

# Skeleton of the upper extremity

# SKELETON OF THE UPPER EXTREMITY

## I. Upper extremity girdle bones (cingulum)

clavicle– *clavicula*

shoulder blade – *scapula*

## II. Bones of free upper extremity (extremitas libera)

arm bone– *humerus*

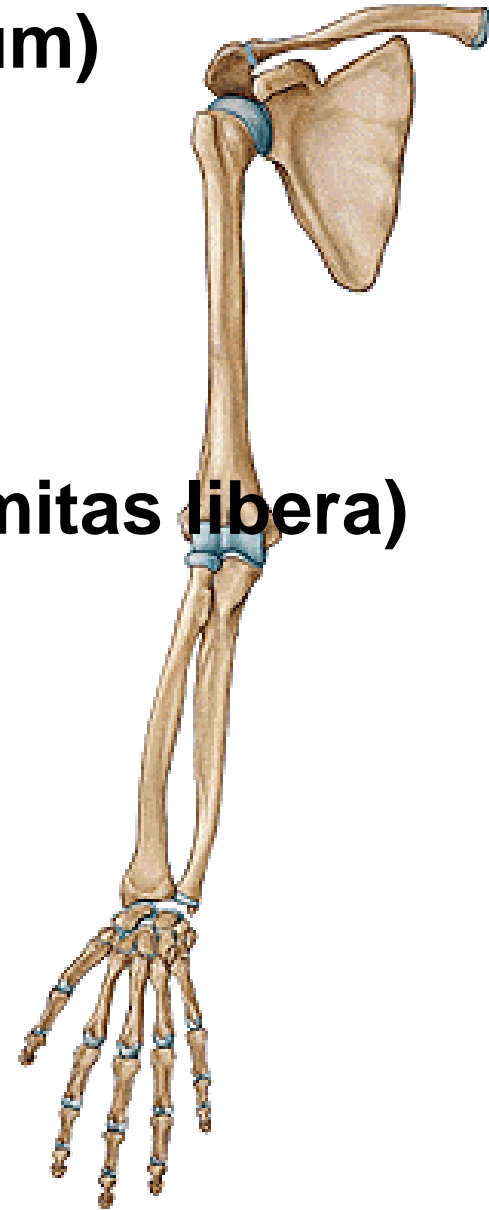
radial bone– *radius*

ulna– *ulna*

carpal bones– *ossa carpi*

metacarpal bones– *ossa metacarpi*

phalanges– *ossa digitorum manus*



# clavicle– *clavicula*

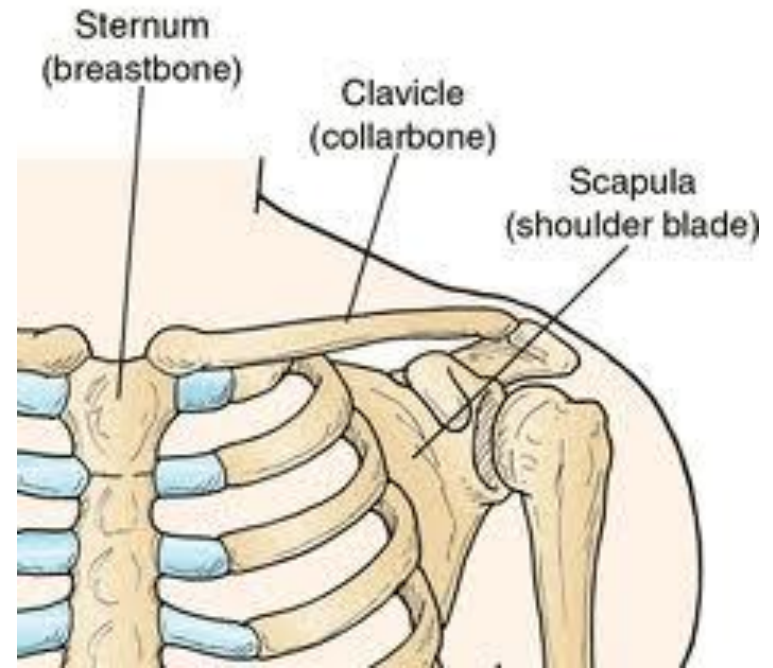
- long bone
- bone which ossifies earliest
- body is S-shaped
- cranial surface- smooth
- caudal surface- rough

## **Extremitas sternalis**

*(facies articularis sternalis)*

## **Extremitas acromialis**

*(facies articularis acromialis)*



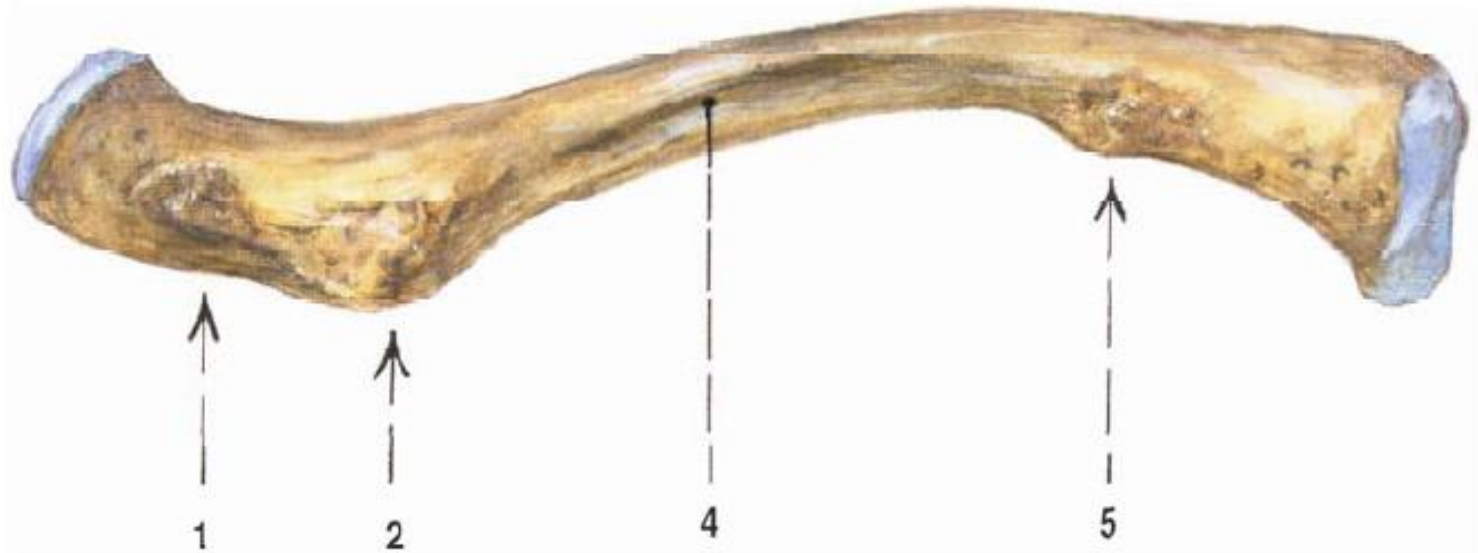
- **extremitas sternalis** (*facies articularis sternalis*)  
***impressio ligamenti costoclavicularis***  
***sulcus subclavius***
- **extremitas acromialis** (*facies articularis acromialis*)  
***tuberositas coracoidea*** (tuberculum conoideum et  
linea trapezoidea)



# clavicle



A



B

# Shoulder blade – scapula

- In height of 2nd to 7th rib
- **margo superior**  
(**incisura scapulae**, processus coracoideus)
- **margo medialis**
- **margo lateralis**  
(cavitas glenoidalis, tuberculum supraglenoidale, tuberculum infraglenoidale, collum scapulae)
- **angulus**: superior, inferior, lateralis



- **facies dorsalis**

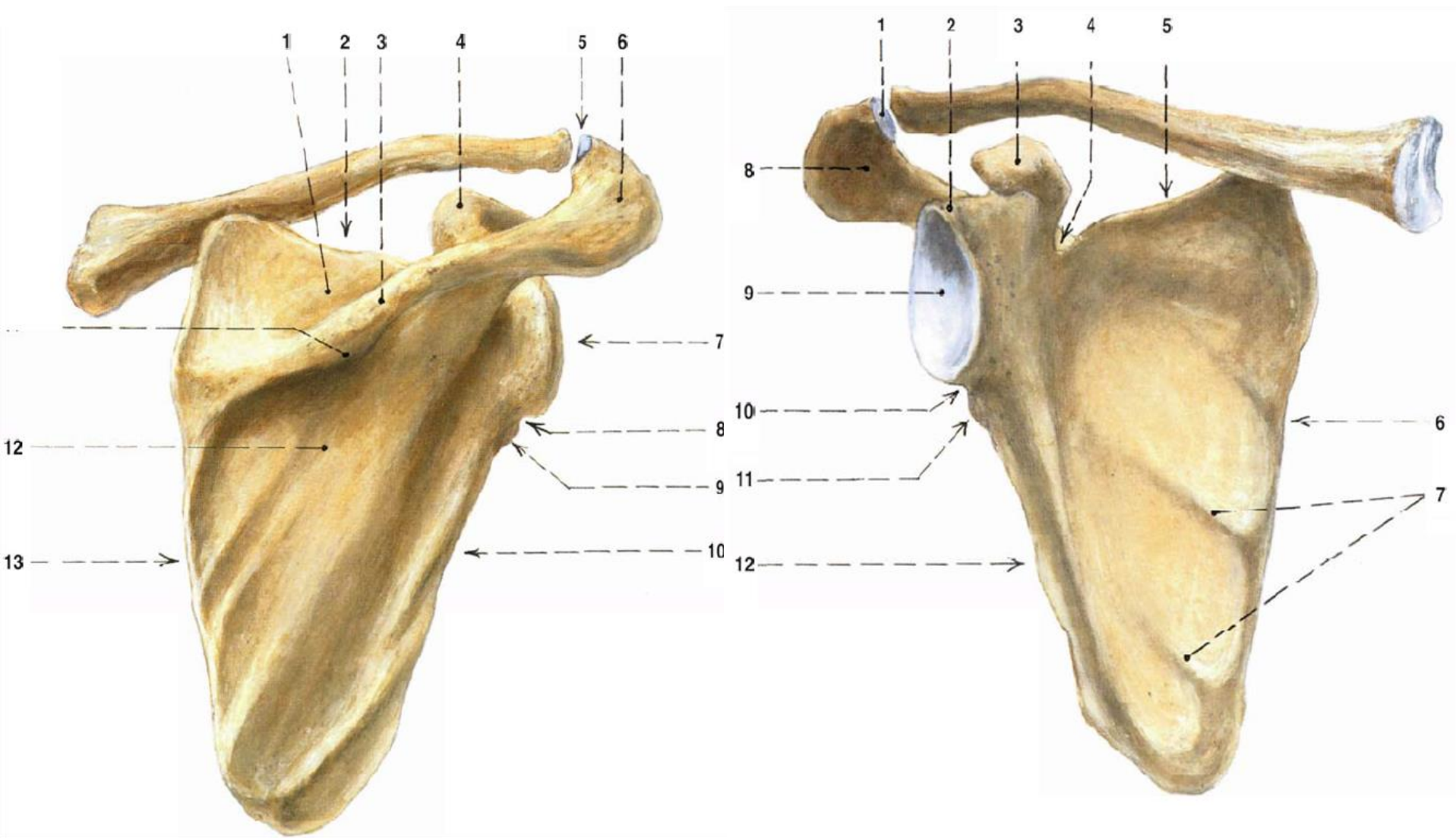
- spina scapulae – protrudes laterally as acromion with facies articularis acromii
- fossa supraspinata
- fossa infraspinata



- **facies costalis**

- fossa subscapularis (lineae musculares)







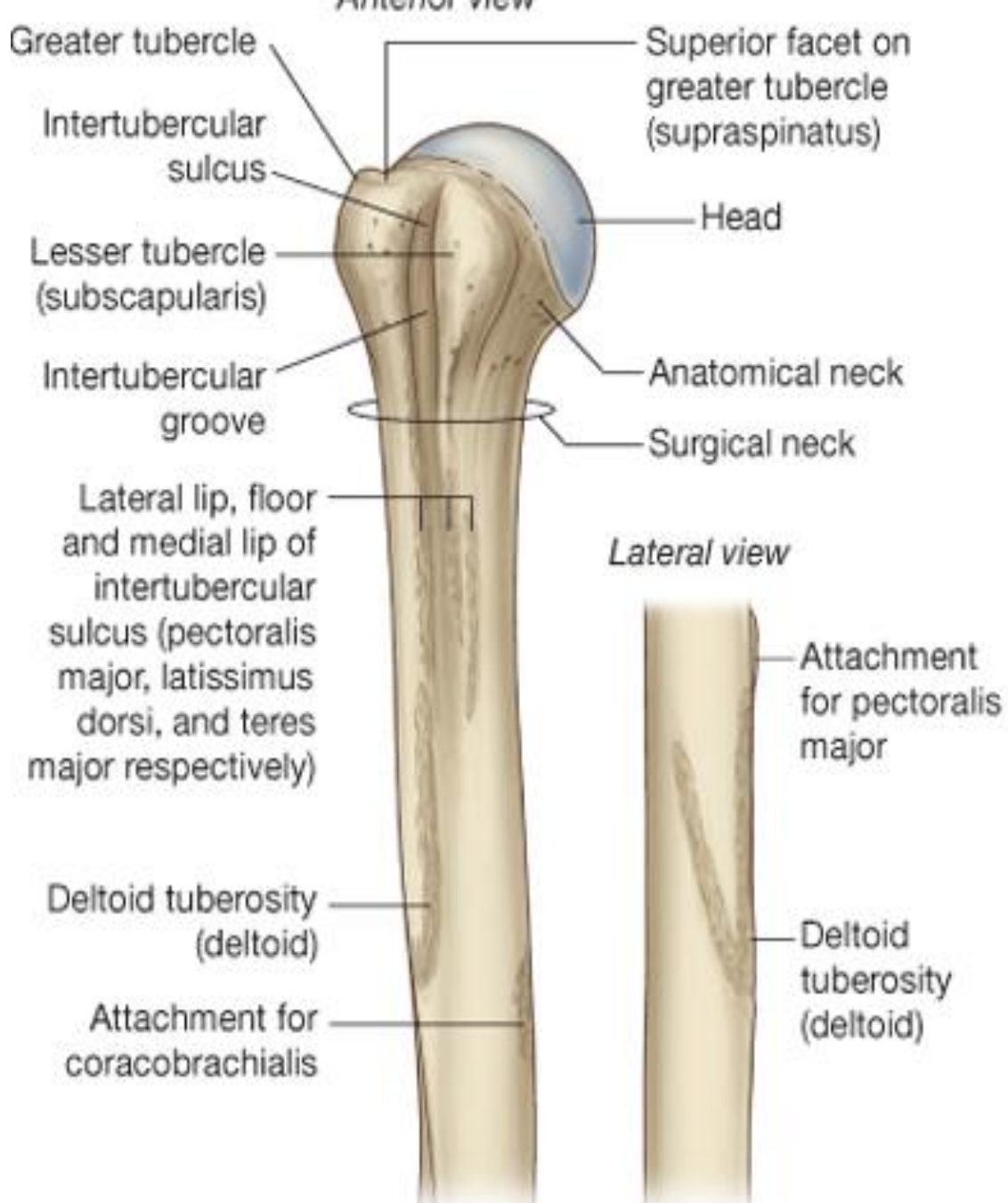
# Arm bone– *humerus*

- **Proximal end (caput):**  
caput humeri  
collum anatomicum  
tuberculum majus et minus  
crista tuberculi majoris et minoris  
sulcus intertubercularis  
collum chirurgicum



- **Corpus:**  
tuberositas deltoidea  
sulcus nervi radialis





- **Distal end:**

epicondylus medialis (sulcus n. ulnaris)

epicondylus lateralis

trochlea humeri (fossa coronoidea)

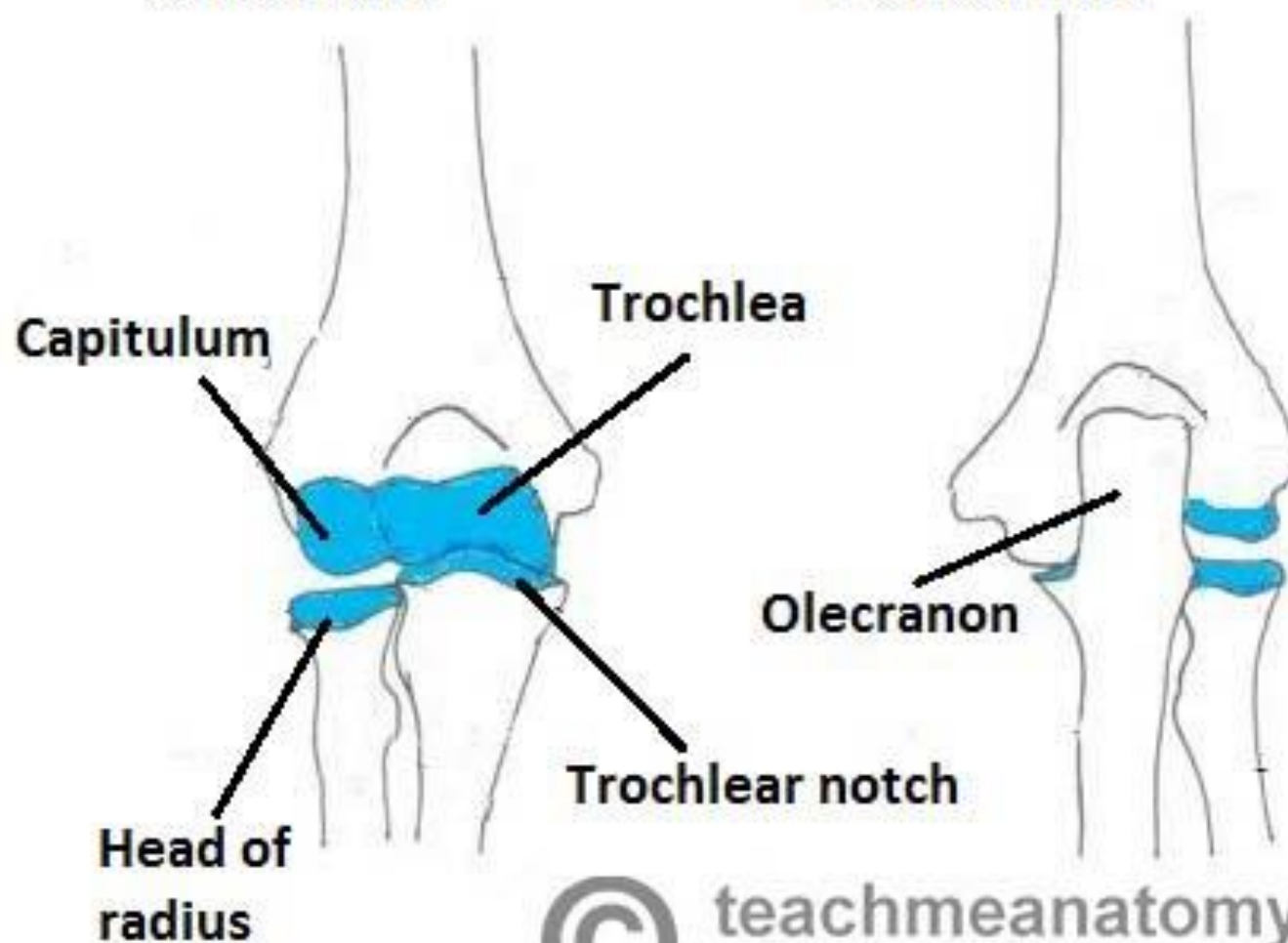
capitulum humeri (fossa radialis)

fossa olecrani



**Anterior:**

**Posterior:**



**teachmeanatomy**

The #1 Applied Human Anatomy Site on the Web.

# Radial bone – *radius*

- **Proximal end:**

caput radii

(fovea capitis radii,  
circumferentia articularis)

- **collum radii**

- **corpus:**

tuberositas radii

margo interosseus

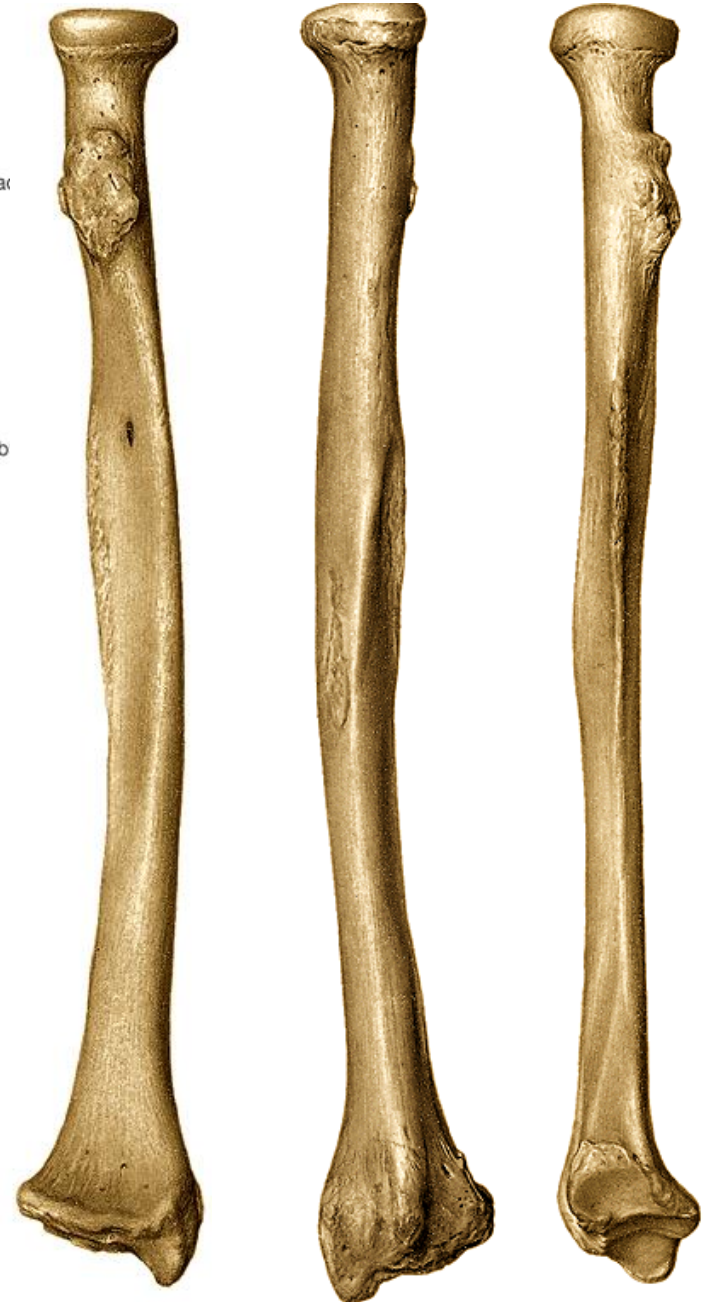
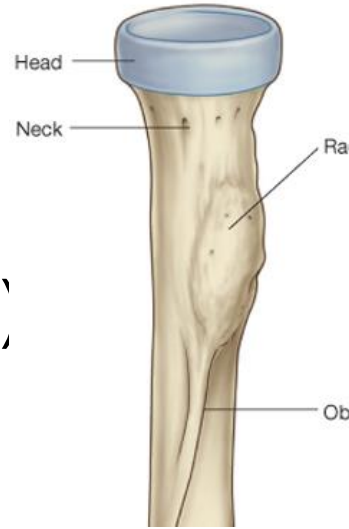
- **Distal end:**

processus styloideus radii

facies articularis carpea radii

incisura ulnaris radii

**sulci tendinum musculorum extensorum**

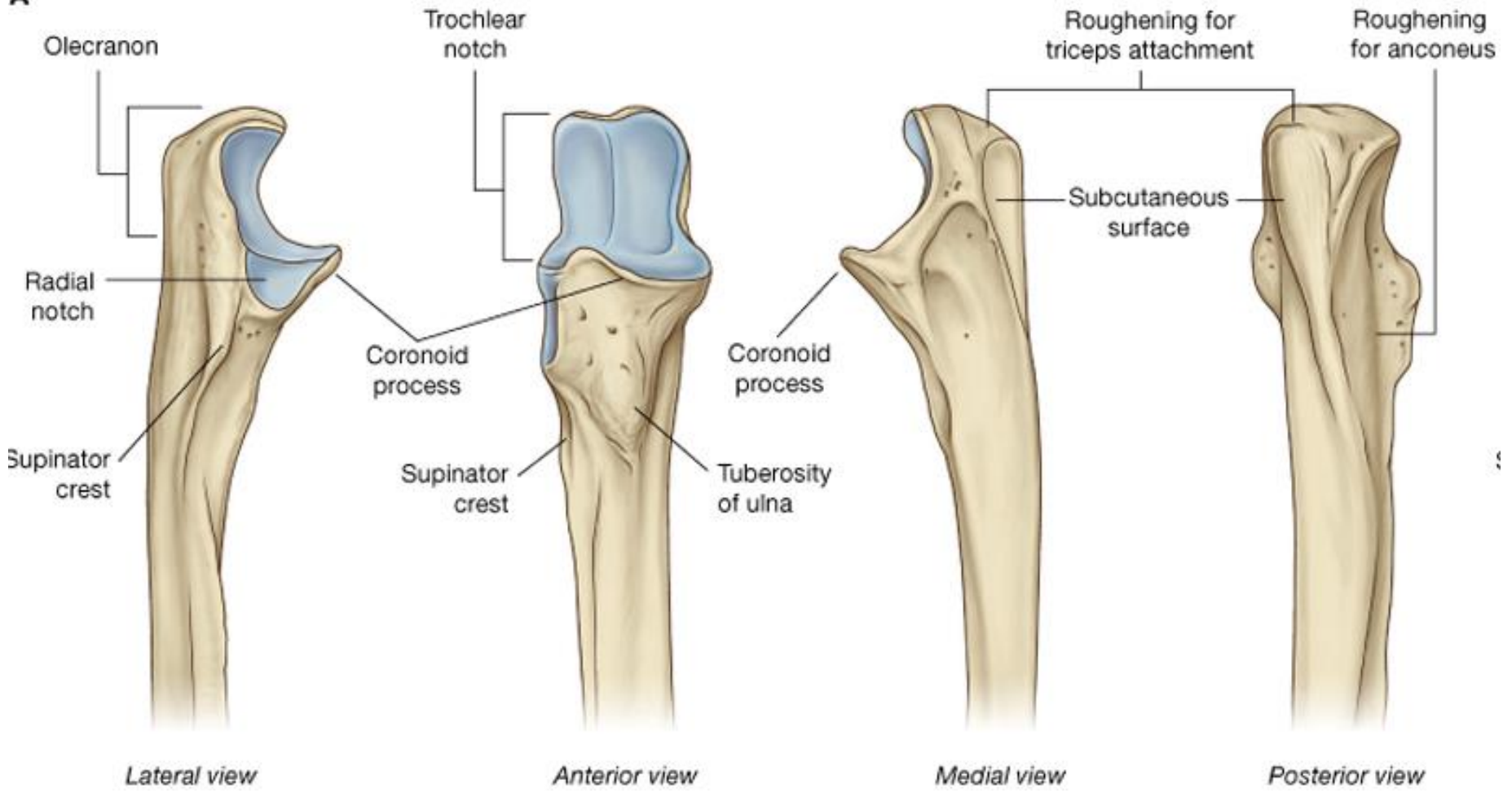


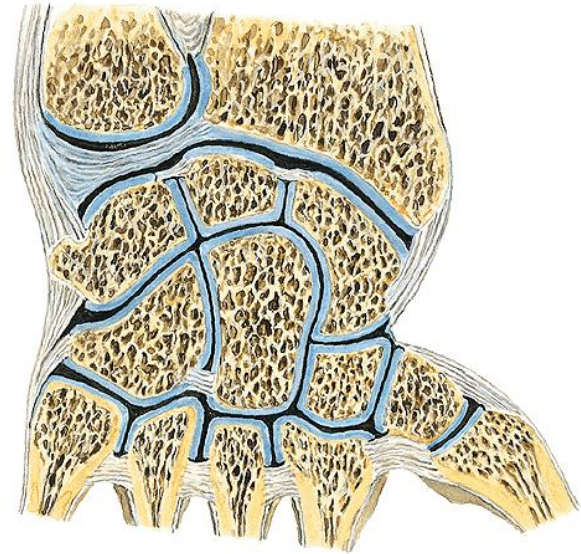
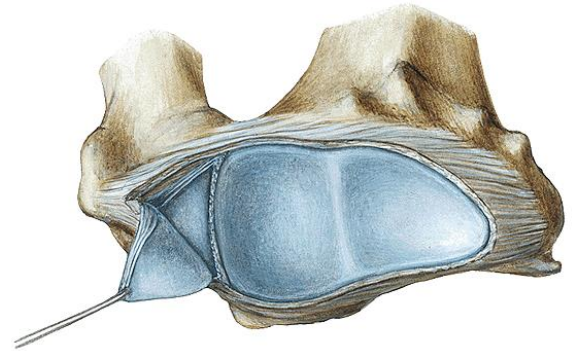
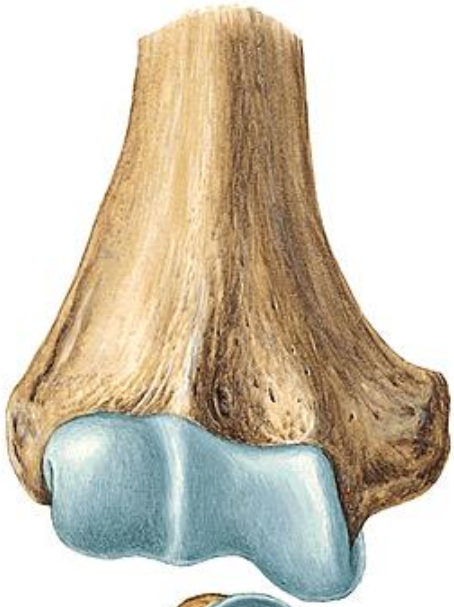
# ulna – ulna

- **Proximal end:**
  - olecranon ulnae
  - incisura trochlearis
  - processus coronoideus
  - tuberositas ulnae
  - incisura radialis ulnae
  - crista musculi supinatoris
- **corpus:**
  - margo interosseus
  - margo posterior
- **Distal end:**
  - caput ulnae
  - circumferentia articularis
  - processus styloideus ulnae



**A**





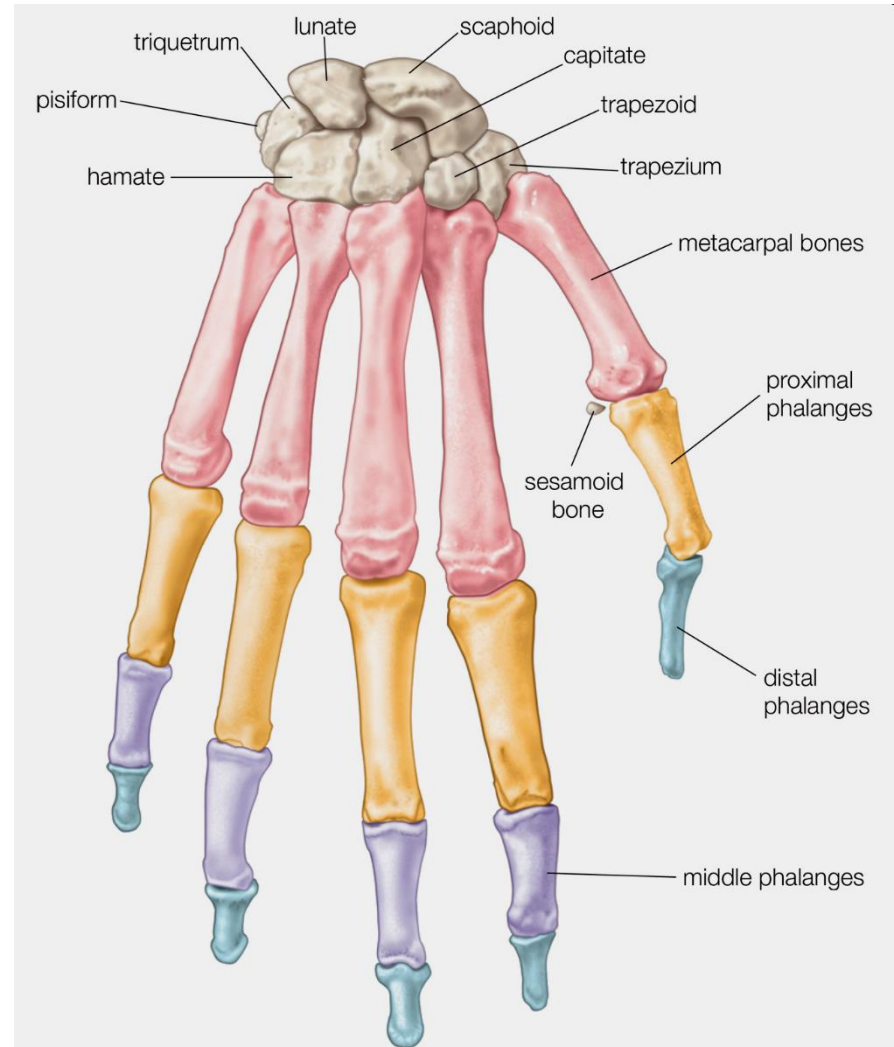
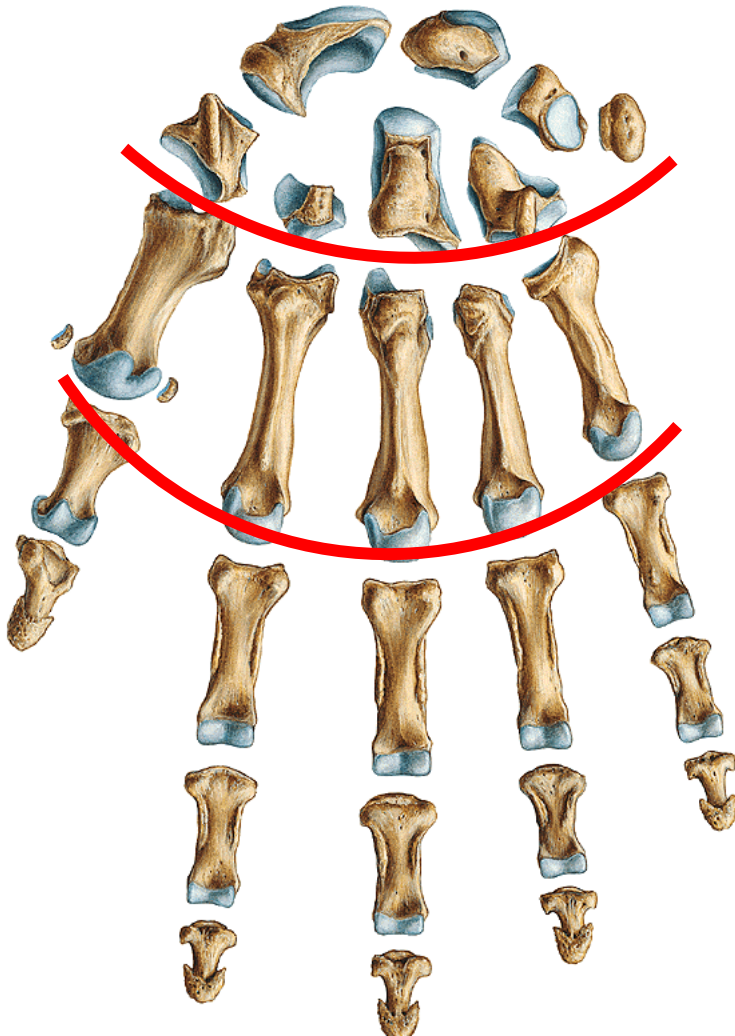


# Hand bones– Ossa manus

**Carpal bones– ossa carpi**

**Metacarpal bones– ossa metacarpi**

**Phalanges– ossa digitorum manus (phalanges)**



# Carpal bones– ossa carpi (8)

## • Proximal row (from thumb):

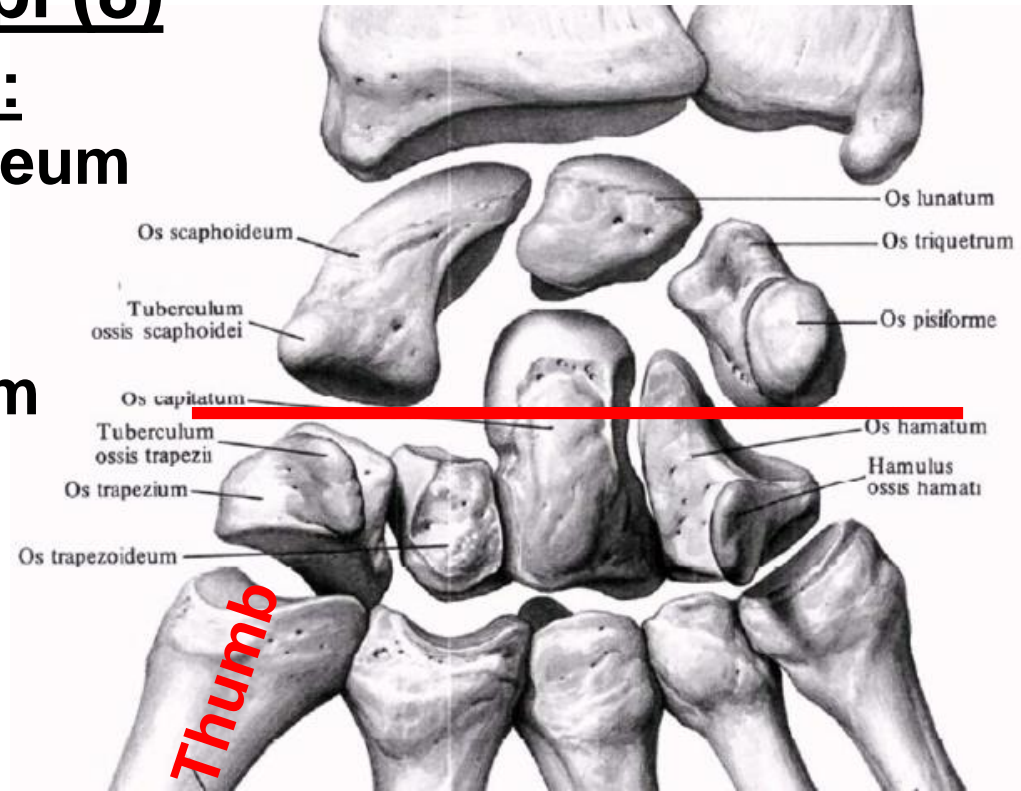
Scaphoid bone– **os scaphoideum**

(tuberculum ossis scaphoidei)

Lunate bone– **os lunatum**

Triquetral none– **os triquetrum**

Pisiform bone– **os pisiforme**



## • Distal row (from thumb):

trapezium– **os trapezium**

(tuberculum ossis trapezii)

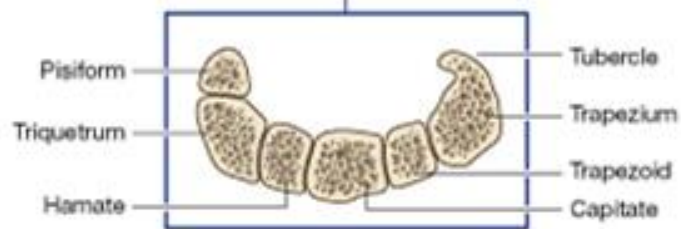
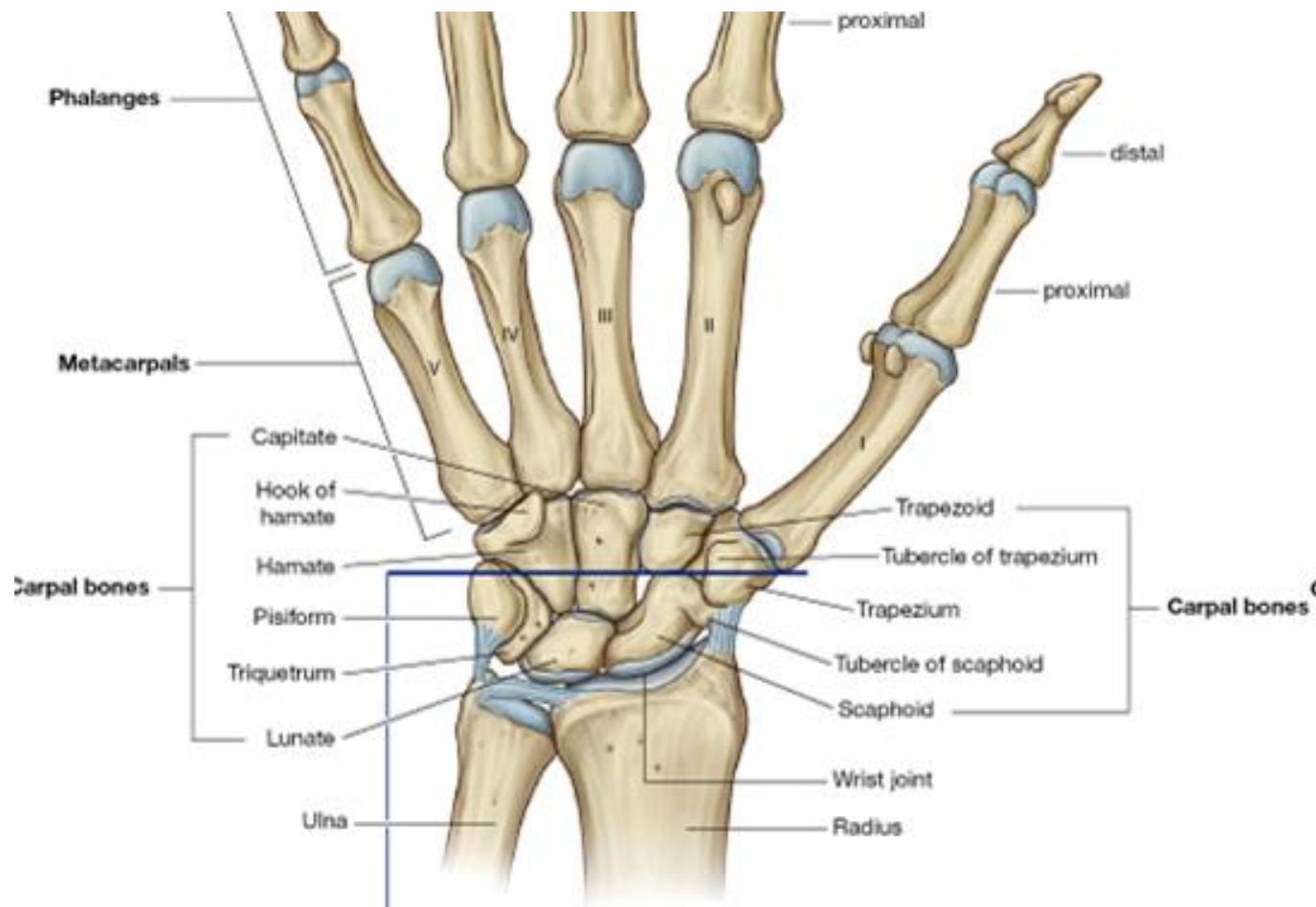
trapezoideum– **os trapezoideum**

capitate– **os capitatum**

(caput ossis capitati)

hamate– **os hamatum**

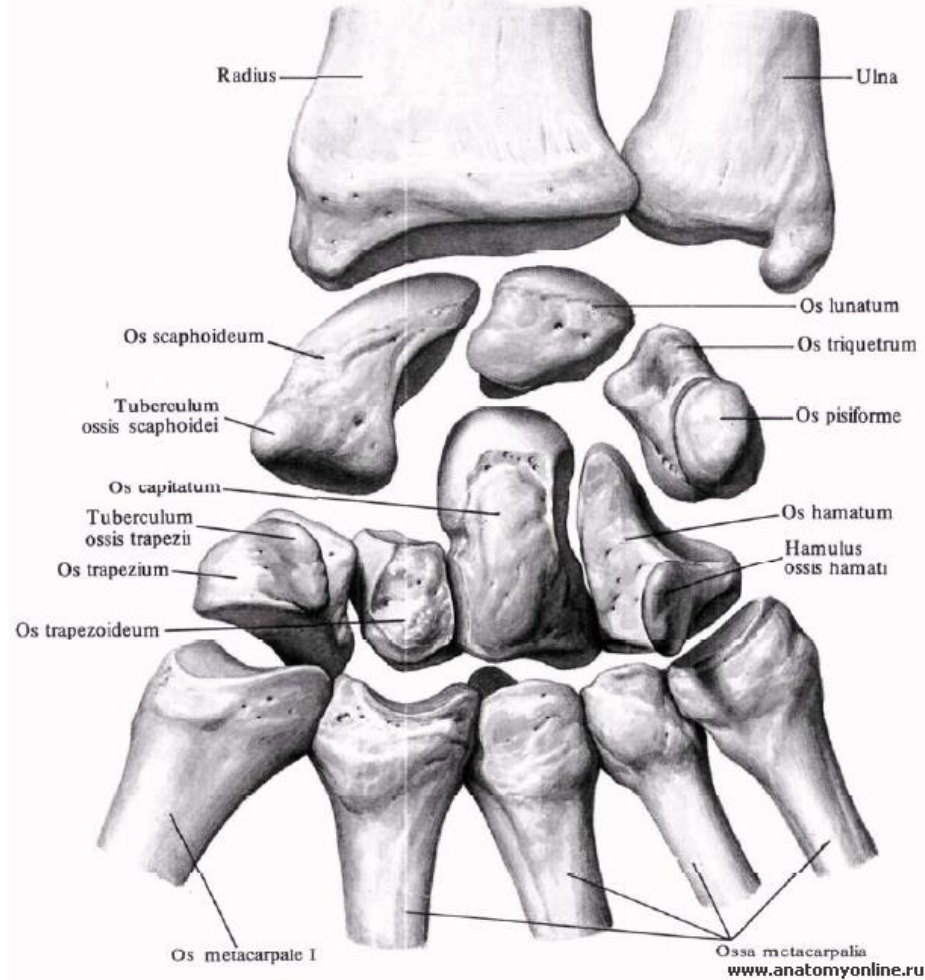
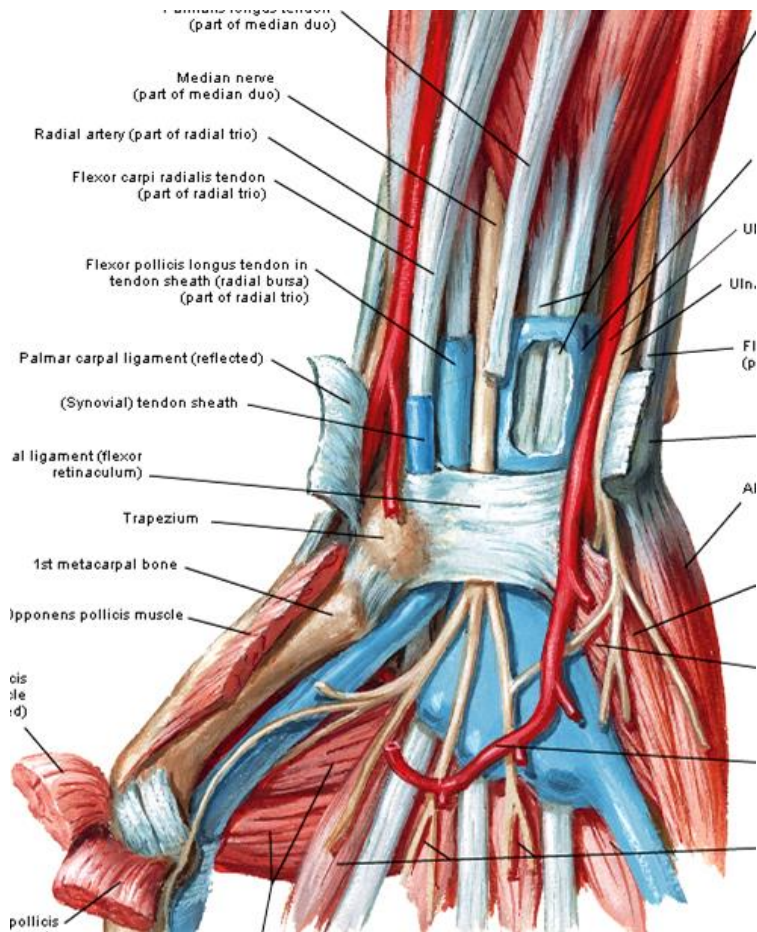
(hamulus ossis hamati)



**Carpal arch**

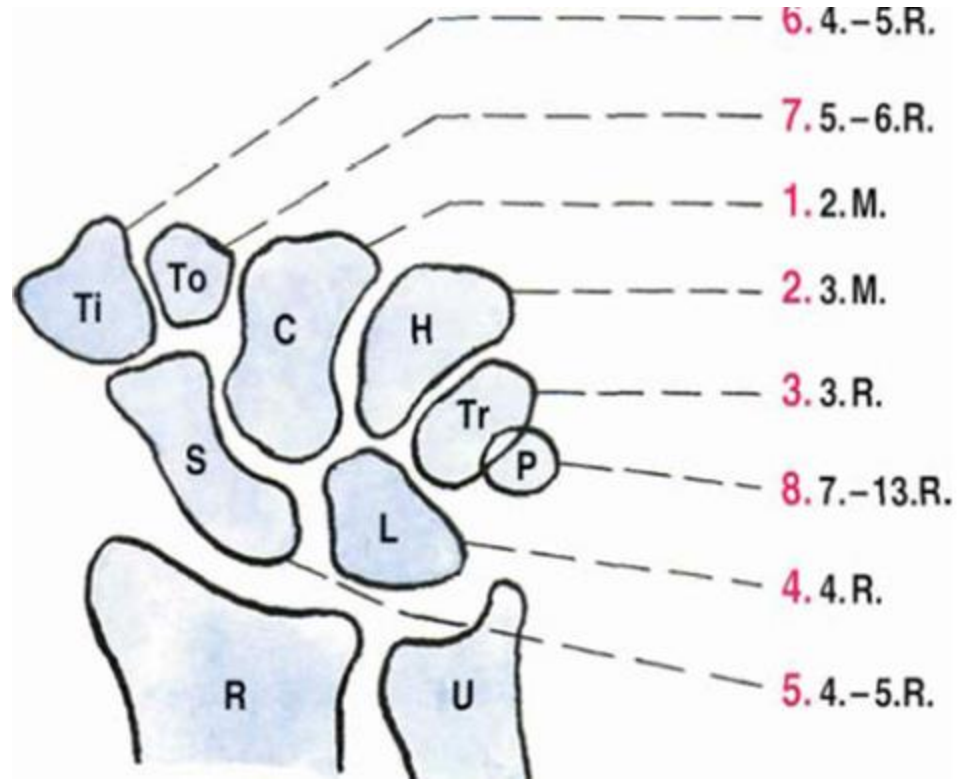


**Carpal arch**



The bones are arranged in that way, they form an arch which is convex dorsally = sulcus carpi, bounded by eminentia carpi radialis et ulnaris

# Ossification of carpal bones

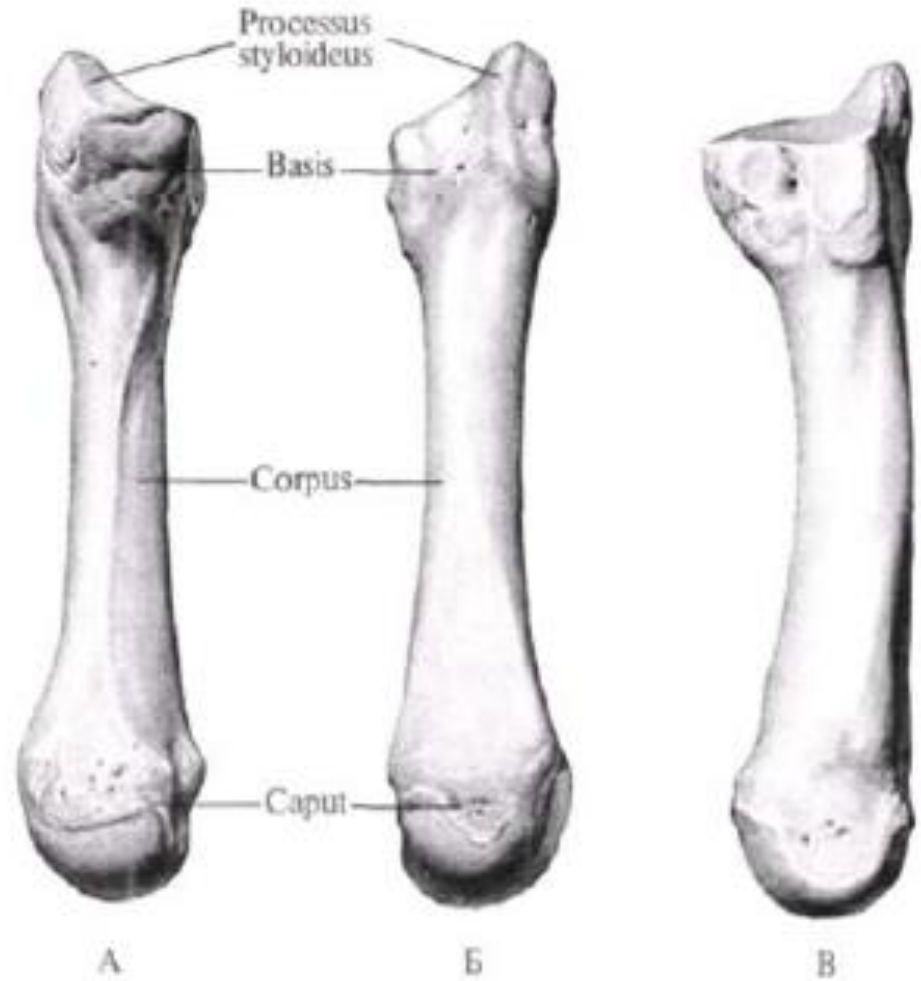


# Metacarpal bones– ossa metacarpi

ossa metacarpi I. – V.  
(from thumb)

basis  
corpus  
caput

The 3rd metacarpal  
bone has processus  
styloideus



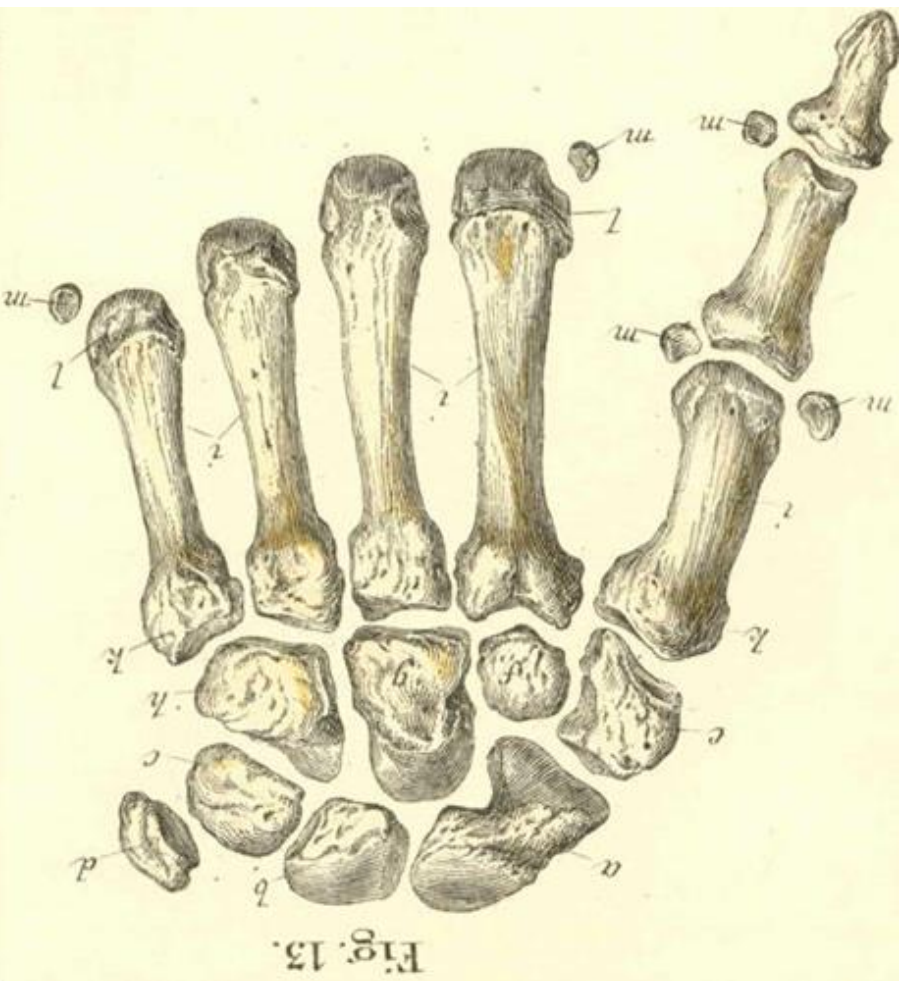
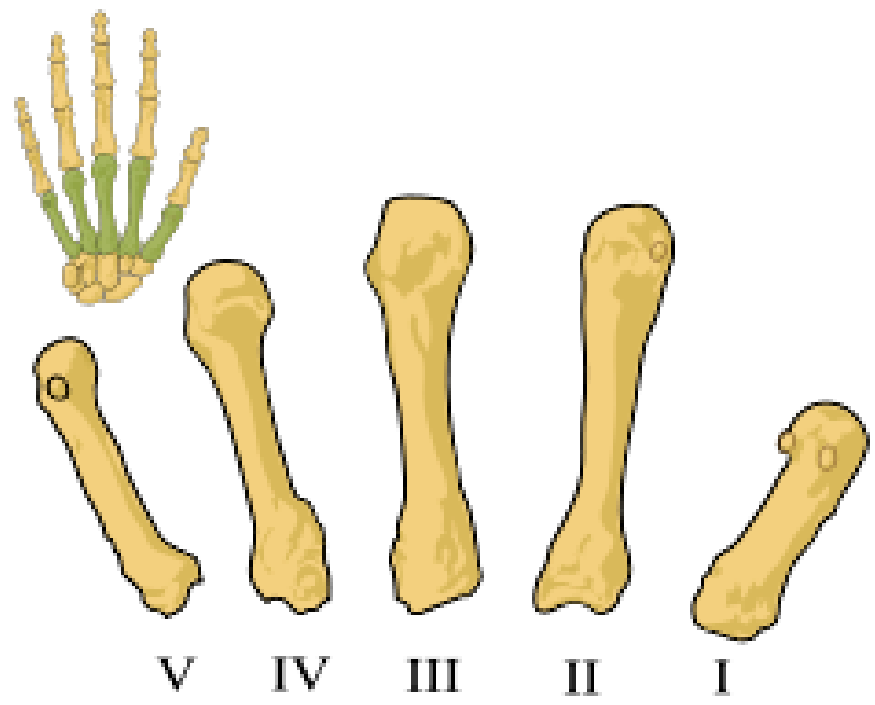


Fig. 13.



# phalanges– ossa digitorum manus

## Phalanges

2nd– 5th finger: phalanx proximalis, media et distalis

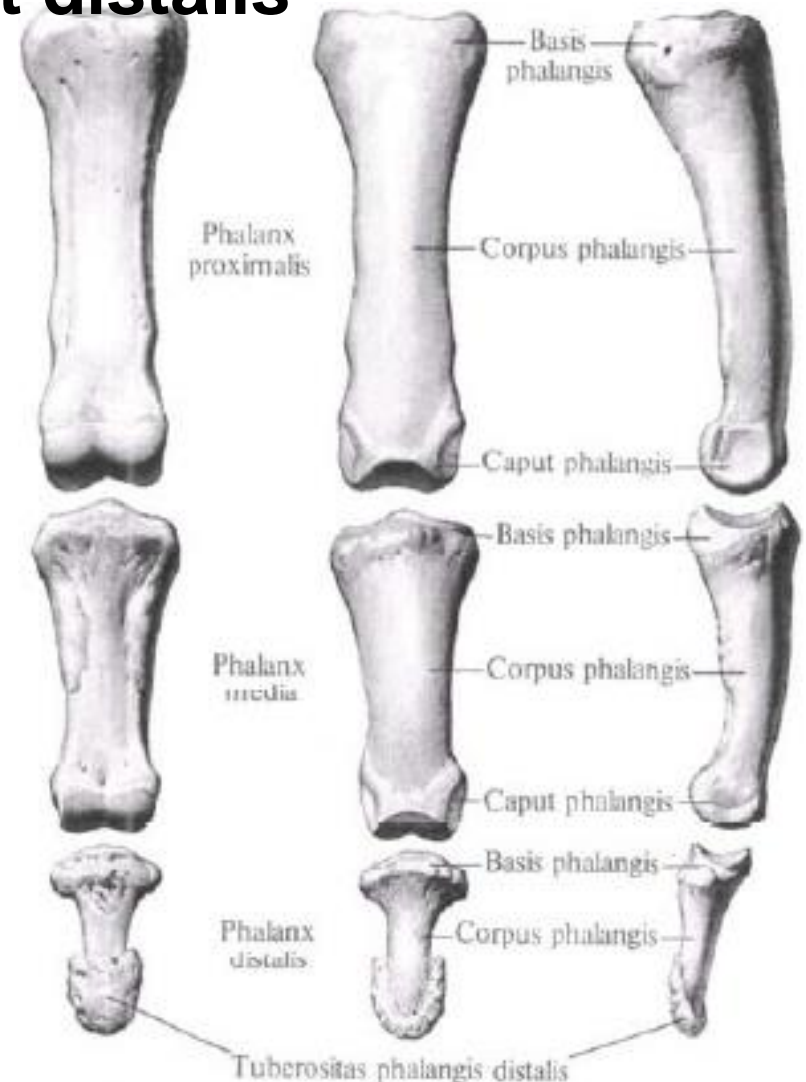
thumb: phalanx proximalis et distalis

basis

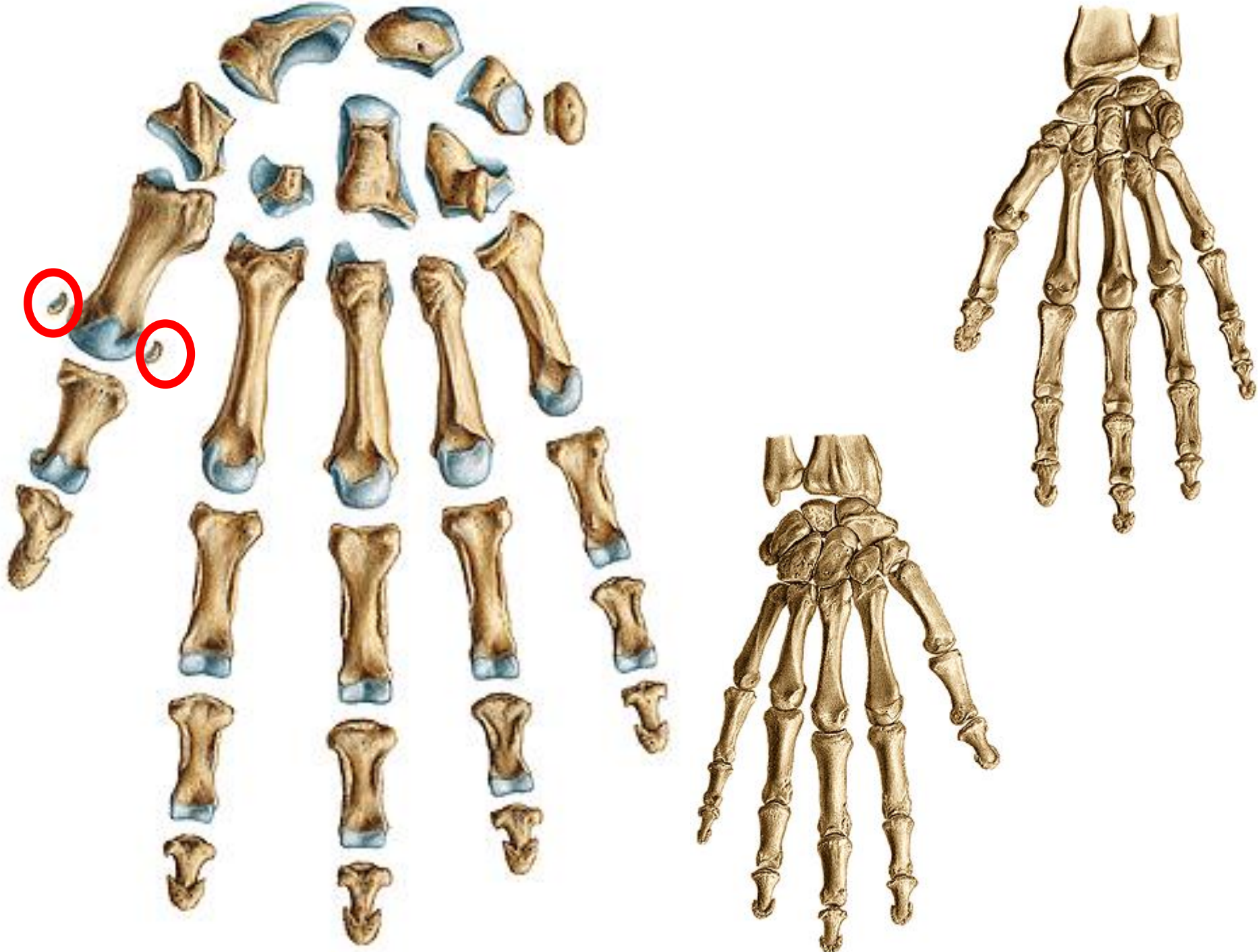
corpus

caput (trochlea)

•On the distal phalanx  
**tuberositas phalangis distalis**

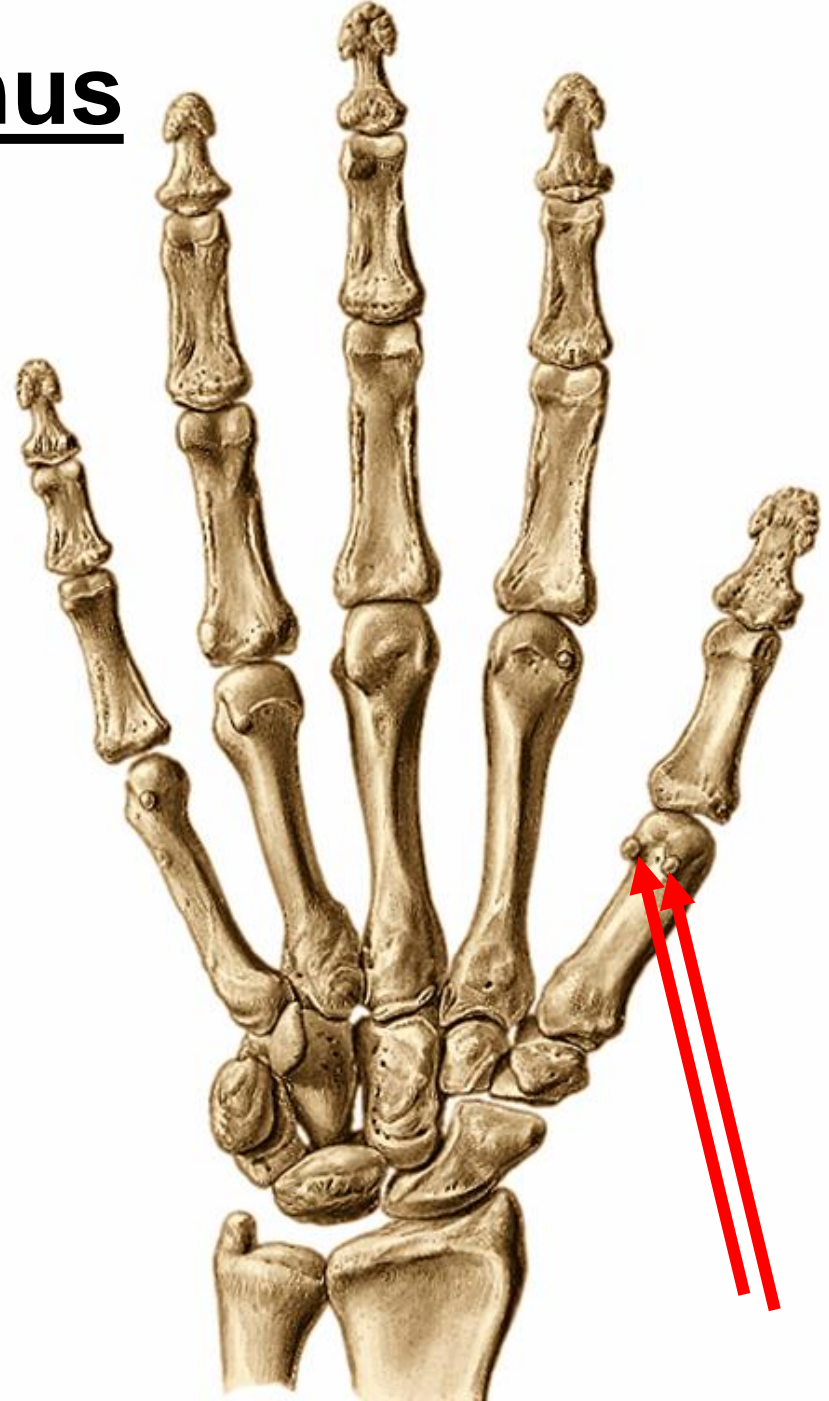






# Ossa sesamoidea manus

- within metacarpophalangeal joints of the thumb: lateral and medial ones
- They develop in muscle insertions and tendons (they protect the joint)
- *os pisiforme*









# Thank you for your attention.



**Pictures:**

**Atlas der Anatomie des Menschen/Sobotta. Putz,R., und Pabst,R. 20. Auflage.**

**München:Urban & Schwarzenberg, 1993**

**Netter: Interactive Atlas of Human Anatomy.**

**Naňka, Elišková: Přehled anatomie. Galén, Praha 2009.**

**Čihák: Anatomie I, II, III.**

**Drake et al: Gray's Anatomy for Students. 2010**