



# **MSK module**

Session :

Seminar room

**Hand**

**Dr Nawal M Abdullah**

# The module: Musculo-Skeletal System

Session: 3

Seminar Lecture

**Hand**

Module staff: Dr.Falih Waheed

**Dr.Nawal Mustafa**

Dr.Kalil Ibrahim

Dr.Ahmed Ibrahim

Dr.Waleed Jawad

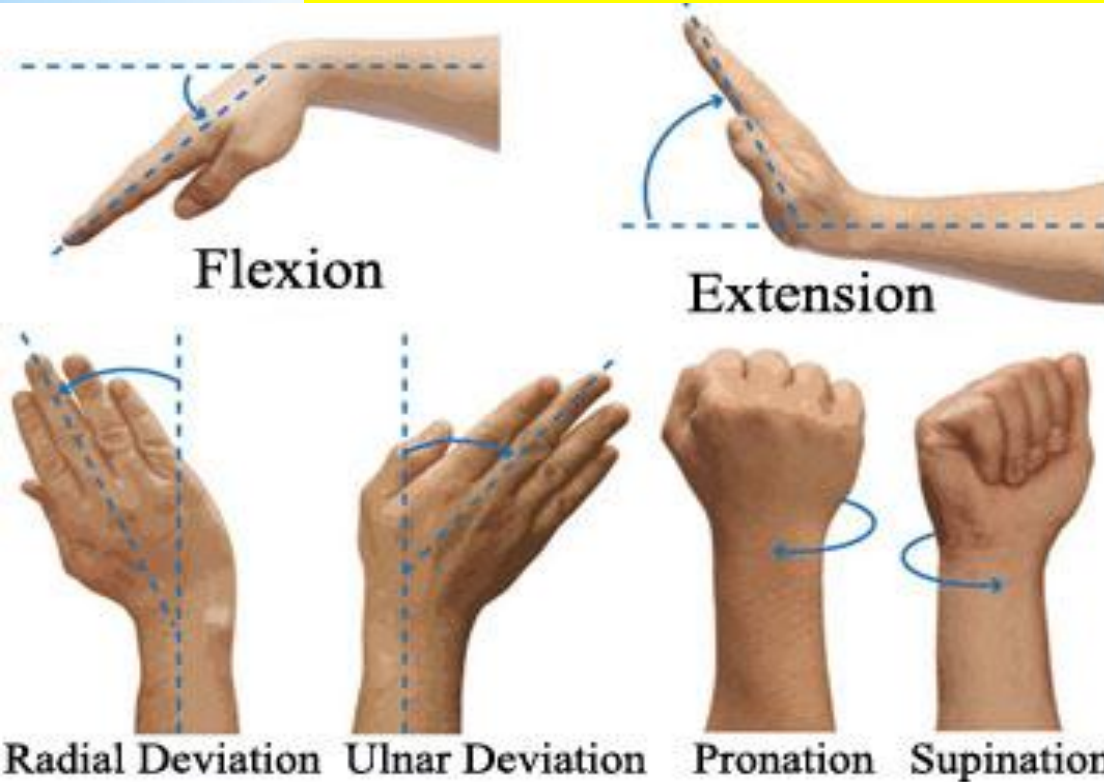
Dr.Raed Jasim

Dr.Rafid Mousa

Dr.Ahmed Khalaf



# Hand



Bones  
Joints  
Muscles  
Common Hand Conditions

# Hand

## Bones of the Wrist and Hand

Styloid process of ulna & radius

8 carpal bones

Proximal row:

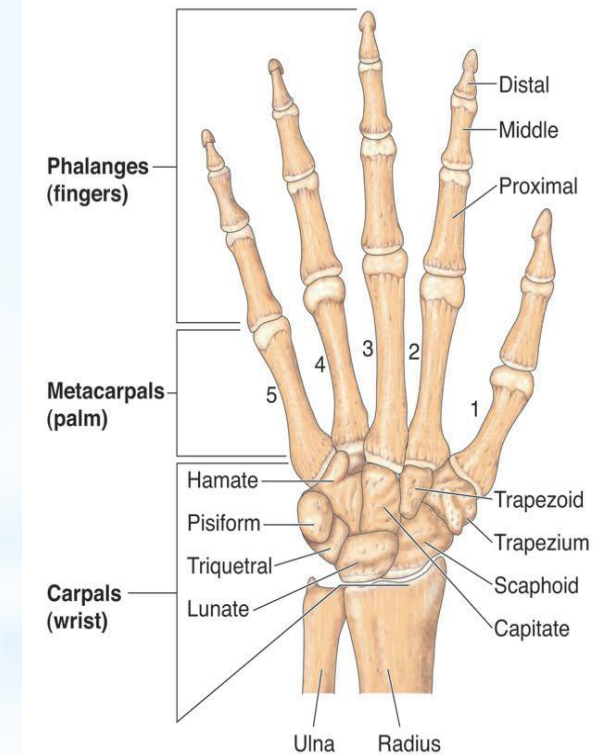
scaphoid, lunate, triquetrum, pisiform

Distal row:

trapezium, trapezoid, capitate, hamate

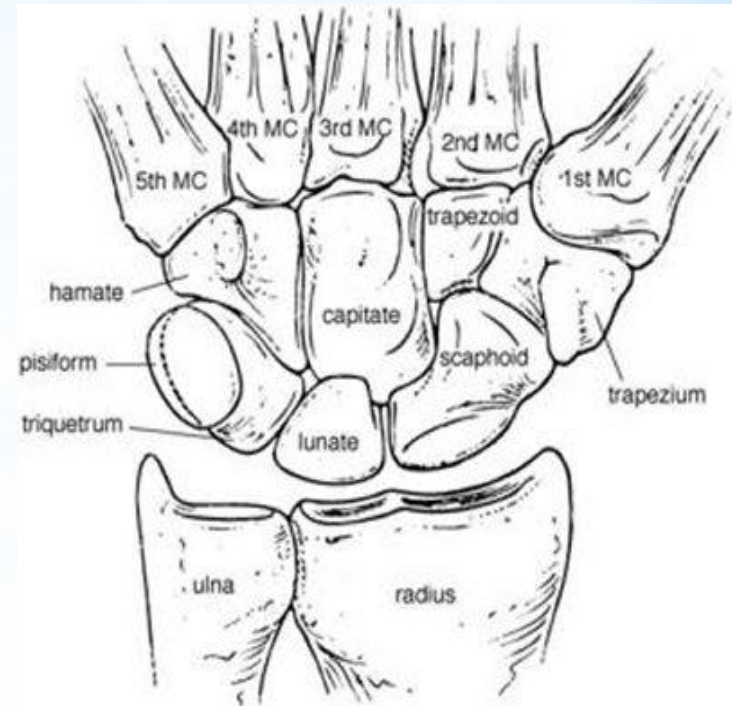
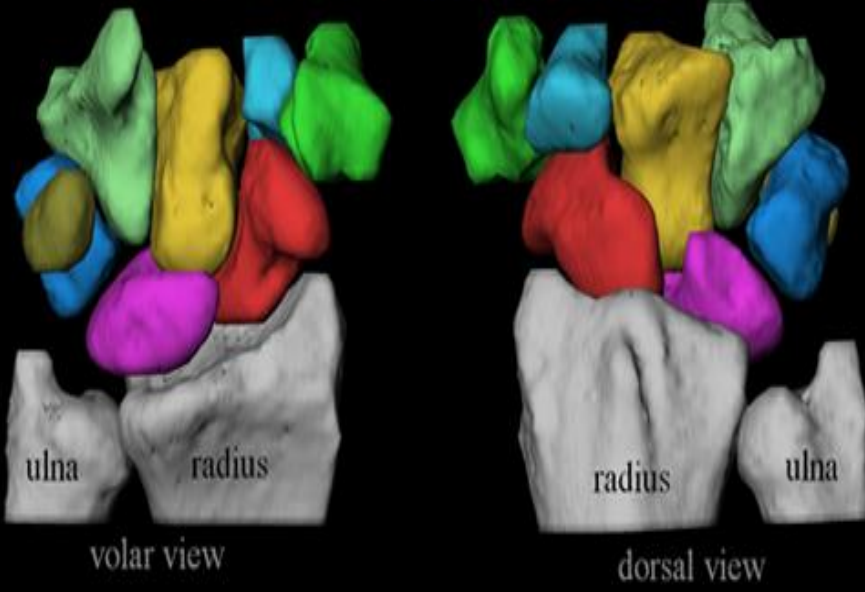
5 metacarpals

14 phalanges



# Hand

Hamate Capitate Trapezoid Trapezium  
Pisiform Triquetrum Lunate Scaphoid



# Hand

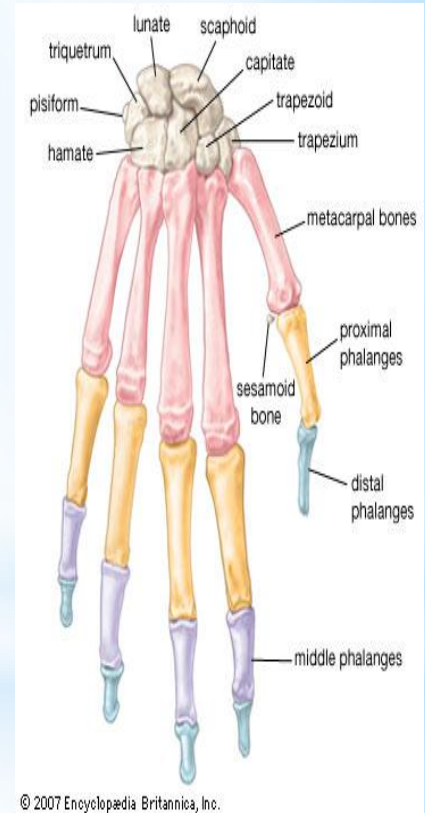
**Scaphoid** - most frequently fractured carpal bone

**Lunate** - most frequently dislocated carpal bone

**Pisiform** - smallest; lies on diff plane; last to ossify

**Capitate** - largest carpal bone, center of wrist,  
first to ossify

**Hamate** - with hook like process



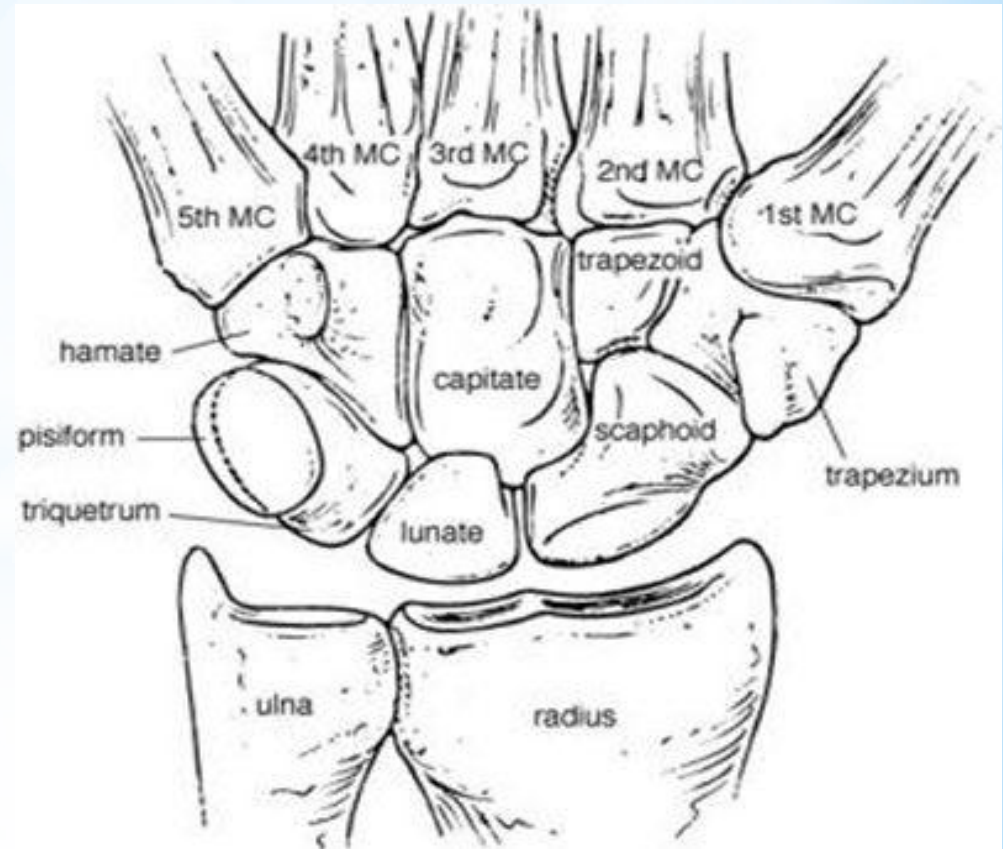
# Joints of wrist and hand

## Carpus/Wrist complex

- *Distal Radioulnar Joint*
- Radiocarpal joints
- Midcarpal joints
- Intercarpal Joint
- Carpometacarpal jts
- Intermetacarpal jts.

## Fingers & thumb

- Metacarpophalangeal
- Interphalangeal



## Palmar fascia

- \* Provides a stable platform for the palmar skin & protects the underlying structures
- \* Insertion site for the palmaris longus tendon





# Muscles of the Wrist and Hand

## \* Wrist extensors

- Brachioradialis
- ECRL
- ECRB
- Extensor digitorum
- Extensor carpi ulnaris

## \* Wrist flexors

- Palmaris longus
- Flexor carpi radialis
- Flexor carpi ulnaris
- Flexor digitorum superficialis



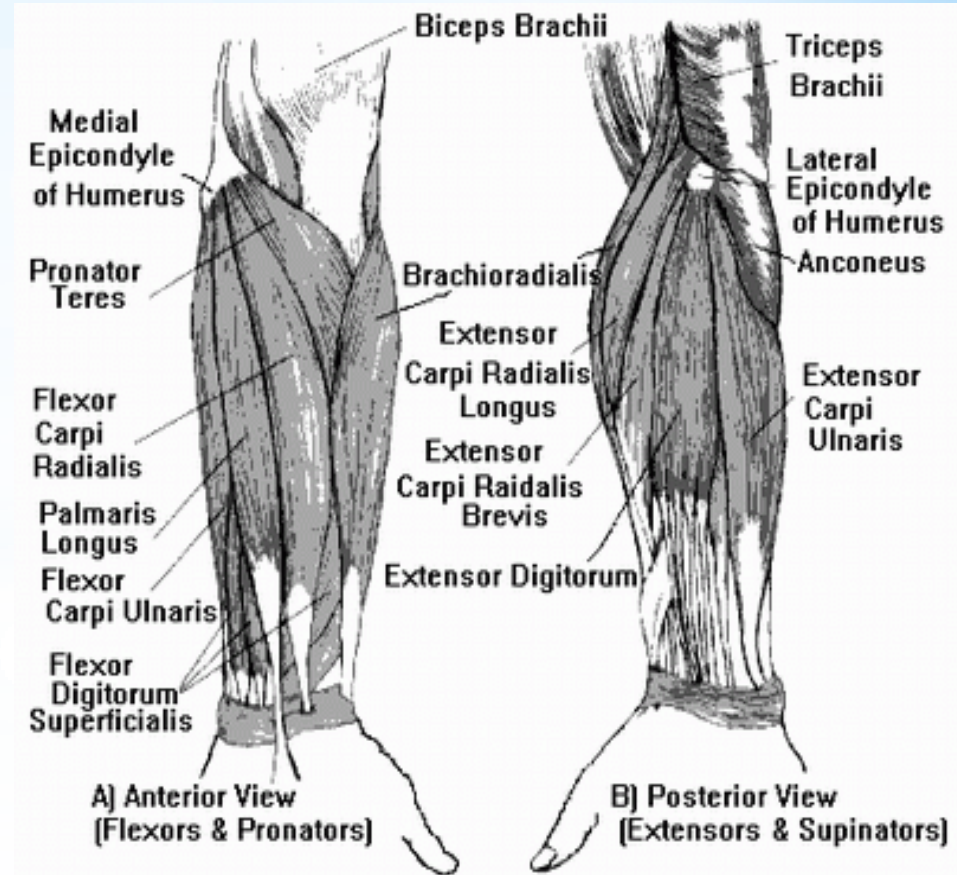
# Hand

## \* Ulnar abductors

- Extensor carpi ulnaris
- Flexor carpi ulnaris

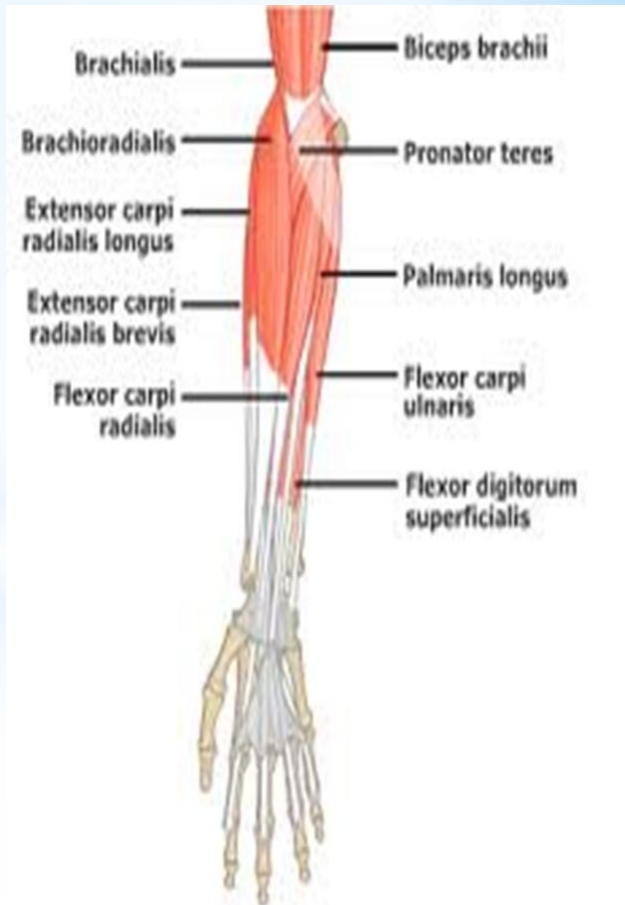
## \* Radial abductors

- ECRL
- Flexor carpi radialis
- Abductor pollicis longus
- Extensor pollicis brevis



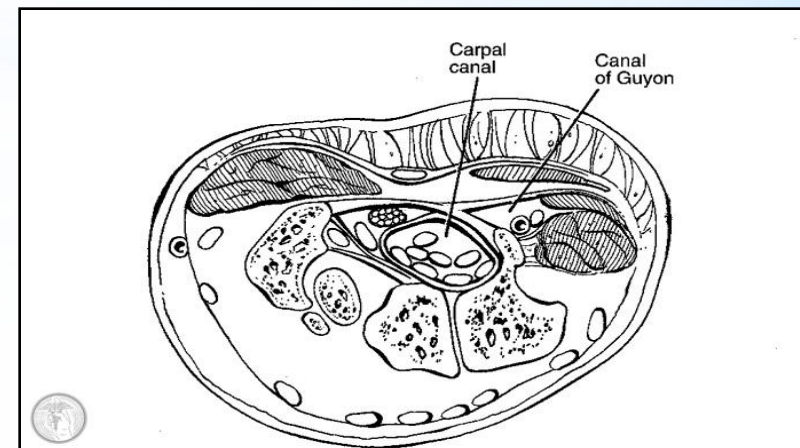
# Extrinsic hand muscles

- Extensor digitorum
- Extensor indicis proprius
- Extensor digiti minimi
- Extensor pollicis longus
- Extensor pollicis brevis
- Abductor pollicis longus
- Extrinsic extensor muscles generate tendons that align within compartments along the dorsum of the wrist
  
- Flexor digitorum superficialis
- Flexor digitorum profundus
- Flexor pollicis longus



# Carpal tunnel

- \* contains the flexor apparatus and the median nerve at the wrist
- \* **contents**
- \* Median nerve
- \* FDS (4), FDP (4), FPL
- \* Long & ring FDS tendons lie more palmar than the index and small FDS tendons

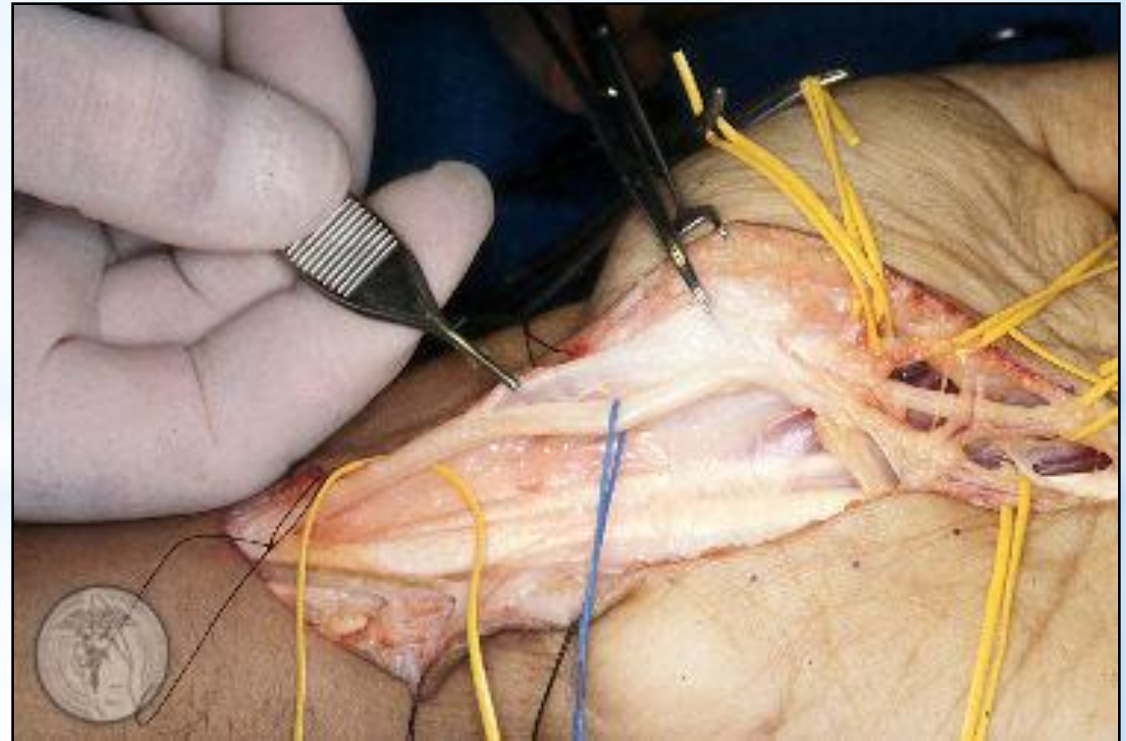


- 4 lumbricals
- 3 palmar interossei
- 4 dorsal interossei
- ❖ **Thenar muscles:**
  - opponens pollicis,
  - APB
  - adductor pollicis,
  - FPB
- ❖ **Hypothenar muscles:**
  - opponens digiti minimi,
  - abductor digiti minimi,
  - flexor digiti minimi brevis
- Palmar brevis



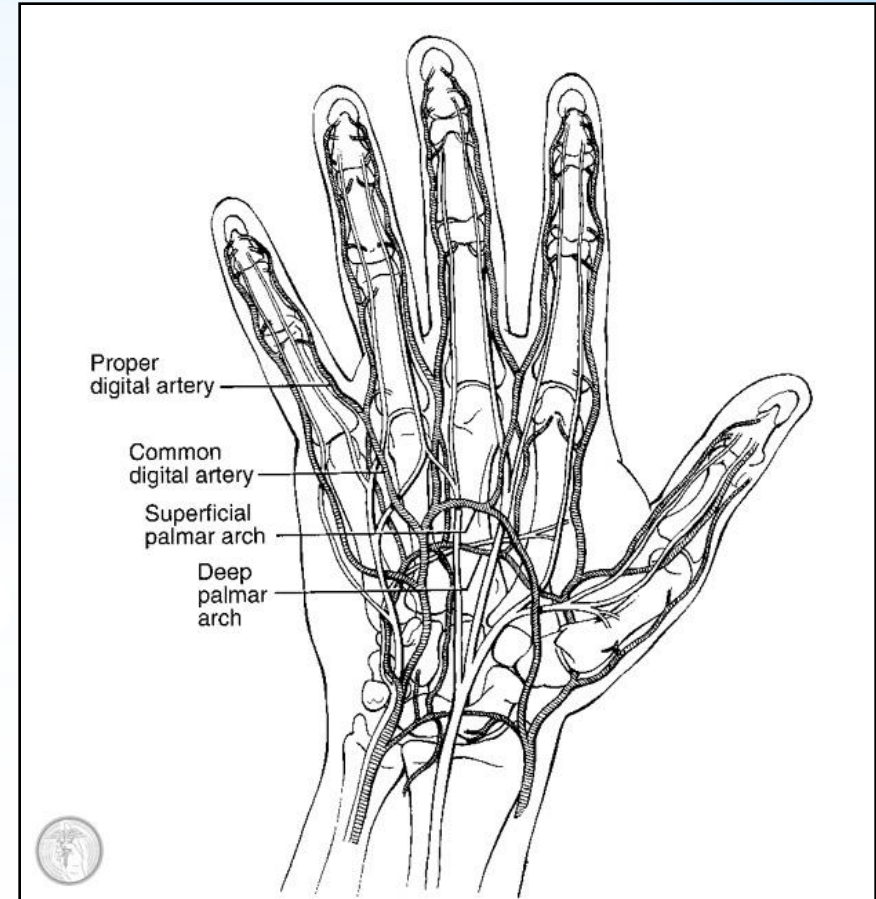
## Hand nerve supply

- \* Radial, median, & ulnar nerves supply the sensibility and motor to the hand and forearm



# Hand blood supply

- ▣ 1. Radial artery supply blood to the hand through a series of two arches
- ▣ -deep palmar arch
- ▣ superficial palmar arch



# Hand

- 2. Ulnar artery
  - a. superficial palmar arch
  - b. deep palmar arch

The vascular supply to the thumb is from digital branches that originate as a common trunk (princeps pollicis artery) from the deep palmar arch

