

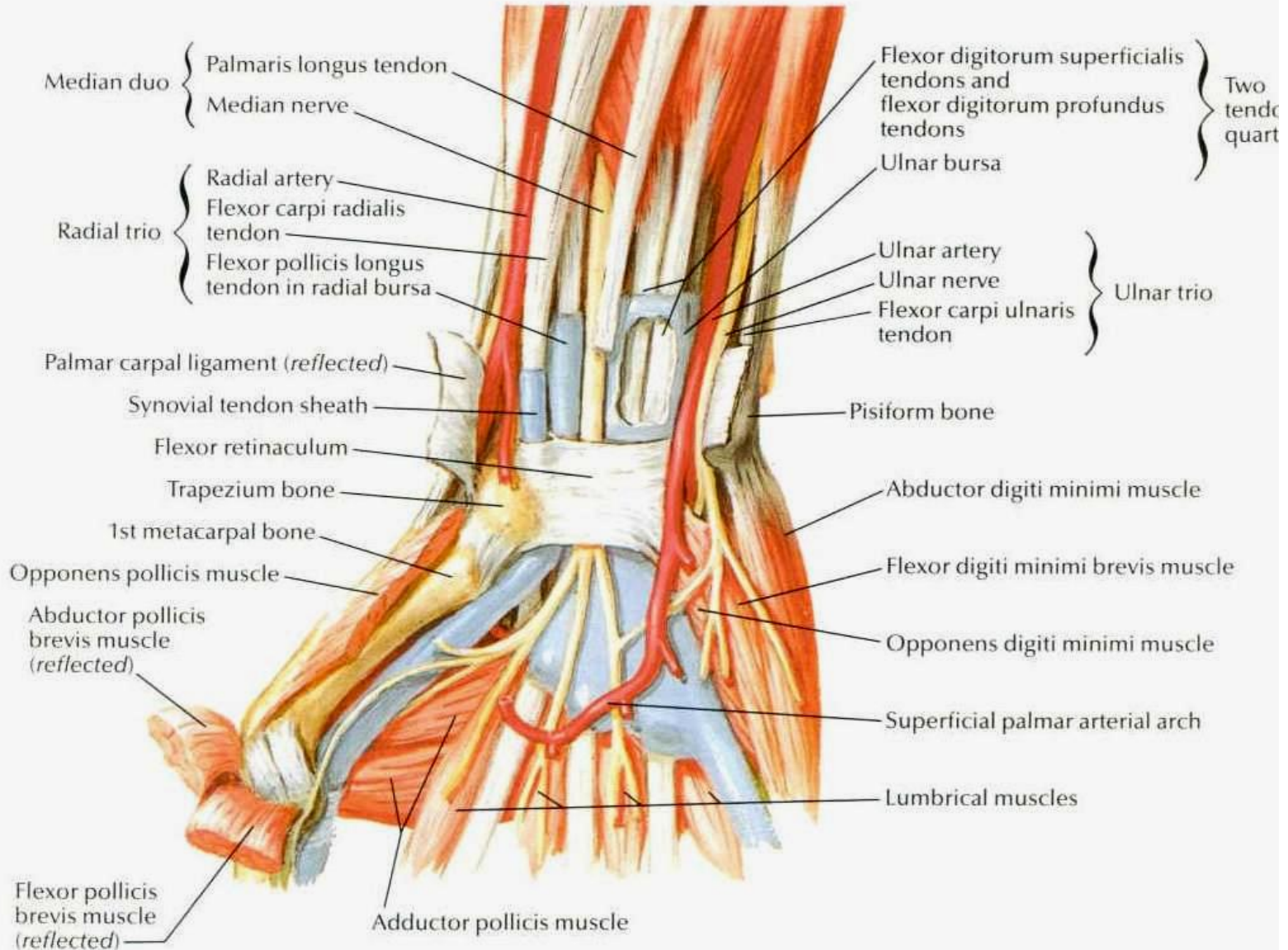
# Basic Science of Tendon And Tendon Disorders

Jeff Auyeung

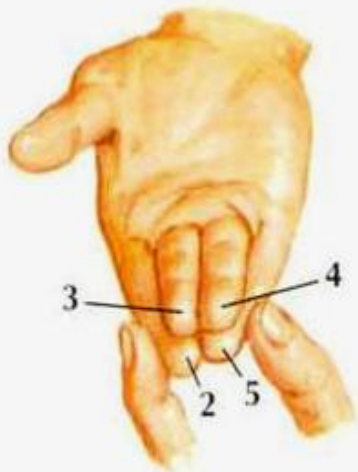
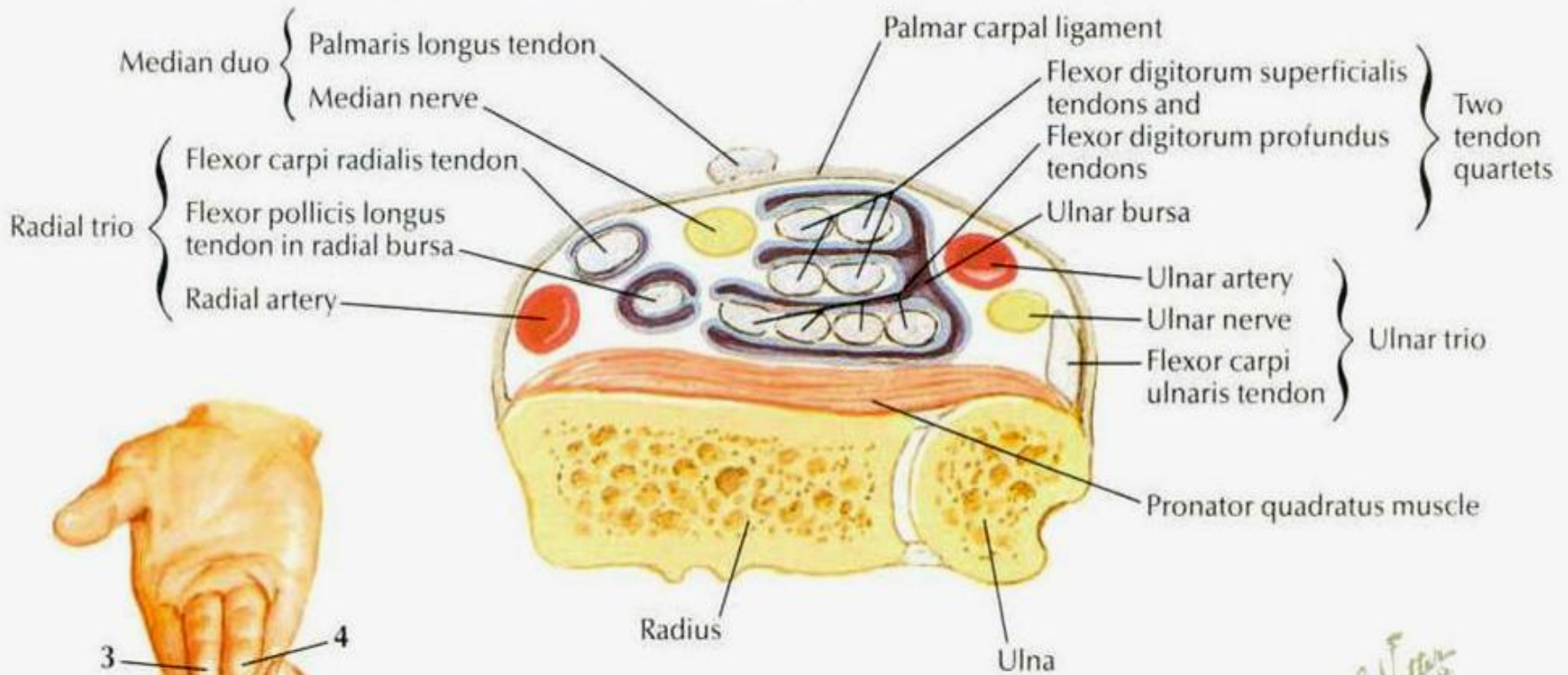
University Hospital of North Durham



# Anatomy



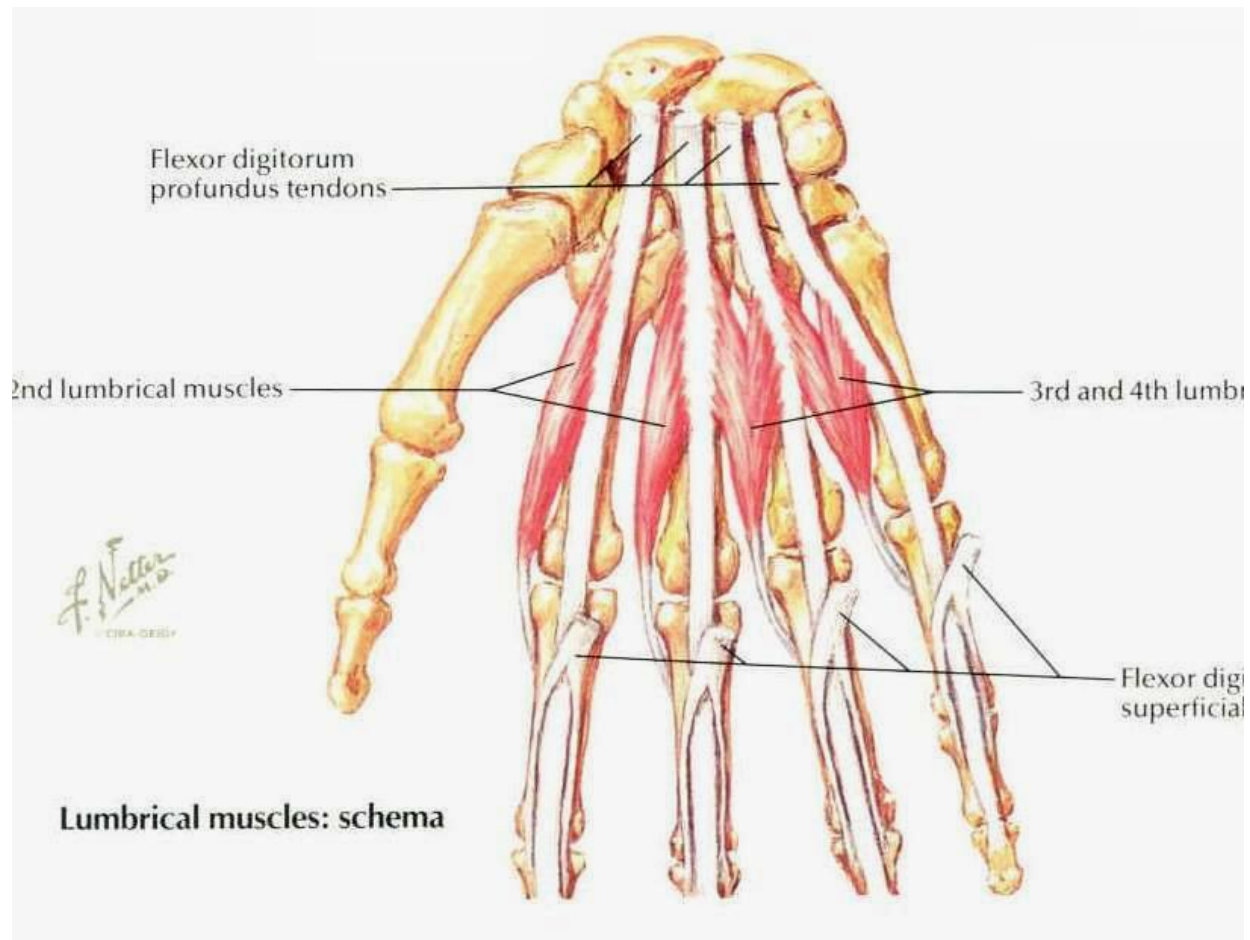
## Schematic cross section proximal to flexor retinaculum

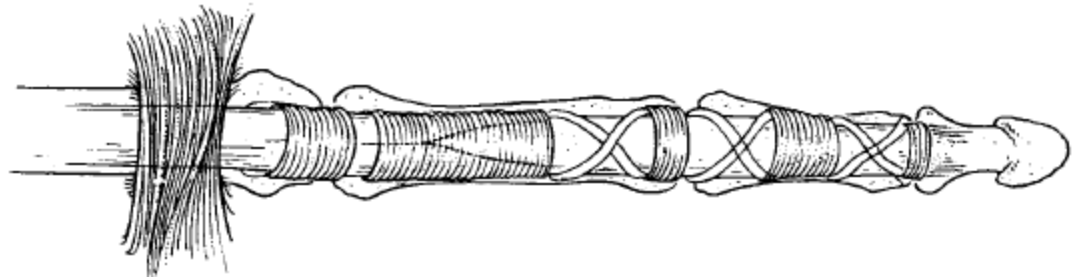
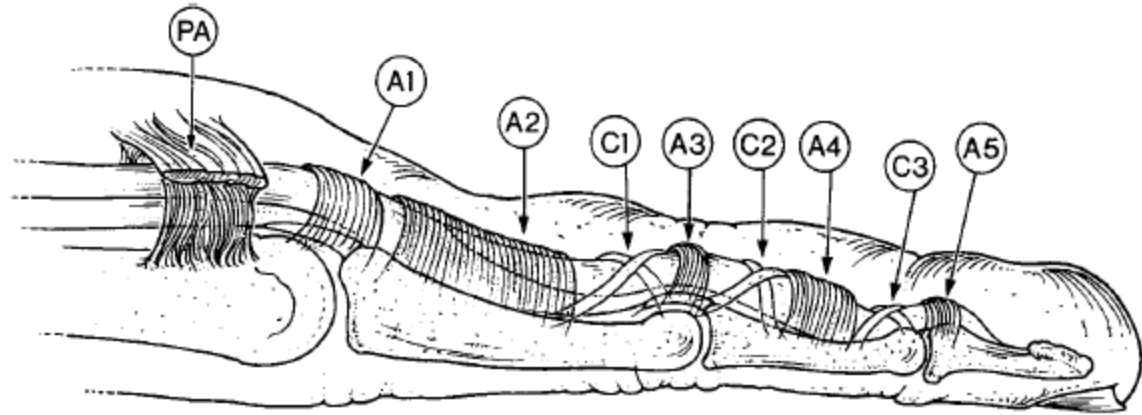


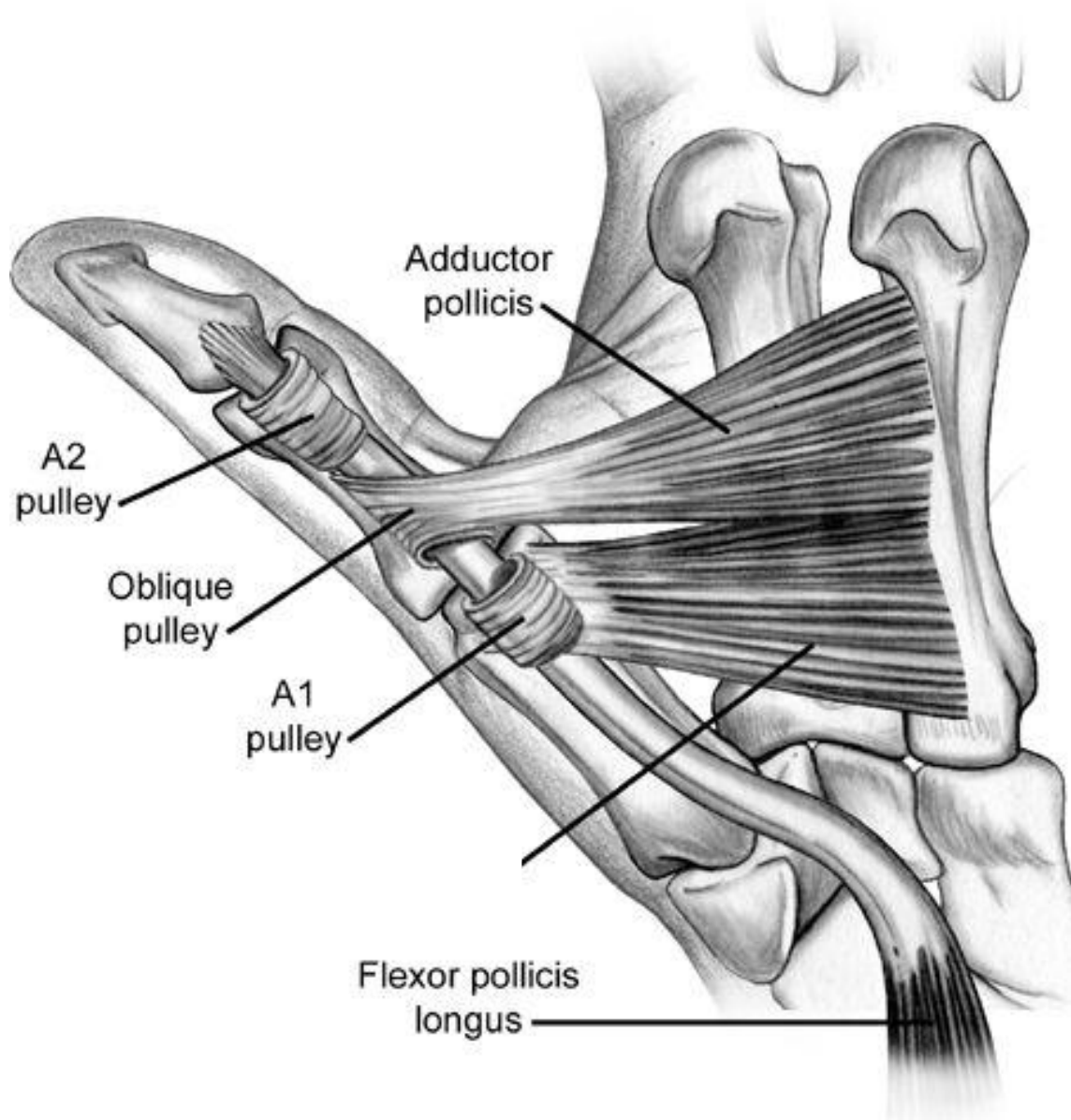
Simple method of demonstrating arrangement of flexor digitorum superficialis tendons at wrist

*F. Netter M.D.*  
LIBRA DEEPI

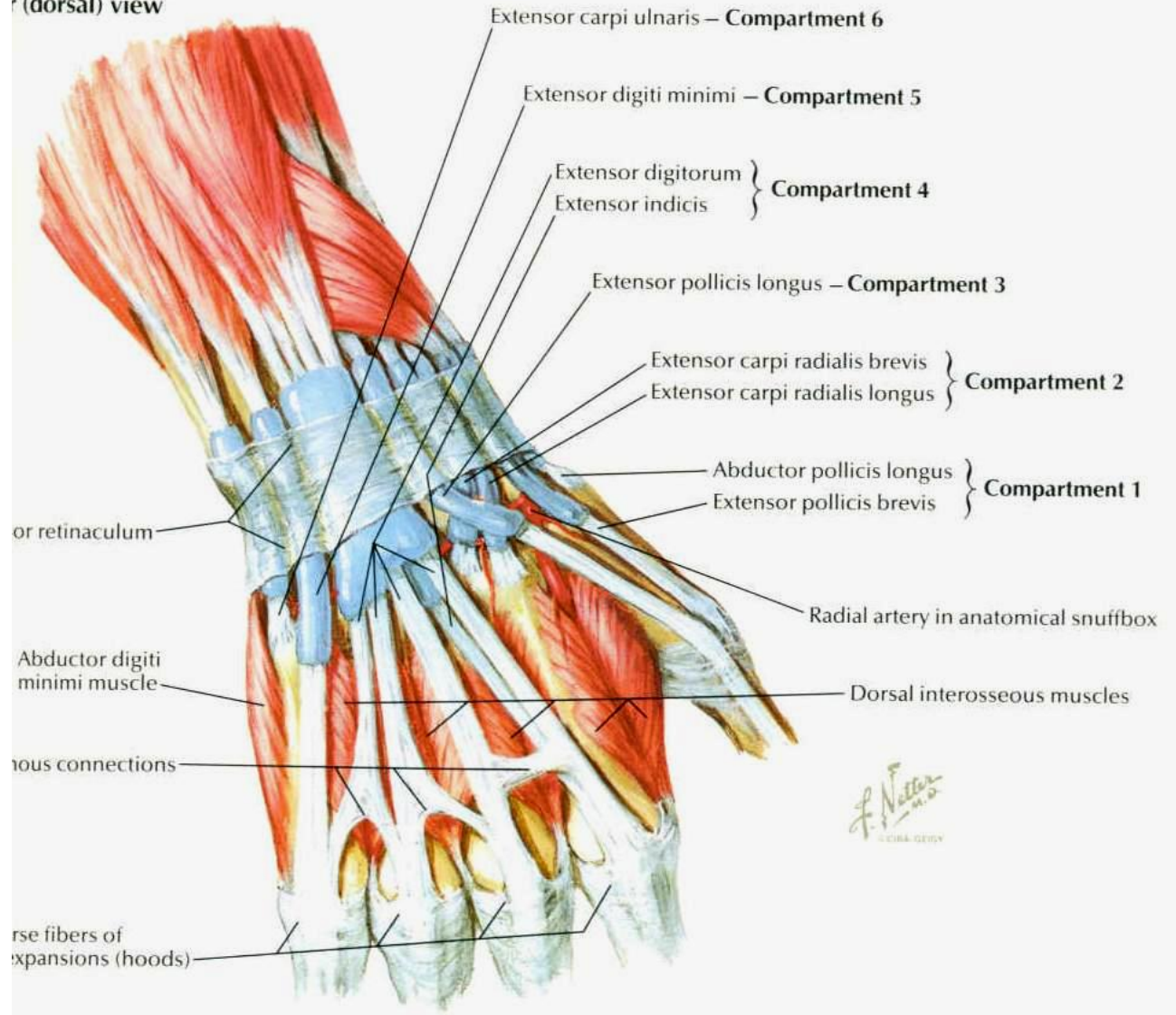




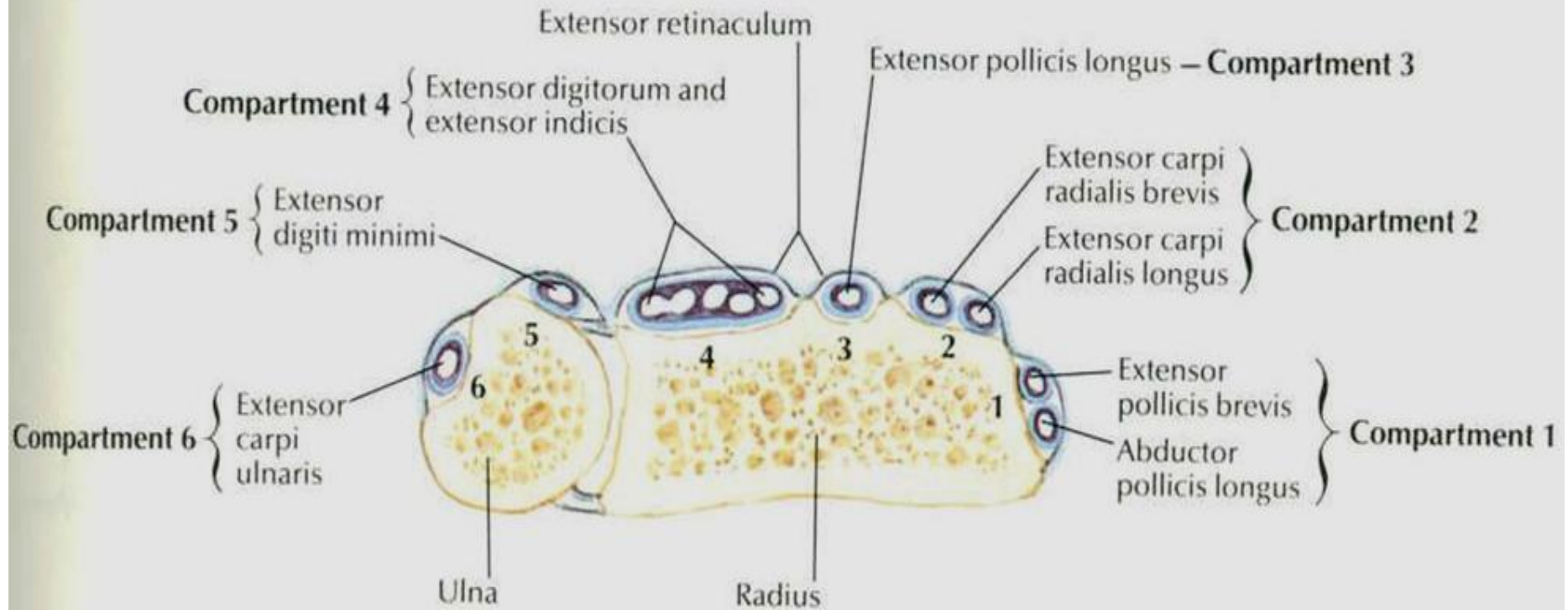


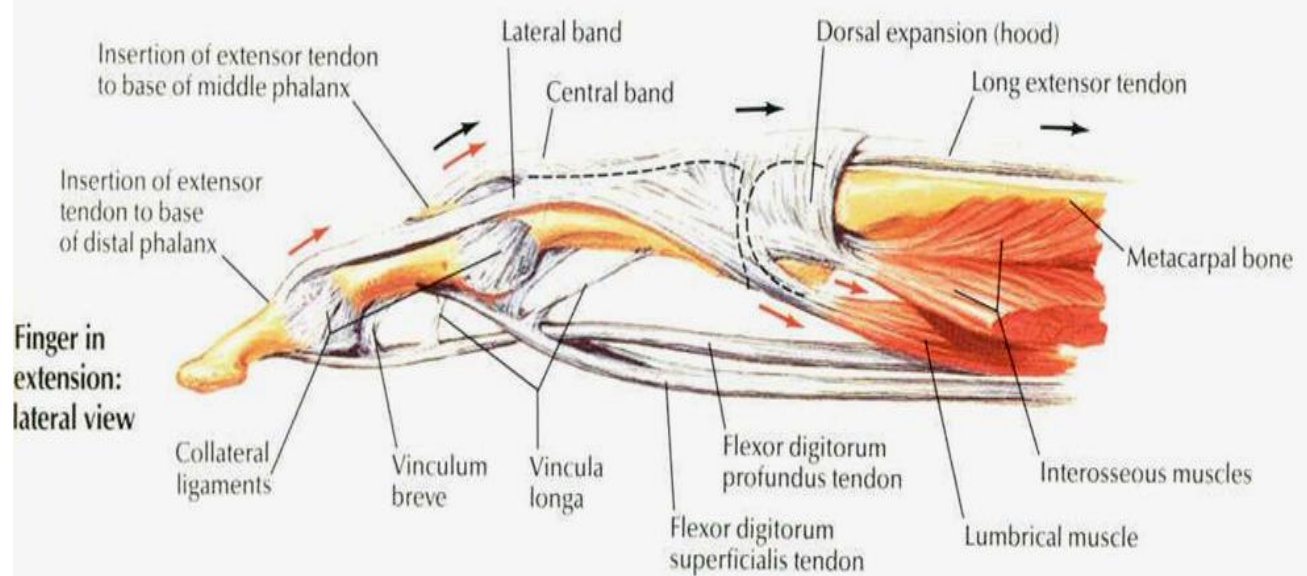
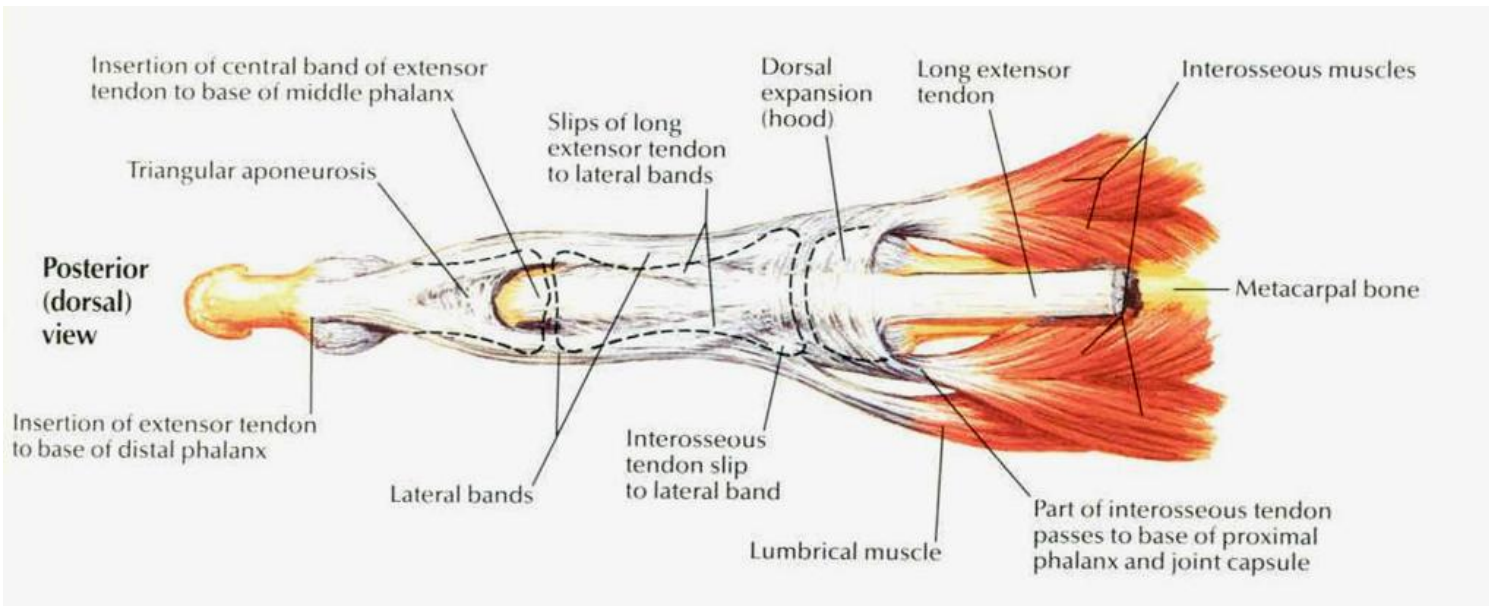


(dorsal) view



## Cross section at proximal wrist





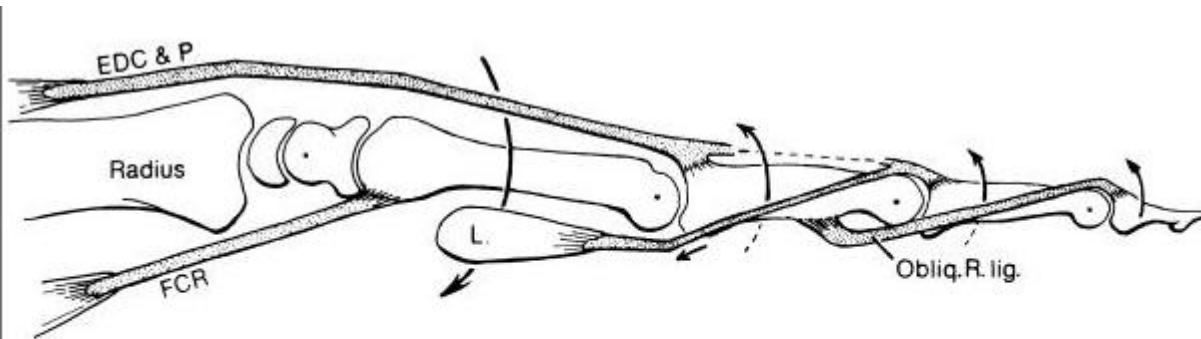
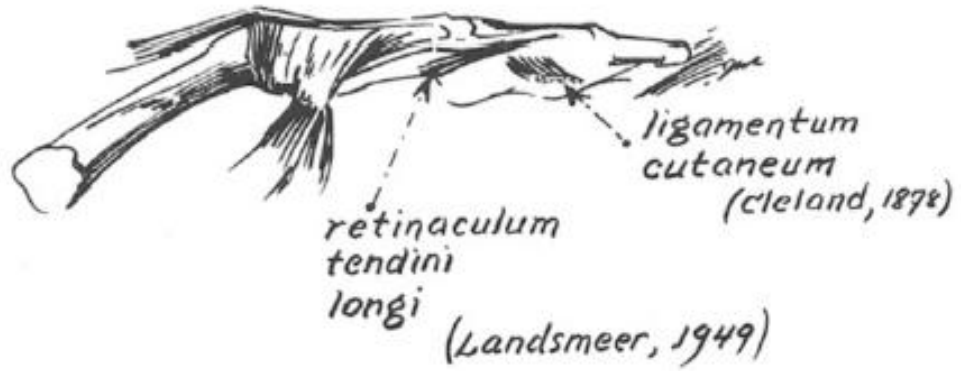
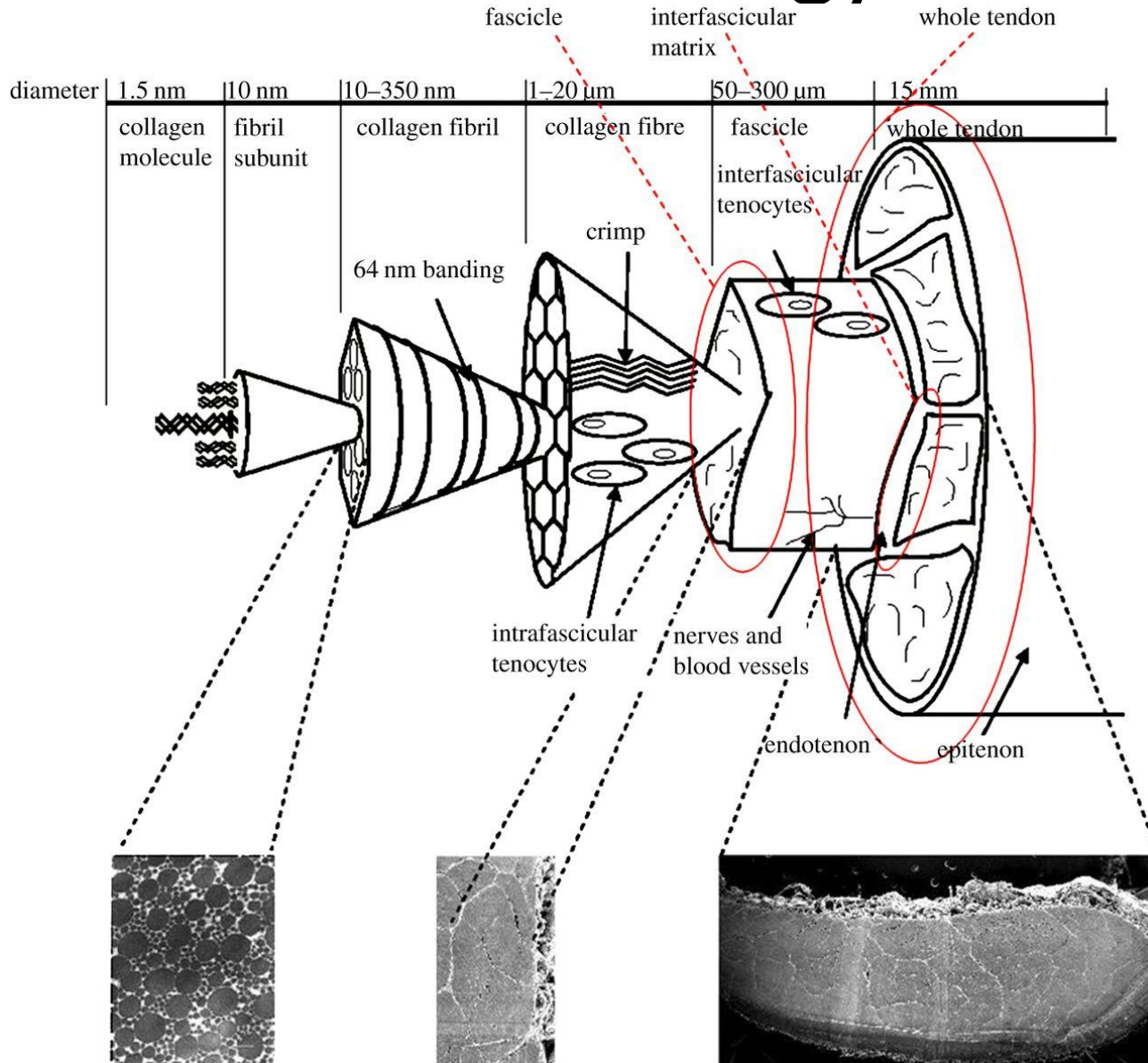


FIGURE 6-2 Schematic representation of the spiral oblique retinacular ligament (Obliq. R. lig.) and its contribution to DIP joint extension.

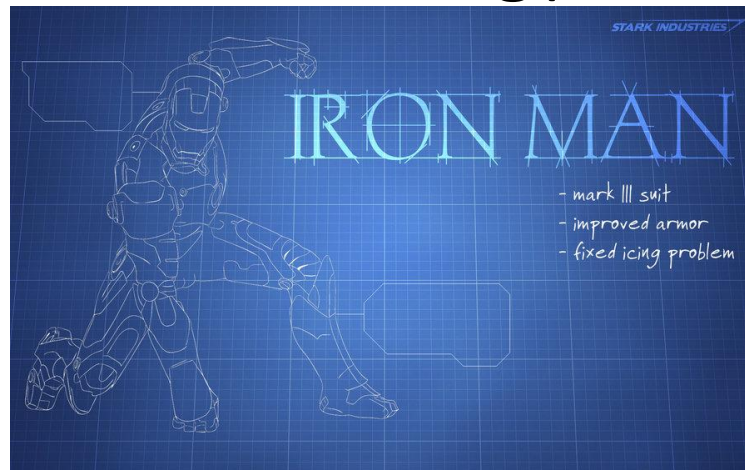


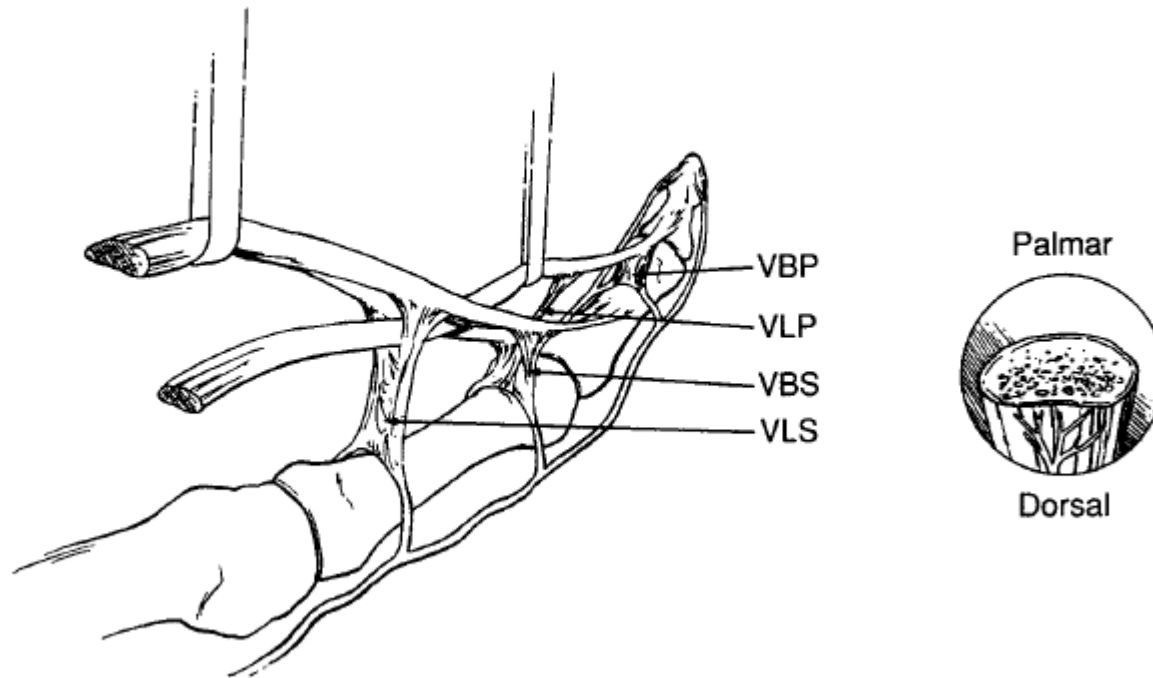
# Histology



# Healing

- 3 phases
- Haematoma/Inflammatory (up to 48hrs)
- Proliferation/Collagen Producing (48hrs-4 weeks)
- Maturation/Remodelling(4 weeks +)

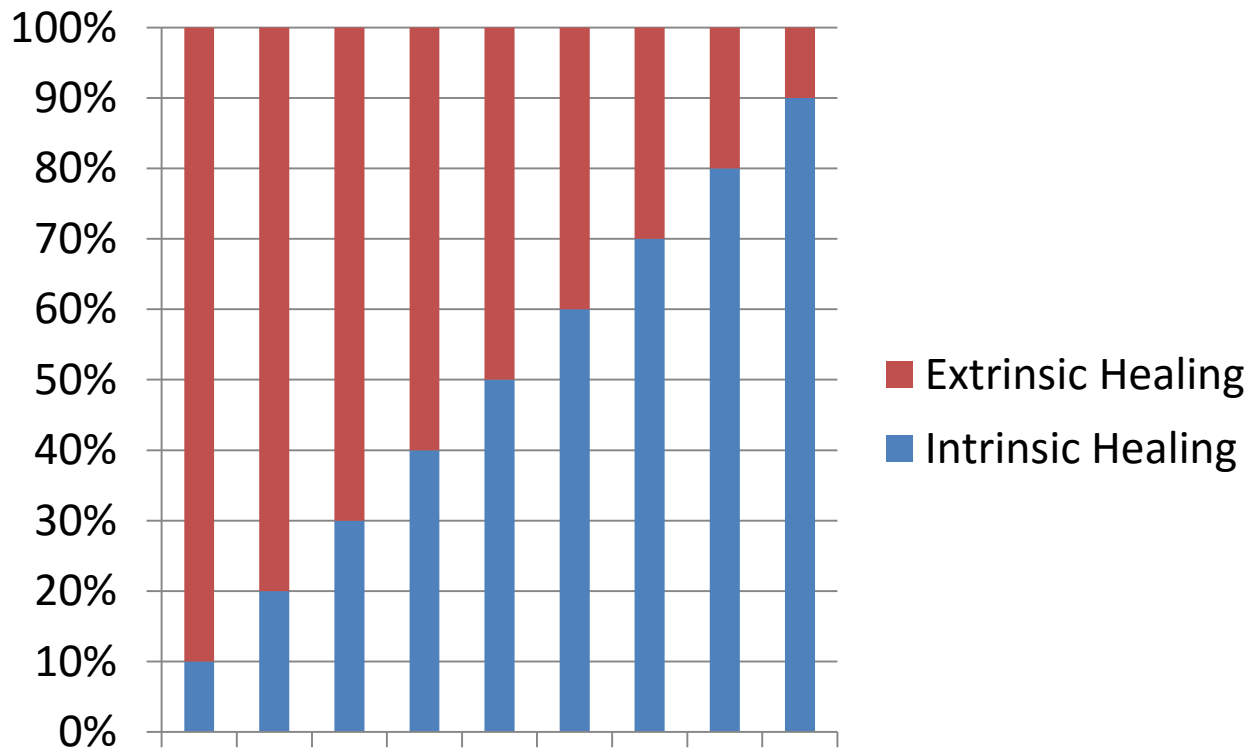




- Normal Tendon nutrition is from vascular (via vincula) and synovial (via tendon sheath)



- Intrinsic vs Extrinsic healing



More Adhesions

Less Adhesions



# Tendon disorders – Stenosing tenovaginitis

- Tendinosis rather tendinitis
- Histology – deposition of mucopolysaccharides no inflammation
- Up to 5 times thickening of tendon sheath
- Tendon thicken as a response to increase friction with thickened sheath



# Tendon disorders – Stenosing tenovaginitis

- Corticosteroid - ?optimal amount and interval for second injection
- Soluble(eg dexamethasone) vs insoluble (eg Triamcinolone)? – latter quicker acting, but may be higher recurrence rate (Ring et al 2008)



# Tendon disorders – Stenosing tenovaginitis

- Trigger digits/Trigger Thumbs
- Often idiopathic, but can be associated with DM
- Steroid injection less effective in DM
- Open vs Percutaneous release for trigger digits



# Tendon disorders – Stenosing tenovaginitis

- De Quervain syndrome
- Hx – pain at radial styloid, often lump visible
- Worse pain with wringing out cloths
- Exam
  - Finkelstein
  - Eichhoff
  - Wrist Hyperflexion Abduction Test (WHAT)
- 0.84 vs 0.94 accuracy (Goubau et al 2014)





- Finkelstein



- Eichhoff

- WHAT



# Tendon disorders – Stenosing tenovaginitis

- Treatment
- Steroid injection – 10-20 mg proximal injection site
- Surgery – open release. ?Endoscopic
- Beware injury to superficial radial nerve

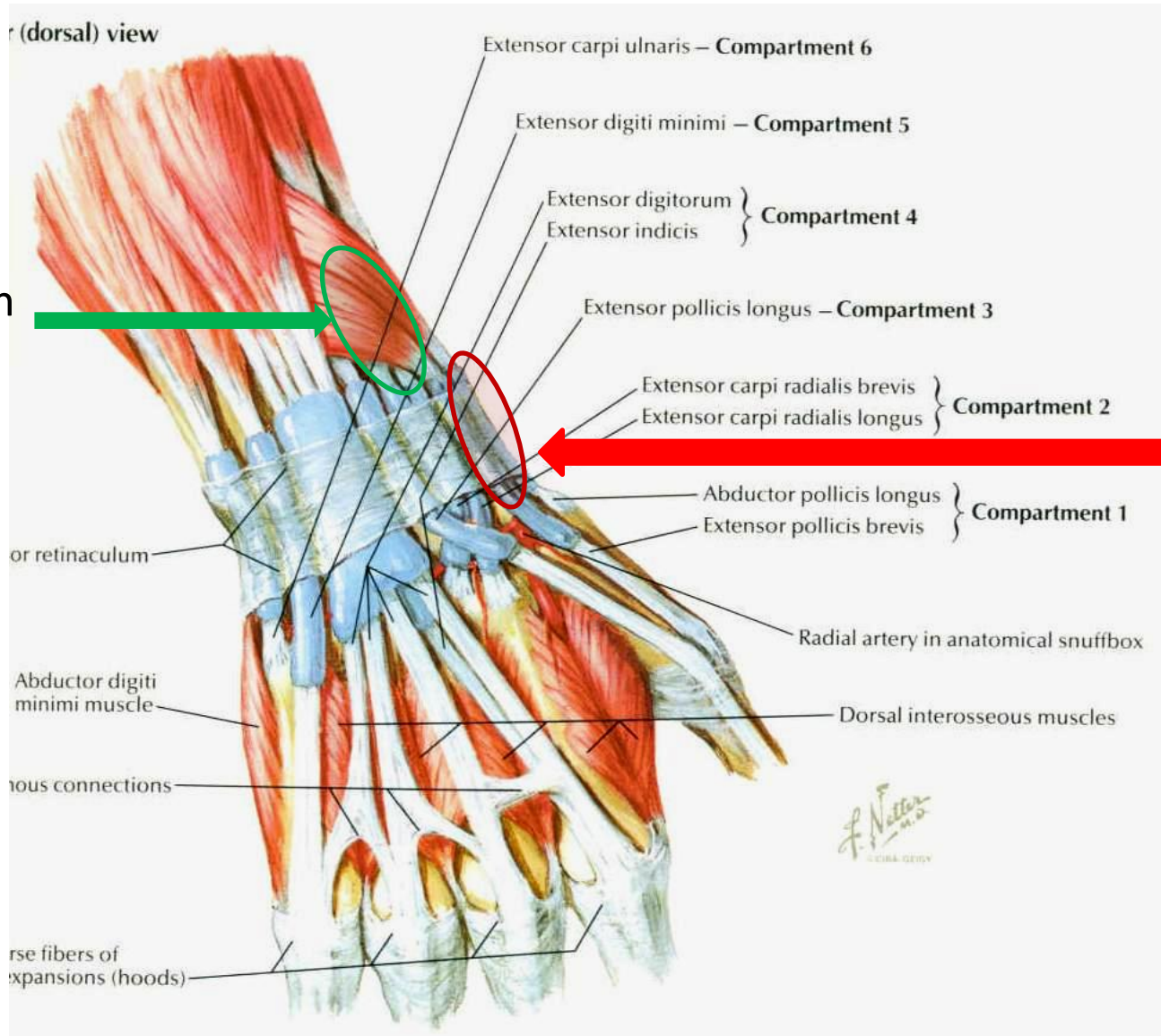


# Tendon disorders – Stenosing tenovaginitis

- Intersection syndrome
- Often confused with De Quervain
- More proximal and dorsal site of symptoms and signs.
- Crepitus sometimes felt
- Conservative – physio/injections



Intersection  
Syndrome



De Quervain



# Tendon disorders – Stenosing tenovaginitis

- FCR
- Need to exclude STTJ OA, if present treat OA
- Steroid injections and eccentric contraction exercises.
- Occasionally decompression



# Tendon disorders – Stenosing tenovaginitis

- ECU tendinosis
- Need to exclude DRUJ instability – if present address this
- Occasionally associated with ECU subluxation – stabilise ECU

