



# MUSCULOSKELETAL MEDICINE

## ELBOW, WRIST AND HAND

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# The Elbow

- If there was an injury or the patient has failed to improve with initial treatment, order a radiograph:
- AP/Lateral/Oblique

# Elbow

## Minor trauma

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- Examples: nondisplaced radial head/neck fractures; chips off of epicondyle or coronoid process; fat pad sign (posterior).
- Sling for 2 weeks, then PT to regain ROM

# Minor Elbow Trauma



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# Elbow Pain

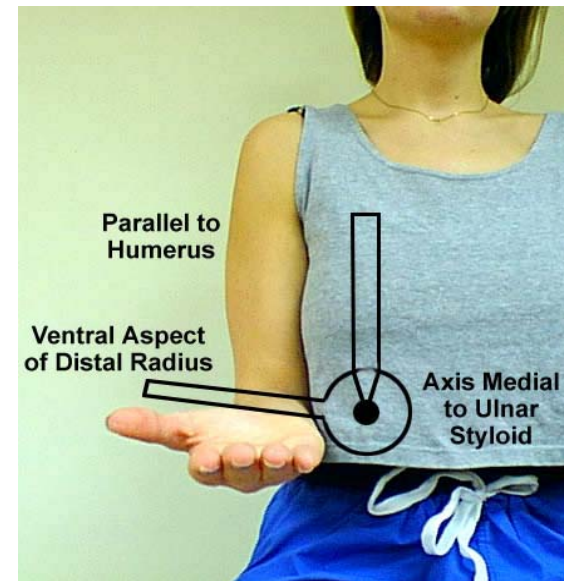
- Get usual history: how did it start, how long, what makes it worse, what has been tried for treatment so far...
- Ask patient to point to where it hurts.

# Lateral Elbow Pain

## ■ Lateral Epicondylitis

- hurts to lift things, pick things up
- not an 'itis'; ECRB is micro-tearing; ECRL duplicates function
- wrist splint, ice massage, limit lifting, use hand supinated, PT (frictional massage), forearm strap.
- Inject up to 3 times. Point of maximum tenderness

# [Lateral Epicondylitis]



# [Lateral Epicondylitis]

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- Surgery is 50-80% successful. No harm comes from not operating and waiting. It usually goes away.
- When is it NOT tennis elbow?  
Tenderness isn't near epicondyle; pain is more anterior and distal; injection doesn't help.



# [ Lateral Epicondylitis Injection ]

- Point of maximal tenderness.
- Perpendicular to skin
- Needle must enter muscle, avoid SQ
- 1-2cc lidocaine or marcaine with ½ cc steroid; 5/8" 25g needle.

# [ Lateral Epicondylitis Injection ]

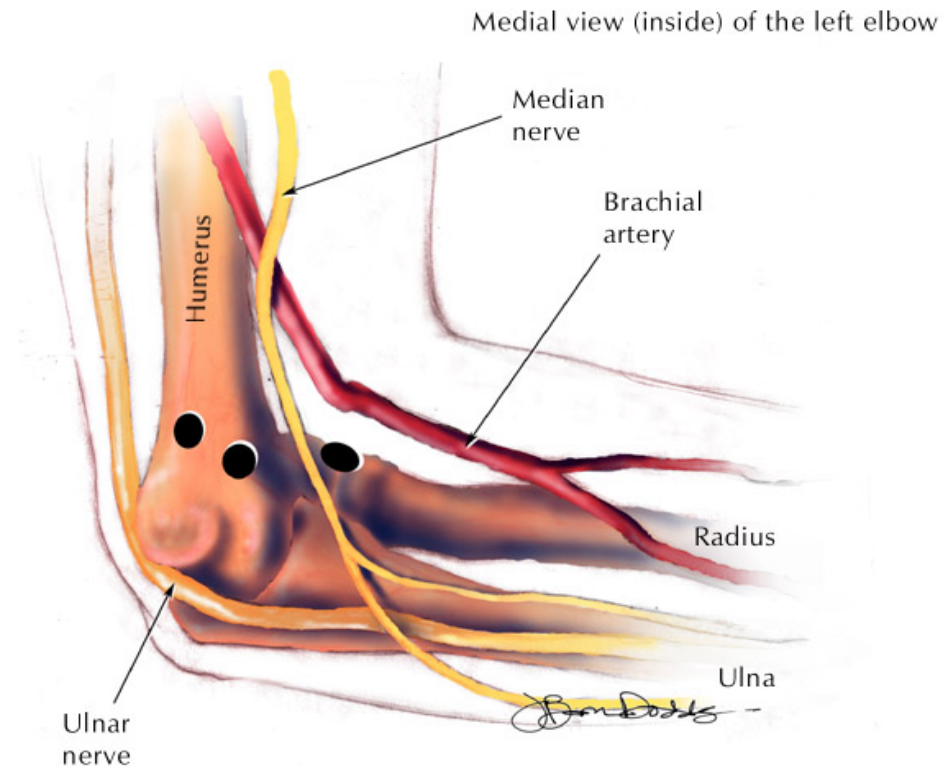


# [ Medial Elbow Pain ]

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- Pain at medial epicondyle or just anterior to it is Medial Epicondylitis (golfer's elbow)
  - treat same as tennis elbow but be careful not to inject posterior to epicondyle
- Pain is in between epicondyle and olecranon: ulnar neuritis.

# Medial Elbow Pain



# [Ulnar neuritis]

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- Can present with numbness/tingling in 5th finger only. Often elbow is painful.
- DX with flexion test or positive Tinel
- Do not inject.
- TX: towel night splint, avoid pressure
- Refer if no better after 6wks. Hand atrophy is a late sign.

# [ Elbow Lumps ]

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- Soft tissue: tophus, rheumatoid nodule
- Fluid: aseptic bursitis (takes 3 mos to resolve; can splint and give NSAIDs, use pads)
- Can tap once to prove it is fluid. Hi-risk of infection. Bursitis that is red must be aspirated. Parenteral ABx for cellulitis.
- Red and angry does not mean joint infxn, usually just cellulitis

# [ Elbow Lumps ]

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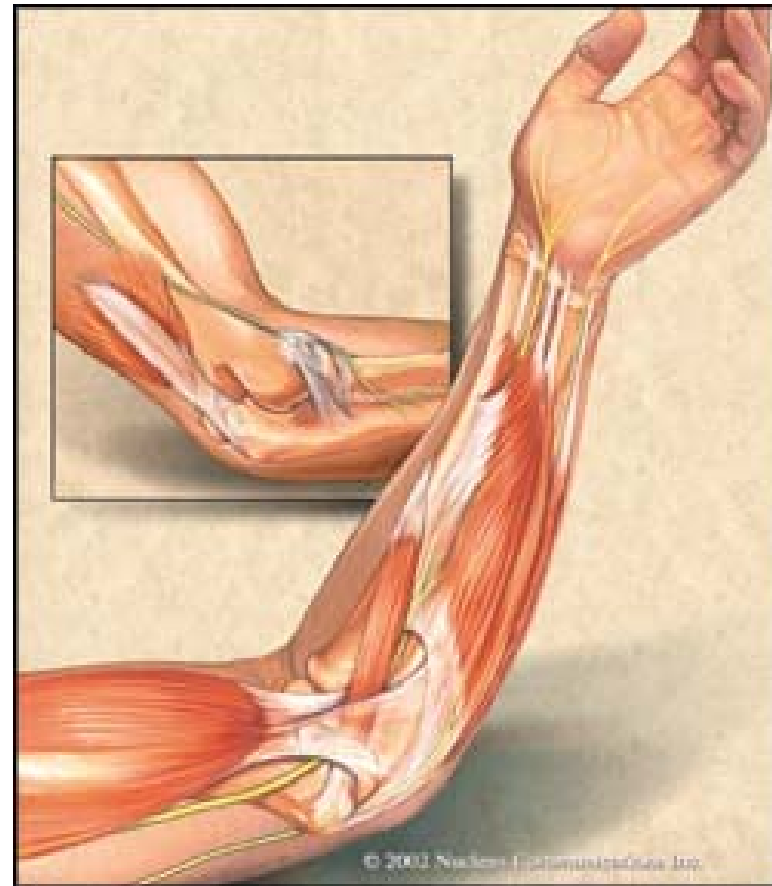
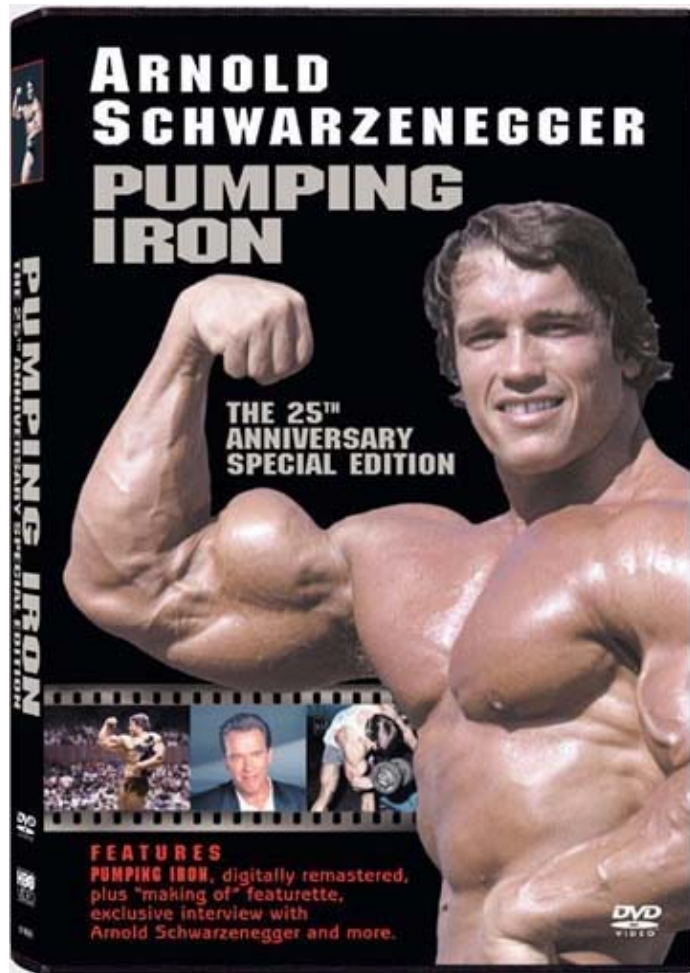
# [Anterior Elbow Pain]

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- Usually after lifting something heavy.
- Concern is Rupture of Distal Biceps Tendon
- DX: high riding biceps muscle; thick tendon not palpable in antecubital fossa, best test is resting position of lower muscle and watching muscle move up/down with supination and pronation
- Refer



# Anterior Elbow Pain



# [Diffuse Elbow Pain]

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- Aches 'all over'
- Range of motion is restricted.
- XR to make diagnosis of arthritis.
- If positive, treat with limitation of repetitive flex/ext, lifting >10 lbs.
- Treat with NSAIDs
- Surgery for 'locking', failed med therapy.

# Elbow Arthritis



# [Wrist Pain]

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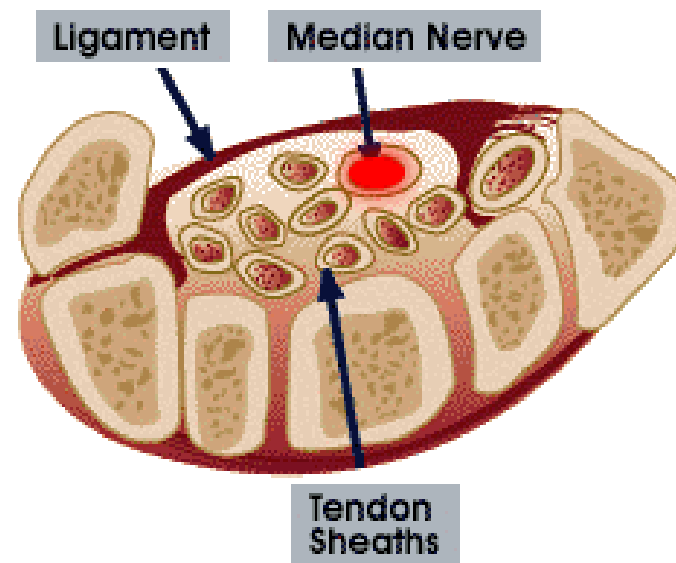
- Always order an xray if there was an injury
- A lot of the DX overlap in symptoms. Best to run through quick exams for all of them to make sure you get the right one.

# [Wrist pain]

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- Aches in the wrist. Clumsy holding things. Fingers feel funny at times. Wakes up from sleeping, has to shake hand.
- Exam: Phalens, carpal compression tests. Look for atrophy, dry skin.
- Pinky finger is always spared.

# Carpal Tunnel Syndrome



# [Carpal Tunnel Syndrome]

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- Constant tingling/numbness is bad sign, refer immediately. Atrophy of the abd poll brevis is a very late sign of nerve damage.
- Treat: night splints, activity modif., NSAIDs, r/o neuropathy/thyroid. Injection can be therapeutic (early), diagnostic, and prognostic.
- If TX fails, refer for NCV electrodiag.

# CTS: who needs a NCV

- NO:
- Good Hx, consistent PEx
- YES:
- H/o neuropathy or radiculopathy
- Odd history or physical findings ('every finger is numb')
- Occupational Injury



# Wrist pain

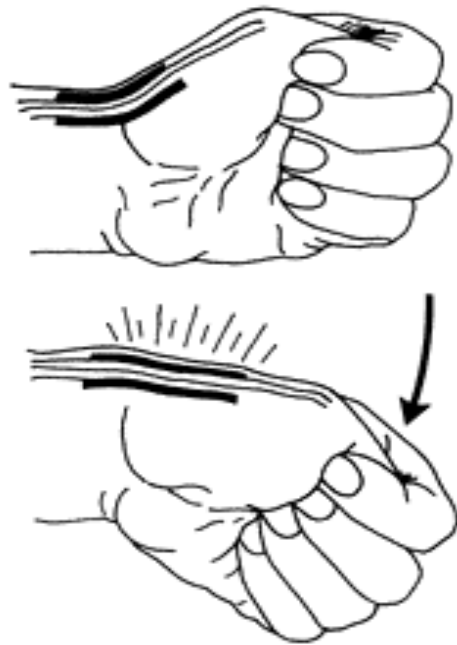
- Aches with gripping, +/- overuse history, no numbness. Frequently seen in new mothers.
- Pain over radial styloid
- Positive Finklestein's test (thumb in palm)

# [DeQuervains Tenosynovitis]

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- 1st dorsal compartment synovitis. Crowds the tendons as they pass through tendon sheath at wrist.
- Initial treatment: thumb spica splint, ice massage, NSAID for 3-6 weeks.
- Injections work very well. 1st injection cures 80%, 2nd injection, another 10%

# DeQuervain's Tenosynovitis



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# DeQuervains Injection

- Active thumb extension to see 1<sup>st</sup> dorsal comp tendons in snuffbox. Visualize where tendons 'disappear' on radius (styloid)
- 45 degree angle proximal, go to bone and back up slightly.
- 1-2cc lidocaine or marcaine with ½ cc steroid and 25g 5/8 inch needle.

# DeQuervains Injection



# [Wrist aching at base of thumb]

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- Trouble doing ADLs, gripping. May feel popping or catching.
- Bump palpable/visible where thumb meets wrist.
- Positive grind and Watson tests.

# [ Basal joint arthritis of thumb ]

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- Women 10x: Men
- Many with severe XR changes have few symptoms and vice versa.
- Treat like any arthritis. Rigid splints are usually poorly tolerated since the thumb is useless in the splint. Use soft neoprene wraps or braces. Injections work well.

# Basal joint thumb arthritis





# [Wrist pain]

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- Vague aching with use, especially with wrist extended.
- All tests normal, xrays normal.
- Best test is palpating wrist dorsum in full flexion.

# [Ganglion cysts]

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- Most common location is wrist dorsum, 2nd most common is dorsoradial wrist.
- DX easy when cyst is big but small cysts sometimes are just as symptomatic. Size follows activity.
- Aspiration has 30% cure rate, proves it isn't cancer to the patient.
- Surgery leaves scar, has 10% recurrence.

# [Thumb pain]

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- Injured thumb playing sports. XRs normal.
- Hurts at ulnar side of thumb at the edge of the webspace.
- Stress testing at 20-30 degrees.

# Thumb pain



# [Ulnar collateral ligament tear]

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- Skiers or gamekeepers thumb
- If thumb stable=sprain; if loose=tear.
- Sprains get a splint/cast for 4wks.
- Tears should be referred immediately.

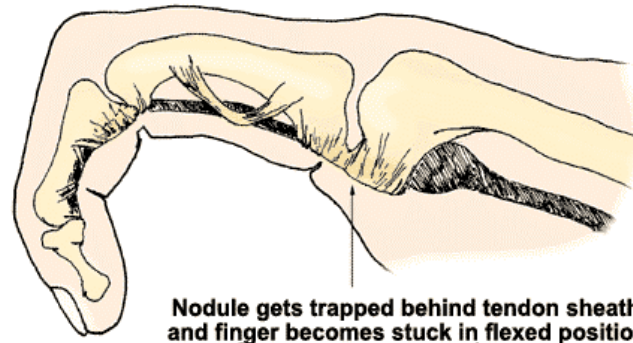
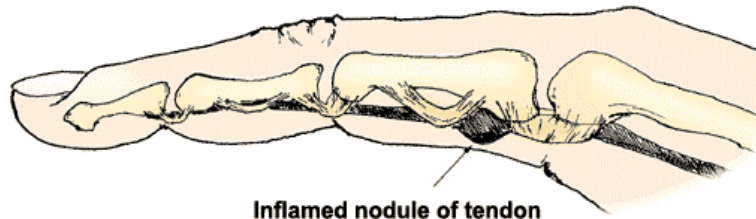
# [Finger pain]

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- Vague aching into PIP joint area. Hurts to grip. Occasionally catches. H/O CTR.
- Tenderness is over A1 pulley (distal palmar crease to proximal finger crease). Can often feel nodule with active finger flexion/ext.

# Trigger Finger

**Trigger Finger**



# Trigger Finger

- Initial treatment: restrict finger flexion (bandaid over the DIP and PIP knuckles), NSAID, ice massage over A1 pulley.
- Inject early, always if there is catching. Refer if patient fails 2-3 injections.



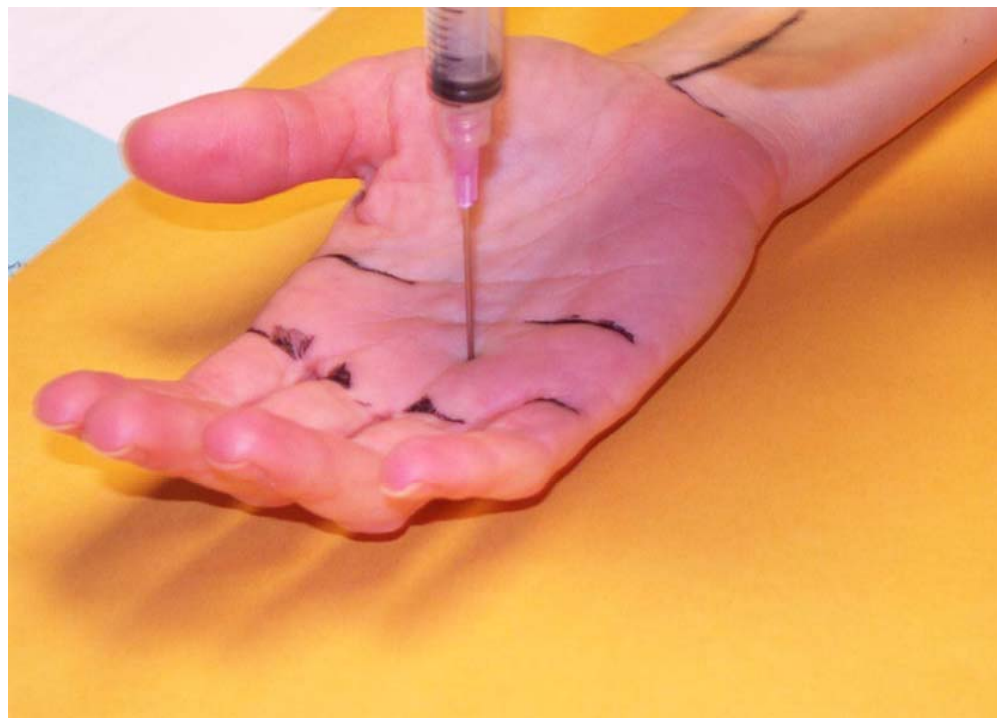
# Trigger Finger Injection

Mark out distal palmar crease and proximal finger crease. Palpate 'hills' and 'valleys'

Inject hill of involved finger in between creases. Perpendicular angle, place needle into tendon and 'relax' finger. Withdraw slowly with pressure on hub to fill sheath.

1cc lidocaine, ½ cc steroid, 25 or 27g 5/8 needle

# Trigger Finger Injection



# Aching in palm

- Hurts to grip.
- 'Lumpy' stuff felt in palmar skin.  
Doesn't move with finger  
flexion/extension.

# [ Dupuytren's contracture ]

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- Fascia becomes thickened. Initially forms nodules, then cords, which contract and make finger bend.
- Early nodular phase is tender, later contractures are without pain.
- Refer when finger contracts.

# Dupuytren's contracture



# [“Jammed Finger”]

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- Usually PIP joint. Looks swollen.
- XR may show small chip at base of middle phalanx
- Alumifoam splint or buddy tape for 10-14 days, then must do passive ROM to get finger to move again. Will look swollen often for 3-6 months.

# [Mallet Finger]

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- Extensor tendon pulls off of base of distal phalanx.
- Can occur with a chip of bone or just the tendon.
- If it is a big piece of bone, it might need surgery.
- Otherwise, 6-8 weeks in extension splint (full-time).

# Mallet Finger



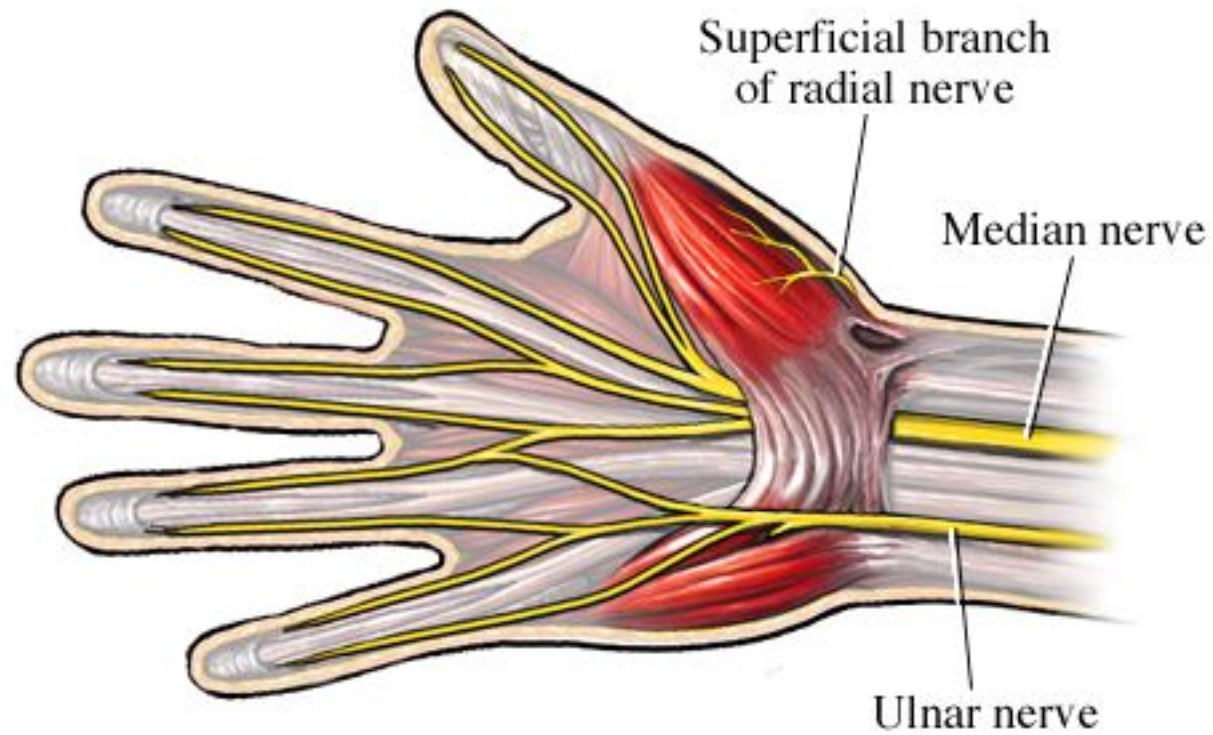


# [Laceration follow-up]

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- Nerves run along side of finger. Each supplies 1/2 of pulp. Test with light touch or paper clip two-point (NL=<10mm).
- FDP (hold single finger, flex DIP)
- FDS (hold other fingers straight, flex PIP)

# [ Hand Anatomy ]



# [Common hand infections]

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- Flexor tenosynovitis
- Paronychia
- Felon
- Bites

# [ Flexor tenosynovitis ]

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- Can result from minor punctures or scratches
- to distal palmar crease)
- Diffuse swelling, tender along entire sheath, slightly flexed position, pain with passive extension (Kanavel's signs).
- If early (not all 4 signs) treat aggressively with ABX, splint and soaks.
- If all 4 signs: immediate surgical consultation.

# [ Paronychia ]

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- Can be localized to one nail fold or entire tip of finger can look bad.
- Distinguish from felon by pulp space tenderness. Edge of nail is digging into nail fold (mechanical irritation). White membrane on nail is good.
- Can start treatment with massaging nail fold away from nail with cotton swab, soaks.
- May need nail edge removal. Antibiotics are secondary.

# [Felon]

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- Very rare.
- Distal finger pulp space infection
- Pulp is tense
- Needs immediate surgical decompression

# [Bites]

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- Most common are dogs (pretty clean), cats (dirty), and humans (dirtiest).
- Can appear within 24 hrs.
- Distinguish joint infection from cellulitis
- XR to rule out foreign body. Culture any fluid.
- Best ABX: augmentin for 10 days. Tetanus toxoid.