HAND EXAMINATION

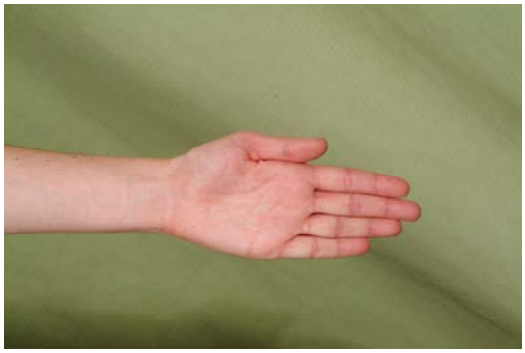
Dominant hand
Age
Occupation
Injury: Mechanism of injury
Pain: Site
Factors influencing
Limitation: ADL, Work, Hobbies
Arthritis: Morning stiffness, multiple joint, familial
Any Clicks, weakness, Pins and needle in the hand
Screening test for shoulder and elbow: Reach back of your head
Can you touch the back?

A.Inspection

1. Dorsum of the hand
Interossie Wasting
Scar
Any shiny skin
Nail changes
Comment on Inferior radio-ulnar joint
Comment on finger deformity
Any wrist tenosynovitis

2. Lateral profile of the hand
Wasting of thenar muscle
Carpo-metacarpal joint subluxation
Translation of carpal bones

3. Palmar aspect [supination]
Thenar or Hypothenar wasting
Evidence of Dupuytren's contracture



2. ROM Wrist

Dorsiflexion 70º
Palmarflexion 80 º

Ulnar deviation 30 º
Radial deviation 20 º

Pronation 90 º
Supination 90 º

Functional ROM: Dorsiflexion and Palmarflexion 40º
Radial-Ulnar deviation arc of 40 º
Rotation 50 º in each direction

Carpo-metacarpal joint

Palmar Abduction 70 º
Radial abduction 70 º

Metacarpo-phalangeal joint

Flexion 50º
Extension 0
Abduction 20 º

Interphalangeal joints

Flexion 90 º
Extension 20 º

Metacarphophalangeal joint

Extension: 30 º
Flexion: 90 º

C.Palpation

Palpate Lister's tubercle at the distal end of the radius
Distal to Lister's tubercle is Lunate
Lateral to lunate is Scaphoid;
Medial to lunate is Triquetrum

TFCC
Look for deep palpation between ECU and FCU

D. Special tests

TFCC compression test

Examiner support the patient's forearm
Axial loading on the patient's hand
Wrist in ulnar deviation i.e. compressing the TFCC
Palmar and dorsiflexion causes pain or click

Examination of FDS and FDP:

FDS

The tendons of FDS work individually whereas FDP tendons work as a unit

Extend rest of the finger in extension. This will make FDP in finger ineffective

And the flexion at PIP is only by intact FDS

FDS

FDP

FDP:

Stabilize finger proximal to DIP

Ask the patient flex at DIP

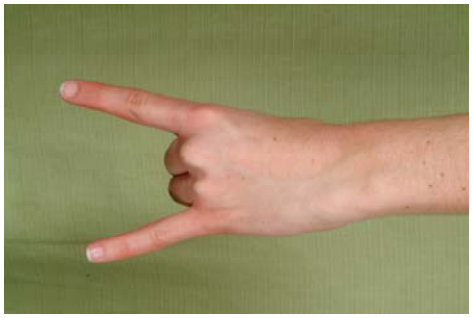
Examination of Extensor Digiti minimi and Extensor indices

Index and little finger have 2 extensors

Stag horn sign selectively examines EDMi and EI

If full extension of the little and index finger is possible with flexion of middle and ring:

t means EDMi and EI are intact



Look for ECU subluxation

In Rheumatoid arthritis, feel the ECU tendon on active forearm rotation. Subluxation can be felt.

Tests for median nerve at wrist:

Tinel's sign

74% sensitivity, 91 % specificity

Supine and tap between palmaris longus and flexor carpi radialis at the wrist crease

Positive sign produces parasthesia in the distribution of the median nerve

Phalen's sign
61% sensitivity, 83% specificity
Elbows were on the table allowing and the wrists to passively flex.
If symptoms provoked within 60 seconds, then the test is positive

Median nerve compression test
86% sensitivity, 95% specificity
Forearm in supination, wrist flexed to 60º
Now digital pressure applied with one thumb over the carpal tunnel.
Test positive if paraethesiae or numbness within 30 seconds

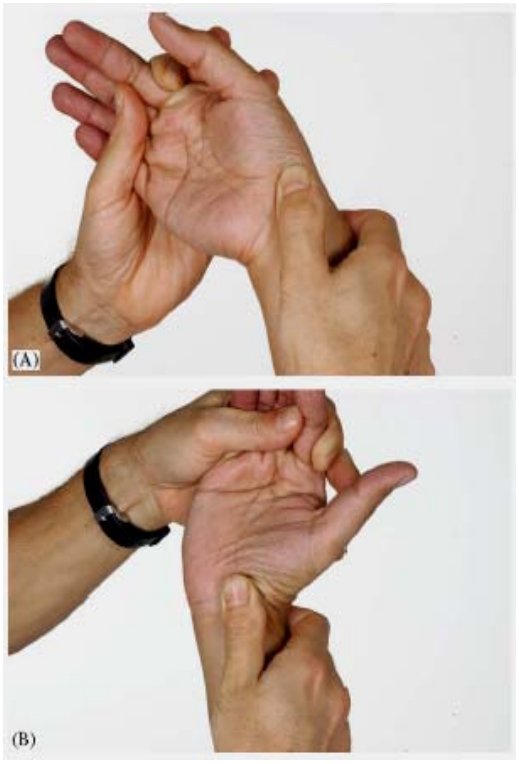
Abductor pollicis Brevis
Thenar muscle supplied by recurrent Branch of median nerve

"Pen test" [refer neurology

Instability tests:
1. Ballotment or Regan's test for VISI [Volar intercalated segment instability]
Wrist in prone
Examiners one thumb over the dorsum of Lunate and other over the dorsum of the Triquetrum
Fingers over volar aspect of the carpal bones
Now try to displace Triquetrum in relation to Lunate

Kirk-Watson's test for DISI [Dorsal intercalated segment instability]

For Left hand of the patient use the examiner's right thumb over the Scaphoid tuberosity. With other fingers over the dorsal wrist
Now the wrist is moved from ulnar to radial deviation maintaining pressure over the volar aspect of Scaphoid tuberosity
When radial deviation, Scaphoid tend to flex which was resisted by examiners thumb



In DISI, there is subluxation of the proximal part of the Scaphoid on radial deviation due to lack of integrity of scapholunate ligament.

Release of pressure over the tuberosity: the proximal Pole of the Scaphoid suddenly pops back into place

Click may be positive in 30% of normal

3. **Midcarpal instability:**

The anteroposterior drawer test
One of the examiner's hands holds the patient's hand and with other hand applies axial traction while the other hand stabilizes the patient's forearm
Now draw the hand, in the anteroposterior direction

4. Ulnar Impaction syndrome

The ulnocarpal impaction manoeuvre.

The examiner moves the ulnar deviated wrist in a volar-to-dorsal direction while applying an axial load across the ulnar side of the wrist.

Pain or click suggest TFCC tear

Piano Key test

Ulnar head: Head prominent in pronation: when subluxation

Stabilize radius and move the head with other hand compared with opposite side: for pop, click or pain

Bunnell's test To check intrinsic contracture

When MPJ in hyper-extension, the contracted interosseous muscles limits flexion of the PIP

With flexion of the MP joint, the intrinsics are relaxed and more flexion at IPJ is possible.

When flexion at PIP is limited but remains same irrespective of MPJ position, an extrinsic tendon contracture should be suspected

Ulnar collateral ligament laxity

Examiner stabilizes metacarpal of the thumb

Check valgus on the thumb with MPJ in 0º and then in 30º flexion.

Laxity at 0 º and 30 º: Both Ulnar Collateral and accessory ligaments are disrupted

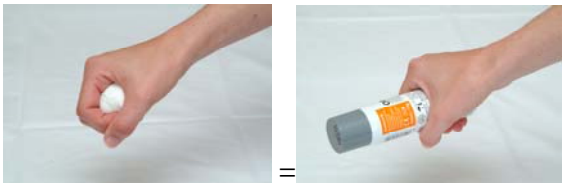
Laxity at 30 º alone: only UCL is involved

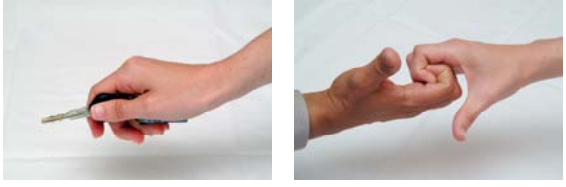
Prehension

Digital prehension

Lateral prehension [Key pinch]

Tip to tip prehension





Grip

Hook
Spherical
Cylinder
Fist

Do not forget:

Sensory and motor examination : Median. Ulnar, Radial nerves

Look for tendon rupture

Passive dorsiflexion of the wrist results in flexion of the fingers

Attitude of the fingers in a resting position may suggest rupture of tendon

Allan's test

Checks vascular integrity of the radial and ulnar artery

Ask the patient clench the fist.

Now examiner compresses both ulnar and radial artery.

On straightening of the fingers, normally blanching is seen

On releasing pressure on the artery. Circulation of the skin is promptly visible.

Now repeat the test by releasing one artery at a time to check the competency of the artery