DRIVING CHANGE 2023
THE URGENT CARE CONVENTION

Managing Common Hand & Wrist Injuries

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FastMed Urgent Care

URGENT CARE ASSOCIATION®

COLLEGE OF URGENT CARE MEDICINE

Today's Agenda

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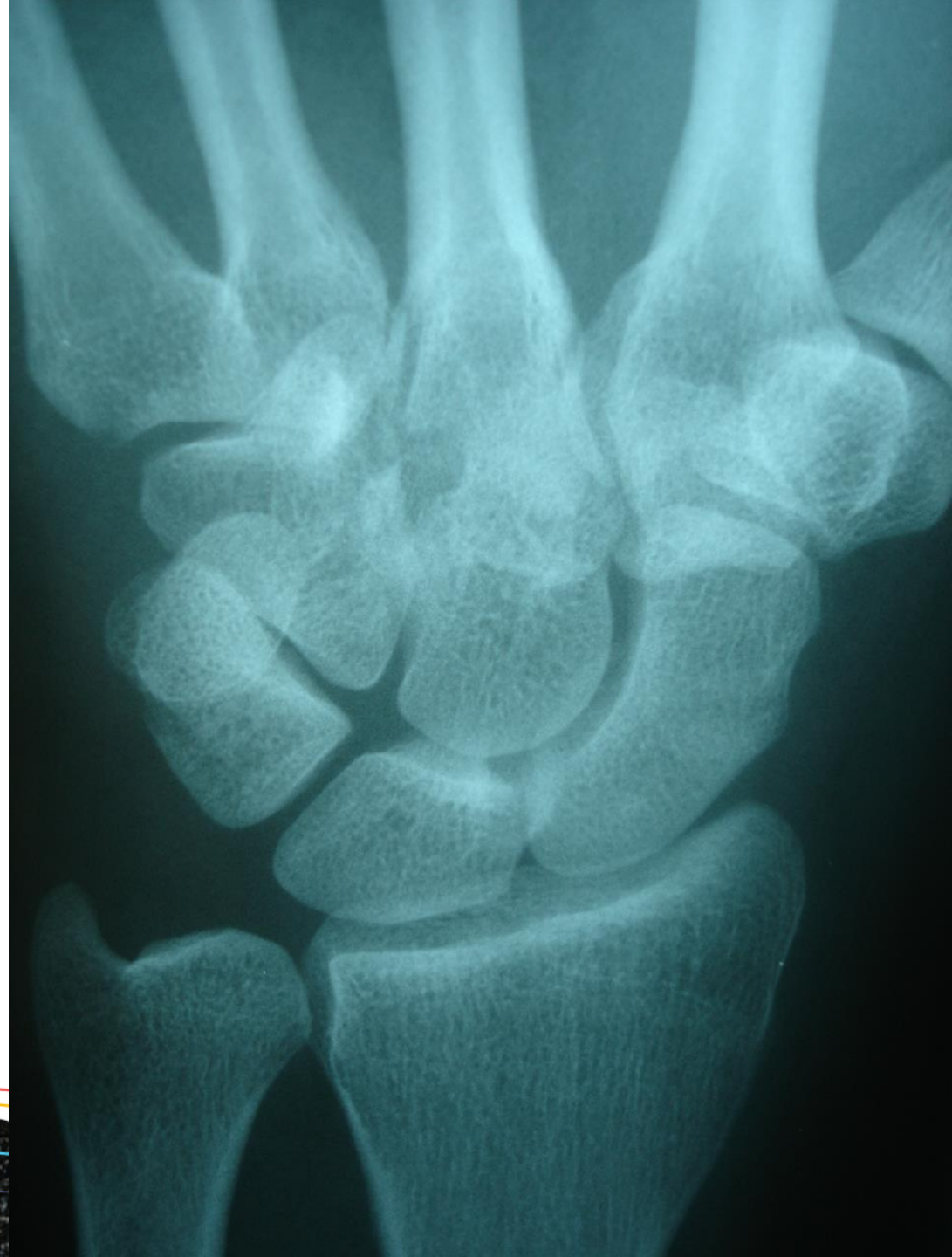
THE URGENT CARE CONVENTION

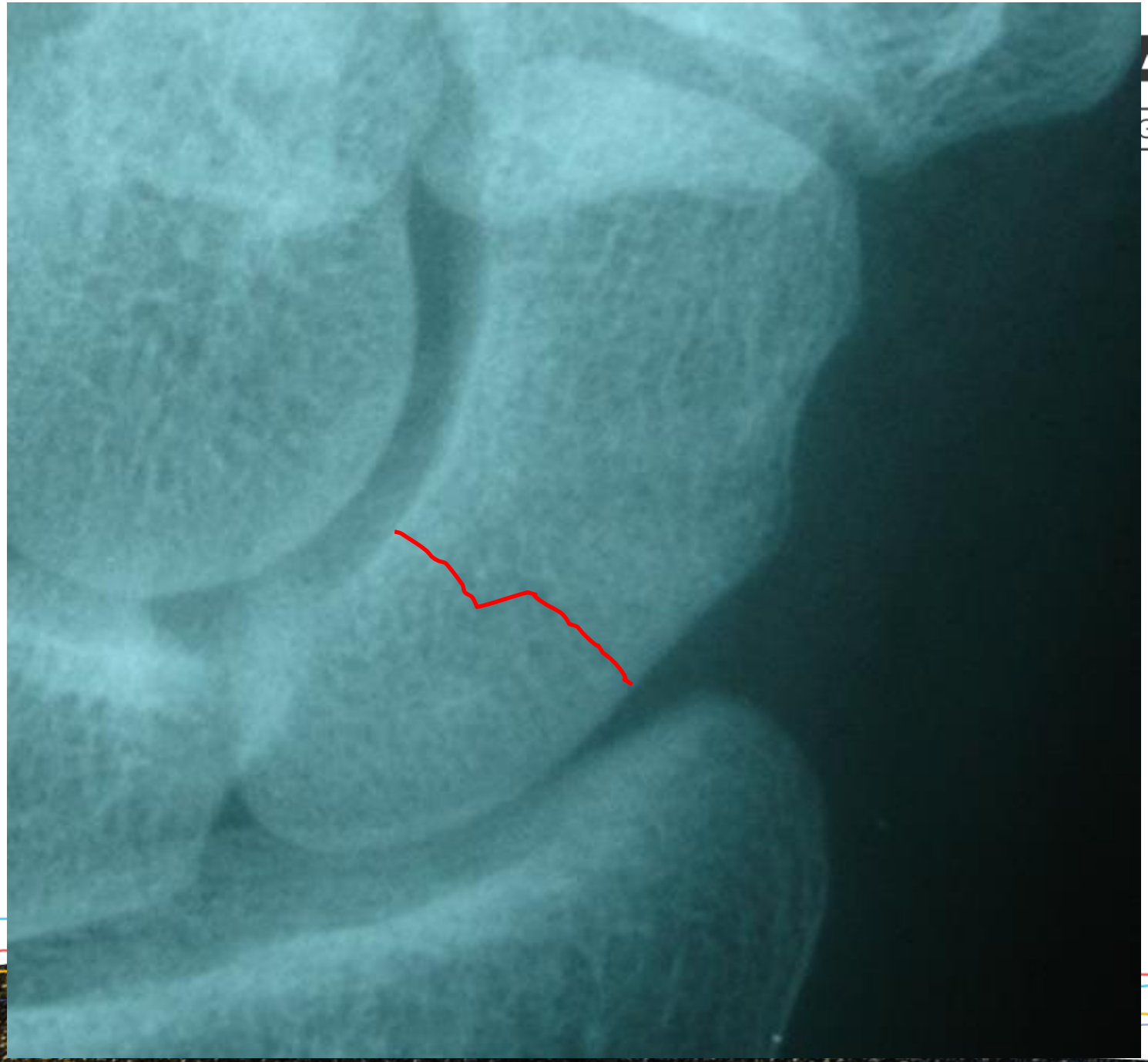
- Review common hand & wrist injuries
- Build on what you know or can easily find
- X-ray reading tips
- Highlight important stuff you shouldn't miss
- Practical advice on standard treatments
- Physical Exam tips (a few new things)
- Add some "why" to the "what"

Case 1- FOOSH

- 24 yo who fell on an outstretched hand.
- dorsal/radial tenderness of wrist
- Grip 4/5, all ROM decreased

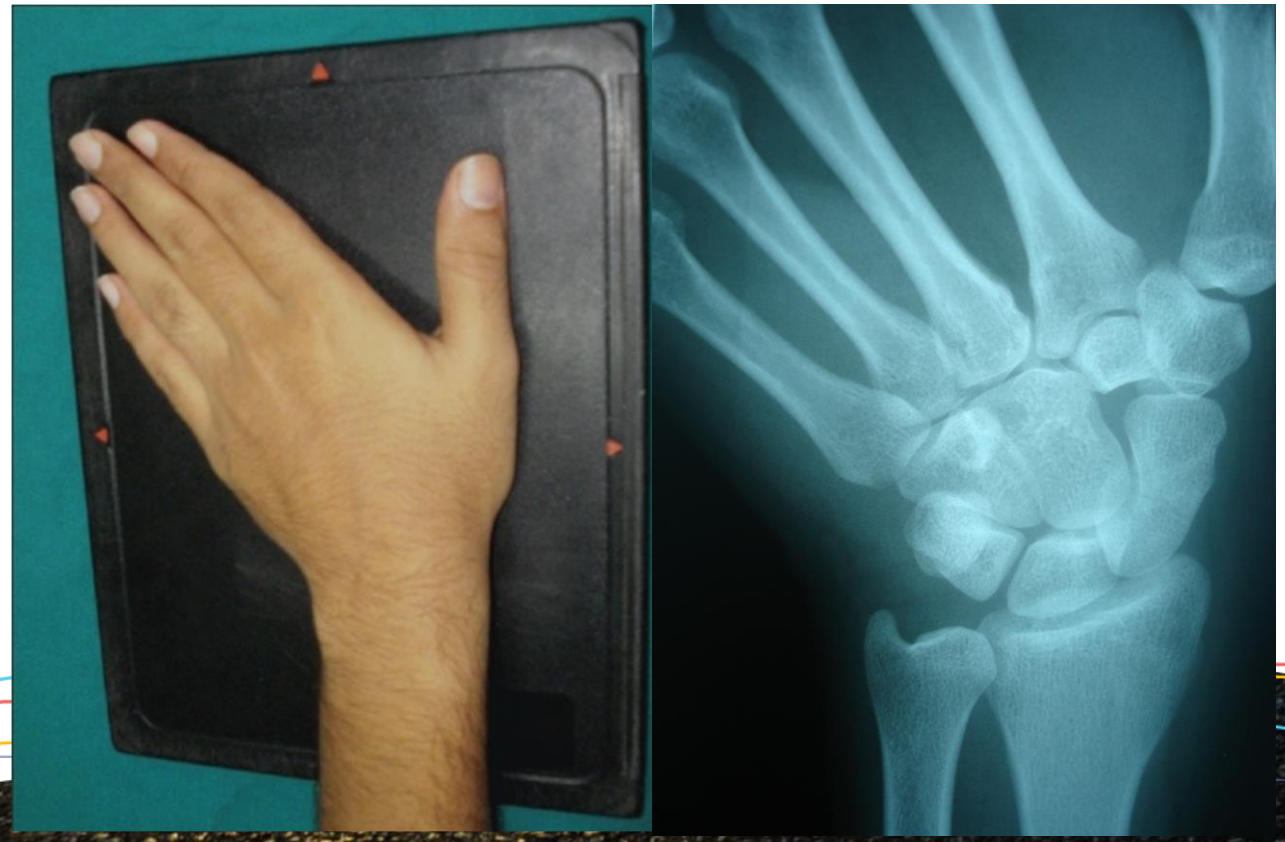
- Scaphoid injury on the differential

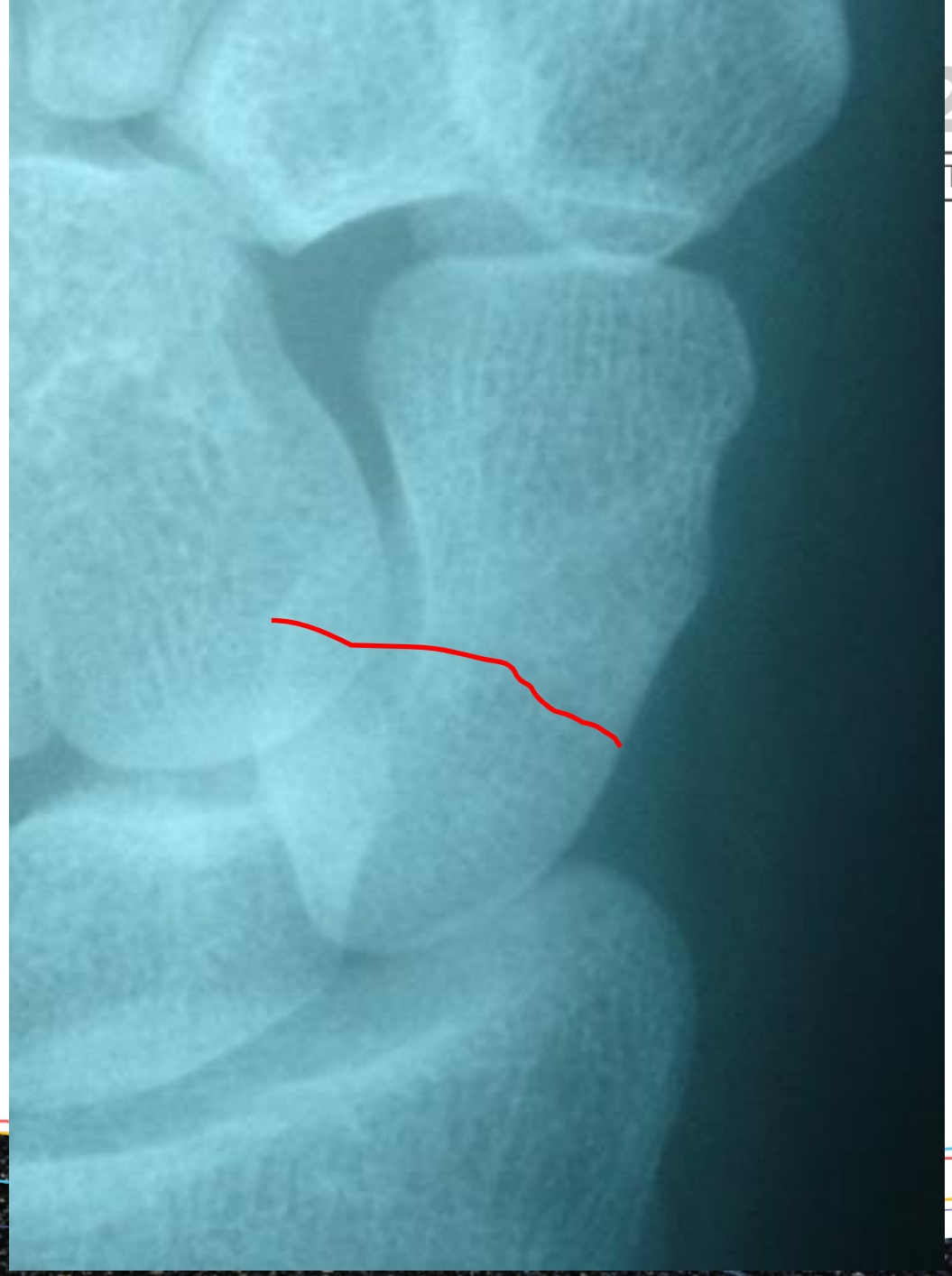




Ulnar Deviation AP X-ray

- Distracts the scaphoid and pulls the two ends apart
- May show subtle fractures





Poor Blood Supply

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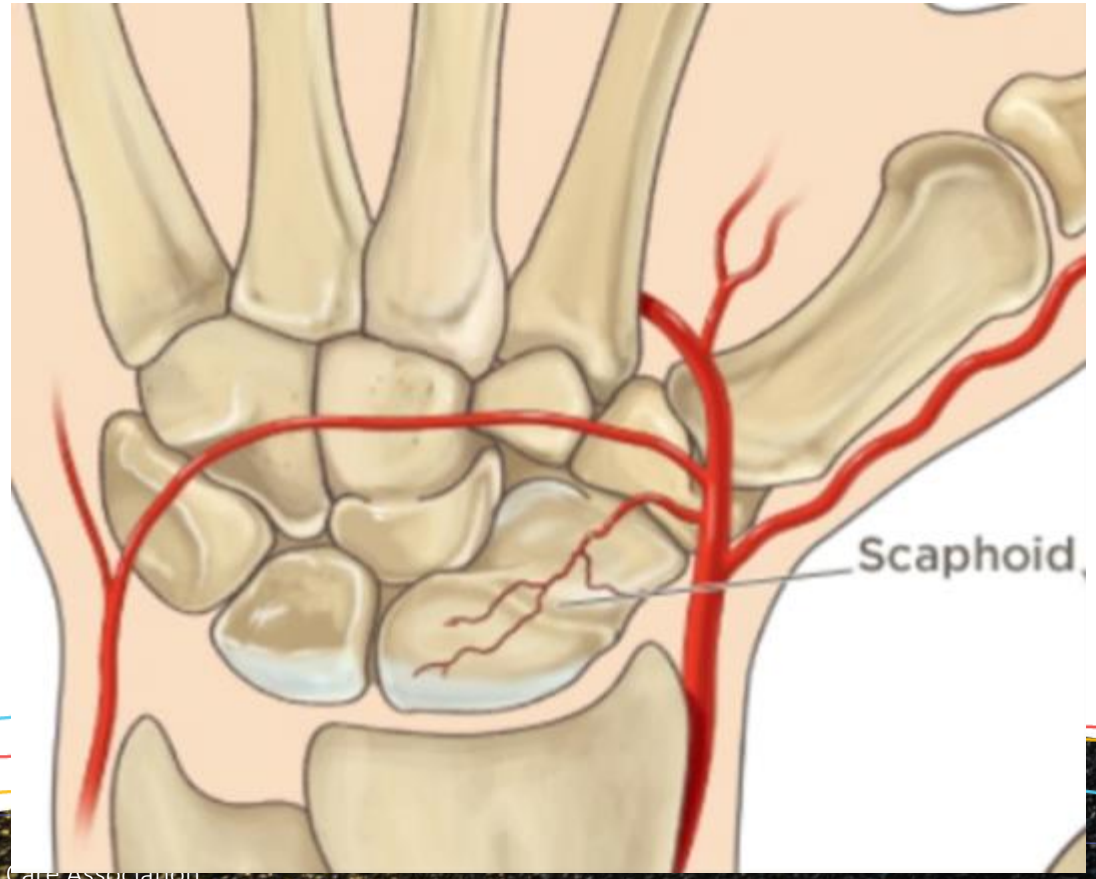
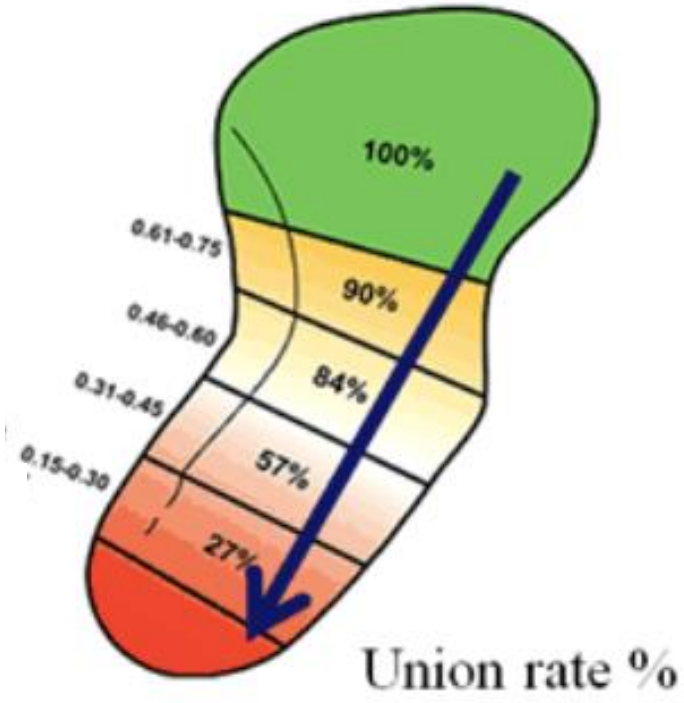
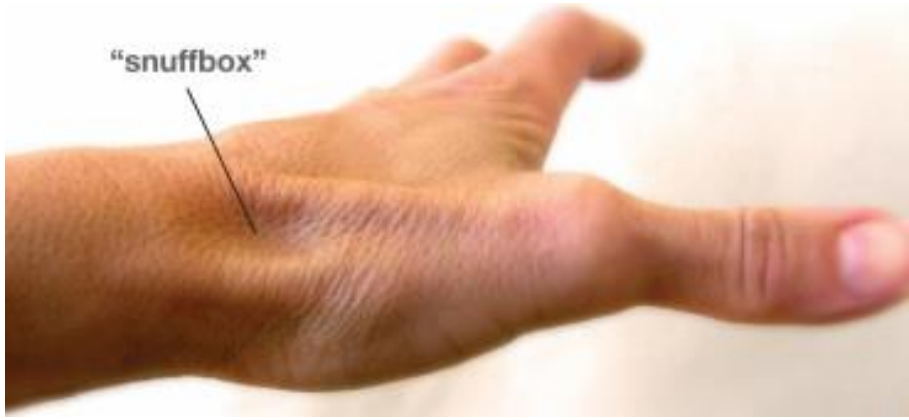
- Retrograde branches off radial artery
- Proximal fractures high risk for non-union

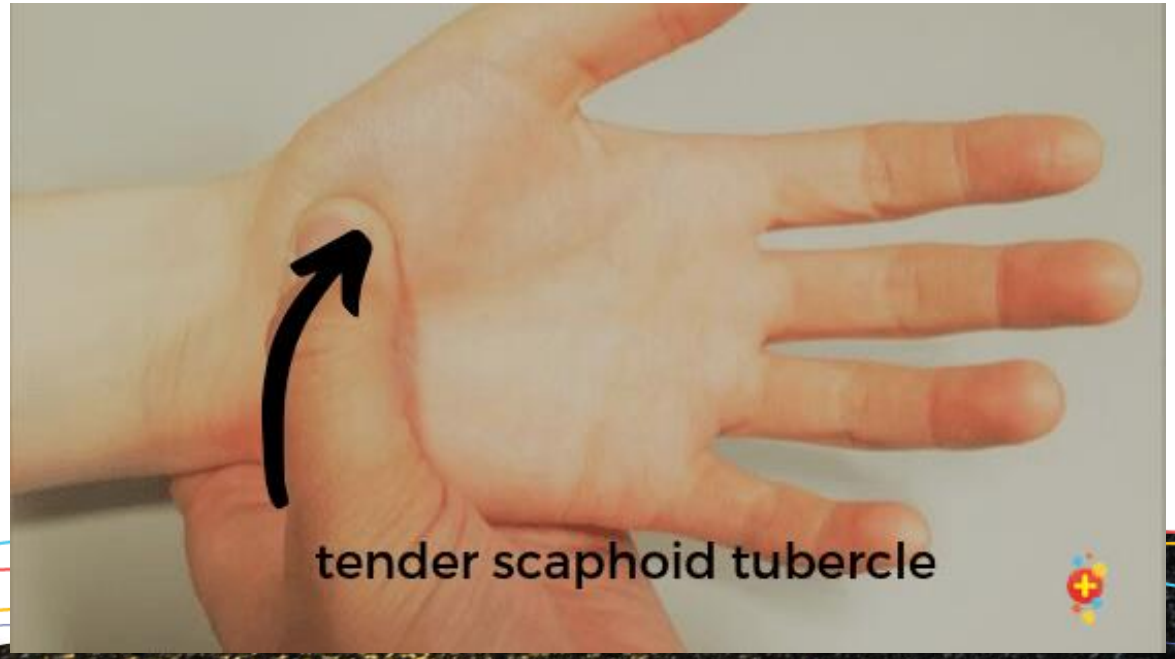


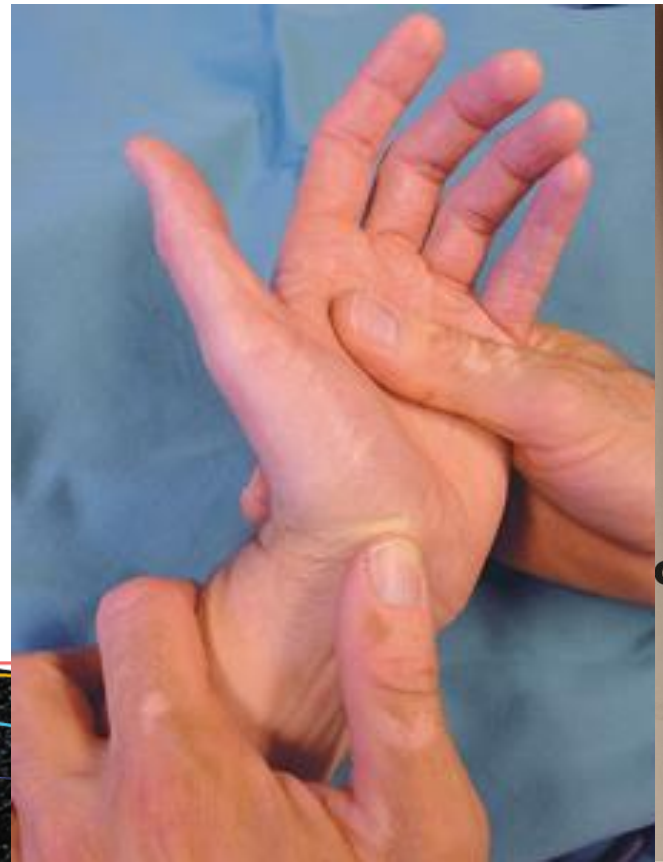


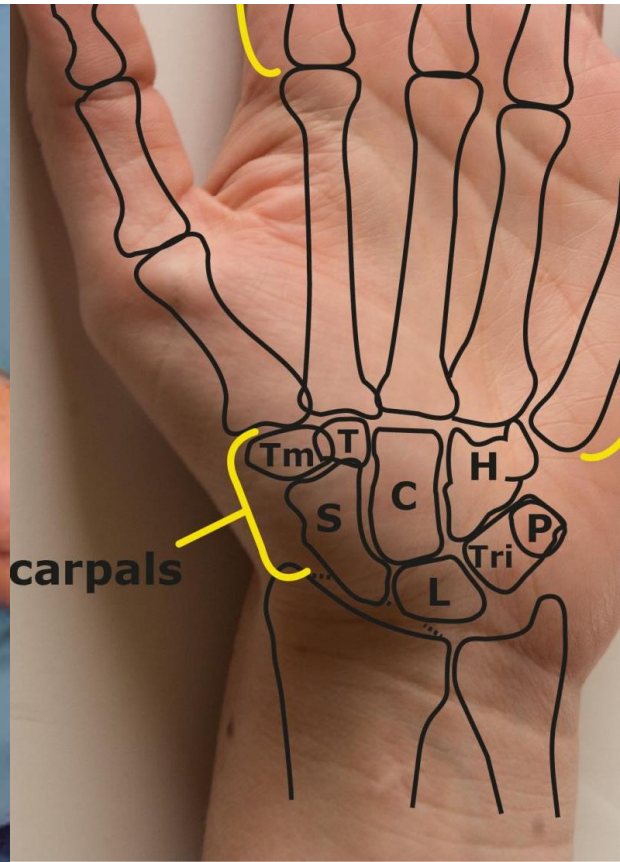
The Snuffbox is not the only way to palpate the scaphoid

- Palmar palpation is just as easy and can be reassuring with a direct blow to the dorsal wrist.









Scaphoid Fracture Treatment

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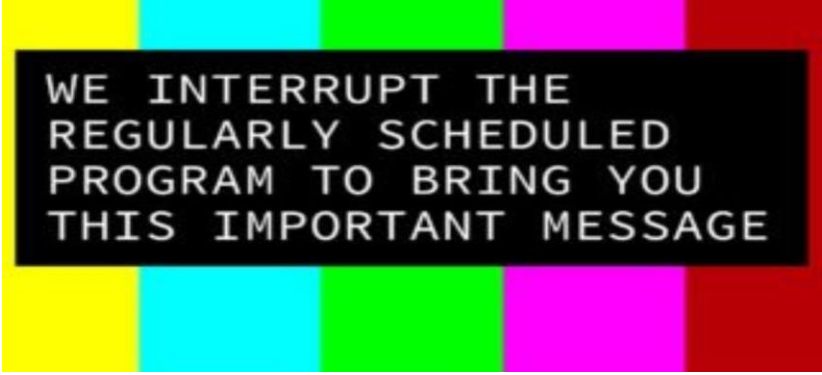
- If suspected, not cleared until repeat films in 10-14 days or repeat exam that shows no concern
- Thumb Spica Splinted until that time
- NSAIDS and fracture?
  - 2021 Meta-analysis of 6 RCTs showed no difference in NSAIDs use for up to 2 weeks. Up to 4 weeks showed increased risk of non-union ~2.5 X risk.(Farii 2021)
  - **Indomethacin** was significantly higher risk than other NSAIDs.

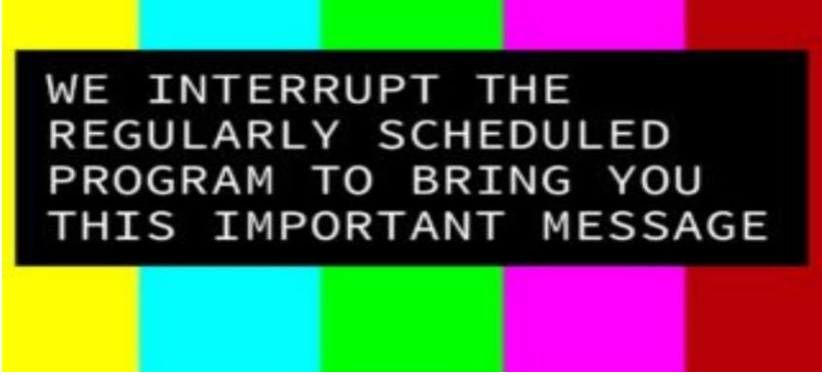
-Remember Opioids have non-unions rates 5-14%

A Brief Moment on Indomethacin…



- Meta-analysis of 178 RCTs for Dyspepsia from NSAIDs (Ofman 2003)
- High Dyspepsia NSAIDs (indomethacin, meclofenamate, piroxicam)
- Percentage patients with dyspepsia
  - 4.2% All NSAIDs, All doses
  - 8.2% High Dose of any NSAID
  - 7.8% Any dose of High Dyspepsia NSAIDS
- No evidence of indomethacin superiority
- Don’t choose it

A Brief Moment on Ibuprofen…



- Several studies show no improved analgesia above 400mg for acute pain (Lyngstad 2021, Motov 2019, Winter 1978, Laska 1986, Seymour 1996)
- High dose IBP, 800mg TID, was not better than 400mg TID for chronic osteoarthritis analgesia (Breshnihan 1978, Moxley 1975, de Blecourt 1975, Cimmino 1982)
- 800mg TID had superior anti-inflammatory effect over 400mg TID (Huskisson 1971, Gall 1982)
- 400mg TID maximizes analgesia but 800mg TID improves anti-inflammatory effect

Can 1° Care read films well?

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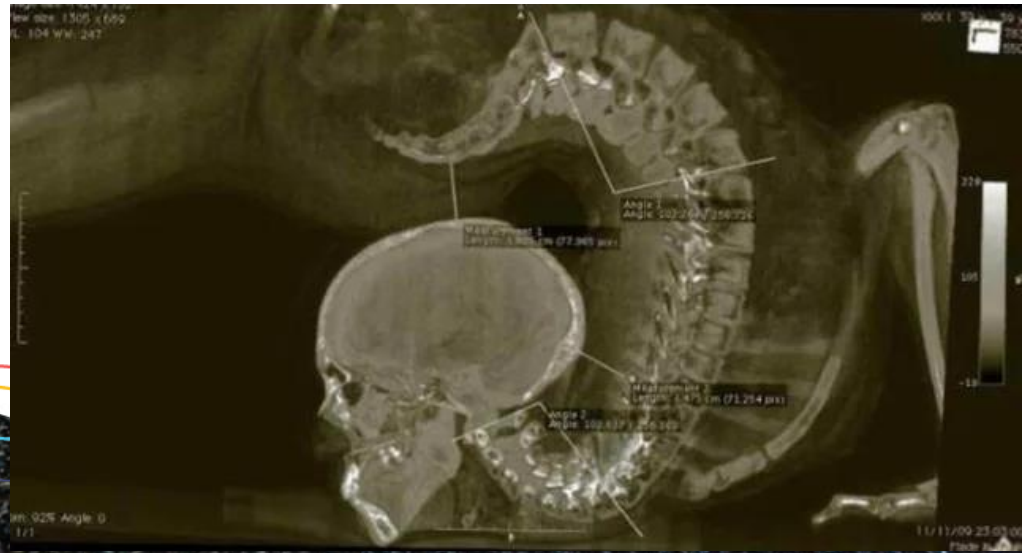
- Carter B, et al, STFM poster 2003
  - 334 consecutive radiographs at a southern family practice residency.
  - Radiologist agreed with resident interpretation in 92.8% of cases
- Studies of extremity films show concordance rate of 79-96%
  (Hopper 1991, Knollmann 1996, Strasser 1987, Bergus 1995)
- Systemic review showed having more clinical history improves accuracy of plain film reads (Loy 2004)

Yes, we can do a fairly good job.

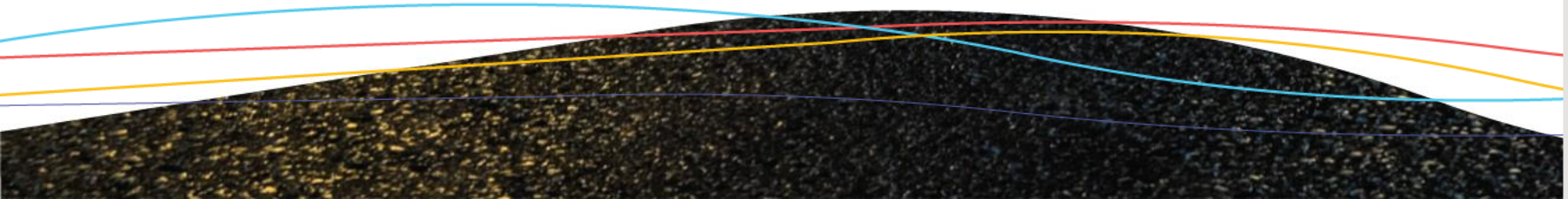


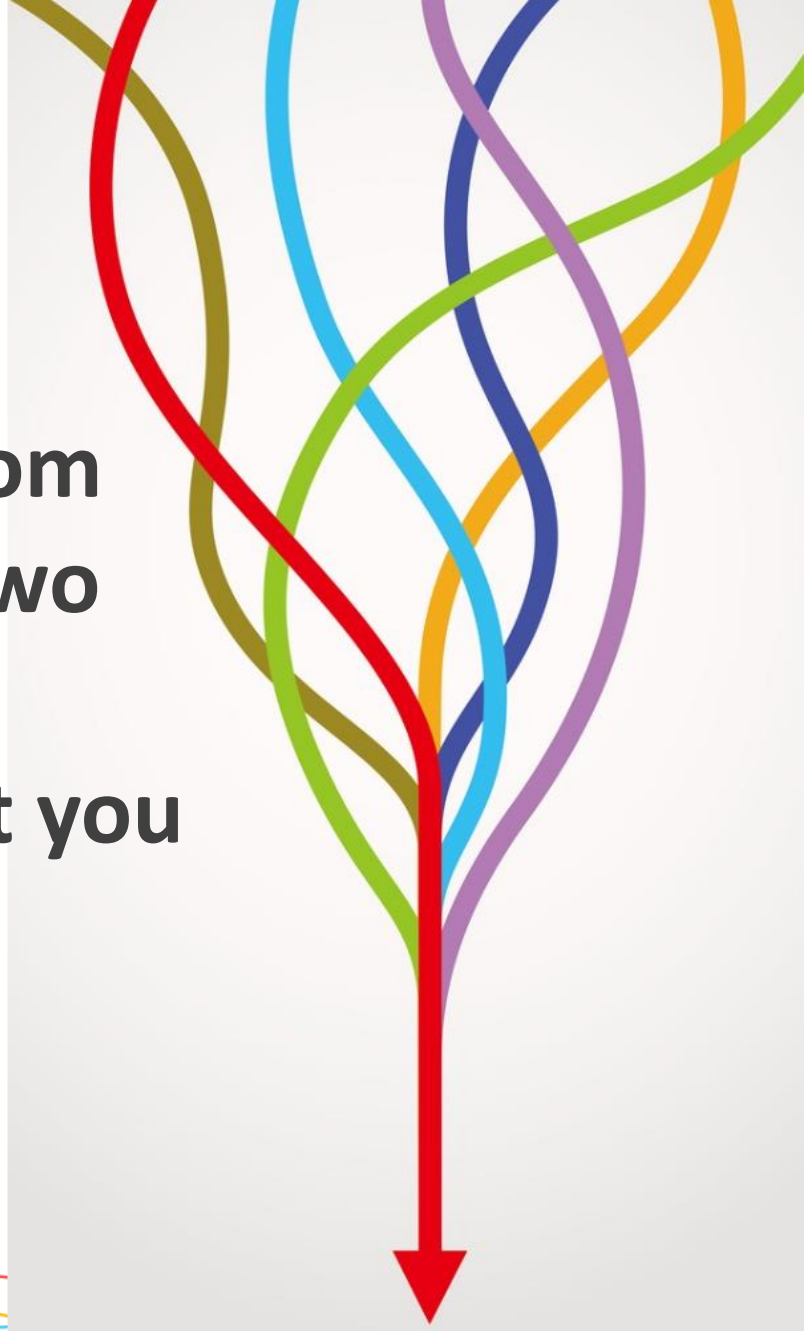
Radiology Errors?

- 2003 personal MSK clinic
- 9 fractures not read by radiology, 9 amendments to report after review
- Equivalent of 1 missed fracture every other week for a full time practitioner
- Published missed fracture rates of 2-9% (Oku 2004, Zappia 2017)
- **READ YOUR OWN FILMS**

How to think through films…

- Know your anatomy
- Determine what view you are looking from
- View intended structures from at least two planes or angles
- Be systematic -don't just try to find what you are looking for
- Don't miss the **trees**
- Don't miss the **forest**





Chuck Woolery 2 x 2 Rule

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Chuck Woolery 2 x 2 Rule

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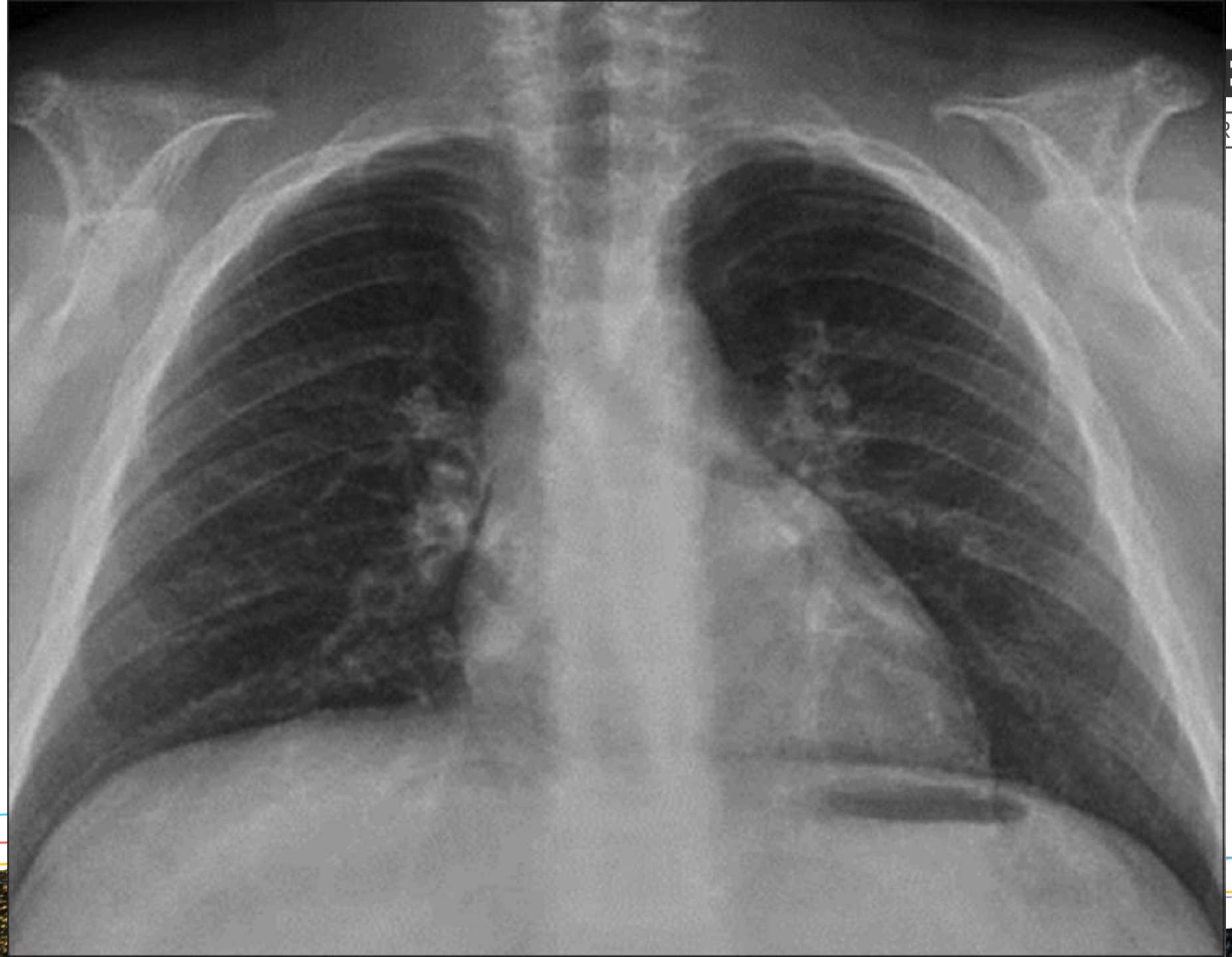
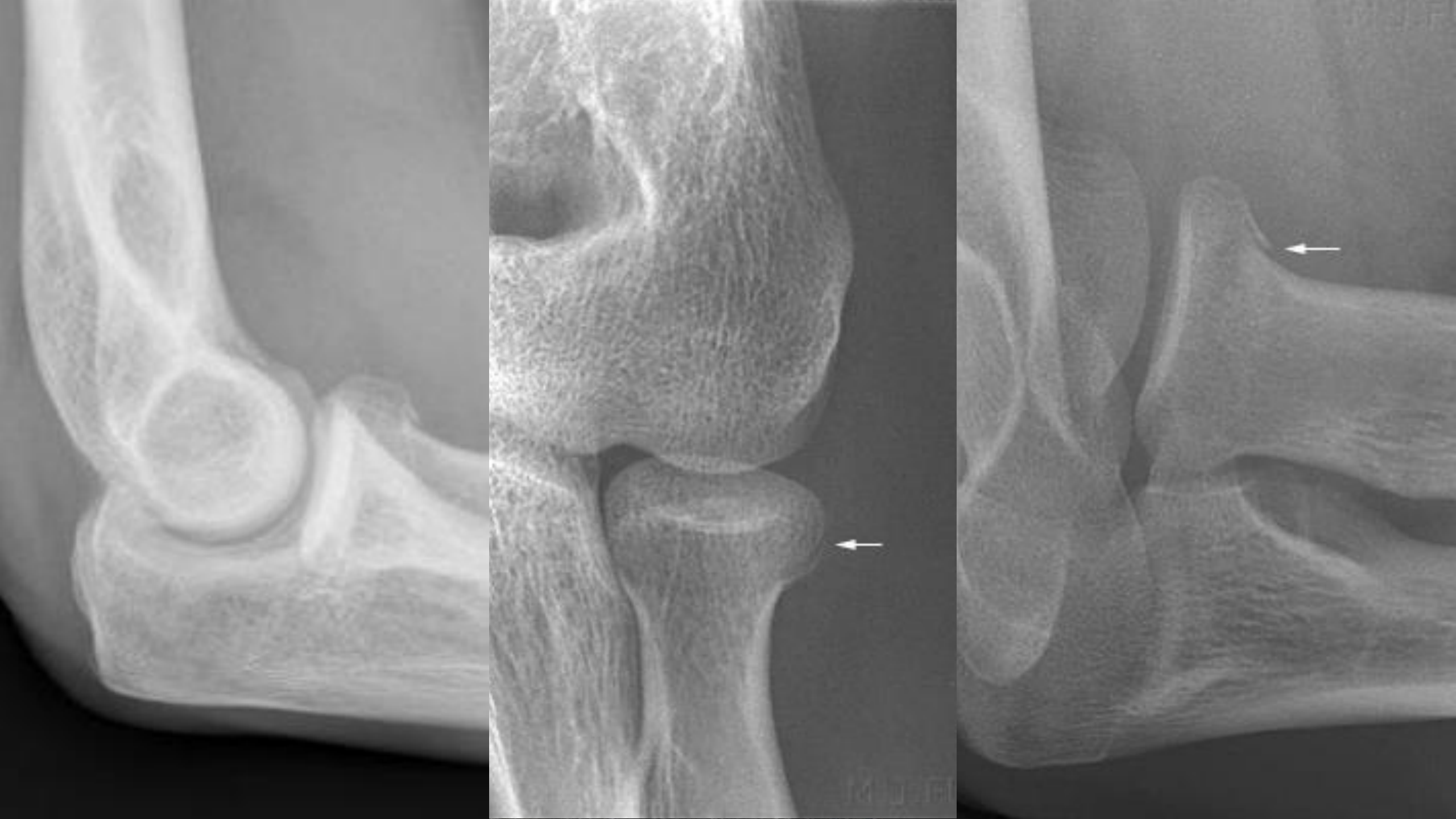
- Look from 2 feet away to get the big picture (the forest)
- Look from 2 inches away to see details (the trees)

2023 Version

ANT-MAN





29 yo slammed thumb in door

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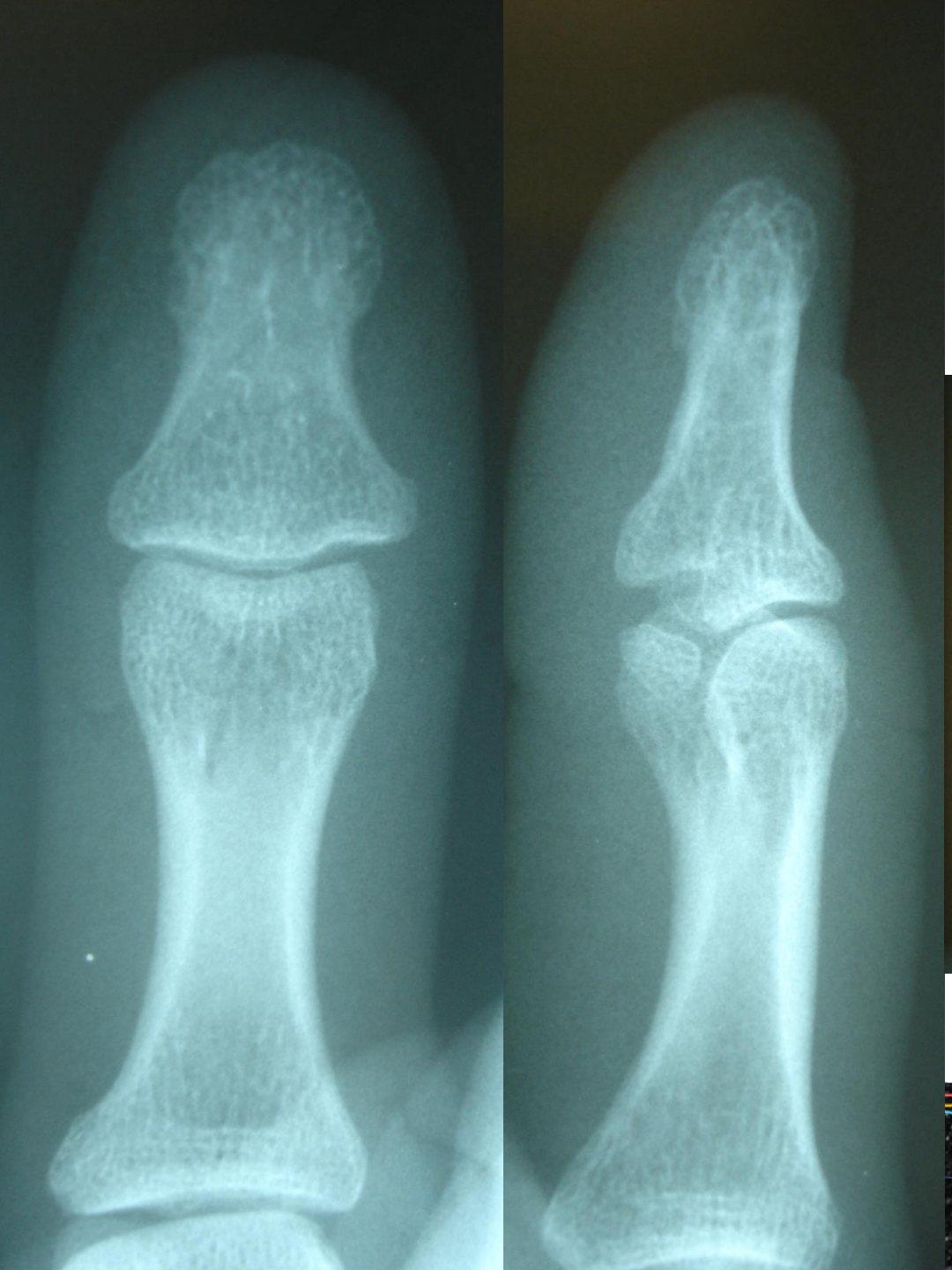

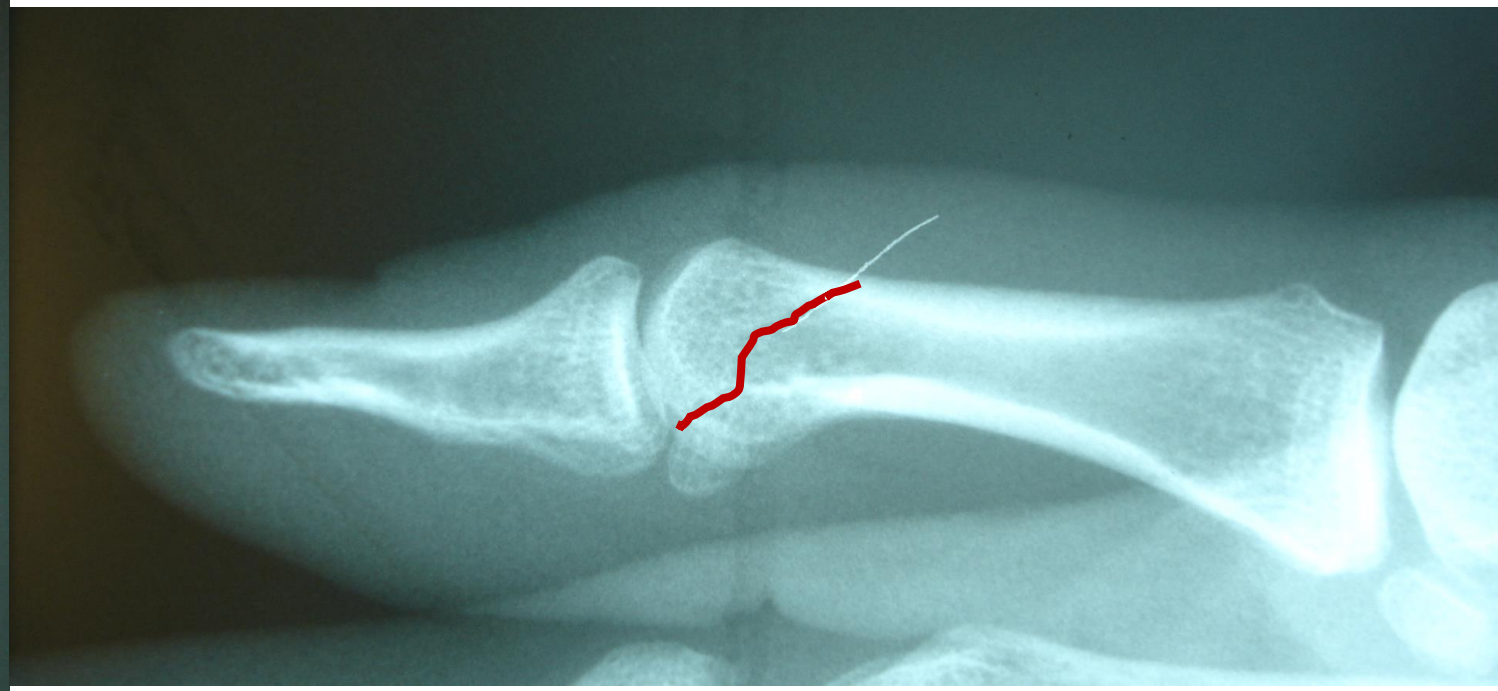

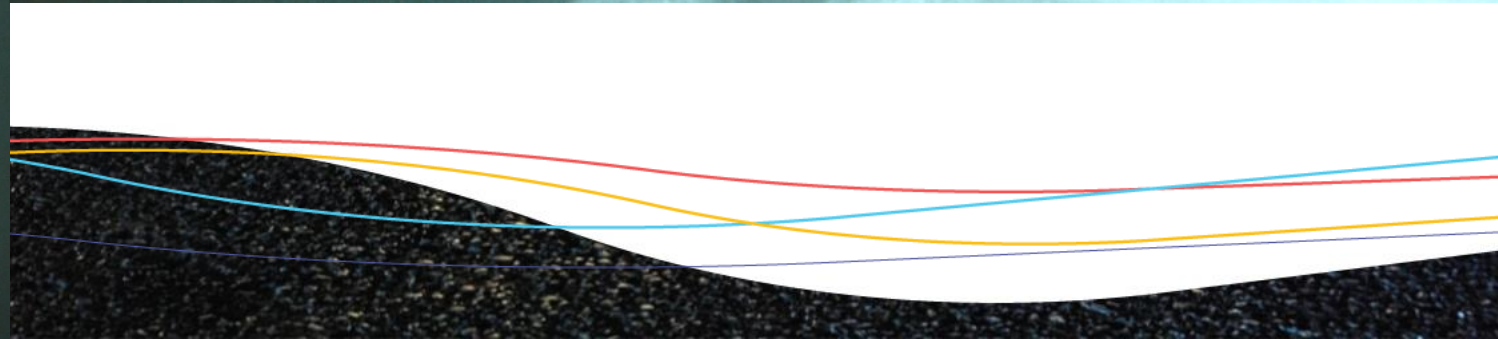

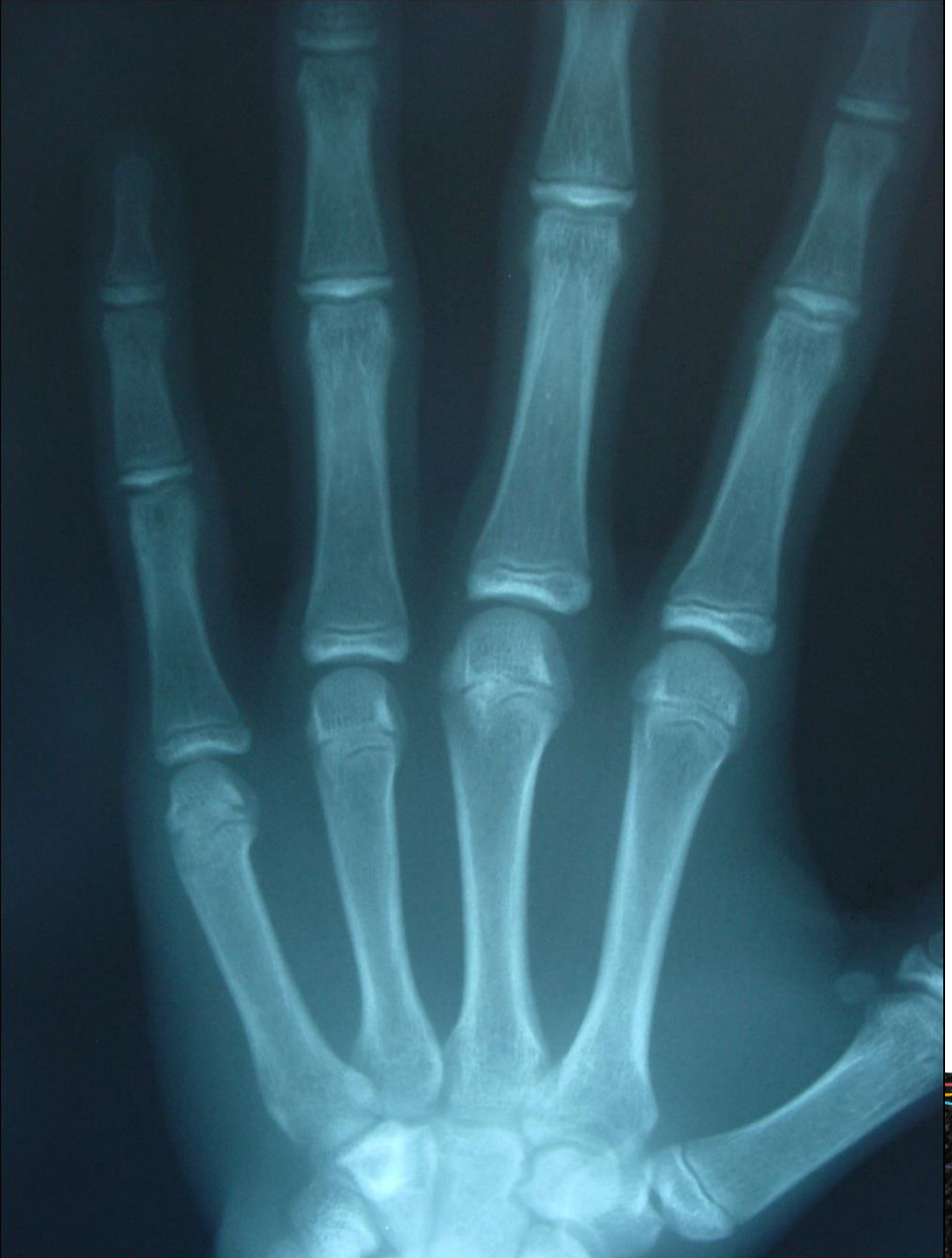

16 yo wrestler with ulnar side hand pain after match

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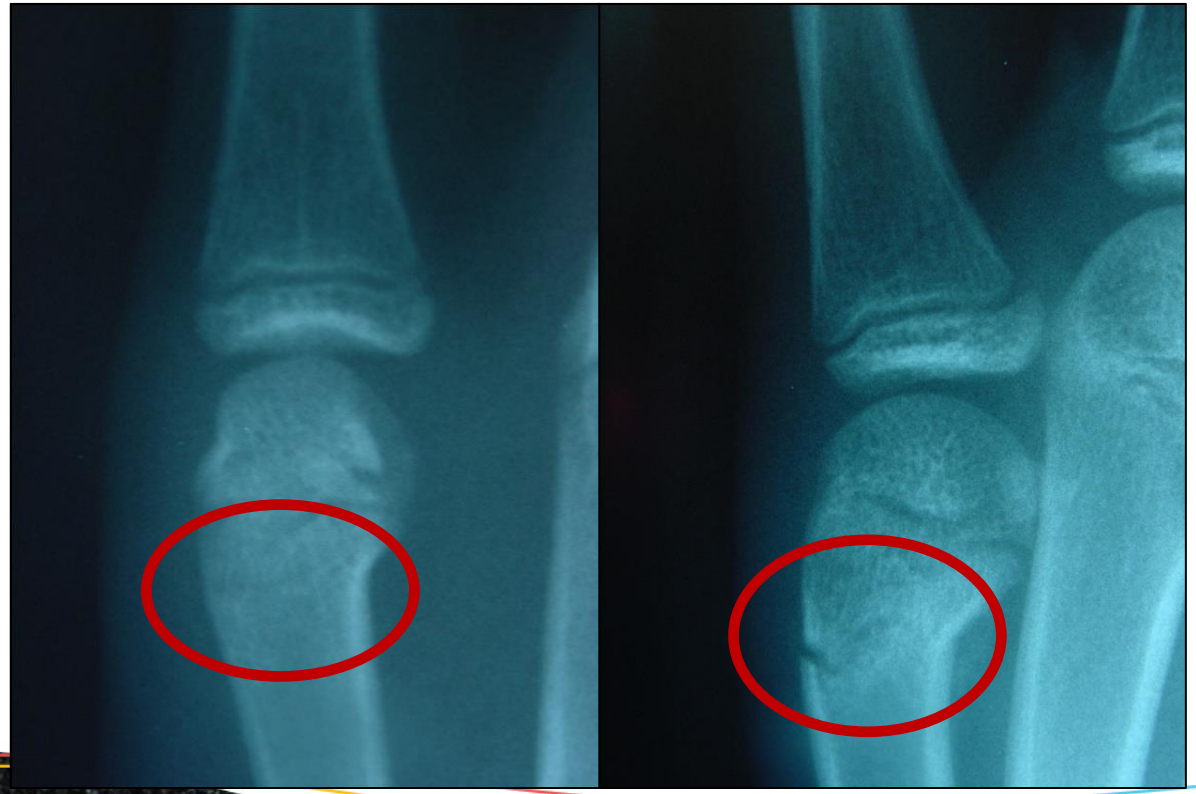
Boxer's Fracture



19 yo hurt middle finger while dunking

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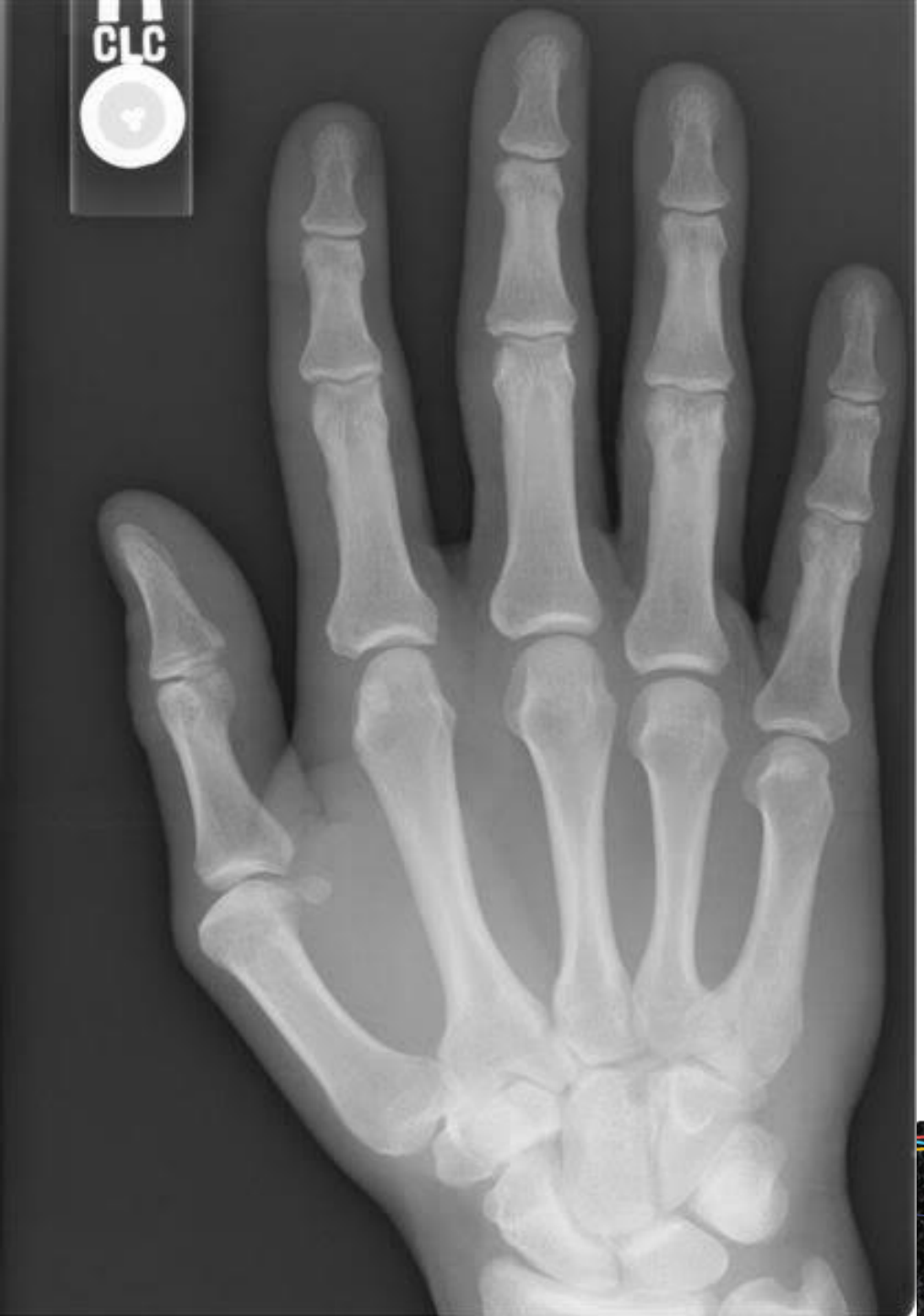

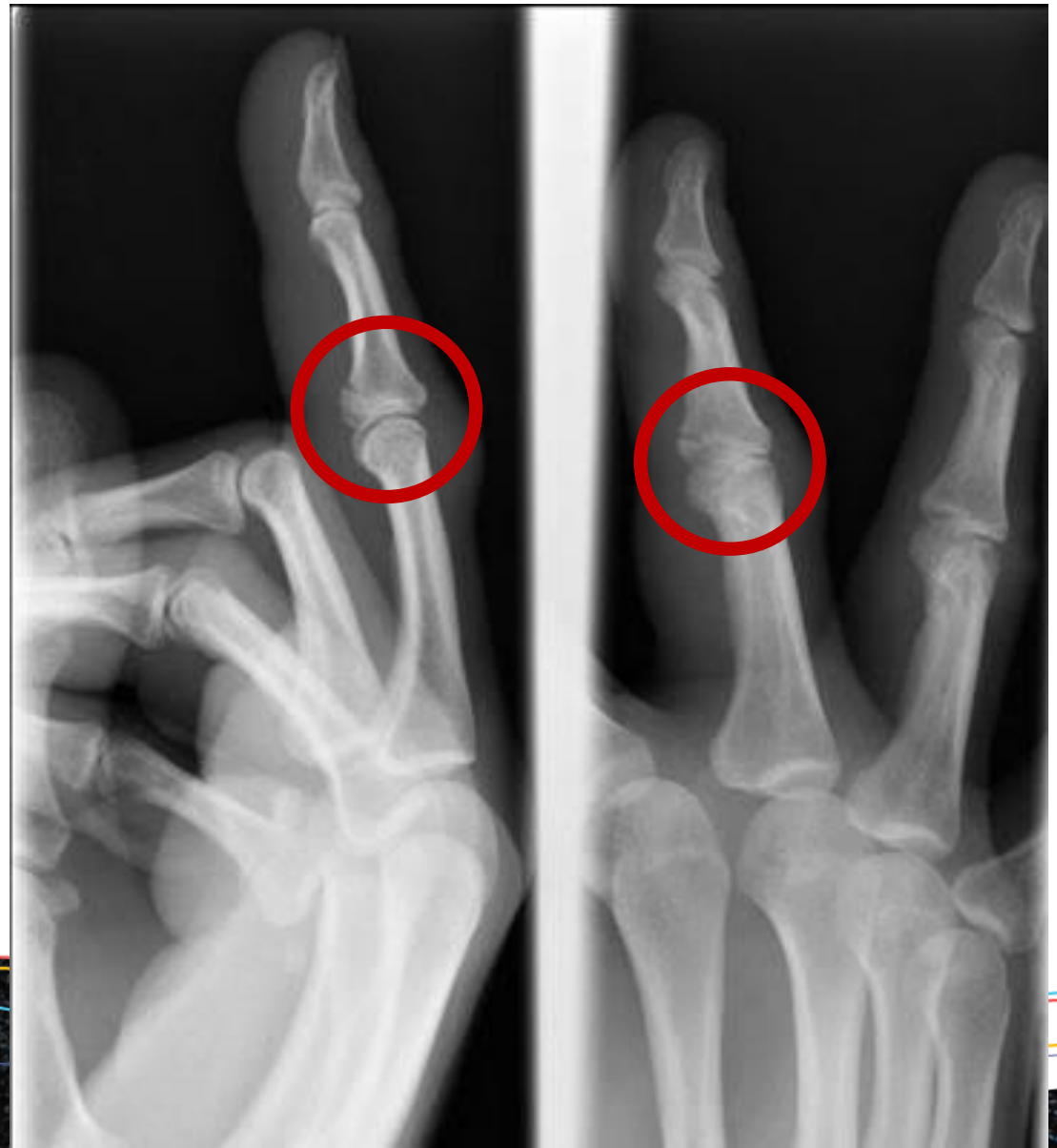

Case 2- 52 yo, pain at base of thumb

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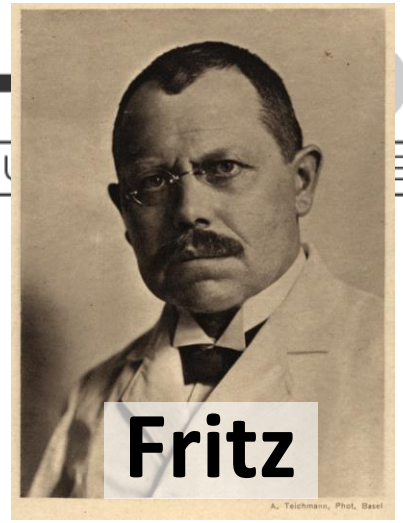
- Fell 6 weeks ago, bothering her since
- Limited ROM due to pain, mild swelling, grip diminished, global tenderness at base of thumb
- Differential:
  - ~~Scaphoid fracture~~
  - DeQuervain's Tenosynovitis
  - CMC Arthritis
  - Ulnar Collateral Ligament

DeQuervain's Tenosynovitis

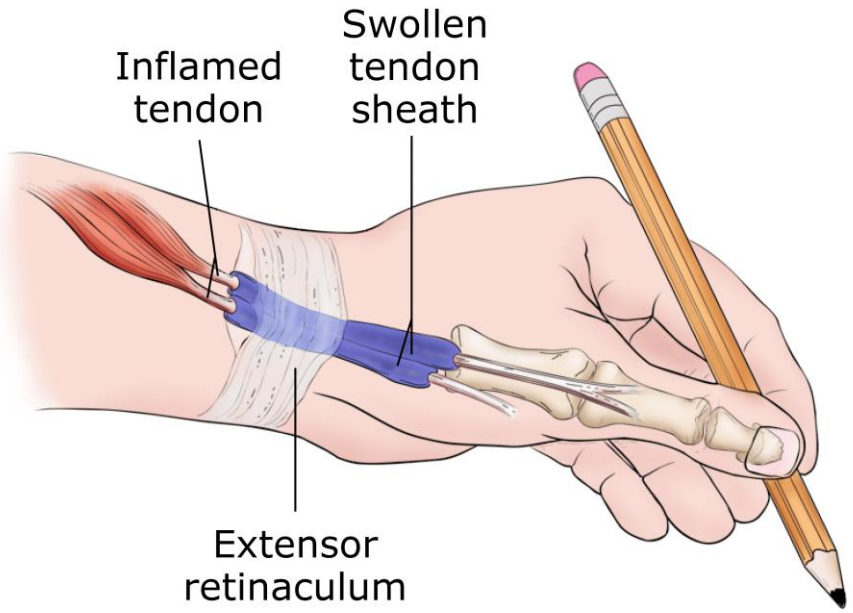
- Female > Male, age 40s-50s, postpartum
- Thumb Spica (long), NSAIDs, activity modification
- Overuse injury must be underused
- 88% mild disease resolves with splinting alone
- 1st Steroid injection 50% resolution
- 2nd steroid injection 90-95% resolution
- Retinacular release surgery

- Very Frustrating Condition (4-6 weeks at best)



abductor pollicis longus (APL)

extensor pollicis brevis (EPB)

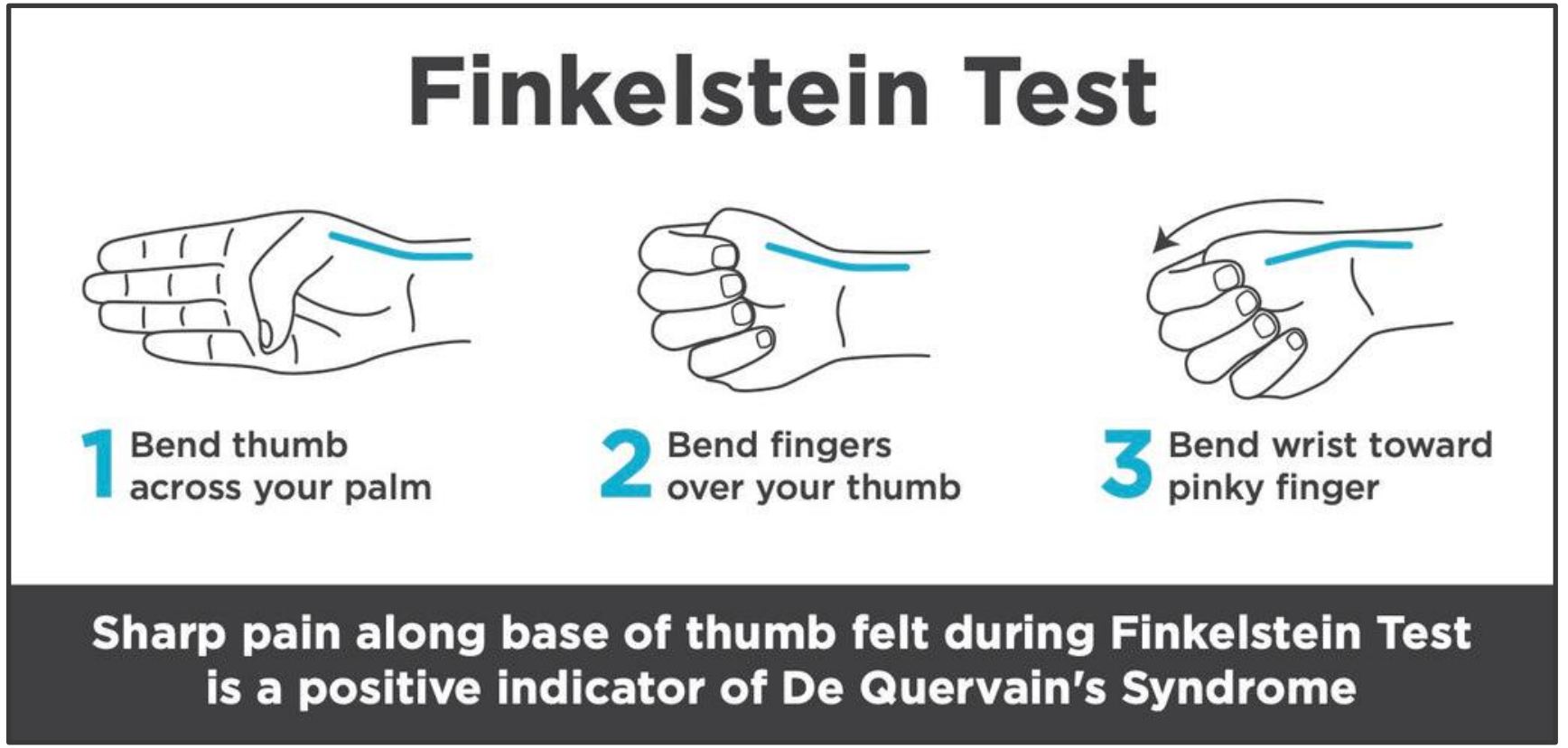


Be thoughtful when performing this test

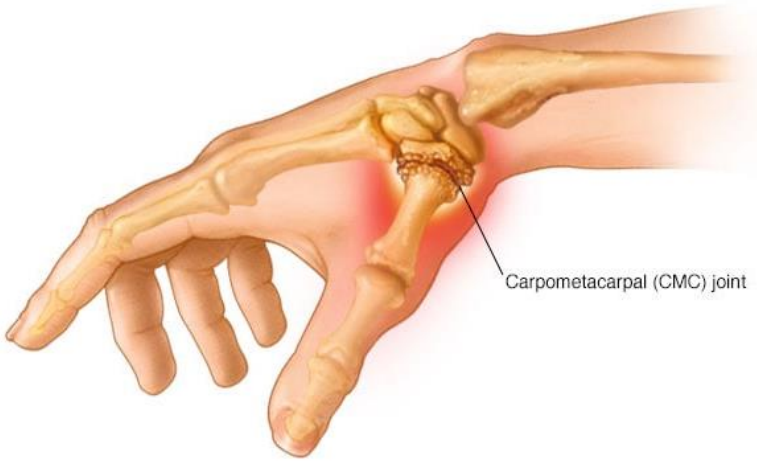
Minimally positive is "positive"

Needs to be negative at resolution

The test alone can aggravate symptoms



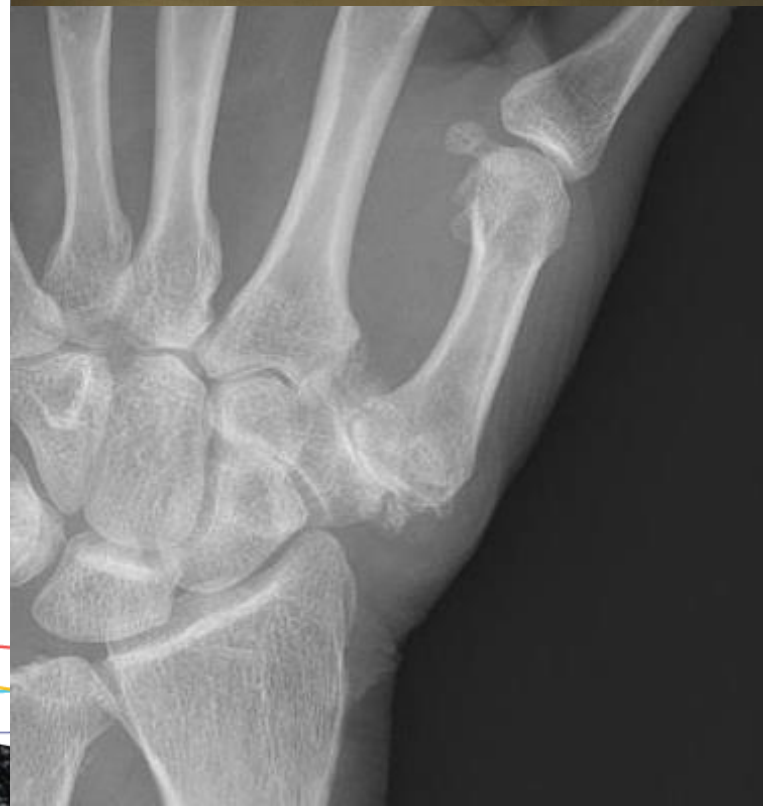
CMC Arthritis



- Most common arthritis of the hand
- Swelling, stiffness, tenderness, ↓ROM, weak grip and weak pinch
- Often presents as acute pain, not chronic
- Women > Men, 60-65% dominant hand
- CMC Grind Test – axial load with rotation
- XR+ Findings
  - Men 5.8% over 50 33.1% over 80
  - Women 7.3% over 50 39.0% over 80

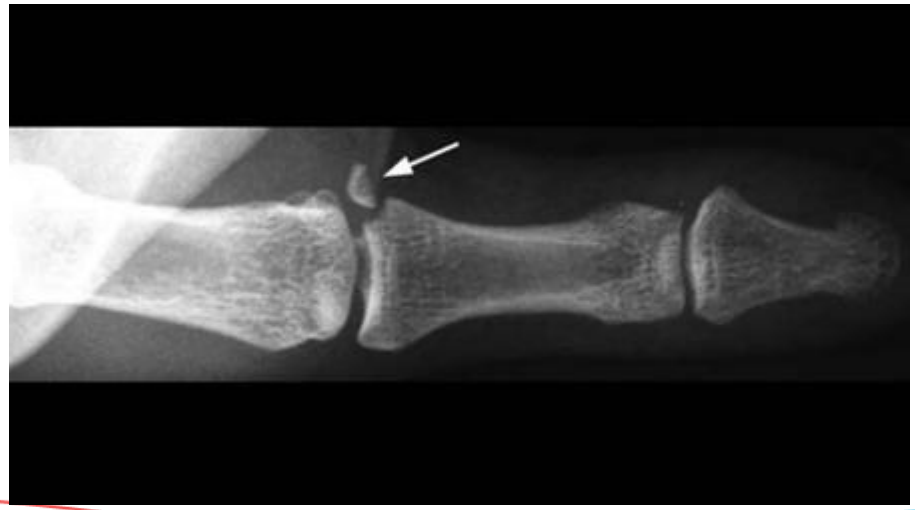
CMC Arthritis

- Can be difficult to distinguish from DeQuervain's acutely
- Treatment
  - NSAIDS (topical helpful)
  - Splinting
  - Ice or heat
  - ROM and strength exercises (rice therapy)
  - Steroid injection

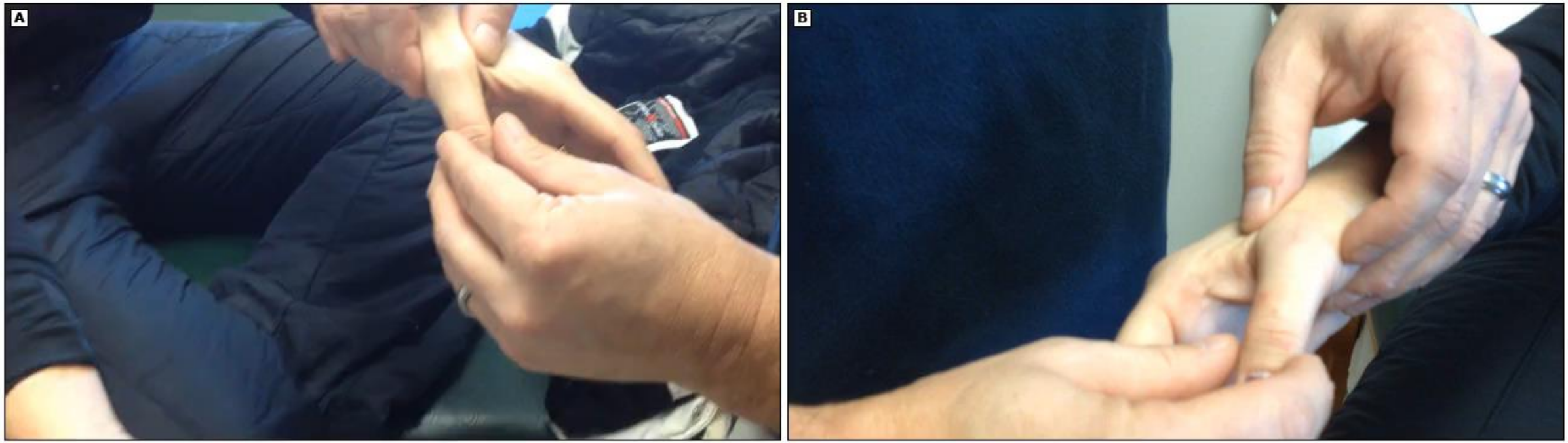


Ulnar Collateral Ligament Injury

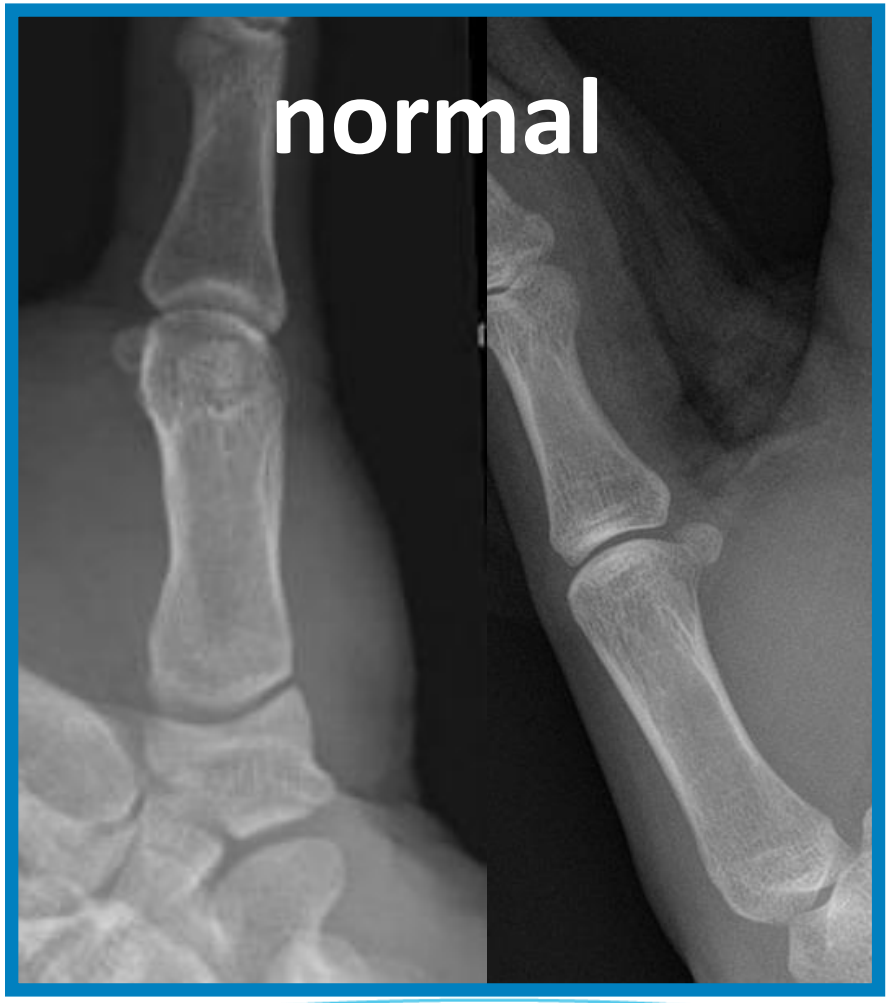
- Skier's Thumb / Gamekeeper's Thumb
- Forced ABD of the thumb
- May cause ligament tear or avulsion fracture
- Tender over Ulnar side of MCP joint
- Laxity or pain on Verus stress testing
- If positive stress test obtain plain films
- Look for bony avulsions

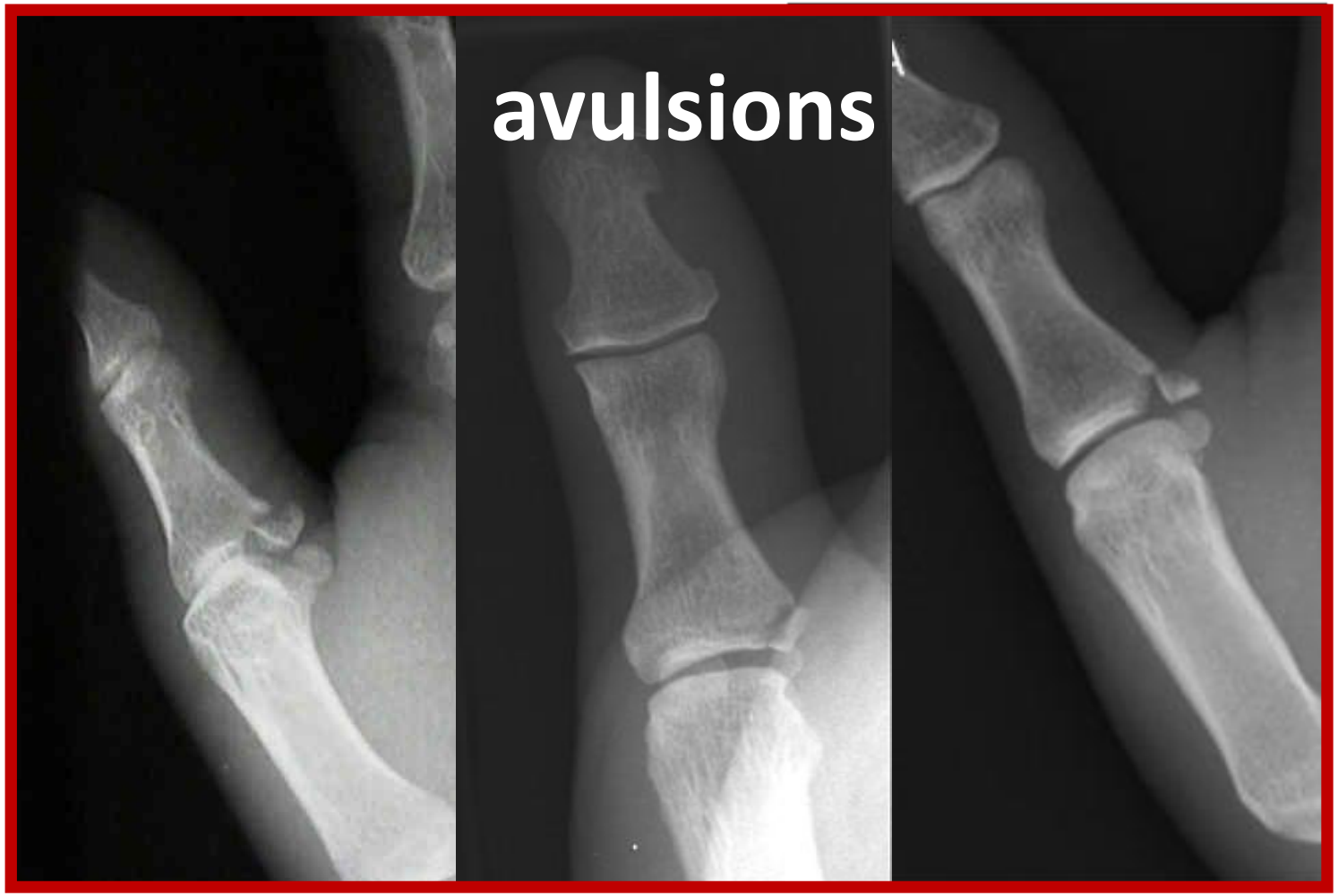


Ulnar Collateral Ligament Testing



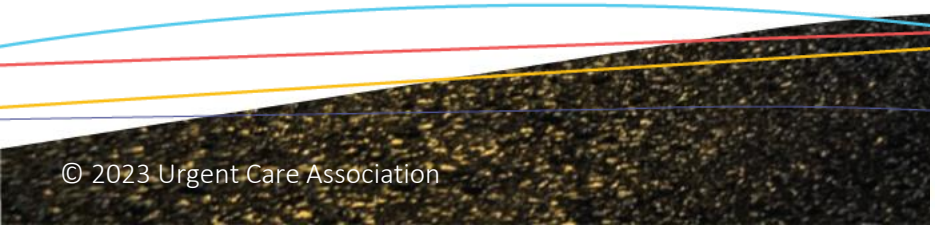
Not the normal MCP Ossicles

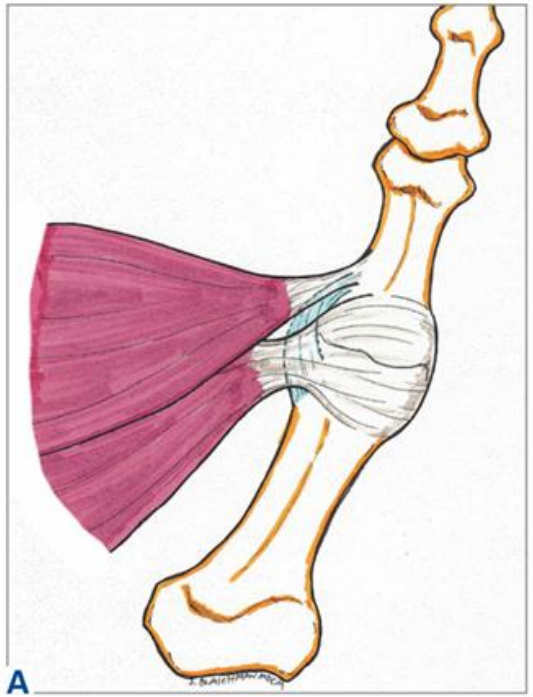


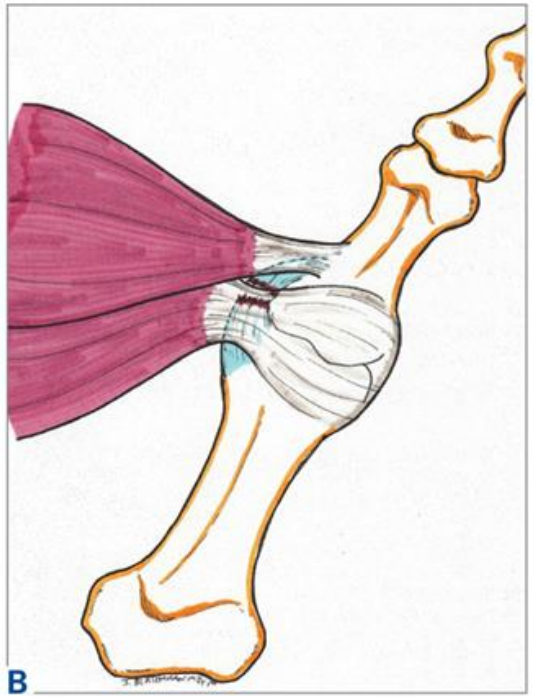


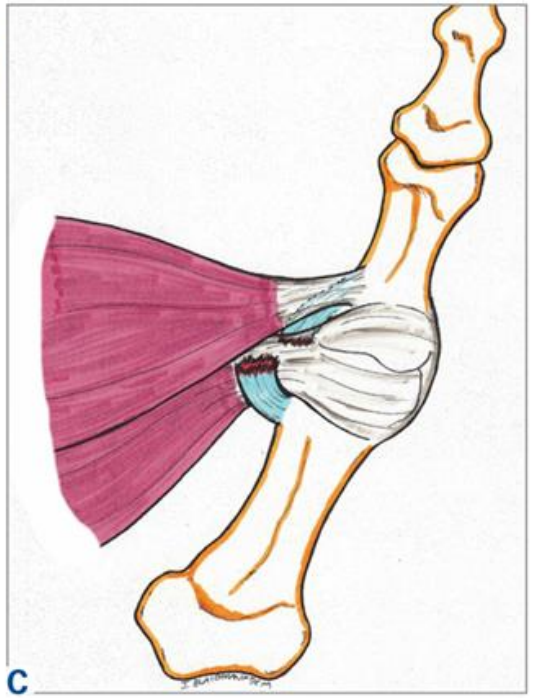
UCL Injury

- NSAIDs, Thumb spica (long) splinting, refer to orthopedics
- If concern for complete tear or avulsion on XR – urgent referral indicated
- **Stener Lesion** occurs in 64-87% of complete UCL tears
- Adductor muscles get between the two ends and surgery required









Distinguishing Factors

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UCL

- Acute
- Tender MCP Joint
- Collateral Lig test +
- - Finkelstein's
- - CMC Grind
- CMC motion normal

CMC Arthritis

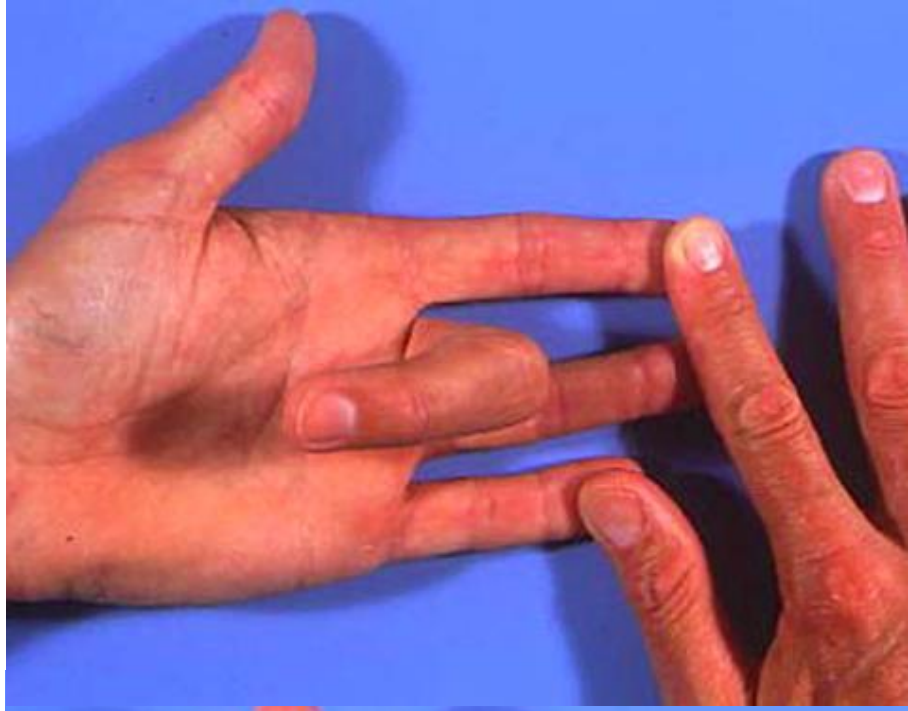
- Subacute/Chronic
- Tender CMC joint
- +/- Finkelstein's
- + CMC Grind Test
- CMC motion limited/painful

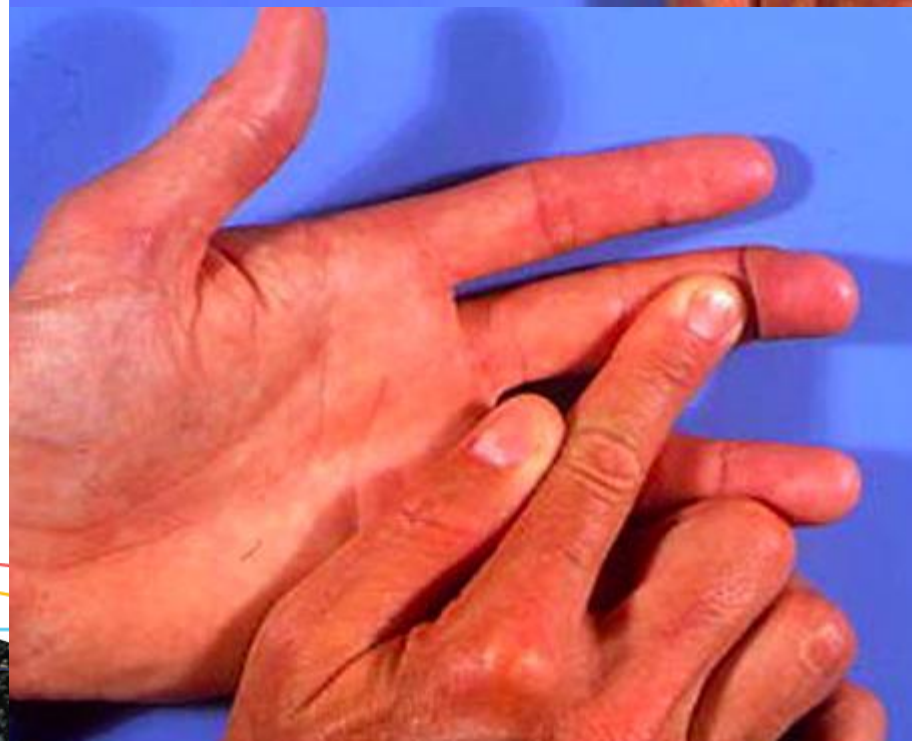
De Quervain's

- Subacute
- Tender dorsal thumb and radial styloid
- + Finkelstein's
- +/- CMC Grind
- CMC motion limited/painful
- Pain with isometric contraction (EXT & ABD of thumb without motion)

Hand & Wrist exam needs Details

- A ton of small anatomy
- Palpate each joint of the finger individually
- Test collateral ligaments
- Test flexion and extension motion and strength at each joint individually
- Does use cause pain?





My 6 week-old wrist sprain is not getting better…(Case 1 returns)

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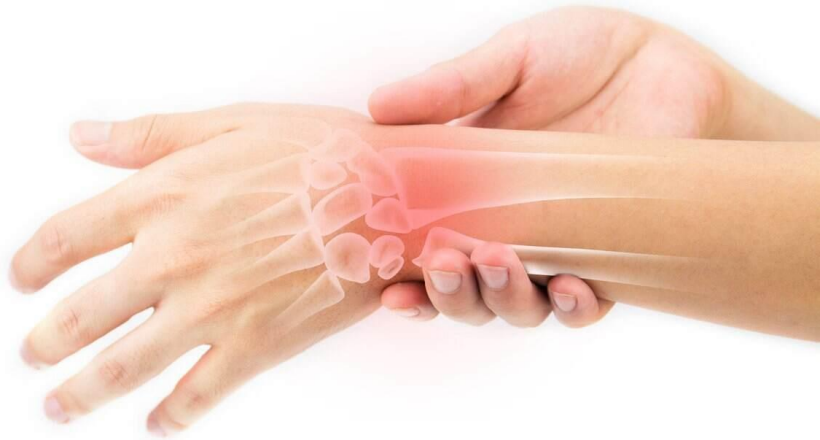
- Patient with wrist sprain/FOOSH/Contusion
- Initial negative x-rays
- Not improving despite standard treatment
- Consider alternate diagnoses
- Ulnar sided pain → TFCC injury
- Radial sided pain → Scapholunate Dissociation



Triangular FibroCartilage Complex

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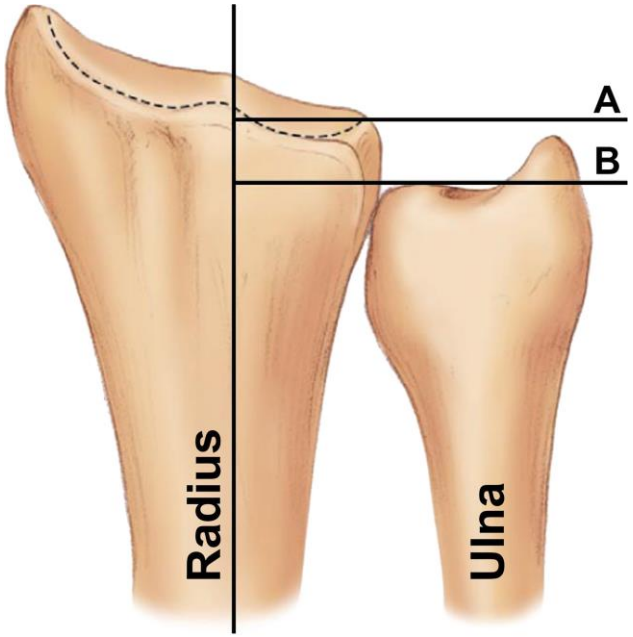
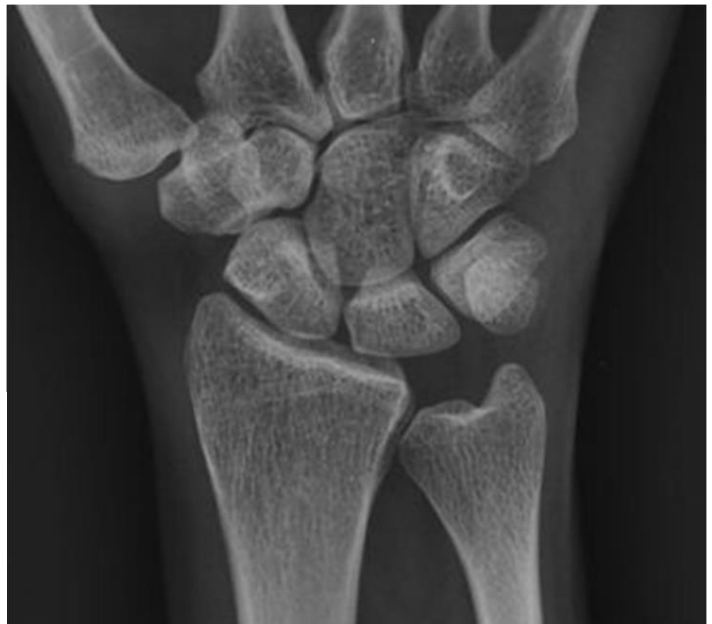
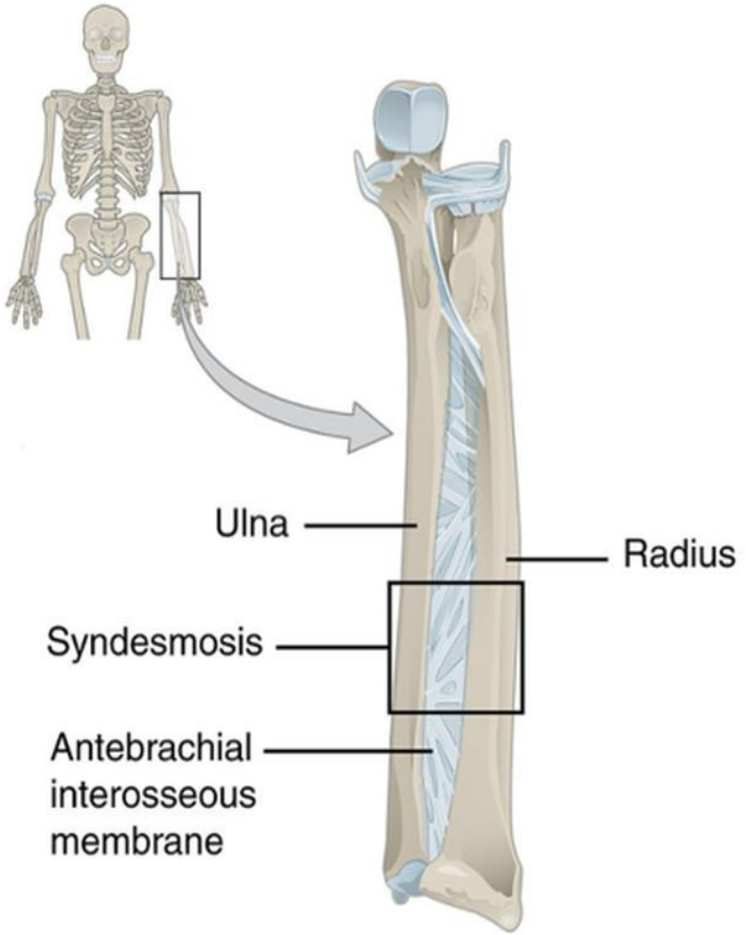
- Ulna Does the work at the elbow
- Radius does the work at the wrist (80% of compressive force)
- This leads to ulnar variance
- Ulna is shorter than the Radius



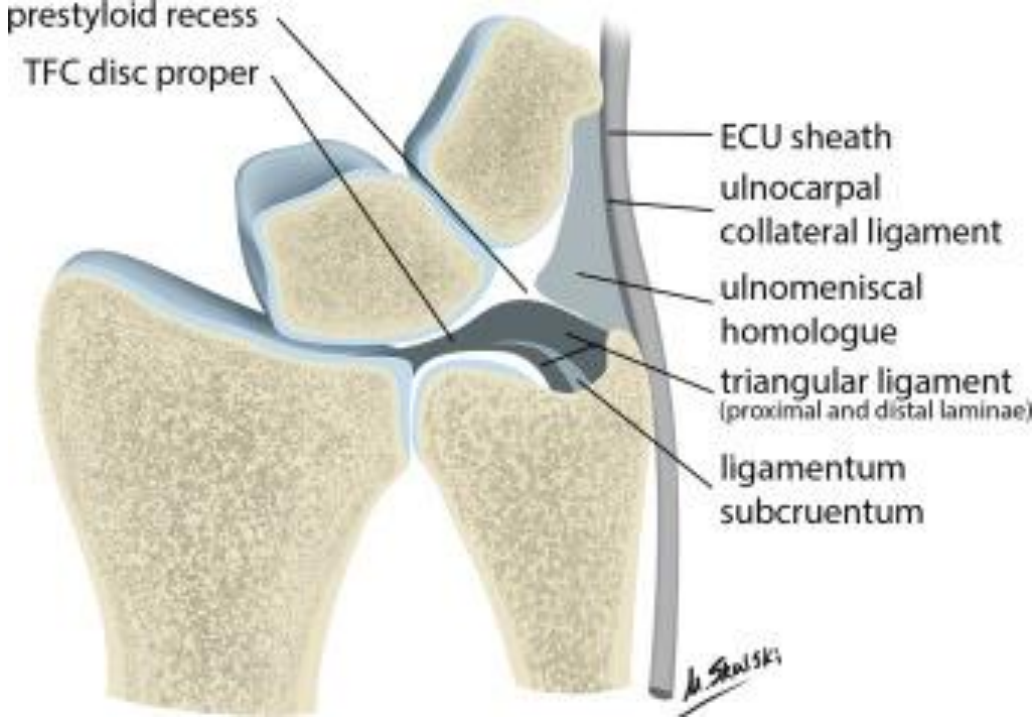


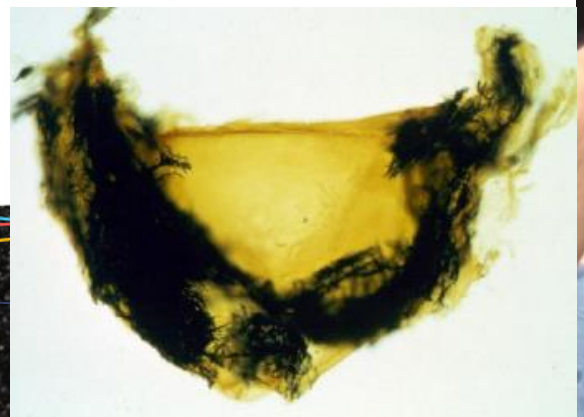


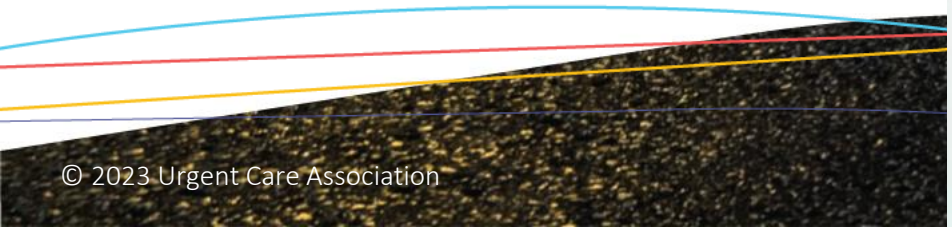
Syndesmosis

TFCC

- Can be injured with wrist Extension/Ulnar Deviation
- Can be injured with axial load to pronated wrist
- MVA with hands on the wheel
- Made of several ligaments and cartilage- function together
- Only outer 10-30% has blood flow, slow to heal
- Plain films not helpful



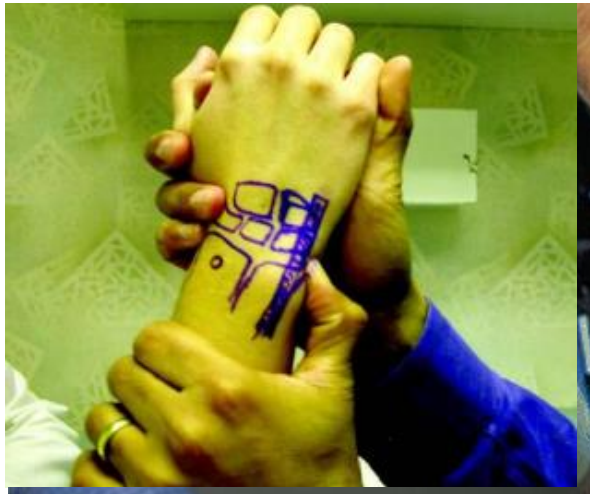


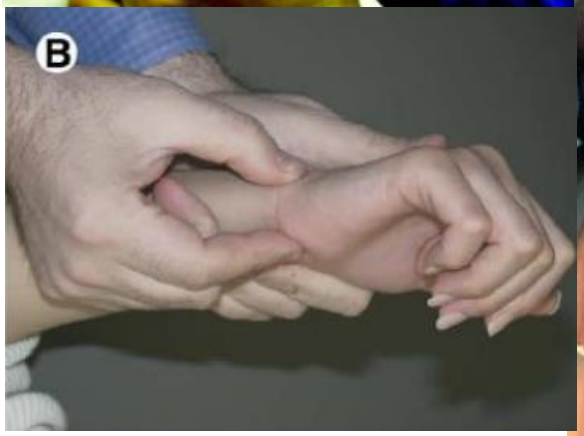


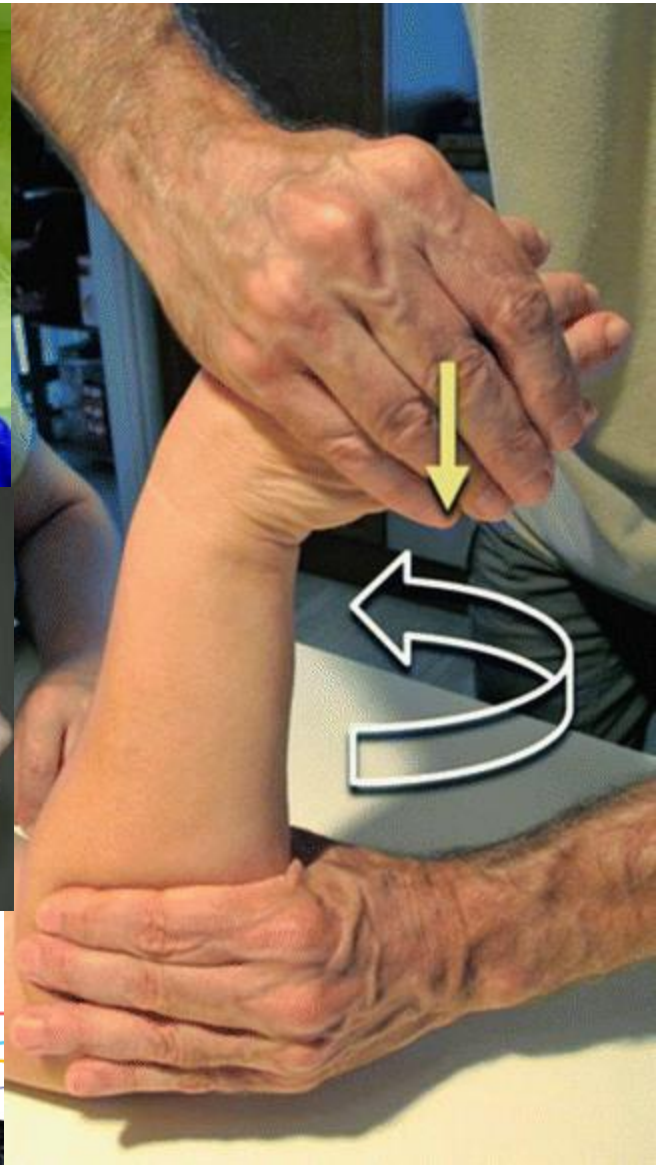
TFCC Exam

DRIVING CHANGE 2023
THE URGENT CARE CONVENTION

- Tenderness over TFCC
  - Tendons in the way on the palm
  - Ulnar Styloid in the way laterally
  - Dorsal palpation right at the tip of the ulna
- Pain with TFCC Compression Test
  - "Impingement"
  - Ulnar deviation
  - Move through FLEX/EXT



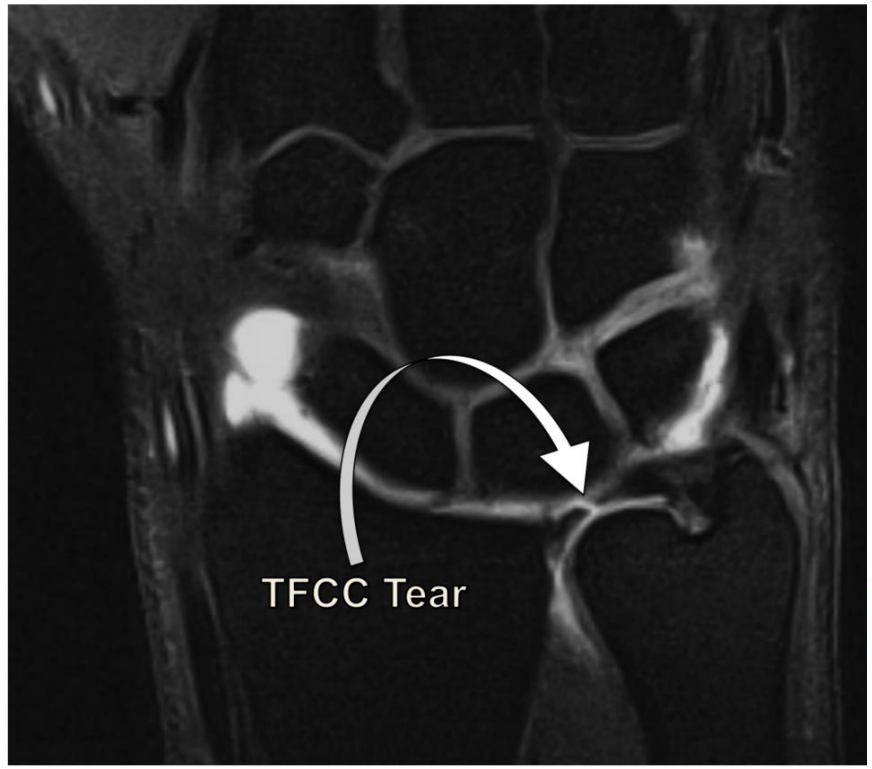




TFCC Diagnosis & Treatment

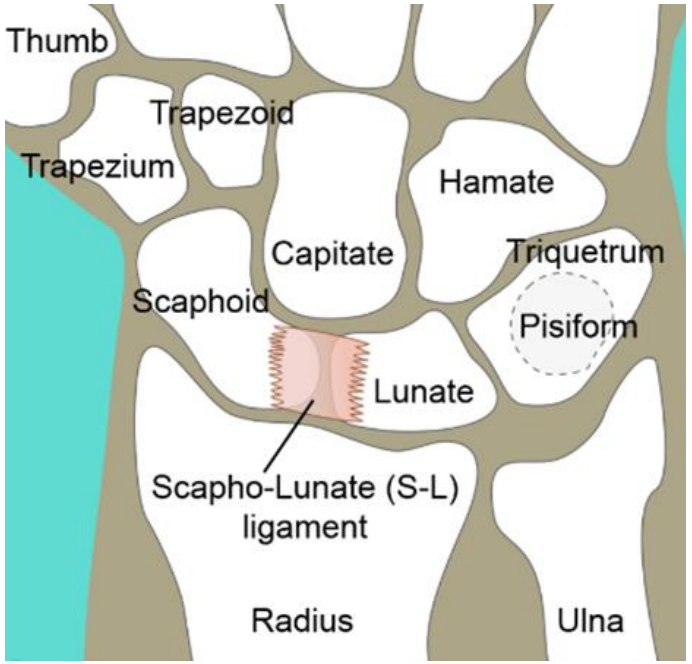
DRIVING CHANGE 2023
THE URGENT CARE CONVENTION

- If clinically suspicious obtain MRI
- Referral to hand surgeon
- 57% heal with conservative care (4-6 weeks casting)
- Steroid injection, surgery
- Missed commonly in wrist injuries
- Put suspected patients in more than cock-up splint



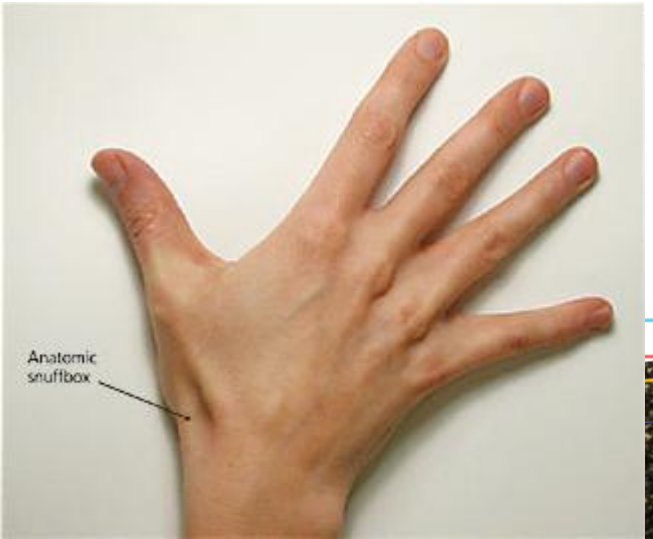
Scapholunate Dissociation

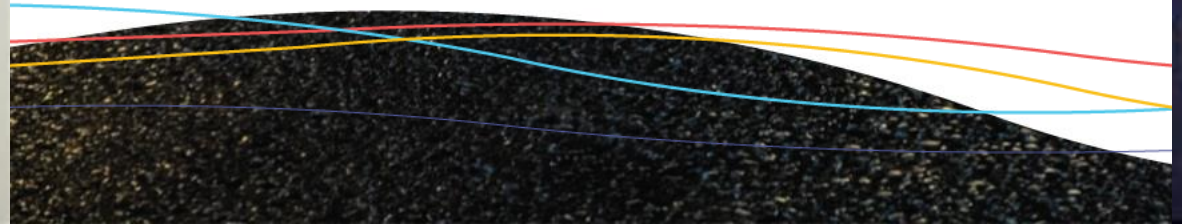
- Approximately **5% of wrist sprains** are associated with scapholunate ligament injury
- Most common ligament injured in the wrist
- Scapholunate ligament holds the scaphoid and lunate together and is the "ACL" of the wrist
- Disruption leads to pain, instability and DJD
- Surgical repair required
- Often missed in initial wrist injuries or falls
- Can take 3 months for instability to develop

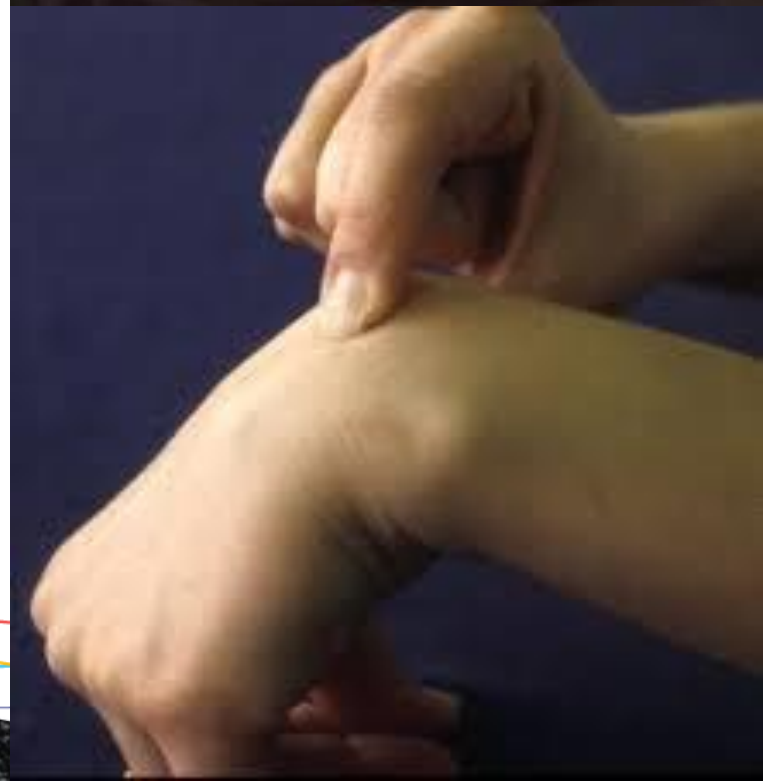


How to palpate the lunate

- Follow the middle finger bones back toward the wrist until you feel a divot.
- Have the patient flex the wrist and the lunate is underneath your fingertip
- Tenderness over the area between the two bones is suggestive of injury

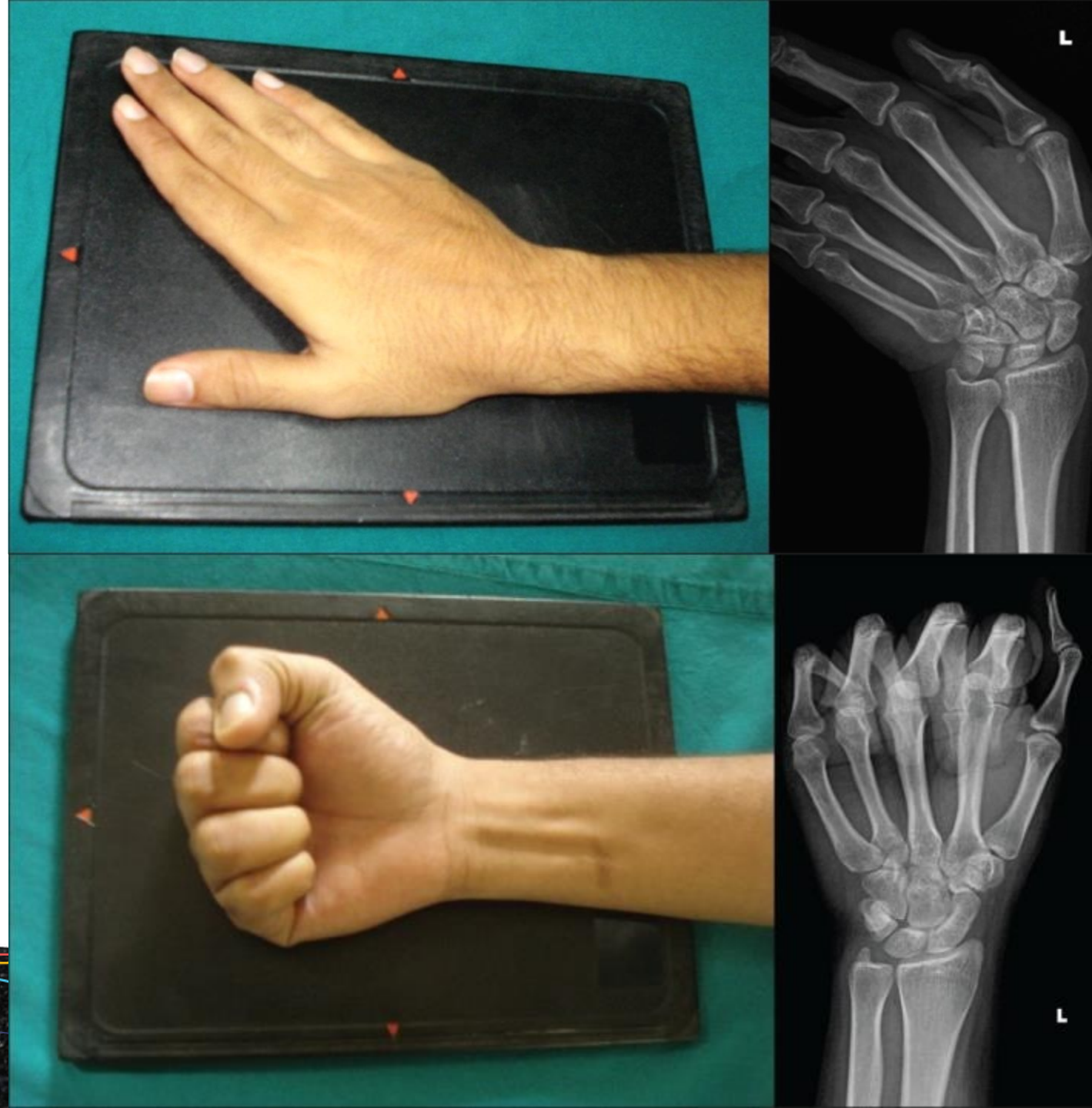






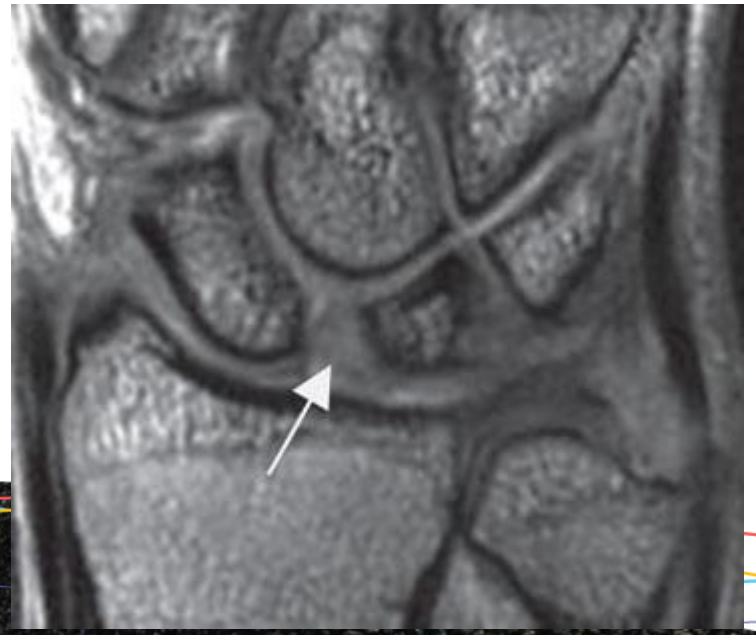
X-ray for scapholunate dissociation

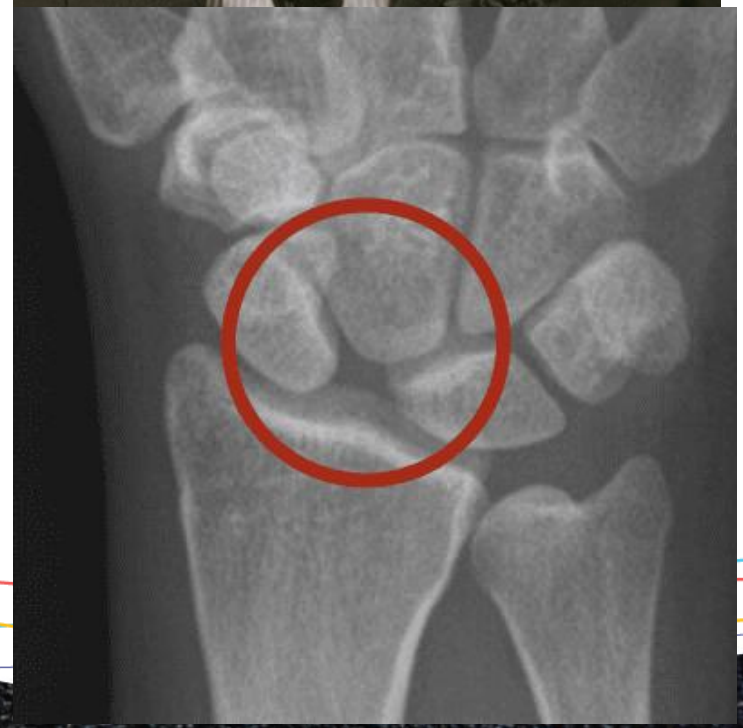
- Ulnar deviated AP and AP Clenched Fist Views
- Force the scaphoid and lunate apart to test ligament integrity
- No more than 4-5mm



Terry Thomas Sign

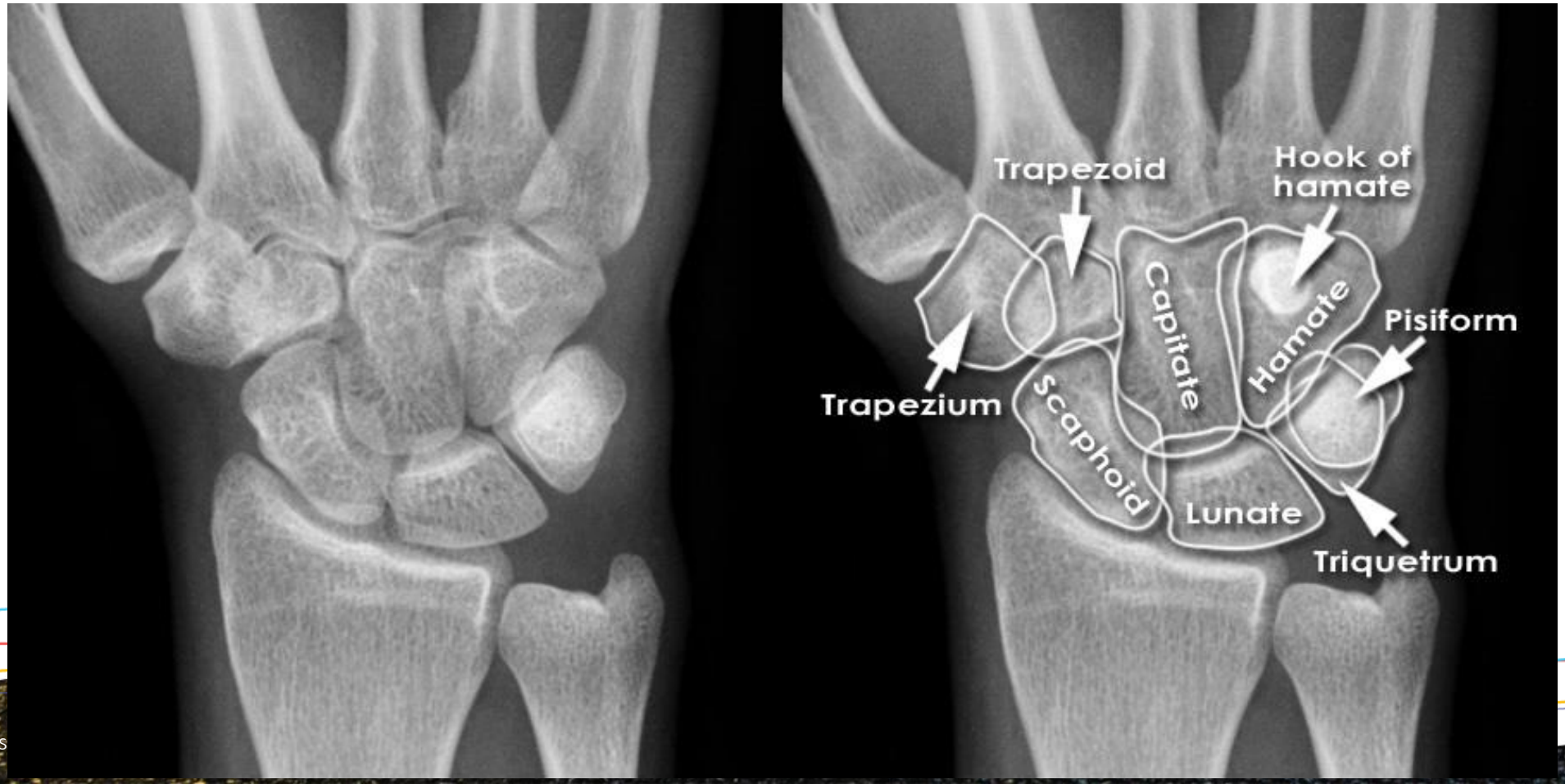
- British Comedian from the 1950s with a gap in his front teeth
- Widening on stress x-rays view reflects disruption
- MRI indicated
- Surgical repair needed so refer to Orthopedics
- Thumb spica splint





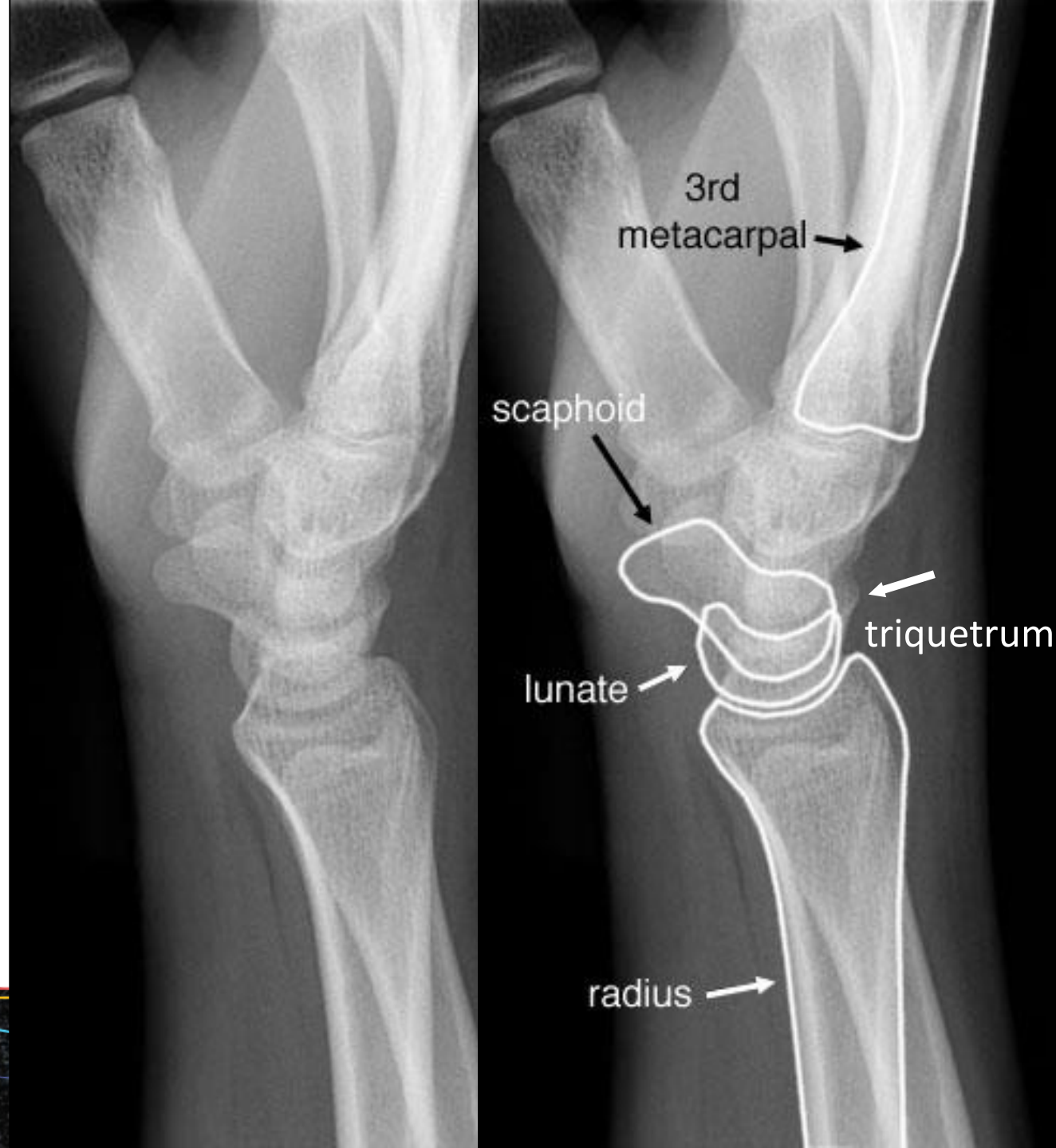
Your focus on hand/wrist x-rays?

- Scaphoid makes up 51-62% of all carpal fractures
- Triquetrum makes up 15% of carpal fractures



Lateral X-ray View Tips

- Lunate is the most proximal carpal bone with a crescent shaped articulating surface
- Scaphoid is the next most proximal crescent shaped edge
- Triquetrum protrudes dorsally as you move distal from radius



Lateral X-ray View Tips

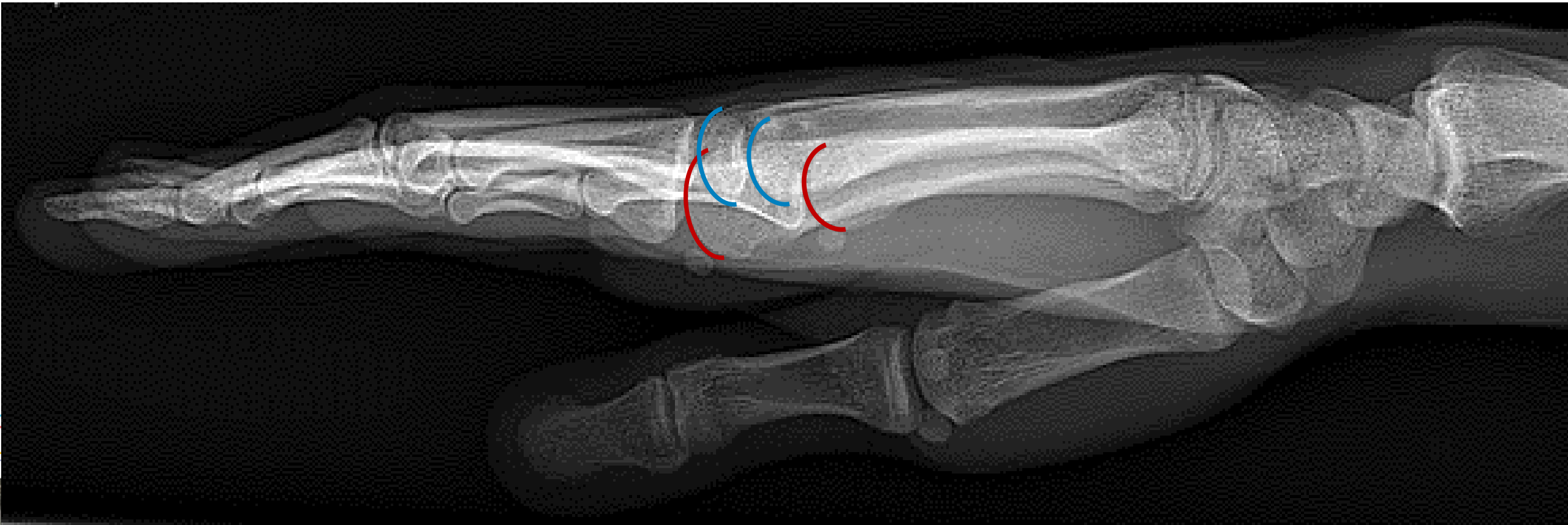
DRIVING CHANGE 2023
THE URGENT CARE CONVENTION

Always

- 3rd metacarpal is the longest
- 5th metacarpal is the shortest

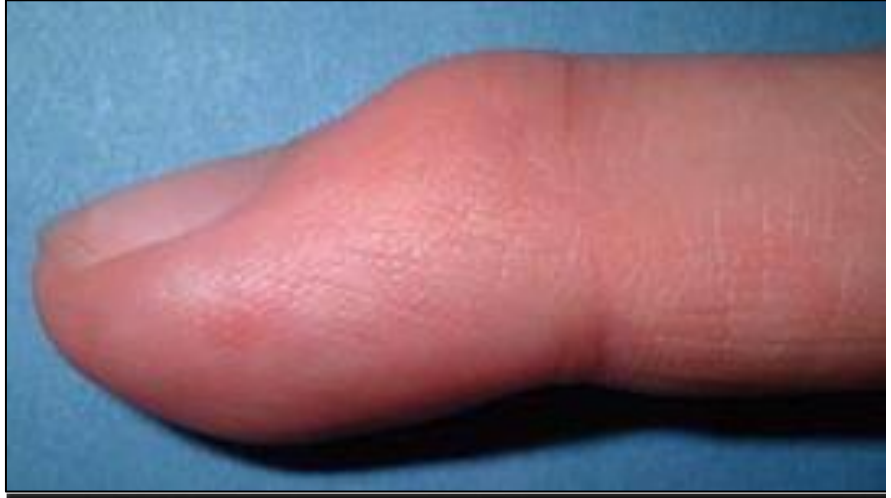
Usually

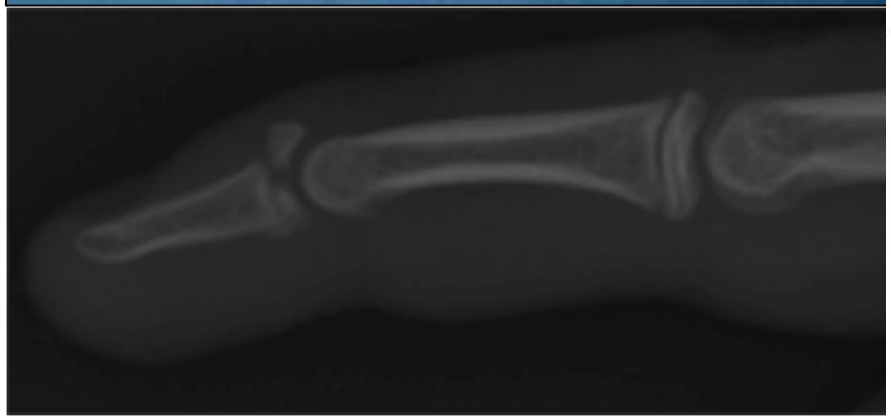
- 2nd metacarpal is 2nd longest
- 4th metacarpal is 2nd shortest

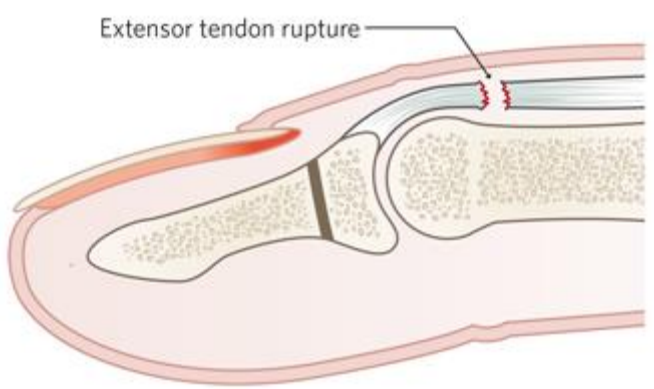


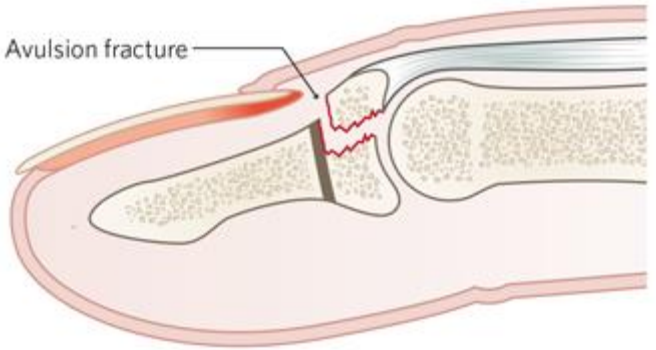
Mallet Finger

- Direct blow to finger "jammed"
- Lacks full EXT
- Always x-ray
- Needs 6 weeks of immobilization in full extension
- >30 % of joint surface involved? May need pinning

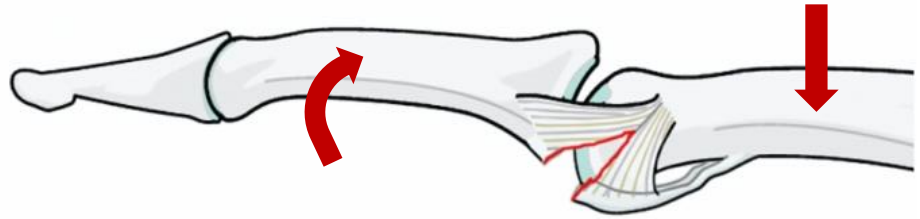




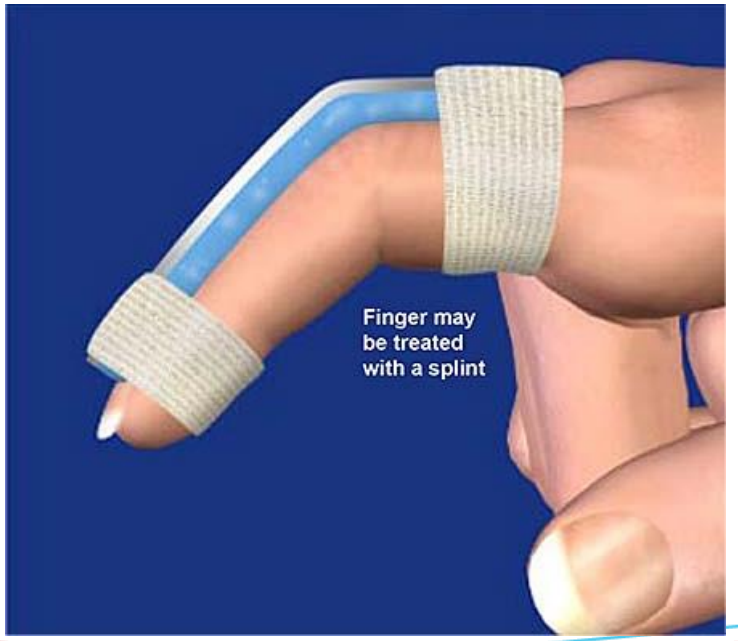


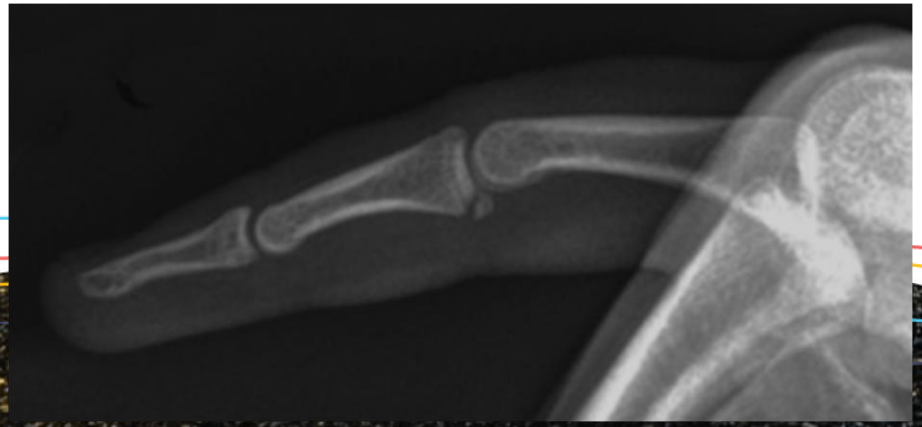


Volar Plate Injury

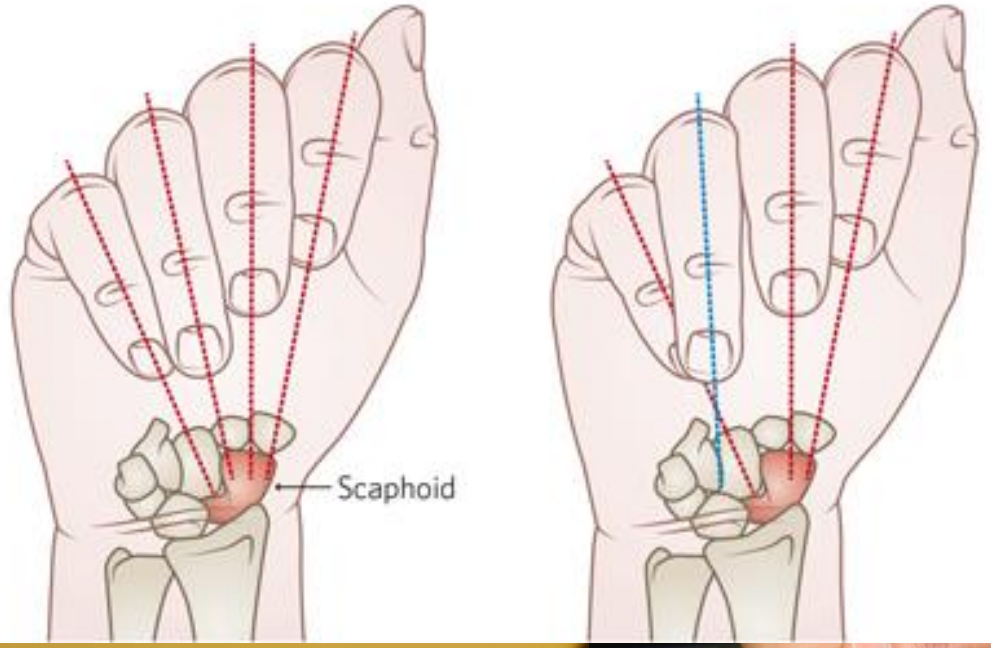


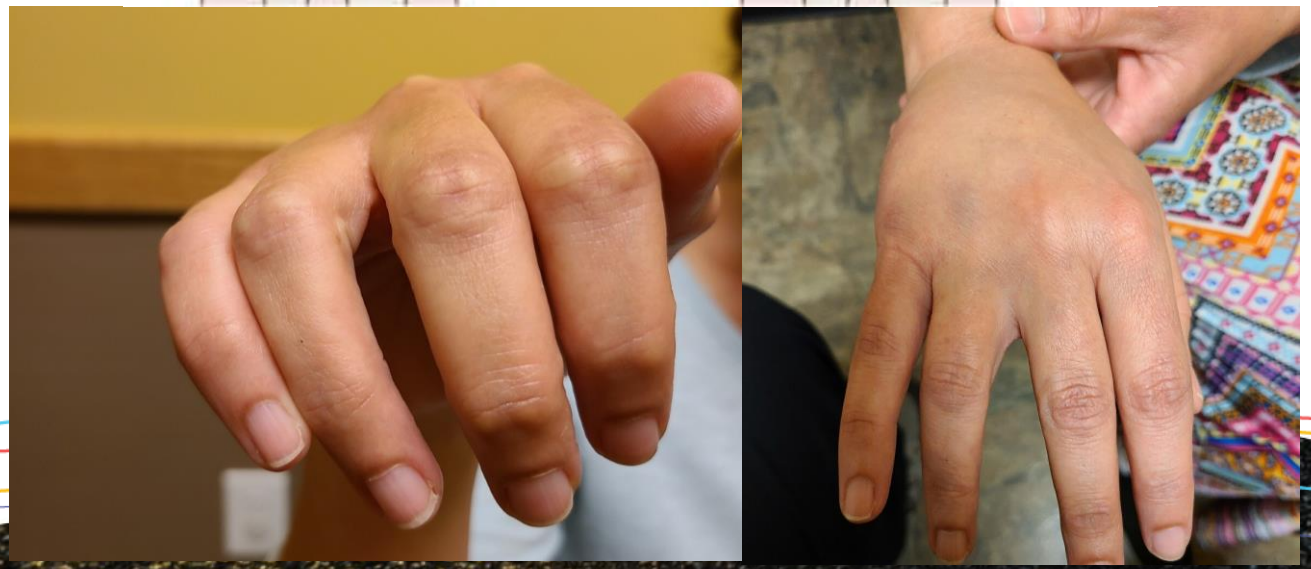
- The other “Jammed” finger injury
- Palmar joint capsule injured when axial load & hyperextension pushes middle phalanx down relative to proximal phalanx
- X-ray to check for avulsion
- Conservative care for normal x-ray and for fracture with less than 30% joint surface involved

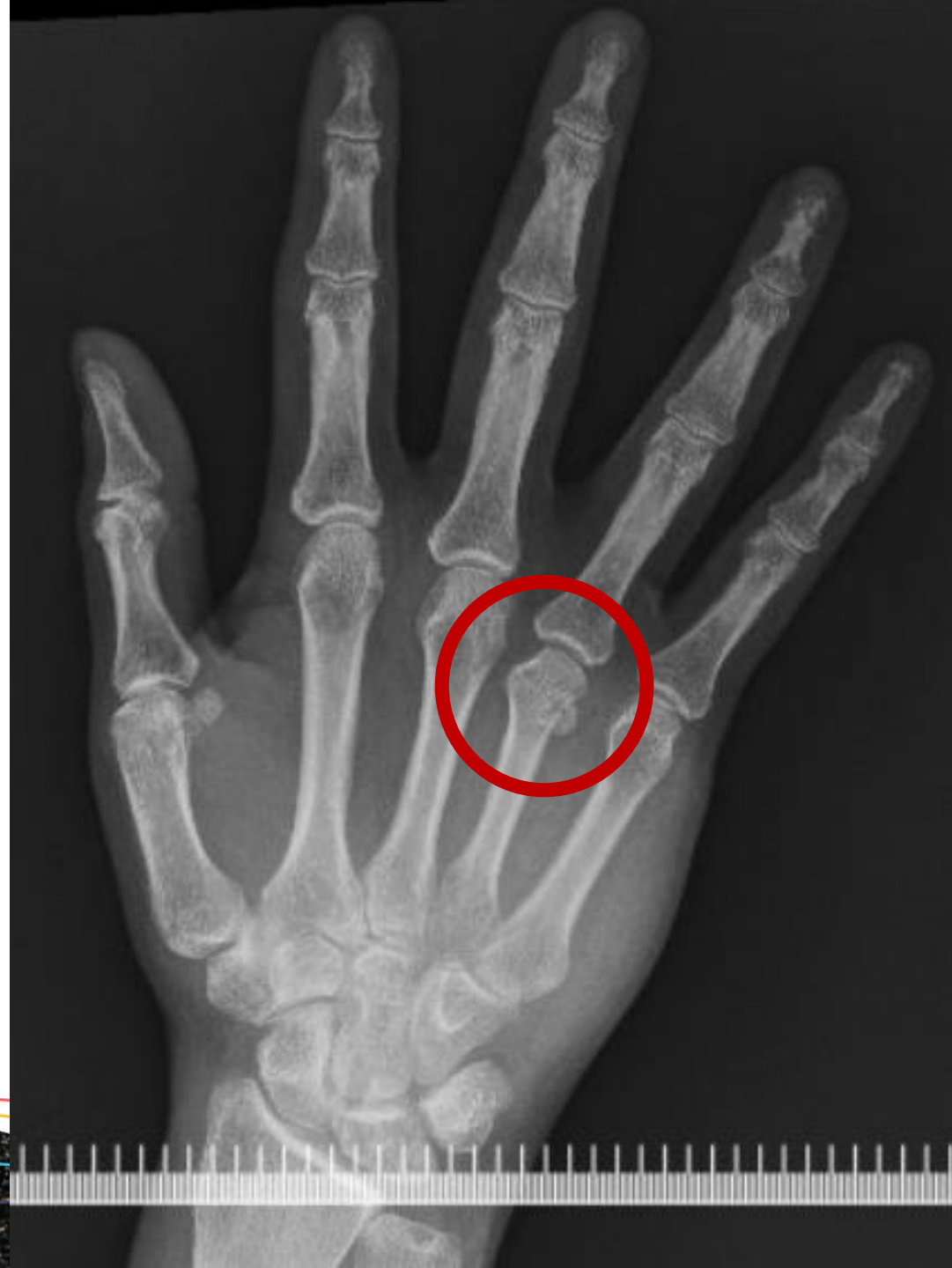




Rotational Finger Deformity







Carpal Tunnel Syndrome

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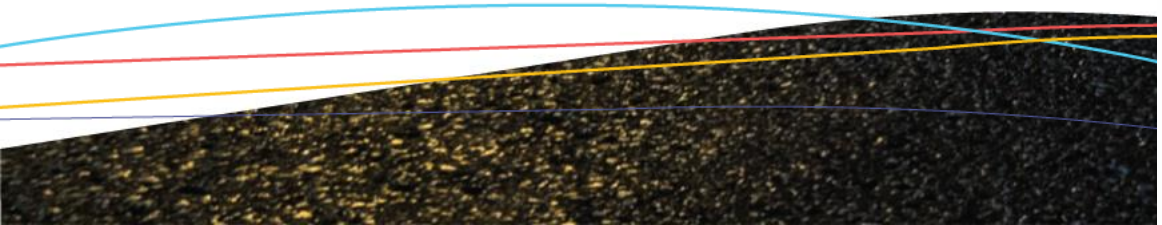
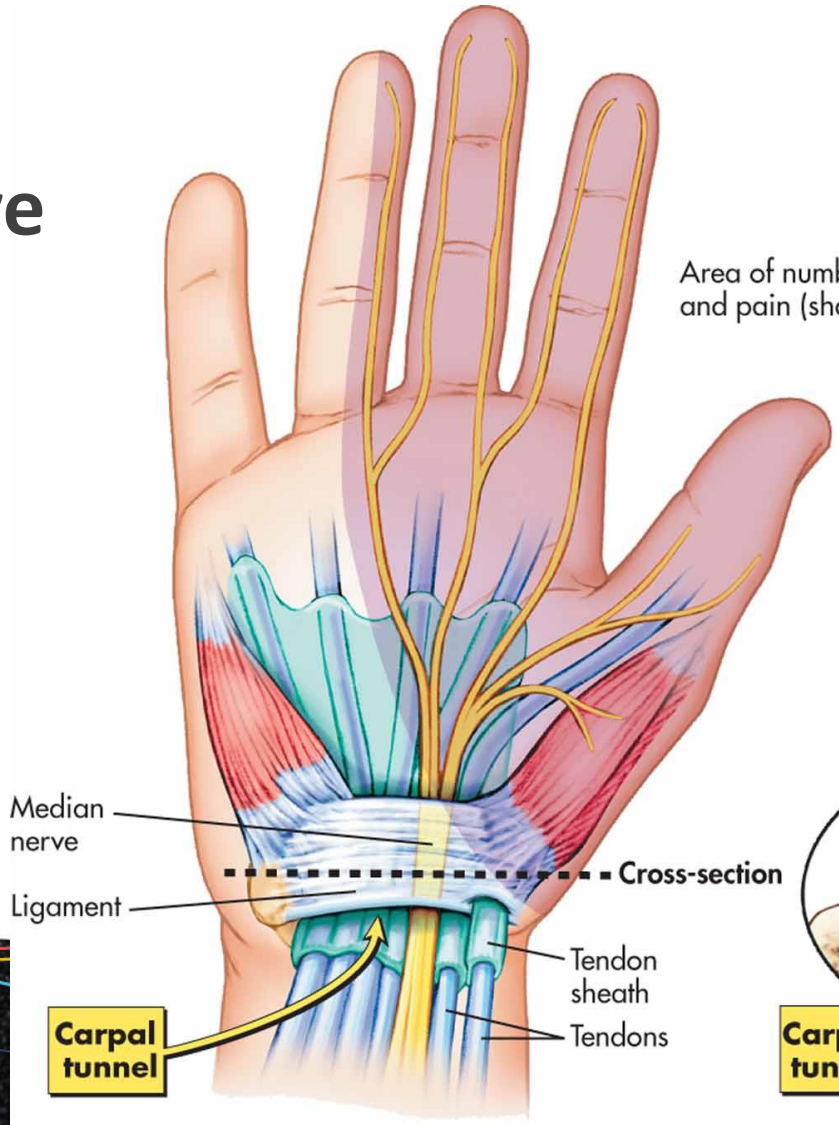
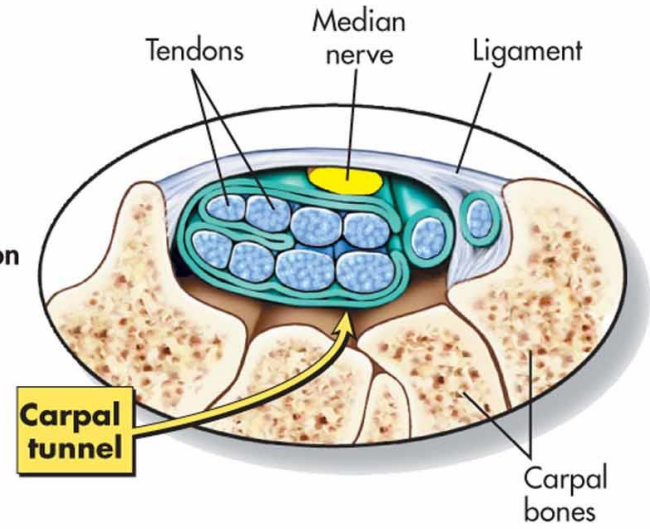
THE URGENT CARE CONVENTION

- Overuse injury
- Chronic inflammation
- Pressure on the median nerve
- Paresthesia, pain, weakness
- Can develop secondary to acute injury
- Female 3:1 male

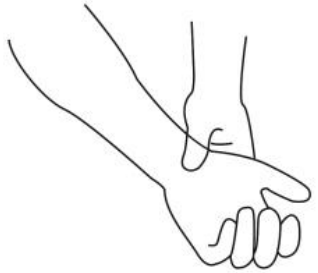




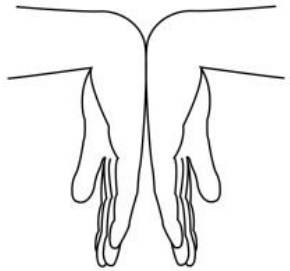


Exams for Carpal Tunnel Syndrome

Carpal Compression Test

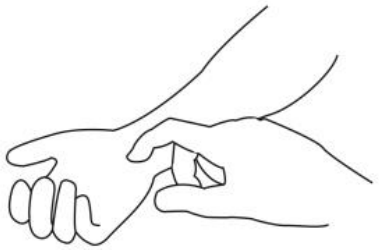


Phalen Sign



Reverse Phalen Sign

Tinel Sign



Tinel's Test

- **Sensitivity 23-97%**
- **Specificity 55-100%**

Carpal Tunnel Syndrome

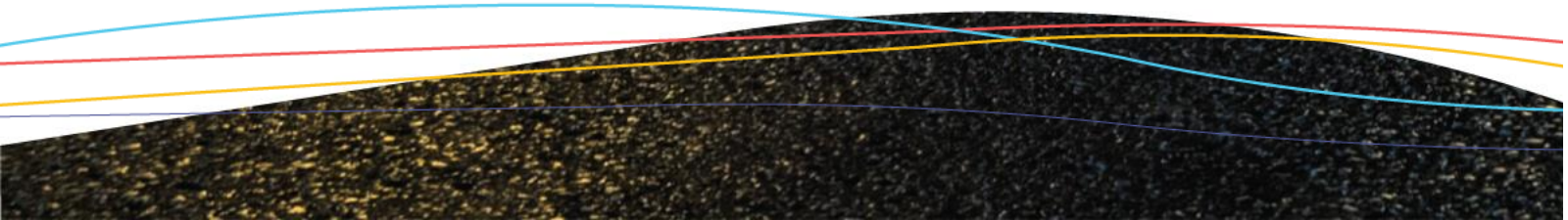
DRIVING CHANGE 2023
THE URGENT CARE CONVENTION

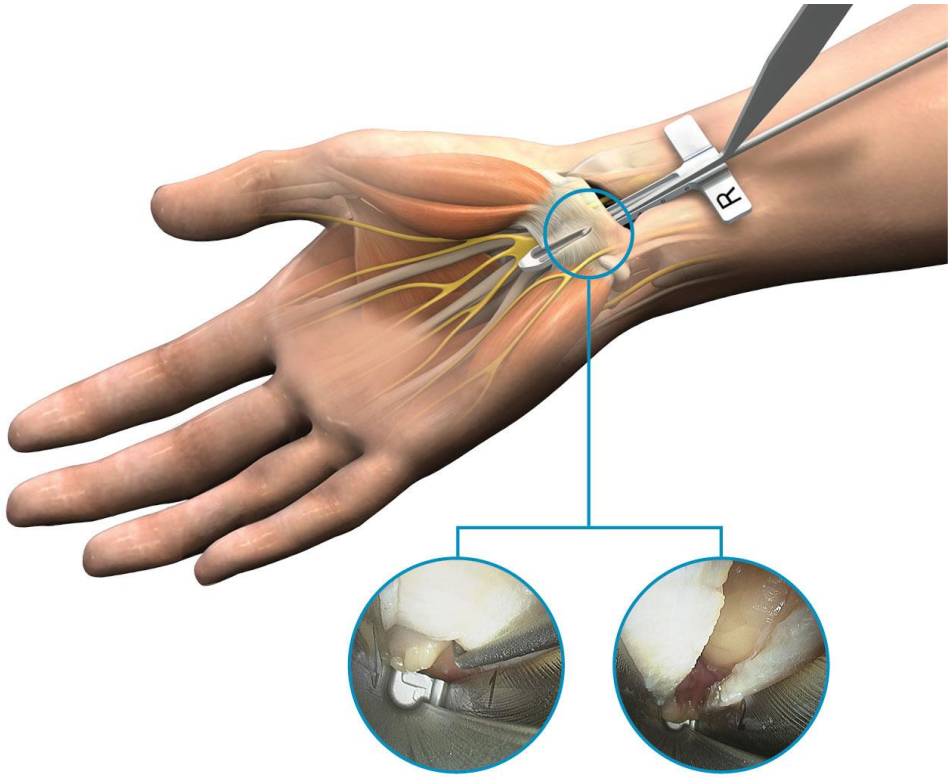
- Diagnosed by history of physical exam
- EMG not needed but may be helpful in complex cases but many false negatives in the first 2 months
- Key to recovery is underuse
- Cock-up splints (Cochrane Review)
  - Evidence shows improvement
  - Night-only may be as good as 24 hours (much better tolerated)
- Hand Exercises/PT shows “small amount of evidence for improved symptoms” (Cochrane Review)

Carpal Tunnel Syndrome

DRIVING CHANGE 2023
THE URGENT CARE CONVENTION

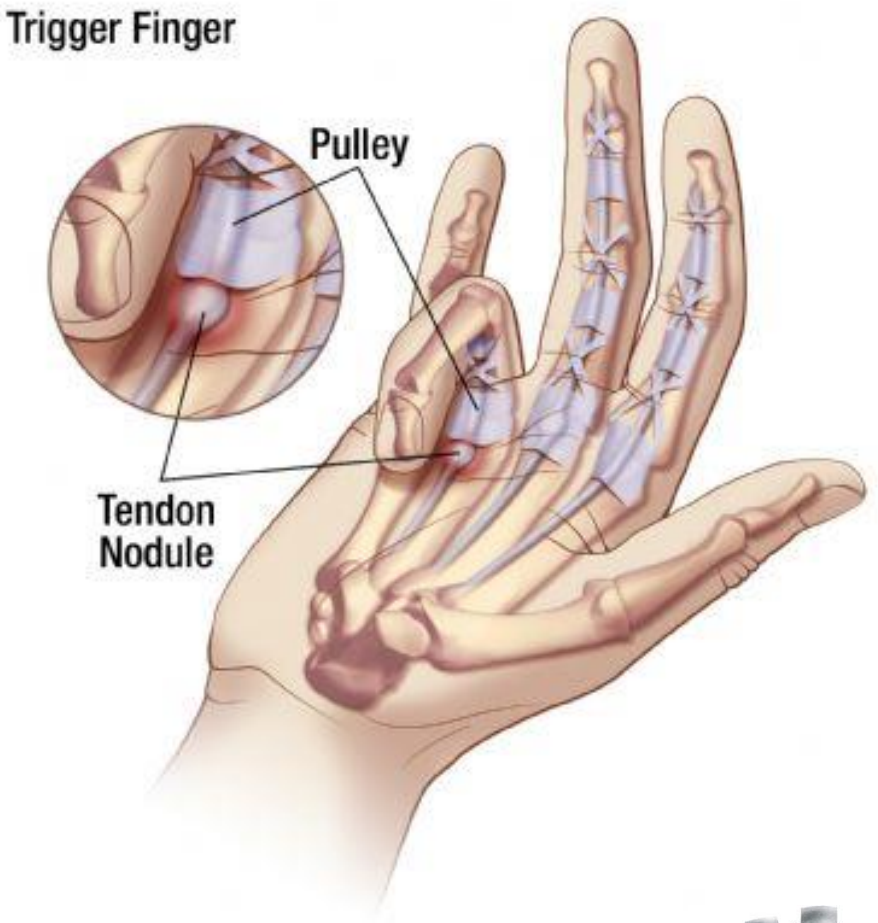
- **Steroid injection**
  - Improves symptoms and quality of life score for up to 3 months
  - Improves nerve conduction
  - May reduce need for surgery for up to 12 months
- **Surgical release**
  - 20 minute procedure, good success rates
  - Open vs Endoscopic
    - Grip strength improved with endoscopic
    - Endoscopic more costly
    - Symptoms and Function equivalent





Trigger finger

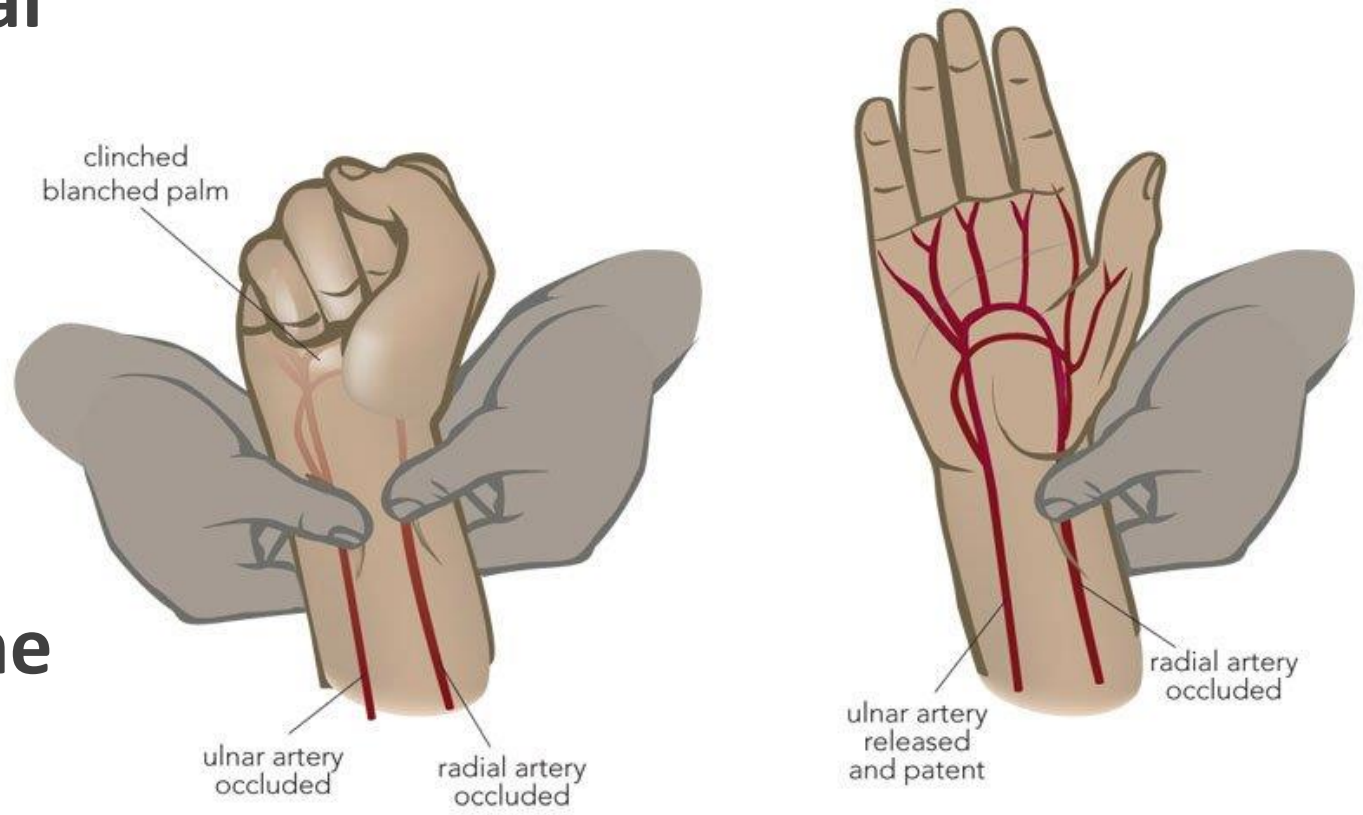
- Most common at the MCP joint
- Overuse and compressive forces lead to tendon inflammation and edema
- Gentle pressure over the palmar side of the MCP joint as the patient FLEX/EXT the finger and you can feel a mobile mass
- Tx- reduce motion (underuse) and compressive force on the area



Padded bicycle or weight-lifting glove

Allen Test for arterial blood flow

- Compress the ulnar and radial artery at the wrist.
- Have the patient open and close the fist several times until the skin is blanched
- Release pressure off one artery and color returns to the hand
- Repeat for the other artery

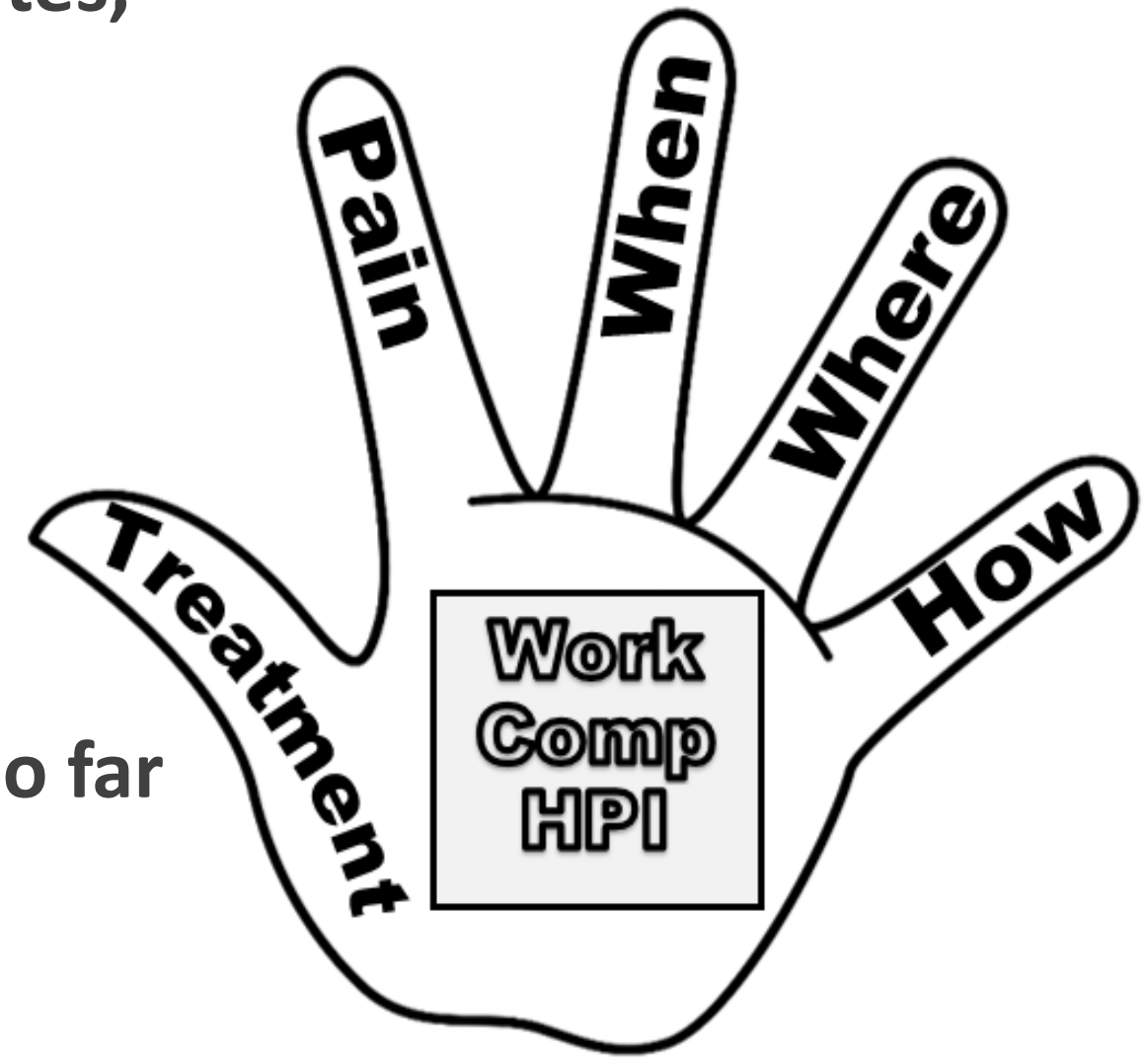


When is Work Comp Different?

DRIVING CHANGE 2023
THE URGENT CARE CONVENTION

The level of detail needed in our notes, particularly visit #1

- When – date, time
- Where – specific location, job task
- How – exact mechanism of injury
- Pain – 1-10 scale, exacerbating & alleviating factors
- Treatment – what have you done so far



When is Work Comp Different?

DRIVING CHANGE 2023
THE URGENT CARE CONVENTION

Follow-up visits need clarification of progress:

- **Overall % Improvement – ask this on every WC F/U visit**
- **Are the restrictions appropriate?**
- **Are the medications helping?**
  - **Don't let what was prescribed at the last visit be the only documentation of what is being taken**
- **Specific physical exam details (compare between visits)**
- **These "data points" are critical for us to determine progress and for others to make important decisions**

When is Work Comp Different?

DRIVING CHANGE 2023
THE URGENT CARE CONVENTION

- **Treatment may change based on higher functional needs**
  - A shift supervisor with an ankle sprain can do a lot more on her feet when in a cast boot
  - A wrist injury may need formal PT earlier if the job requirements for wrist function are demanding or repetitive
- **Patients need positive encouragement and forecasted recovery**
  - Many injured workers have a dichotomous world view
  - We can show them a bright future and keep them confidently focused

Injured, not working, meds, restrictions

Regular me doing my regular job

DRIVING CHANGE 2023

THE URGENT CARE CONVENTION

How you can drive change:

- Be detailed and thorough on the physical exam
- Remember the Scapho-lunate Ligament and the TFCC for injured wrists that aren't improving
- Be systematic on x-ray reading (forest and trees)
- Indomethacin may not be a good choice (along with high dose Ibuprofen)

DRIVING CHANGE 2023