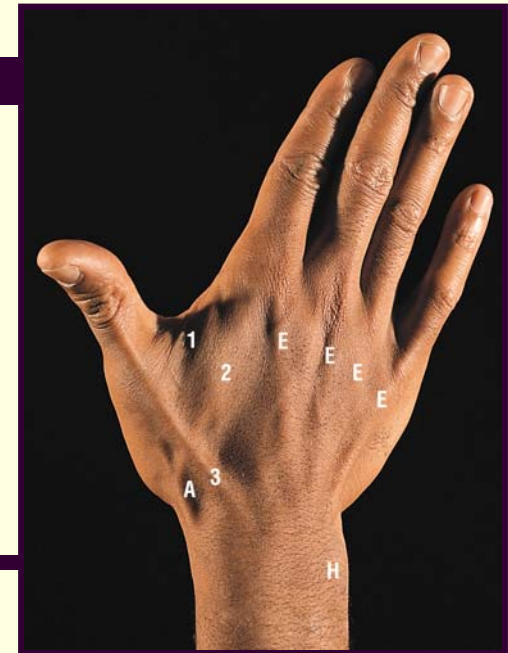


WWW.FISIOKINESITERAPIA.BIZ

The Wrist and Hand





- ## “Anatomical snuffbox”

Skeleton of the wrist and hand

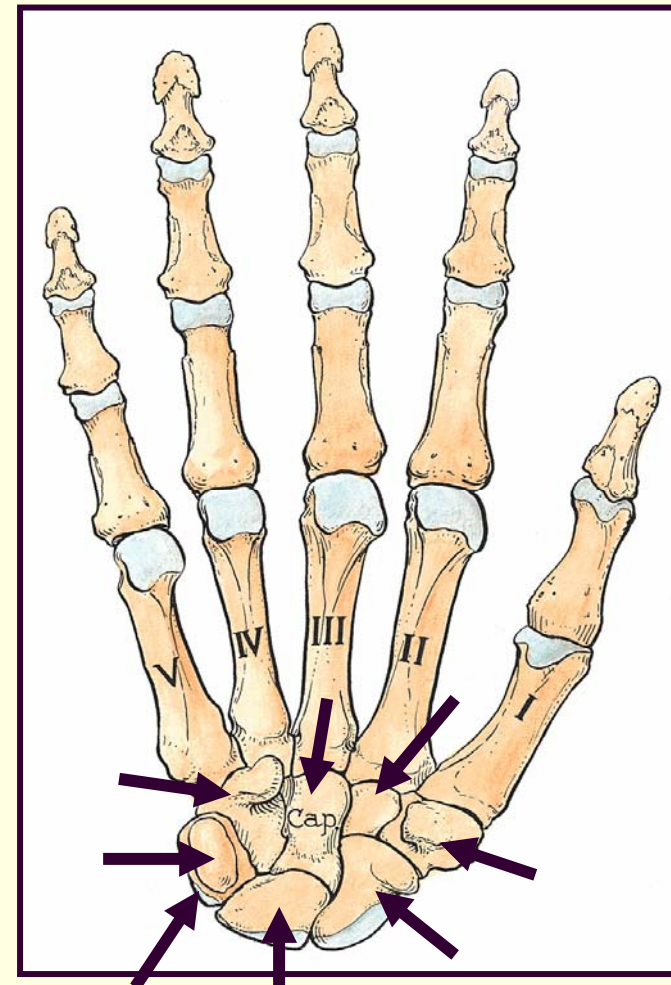
➤ Carpal bones: *arranged in two rows*

1. Proximal row

- a. **scaphoid**
- b. **lunate**
- c. **triquetrum**
- d. **pisiform**

2. Distal row

- a. **trapezium**
- b. **trapezoid**
- c. **capitate**
- d. **hamate**



Skeleton of the wrist and hand

➤ Bones of the hand

1. *Metacarpals*

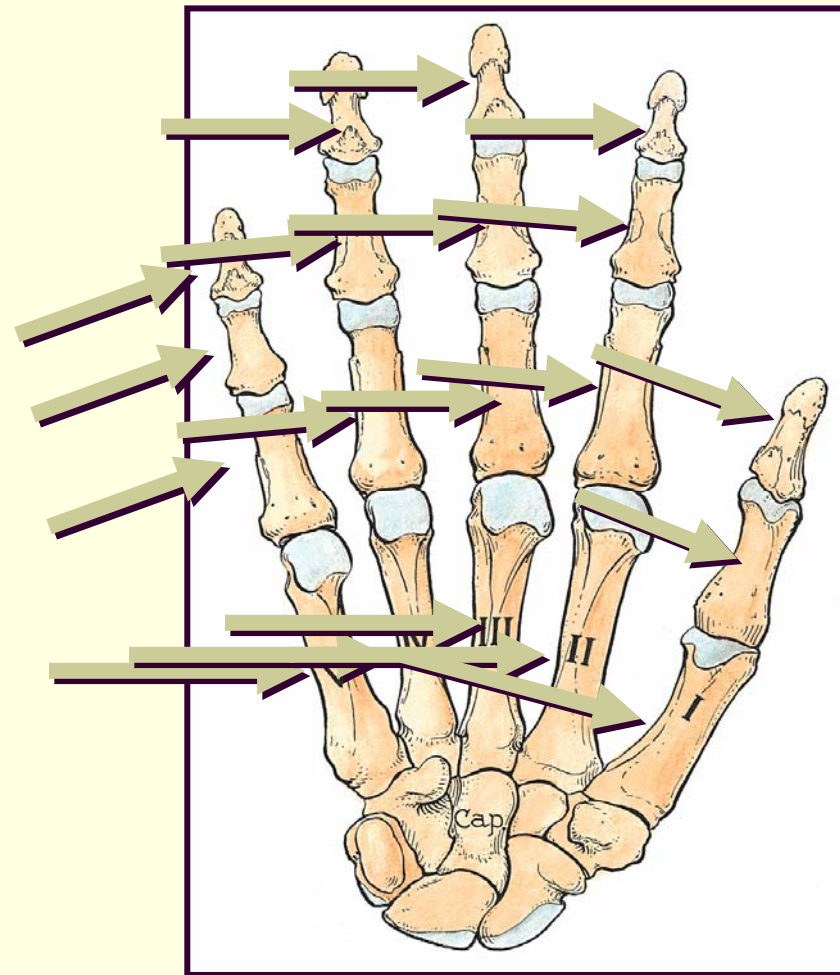
2. *Phalanges*

a. proximal

b. middle

c. distal

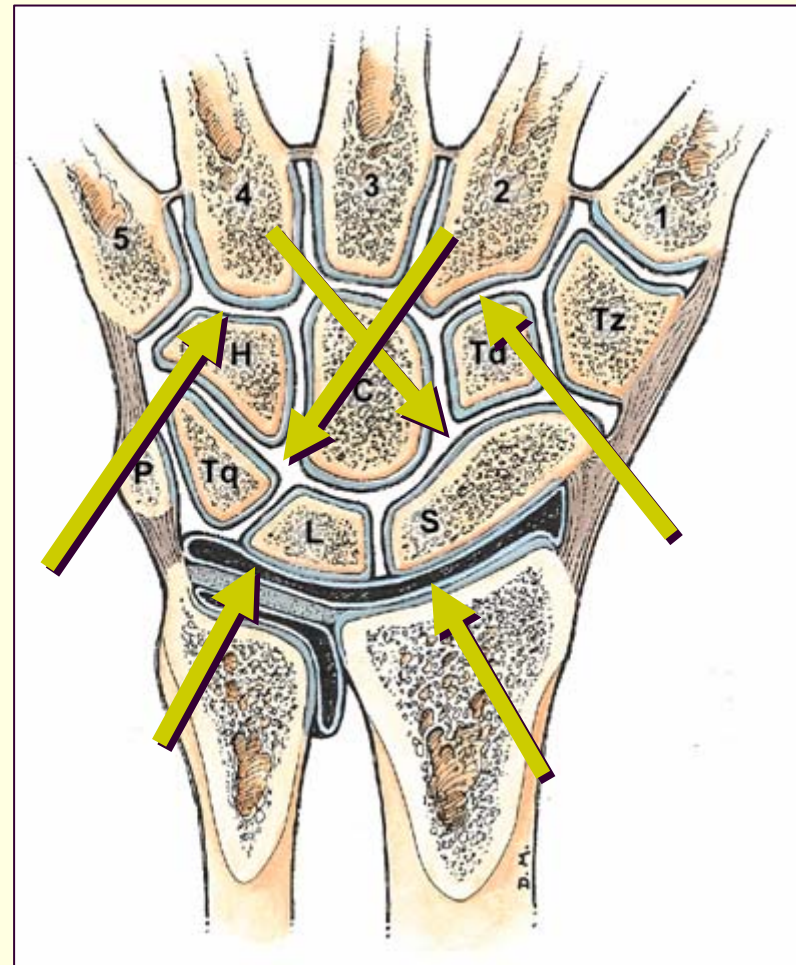
❖ Note: the thumb has only **proximal** and **distal** phalanges



Joints of the wrist and hand

A. Joints of the wrist and hand

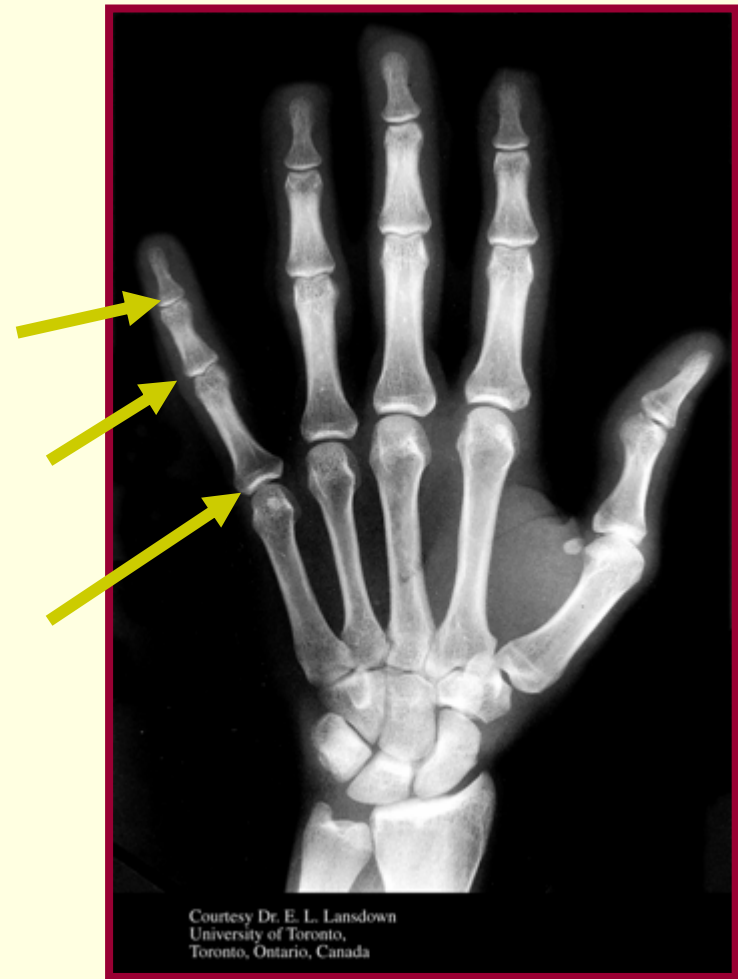
1. Radiocarpal joint
2. Intercarpal joints
3. Carpometacarpal joints



Joints of the wrist and hand

A. Joints of the wrist and hand

1. Metacarpophalangeal (M.P.) joint
2. Proximal interphalangeal (P.I.P.) joint
3. Distal interphalangeal (D.I.P.) joint



Fascial structures of the hand

- A. **Superficial fascia** (thick on palm, thin on dorsum)
- B. **Flexor retinaculum**

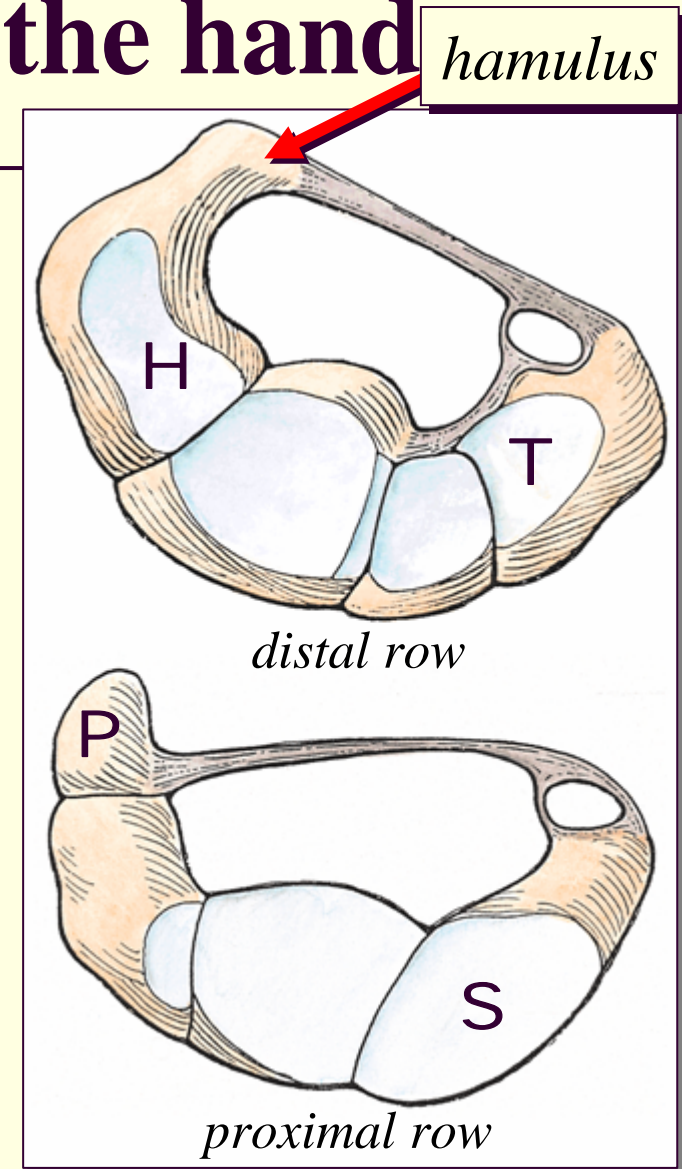


Fascial structures of the hand

A. **Superficial fascia** (thick on palm, thin on dorsum)

B. **Flexor retinaculum**

- attaches to the pisiform and hamulus medially
- attaches to the scaphoid and trapezium laterally

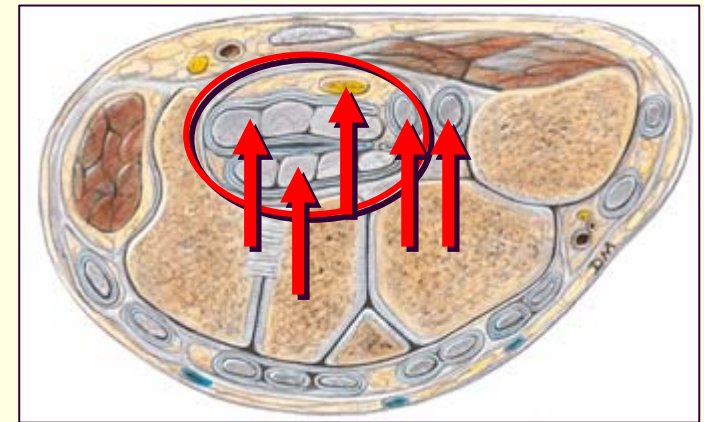


Fascial structures of the hand

A. **Superficial fascia** (thick on palm, thin on dorsum)

B. **Flexor retinaculum**

- attaches to the pisiform and hamulus medially
- attaches to the scaphoid and trapezium laterally
- forms the **carpal tunnel** through which pass:
 - (the tendon of **flexor carpi radialis** in its own separate compartment)
 - the tendon of **flexor pollicis longus**
 - the tendons of **flexor digitorum superficialis and profundus**
 - the **median nerve**



Fascial structures of the hand

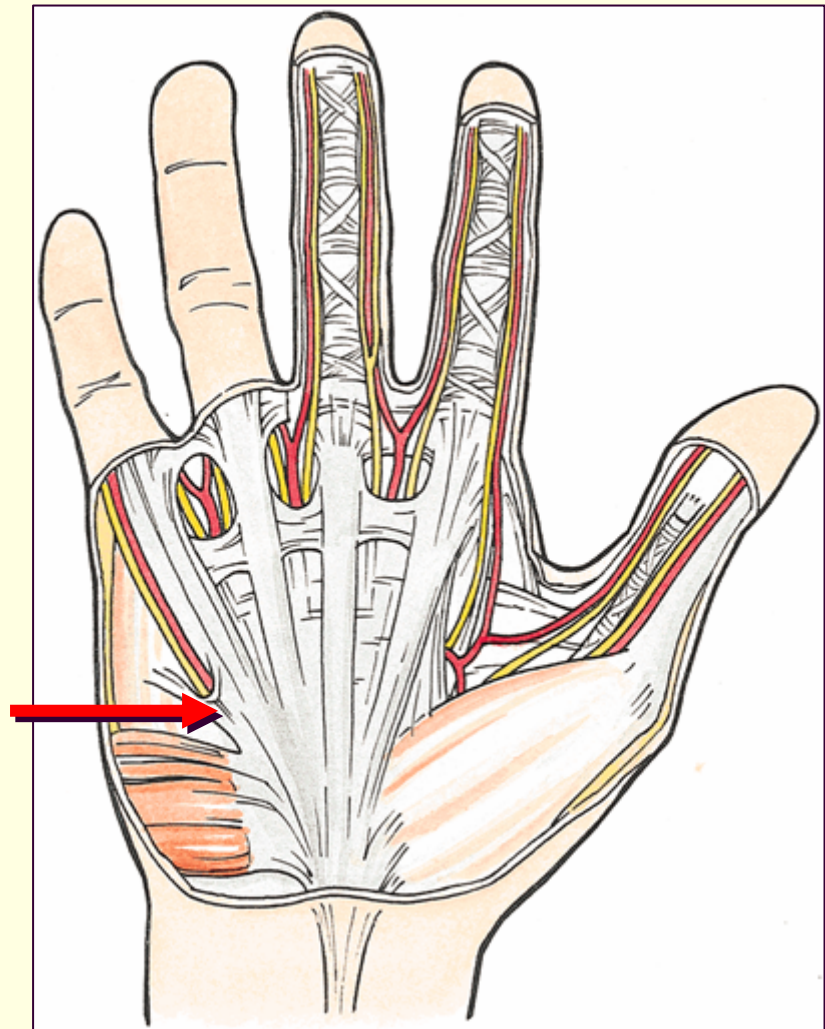
C. Extensor retinaculum

Extensor tendons pass deep to retinaculum in six separate compartments



Fascial structures of the hand

D. Palmar aponeurosis



Fascial structures of the hand

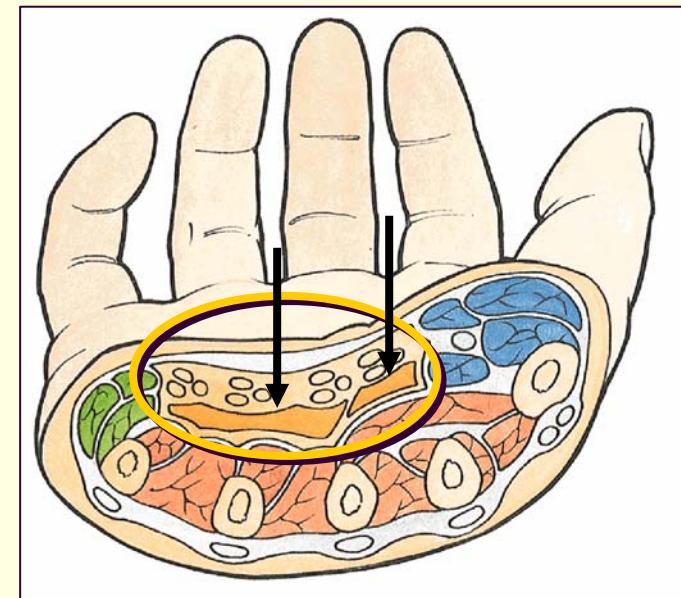
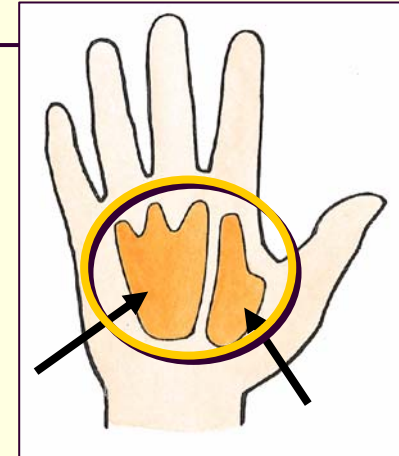
- **palmar fascial compartments**

- separated from each other by CT septa

1. ***Central compartment*** (deep to palmar aponeurosis)

- **Contents:**

- ✓ flexor tendons
- ✓ digital nerves
- ✓ palmar arterial arches
- ✓ 2 ***fascial spaces***:
 - ☀ ***thenar space***
 - ☀ ***midpalmar space***



Fascial structures of the hand

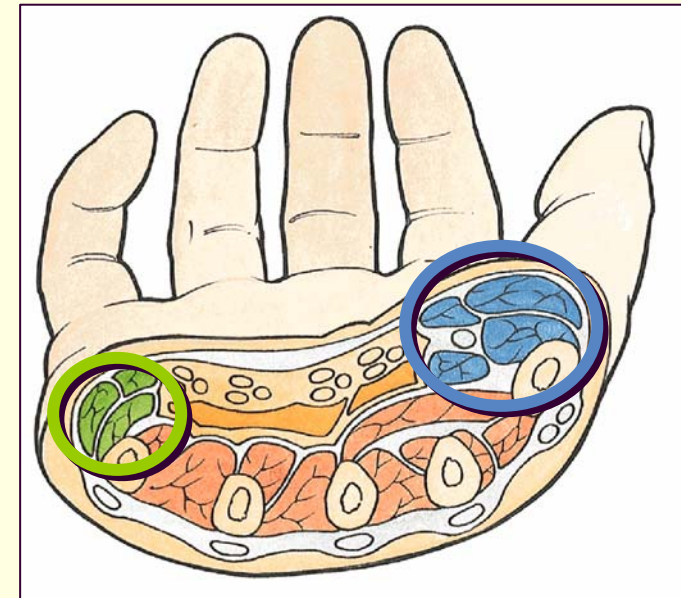
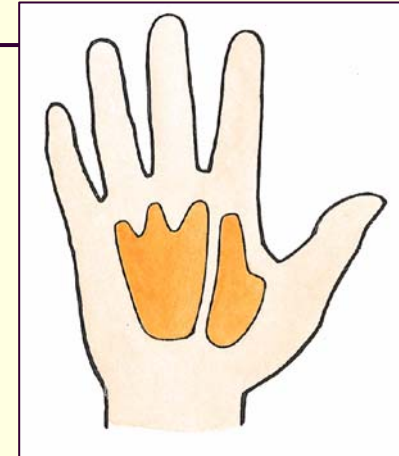
- palmar fascial compartments

2. *Thenar compartment*

- **Contents:**
 - ✓ thenar muscles

3. *Hypothenar compartment*

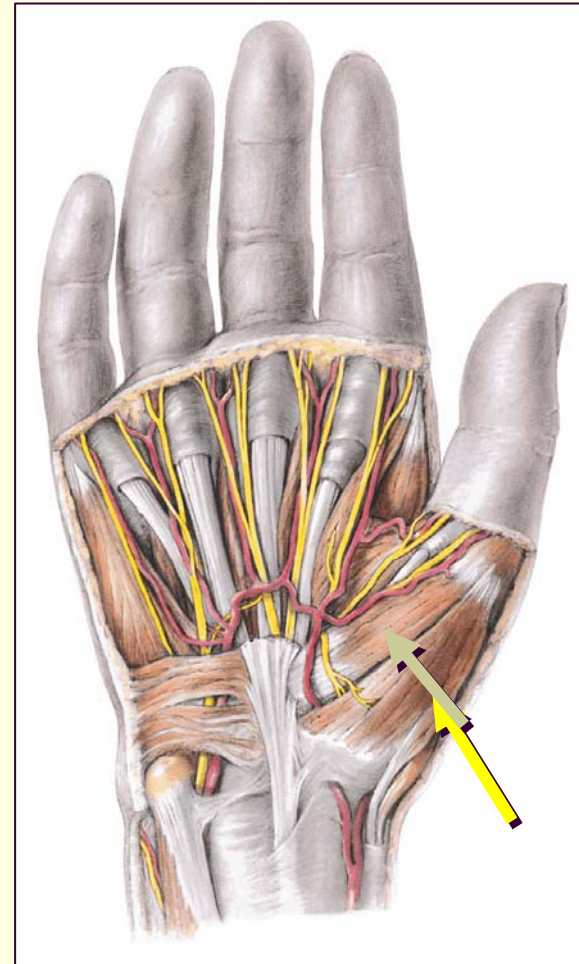
- **Contents:**
 - ✓ hypothenar muscles



Intrinsic muscles of the hand

A. Muscles of the thumb

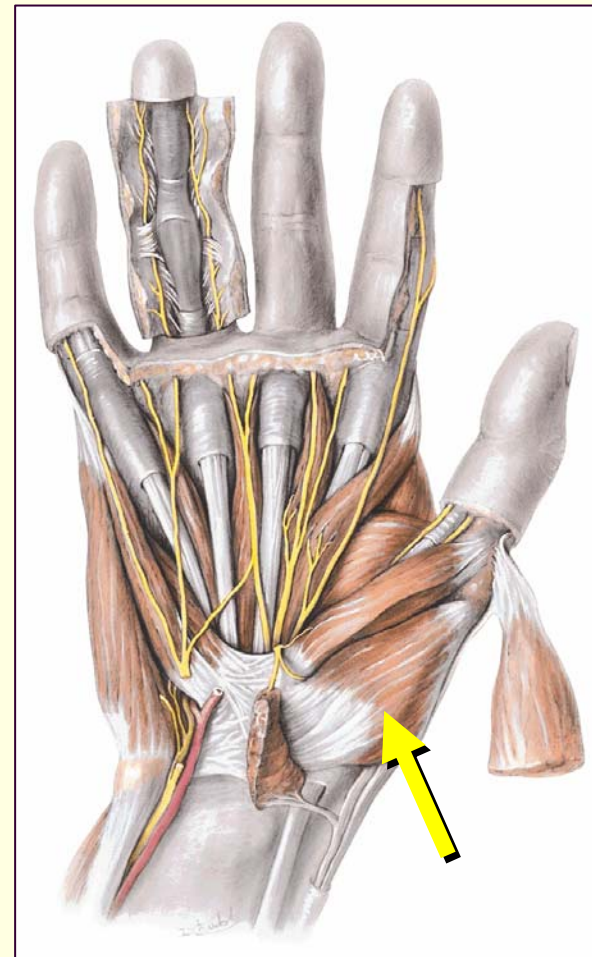
1. *Abductor pollicis brevis*
2. *Flexor pollicis brevis*



Intrinsic muscles of the hand

A. Muscles of the thumb

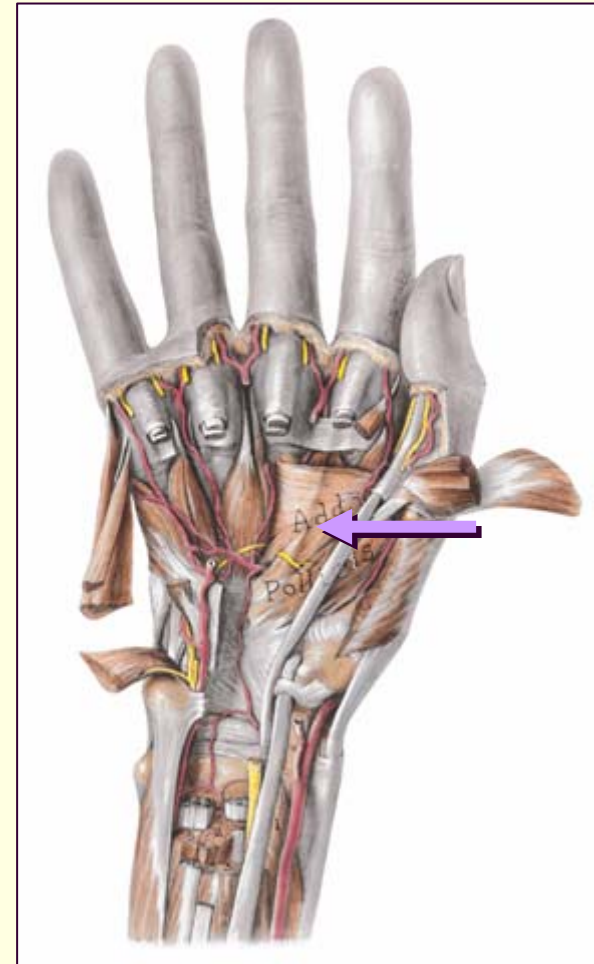
1. *Abductor pollicis brevis*
2. *Flexor pollicis brevis*
3. *Opponens pollicis*



Intrinsic muscles of the hand

A. Muscles of the thumb

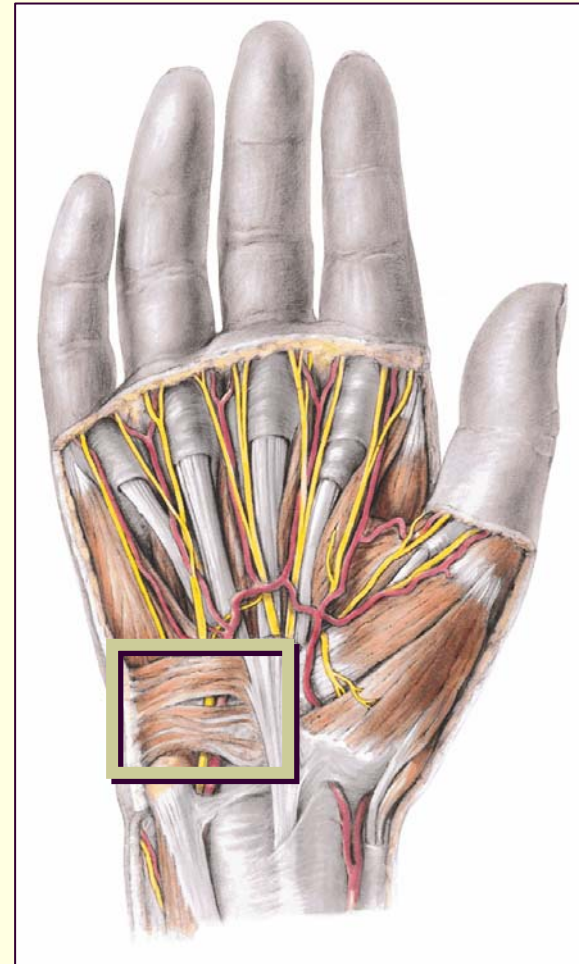
1. *Abductor pollicis brevis*
2. *Flexor pollicis brevis*
3. *Opponens pollicis*
4. *Adductor pollicis*



Intrinsic muscles of the hand

B. Hypothenar muscles

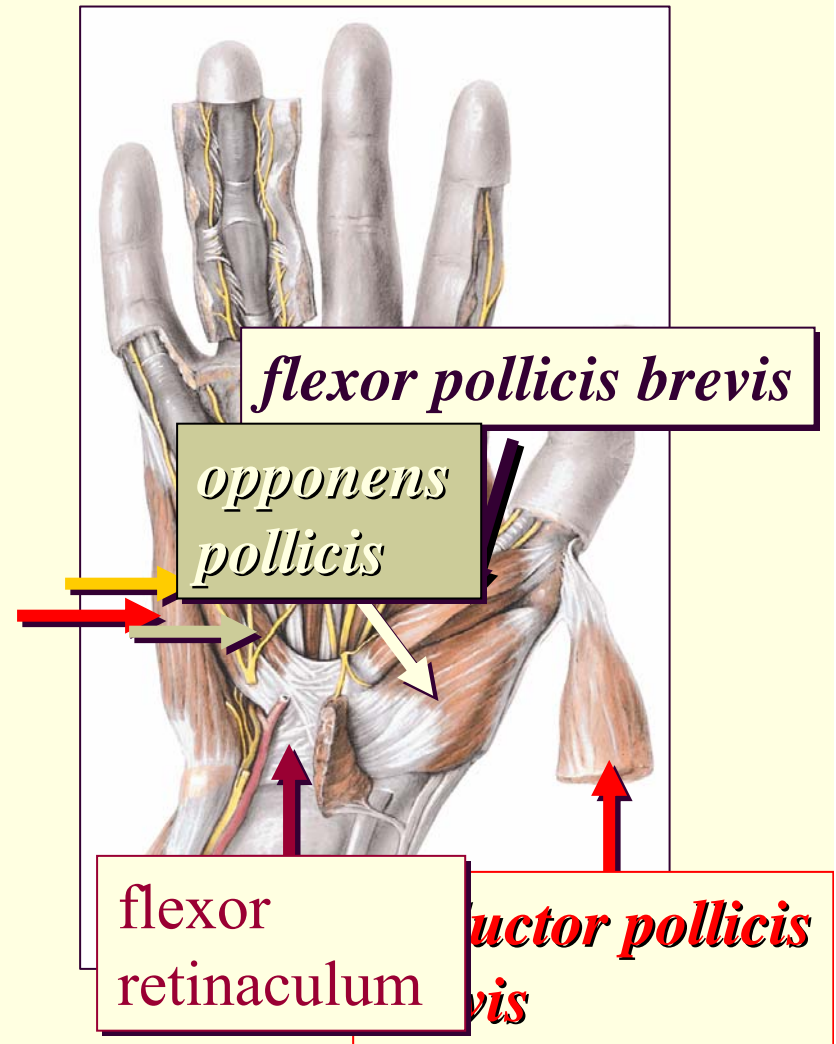
1. *Palmaris brevis*



Intrinsic muscles of the hand

B. Hypothenar muscles

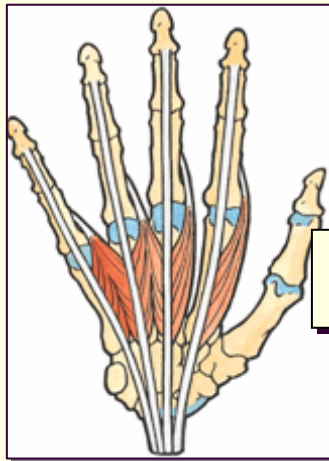
2. *Abductor digiti minimi*
3. *Flexor digiti minimi brevis*
4. *Opponens digiti minimi*



Intrinsic muscles of the hand

C. Other Intrinsic hand muscles

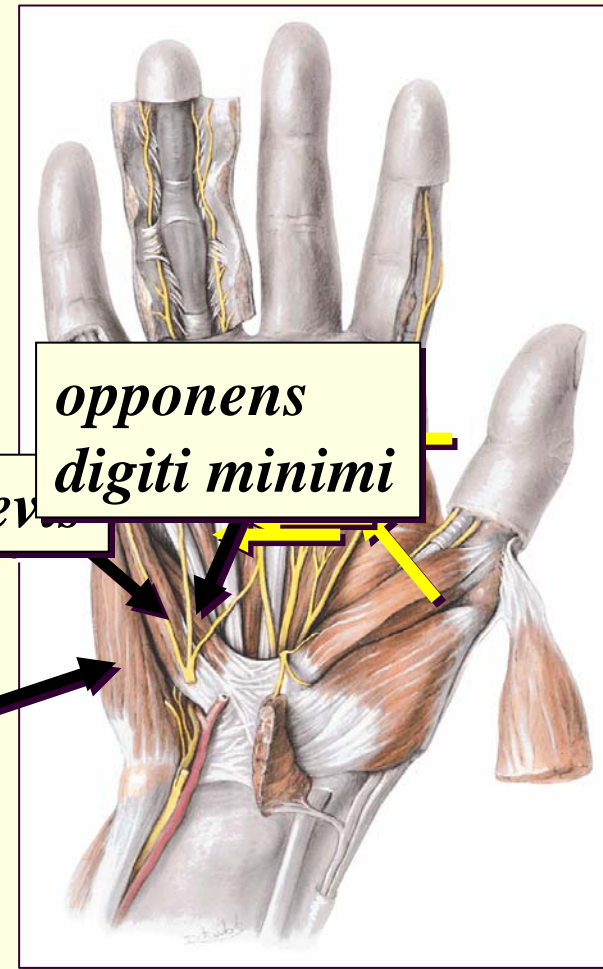
1. lumbricals



lumbricals

flexor digiti minimi brevis

abductor digiti minimi

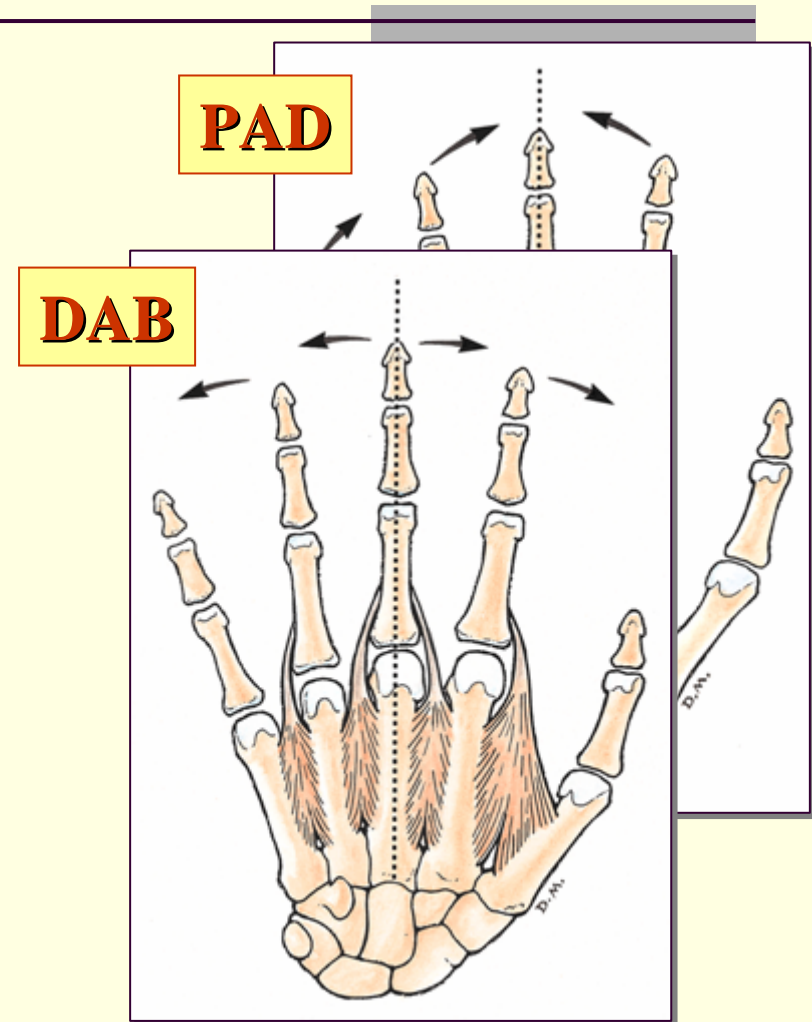


Intrinsic muscles of the hand

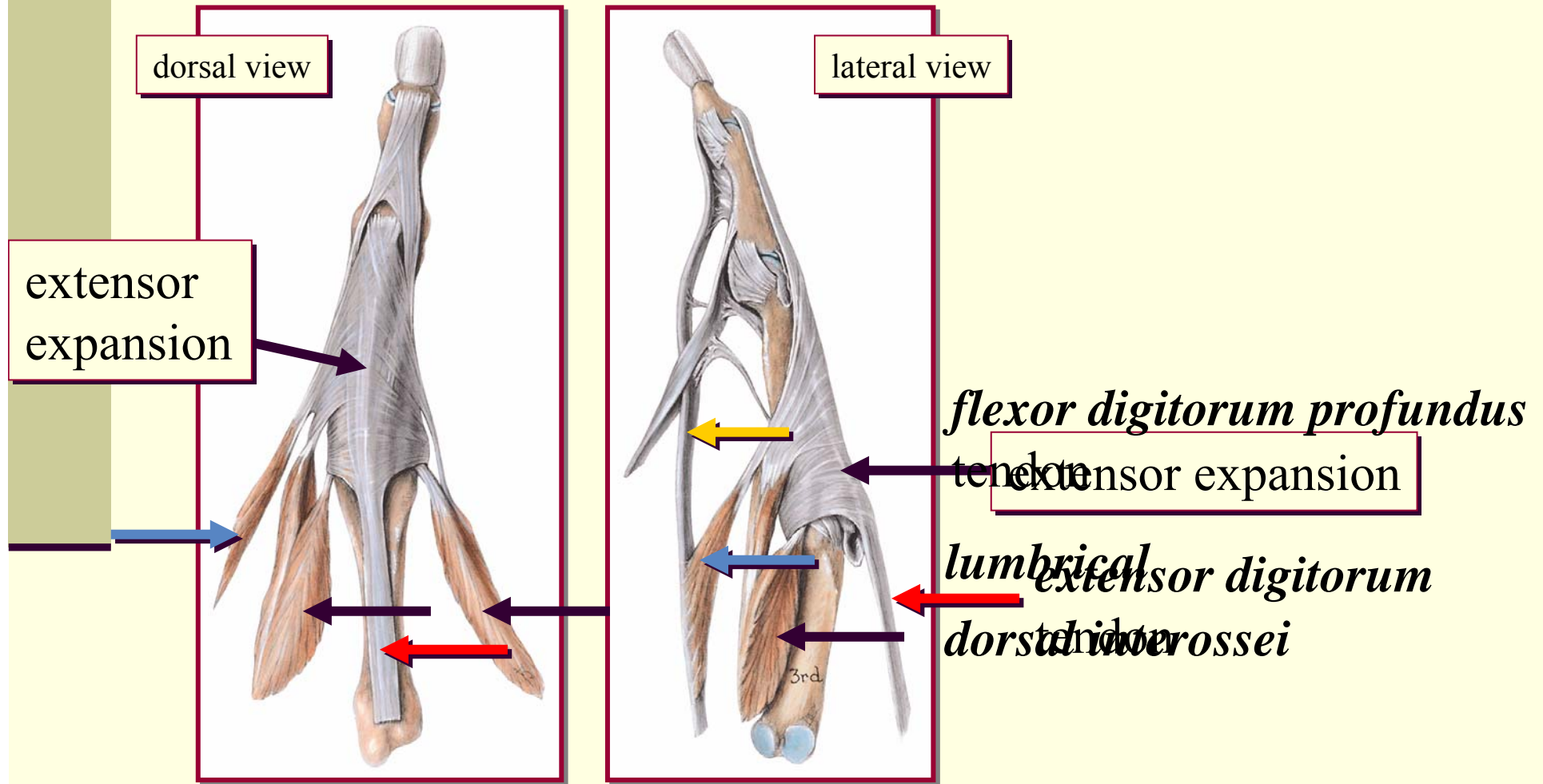
C. Other Intrinsic hand muscles

2. Interosseous muscles

- a. palmar interossei
- b. dorsal interossei



Intrinsic muscles of the hand

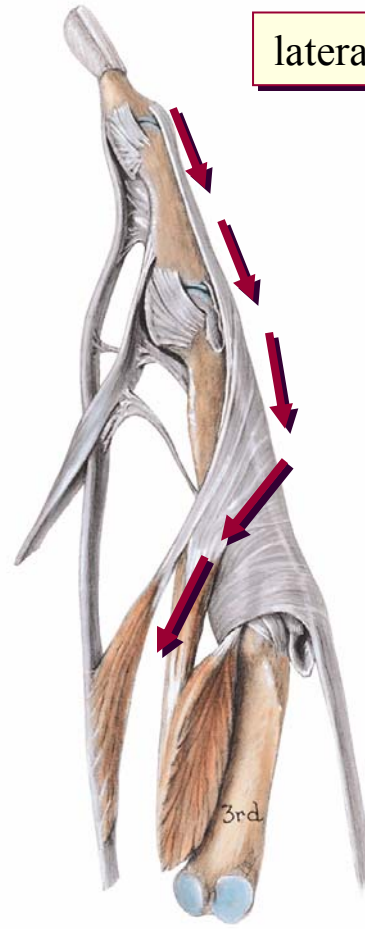


Intrinsic muscles of the hand

dorsal view

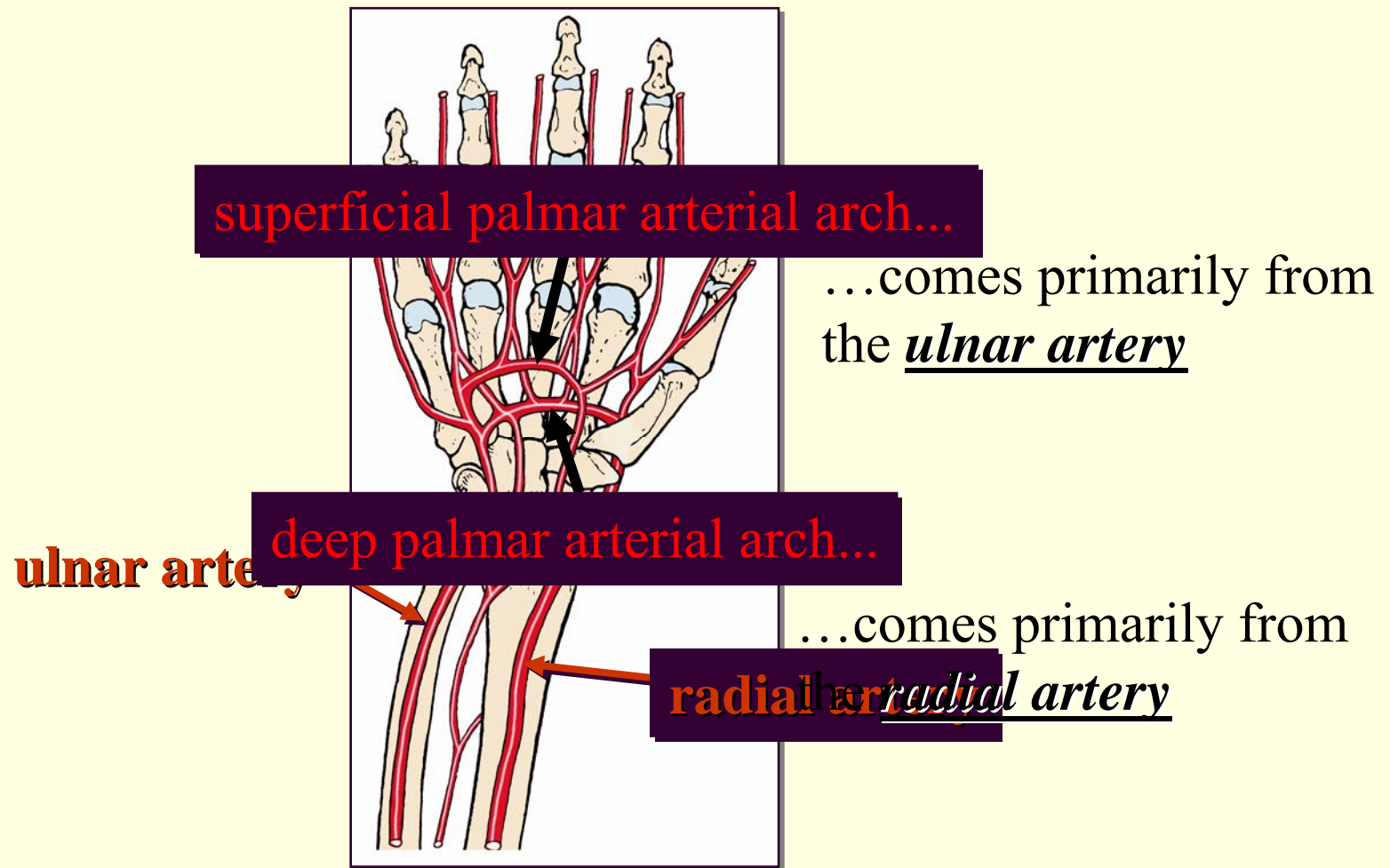


lateral view



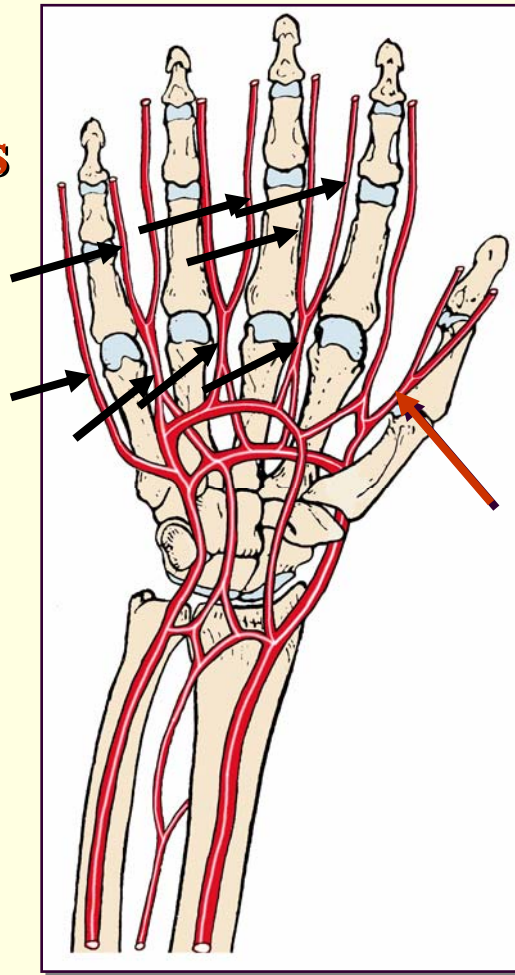
Action of lumbricals
and interossei

Blood supply to the hand



Blood supply to the hand

common digital arteries
proper digital arteries

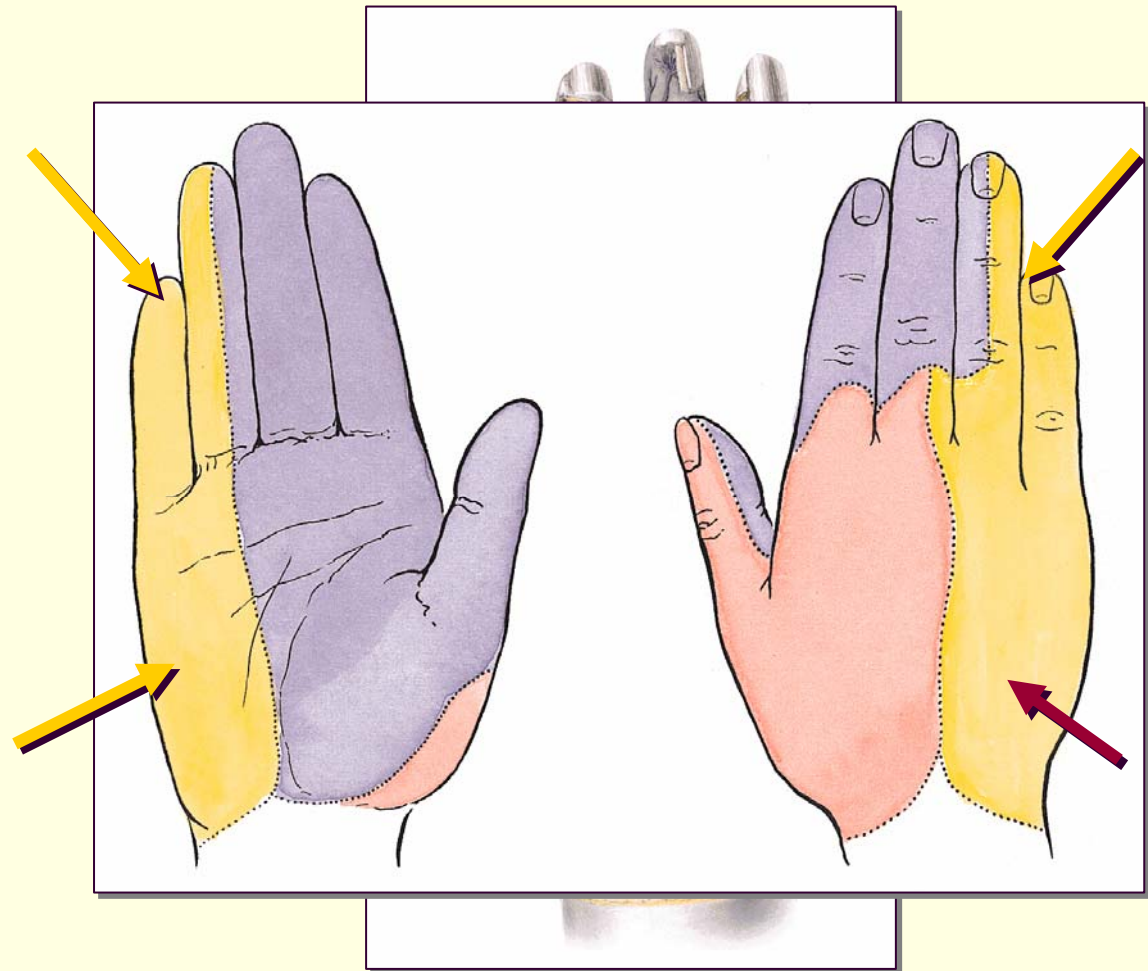


princeps pollicis artery

Nerves of the hand

A. *Ulnar nerve*

1. Cutaneous branches
 - a. dorsal branch
 - b. digital branches
 - c. palmar branch

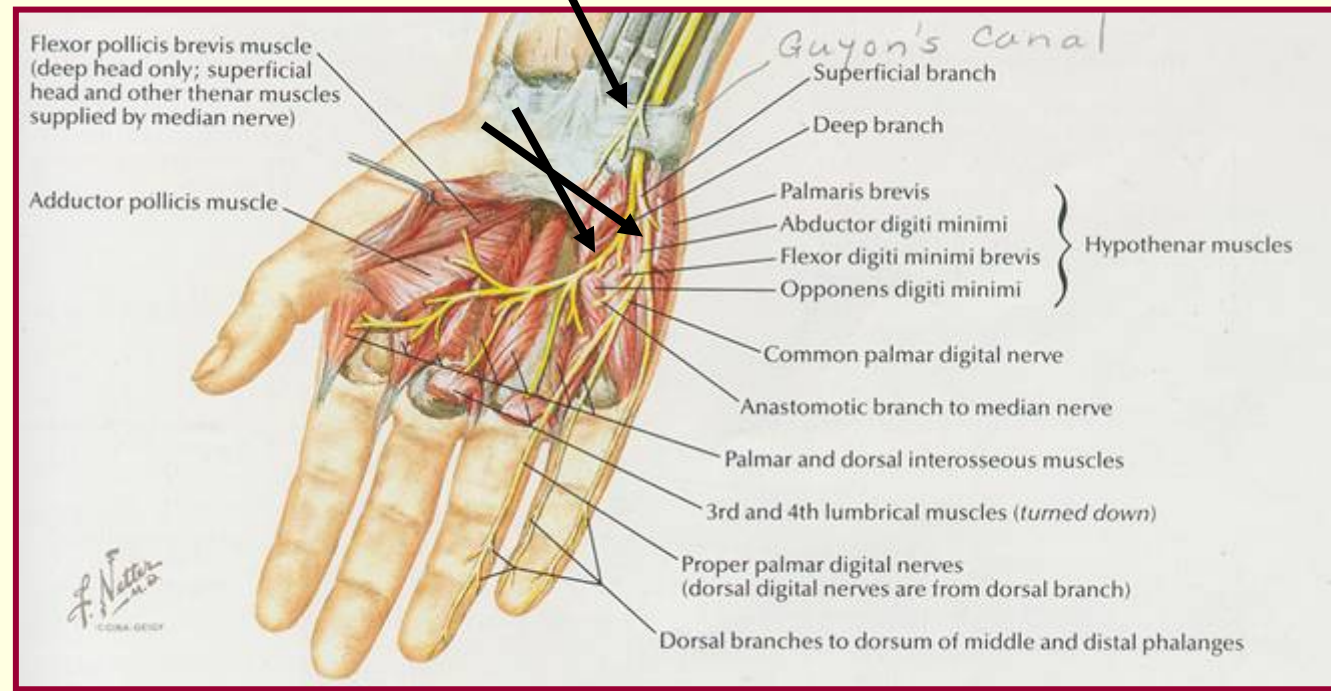


Nerves of the hand

A. *Ulnar nerve*

- superficial branch
- deep branch

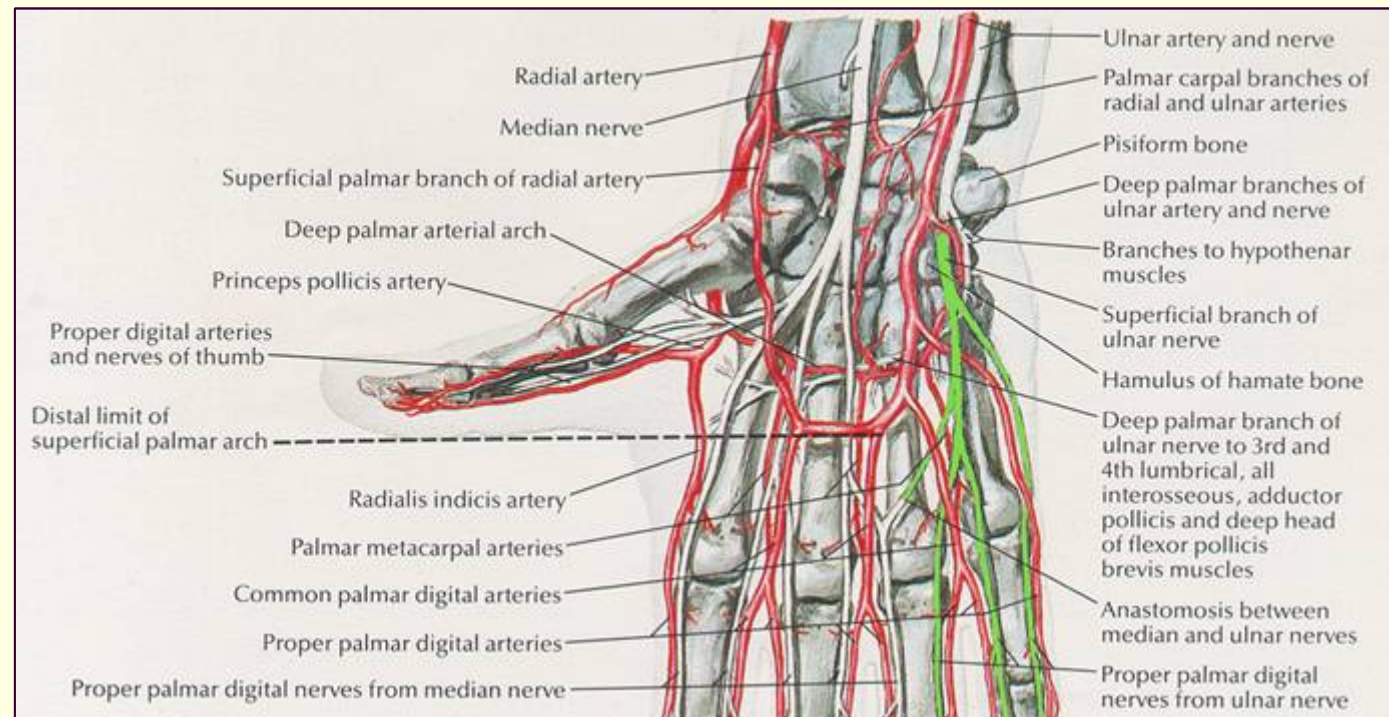
palmar cutaneous branch



Nerves of the hand

A. *Ulnar nerve*

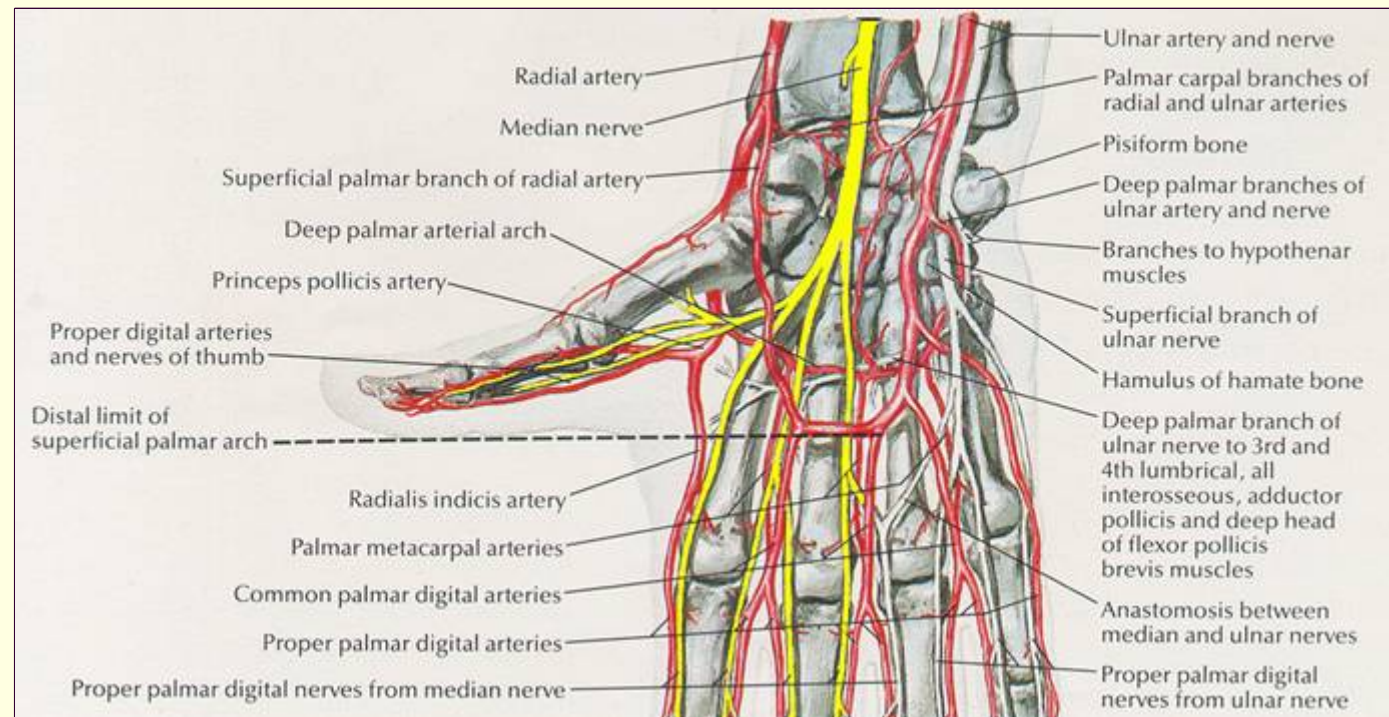
- superficial branch
- deep branch



Nerves of the hand

B. Median nerve

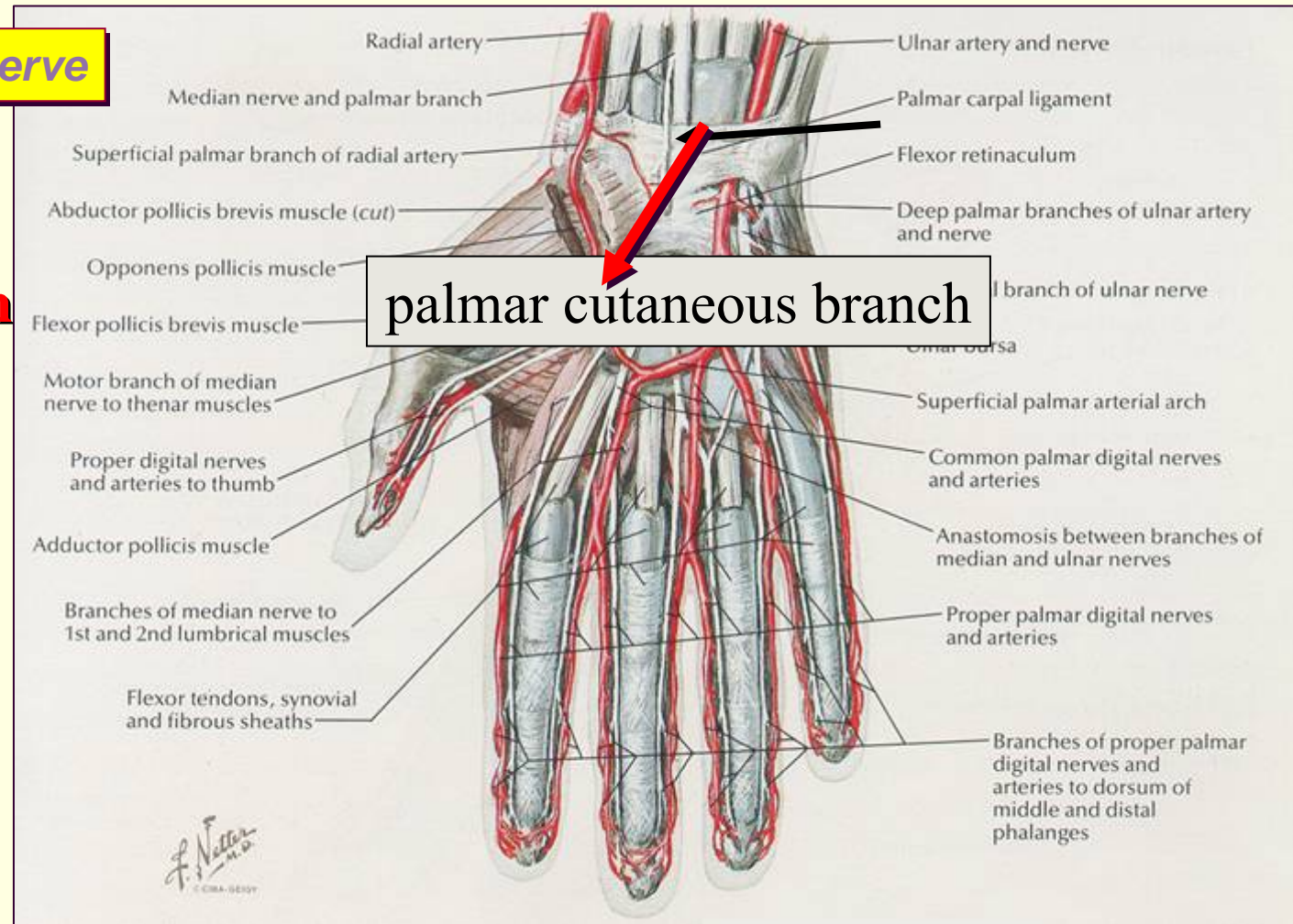
digital branches



Nerves of the hand

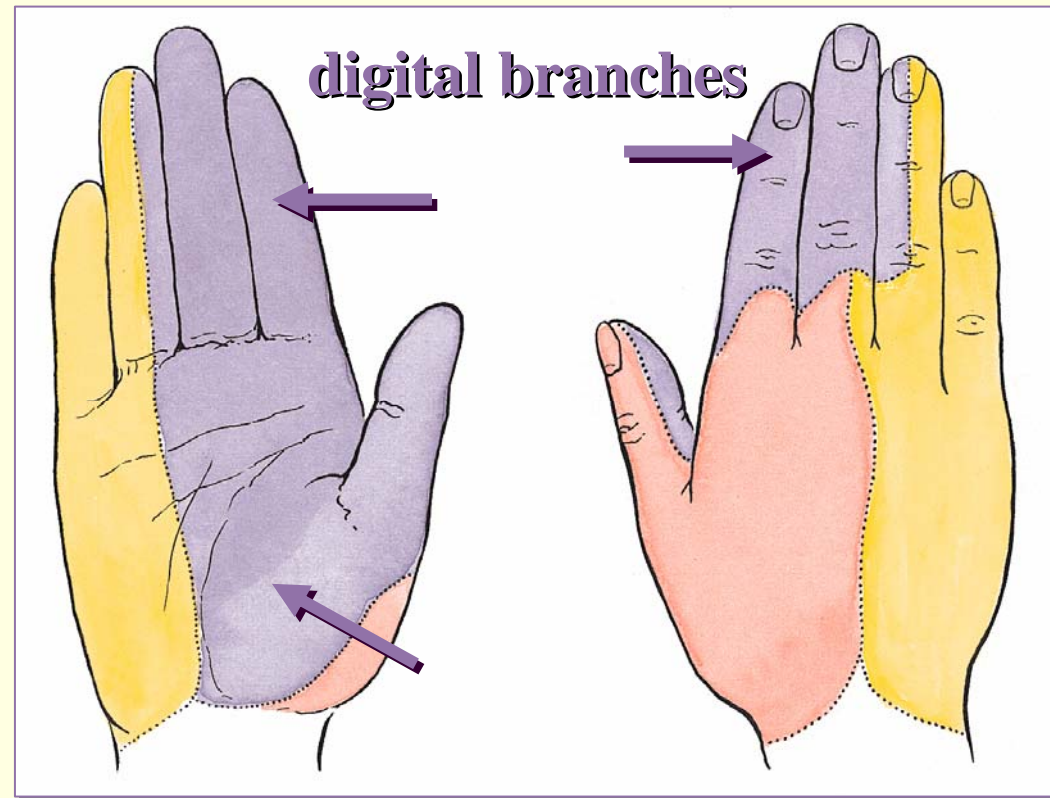
B. Median nerve

recurrent branch



Nerves of the hand

B. Median nerve



palmar cutaneous branch

Nerves of the hand

C. *Radial nerve*

- **superficial radial nerve**

