

Hand Examination

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Objective

- Take proper history of patients presenting with hand pathologies
- Perform a comprehensive hand exam
- Formulate a differential diagnosis based on history and clinical exam

Outline

- History taking
- Physical Exam
- Examples

History

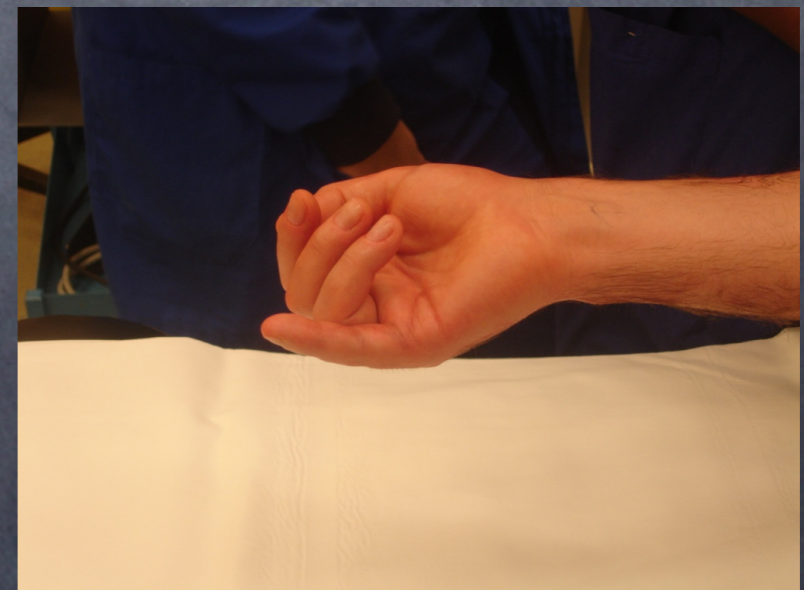
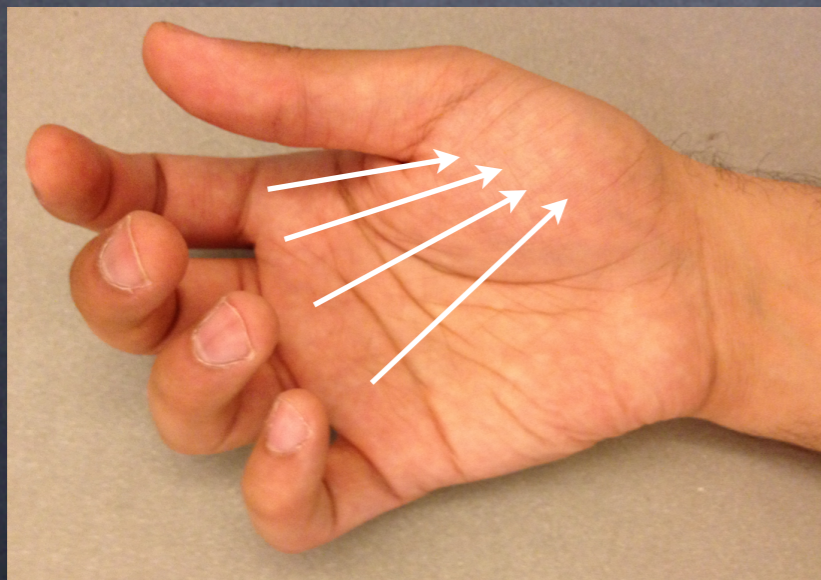
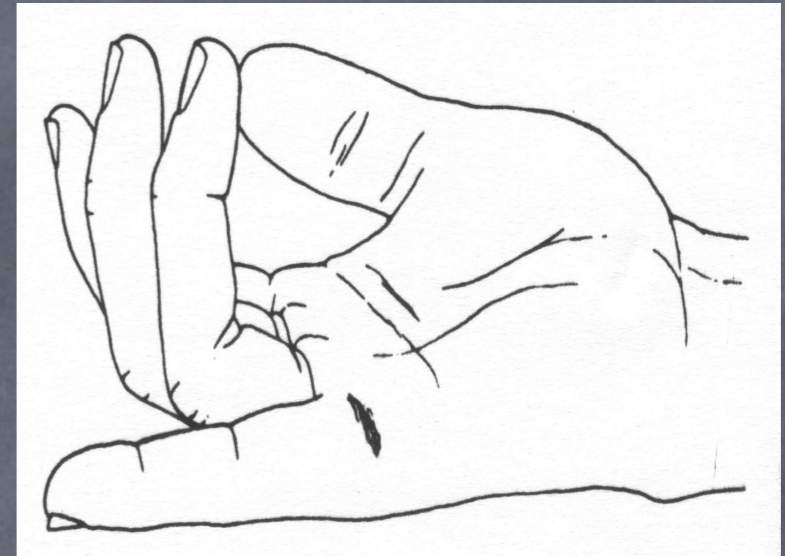
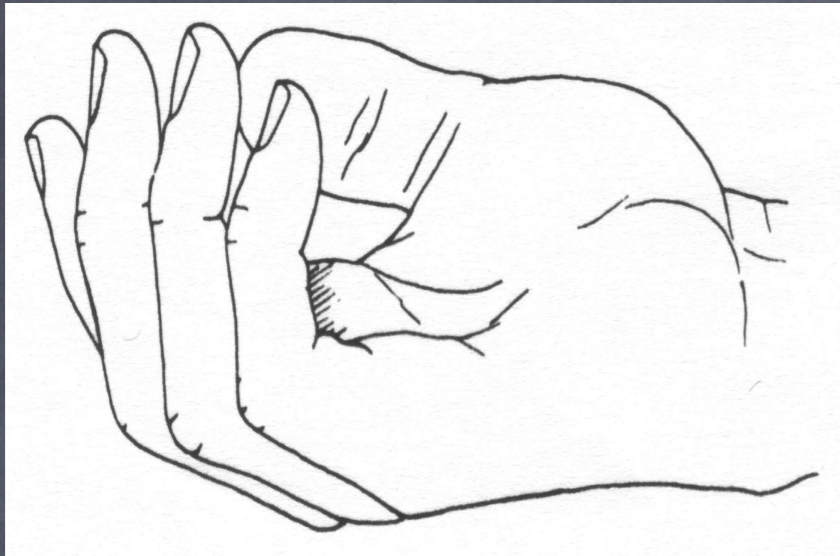
- Age & and dominance
- Occupation & hobbies
- Previous hand injuries/surgeries
- PMH (RA, OA, DM ...)
- Medications & allergies
- Tetanus

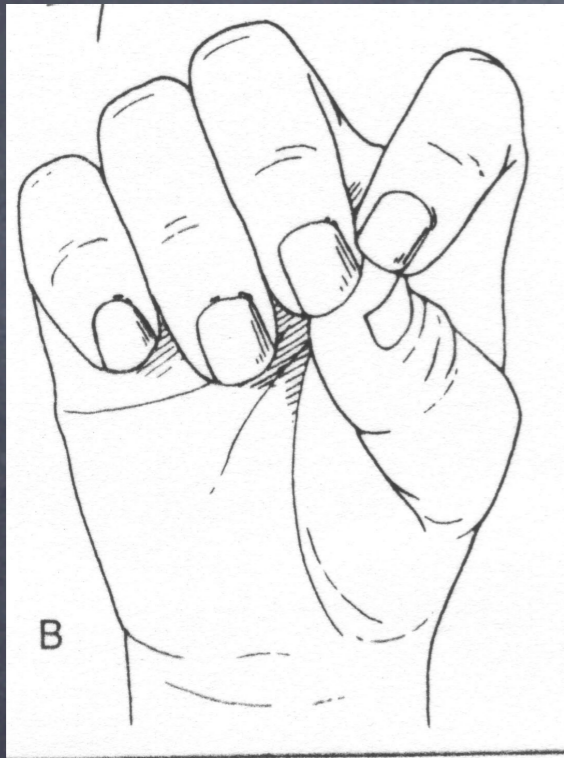
Exam

- Inspection
- Palpation
- Motor
- Sensory
- Vascular

Inspection

- Posture / cascade
- Deformity
- Rotation or scissoring
- Wasting or swelling
- Color







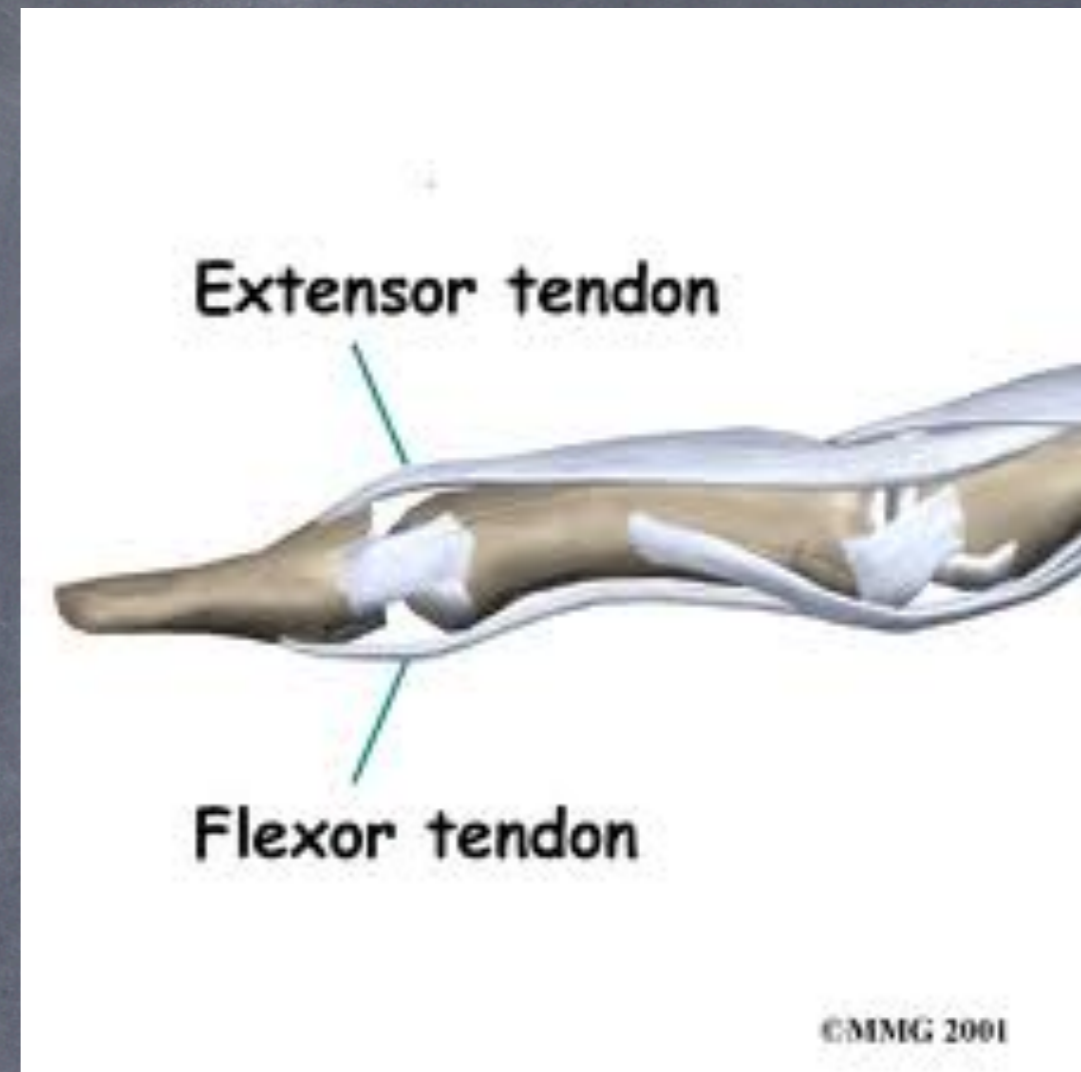
Palpation

- Tenderness
- Temperature (warm or cold)
- Thrill
- Range of motion (ROM)
 - Active
 - Passive

ROM

• For full & normal AROM you need

- Normal skin
- Normal nerves
- Normal tendons
- Normal joints



ROM

- If pt. is unable to actively move the finger
 - you put it through passive ROM (PROM)
 - FULL PROM = problem in tendon or nerve
→ tenodesis
 - Incomplete PROM = problem in joint or scarring (skin or tendon)
→ X-ray

Tenodesis







Motor

- ◉ Cervical Nerve Root (Brachial Plexus)
 - ◉ C5 → Deltoid
 - ◉ C6 → Biceps
 - ◉ C7 → Triceps
 - ◉ C8 → Finger Flexors
 - ◉ T1 → Interossei

Motor

- ◉ Peripheral Nerves:

- ◉ Radial:

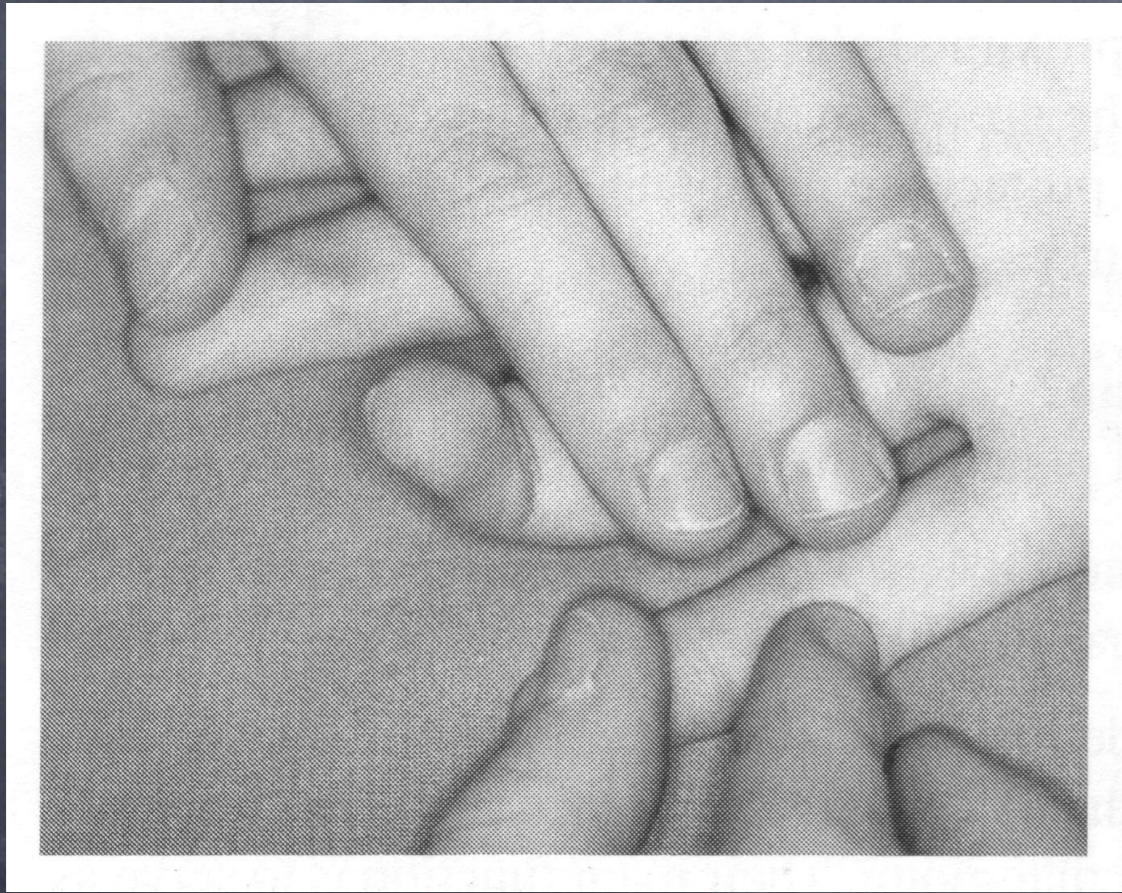
- ◉ wrist, finger and thumb extensors

- ◉ Median:

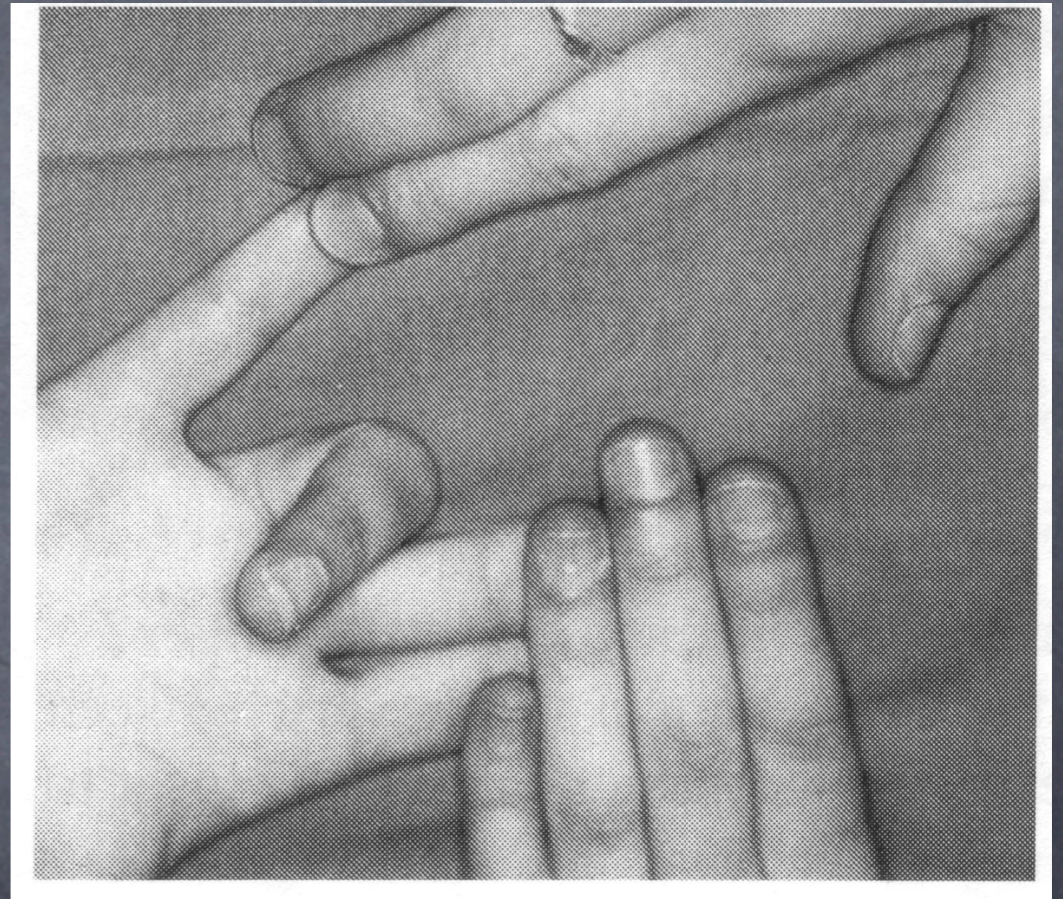
- ◉ FCR, PL, FDS, FDP(2,3), FPL, thenar muscles (APB), 2 Lumbricals

- ◉ Ulnar:

- ◉ FCU, FDP(4,5), hypothenar muscle, adductor pollicis, 2 lumbricals, interossei (1st DI)

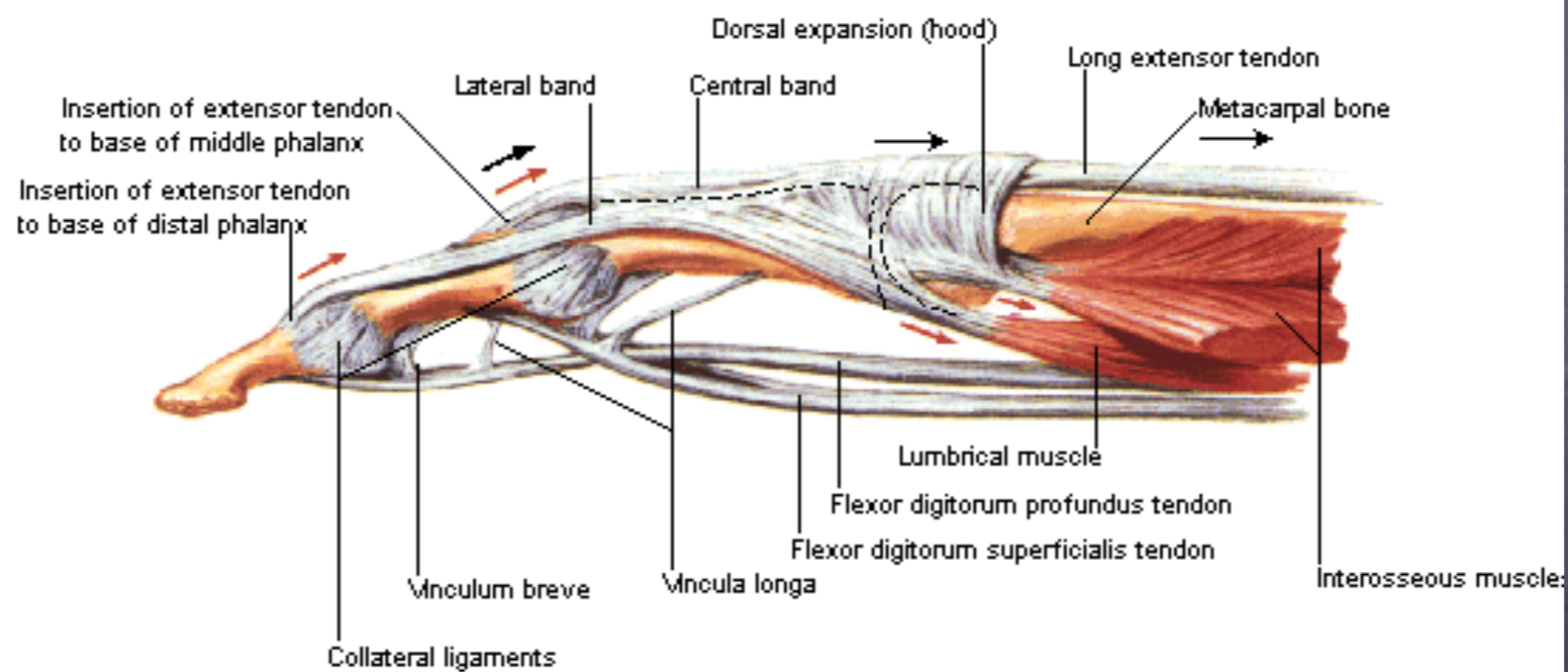


Flex Dig Prof (FDP)
Sup (FSD)



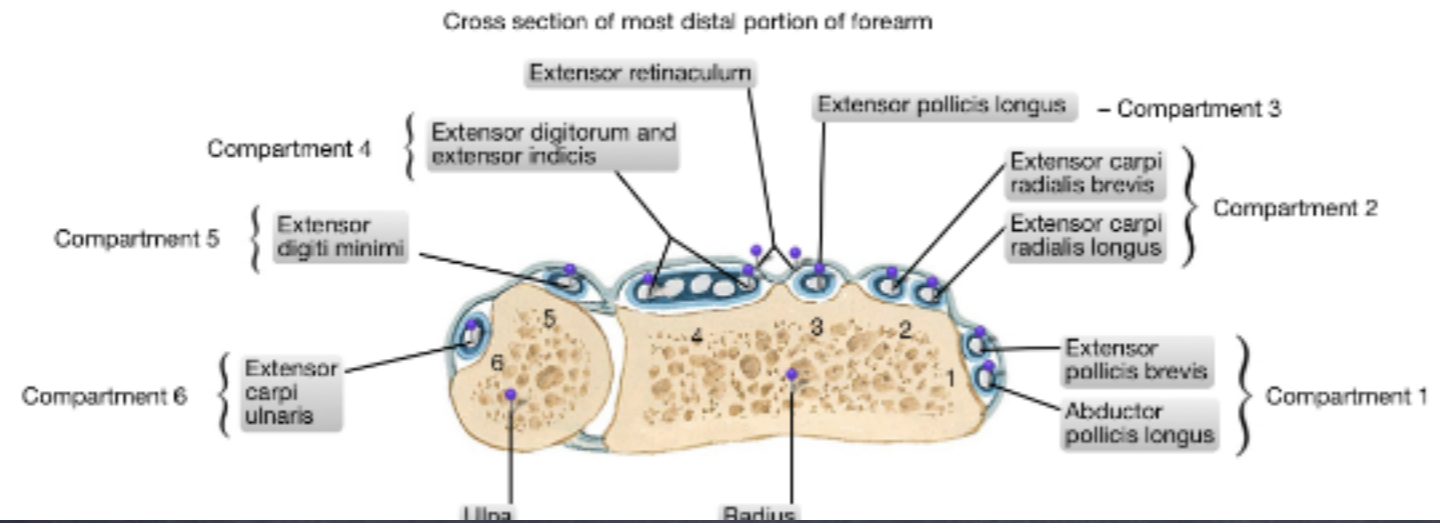
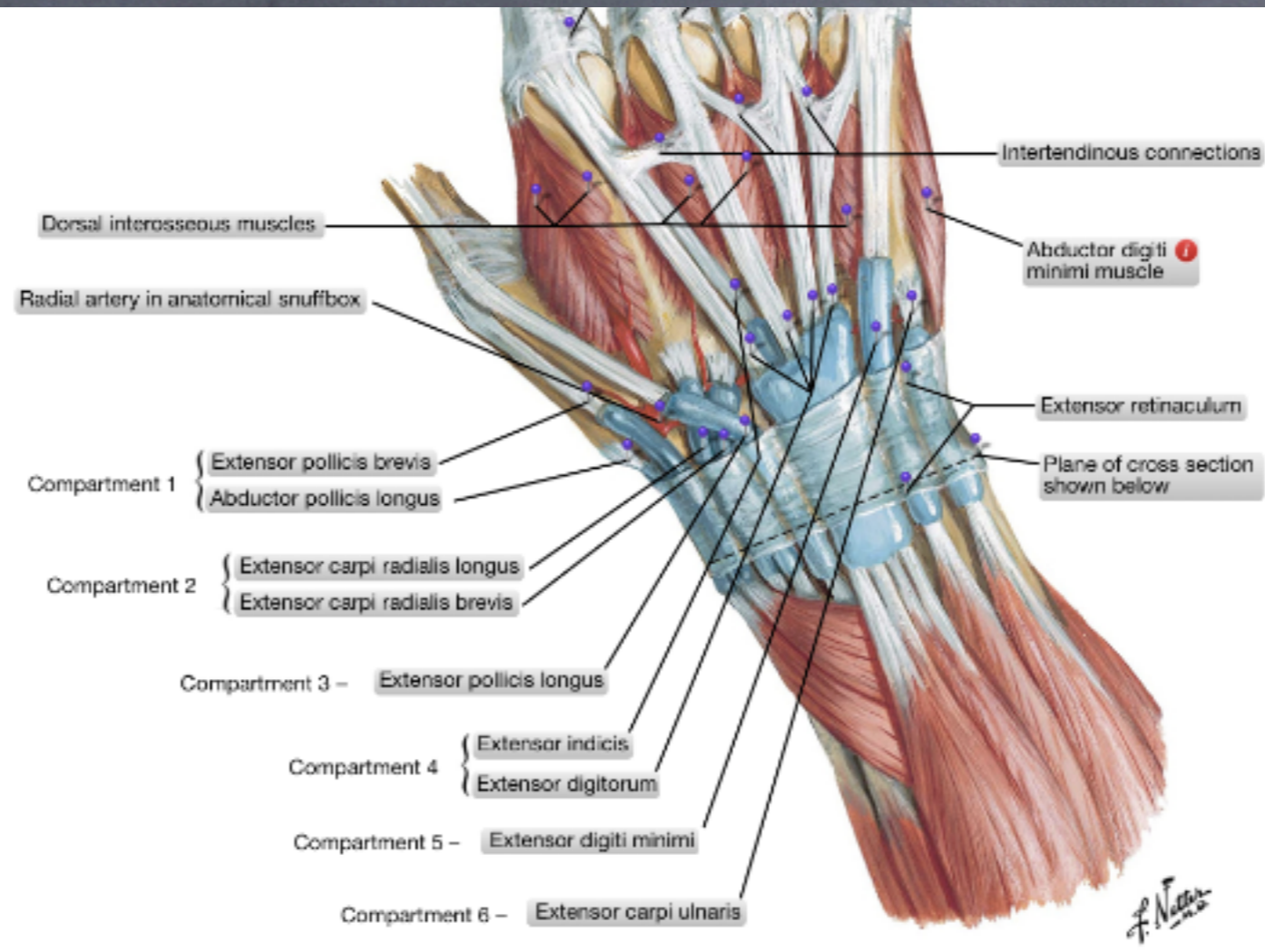
Flex Dig

Flexor and Extensor Tendons in Fingers Extended - Lateral View

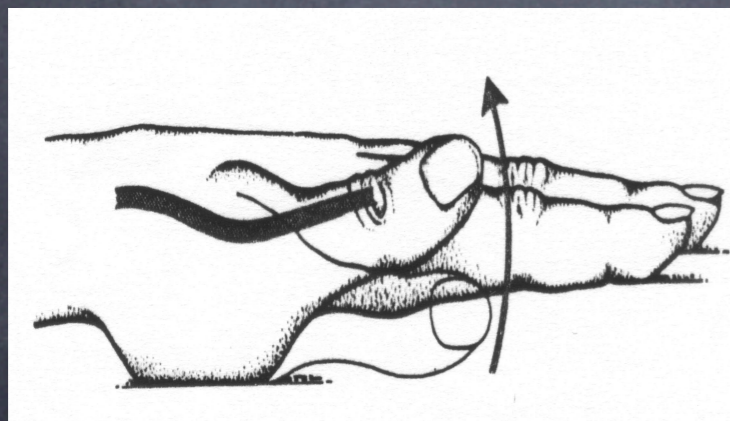
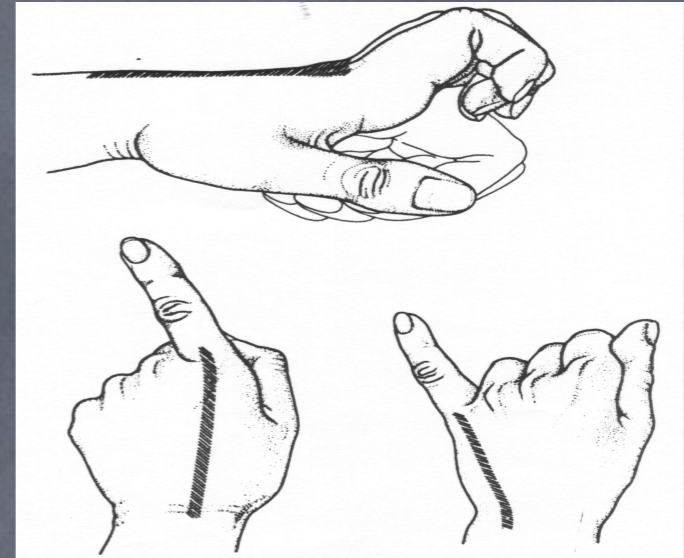
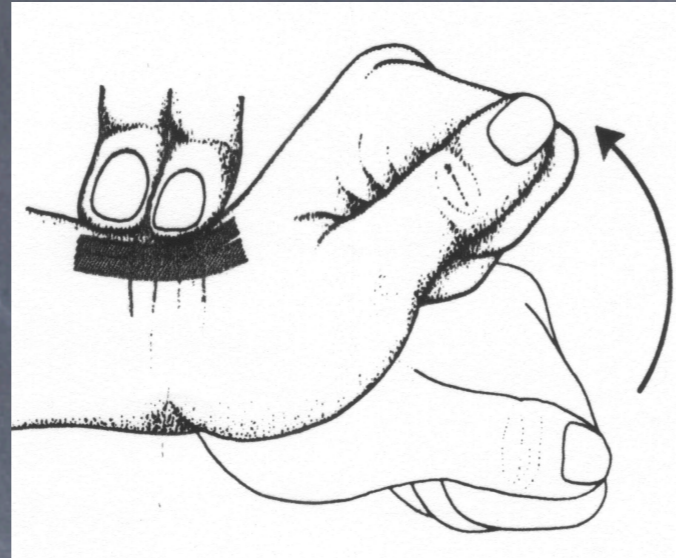
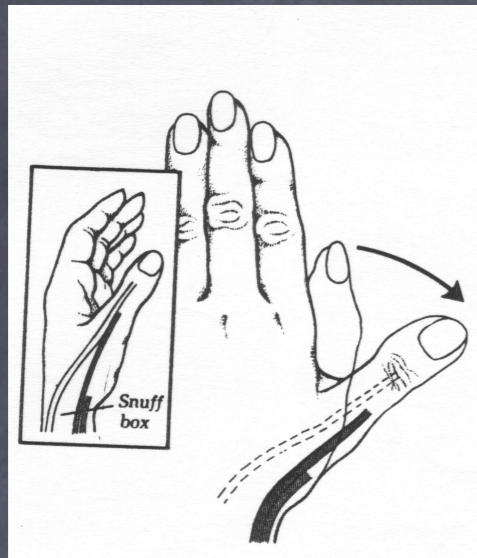


Note: black arrows indicate pull of long extensor tendon; red arrows indicate pull of interosseous and lumbrical muscles

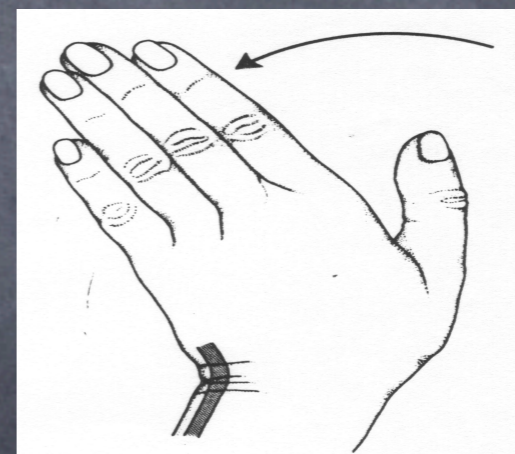
F. Natter
M.D.



APL/EPB ECRL/ECRB EDC/EIP/EDM



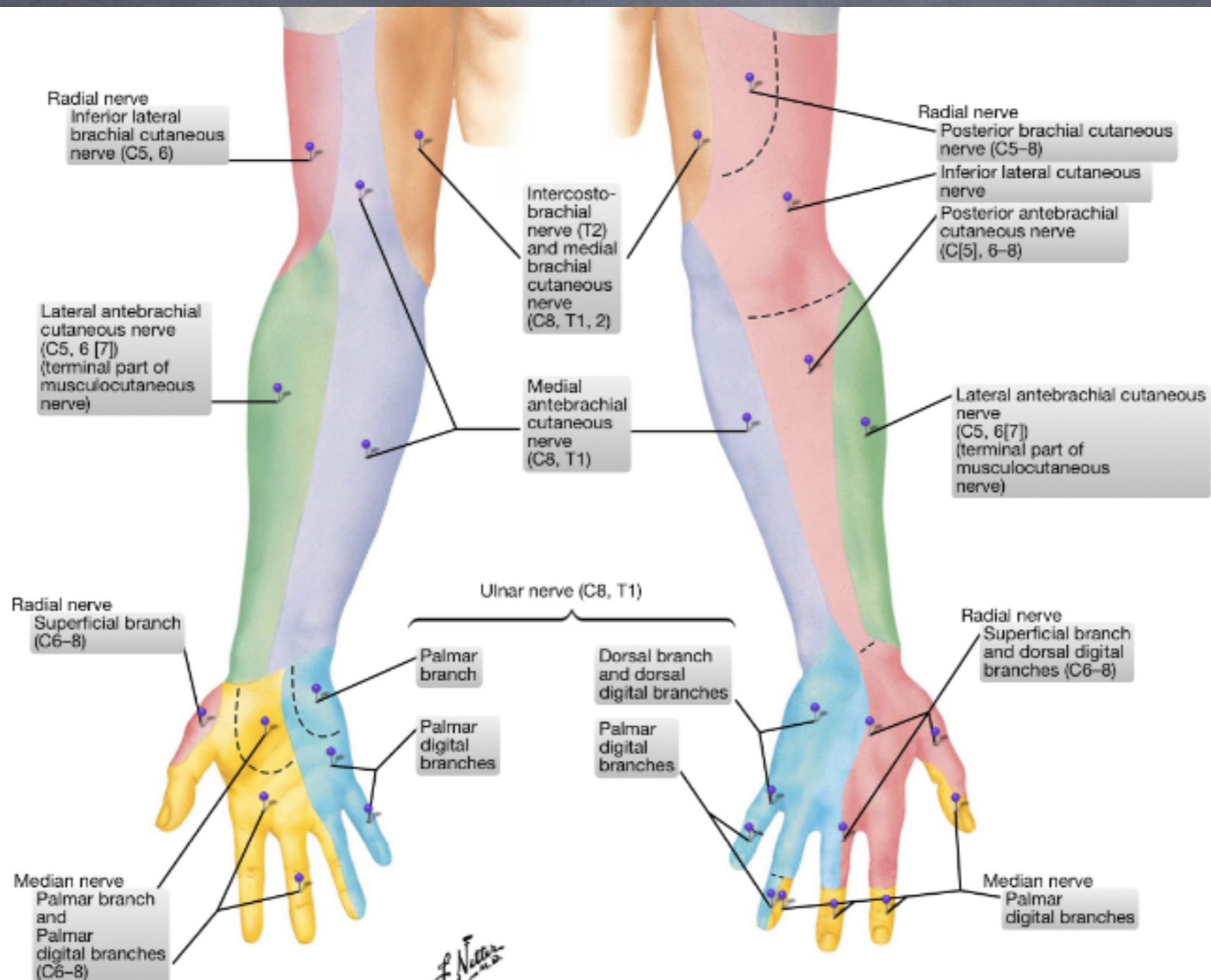
EPL



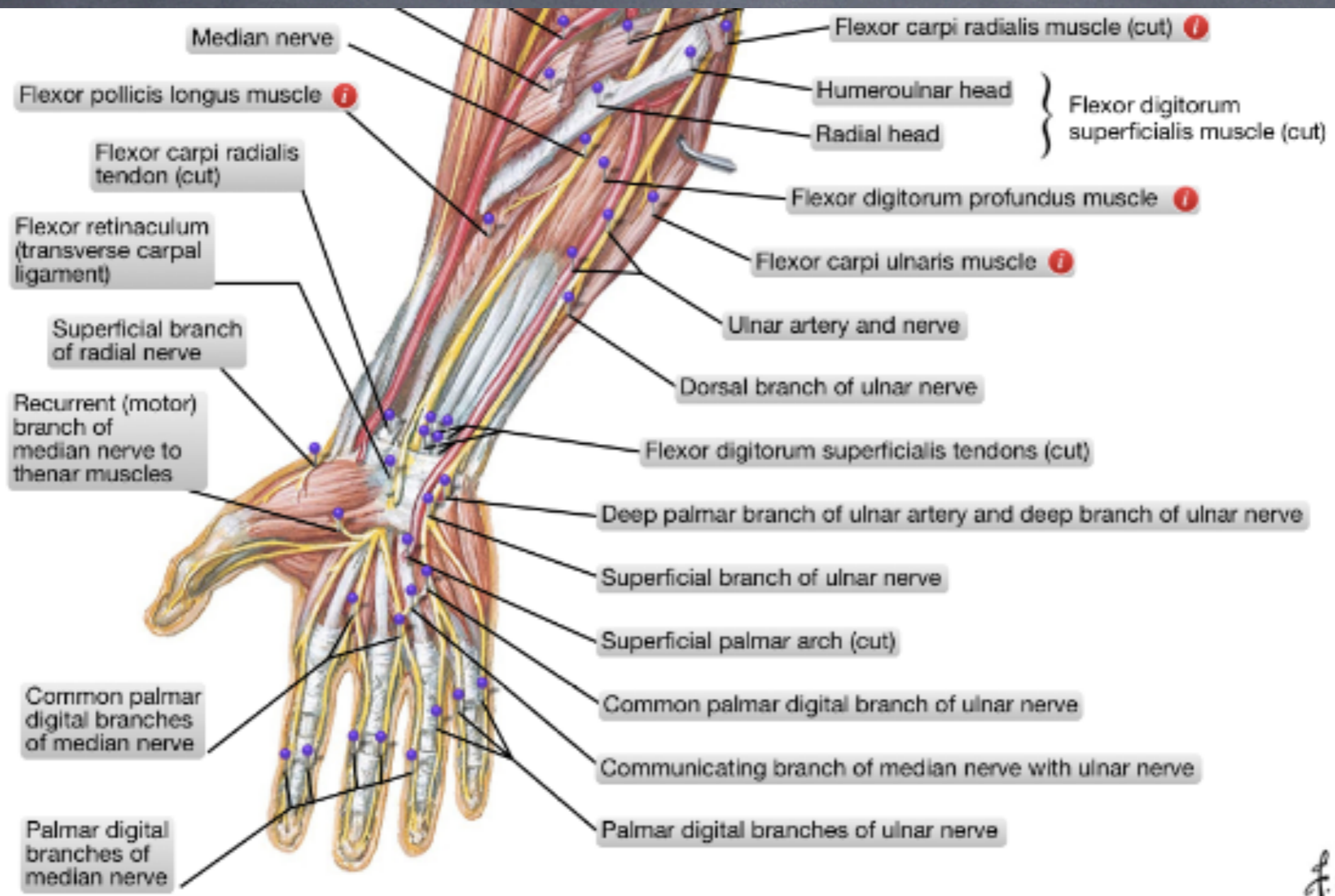
ECU

Sensory Exam

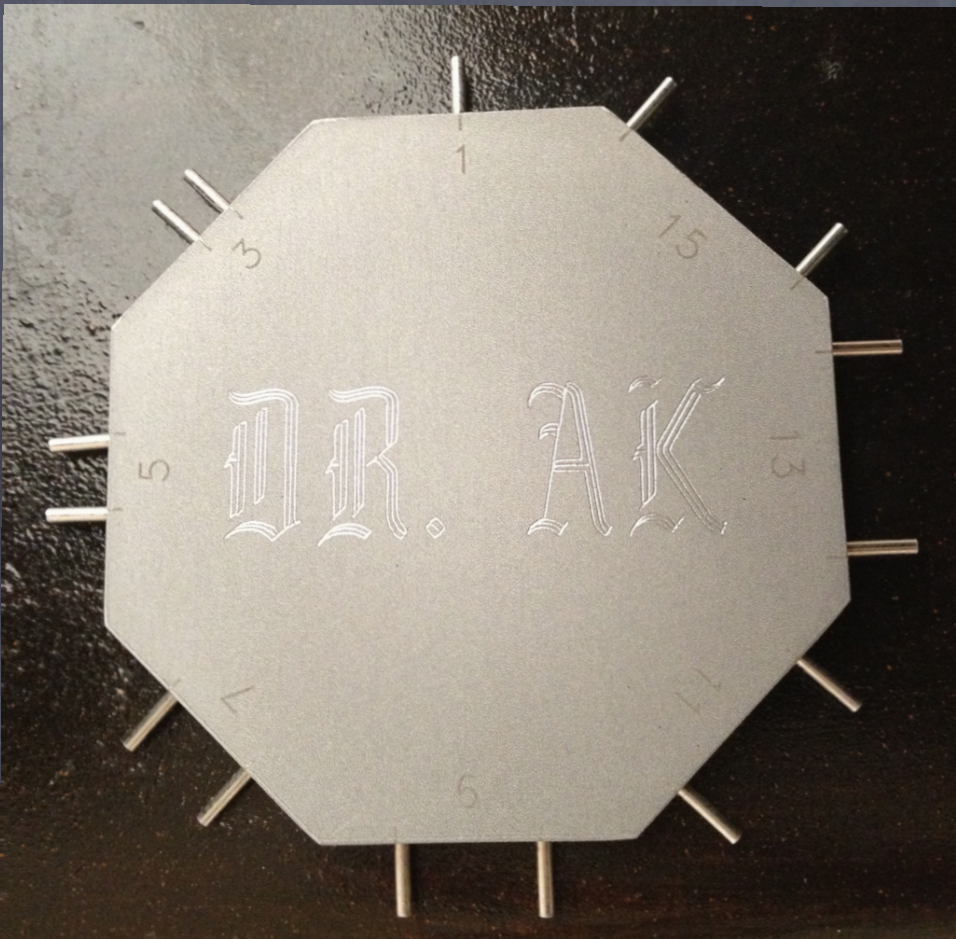
- Types of sensation:
 - Pain
 - Pressure
 - Light touch
 - Vibration
- Moving 2 point discrimination (M2PD)
 - 3-5 mm N



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



F. Netter M.D.



Vascularity

- ◉ Color:

- ◉ White --> ischemic (arterial compromise)

- ◉ Blue --> venous congestion

- ◉ Black --> Gangrene

- ◉ Temperature

- ◉ Allen's test

- ◉ Capillary refill

Allen's Test

- Two main arteries in the hand
 - Radial
 - Ulnar
- Two arteries in each digit
 - Radial digital artery
 - Ulnar digital artery

