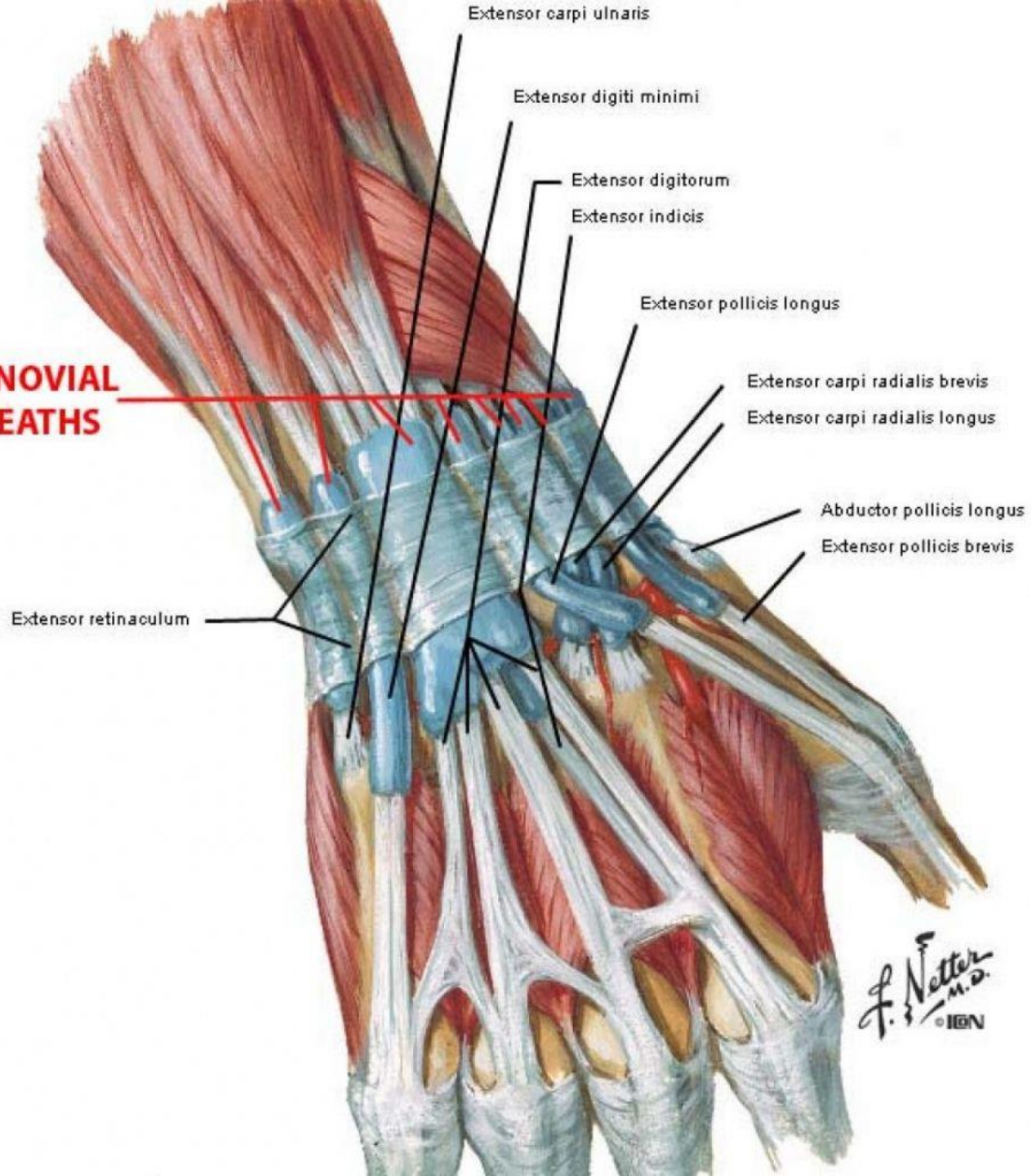




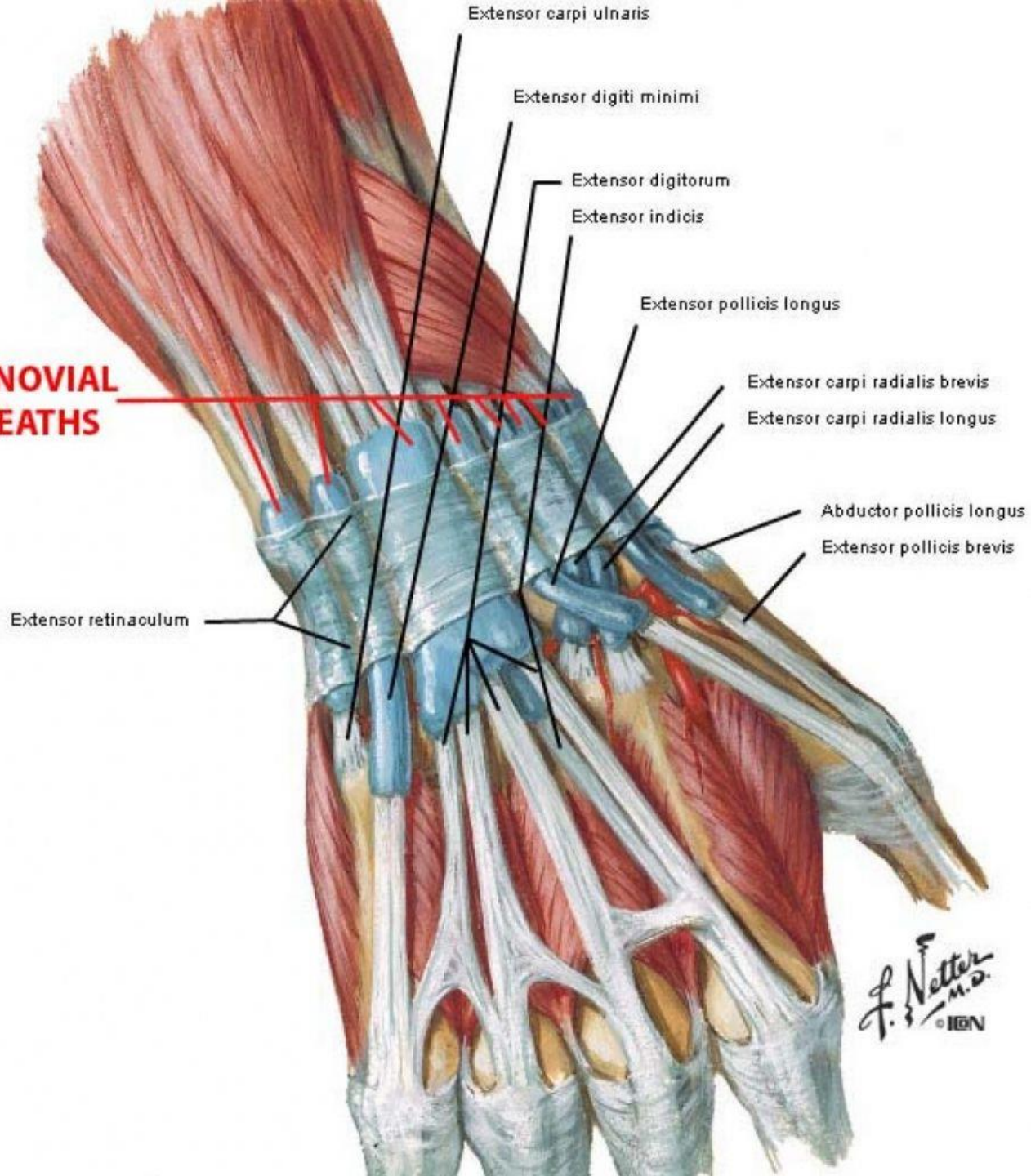




**SYNOVIAL SHEATHS**



**SYNOVIAL SHEATHS**

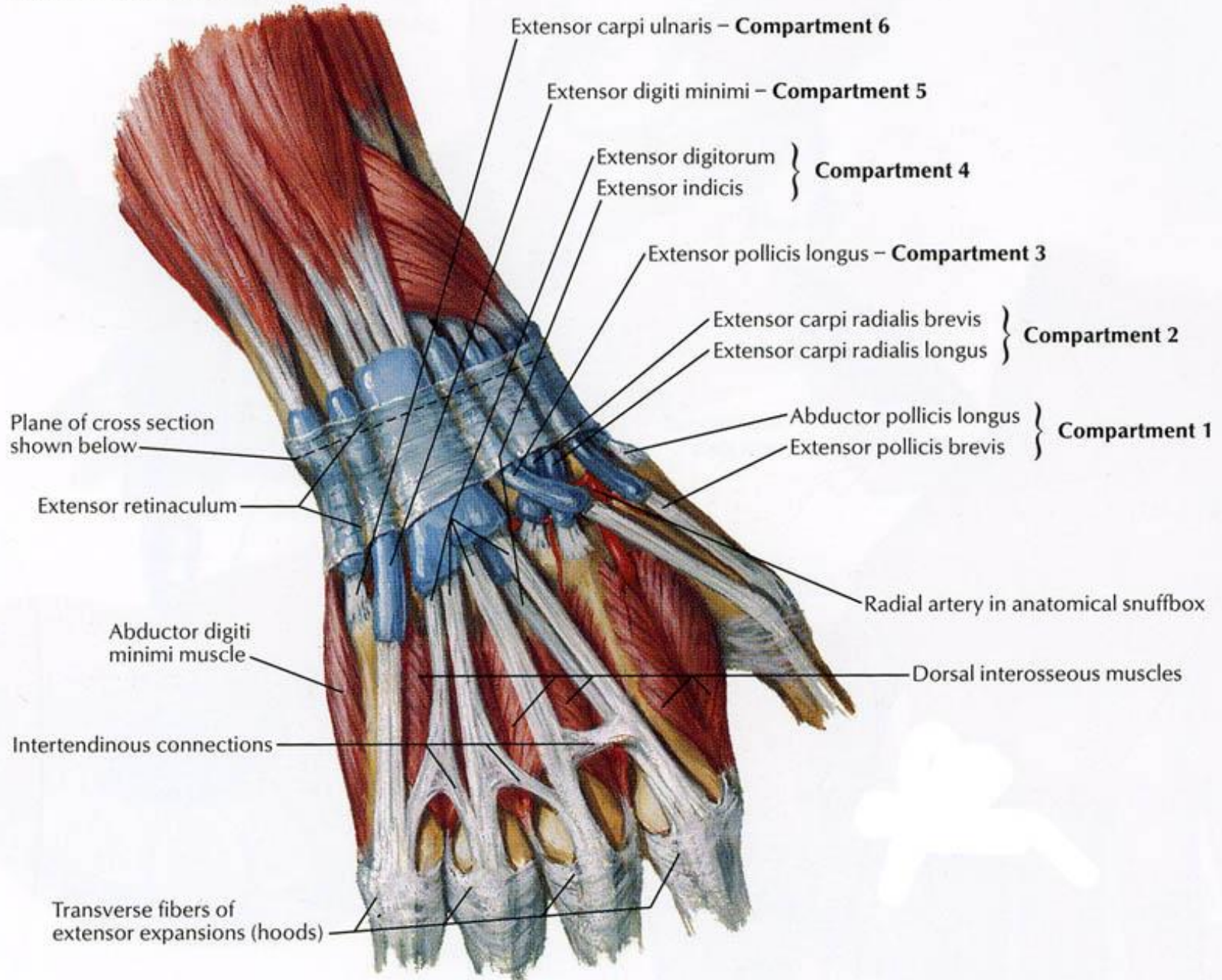


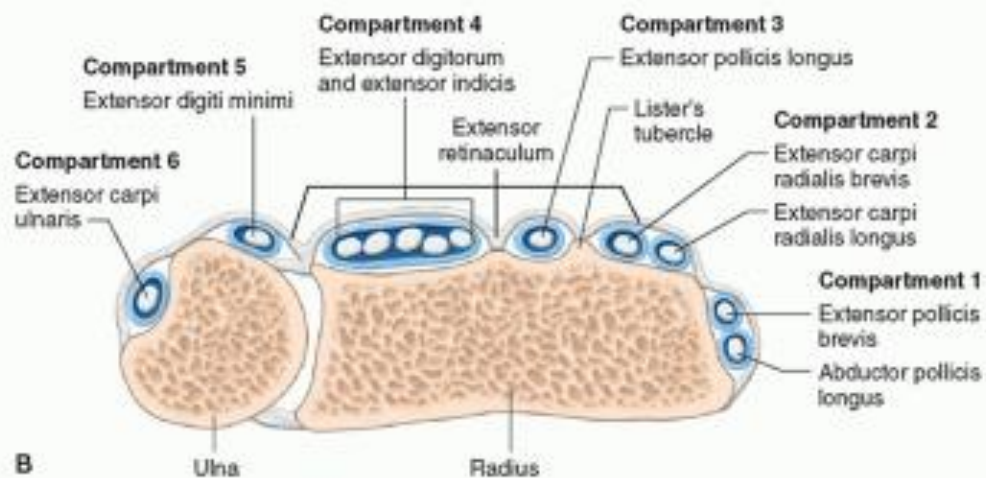
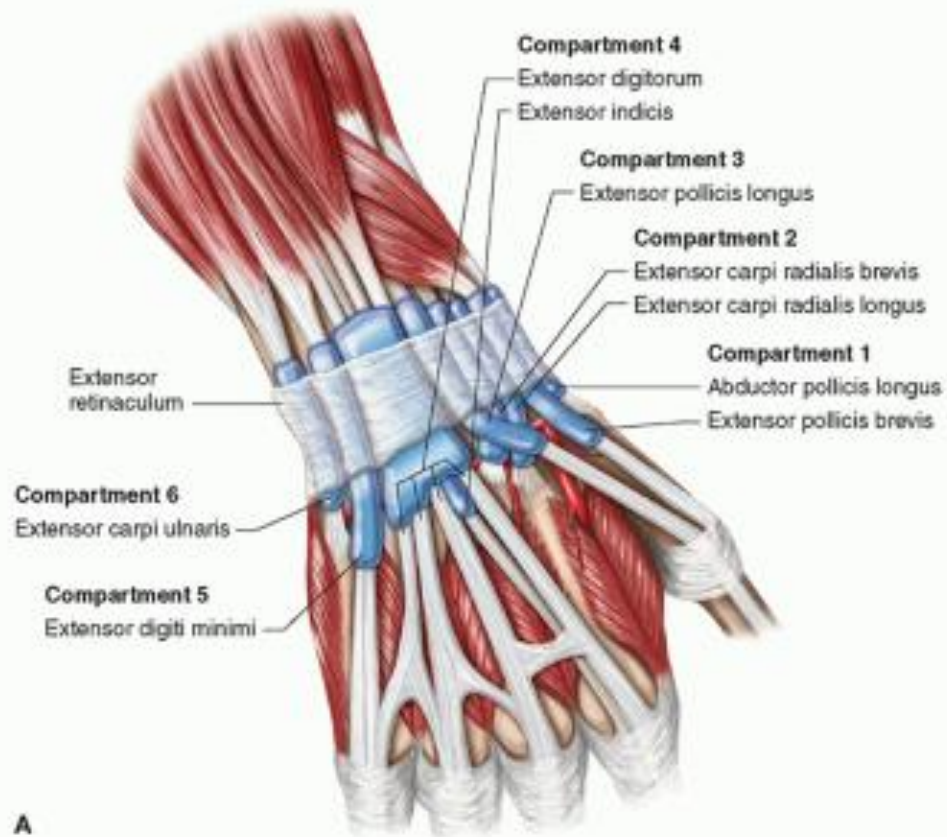
*F. Netter*  
M.D.  
© IGV

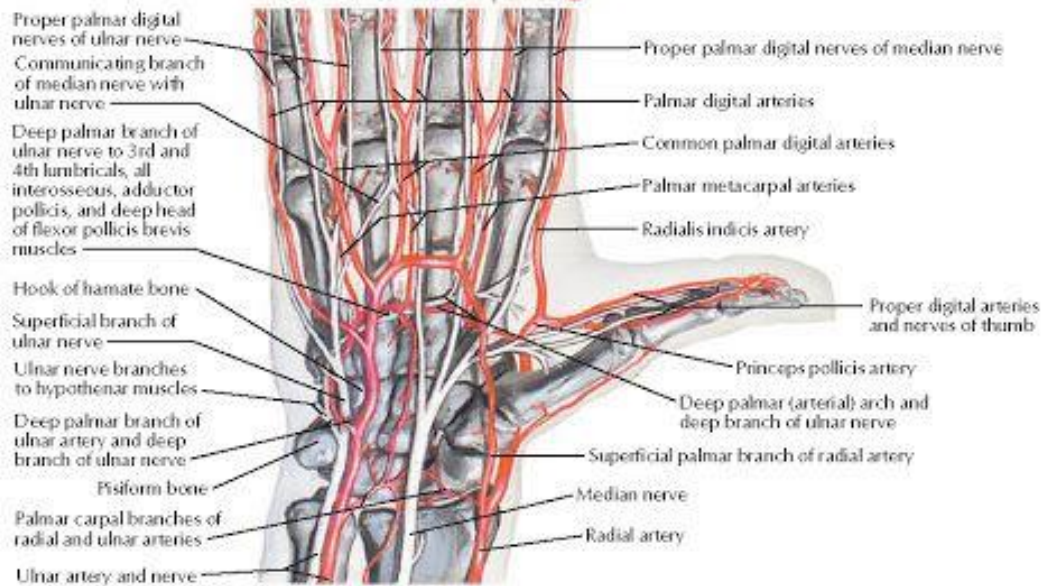
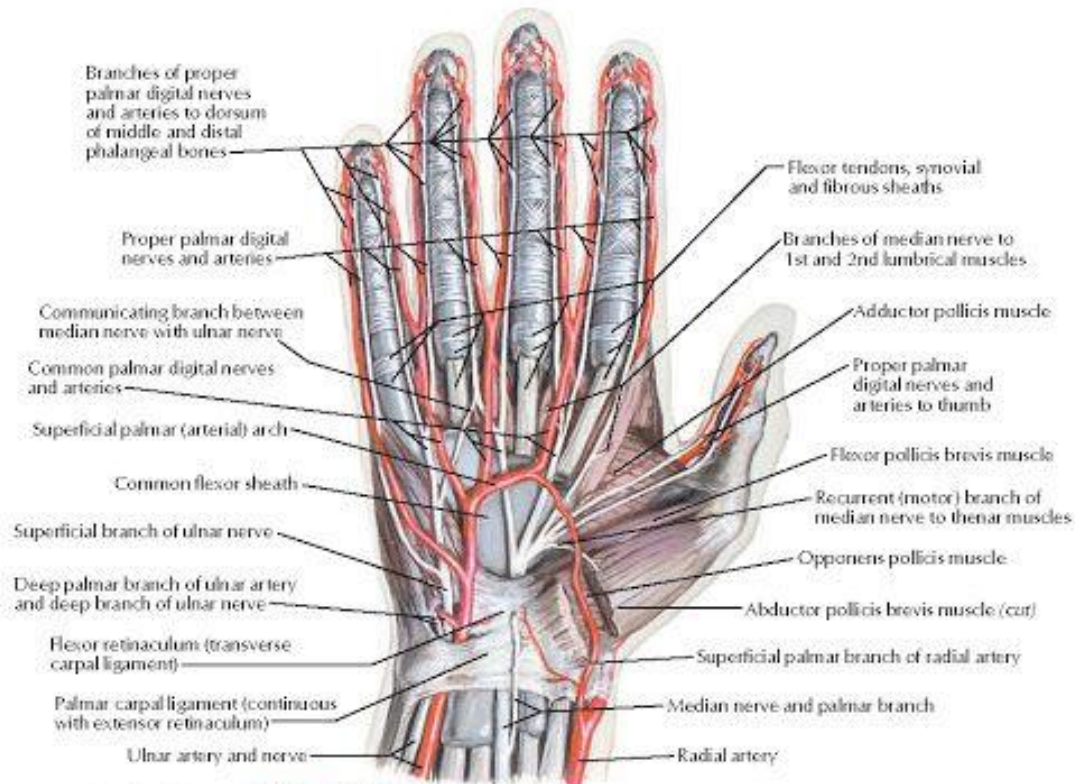


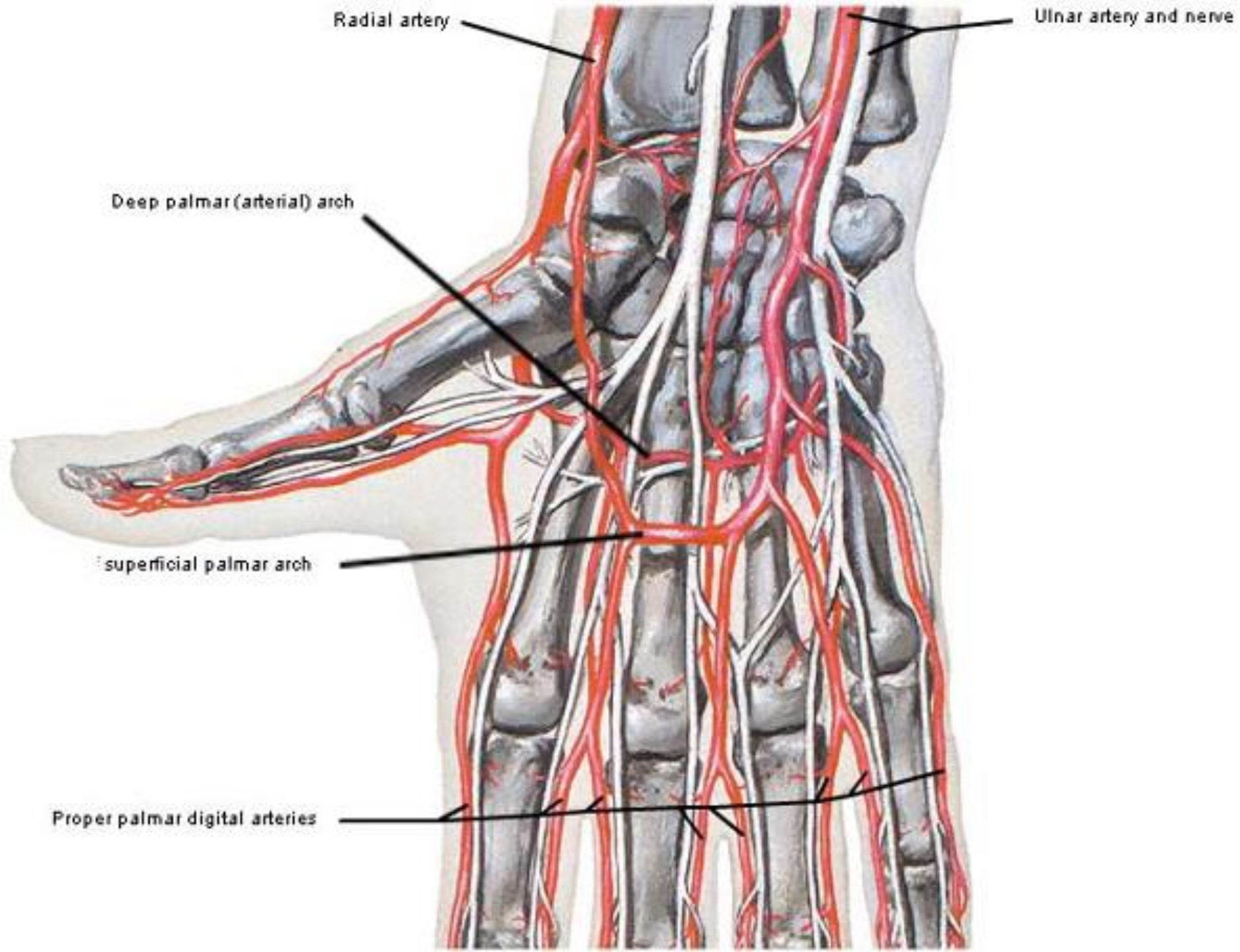
# Extensor compartments

Posterior (dorsal) view

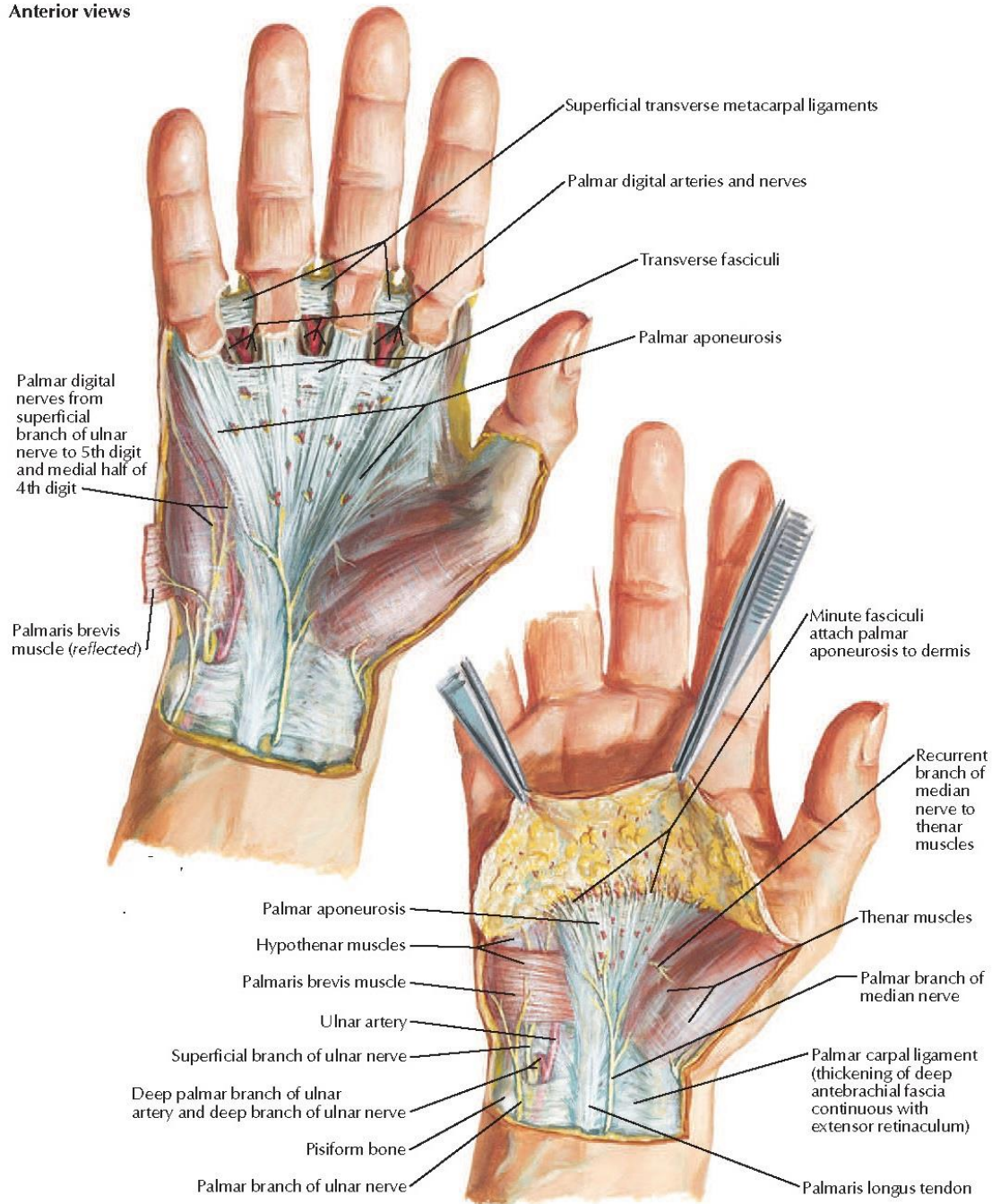




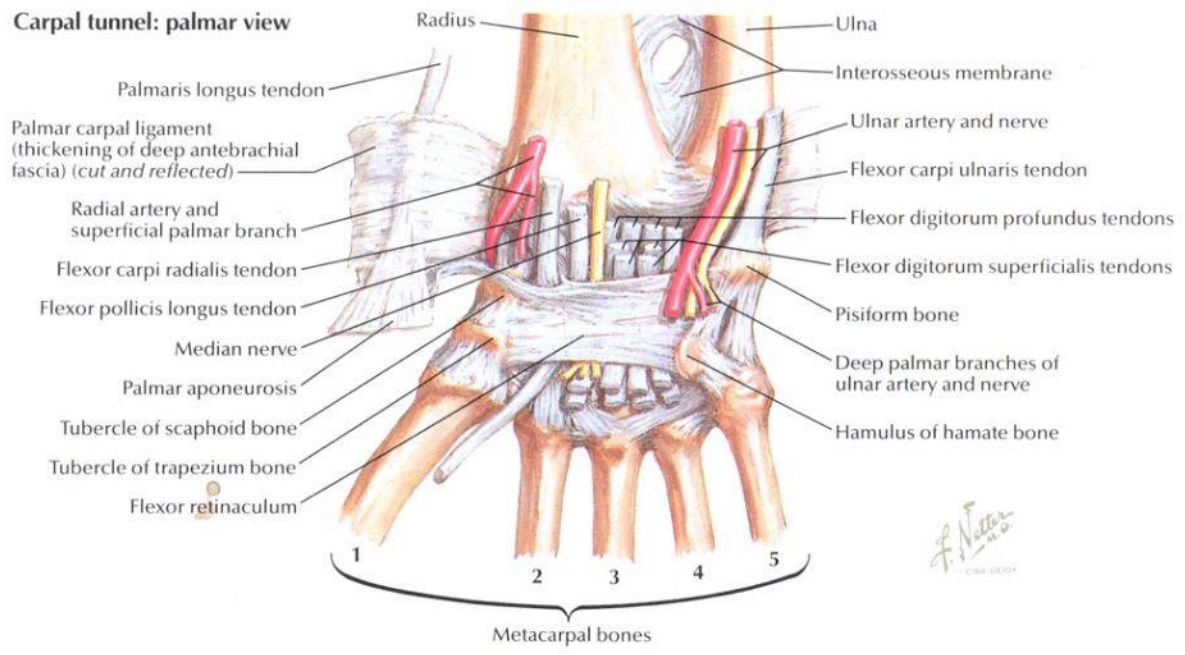




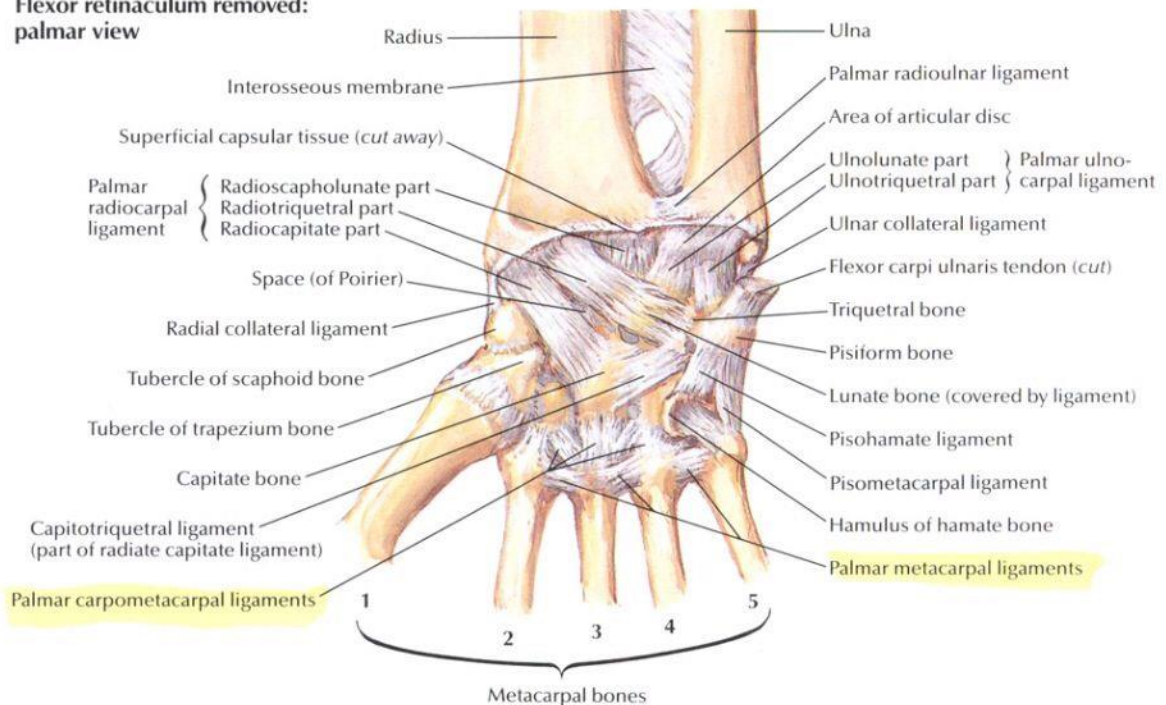
Anterior views

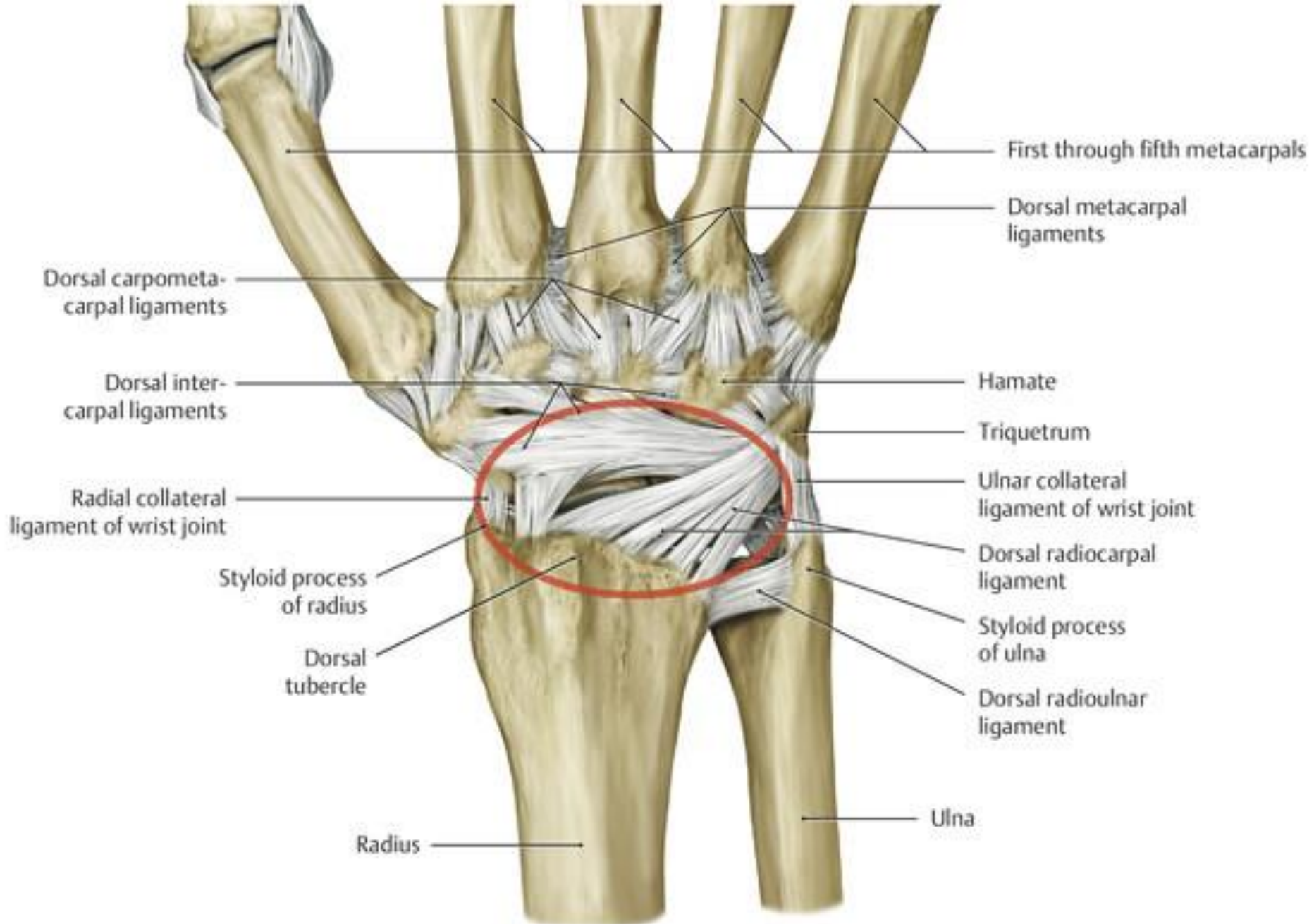


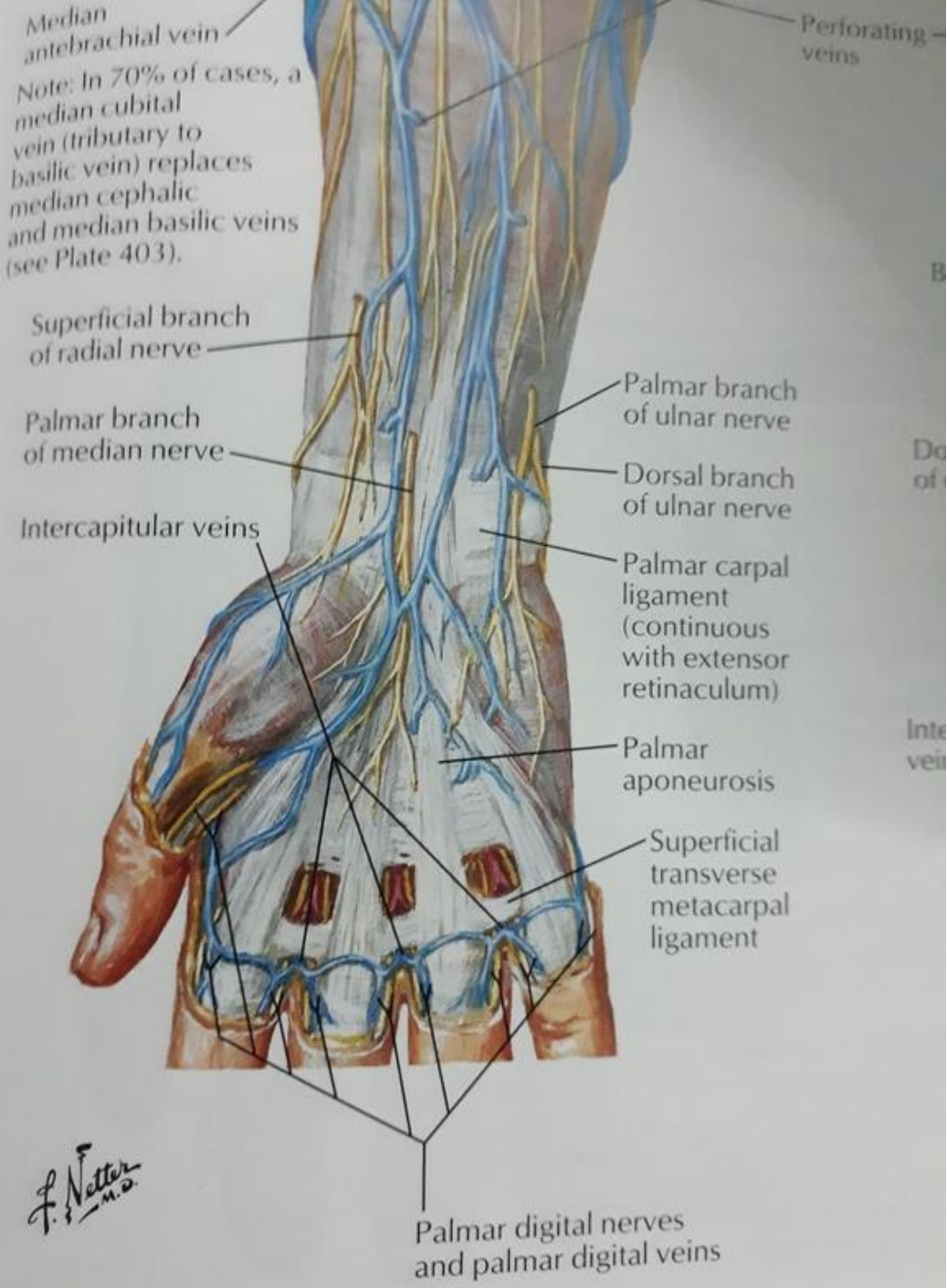
**Carpal tunnel: palmar view**



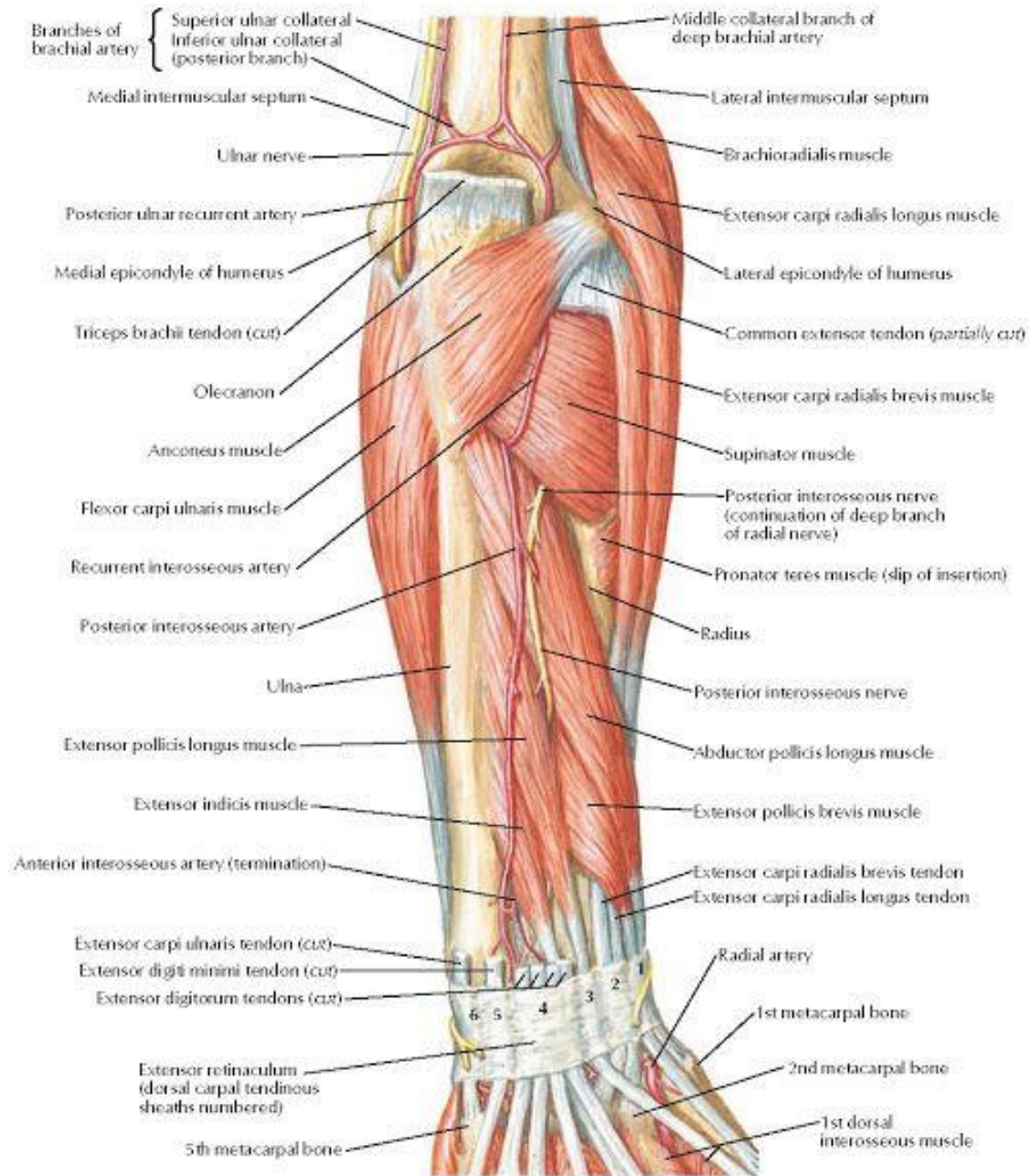
**Flexor retinaculum removed: palmar view**



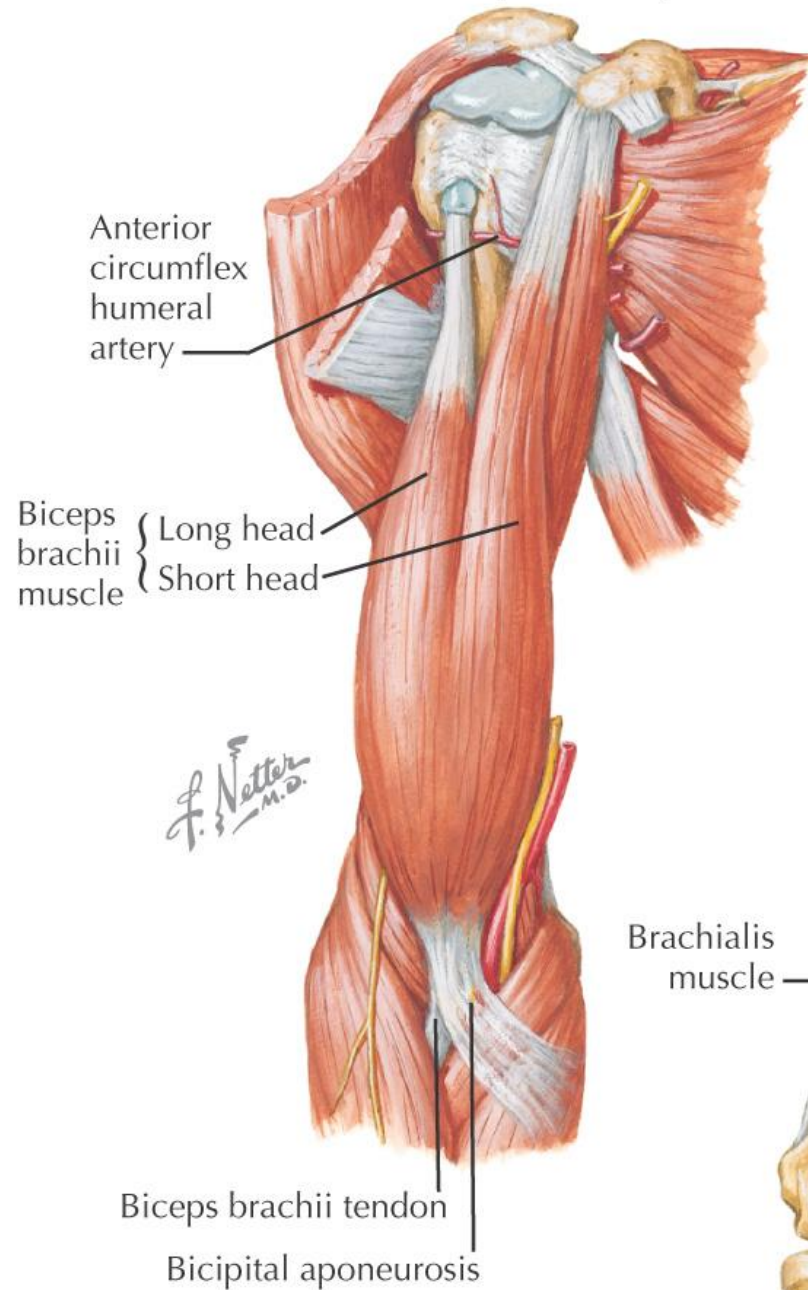




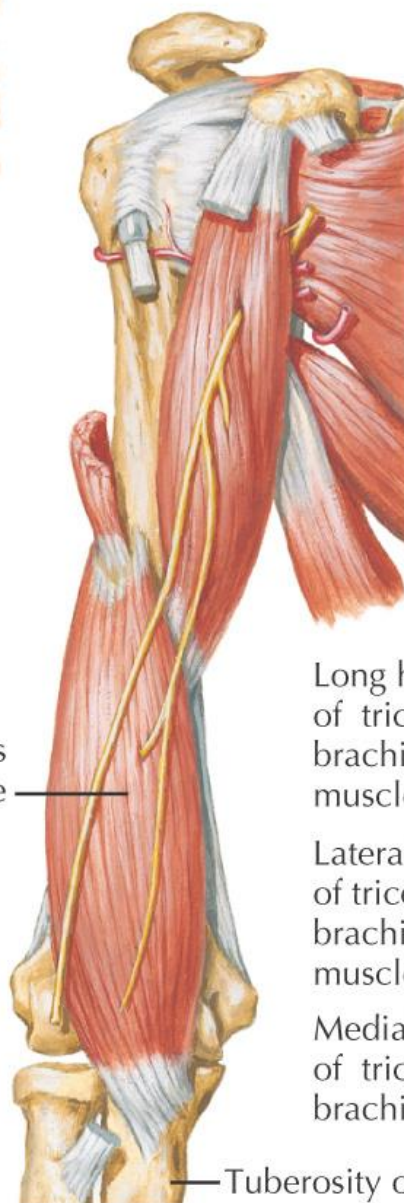




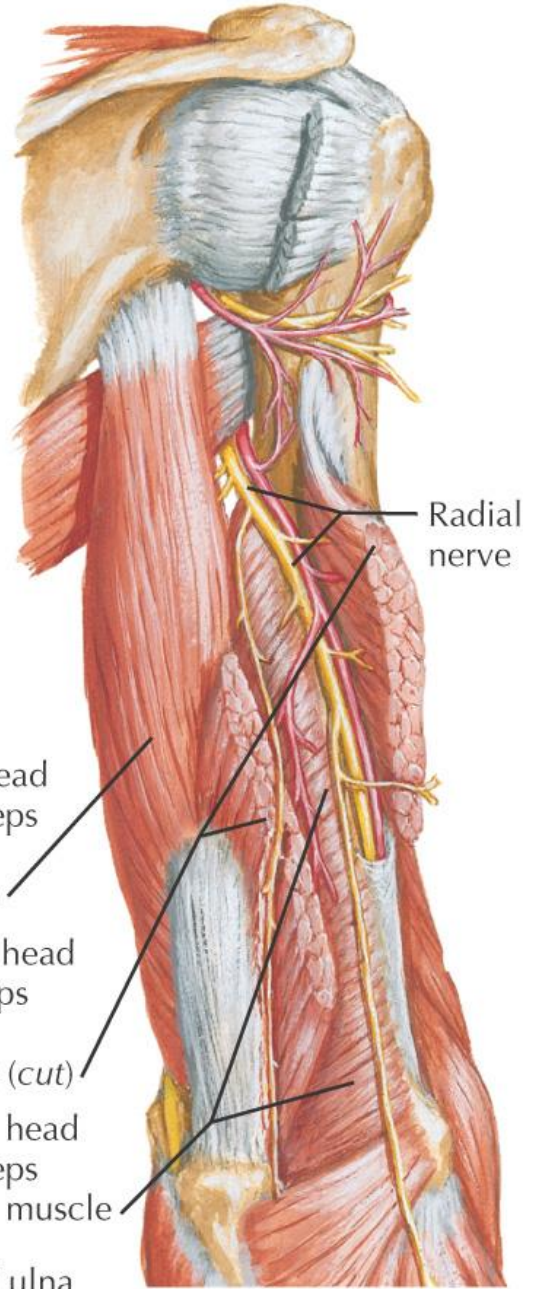
# Superficial layer

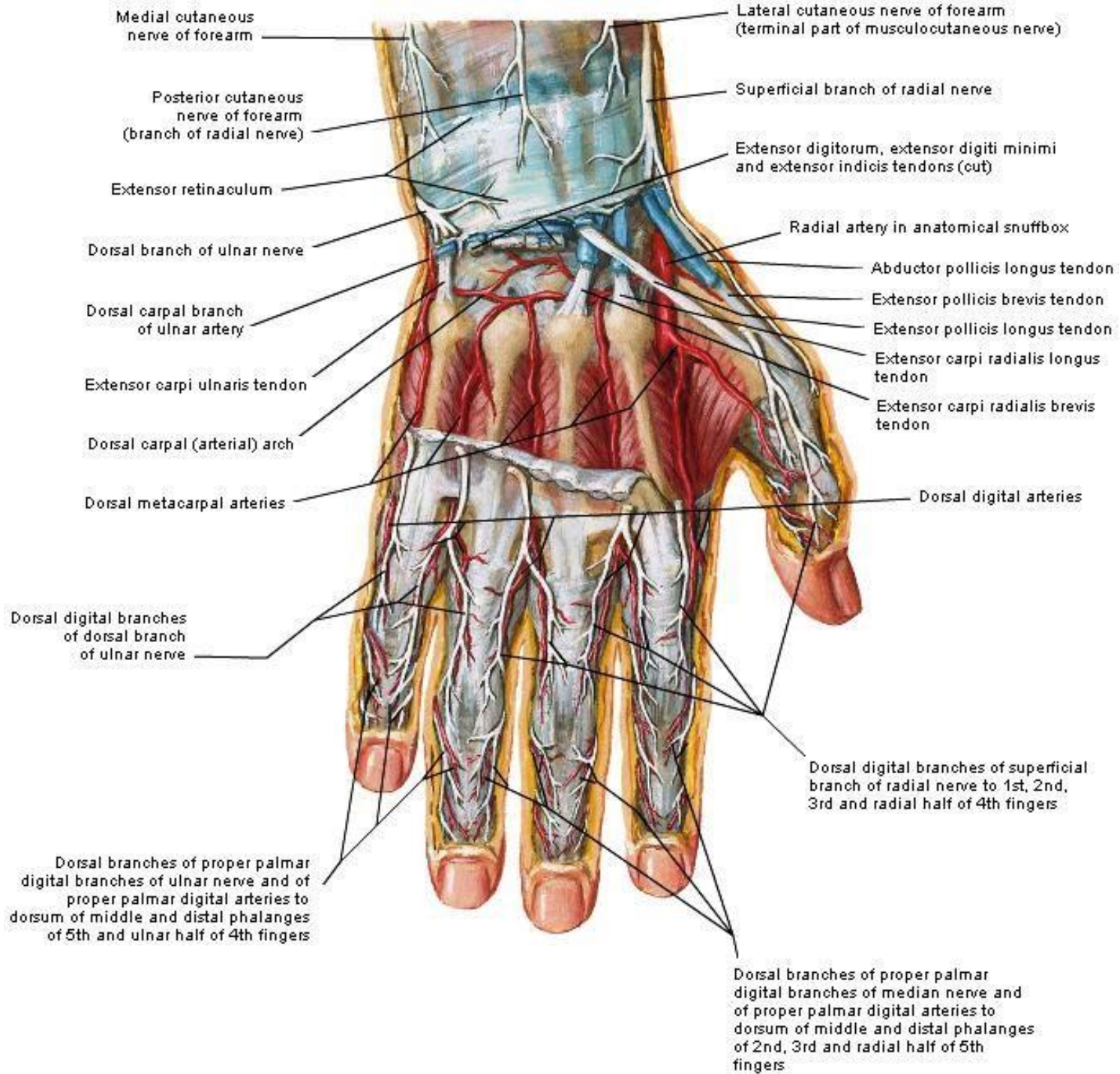


# Deep layer



# Deep layer





Medial cutaneous nerve of forearm

Lateral cutaneous nerve of forearm (terminal part of musculocutaneous nerve)

Posterior cutaneous nerve of forearm (branch of radial nerve)

Superficial branch of radial nerve

Extensor retinaculum

Extensor digitorum, extensor digiti minimi and extensor indicis tendons (cut)

Dorsal branch of ulnar nerve

Radial artery in anatomical snuffbox

Dorsal carpal branch of ulnar artery

Abductor pollicis longus tendon

Extensor carpi ulnaris tendon

Extensor pollicis brevis tendon

Dorsal carpal (arterial) arch

Extensor pollicis longus tendon

Dorsal metacarpal arteries

Extensor carpi radialis longus tendon

Extensor carpi radialis brevis tendon

Dorsal digital arteries

Dorsal digital branches of dorsal branch of ulnar nerve

Dorsal digital branches of superficial branch of radial nerve to 1st, 2nd, 3rd and radial half of 4th fingers

Dorsal branches of proper palmar digital branches of ulnar nerve and of proper palmar digital arteries to dorsum of middle and distal phalanges of 5th and ulnar half of 4th fingers

Dorsal branches of proper palmar digital branches of median nerve and of proper palmar digital arteries to dorsum of middle and distal phalanges of 2nd, 3rd and radial half of 5th fingers