


LOYOLA UNIVERSITY MEDICAL CENTER
Loyola University Chicago

Department of Orthopaedic Surgery & Rehabilitation

Examination of the Hand, Wrist and Forearm


February 19, 2004



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The Purpose of the Shoulder and Elbow is to position The HAND



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Physical Examination is derived from Anatomic Knowledge




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Superficial Anatomy

- Anatomic Snuff Box
 - Extensor Pollicis Brevis
 - Extensor Pollicis Longus
 - Palpate Scaphoid



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Superficial Anatomy Palpate

- Distal Radius
- Distal Ulna

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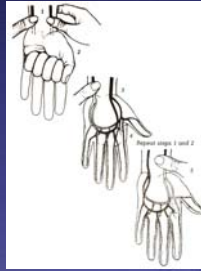
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Superficial Anatomy

- Metacarpophalangeal Joint (MCP)
- Proximal Interphalangeal Joint (PIP)
- Distal Interphalangeal Joint (DIP)

Vascular Anatomy

- Radial Pulse
- Ulnar Pulse
- Allen Test



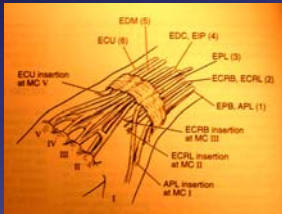
Superficial Anatomy

- Thumb Extensor Tendons
- 3 Joints = 3 Tendons



Superficial Anatomy

- Extensor Digitorum Communis



Superficial Anatomy

- Flexor Carpi Radialis



Superficial Anatomy

- Flexor Carpi Ulnaris
 - Palpate tendon
 - Can you palpate the pisiform ?



Palmaris Longus


- May not be present

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Heberden Node

- Osteoarthritic Marginal Osteophytes involving the Distal Inter-Phalangeal Joint (DIP)




1977 ANNEE MONDIALE DU RHUMATISME

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Bouchard Node

- Osteoarthritis with Marginal Osteophytes at Proximal Inter-Phalangeal Joint (PIP)



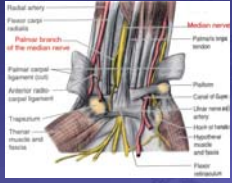
1977 ANNEE MONDIALE DU RHUMATISME

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Provocative Tests Carpal Tunnel Syndrome

- Phalen Maneuver
- Tinel Sign over Median Nerve



Radial artery
Flexor carpi radialis
Palmar branch of the median nerve
Palmar carpal ligament (sac)
Anterior carpal-carpal ligament
Trapezoid
Trapezoid-metacarpal ligament
Flexor digitorum profundus
Flexor digitorum superficialis
Flexor pollicis longus
Median nerve
Palmar longus tendon
Pisiform
Capitulum of scaphoid
Ulnar tunnel
Hypodermis
Skin
Flexor carpi ulnaris

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Provocative Test De Quervain Tenosynovitis

- Finkelstein Maneuver





Abductor pollicis longus
Extensor pollicis brevis

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Range of Motion

- Forearm Rotation
 - Pronation
 - Supination

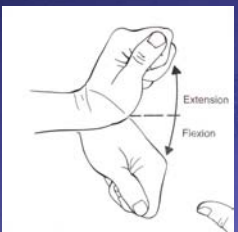
Supination Pronation

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Range of Motion

- Wrist
 - Flexion = Palmar Flexion
 - Extension = Dorsi Flexion



Extension
Flexion

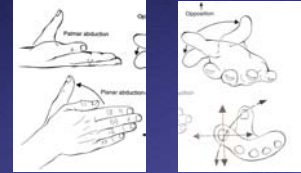
Range of Motion

- Wrist
 - Radial Deviation – toward the radius
 - Ulnar Deviation – toward the ulna



Range of Motion

- Thumb
 - CMC
 - Abduction
 - Adduction
 - MP
 - Flexion
 - Extension
 - IP
 - Flexion
 - Extension



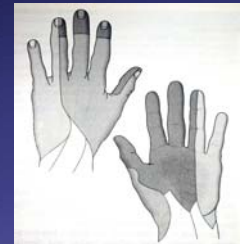
Range of Motion

- Finger
 - MP
 - Flexion
 - Extension
 - Abduction
 - Adduction
 - PIP & DIP
 - Flexion
 - Extension



Physical Examination

- Sensory function
 - Distributions of nerves to hand
 - Radial
 - Median
 - Ulnar

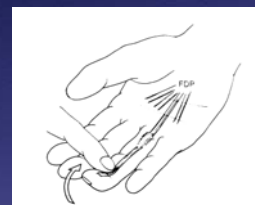


Physical Examination

- Two-point discrimination
 - Smallest distance that patient can correctly identify on 2/3 trials
 - 5 mm normal
 - >15 mm absent

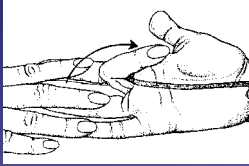
Physical Examination

- Flexor Digitorum Profundus



Physical Examination

- Flexor Digitorum Superficialis
 - Extend all other digits to isolate FDS and inhibit motion from FDP



Physical Examination

- Motor exam
 - Median Nerve
 - All muscles of palmar forearm except:
 - FCU
 - FDP ring
 - FDP little



Physical Examination

- Motor exam
 - Ulnar Nerve
 - All muscles of hand except:
 - APB
 - Opponens Pollicis
 - FPB superficial head
 - Lumbricals index & middle

