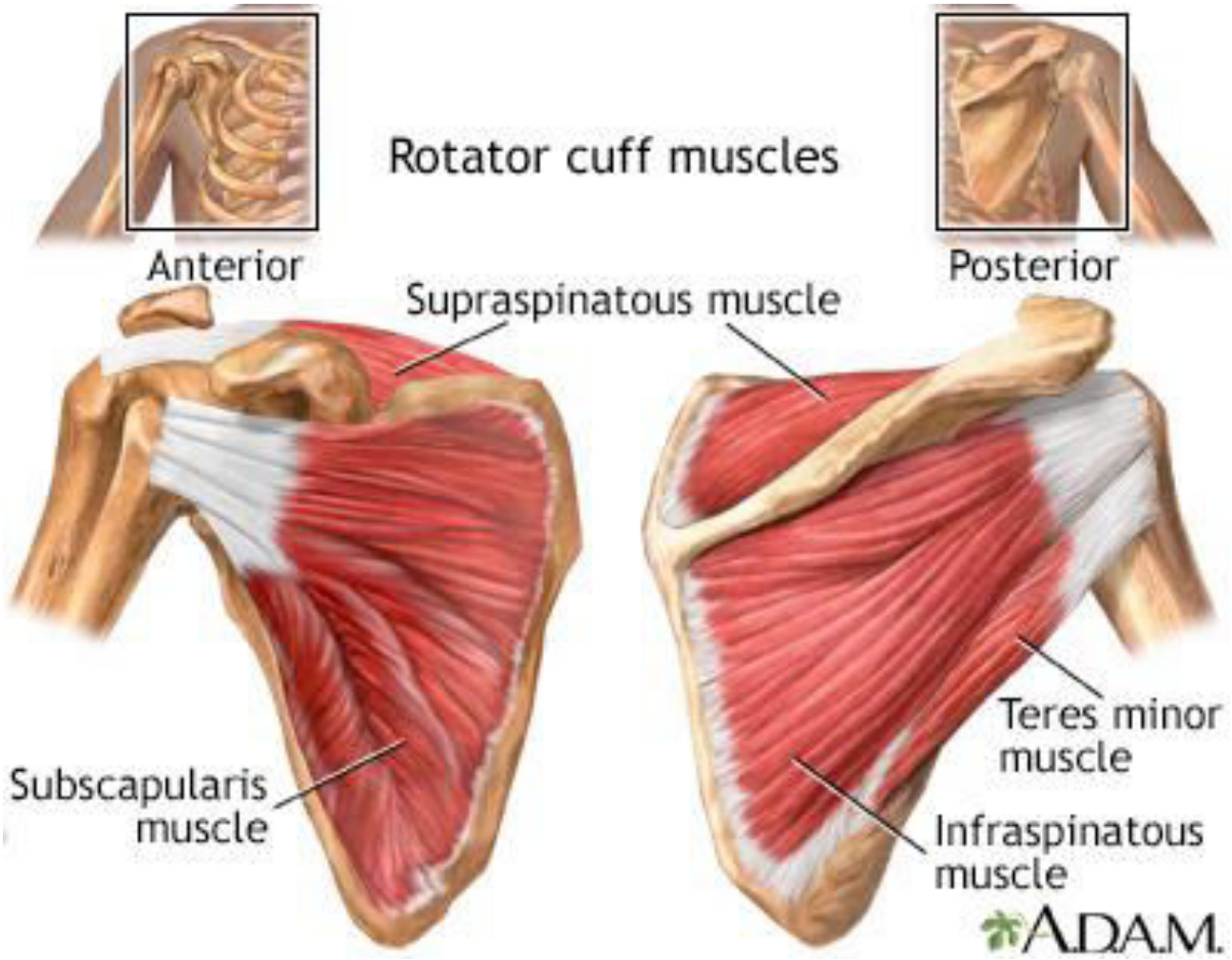
Orthopedic Surgery Mini-OSCE

Lana Sbitan

Shoulder Disorders :

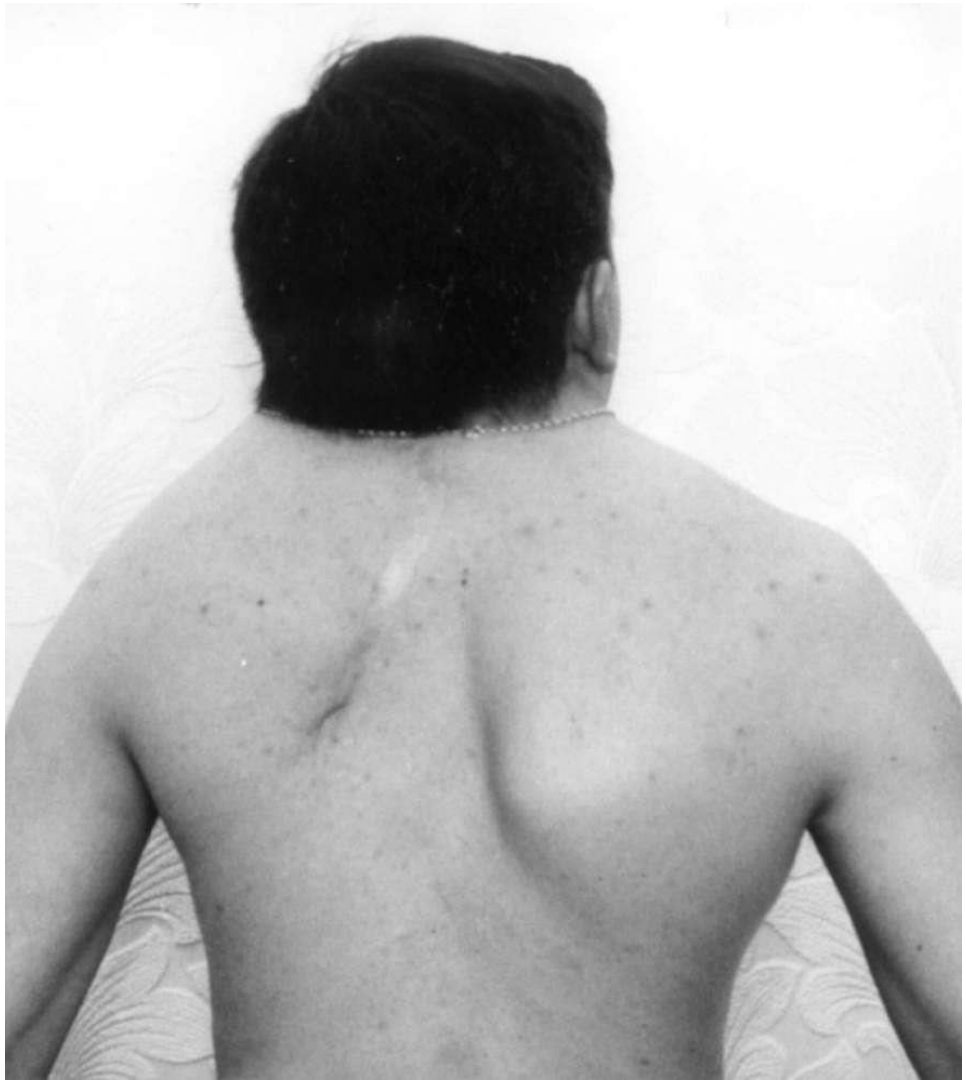
Supraspinatous	Initiate abduction	Suprascapular nerve
Infraspinatous	External rotation	Suprascapular nerve
Teres minor	External rotation	Axillary nerve
Subscapularis	Internal rotation	Subscapular nerve



- **What is your Dx ?**
  - Winged scapula
- **The affected nerve is ?**
  - Long thoracic nerve" Nerve to serratus anterior "

Springle Shoulder

Klippel Feil



Popeye sign

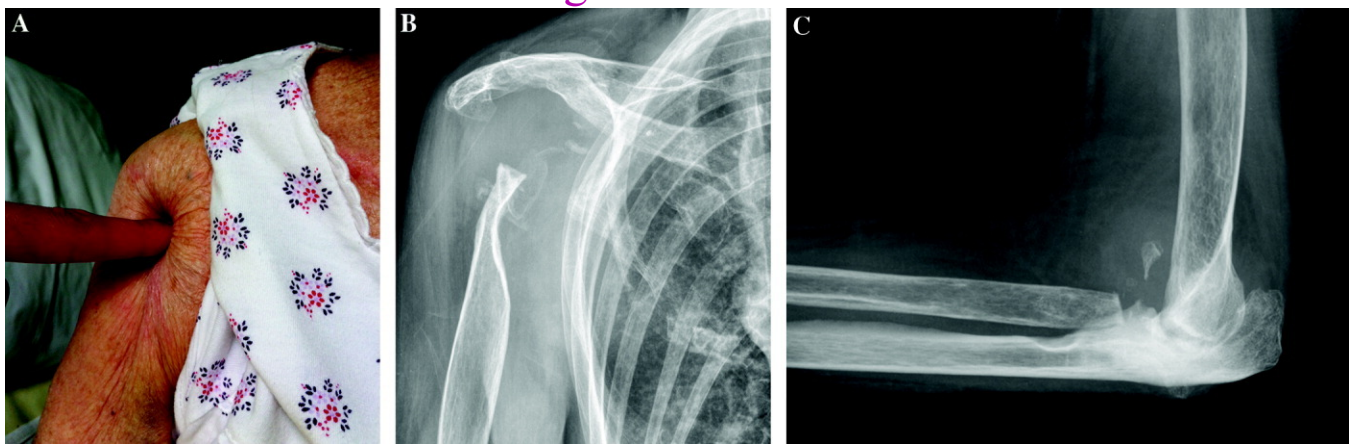
Biceps Tendon Rupture

Due to rupture of the long head of biceps

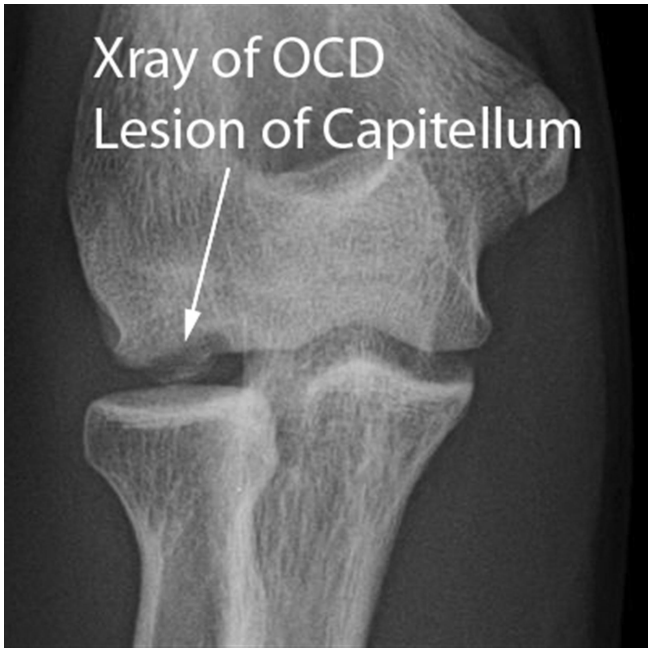
Treatment : In elderly conservative as they are still able to us ethe short head of biceps

But in young we need to repair due to their need of more power for better activity

Milwaukee shoulder refers to a destructive shoulder arthropathy due to the deposition of hydroxyapatite crystals, and identification of these crystals in synovial fluid is the cornerstone of diagnosis.



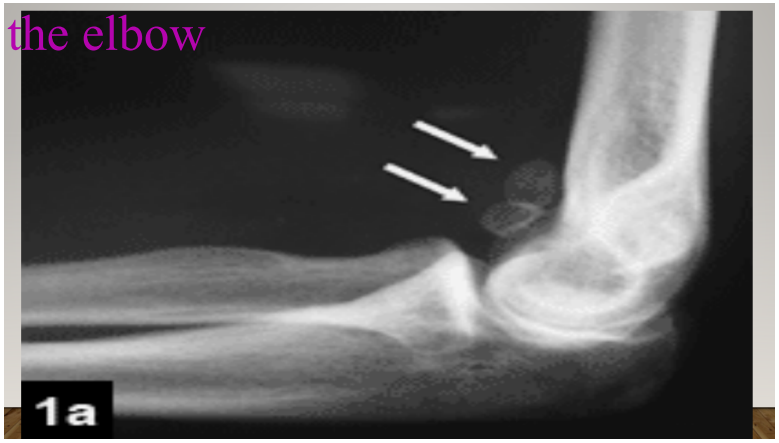
Elbow Disorders :



Capitellum is a common site in the elbow for OCD

Clinically --> Locking

OCD is a common cause of loose bodies in the elbow



What is the diagnosis of this condition?

Cubitus varus (vara)

What is the cause of this condition?

- malunion of supracondylar fracture / supracondylar fracture of the distal humerus

What is the diagnosis?

Cubitus valgus

What is the cause?

Non union of lateral condyle

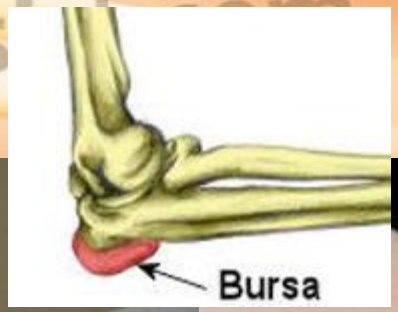
Most Common complication:

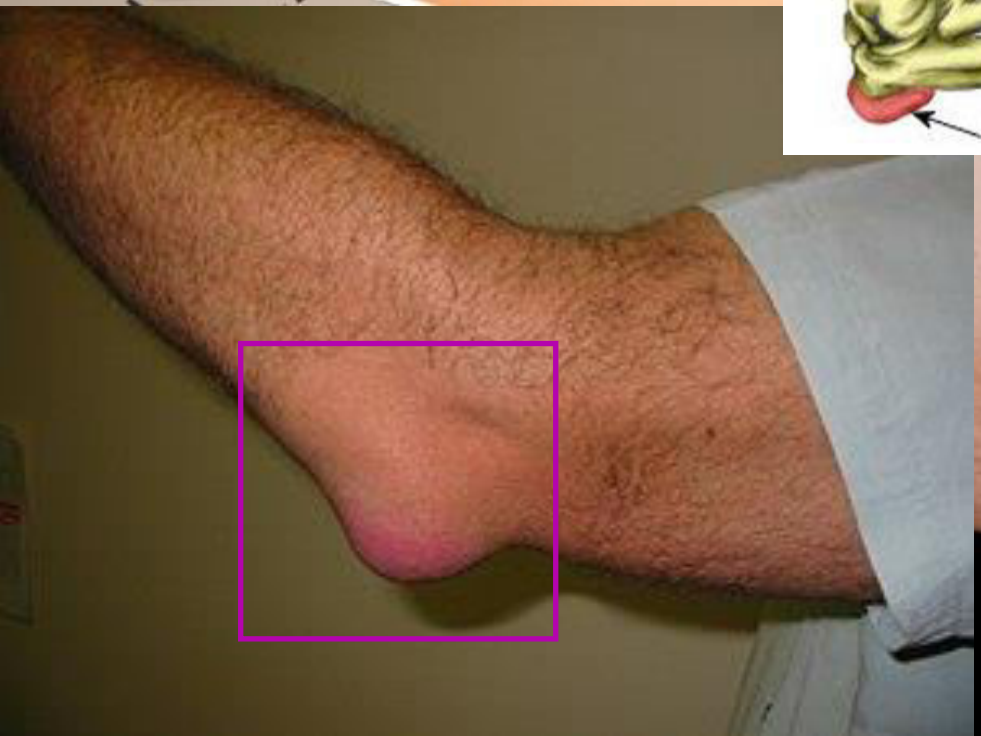
Ulnar nerve

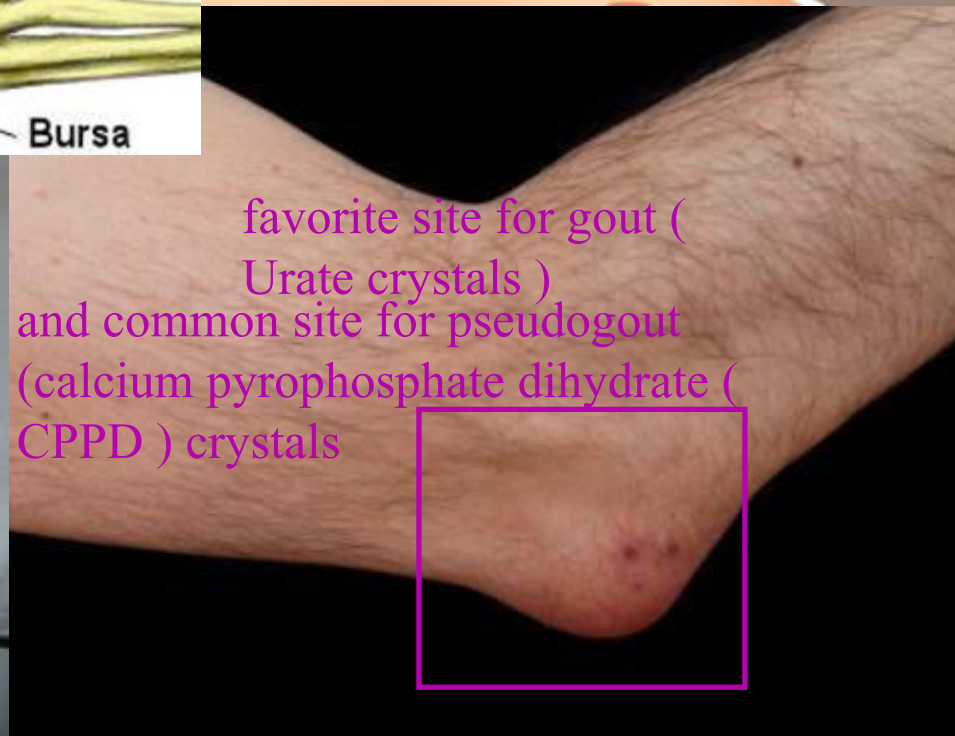
Students Elbow or Olecranon Bursitis

It is a condition where there is swelling, redness and inflammation of the bursa that protects the bone at the posterior side of the elbow.

we need to exclude infection first by aspirating the bursa

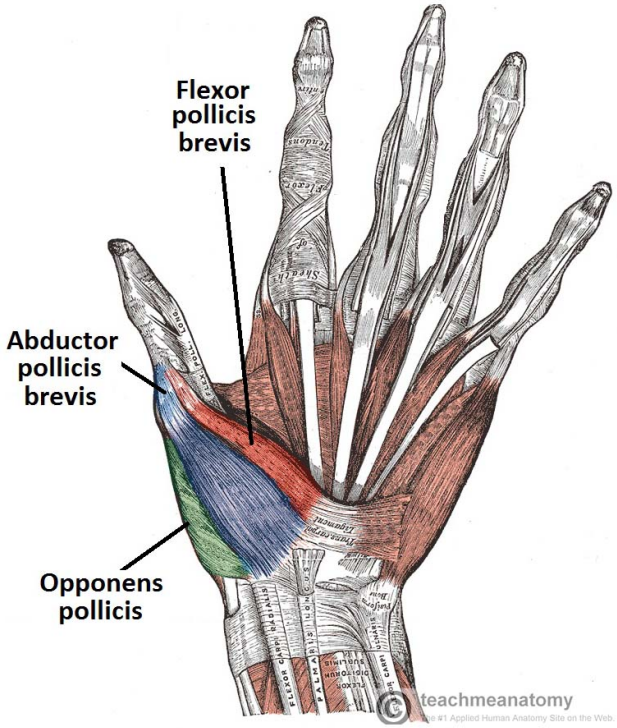




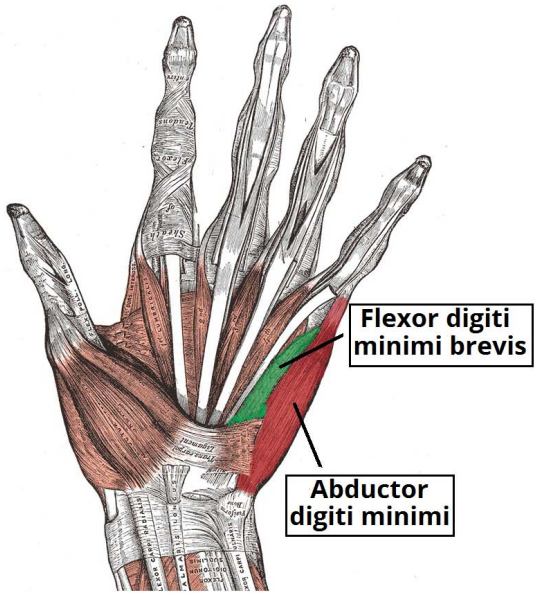


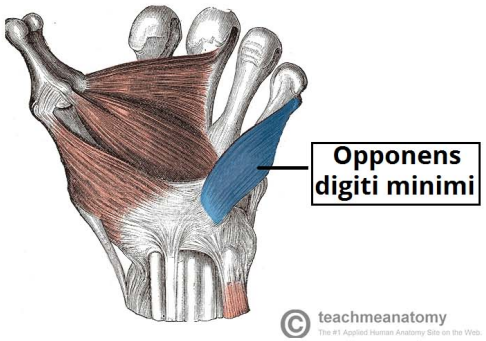
favorite site for gout (Urate crystals)
and common site for pseudogout (calcium pyrophosphate dihydrate (CPPD) crystals

Wrist and Hands Disorders :



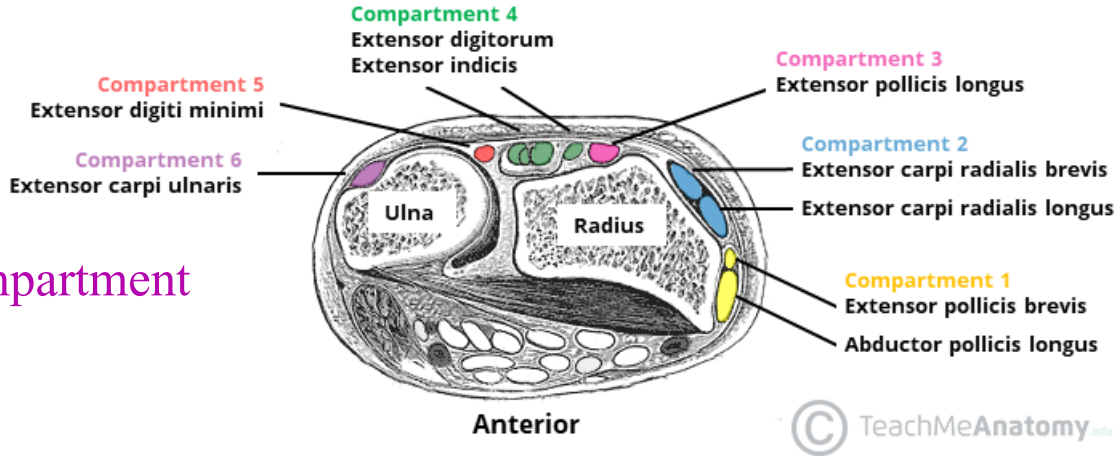
Thenar Muscles



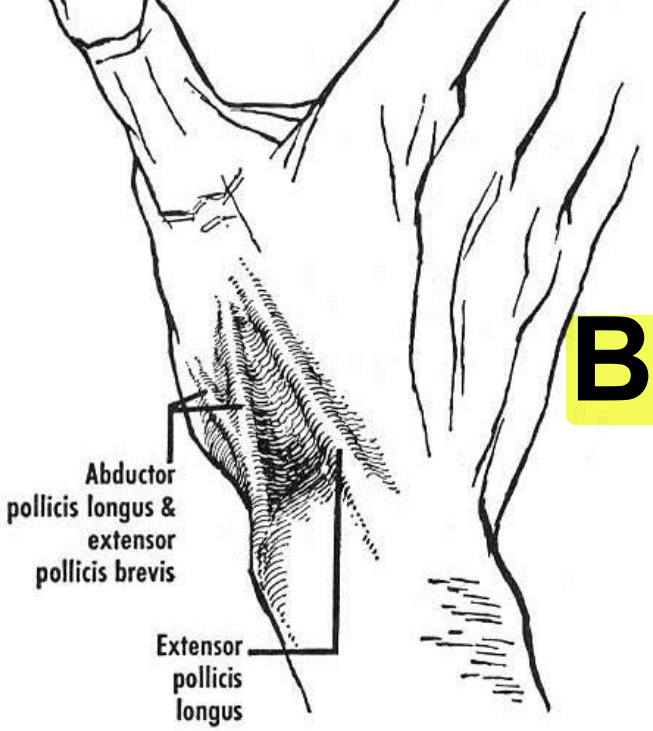


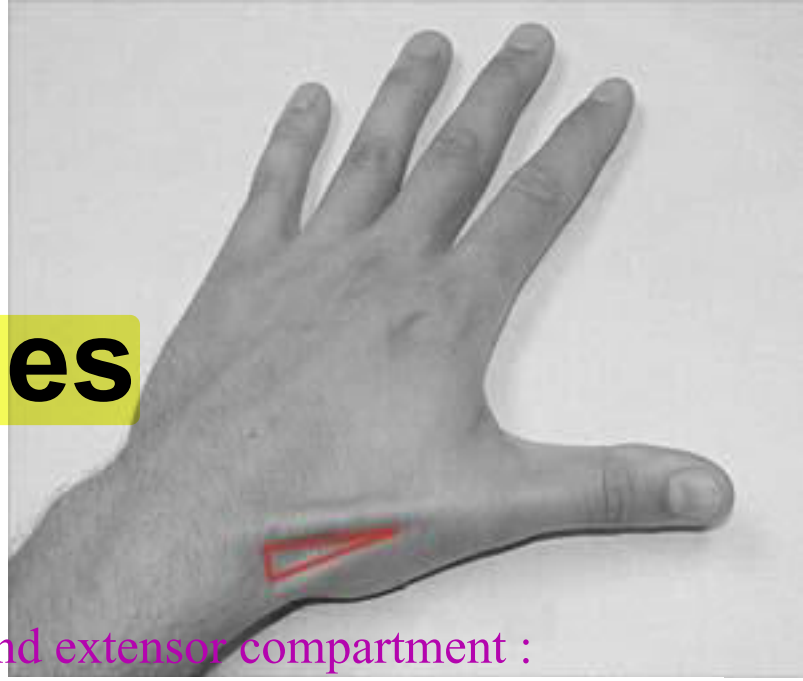
Hypothenar muscles

Extensor compartment

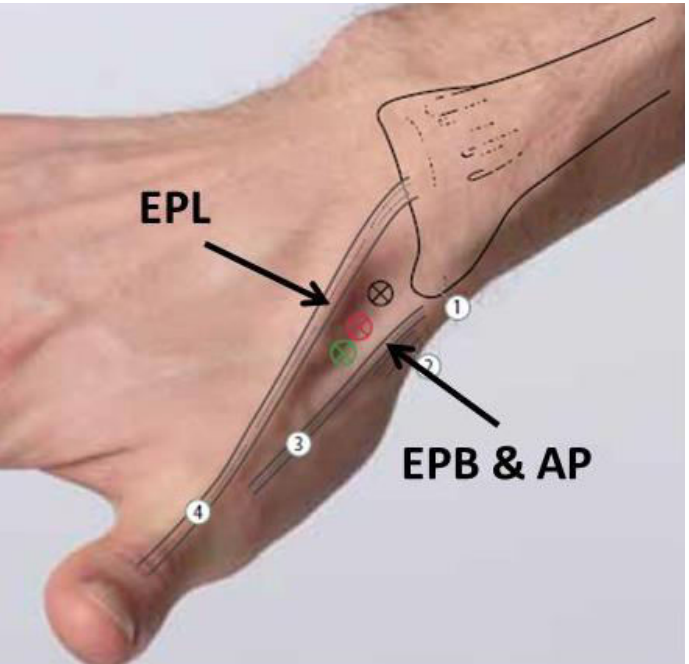


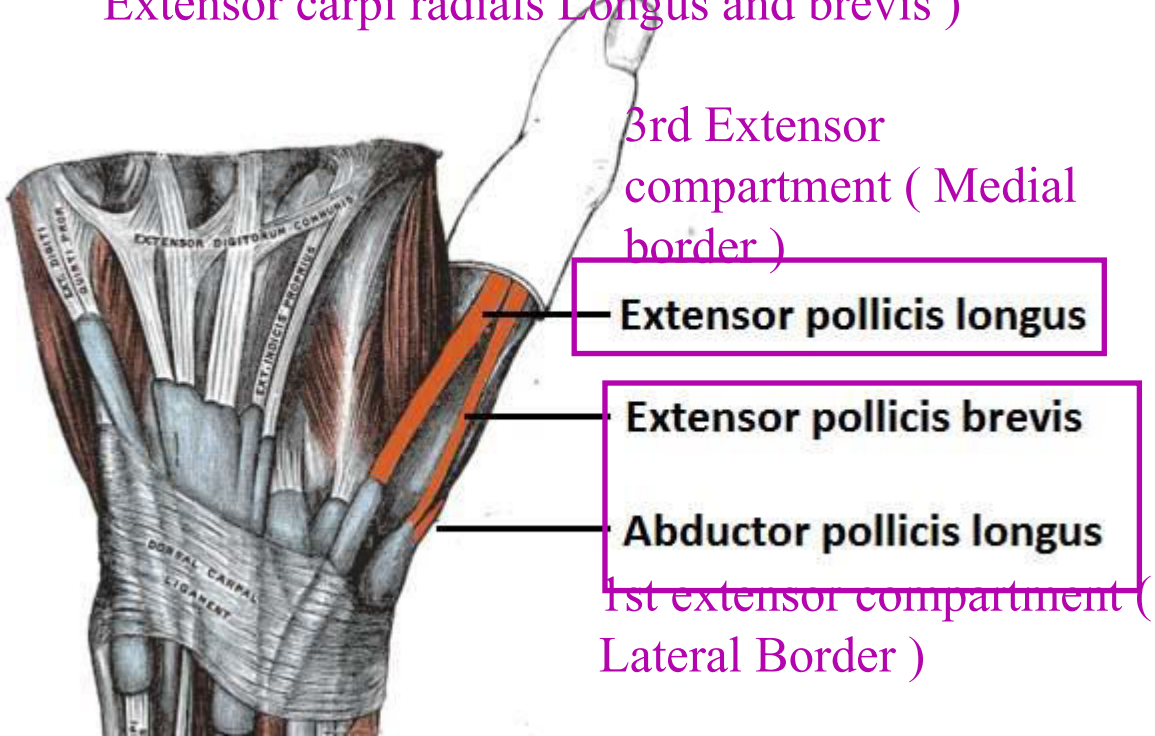
Snuff Box Boundaries





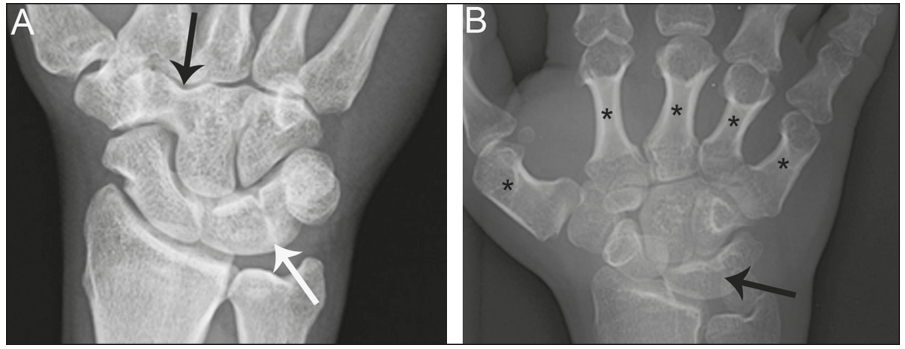
in the floor (2 nd extensor compartment : Extensor carpi radials Longus and brevis)





carpal coalition syndrome

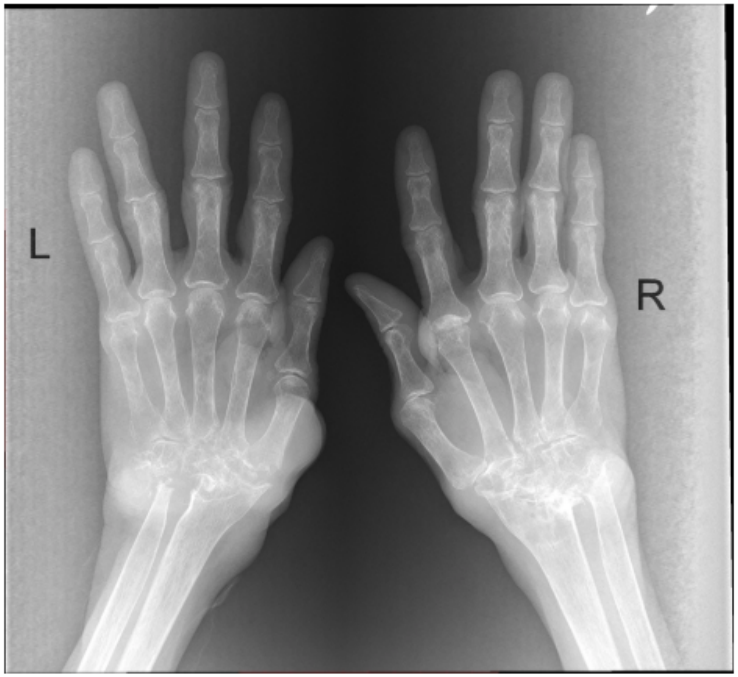
:a genetic condition characterized by fusion of the bones in the wrist (carpals)



Ulnar hemimelia
:complete or partial absence of the ulna bone

Arthrogryposis multiplex congenita :small and large joints (contractures)

RA in the Wrist



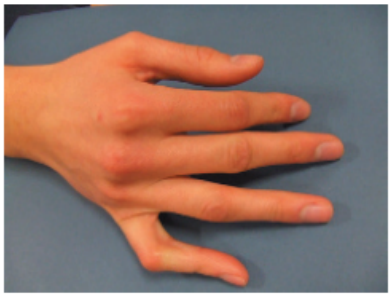
severe osteopenia with soft tissue swelling around the wrists, erosion of the distal radius and ulna, severe narrowing of the radiocarpal joint with carpal ankylosis and destruction of the intercarpal articulations.

extensor carpi ulnaris: most commonly affected in RA, it ruptures causing deformity at the wrist.

OA in the 1st carpometacarpal joint

Constriction bands

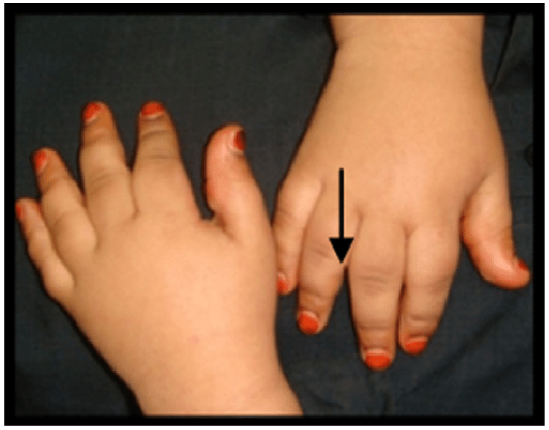
Marfan’s syndrome (spider hands)

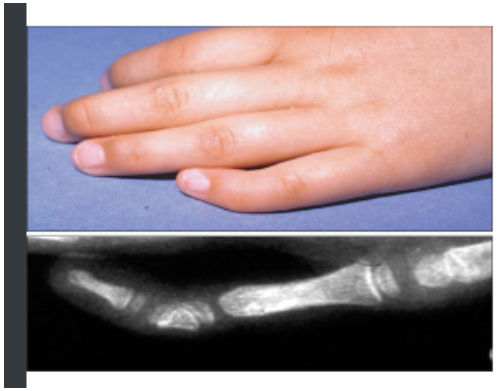


Camptodactyly

rare congenital condition of the hand that is characterized by a digital flexion deformity that usually occurs in the PIP joint of the small finger.

achondroplasia trident hand





Clinodactyly

: is a congenital condition of the hand, often associated with Down's syndrome, that is characterized by the abnormal curvature of a digit in the radioulnar plane.

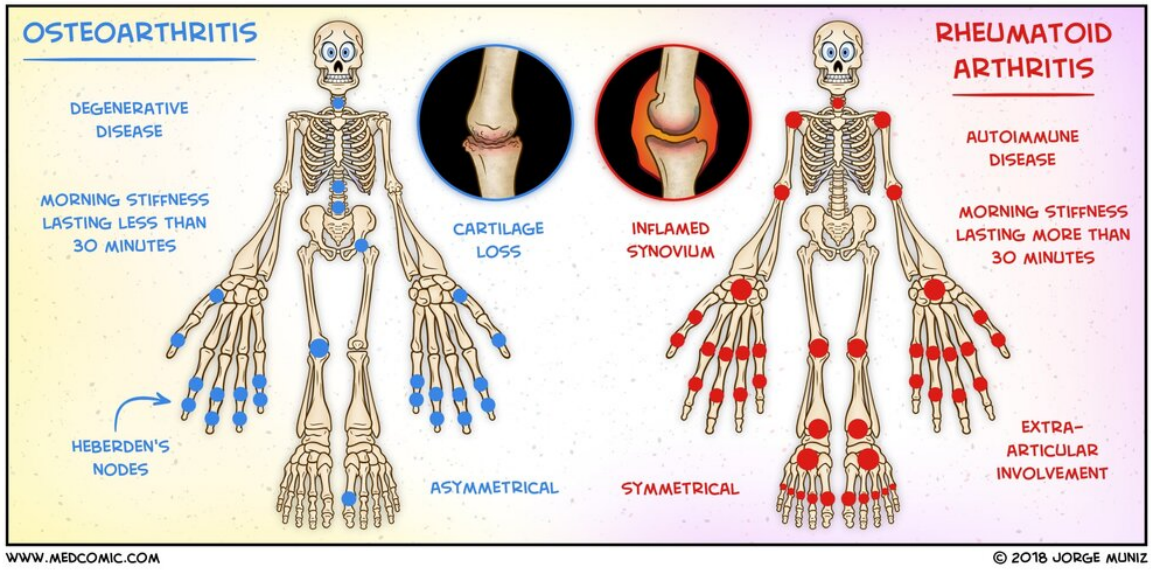
Radial Dysplasia

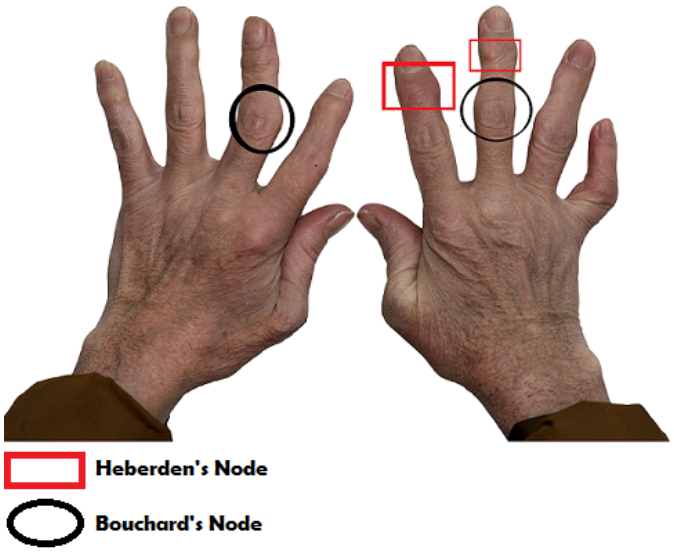
Radial Club Hand

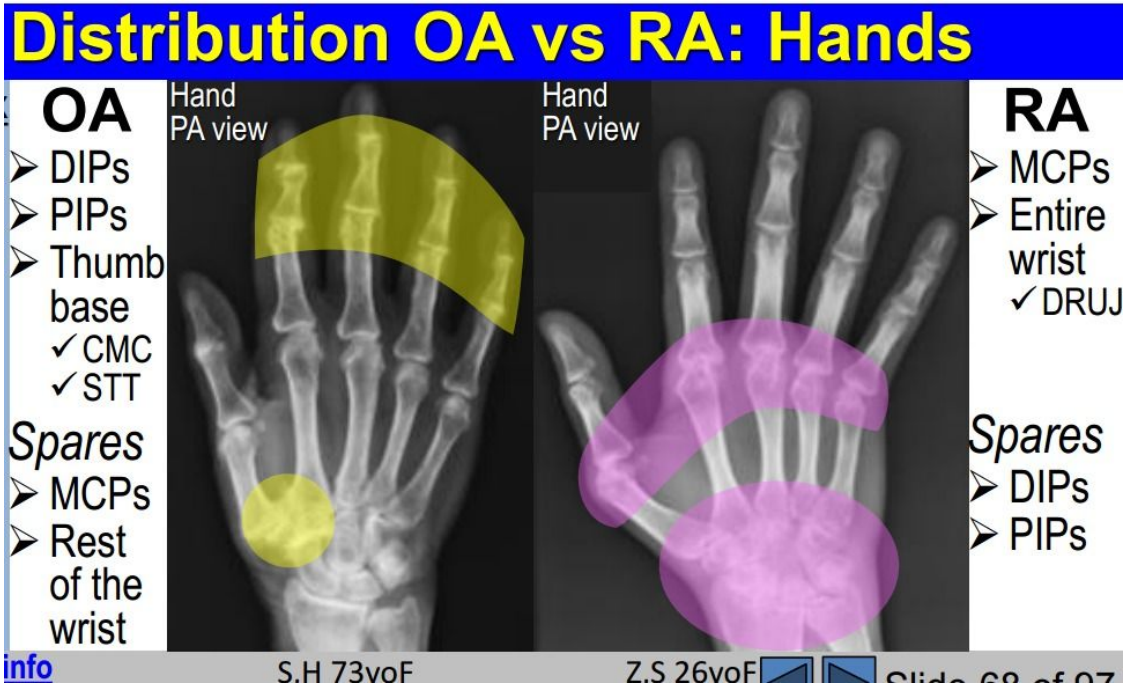
The infant is born with the wrist in marked radial deviation. There is absence of the whole or part of the radius, and usually also the thumb.

Dx? Syndactyly

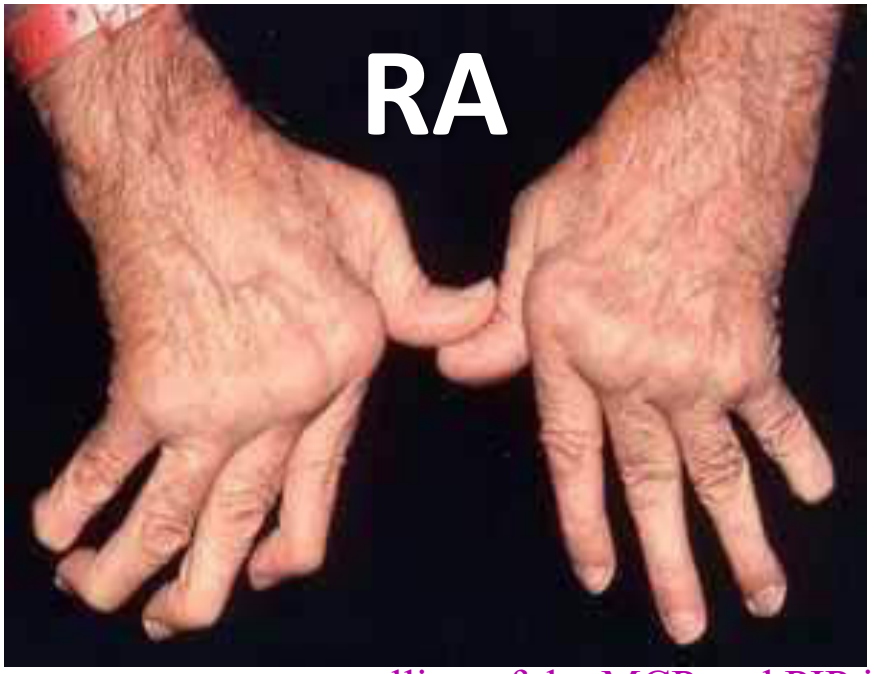
Dx? Polydactyly







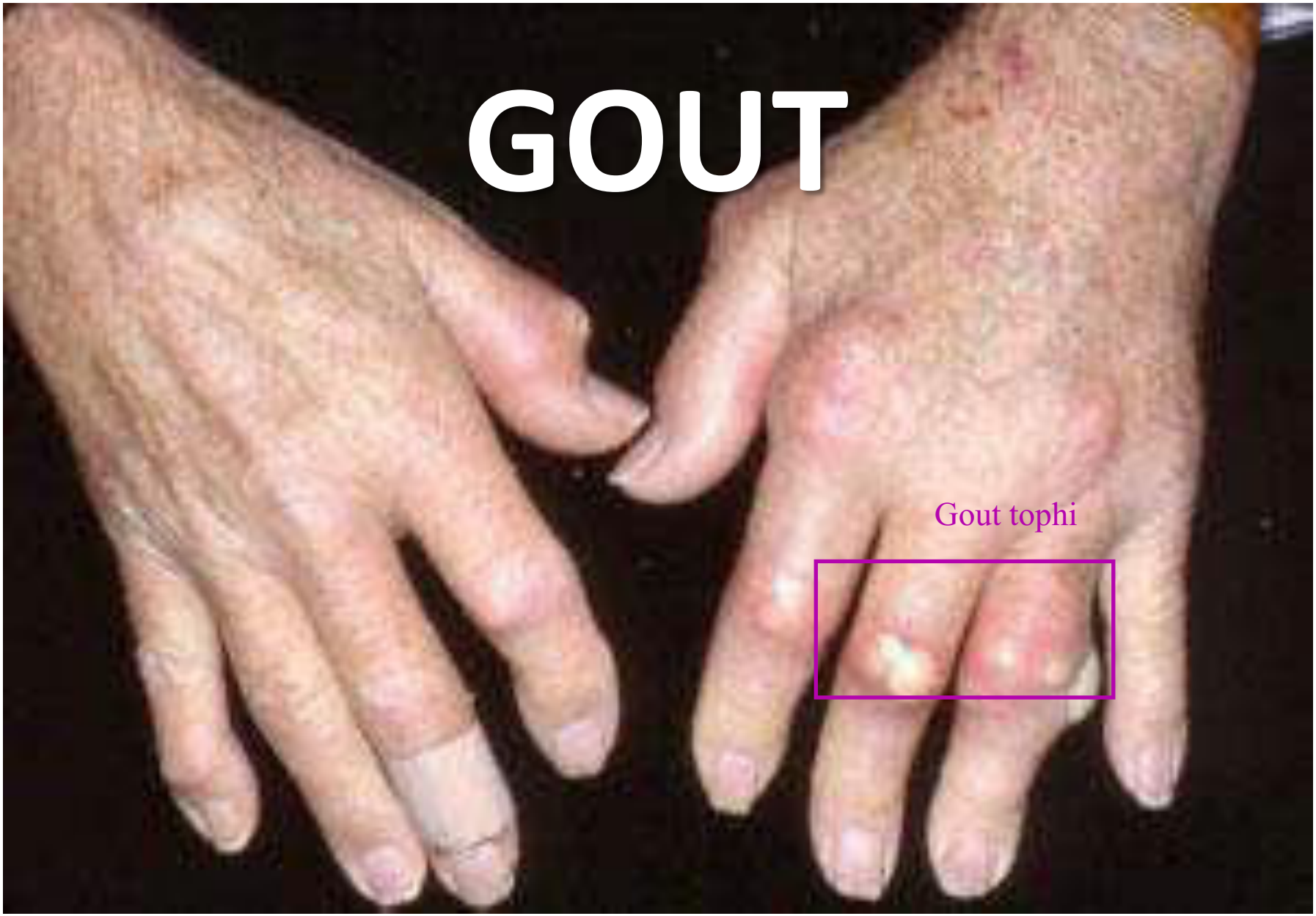
Heberden's nodes : bony thickening around the DIP joints -restriction of movement. -Not infrequently, some of the PIP joints are involved (Bouchard's nodes)



:swelling of the MCP and PIP joints; both hands are affected, more or less symmetrically.

RA

) ulnar deviation of the fingers
2)subluxation of the MCP joints
3)swan-neck or boutonnière deformities


GOUT
Gout tophi

Dx?

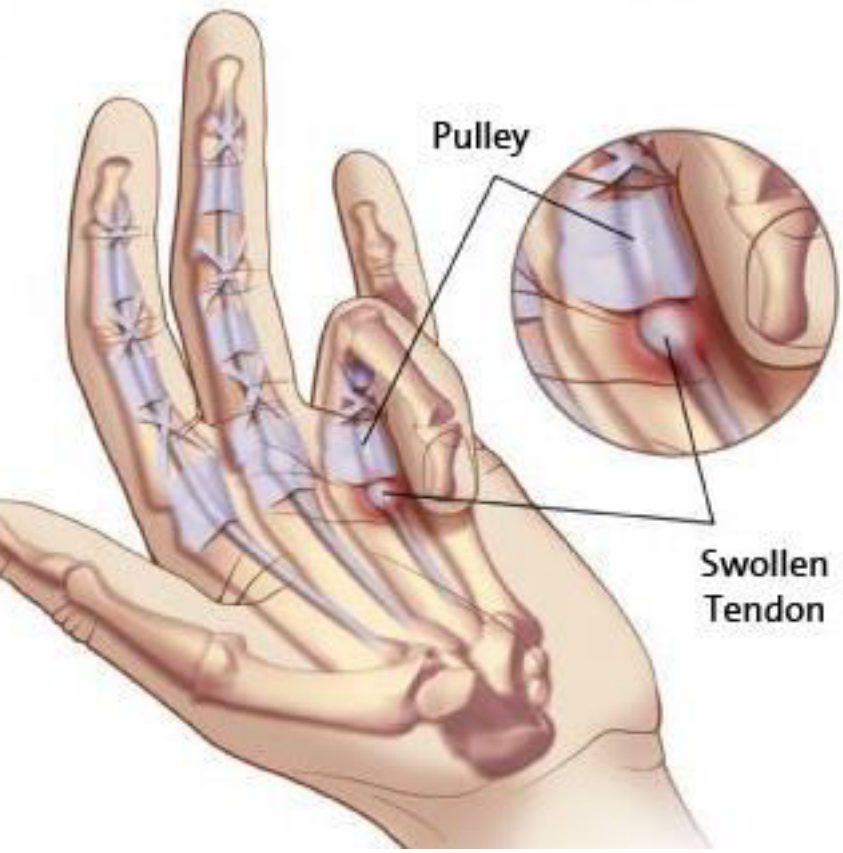
TB of wrist joint

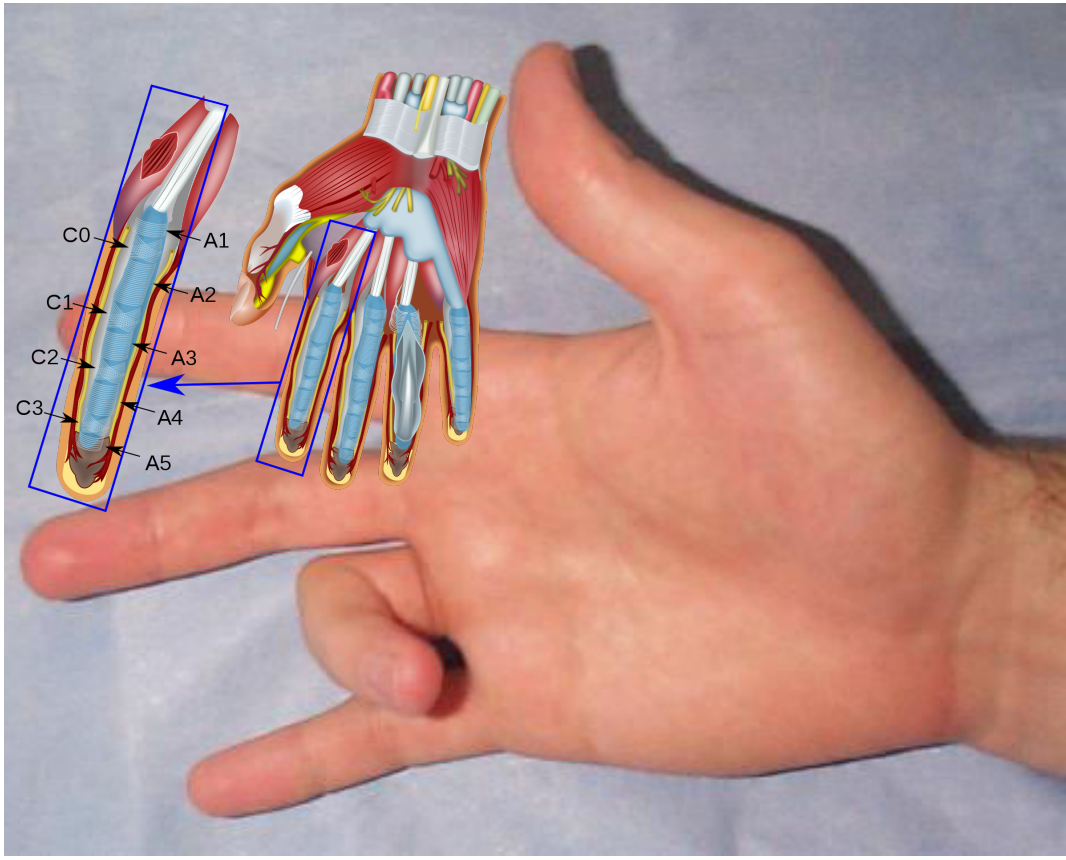
Trigger finger

thickening of the fibrous tendon sheath

is a condition that causes pain, stiffness, and a sensation of locking or catching when you bend and straighten your **finger**. The condition is also known as “stenosing tenosynovitis.” The ring **finger** and thumb are most often affected by **trigger finger**

Common in diabetes





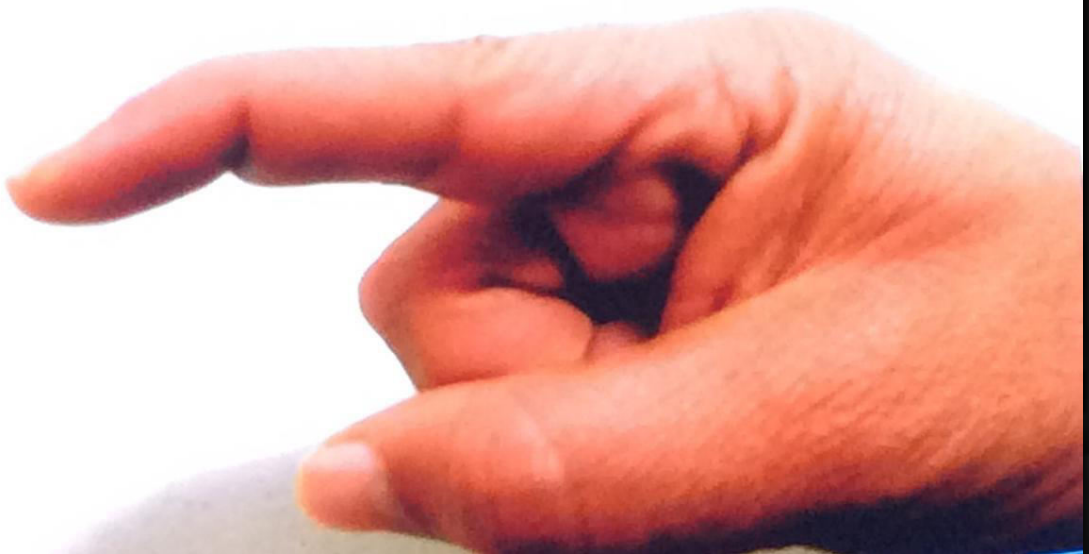
Dx? Dupuytrens Contracture

nodular hypertrophy and contracture of the superficial palmar fascia (palmar aponeurosis high incidence in epileptics receiving phenytoin therapy; associations with diabetes, epilepsy, smoking, alcoholic cirrhosis, AIDS and pulmonary tuberculosis

Dx?

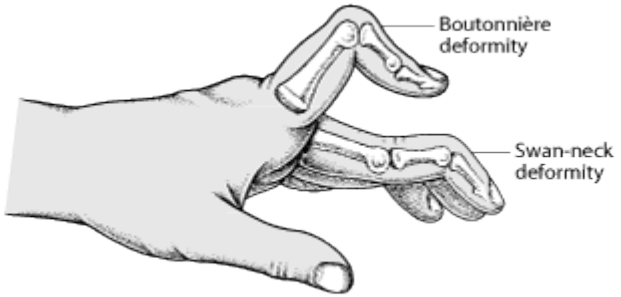
Mallet finger (Extensor Tendon Avulsion)

injury at the attachment of the extensor tendon to the terminal phalanx.



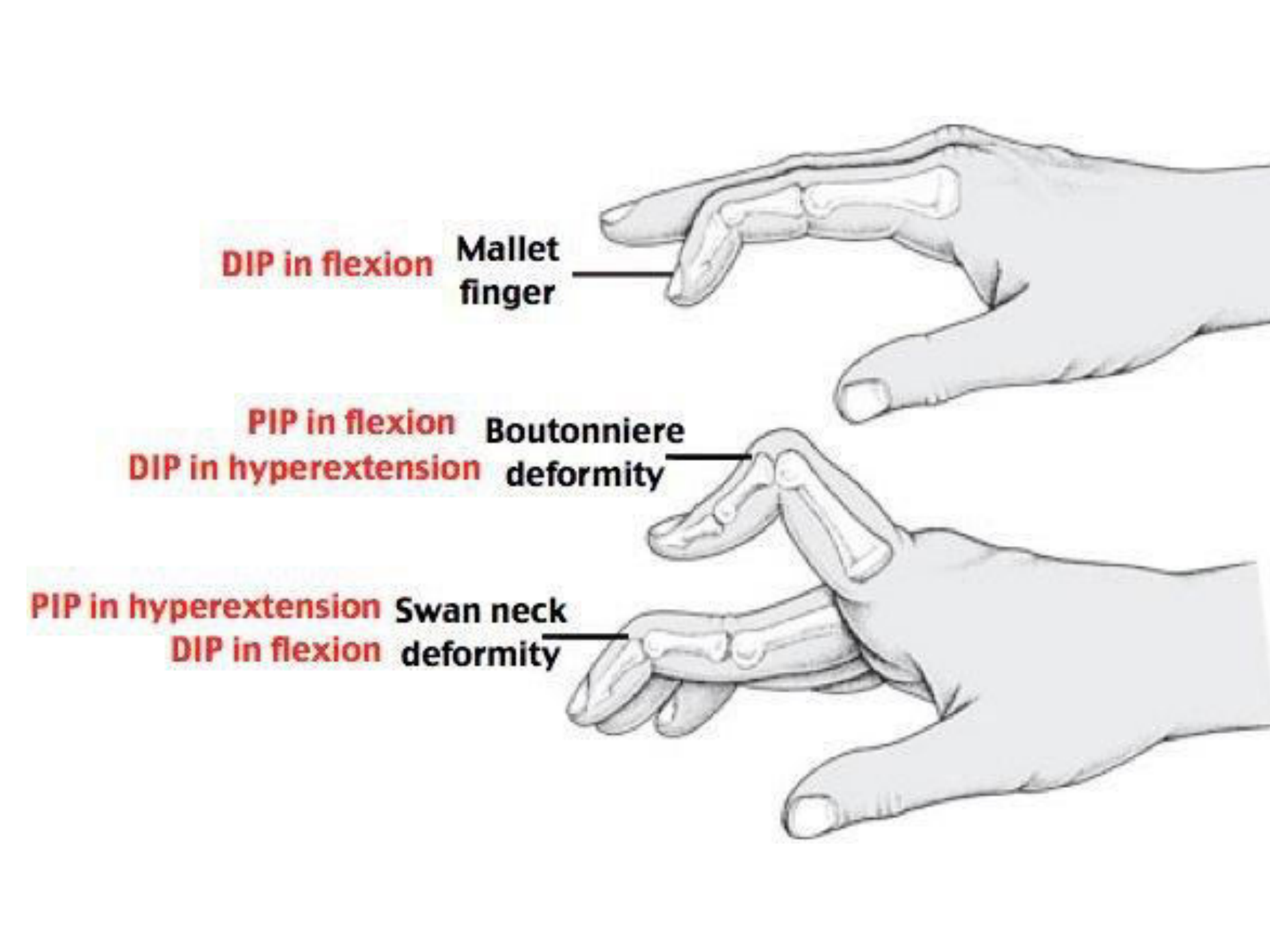
Extensor tendon injuries characterized by PIP flexion and DIP extension

--> Trauma or RA



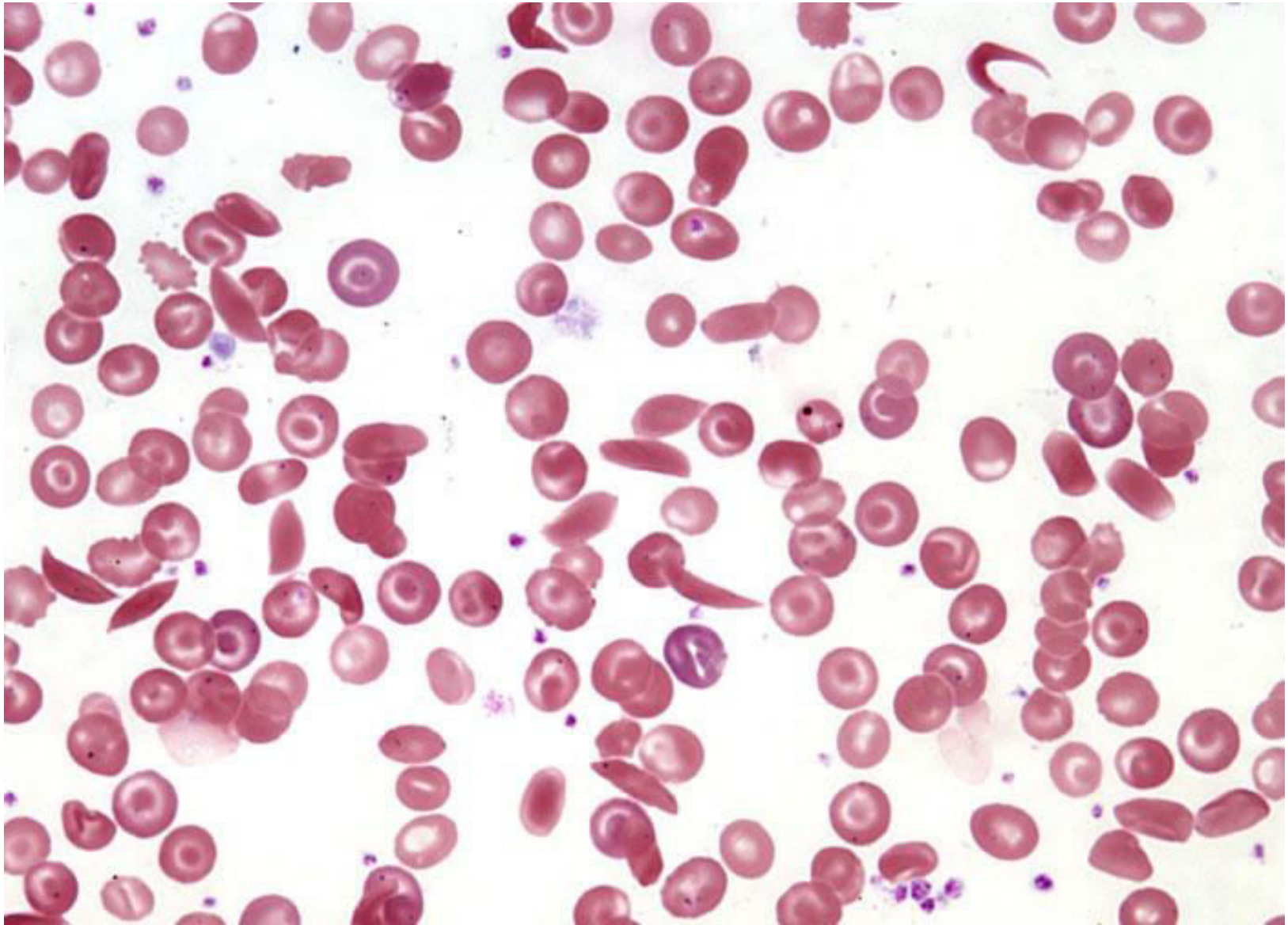
the PIP joint is hyperextended and the DIP joint flexed.

---> RA


DIP in flexion
Mallet finger
PIP in flexion
DIP in hyperextension
Boutonniere deformity
PIP in hyperextension
DIP in flexion
Swan neck deformity

Bone Disorders :

- **What is most common pathogen to cause osteomyelitis in sickle cell patients?** Salmonella



--- A three year old with limbing and thigh pain for the last 24 hours , on examination he is lethargic and holding his left hip flexed and externally rotated , the most likely diagnosis :

Septic Arthritis (Septic Hip)

Considered a surgical emergency and requires prompt recognition and urgent surgical I&D followed by IV antibiotics.

TX : - Admission - Emergency incision and drainage - Joint aspiration / CT / US - Culture

History : Mostly previous upper respiratory tract infection , inability to walk

TABLE 4. Kocher Criteria for Septic Arthritis of the Hip (8)

Temperature >101.3°F (38.5°C)
White blood cell count >12,000/μL (12×10^9/L)
Erythrocyte sedimentation rate >40 mm/h
Inability to ambulate
*C-reactive protein >2.5 mg/L (23.81 nmol/L)

*C-reactive protein added by Caird et al; not part of the original Kocher criteria.

Kocher Criteria	No (0 points)	Yes (1 point)
Non-Weight Bearing	☐	☐
Temp > 38.5° C (101.3° F)	☐	☐
ESR > 40 mm/hr	☐	☐
WBC >12,000 cells/mm³	☐	☐

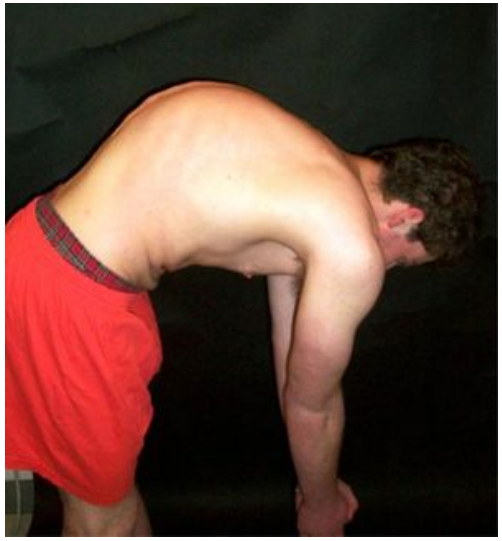
Points	Likelihood of Septic Arthritis
0	0.20%
1	3%
2	40%
3	93%
4	99%

	Age	Organisms
1	Neonates	Streptococcus sp Gram-negative organisms
2	Infants	Staphylococcus aureus Haemophilus influenza
3	Children	Staphylococcus aureus Salmonella
4	Adolescent	Staphylococcus aureus Nesseria gonorrhoea
5	Adults	Staphylococcus aureus Streptococcus Gram-negative organisms
6	IV Drug Abusers	Suspect Pseudomonas and atypical organisms

Spine Disorders

Scoliosis

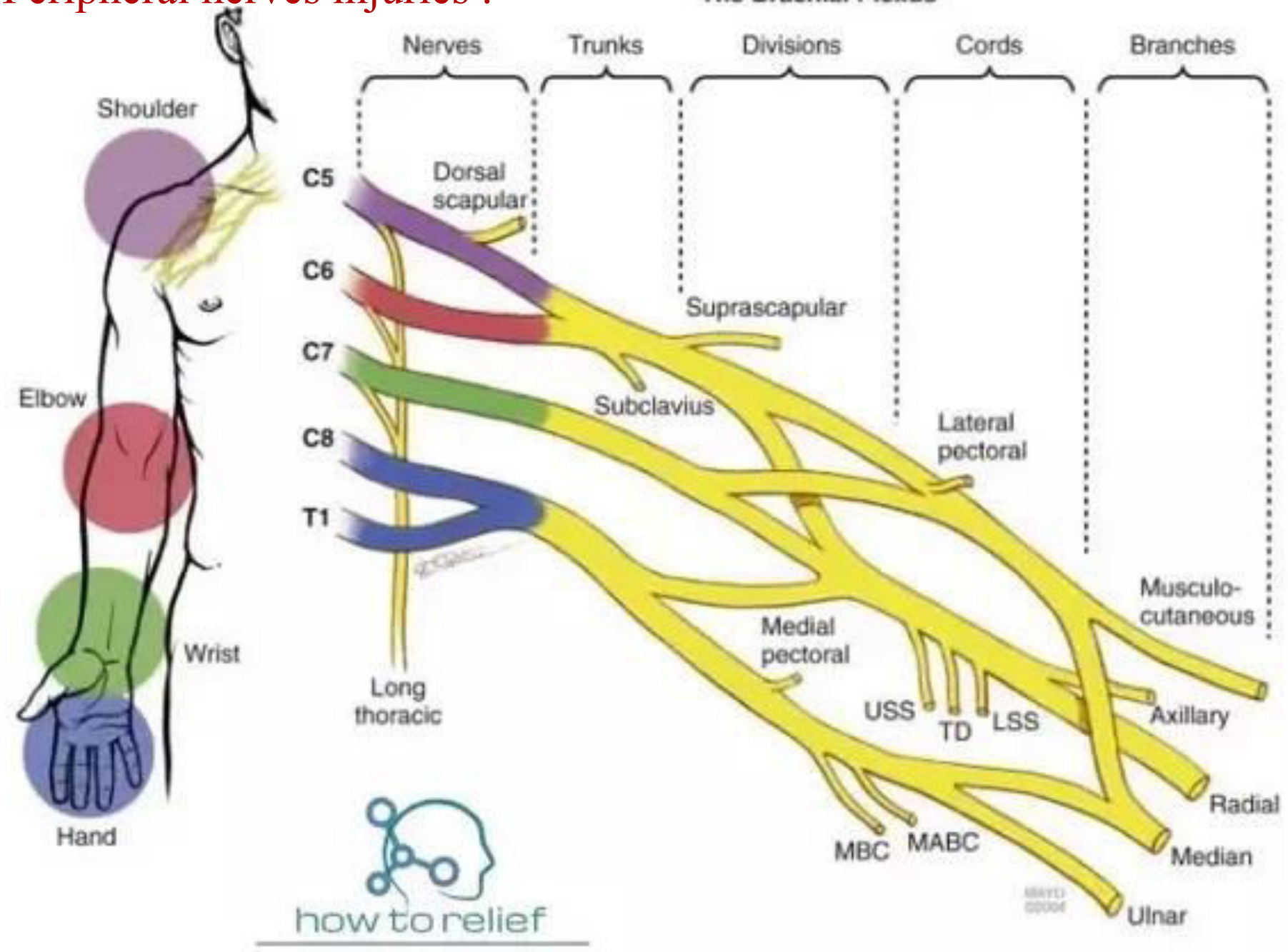
Thoracic Scoliosis

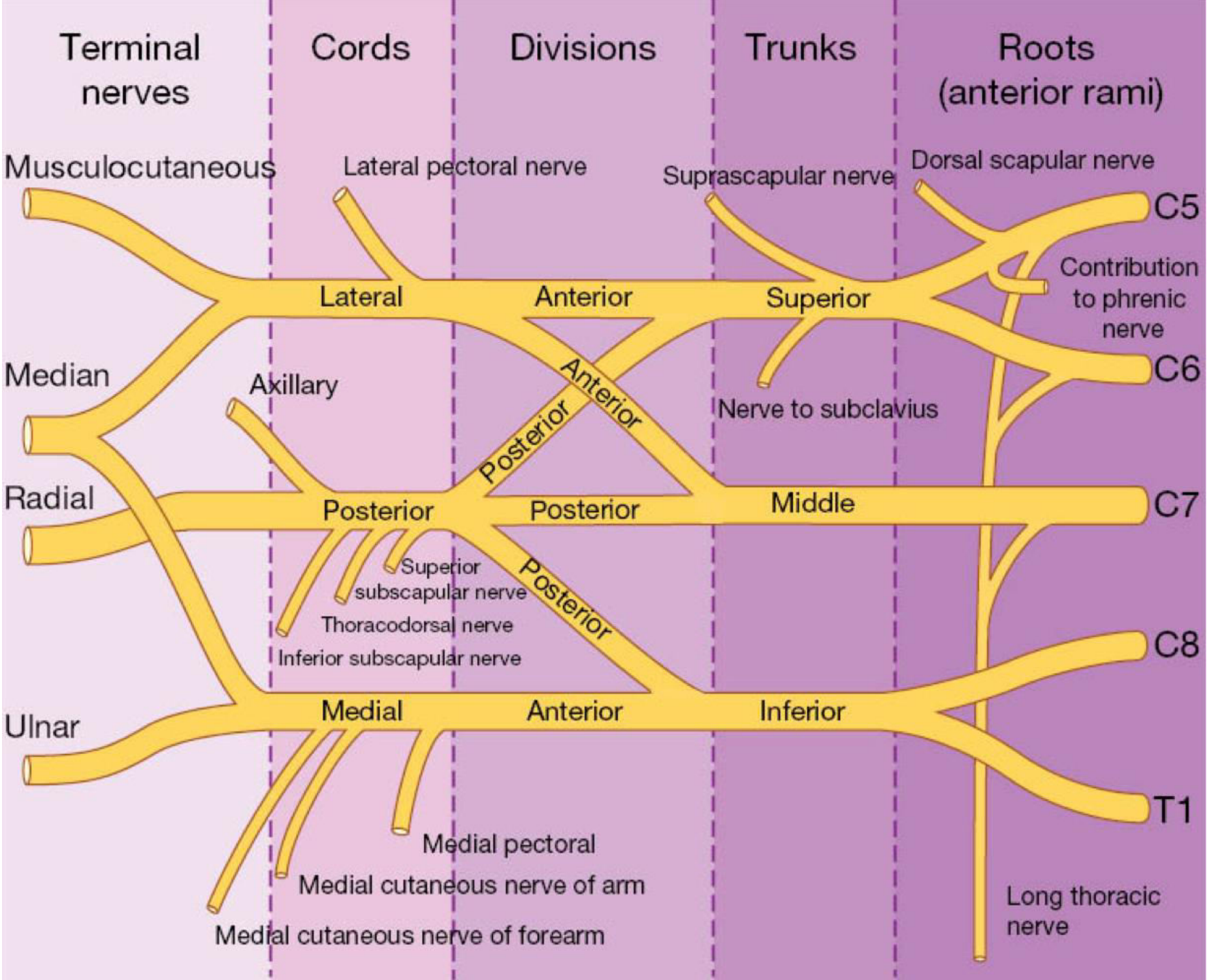


scheuermann's kyphosis
: a structural deformity of the vertebral bodies and spine. The kyphosis of the thoracic region will be around 45 to 75 degrees.

Lordosis

Peripheral nerves injuries :

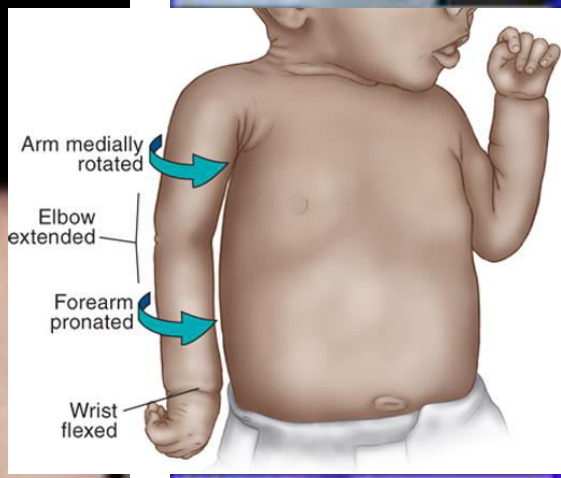


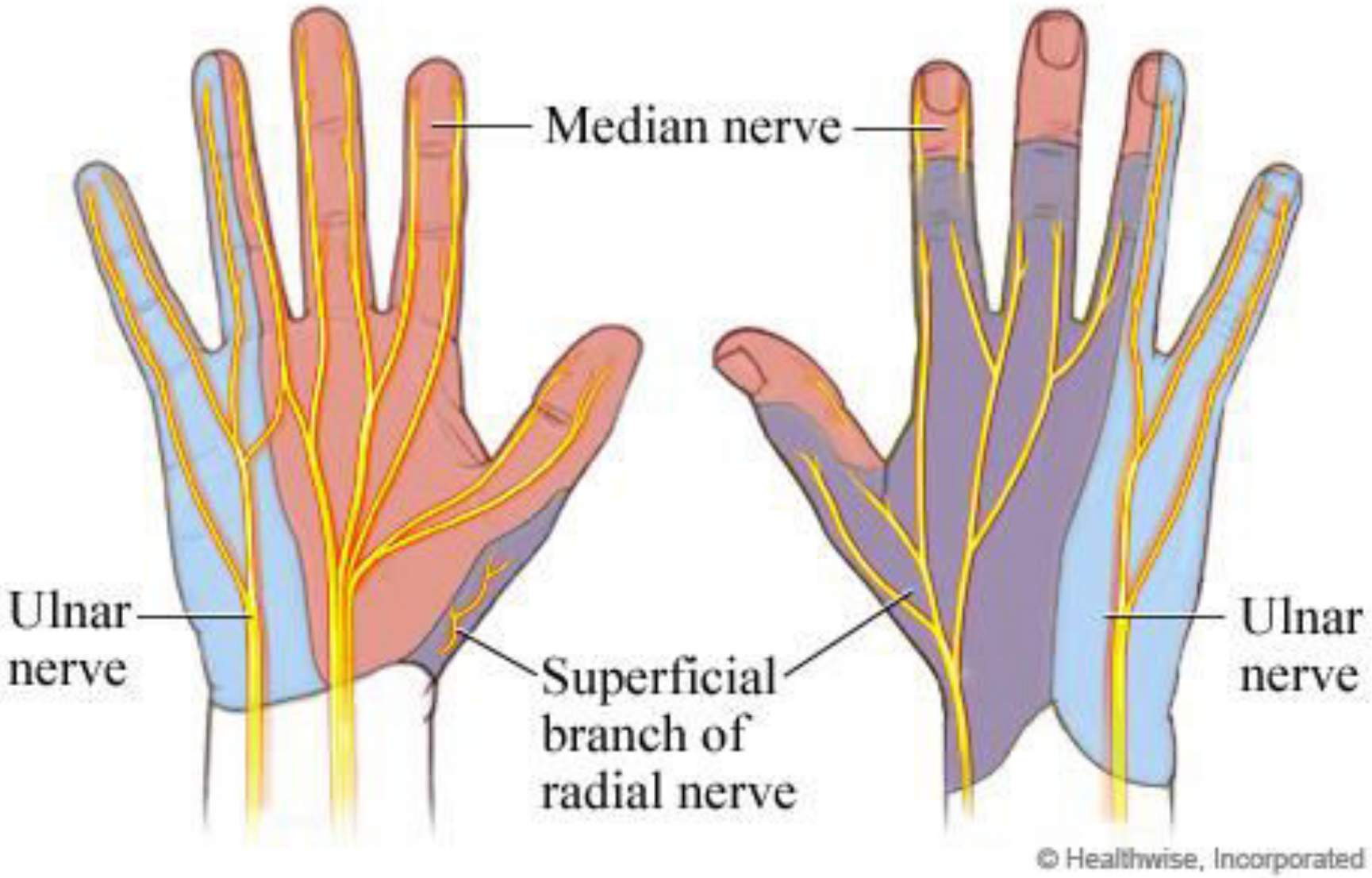

Terminal nerves
Cords
Divisions
Trunks
Roots (anterior rami)
Musculocutaneous
Lateral pectoral nerve
Suprascapular nerve
Dorsal scapular nerve
C5
Contribution to phrenic nerve
Lateral
Anterior
Superior
C6
Median
Axillary
Anterior
Posterior
Nerve to subclavius
Radial
Posterior
Posterior
Middle
C7
Superior subscapular nerve
Thoracodorsal nerve
Inferior subscapular nerve
Posterior
C8
Ulnar
Medial
Anterior
Inferior
T1
Medial pectoral
Medial cutaneous nerve of arm
Medial cutaneous nerve of forearm
Long thoracic nerve

Erbs palsy

"causes paralysis of the abductors and external rotators of the shoulder and the forearm supinator's, The arm is held to the side, internally rotated & pronated"

Waiter Tip Position




Median nerve
Ulnar nerve
Superficial branch of radial nerve
Ulnar nerve
© Healthwise, Incorporated

Nerve Palsies

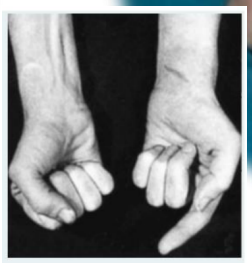
Ulnar

Median

Radial

Claw Hand

Pointing finger

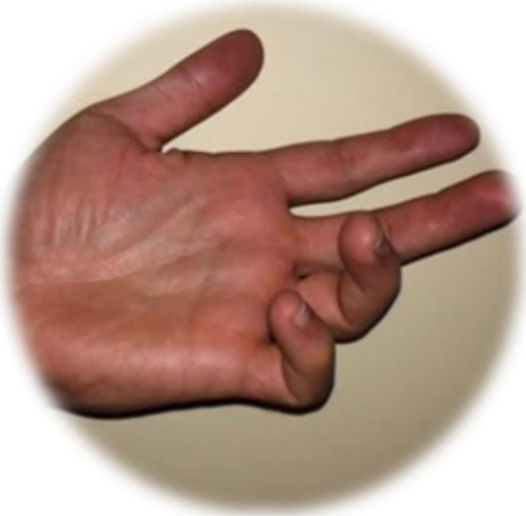


Wrist Drop

Ape Hand

Mnemonic: DR.CUMA

Drop
Radial
Claw
Ulna
Median
Ape

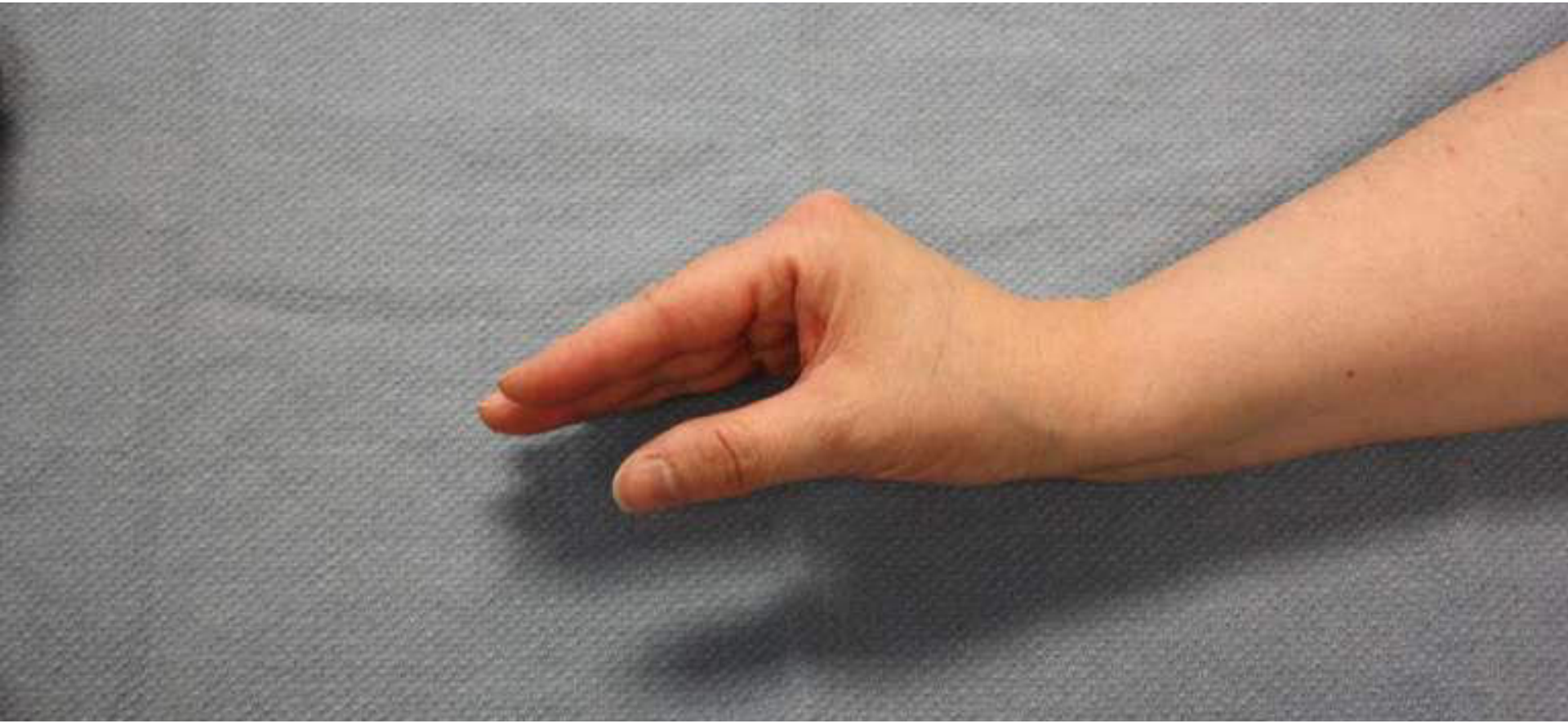


- **What is the muscle responsible for this movement ?**

Lumbricals

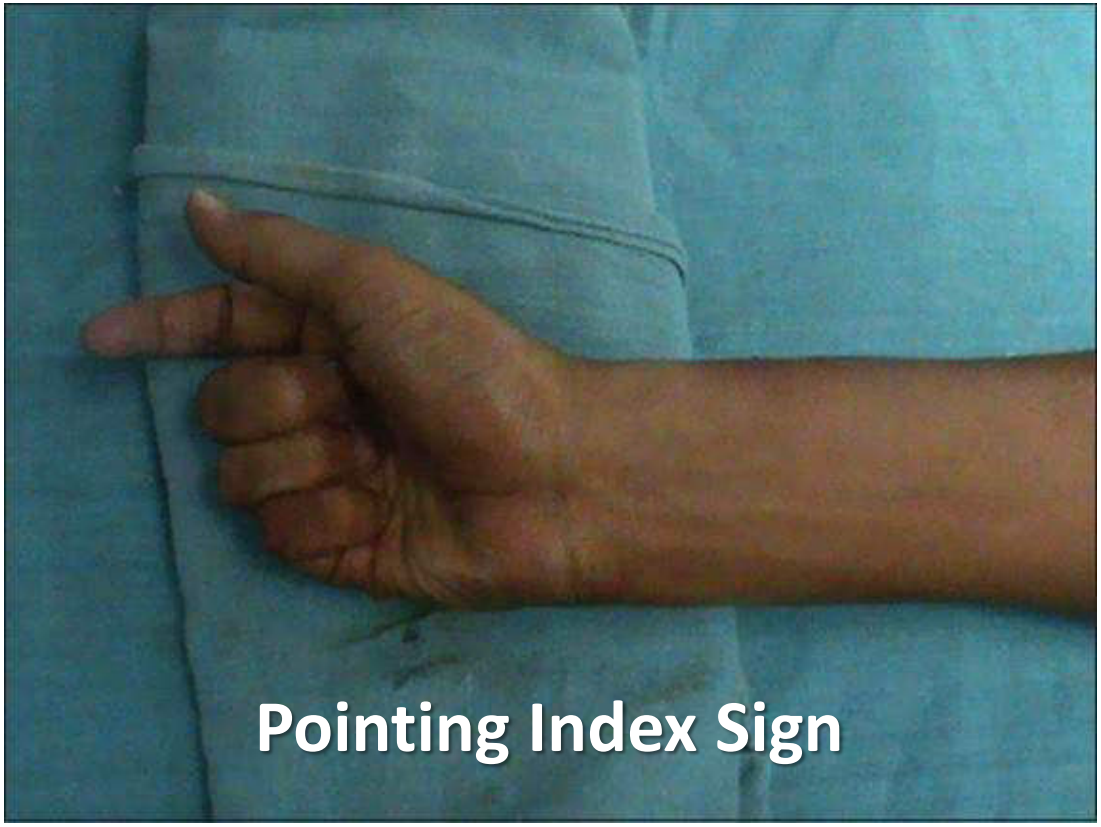
- **Supplied by which nerve ?**

by Ulnar nerve and median nerve



Cut injury at forearm result in this picture which most likely nerve injury?

Median nerve injury



60 years old presented after falling down with these findings , The patient is able to extend his elbow , what is the level of the lesion :

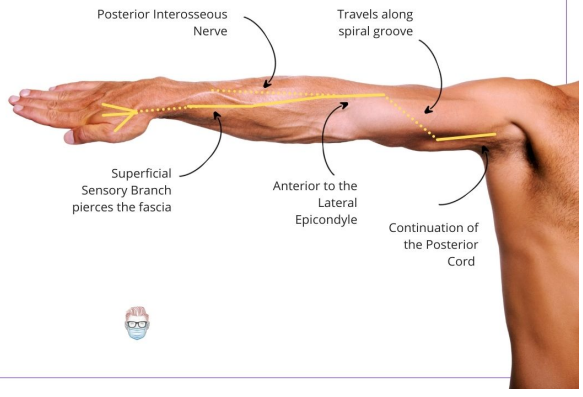
---> Lower level Radial Nerve lesion

HIGH VS LOW RADIAL NERVE PALSY

thePlasticsFella.com

	High Radial Nerve Palsy	Low Radial Nerve Palsy
Location	Proximal to Proximal Forearm	Distal to Proximal Forearm
Nerves	Radial Nerve Proper	PIN and SBRN
Elbow Extension	Absent if injury proximal to tricep branches	Present
Wrist Extension	Absent	Weak with Radial Devication
Finger Extension	Absent	Absent
Sensation	Motor and Sensory Deficits	Sensory Deficits if compression of SBRN

Anatomical Course of the Radial Nerve



27

34 y old male patient, presented to the clinic with a history of saw blade cut to his left hand, on examination the scar of the cut was over the medial aspect of the distal wrist crease. The most likely findings are: *
(1 Point)

Ulnar nerve lesion (associated with Paresthesia and numbness over the medial one and half finger) in addition to claw hand deformity (it will be more associated with picture B -- > As the injury caused low level lesion - Ulnar paradox)

- Wrist and Hands Examination :

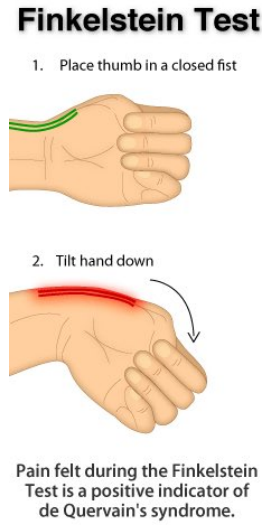
Piano-Key Sign Test is a test carried out for the clinical assessment of wrist instability. It is used as an indicator for distal radio-ulnar joint instability and tears of the triangular fibrocartilage complex of the wrist.

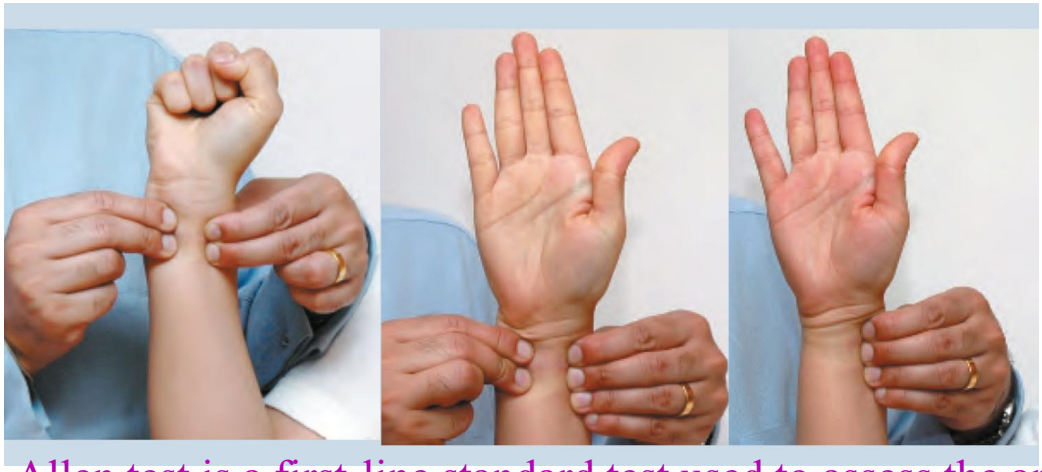
watson test for scapho-lunate instability: thumb pressure is applied to the volar aspect of wrist over distal pole of scaphoid. Move from ulnar to radial deviation. -Painful clunk is positive.

Pivot shift test: compress the wrist axially while moving it towards ulnar and radial deviation

- painfull clunk…..> midcarpal instabilty.

This test (finkelstein) diagnoses two diseases:
1-tenosynovitis of 1st compartment: tenderness at radial styloid (wrist joint) 2-tenosynovitis of 2nd compartment (intersection syndrome): (tenderness 5cm proximal to wrist joint)





The Allen test is a first-line standard test used to assess the arterial blood supply of the hand. This test is performed whenever intravascular access to the radial artery is planned or for selecting patients for radial artery harvesting, such as for coronary artery bypass grafting or for forearm flap elevation.

flexor digitorum profundus test

What Is the name of this test ? & for what ?

Tennis elbow test , lateral epicondylitis

- **What is this sign?** Froment's Sign
  - **For which nerve?** Ulnar nerve