SCOREBUILDERS

SPOTLIGHT
Series

Need 2 Know: Wrist/Hand

Presented by
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Purpose

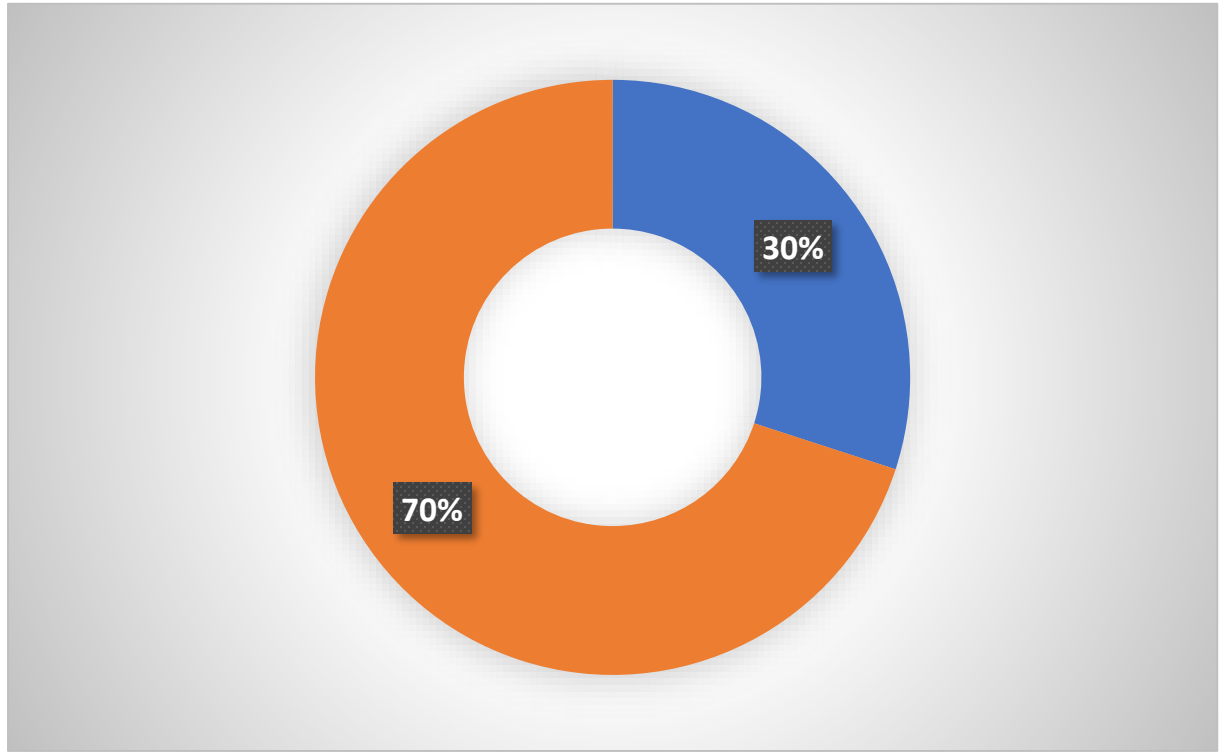
1. Identify areas of focus for your study plan.
2. Prepare you for wrist/hand content that could be encountered on NPTE.

NOT

1. Comprehensive course on the wrist/hand (but covers a lot!).
2. Rehash of Scorebuilders book.

BIG PICTURE

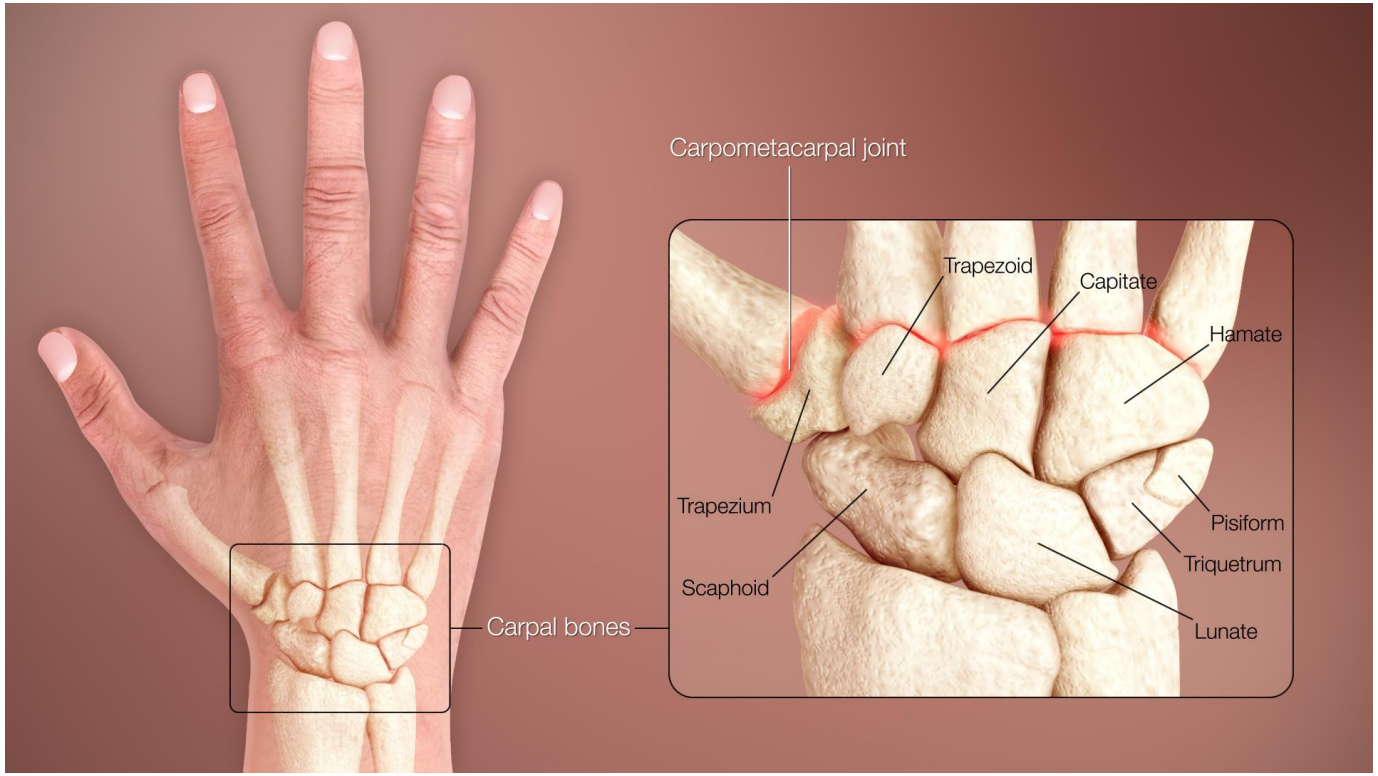
- There are 51-60 items on the NTPTE specific to the MS system



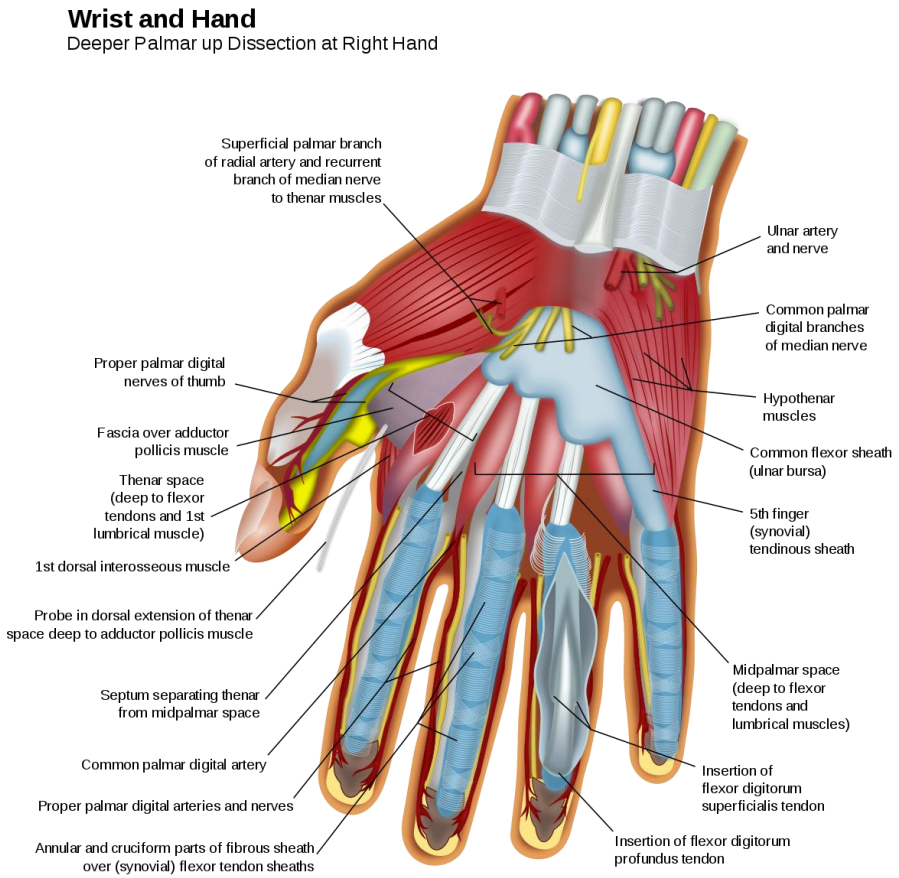
Who FSBPT is testing…

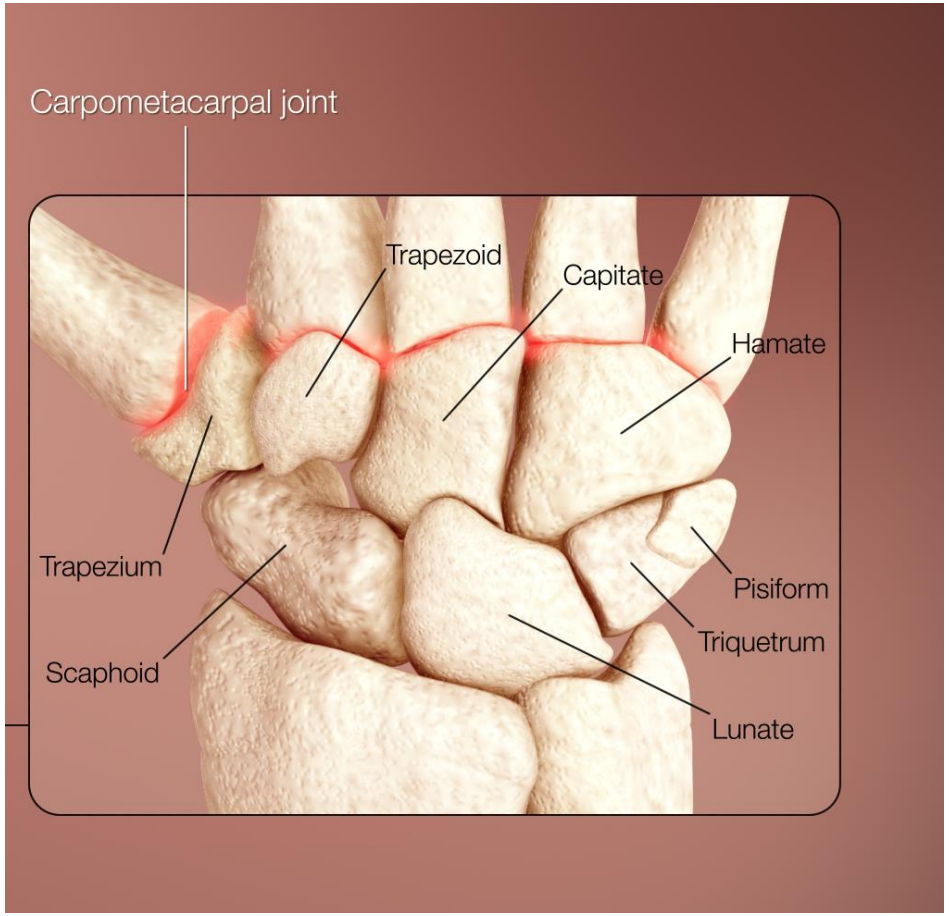
Likely Questions

- Anatomy of the wrist/hand
- Kinesiology of the wrist/hand
- Basic examination/tests
- Pathologies of the wrist/hand
- Differential diagnosis
- Common injuries

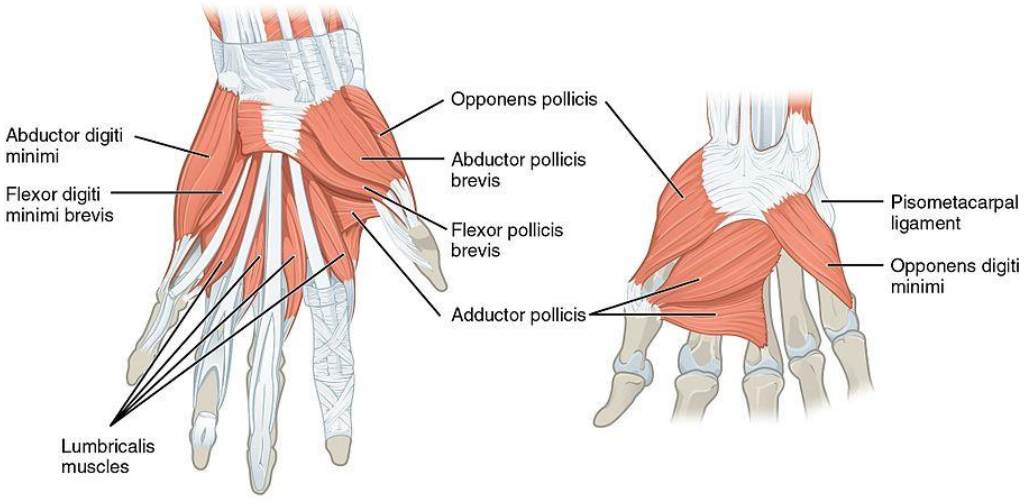


Anatomy


Wrist and Hand
Deeper Palmar up Dissection at Right Hand
Superficial palmar branch of radial artery and recurrent branch of median nerve to thenar muscles
Ulnar artery and nerve
Common palmar digital branches of median nerve
Proper palmar digital nerves of thumb
Hypothenar muscles
Fascia over adductor pollicis muscle
Common flexor sheath (ulnar bursa)
Thenar space (deep to flexor tendons and 1st lumbrical muscle)
5th finger (synovial) tendinous sheath
1st dorsal interosseous muscle
Probe in dorsal extension of thenar space deep to adductor pollicis muscle
Midpalmar space (deep to flexor tendons and lumbrical muscles)
Septum separating thenar from midpalmar space
Common palmar digital artery
Insertion of flexor digitorum superficialis tendon
Proper palmar digital arteries and nerves
Annular and cruciform parts of fibrous sheath over (synovial) flexor tendon sheaths
Insertion of flexor digitorum profundus tendon

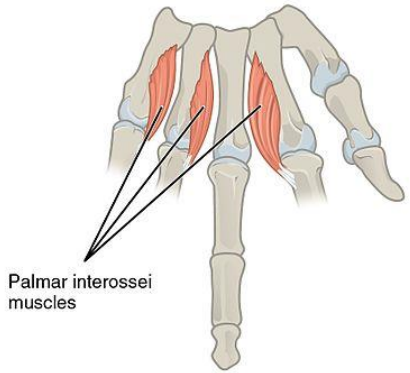

Carpometacarpal joint
Trapezoid
Capitate
Hamate
Trapezium
Pisiform
Triquetrum
Scaphoid
Lunate

Intrinsic vs Extrinsic

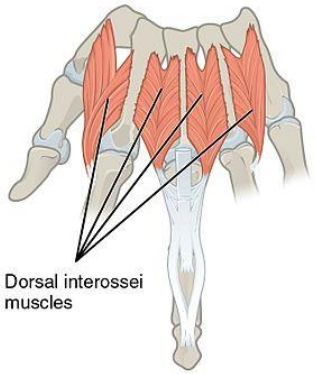


Superficial muscles of left hand (palmar)

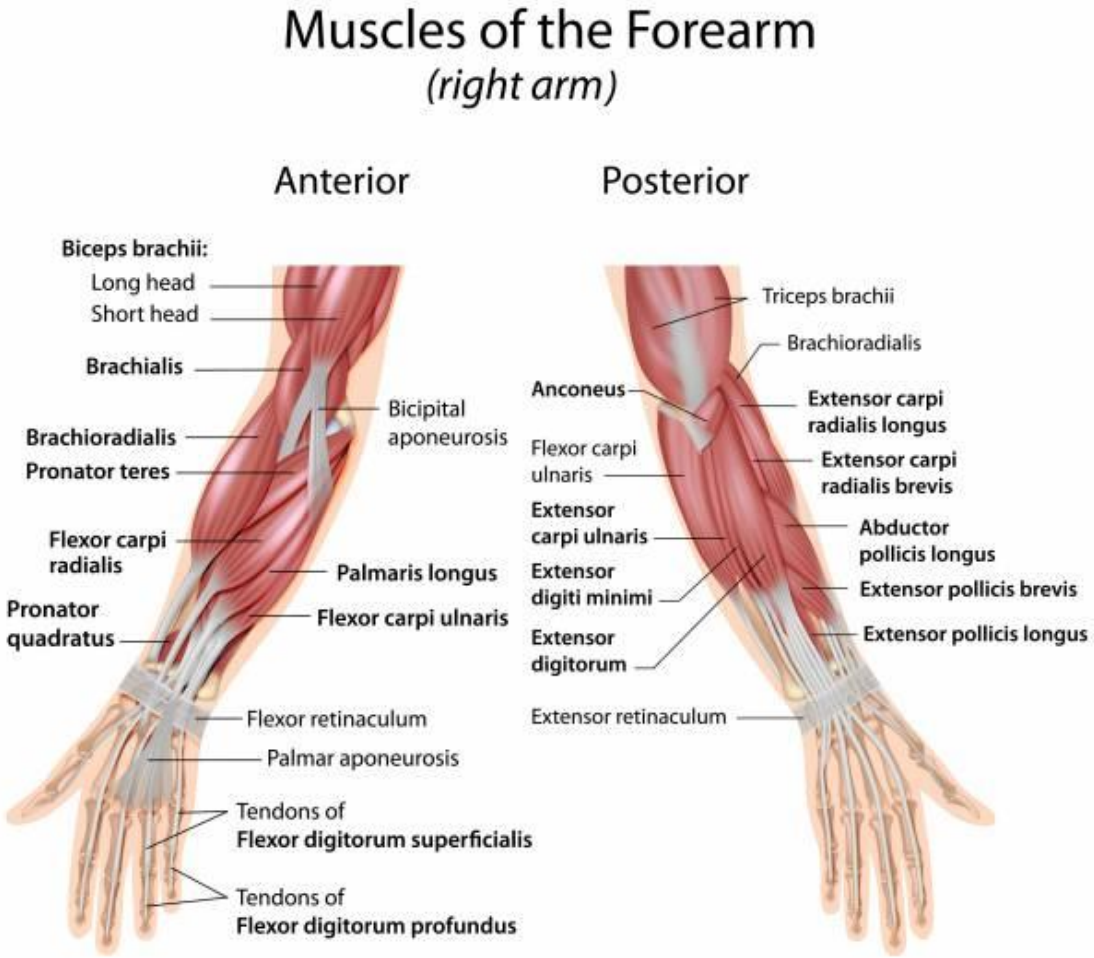
Deep muscles of left hand: (dorsal view)



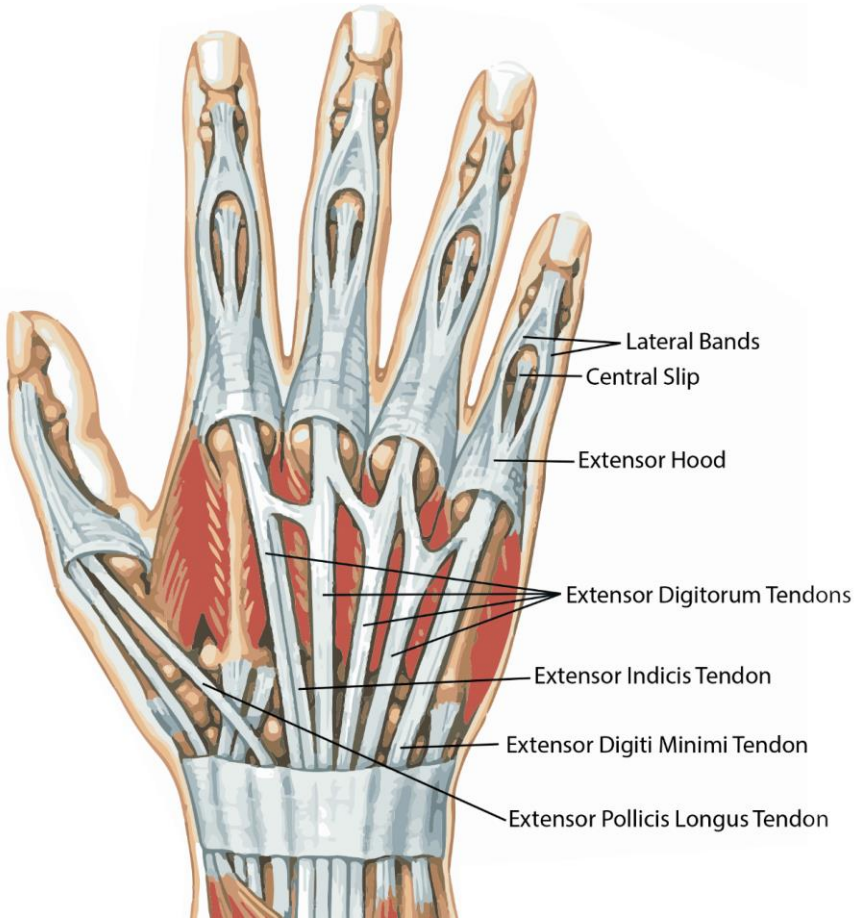
Interossei muscles of left hand (palmar view)

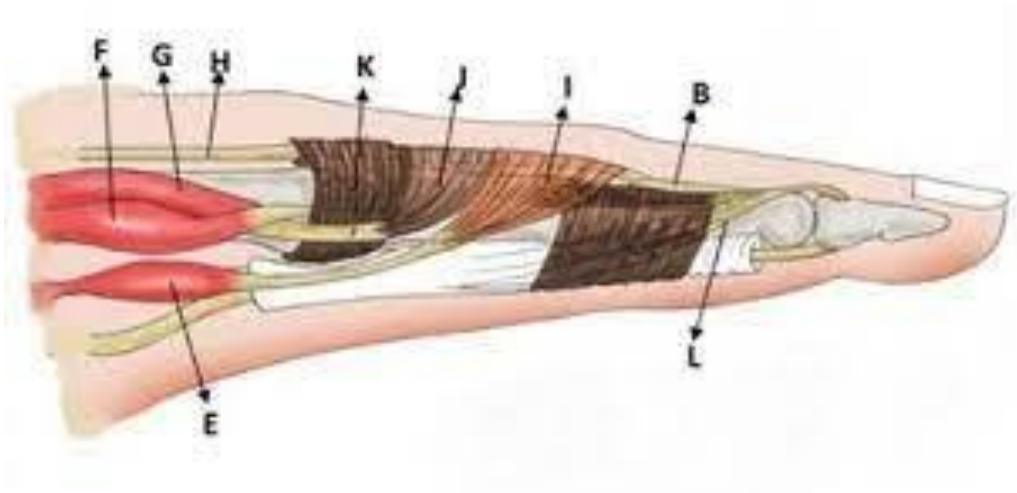


Interossei muscles of left hand (dorsal view)

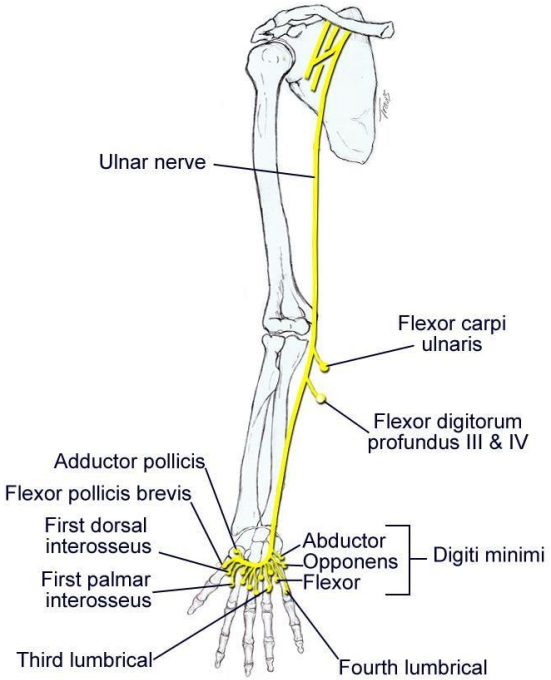


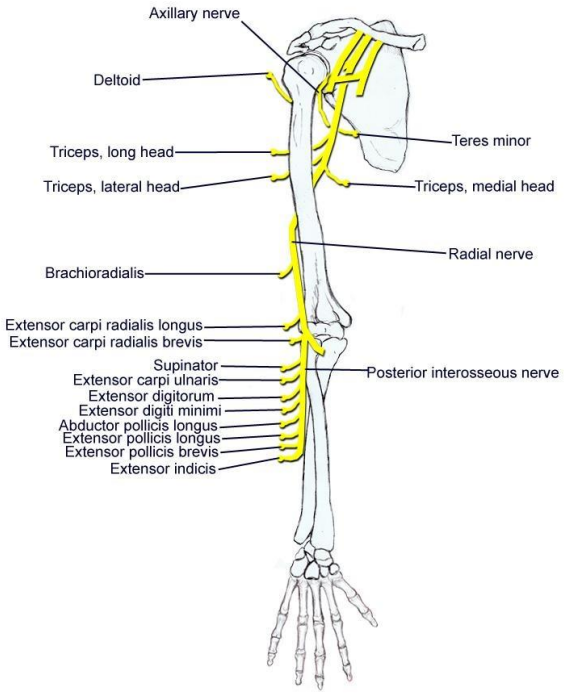
Those pesky ligaments…

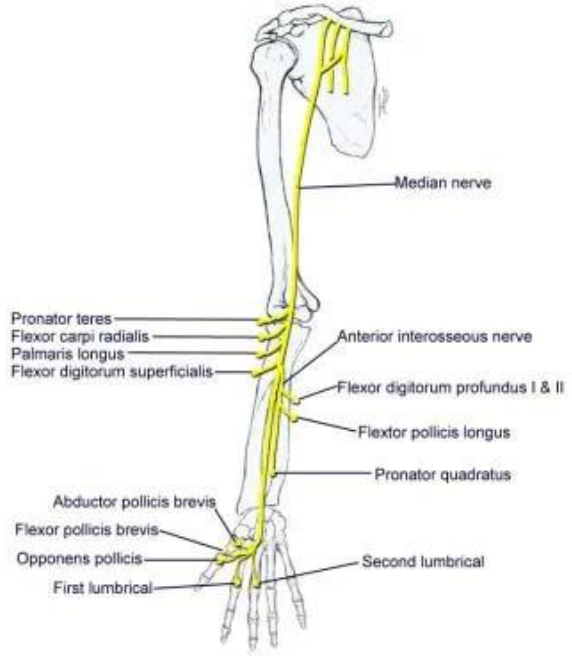




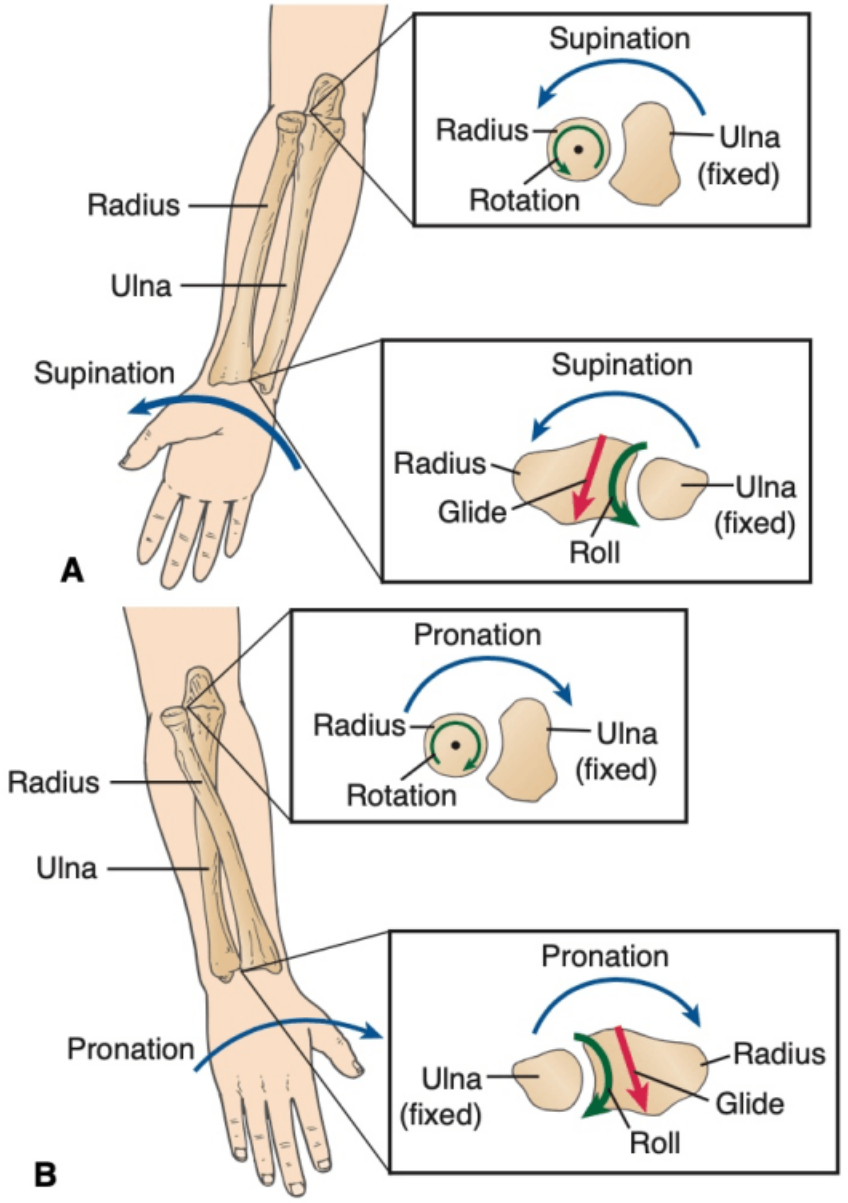
Innervations



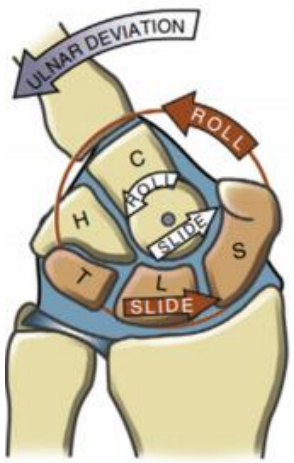


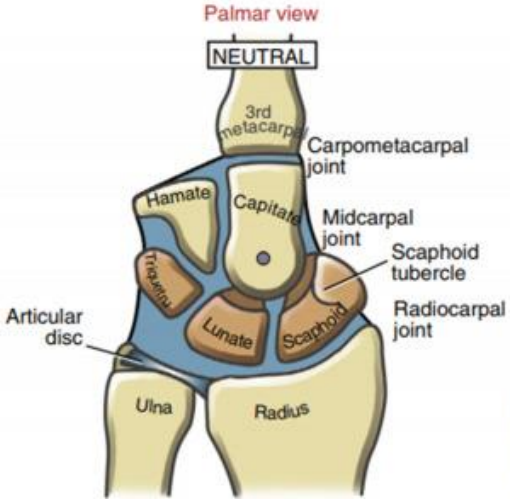


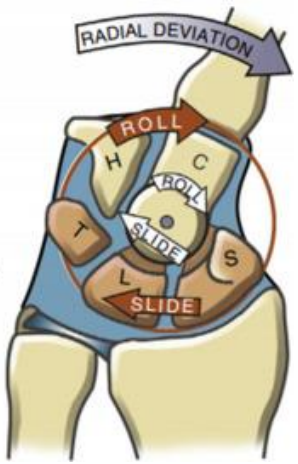
Kinesiology

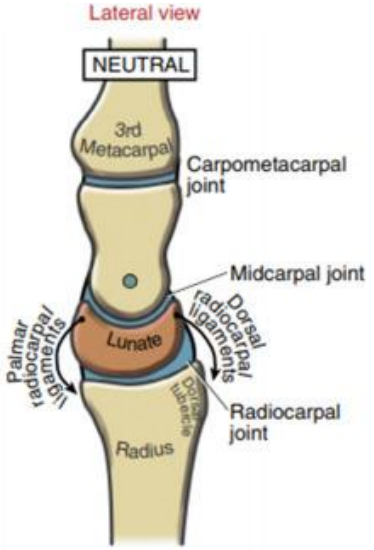


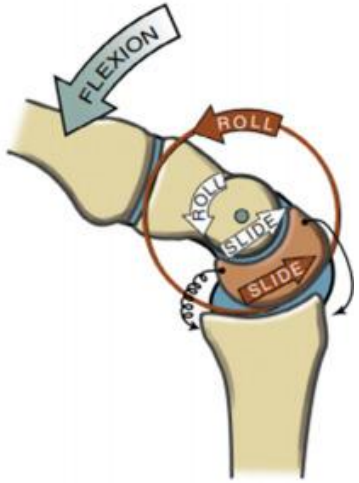
Kinesiology





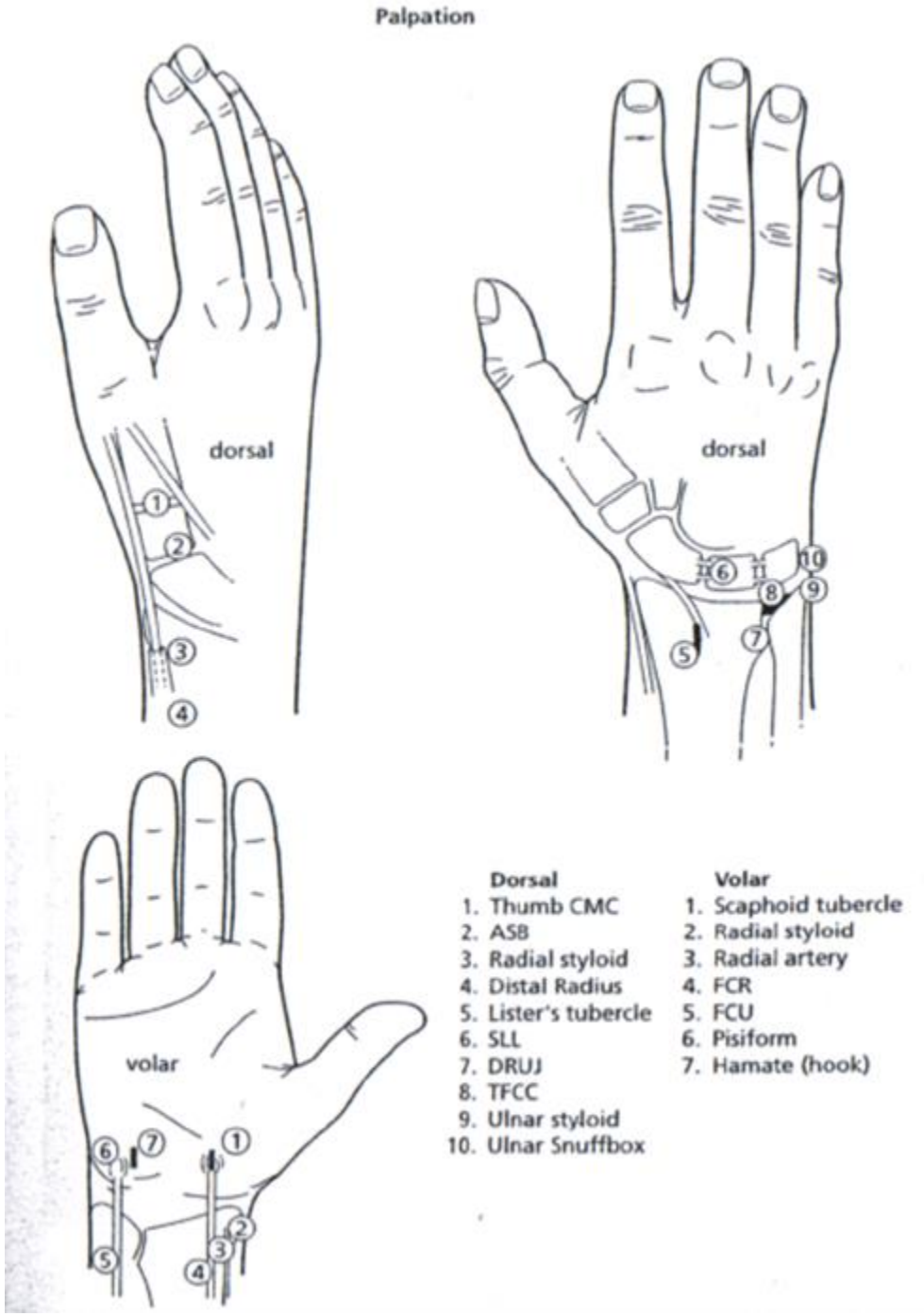


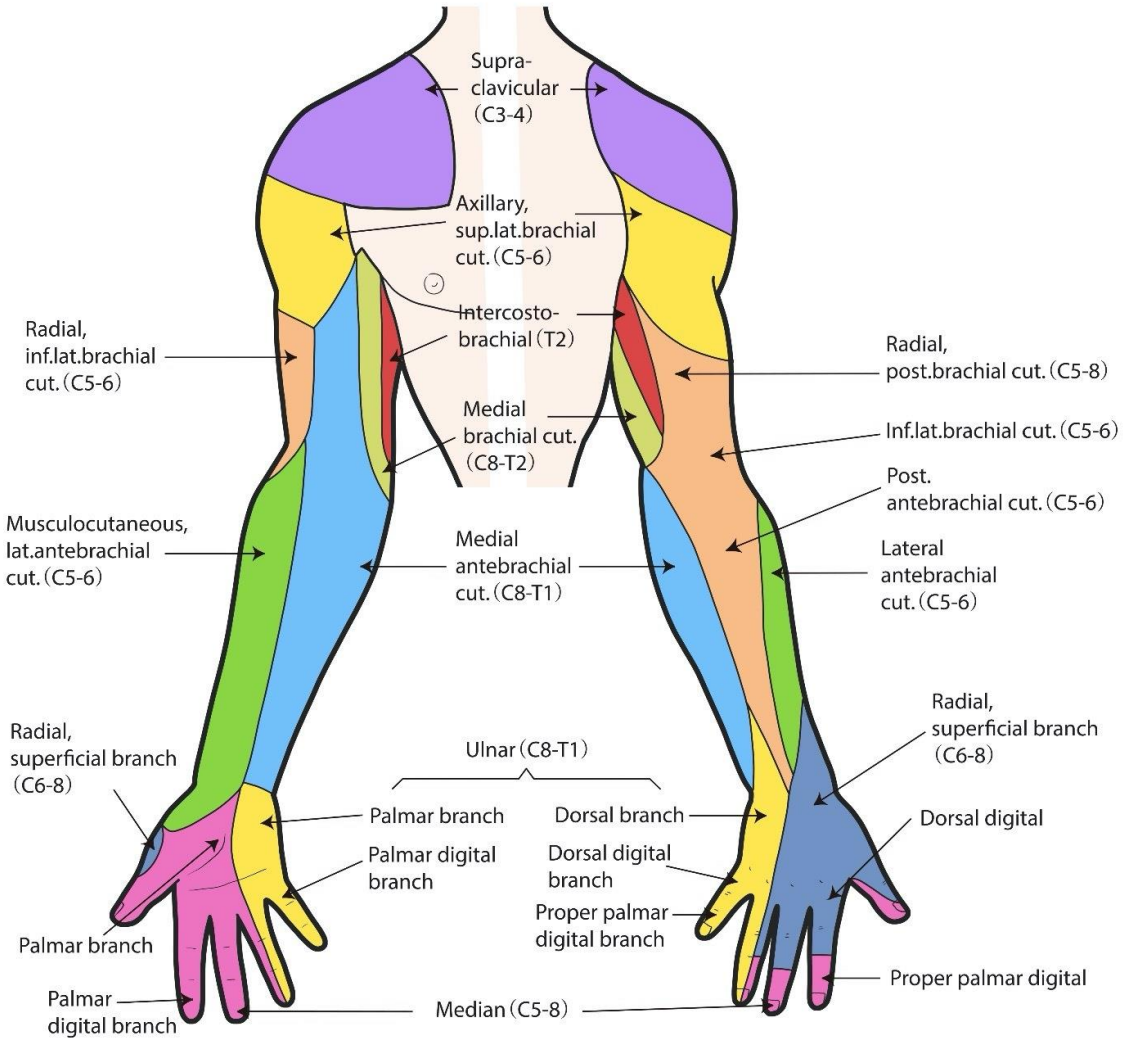




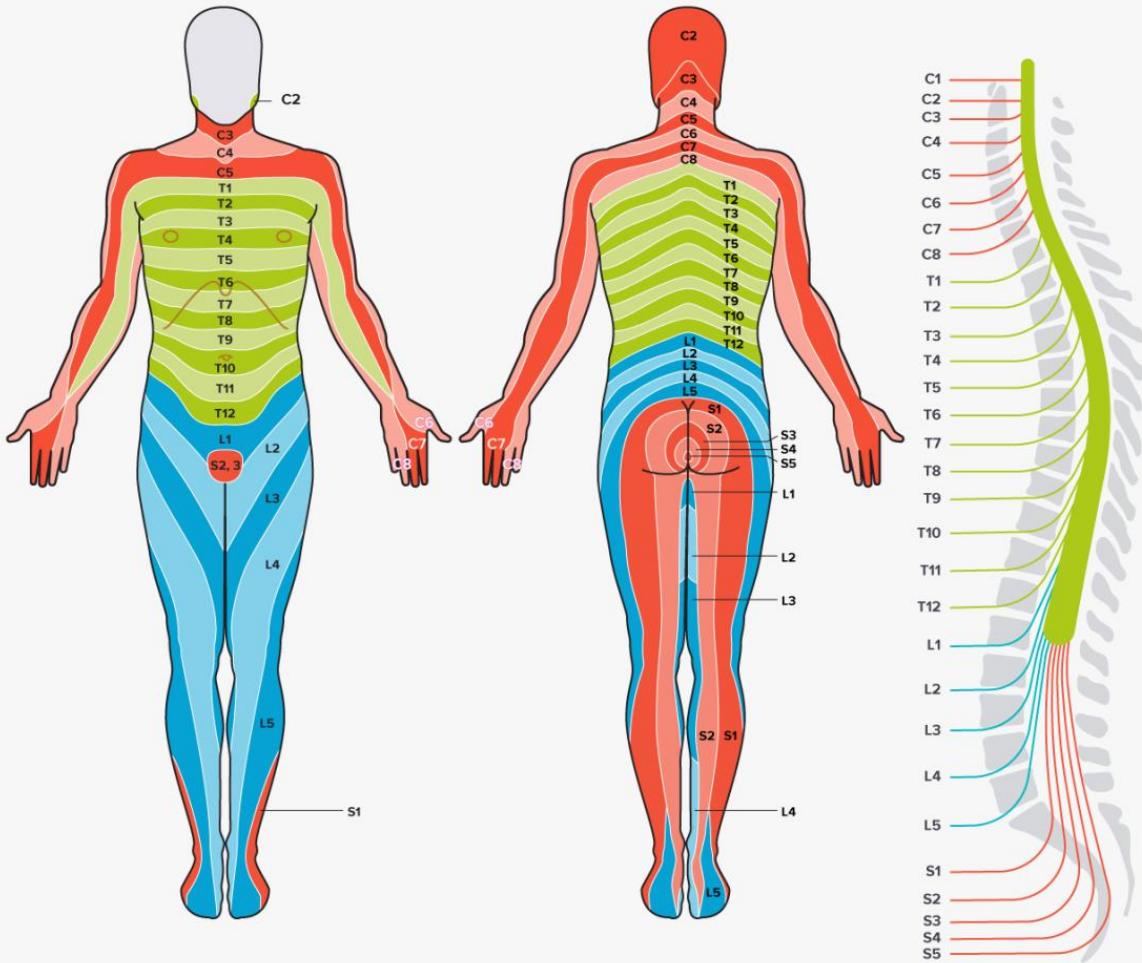
Examination (general)

- Sensory patterns
- Myotomes
- Special
- Grip



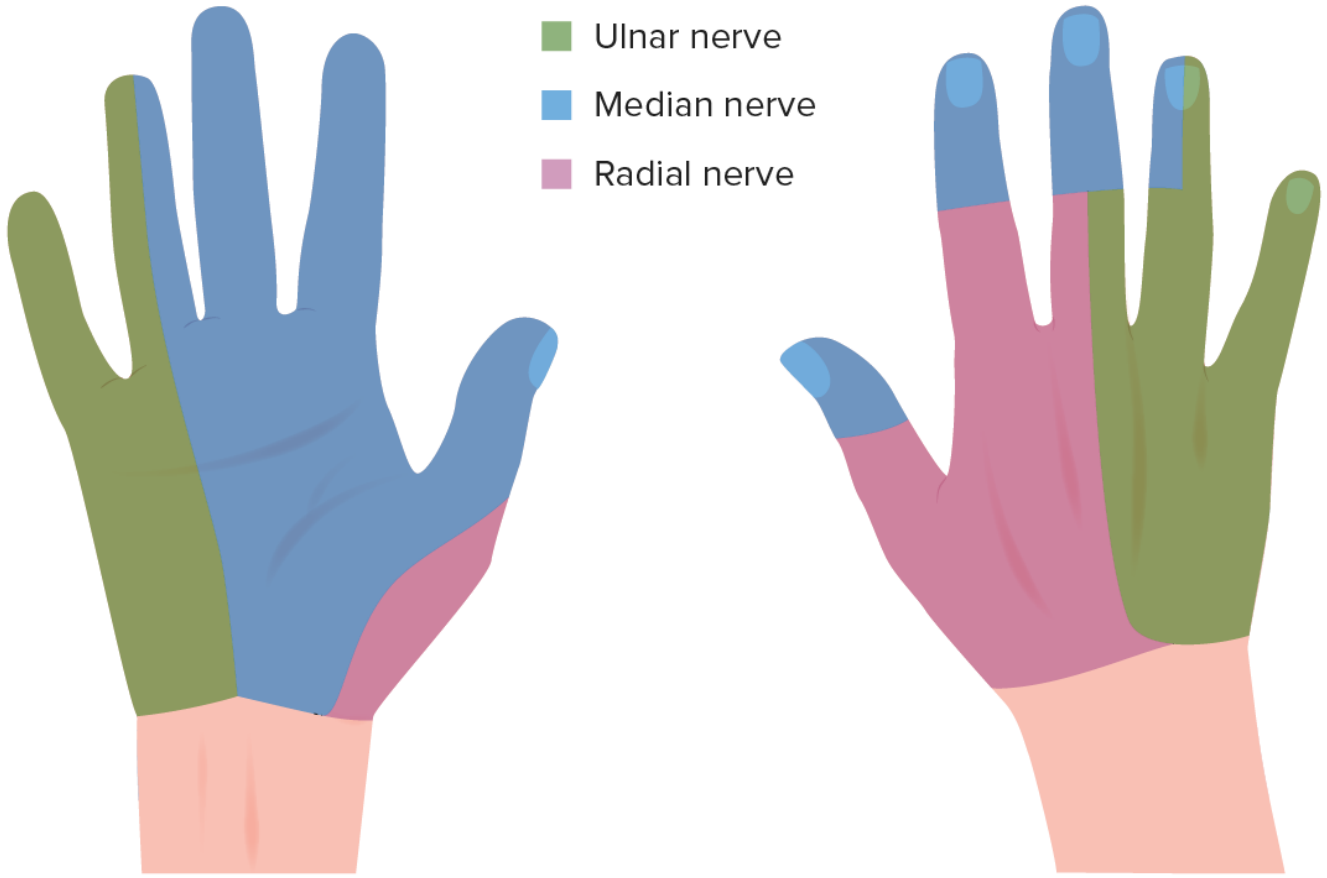


Dermatomes

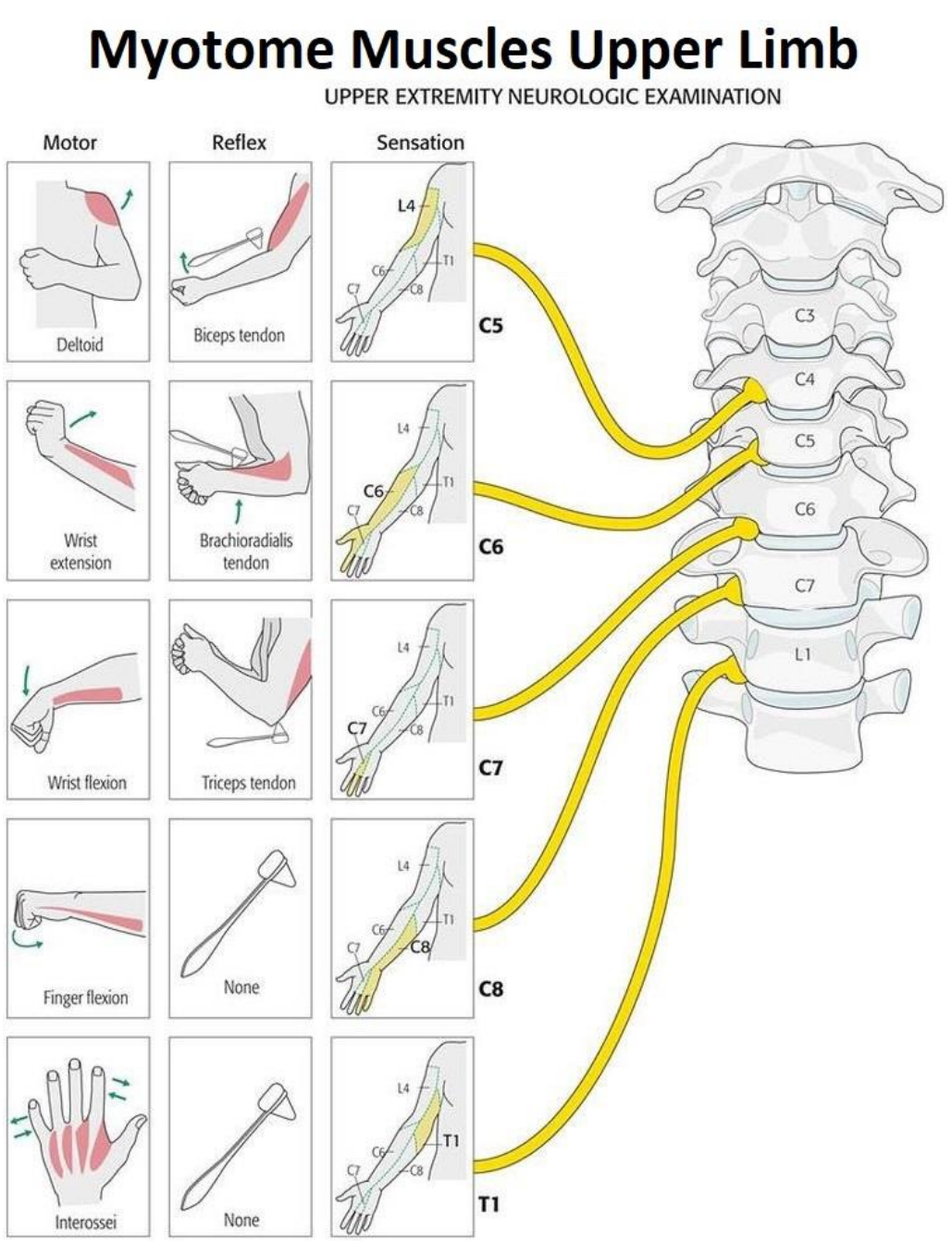


MEDICALNEWSTODAY

Up Close



Mytomes


Myotome Muscles Upper Limb
UPPER EXTREMITY NEUROLOGIC EXAMINATION
Motor
Reflex
Sensation
Deltoid
Biceps tendon
Wrist extension
Brachioradialis tendon
Wrist flexion
Triceps tendon
Finger flexion
None
Interossei
None
L4
T1
C6
C7
C8
C5
C6
C7
C8
T1
C3
C4
C5
C6
C7
L1
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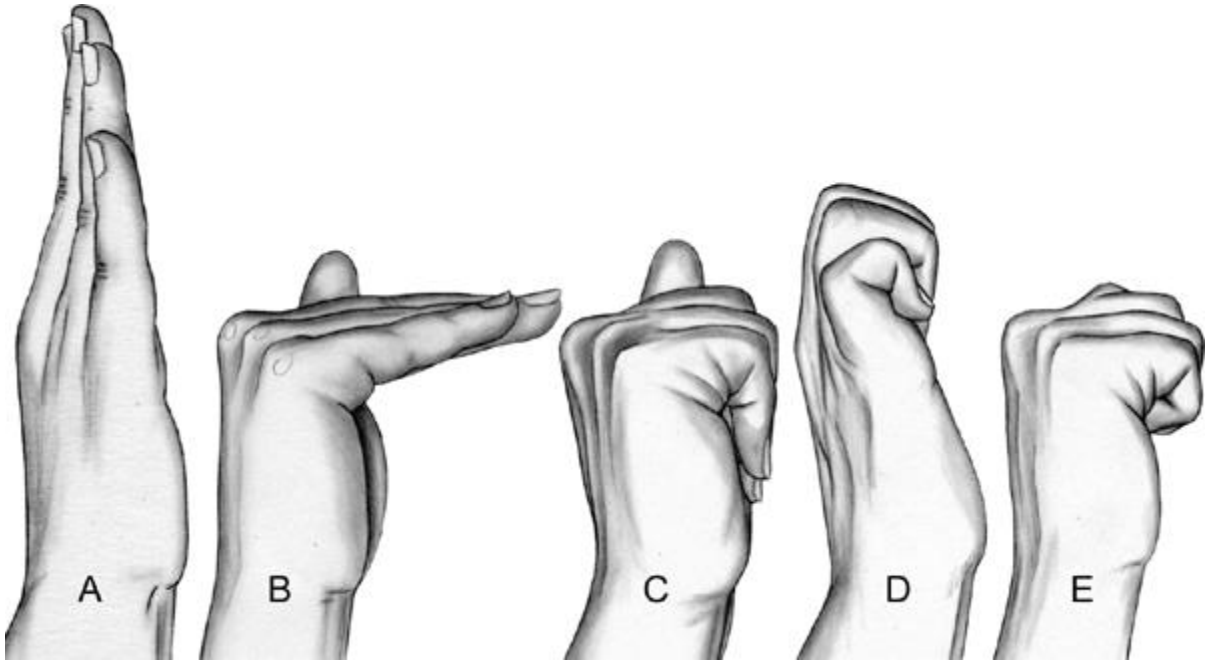
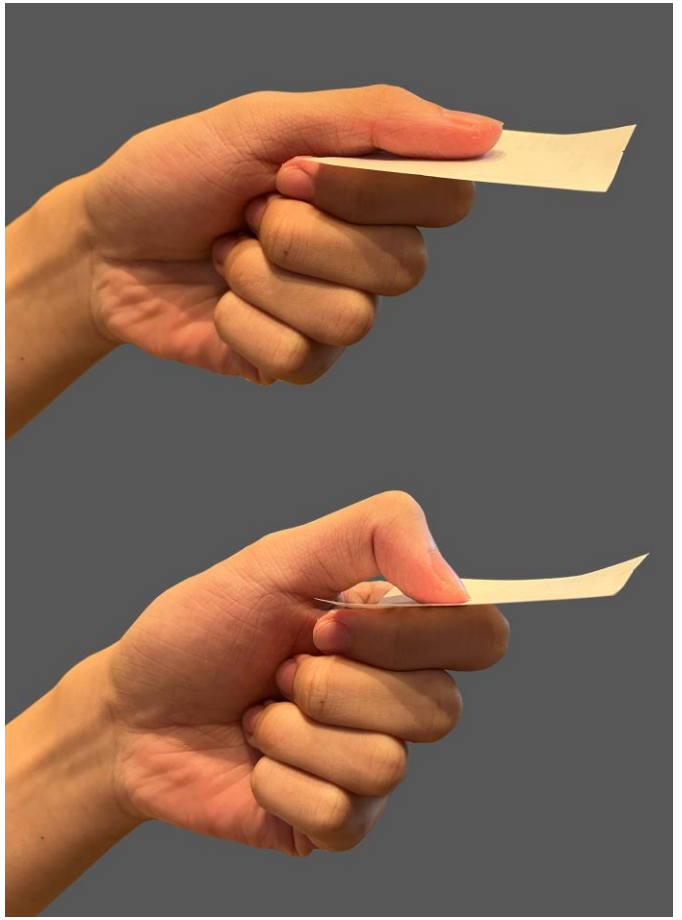
Special tests



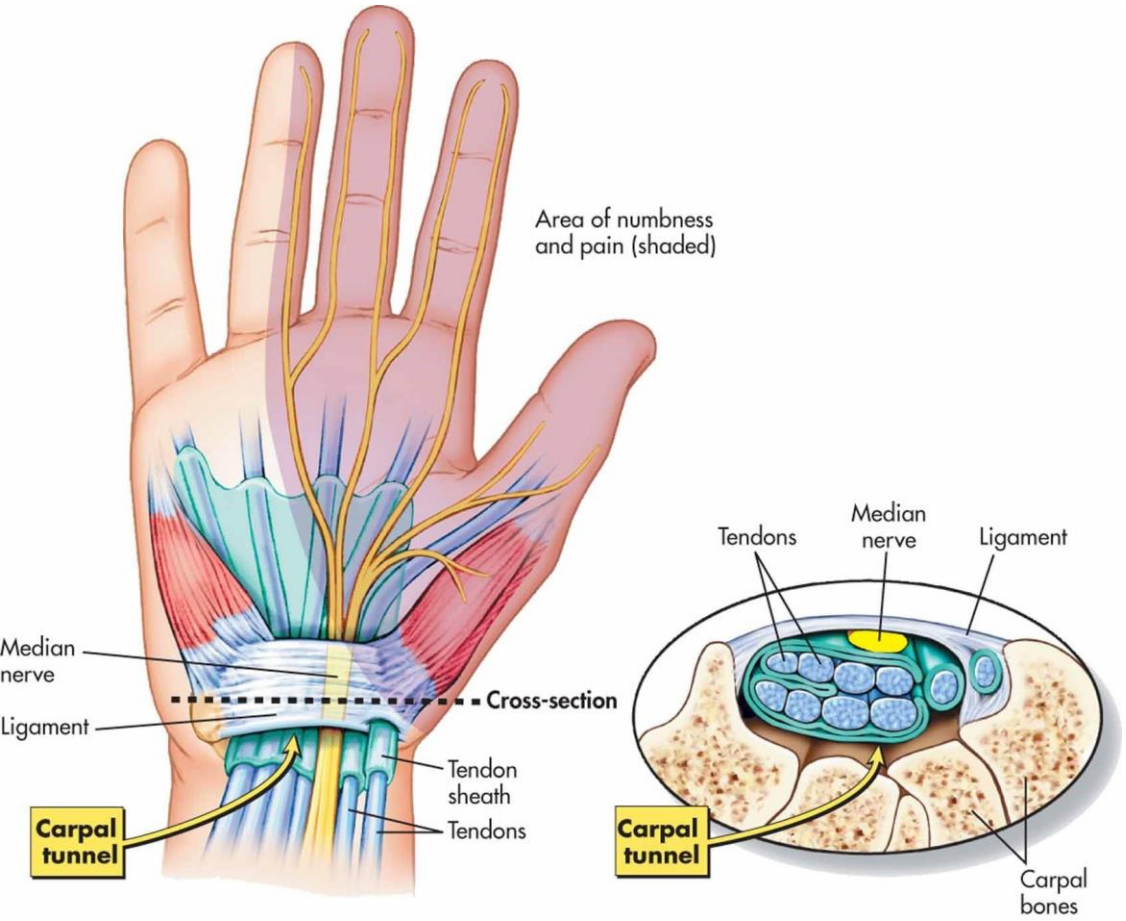


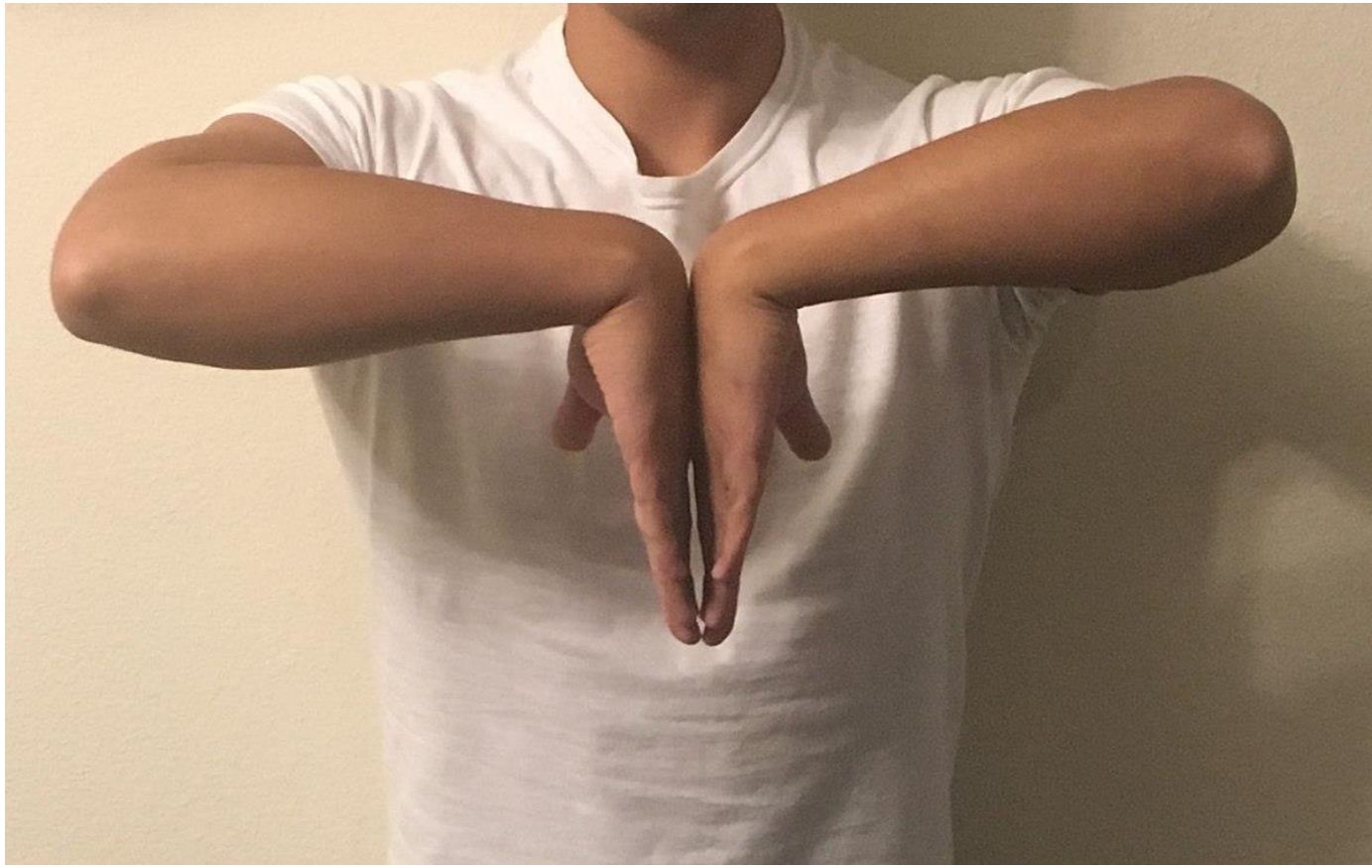
Grip

Pathologies

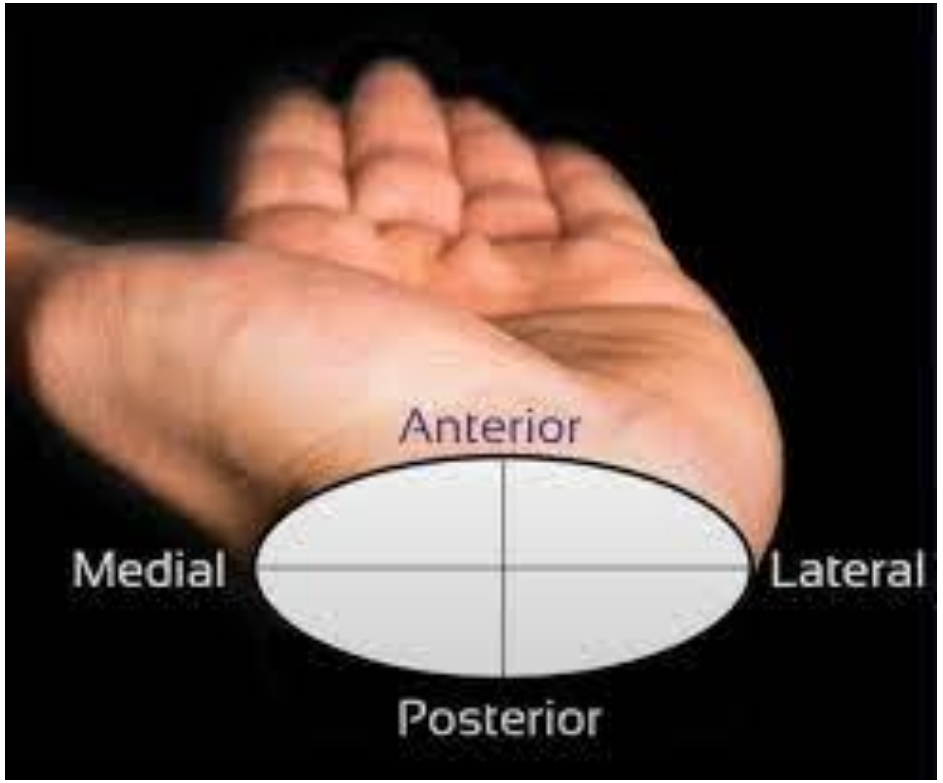
- Carpal Tunnel
- Common fractures
- Instability
- Rheumatoid arthritis
- Flexor tendon injuries
- Extensor tendon injuries
- Burns

Carpal Tunnel

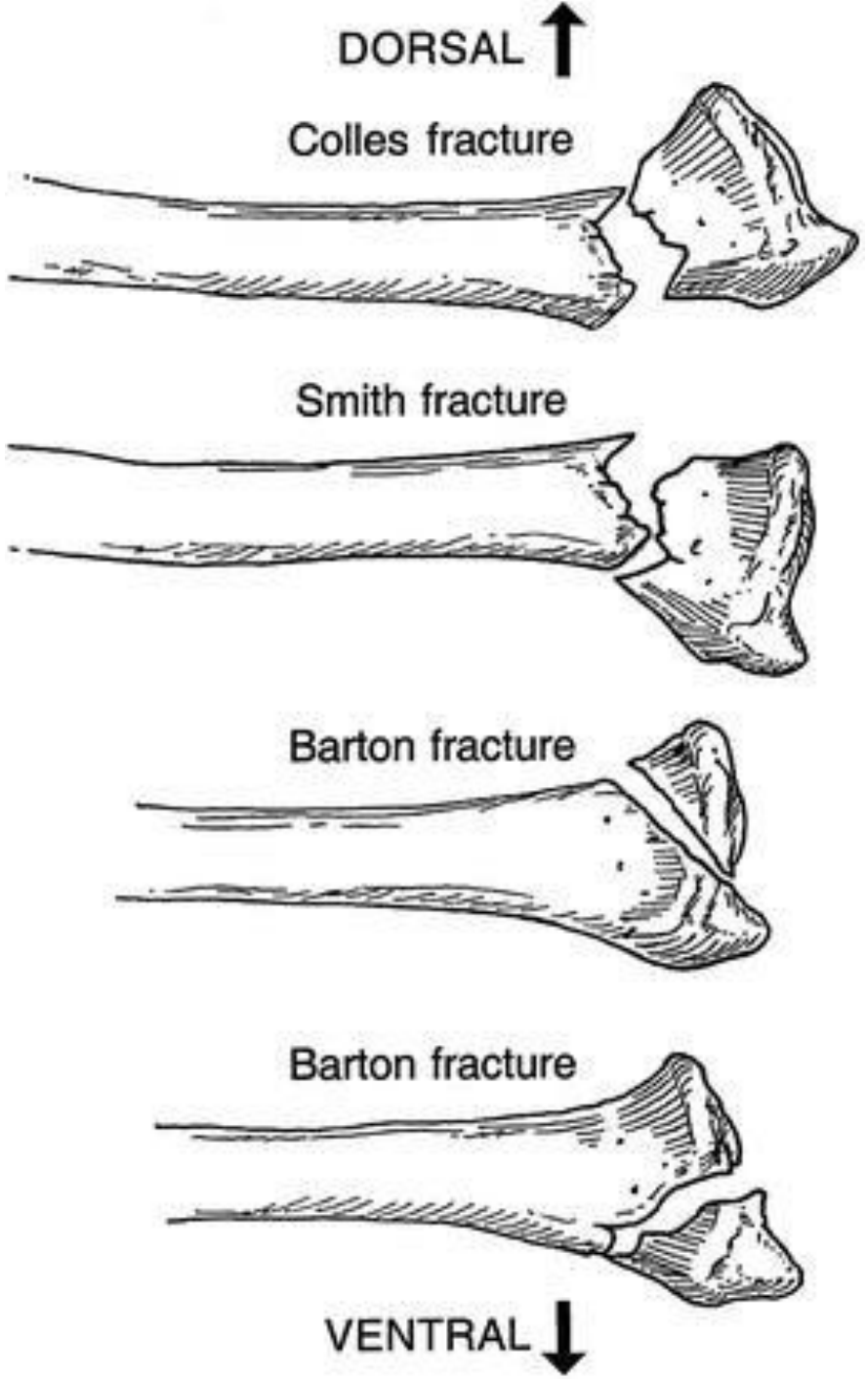




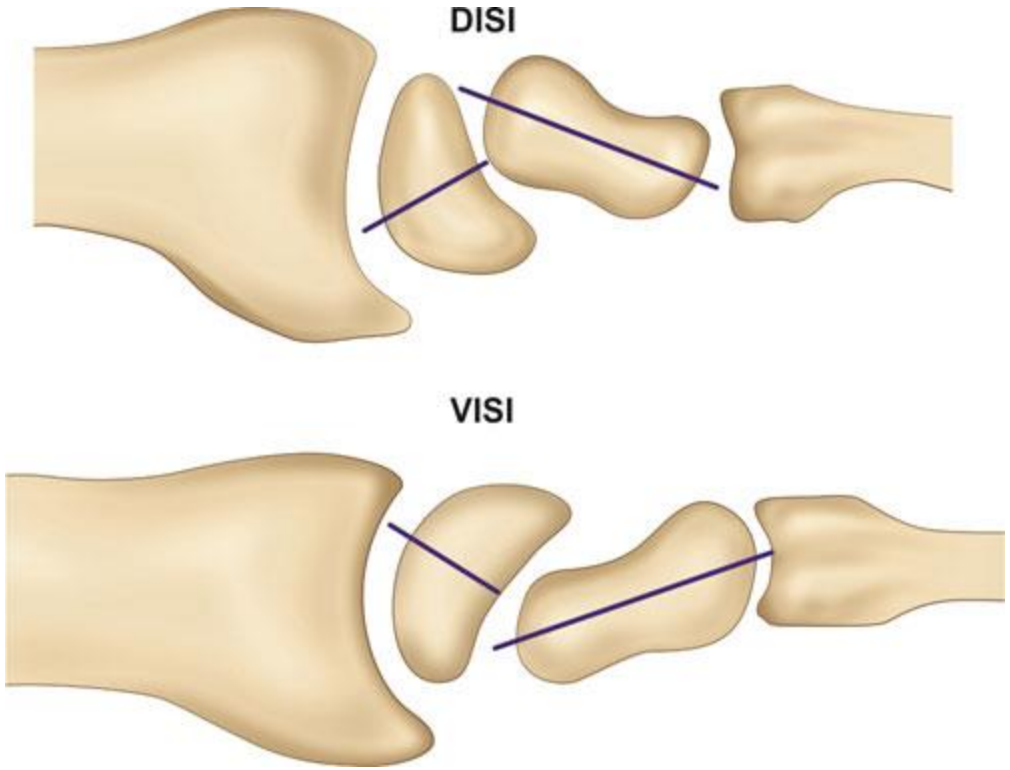
Carpal Tunnel

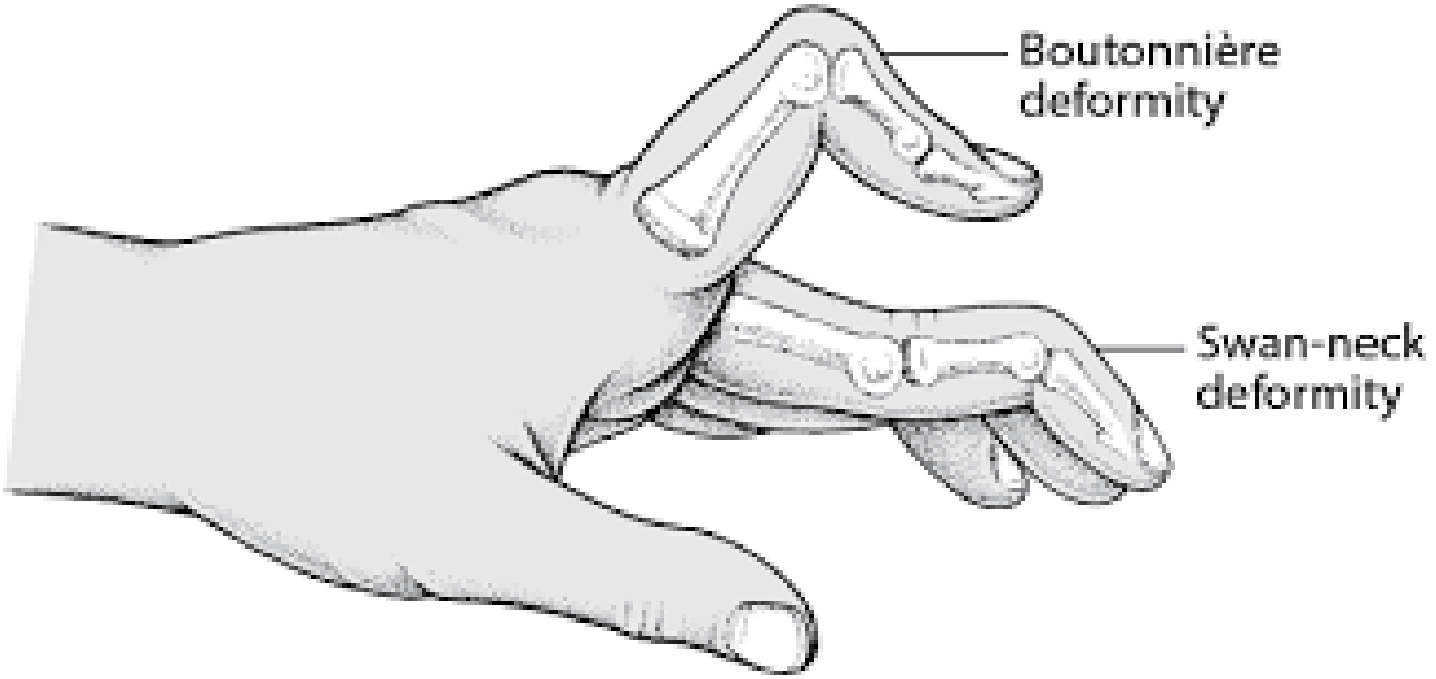


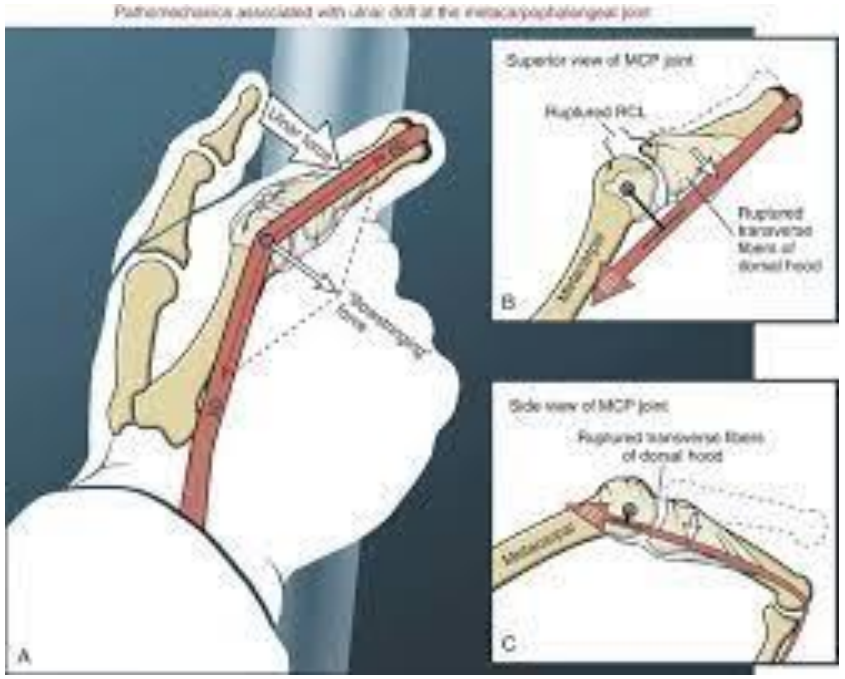
Common Fractures



Instability

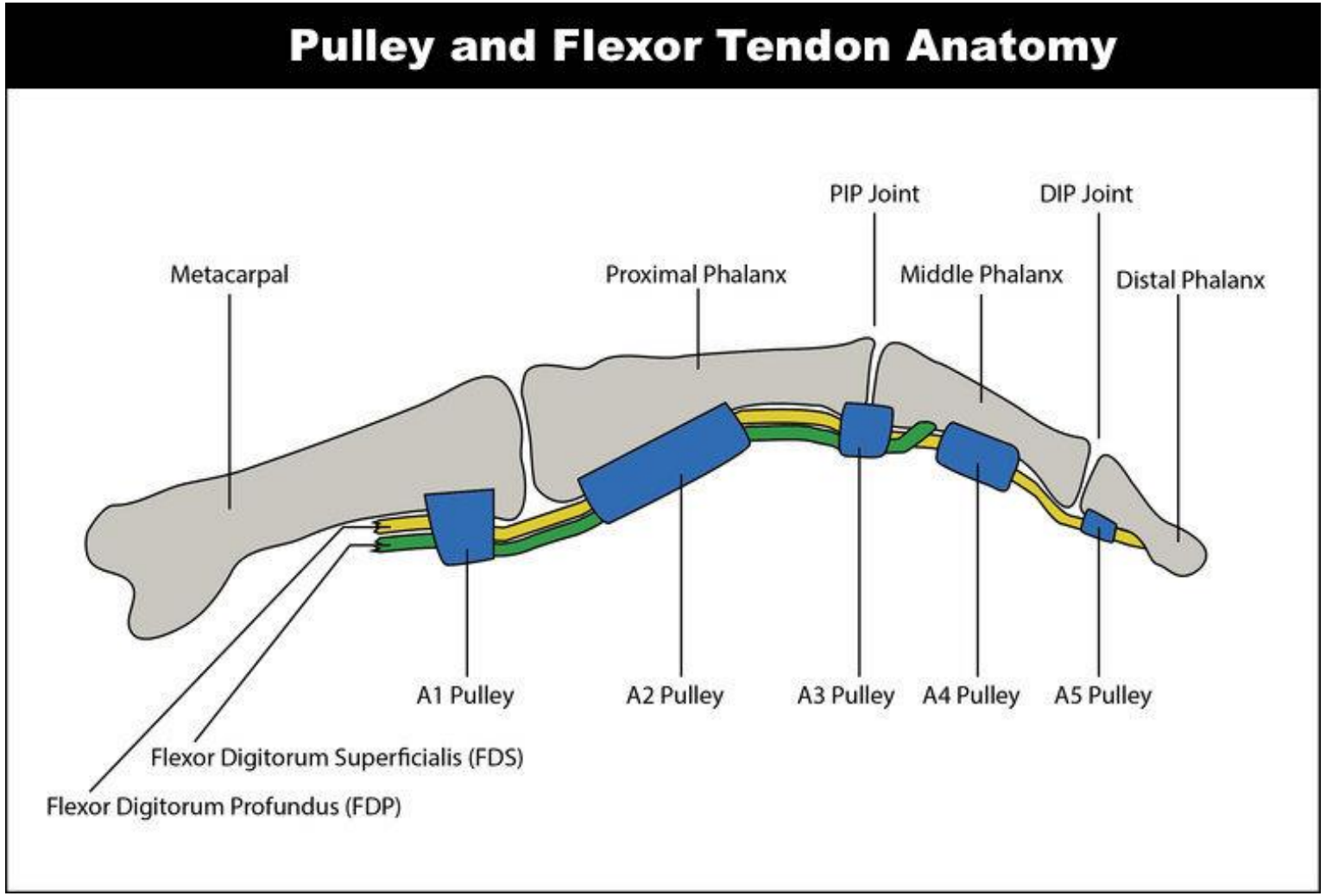




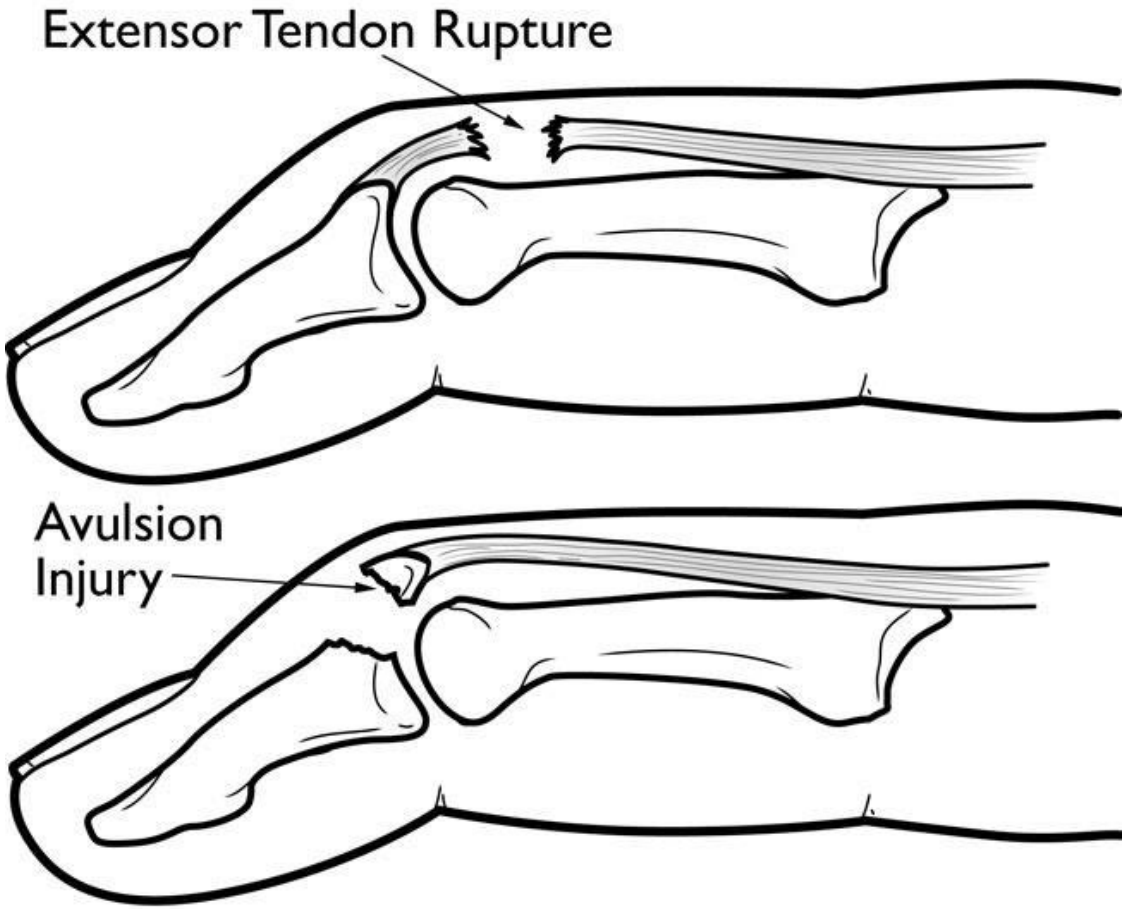


Rheumatoid Arthritis

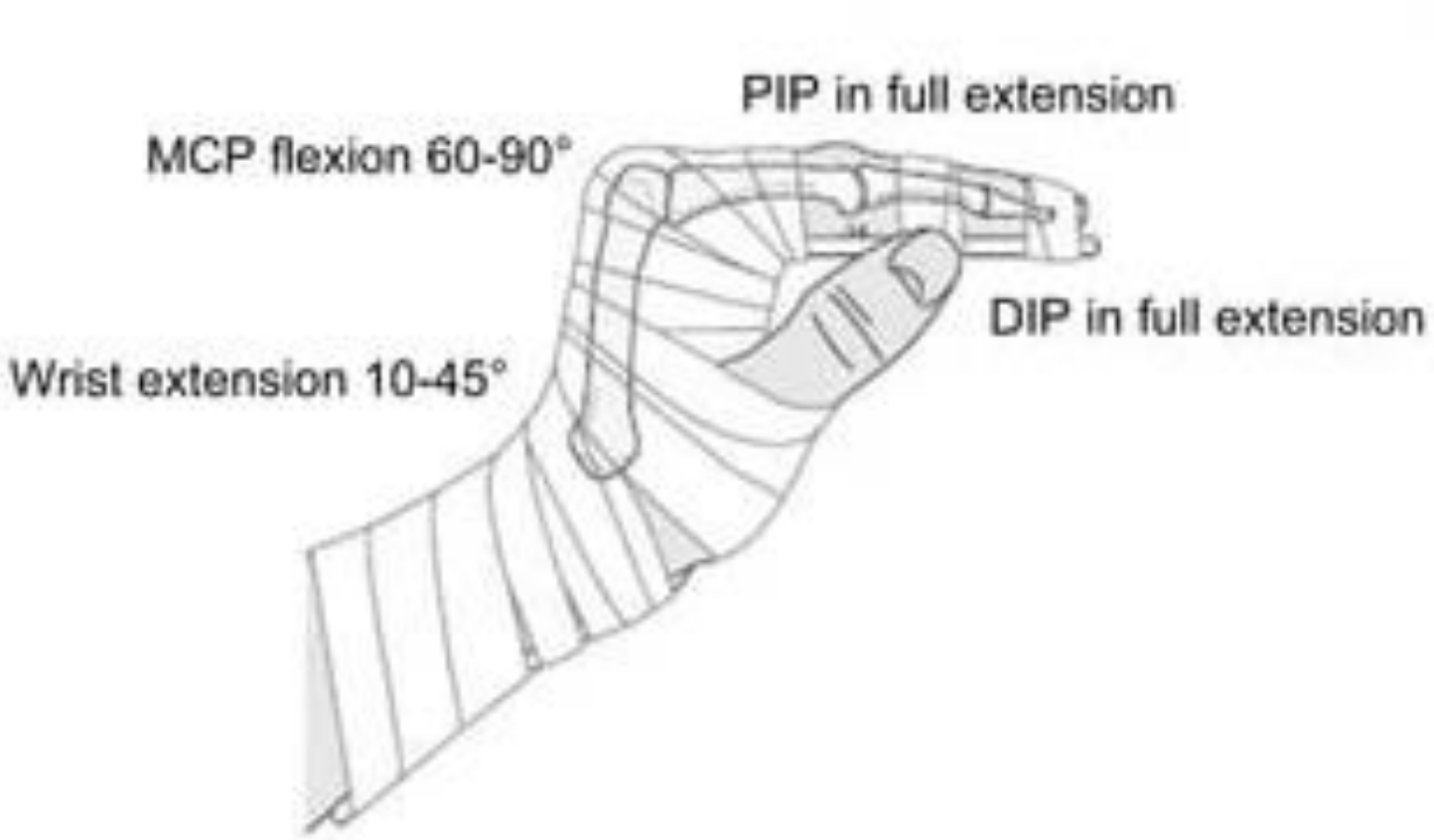
Flexor Injuries



Extensor Injuries



Burns


PIP in full extension
MCP flexion 60-90°
DIP in full extension
Wrist extension 10-45°

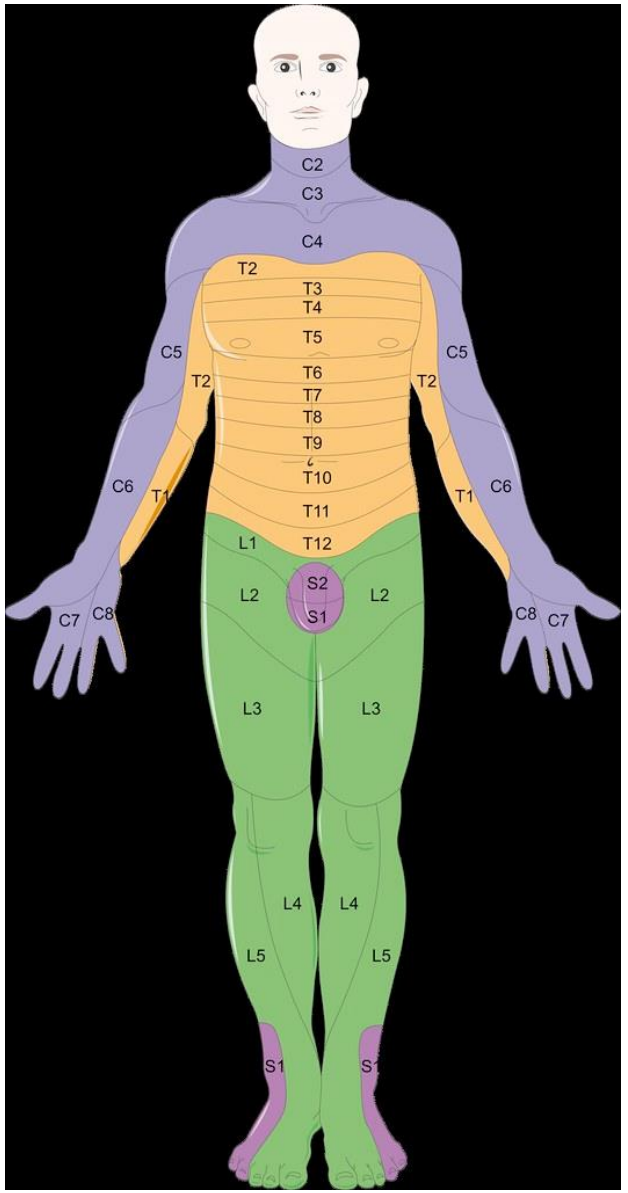
Differential Dx

- RA vs OA
- Cervical radiculopathy
- Pronator syndrome
- AIN Syndrome
- PIN Syndrome
- Superficial Radial nerve
- Scaphoid avascular necrosis
- Compartments

RA vs OA

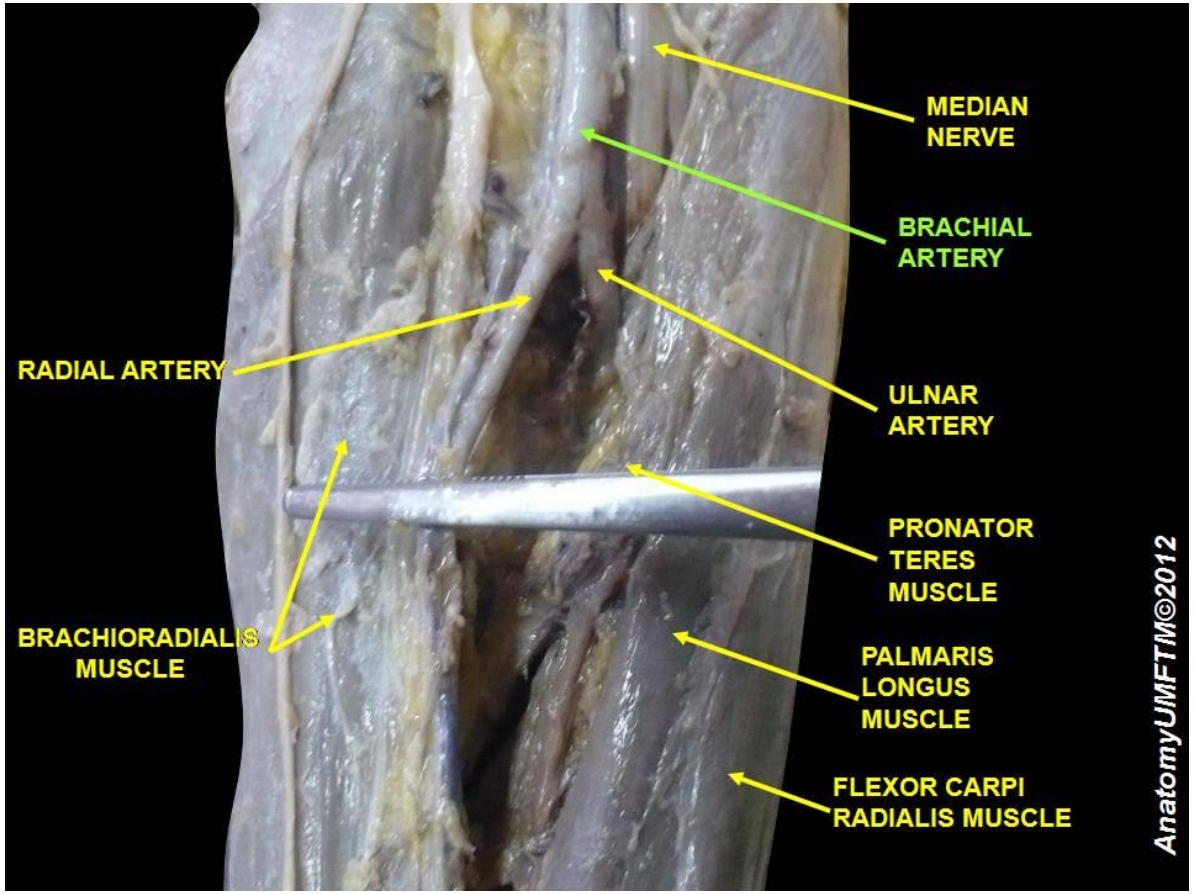
Cervical Radiculopathy

- Primarily C5, C6, T1, T2
- C/s cluster
  - + ULNT median nn
  - + spurlings
  - + distraction
  - <60* rot



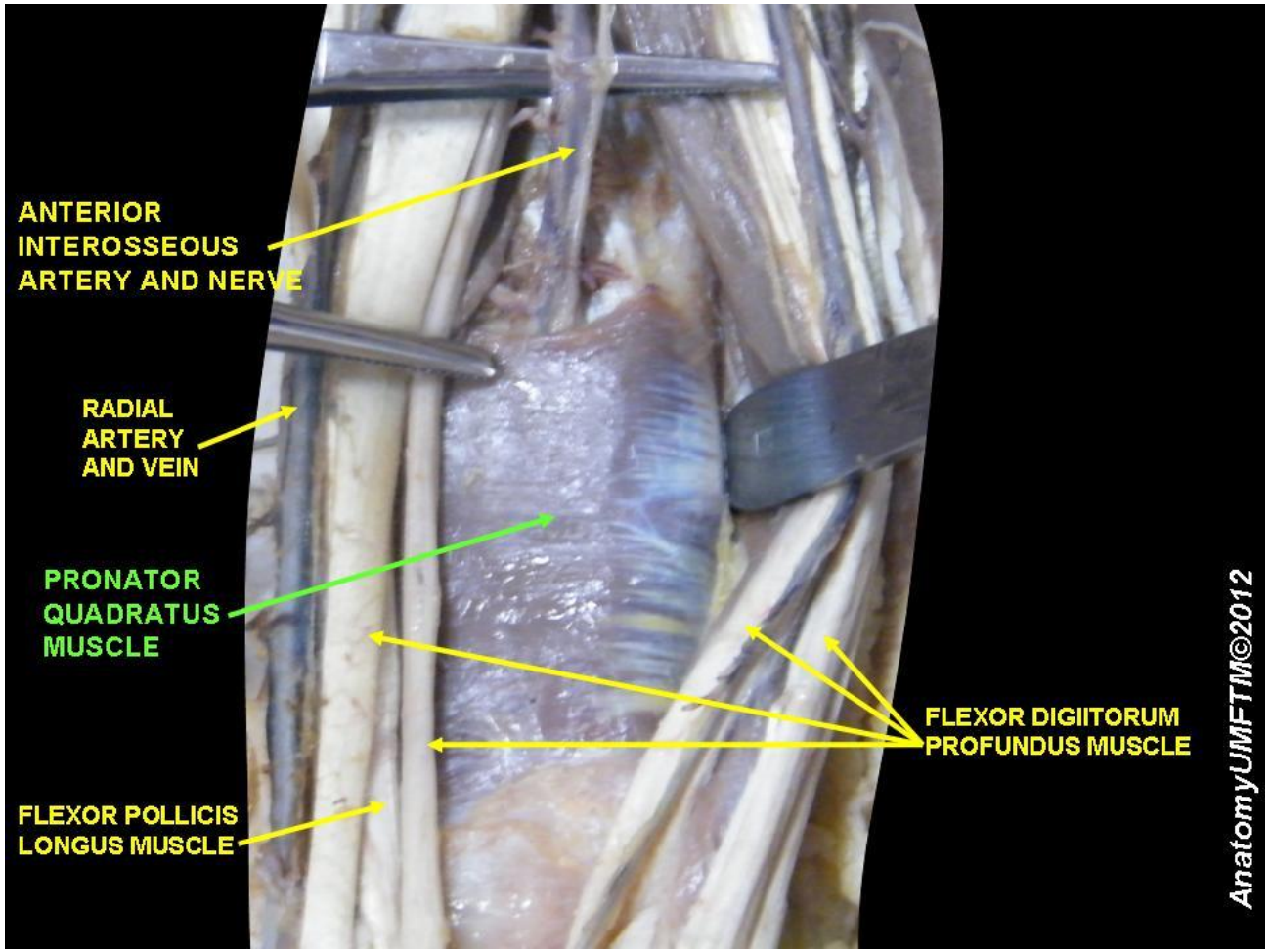
Pronator Syndrome

- Median nn compression
- Pain with pronation
- Pronator usually strong
  - Median nn branches before compression
- Motor AND sensory issues
- Tinels and Phalens (-) at wrist



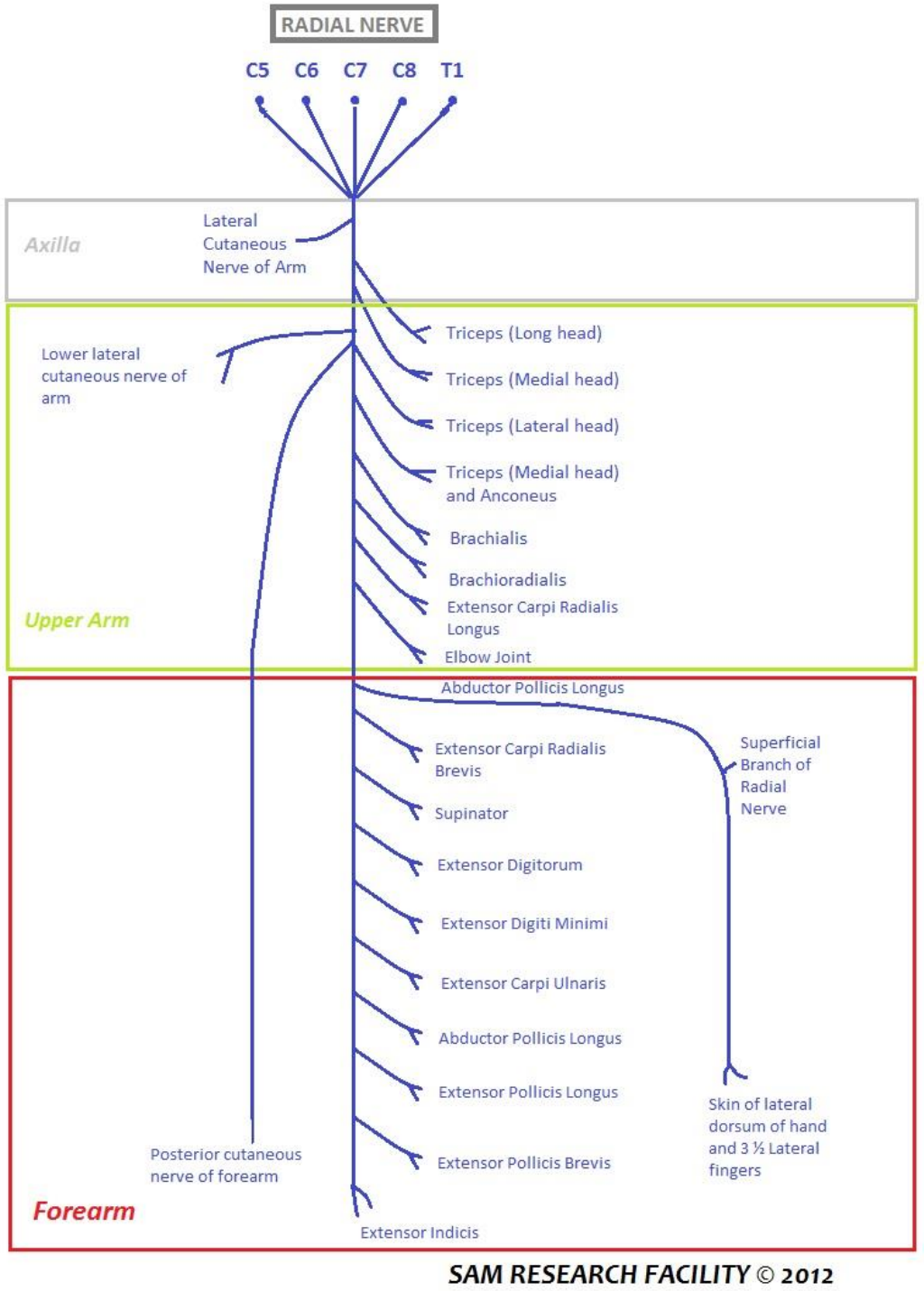
Anterior Interosseous Nerve

- ONLY motor
- Pinch weakness
- No sensory distrubances
- Innervates
  - FDP
  - FPL
  - Pronator quad
- No OK sign



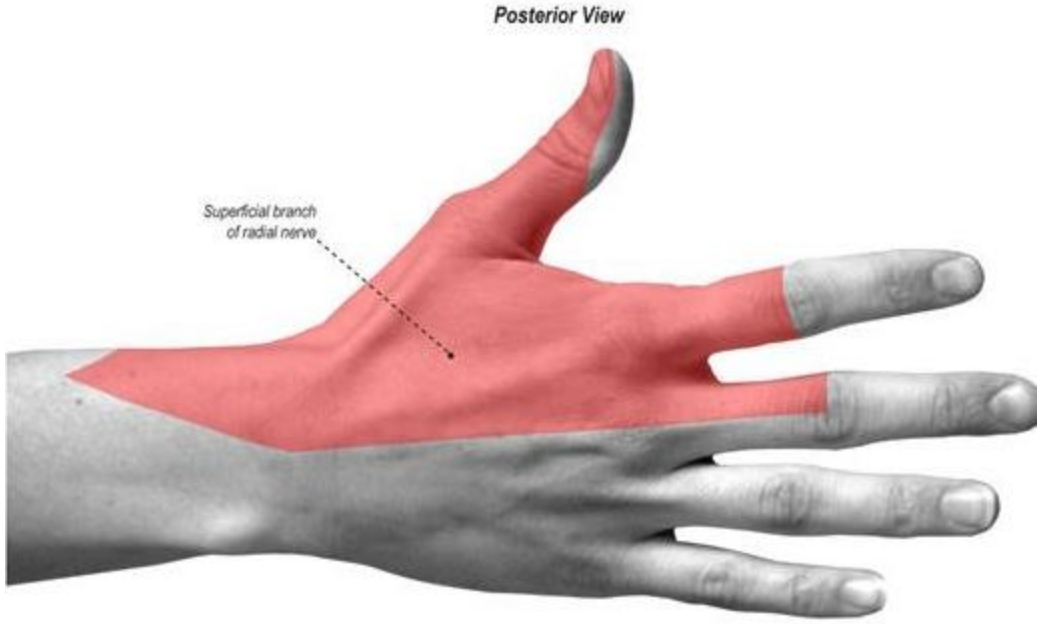
Posterior Interosseous Nerve

- Radial only innervates
  - Triceps
  - Brachioradialis
  - ECRL/B
  - All others are PIN
- Also called supinator syndrome
- Weak intrinsics andextension
- Domination by radial deviation
  - ECRL/B overwhelm weak ECU

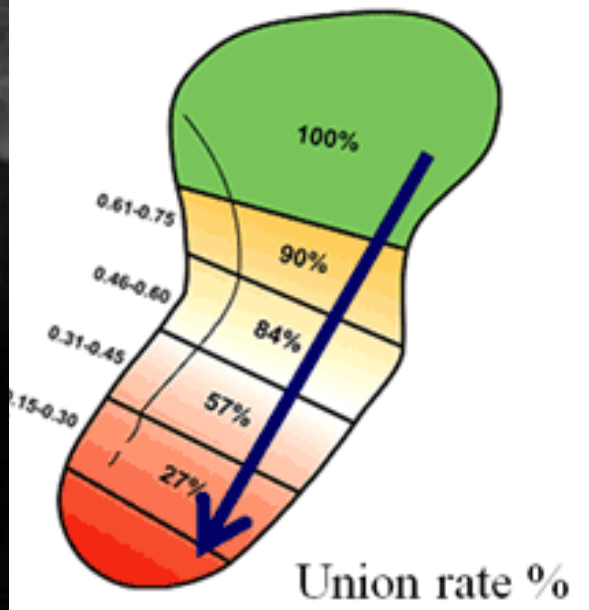


Superficial Radial Nerve

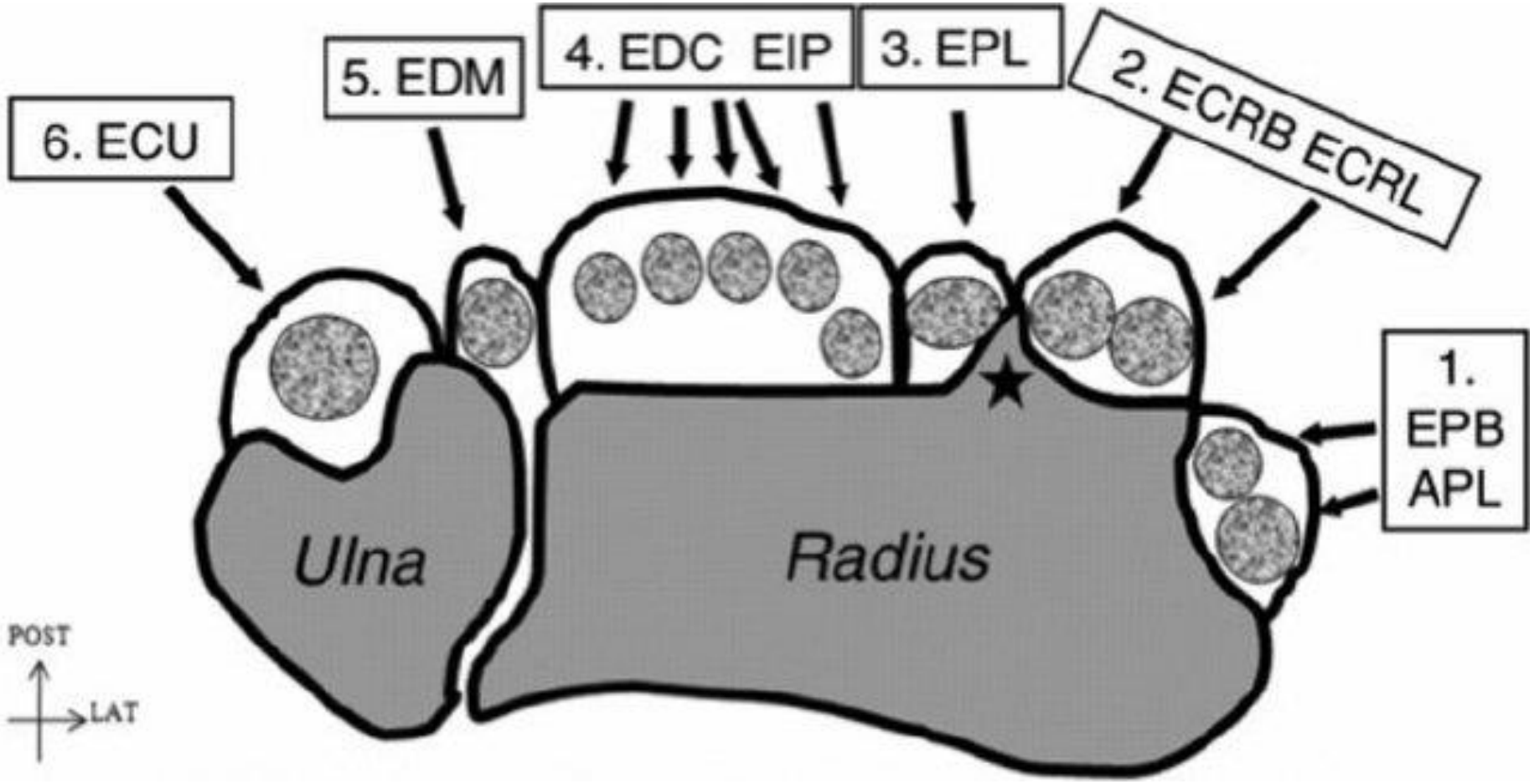
- Compression of superficial radial nn
- Sensory only
- Called dog leash syndrome



Scaphoid Necrosis



Compartments



Question 1

- A patient presents with an inability to form the table top position with their hand. Passively, the PT finds that they can achieve the position, but when the patient actively attempts to perform the motion the DIP joints end up flexing. Based on this information, what muscle group would **BEST** benefit from strengthening?

1. Flexor digitorum profundus
2. Flexor digitorum superficialis
3. Lumbricals
4. Dorsal interossei

Question 2

- A patient complains of pain in their right thumb that is constant in nature. They have a positive upper limb neural tension test for the median nerve, however no loss of sensation or tingling in the thenar region. What other test would be the **MOST** appropriate to help diagnose this condition?

1. Spurlings test
2. Phalen's test
3. Cervical flexion ROM
4. Froment's test

Question 3

- A patient presents status post a hand burn. They have been placed in the POSI position for the past 6 weeks and are now cleared for range of motion. What stretch would be the **MOST** beneficial to restore finger function?

1. MCP flexion and IP extension
2. MCP extension and IP flexion
3. MCP abduction
4. Wrist extension with MCP flexion

Question 4

- A patient complains of right thumb pain following a vibratory injury that occurred two days ago. The patient was swinging a golf club and impacted the ground instead of the ball. They complain of the pain at the base of the thumb/wrist region. Inspection shows swelling in the region and limited ROM and MMT due to pain. Based on these findings, what is the **MOST** appropriate intervention for this patient?

1. Place in a thumb spica splint
2. Use modalities to reduce inflammation
3. Refer out to MD for imaging
4. Begin pain free isometric exercises

Question 5

- A patient with rheumatoid arthritis presents with a swan-neck deformity of their 4th digit. The deformity is found to be mobile and responsive to mobilization techniques. What mobilization techniques would be the **MOST** appropriate for this patient?

1. DIP extension and PIP flexion
2. MCP extension, DIP extension, and PIP flexion
3. DIP flexion and PIP extension
4. MCP flexion, DIP flexion, and PIP extension

Feedback? Let Us Know!

We would love to get your general feedback on today's session and ideas for subject matter for future Spotlight Sessions!

SPOTLIGHT *Series*

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