

# OSTEOLOGY OF ULNA

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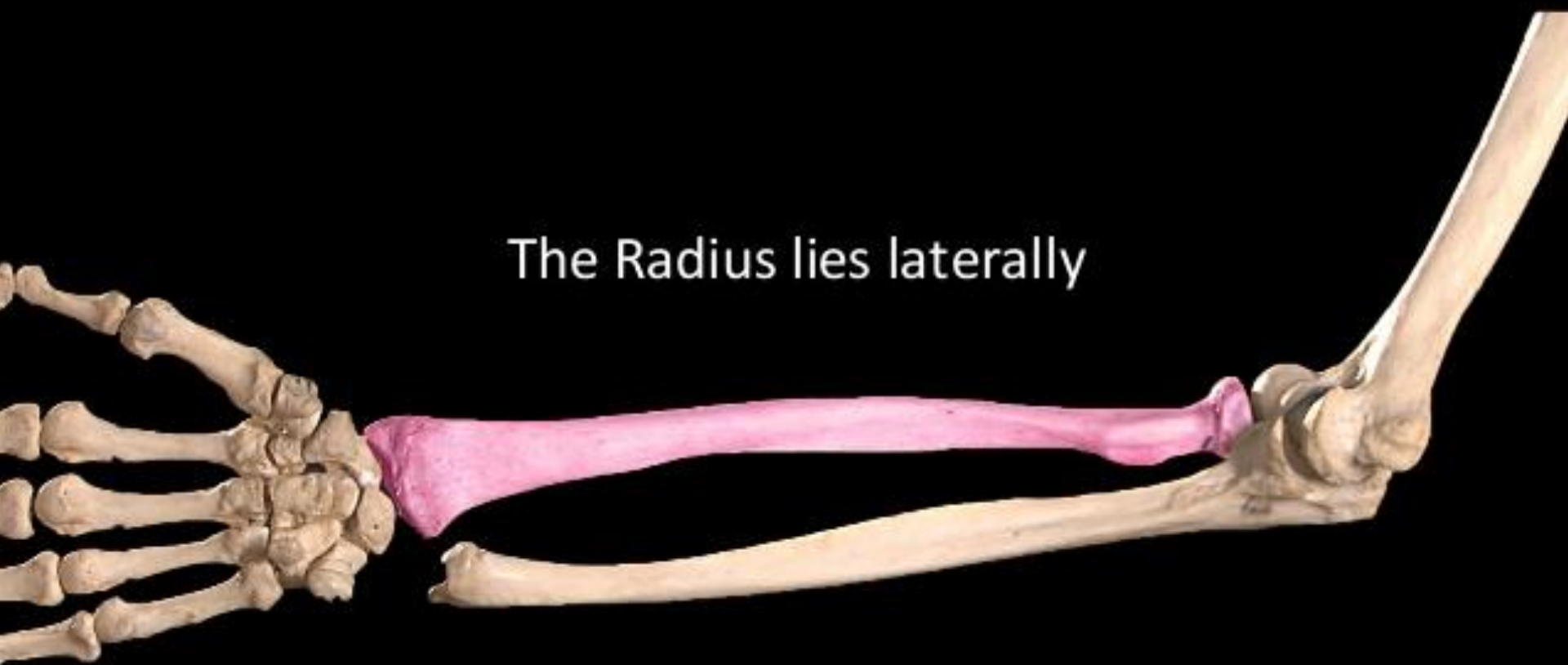
LECTURER ANATOMY KGMC

# The Ulna



The Ulna lies medially

# The Ulna



The Radius lies laterally

It is divided into  
thirds along its  
length



It is divided into  
thirds along its  
length

Proximal third

Middle third

Distal Third



The Proximal Ulna is expanded and has a number of interesting projections



Medial view



Lateral view

# UPPER END OF ULNA BONE

2 NOTCHES....RADIAL , TROCHLEAR  
2 PROCESSES....OLECRANON, CORONOID  
1 TUBEROSITY...ULNAR TUBEROSITY  
SUPINATOR CREST

The Proximal Ulna is expanded and has a number of interesting projections



Anterior View



Posterior View



## Proximal Ulna

The Ulna articulates with the Radial Head at the Proximal Radioulnar Joint

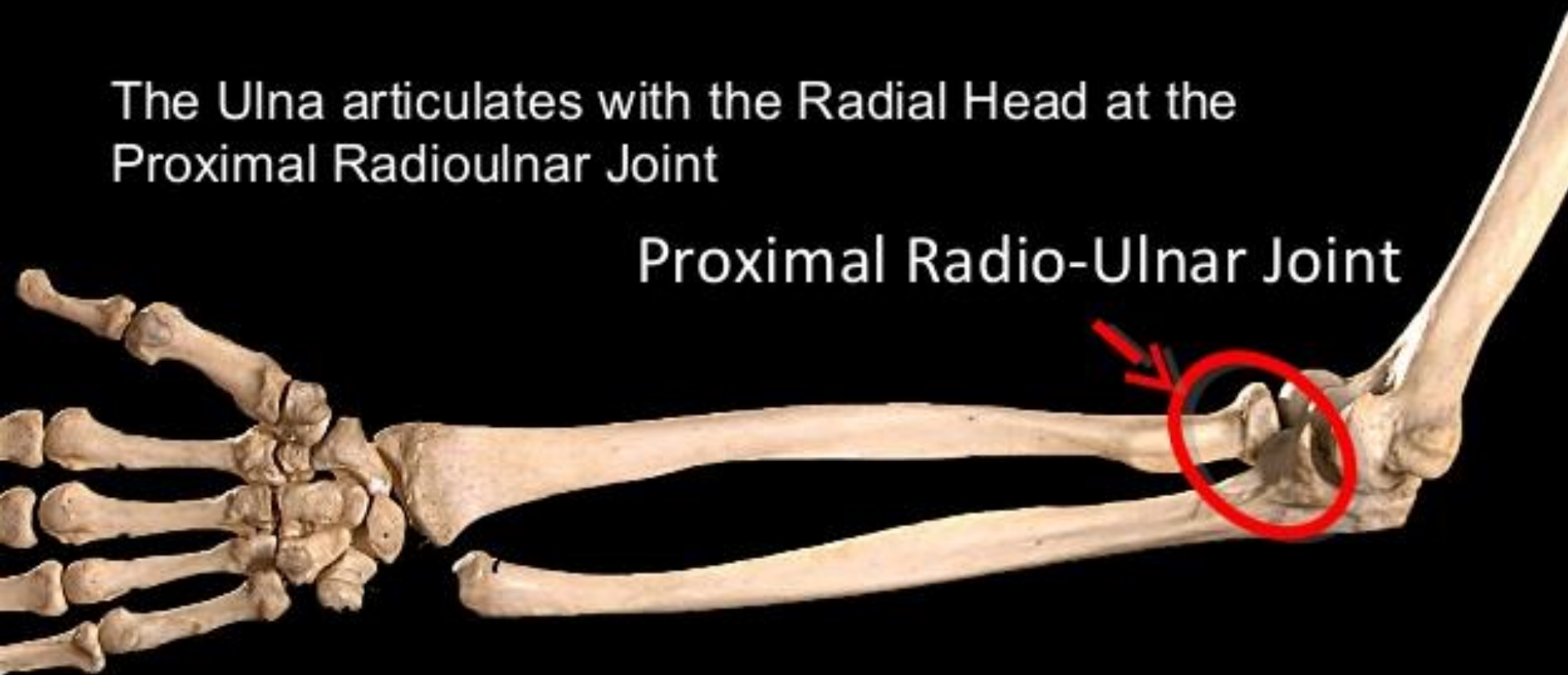


Lateral View

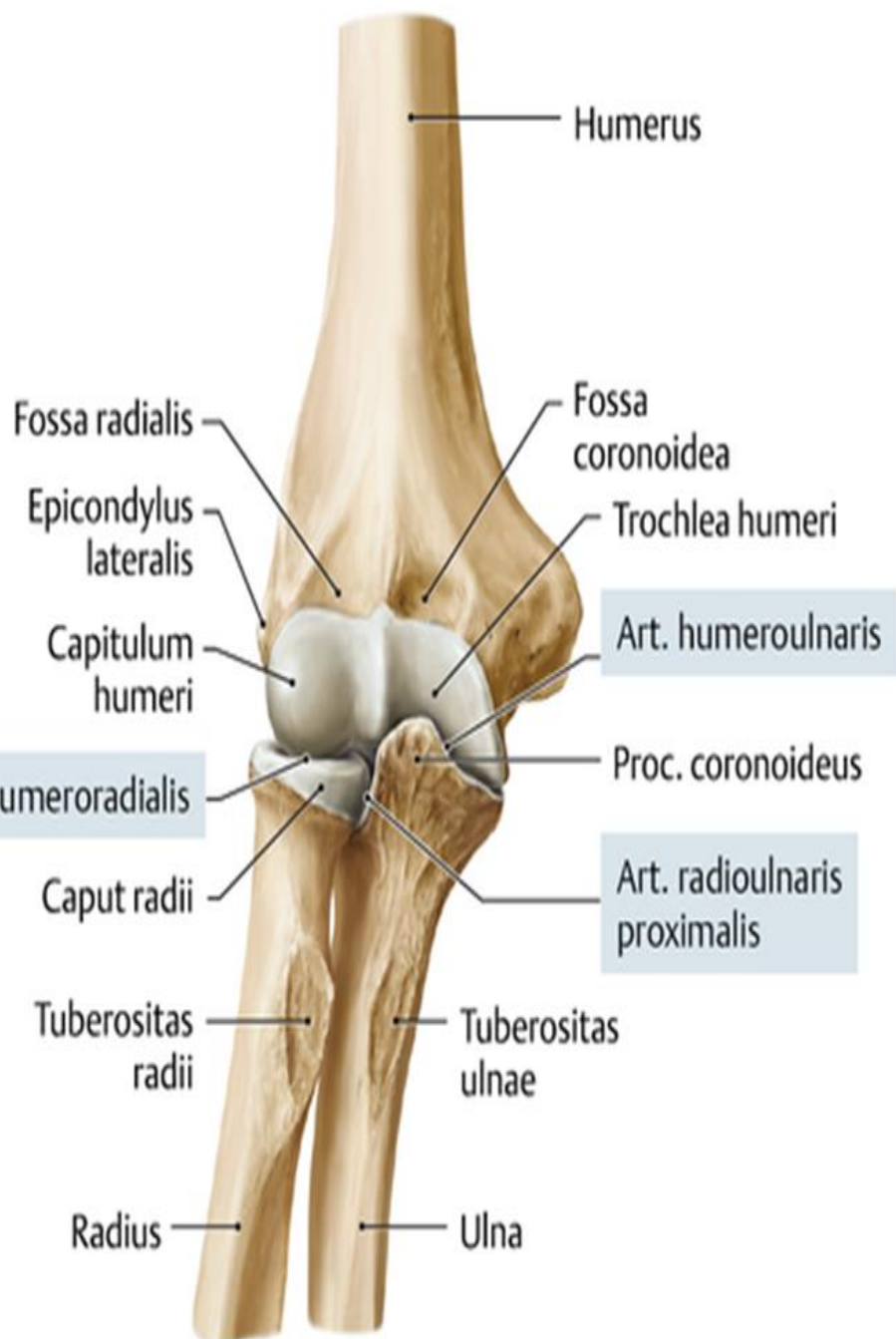
# The Ulna

The Ulna articulates with the Radial Head at the Proximal Radioulnar Joint

Proximal Radio-Ulnar Joint



## Ansicht von ventral



## Ansicht von dorsal



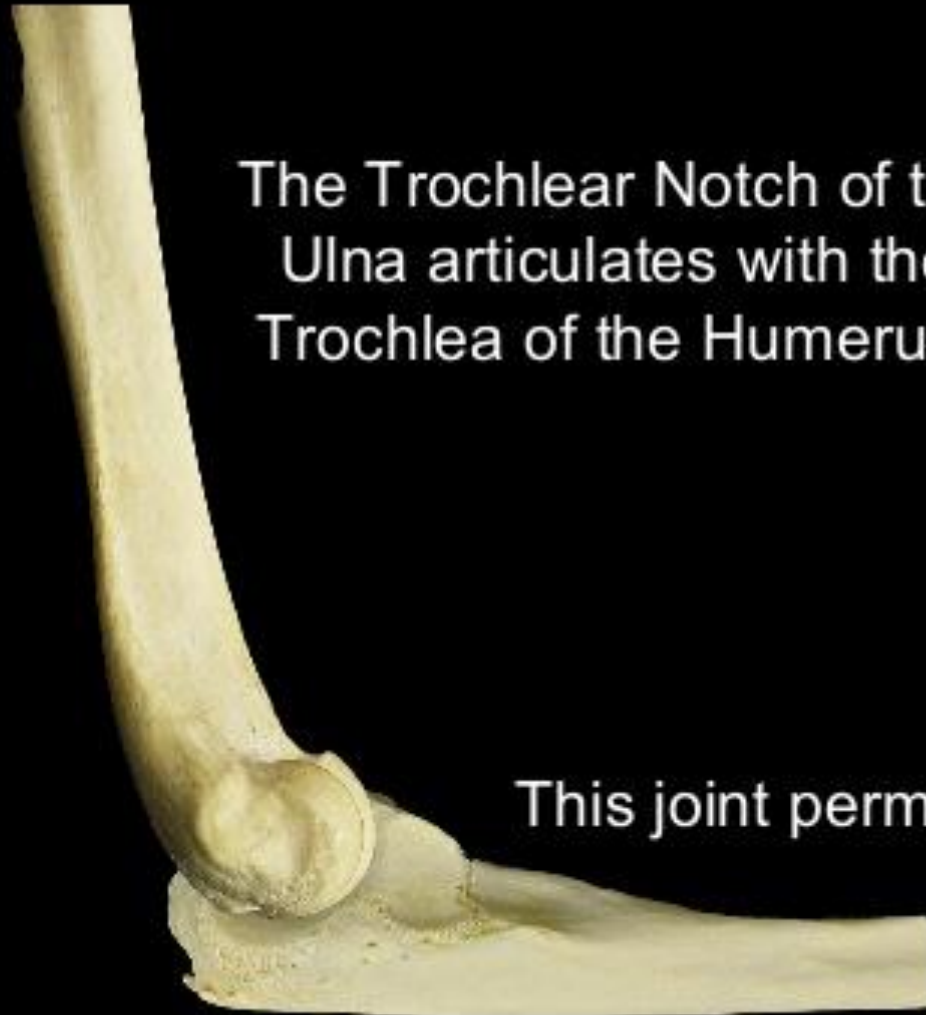
The Ulna articulates with the Humerus at the Elbow Joint

Trochlear  
Notch



Lateral View

Right Ulna



The Trochlear Notch of the Ulna articulates with the Trochlea of the Humerus

This joint permits flexion and extension

Distal Humerus  
Posterior view



Trochlea

The Triceps Muscle inserts here



Olecranon



Lateral View

Right Ulna



Distal Humerus  
Posterior view



Olecranon Fossa

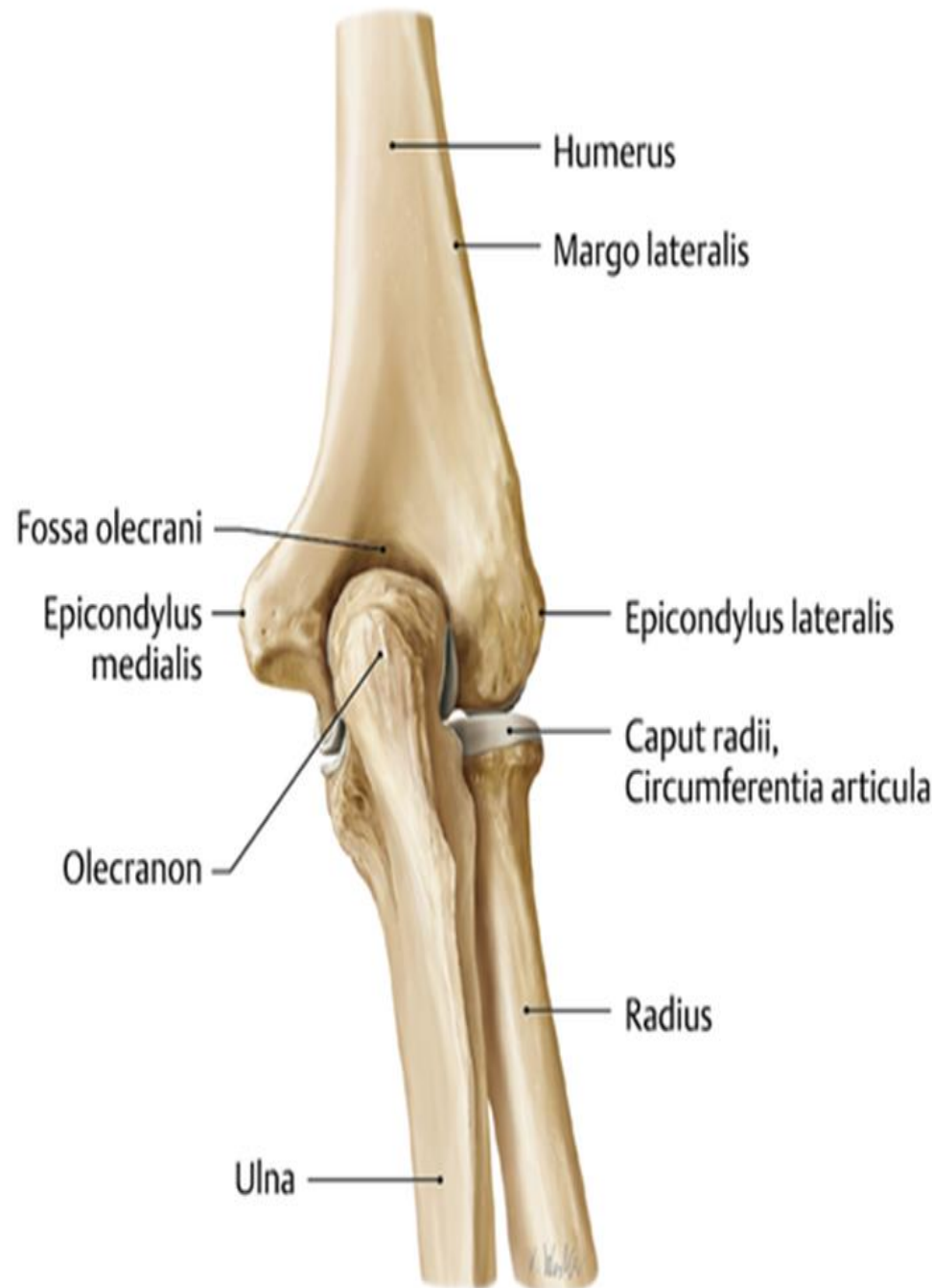
In extension the  
Olecranon Process of  
the Ulna engages with  
the Olecranon Fossa of  
the Distal Humerus



## Ansicht von ventral



## Ansicht von dorsal



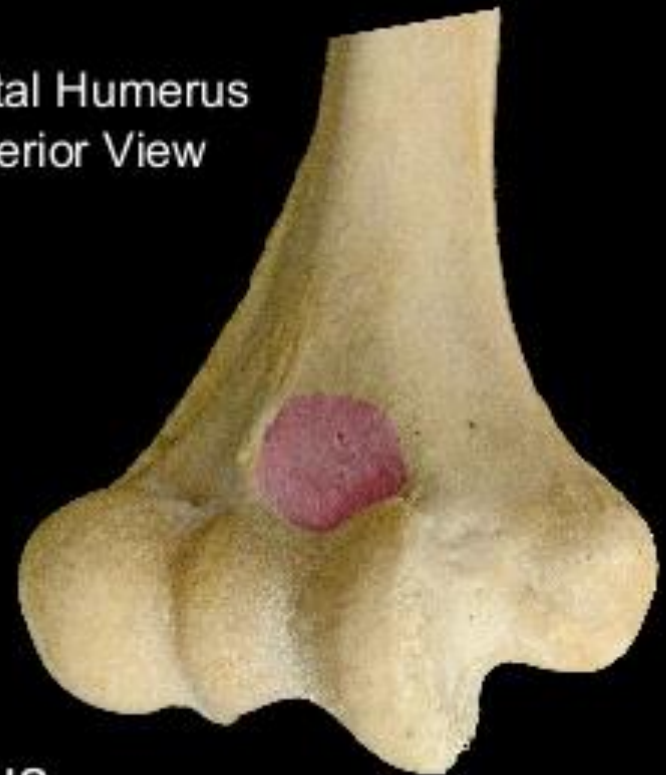


Coronoid Process



Medial View

Distal Humerus  
Anterior View



Coronoid Process

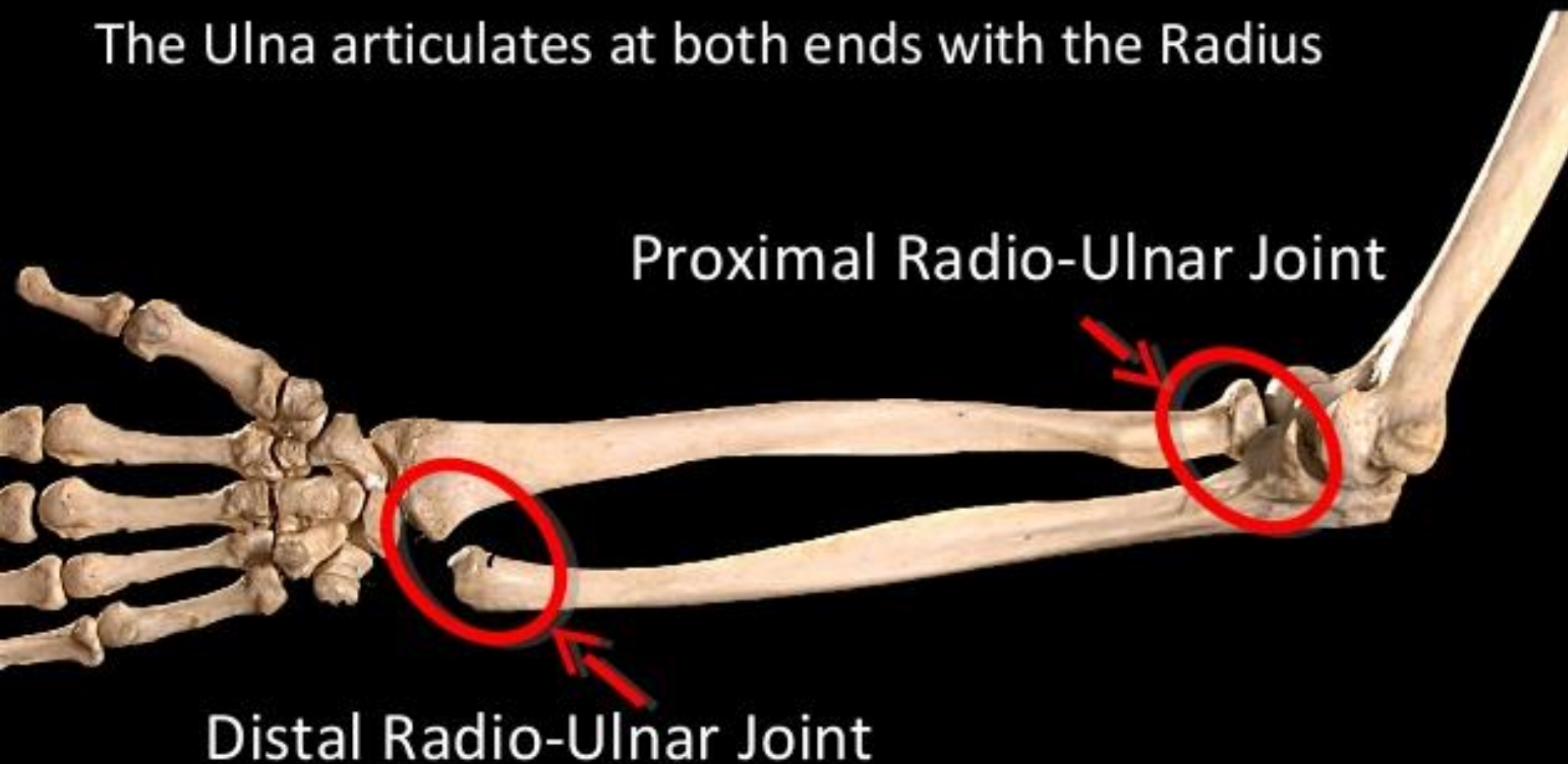
In Elbow Flexion the  
Coronoid Process of the Ulna  
articulates with the  
Coronoid Fossa of the distal Humerus

In Elbow Flexion the  
Coronoid Process of the Ulna  
articulates with the  
Coronoid Fossa of the distal Humerus



The Ulna articulates at both ends with the Radius

Proximal Radio-Ulnar Joint



Distal Radio-Ulnar Joint

# LOWER END OF ULNA

HEAD AND STYLOID PROCESS

The Distal Ulna has a  
Rounded Head



The Distal Ulna has a  
Rounded Head  
and a small  
Styloid Process



# SHAFT OF ULNA

3 BORDERS...POSTERIOR.ANTERIOR &  
LATERAL

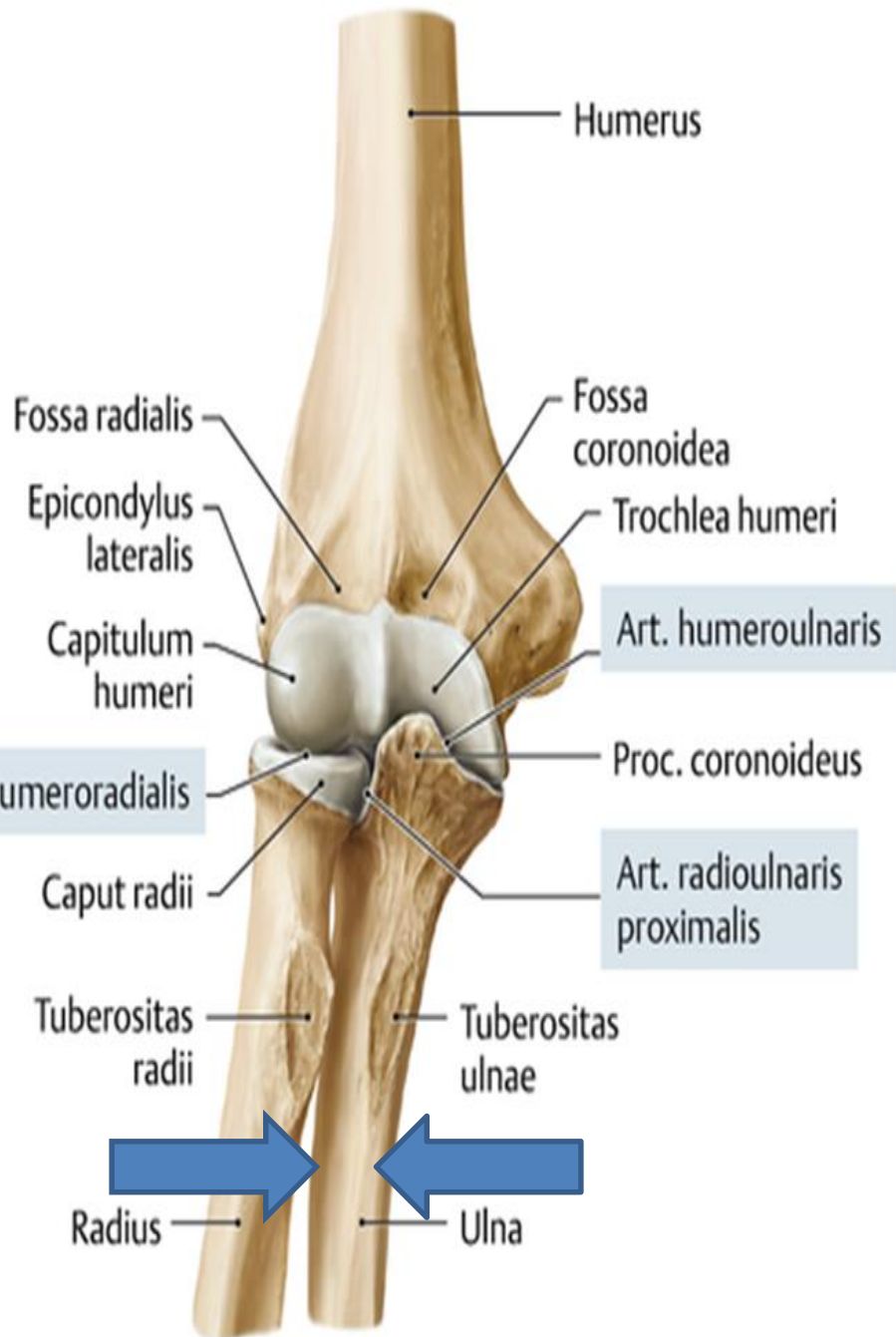
3 SURFACES...ANTERIOR,POSTERIOR &  
MEDIAL



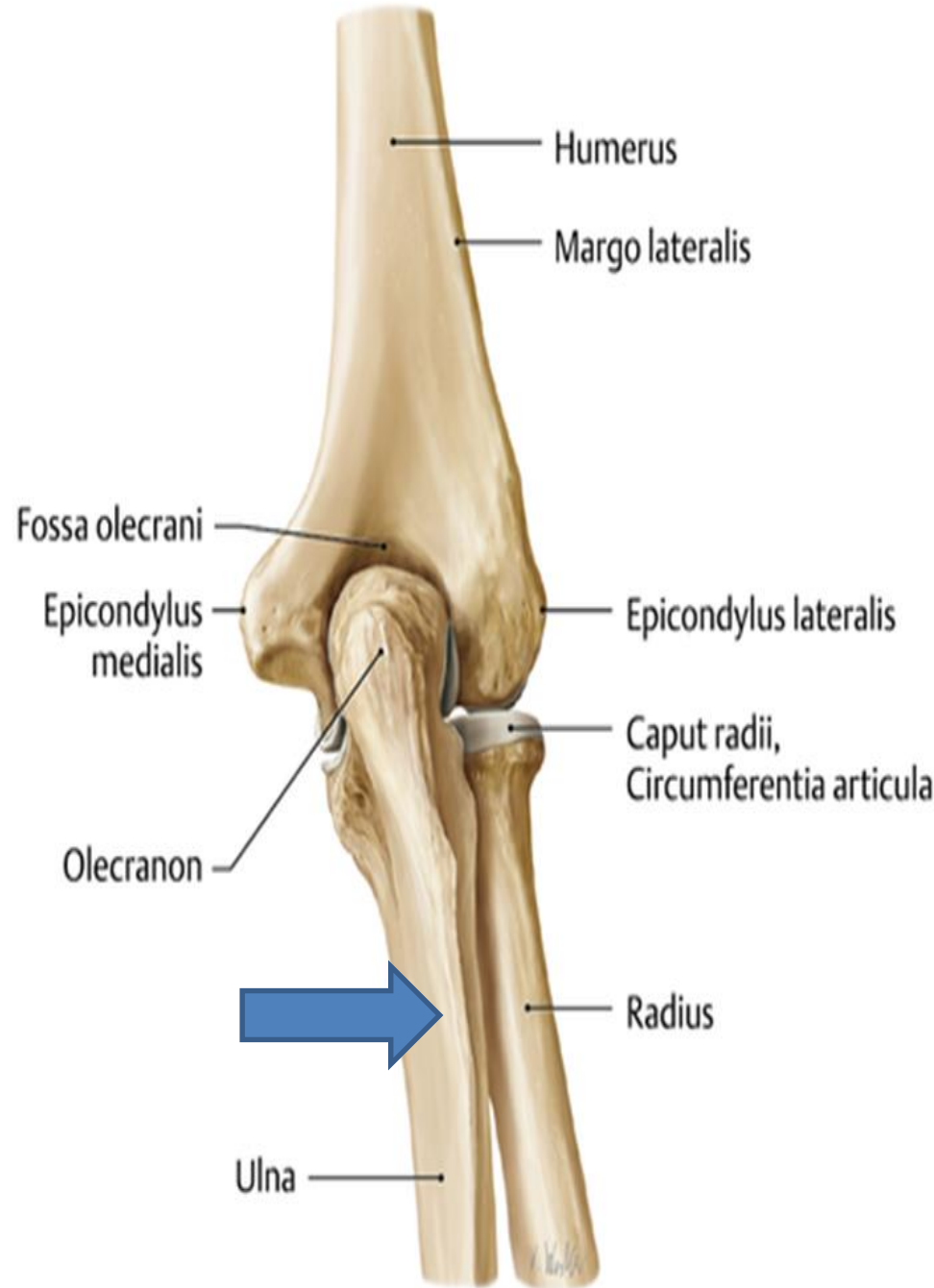
# BORDERS

- The three borders:
- Posterior – palpable along the entire length of the forearm posteriorly
- Interosseous – site of attachment for the interosseous membrane, which spans the distance between the two forearm bones.
- Anterior – unremarkable

Ansicht von ventral



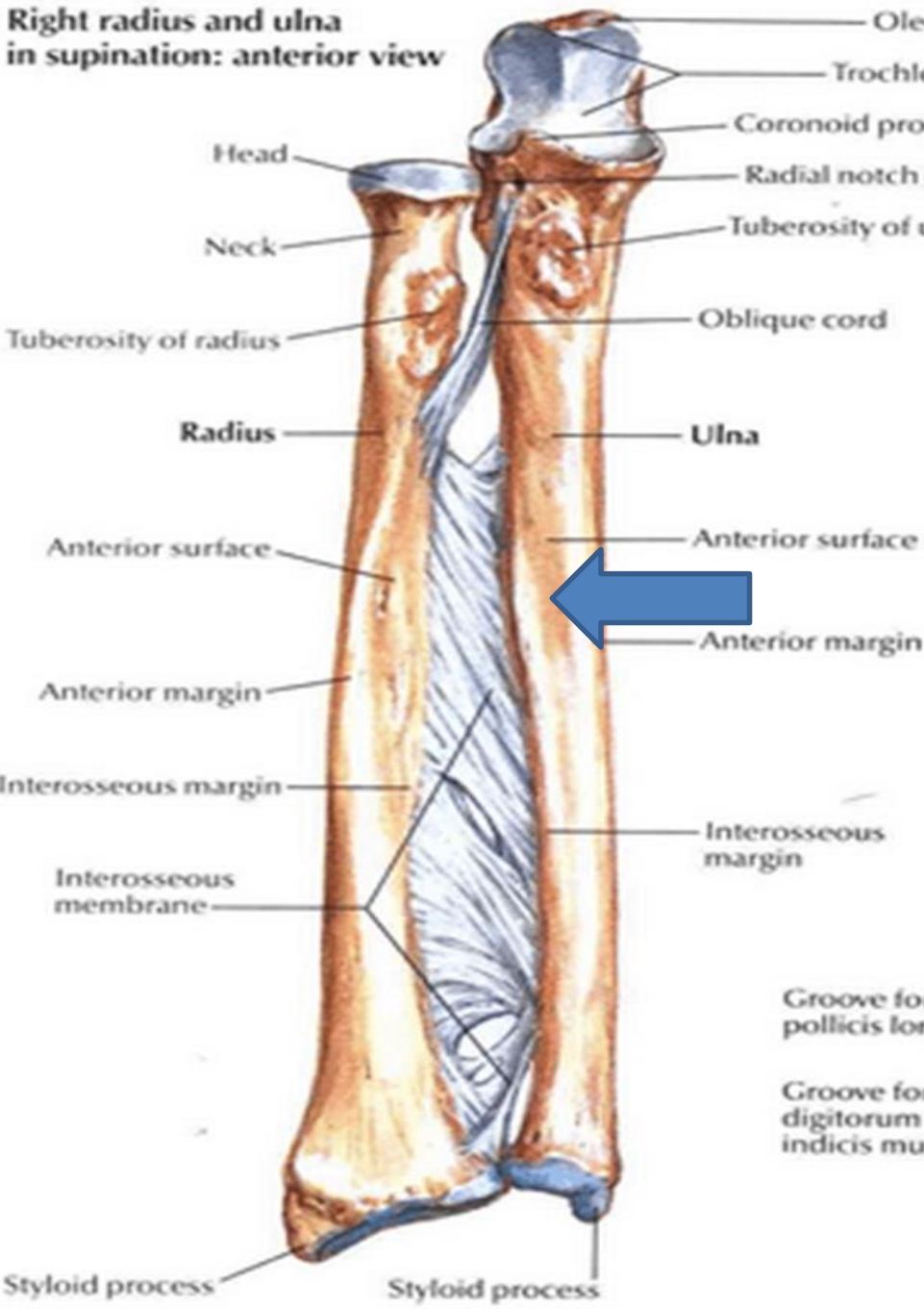
Ansicht von dorsal



# SHAFT OF ULNA...SURFACES

- The ulnar shaft is triangular in shape, with three borders and three surfaces. As it moves distally, it decreases in width.
- The three surfaces:
  - Anterior – site of attachment for the pronator quadratus muscle distally.
  - Posterior – site of attachment for many muscles.
  - Medial – unremarkable.

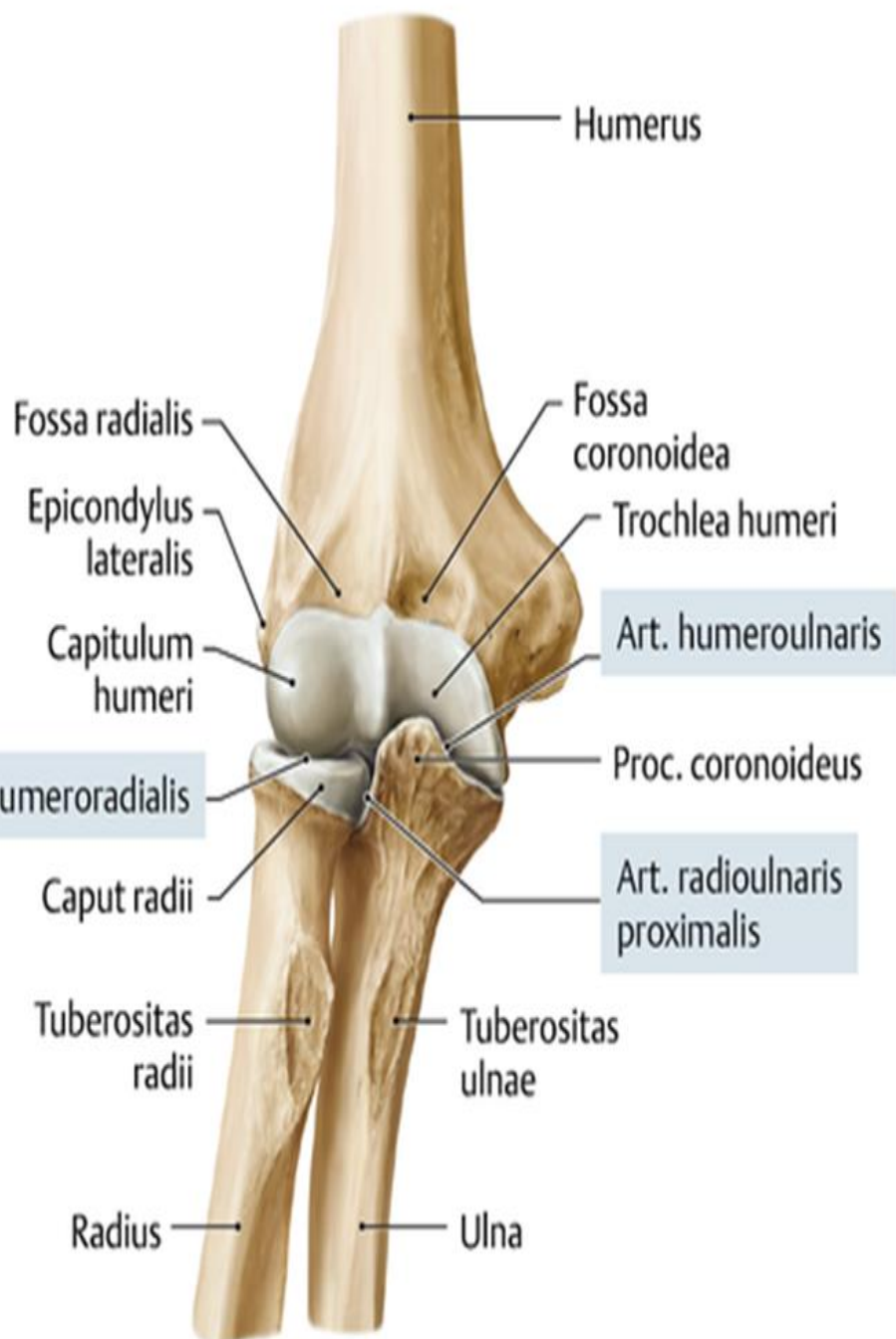
**Right radius and ulna in supination: anterior view**



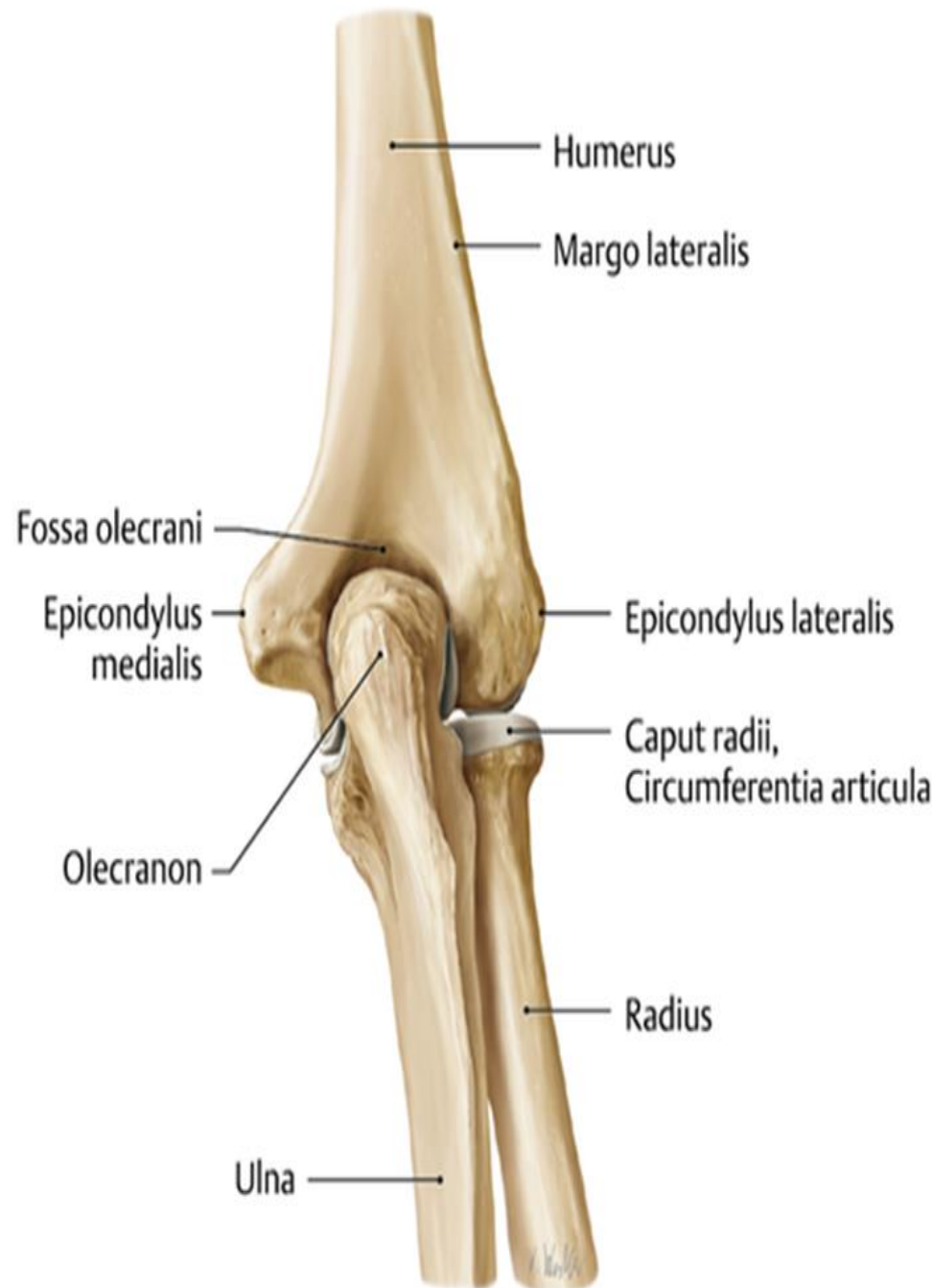
**Right radius and ulna in pronation: anterior view**



## Ansicht von ventral



## Ansicht von dorsal



# MUSCLE ATTACHMENT OF ULNA BONE

# MUSCLE ATTACHMENT

- BRACHIALIS....ULNAR TUBEROSITY
- SUPINATOR....SUPINATOR CREST
- FLEXOR DIGITORUM  
PROFUNDUS...OLECRANON PROCESS  
ANTERIOR AND MEDIAL SURFACES OF THE  
SHAFT
- FLEXOR DIGITORUM  
SUPERFICIALIS...CORONOID PROCESS

- TRICEPS...OLECRANON PROCESS
- ANCONEUS...OLECRANON PROCESS
  
- PRONATOR TERES....CORONOID PROCESS
- PRONATOR QUADRATUS...LOWER ANT SURFACE



# Brachialis

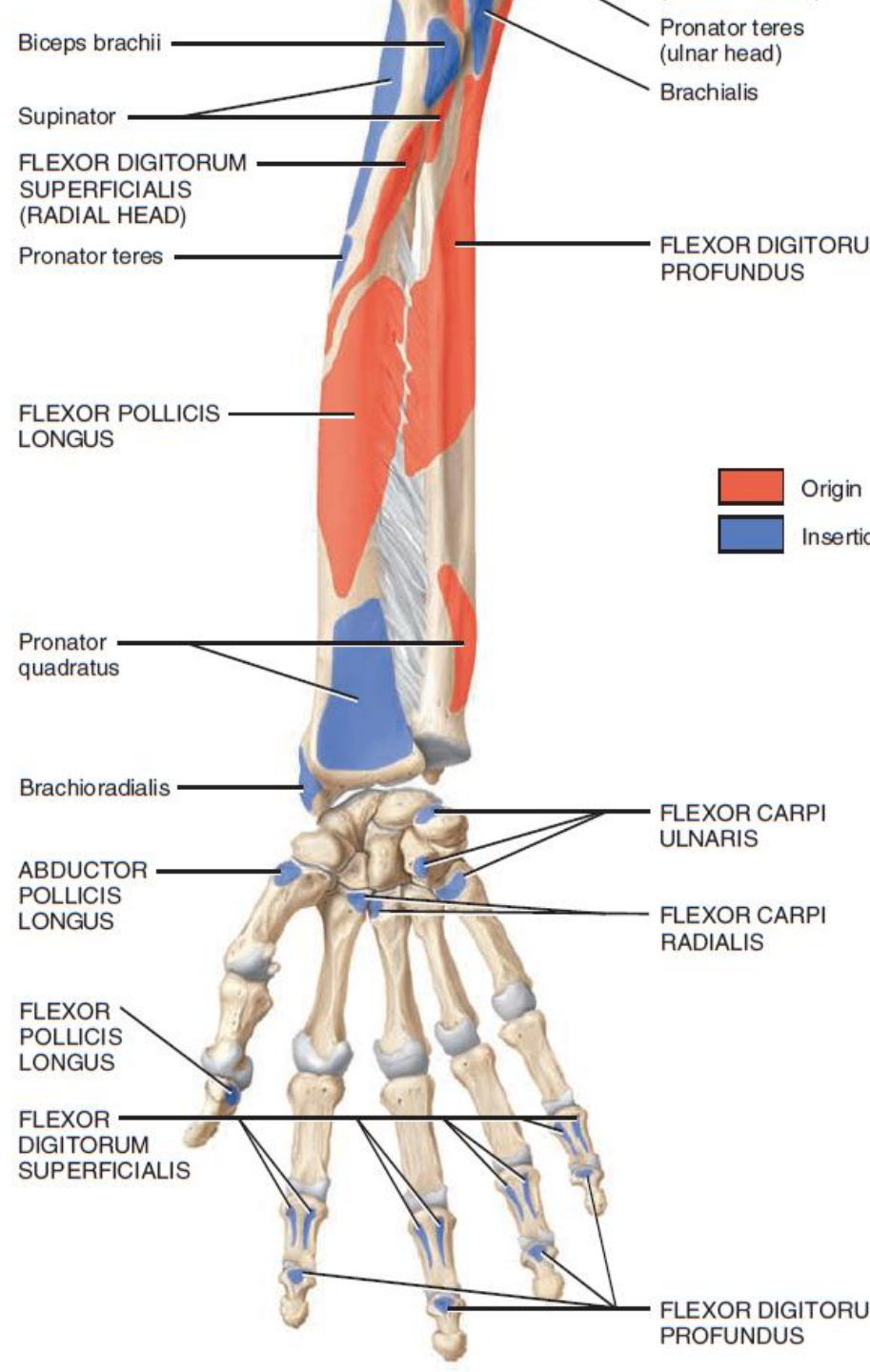
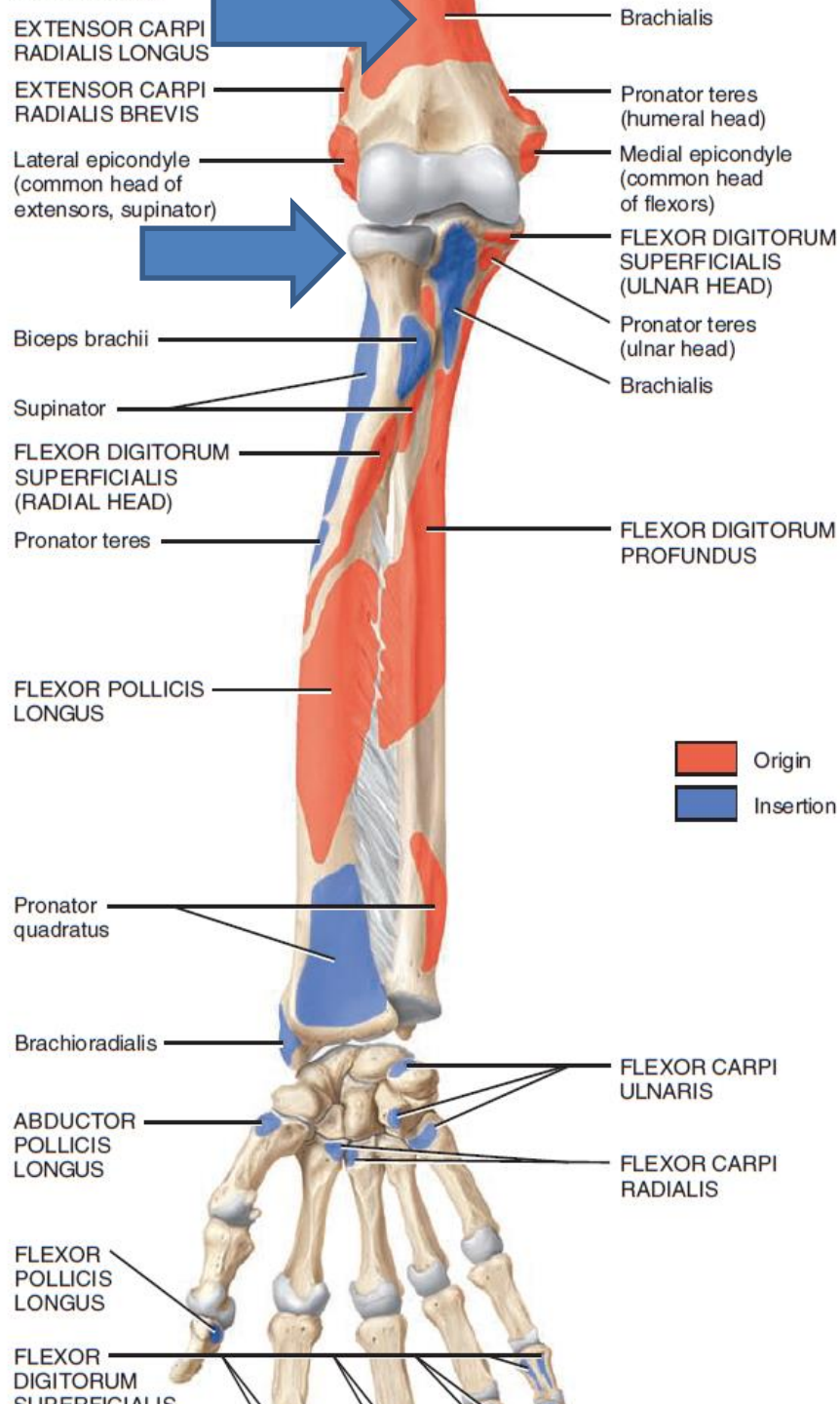
Attaches to  
Coronoid Process  
and Tuberosity of the  
Ulna

Flexes Elbow

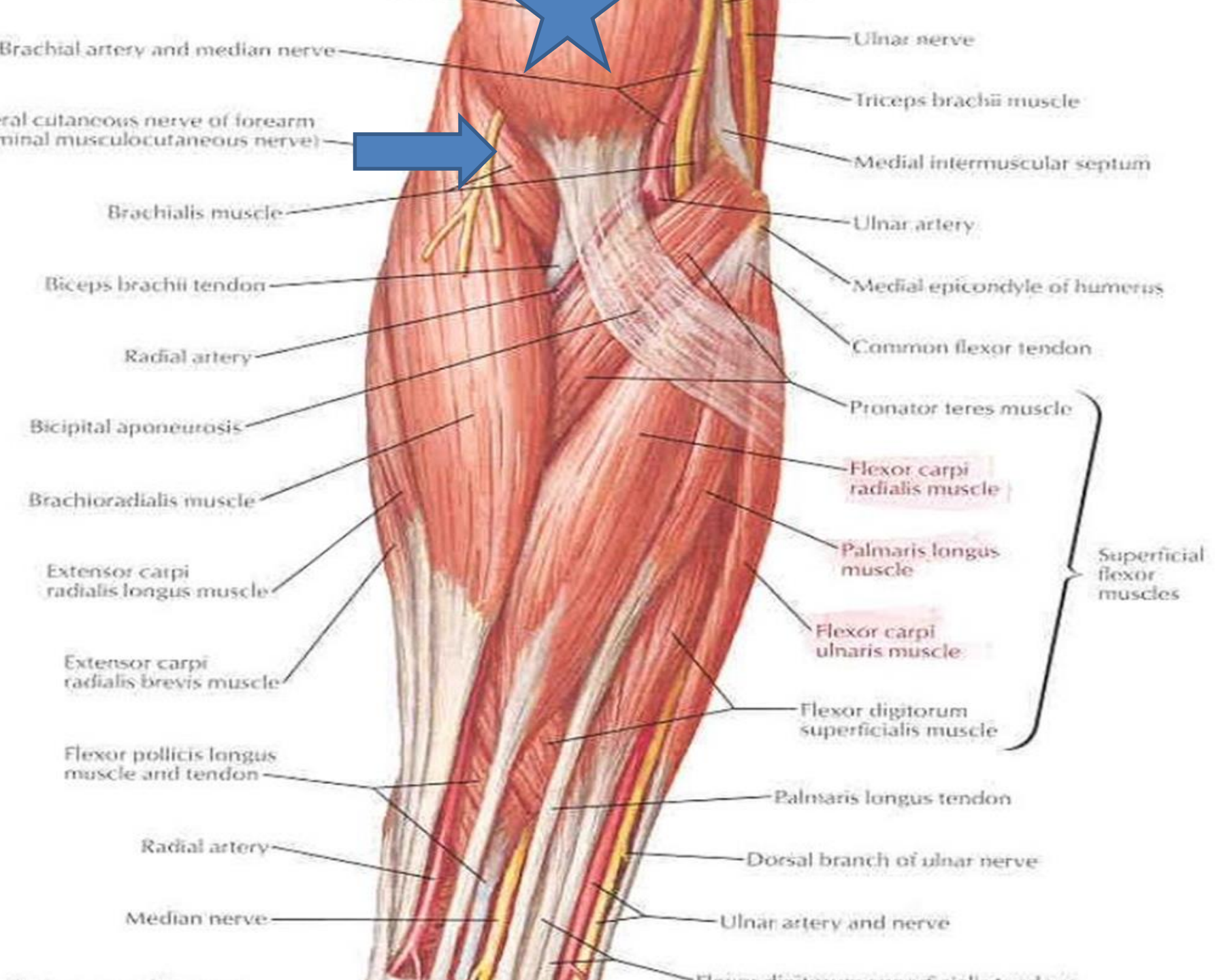


Volar Aspect  
Forearm









Supinator



Proximal Ulna  
Lateral View



# Supinator

Deep part attaches to the supinator crest and ulna tuberosity

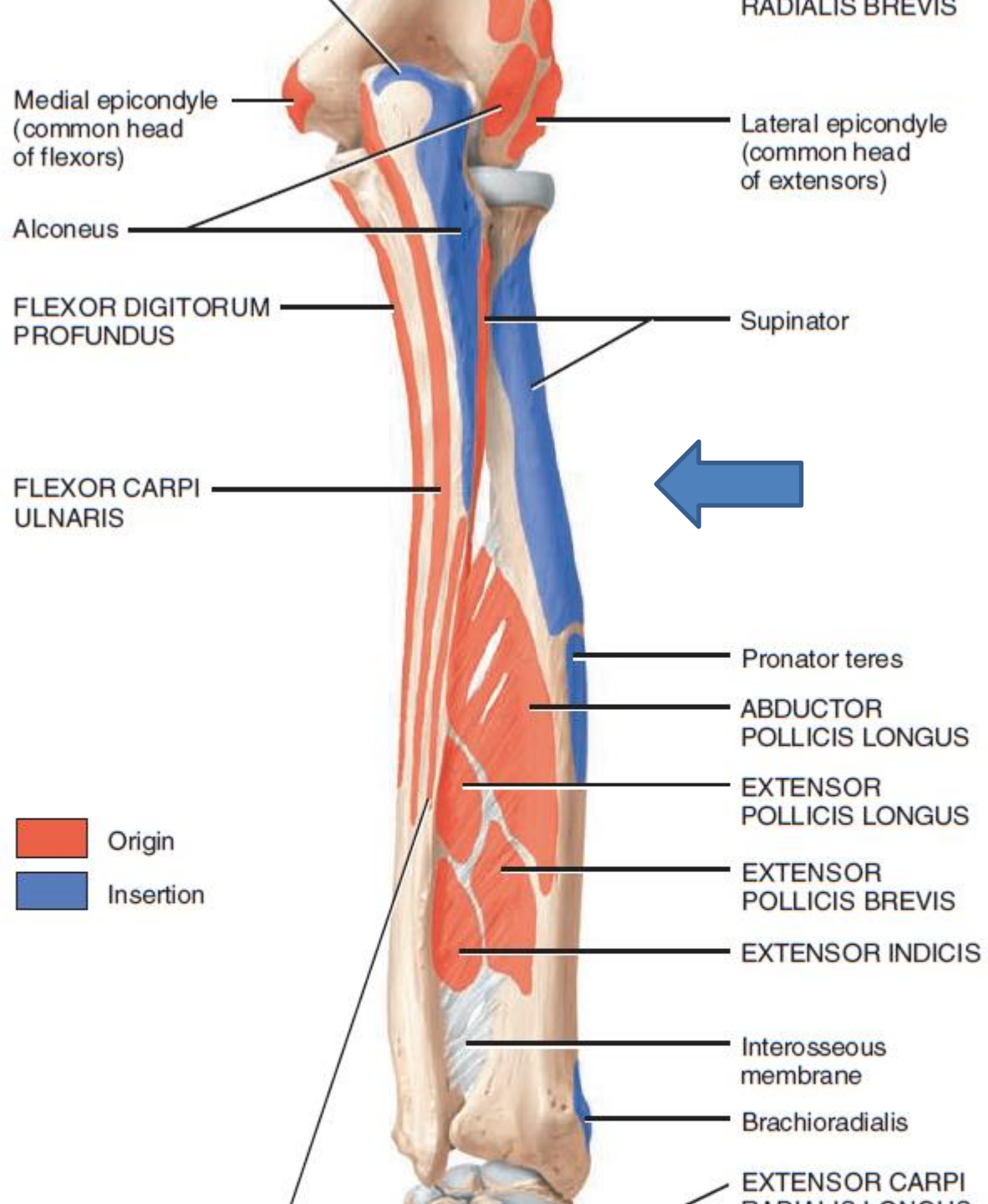


Posterior View Forearm

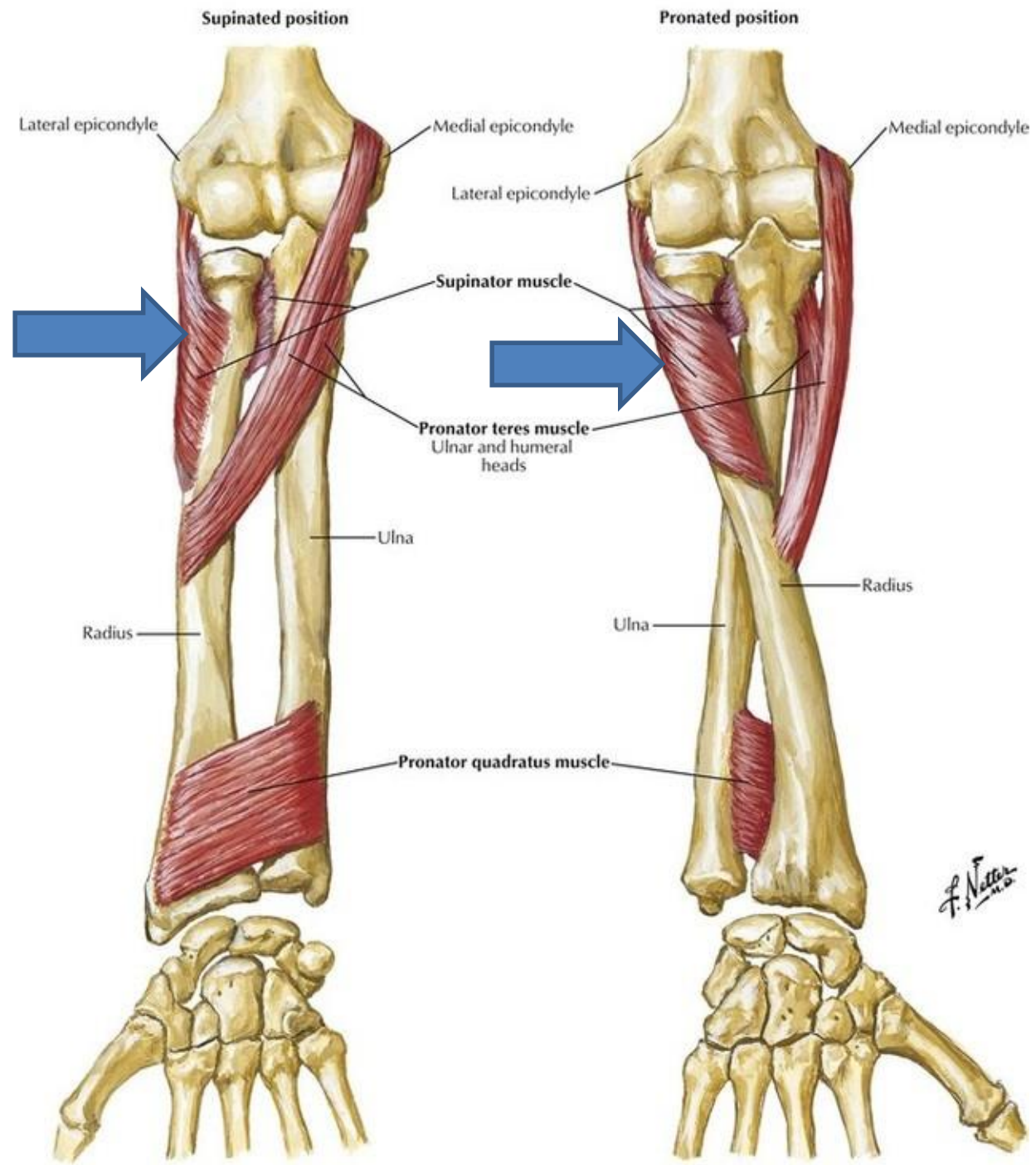
Proximal Ulna Lateral View



Supinates the forearm







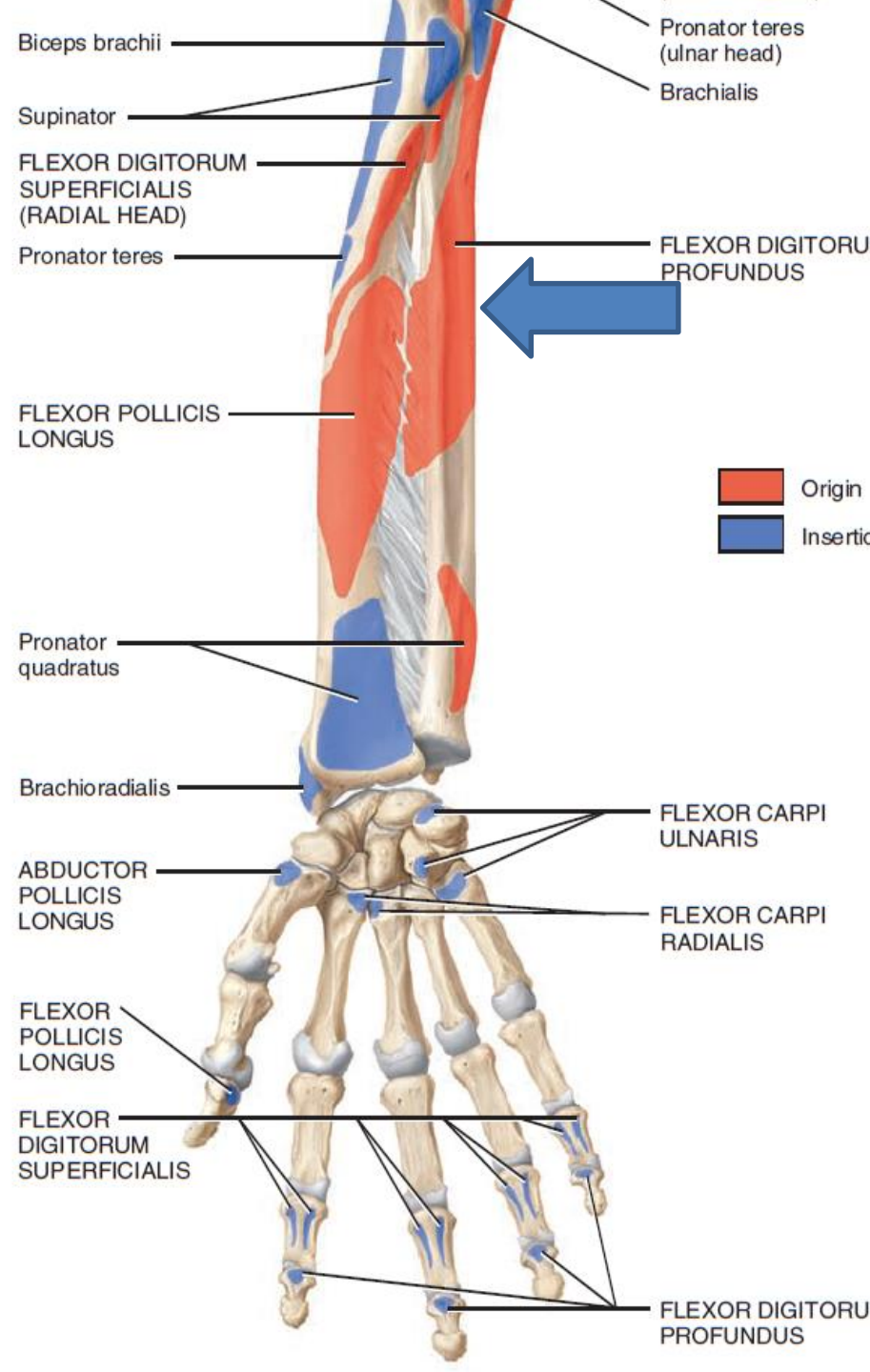
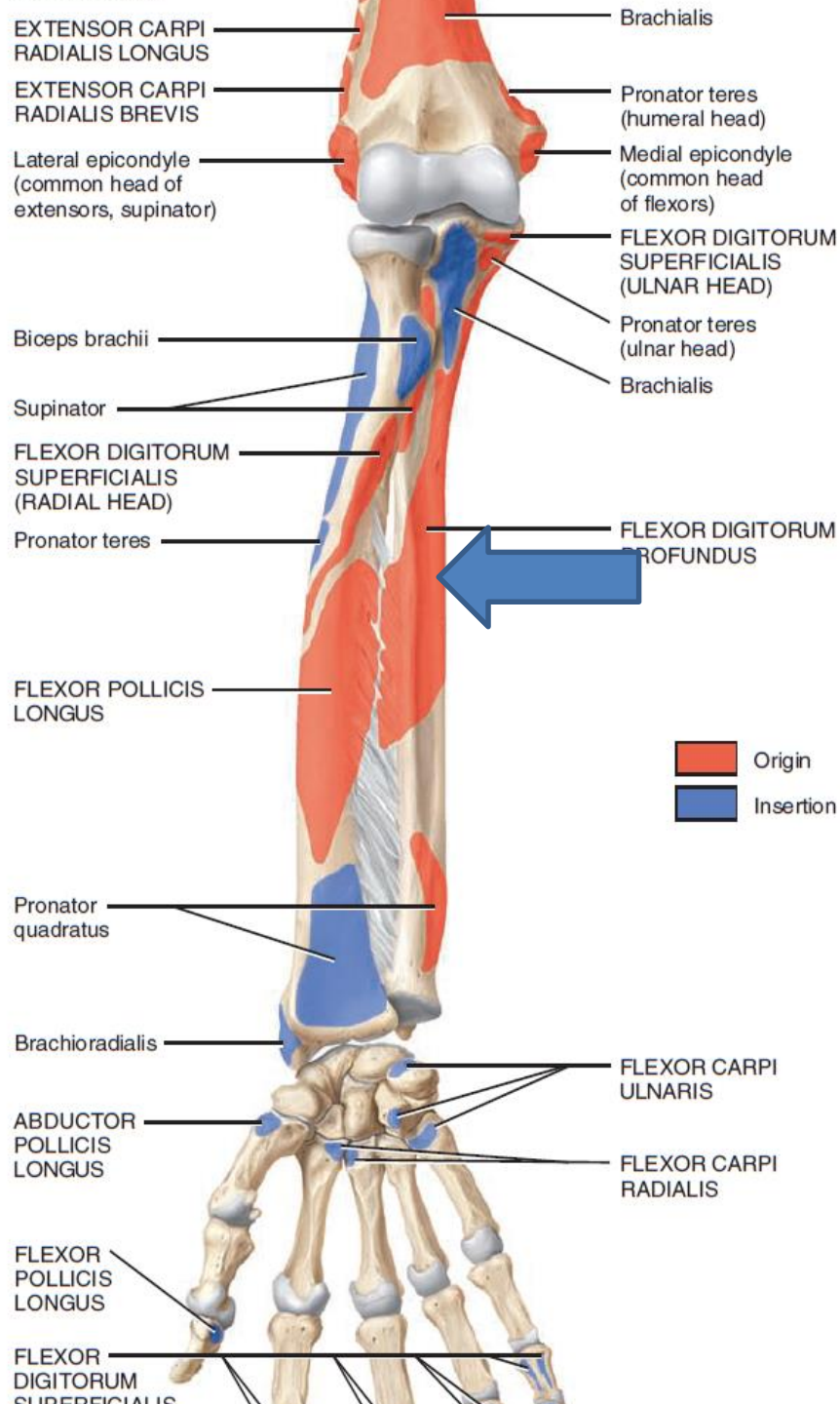
# Flexor Digitorum Profundus

Arises from the medial aspect of olecranon and proximal 3/4 of medial and anterior surfaces of ulna

Flexes distal interphalangeal joints, proximal interphalangeal joints, metacarpophalangeal joint of digits 2-5; flexes wrist







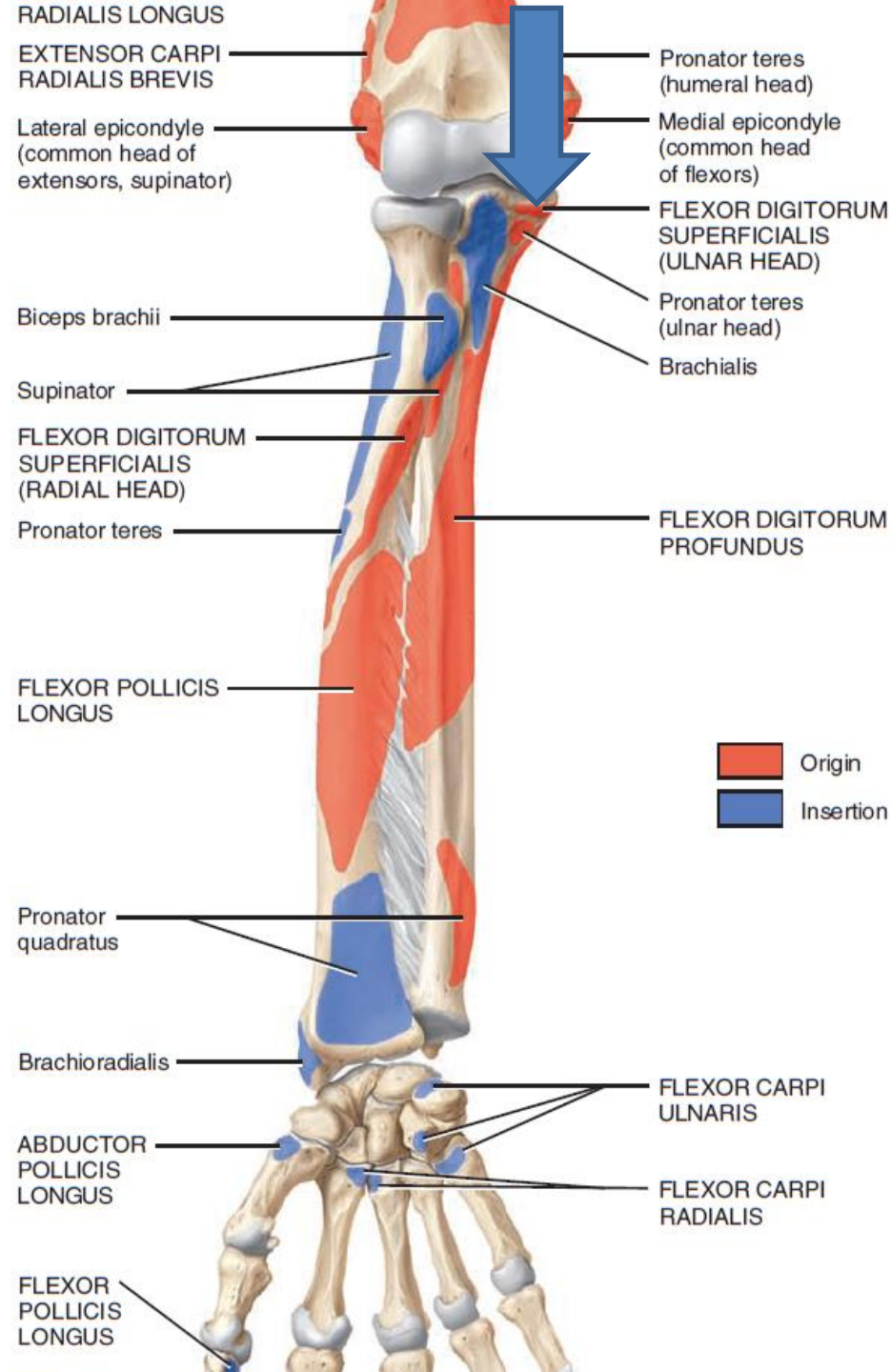
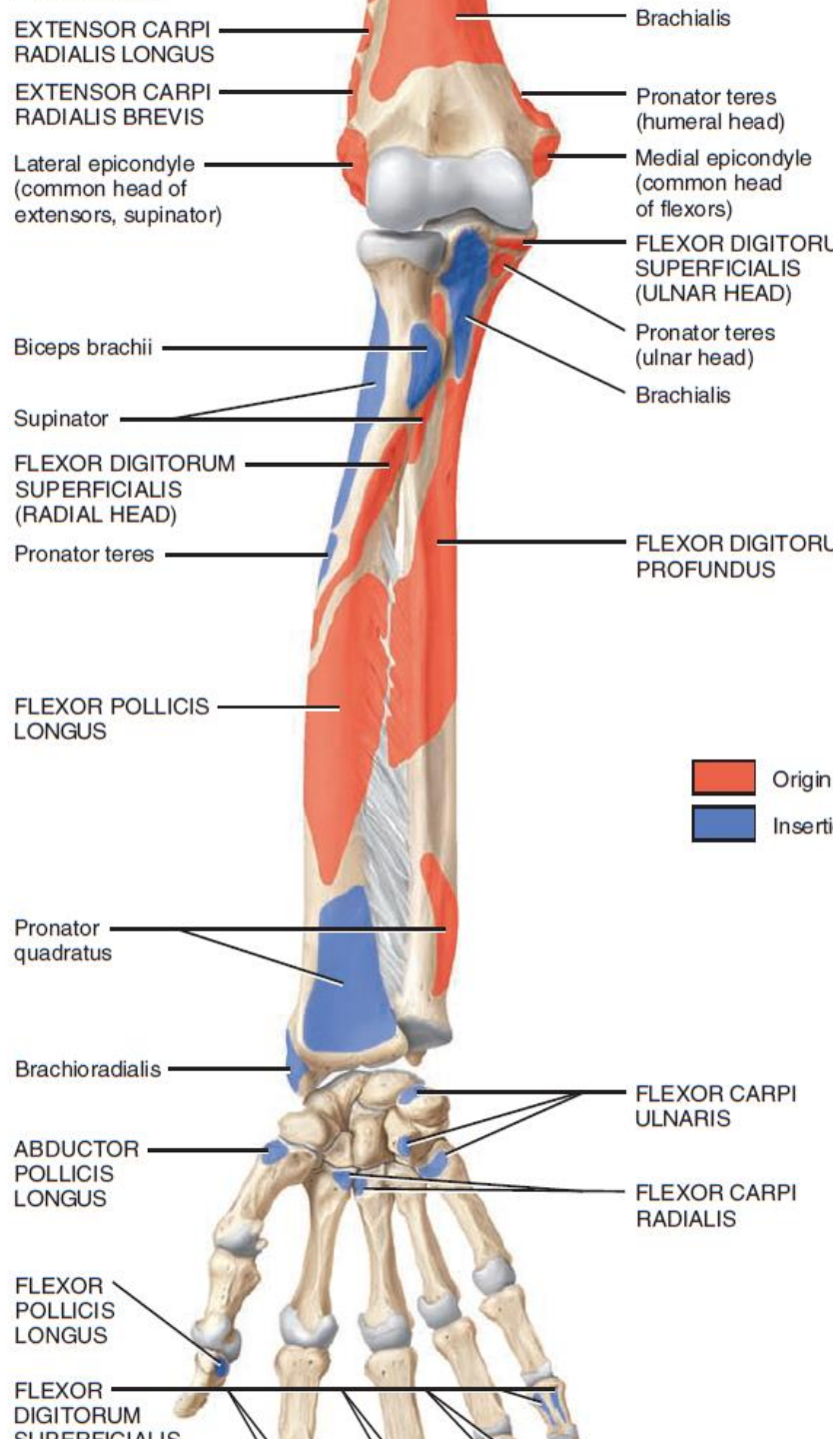


# Anterior Forearm

## Flexor Digitorum Superficialis

Origin	Humeral head: common flexor origin, medial epicondyle of humerus Ulnar head: ulnar collateral ligament, and coronoid process of ulna Radial head: superior half of anterior border of radius, anterior oblique line
Insertion	Tendons split and insert of either side of middle phalanges digits 2 –5
Action	Flexes middle phalanges at proximal interphalangeal joints of 2-5 digits; flexes proximal phalanges at metacarpophalangeal joints and hand
Nerve Supply	Median nerve (C7, C8 and T1)
Blood Supply	Ulnar artery



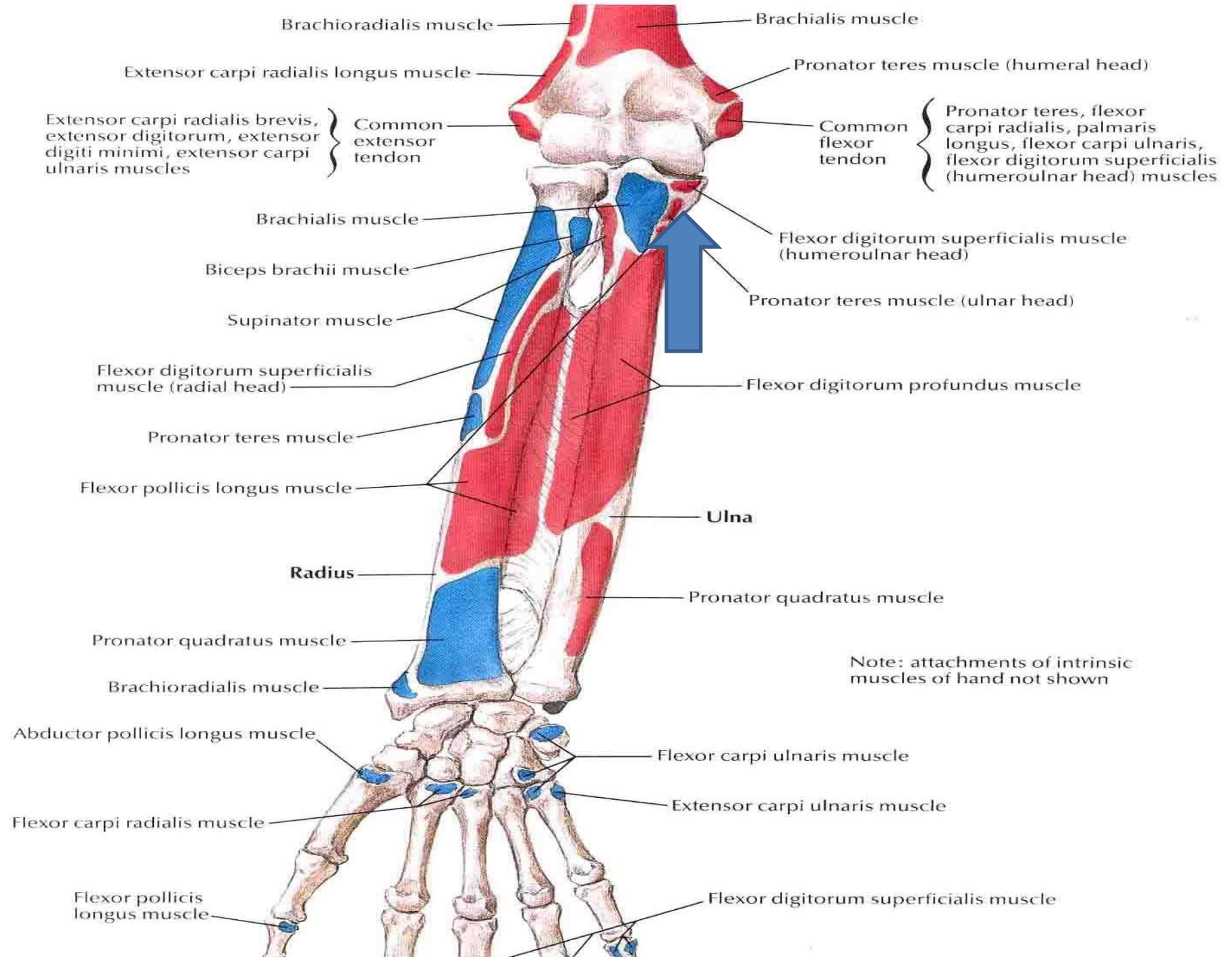


# Anterior Forearm

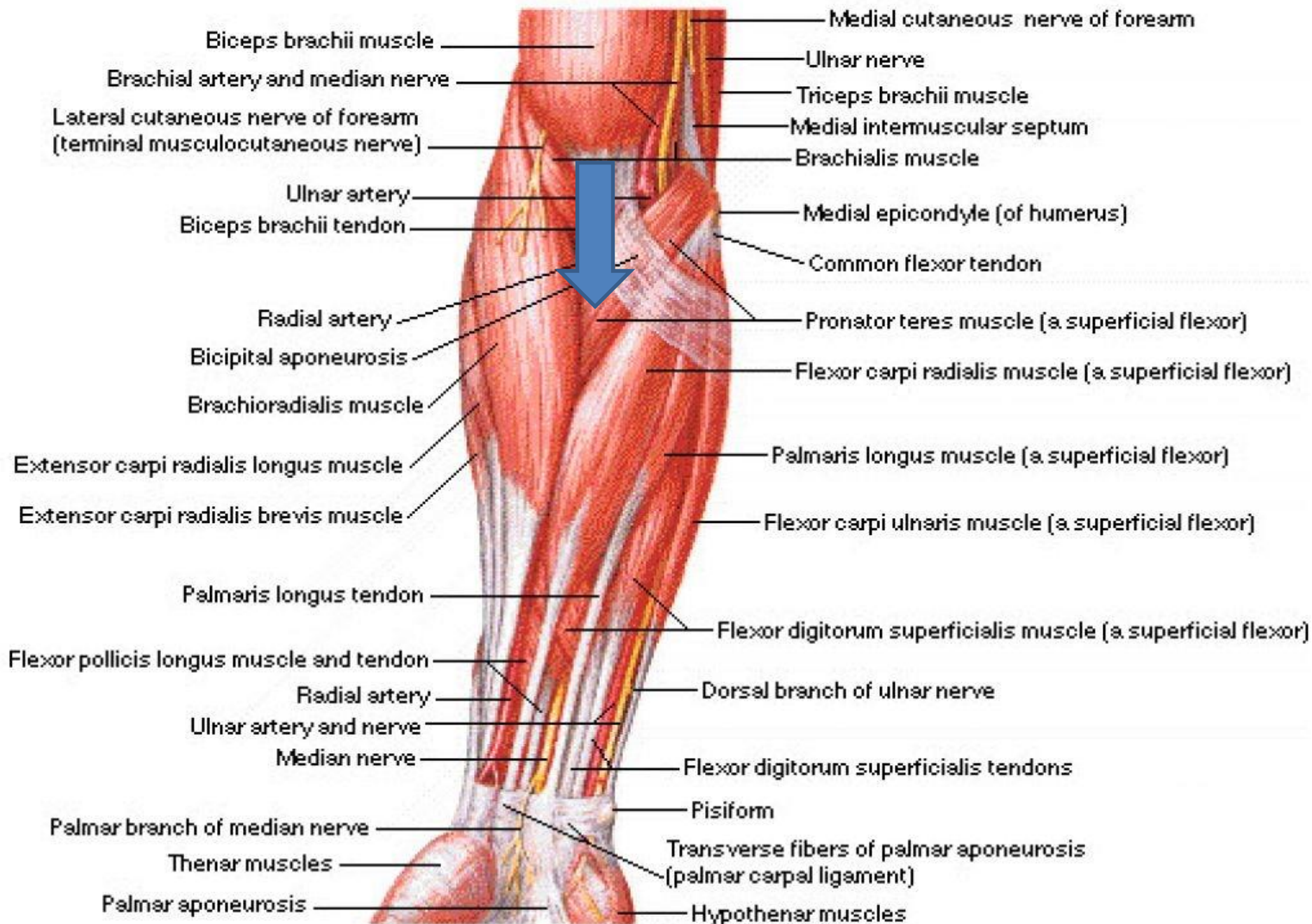


## Pronator Teres

Origin	<b>Humeral head: medial epicondyle, supracondylar ridge of humerus</b> <b>Ulnar head: medial border coronoid process of ulna</b>
Insertion	<b>Middle of lateral surface of radius</b>
Action	<b>Pronates forearm, flexes elbow</b>
Nerve Supply	<b>Median nerve (C6 and C7)</b>
Blood Supply	<b>Ulnar artery, anterior recurrent ulnar artery</b>





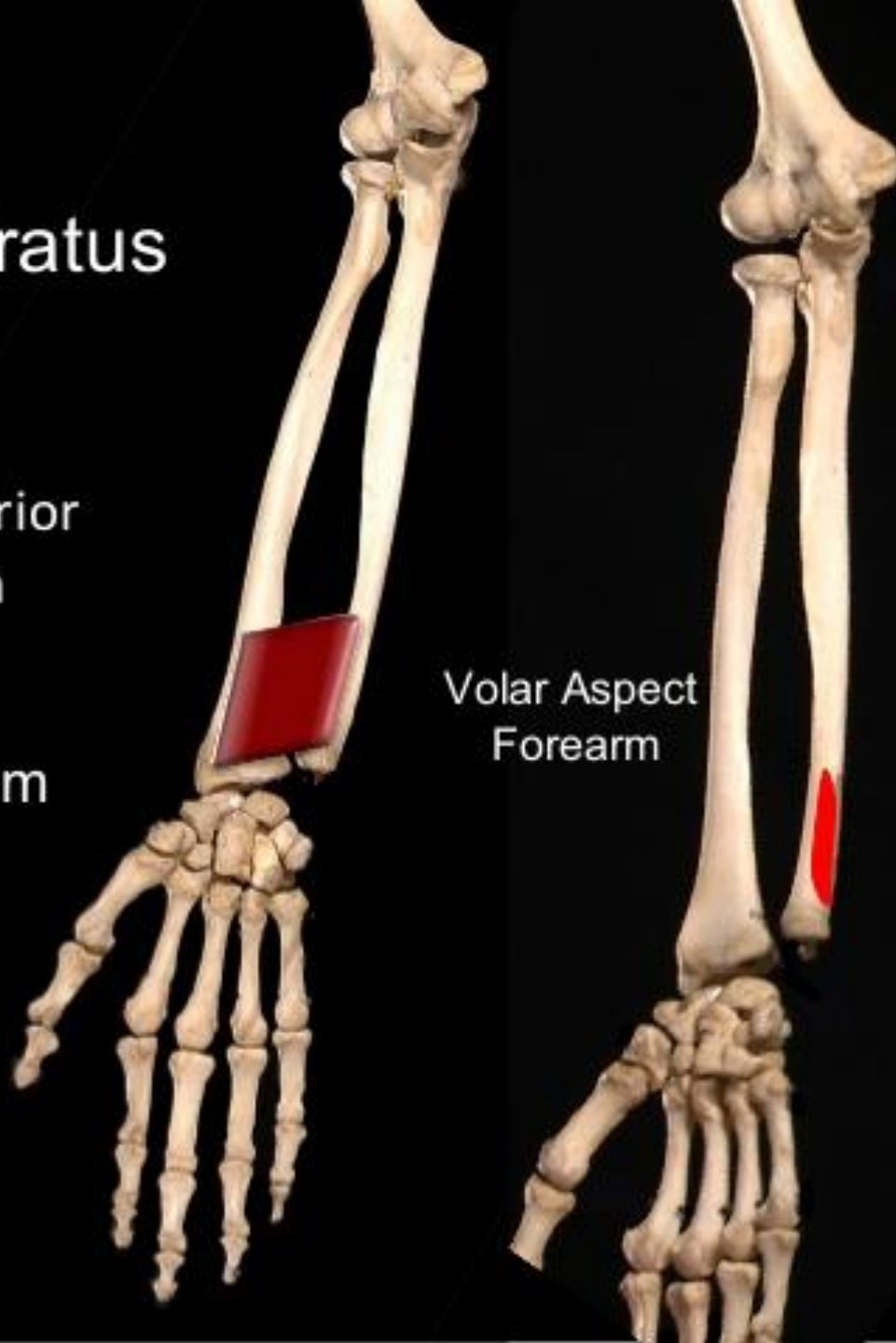


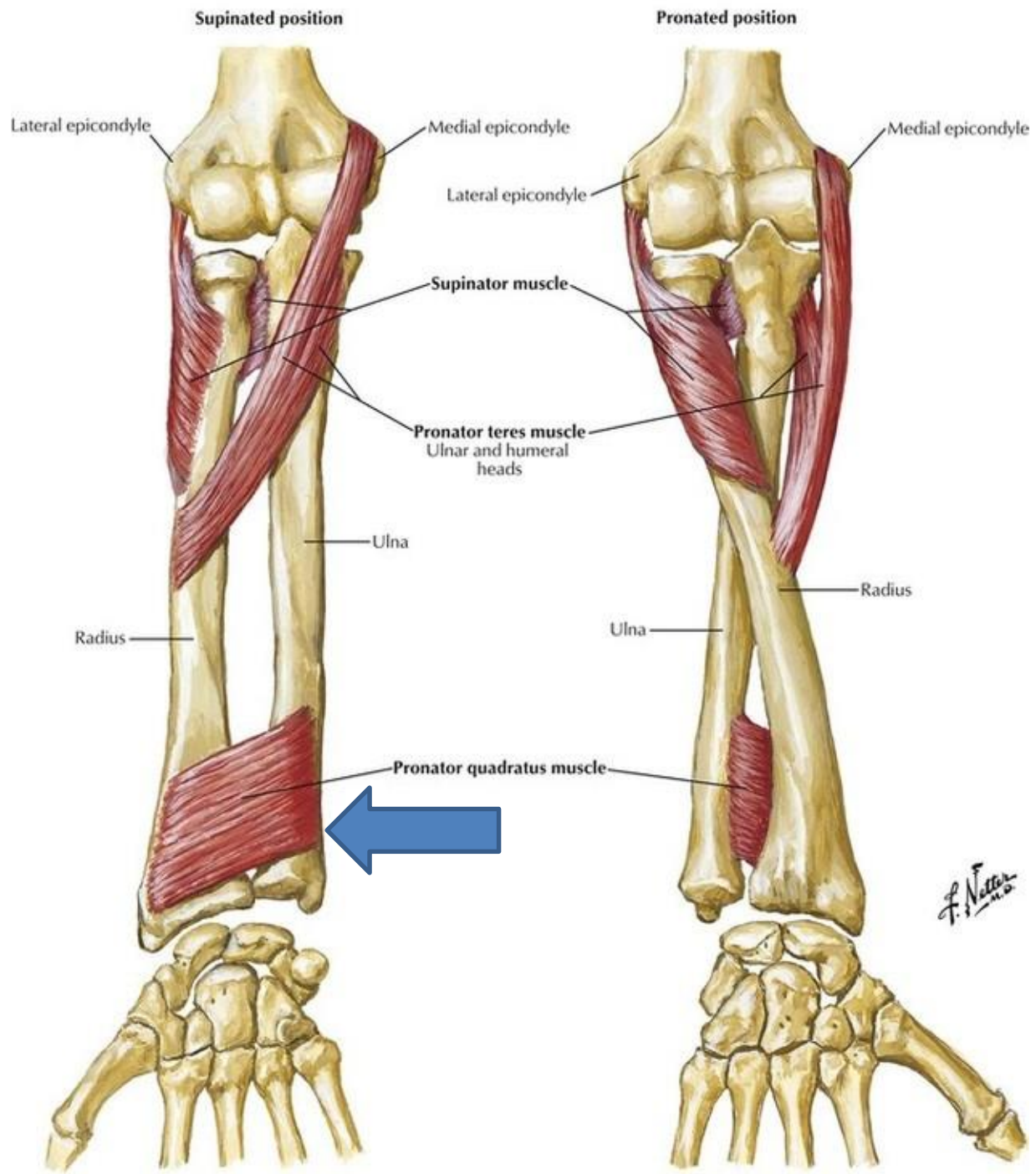
# Pronator Quadratus

Distal 1/4 of anterior surface of ulna

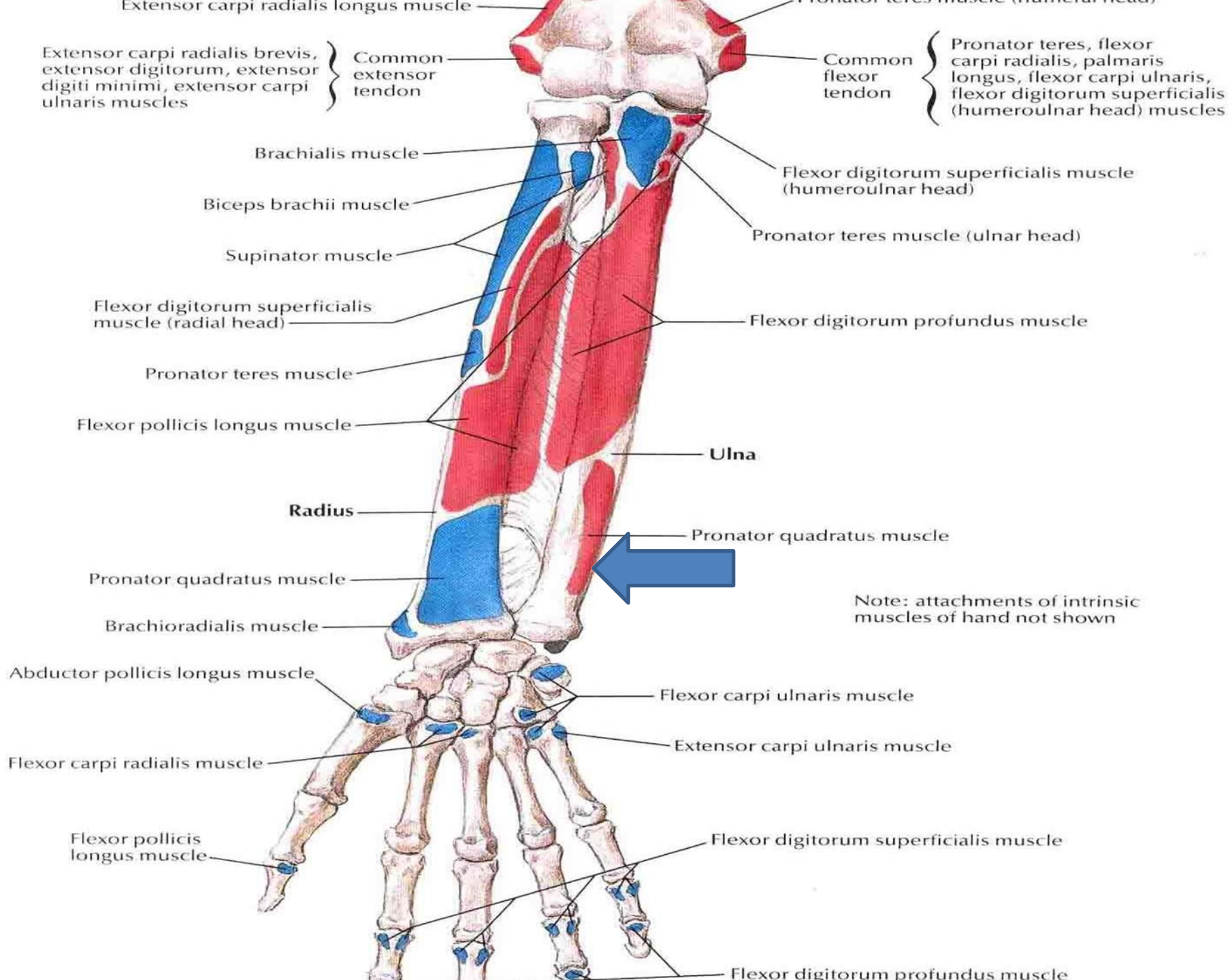
Pronates forearm

Volar Aspect Forearm









# Triceps



Attaches to olecranon  
process of ulna

Extends elbow joint



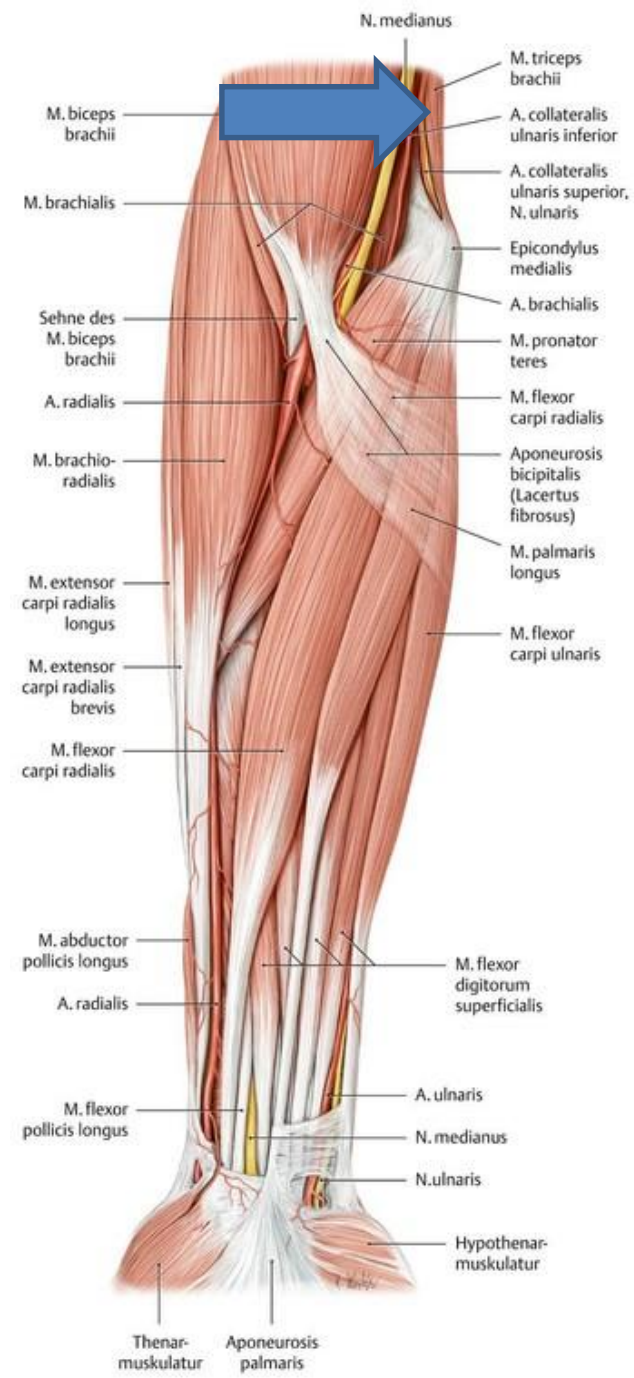
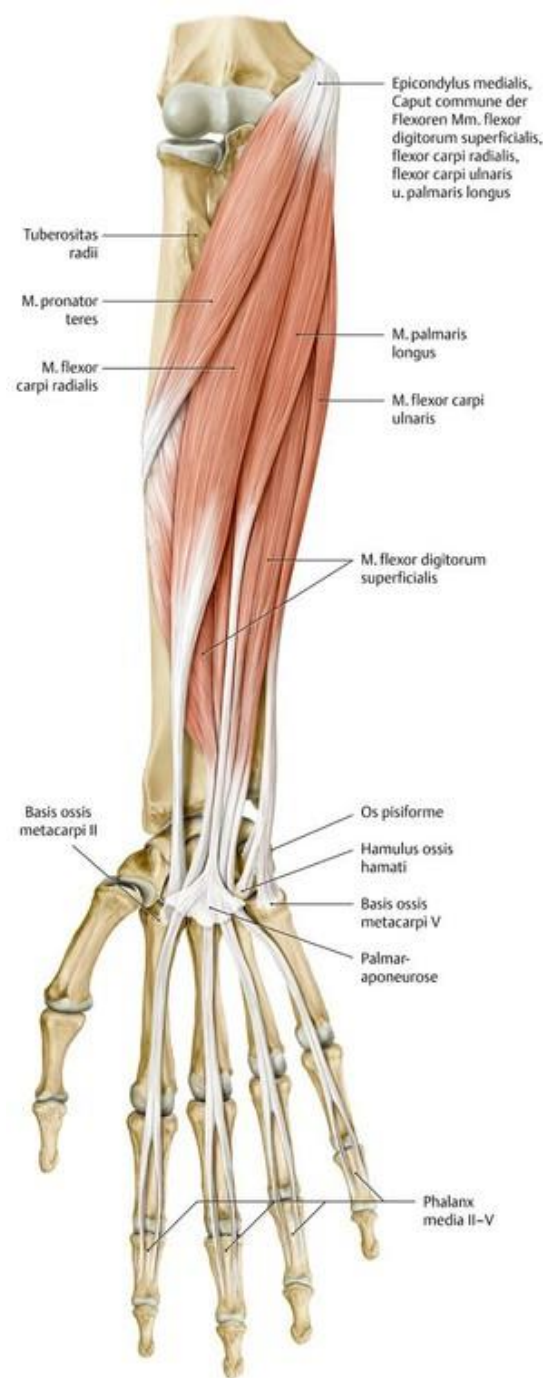
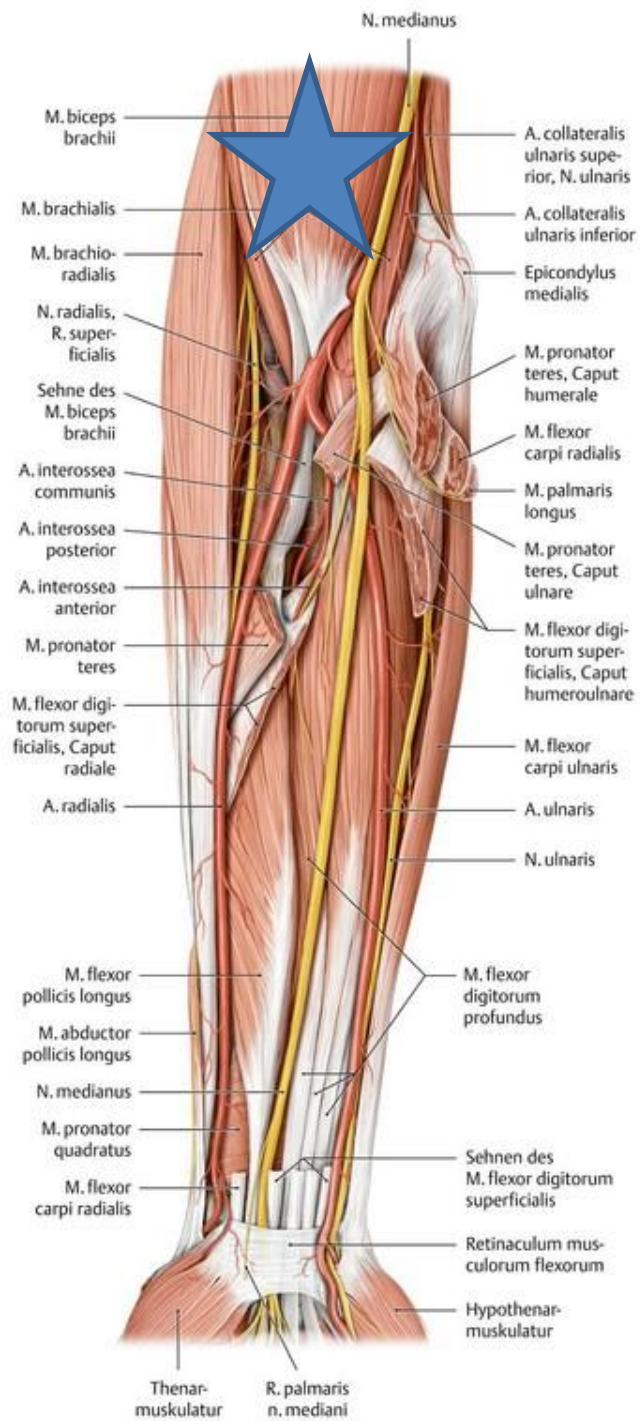
# Posterior Arm

## Triceps

Origin	Long head: infraglenoid tubercle of scapula; Lateral head: posterior surface of humerus, superior to radial groove Medial head: posterior surface of humerus, inferior to radial groove
Insertion	Olecranon process of ulna, fascia of forearm
Action	Extends elbow joint
Nerve Supply	Radial nerve (C6, C7 and C8)
Blood Supply	Branches of deep brachial artery







# Anconeus

Attaches to postero-lateral aspect of olecranon process of the ulna

Extends the elbow joint, abducts ulna in pronation



# MUSCLE ATTACHMENT(POSTERIOR SURFACE OF SHAFT)

- ABDUCTOR POLLICIS LONGUS....
- EXTENSOR POLLICIS LONGUS..
- EXTENSOR POLLICIS BREVIS
- EXTENSOR INDICIS

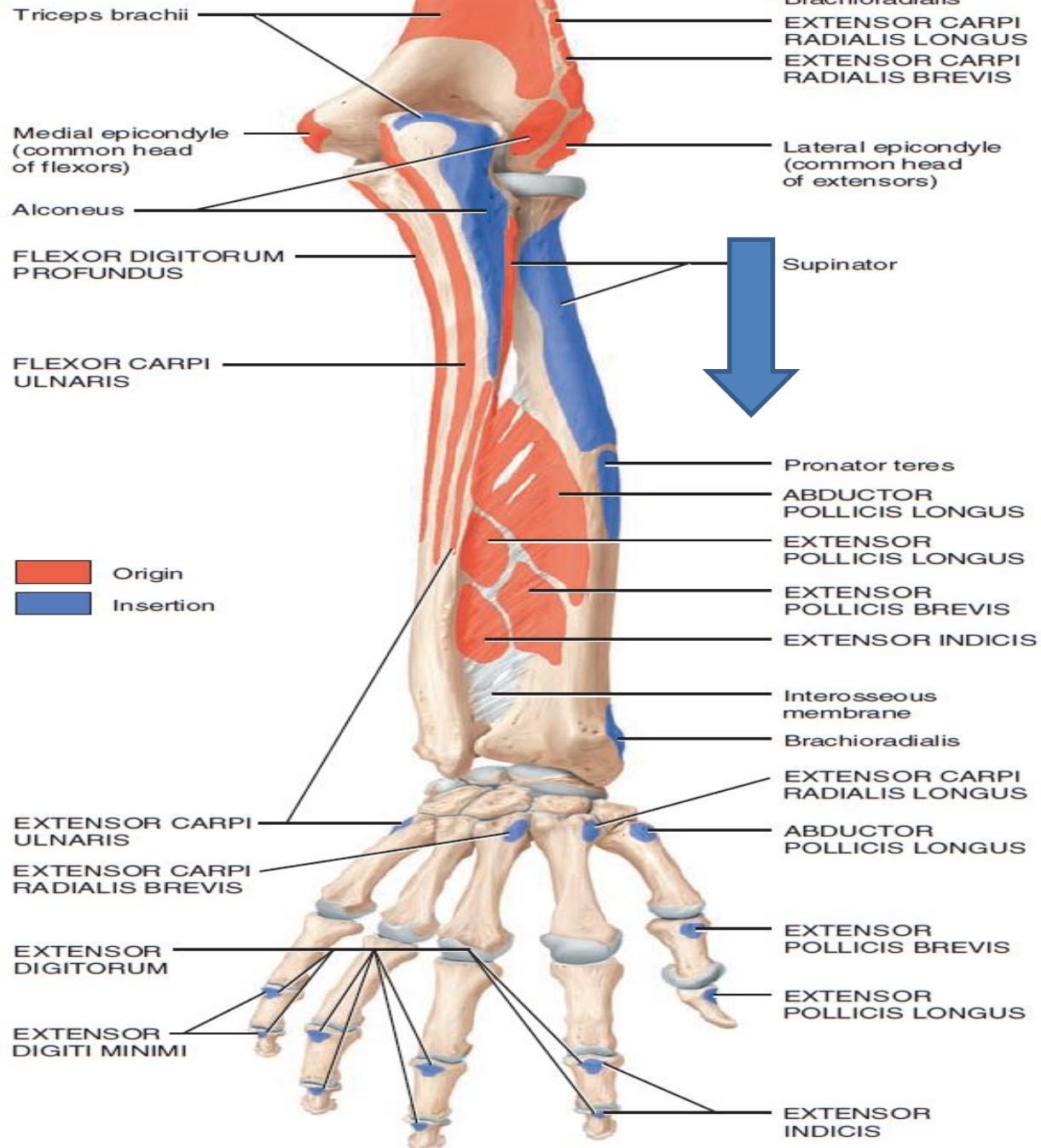
# Abductor Pollicis Longus

Arises from posterior surface of proximal shaft of ulna

Abducts thumb, extends thumb at carpometacarpal joint







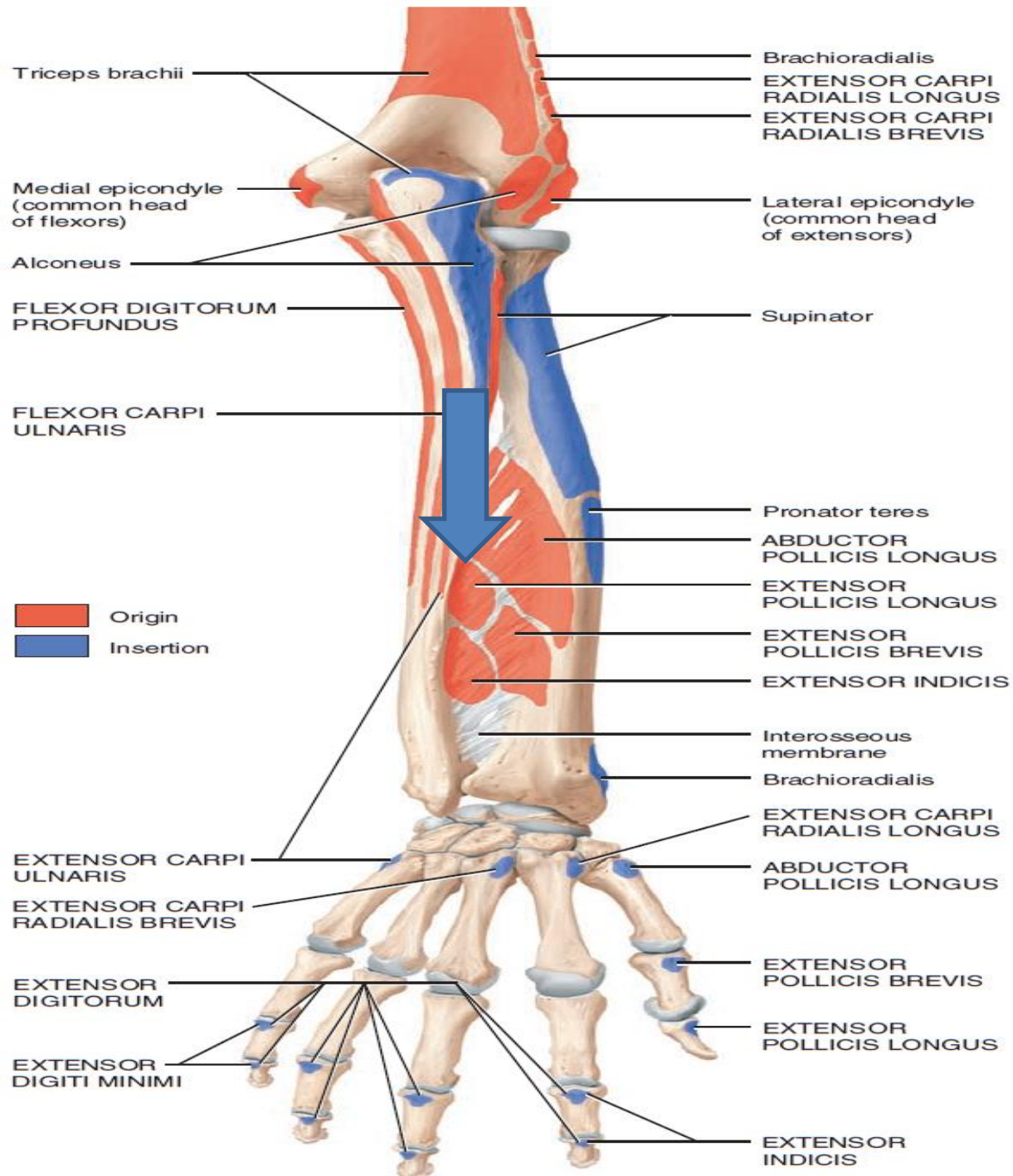


# Extensor Pollicis Longus

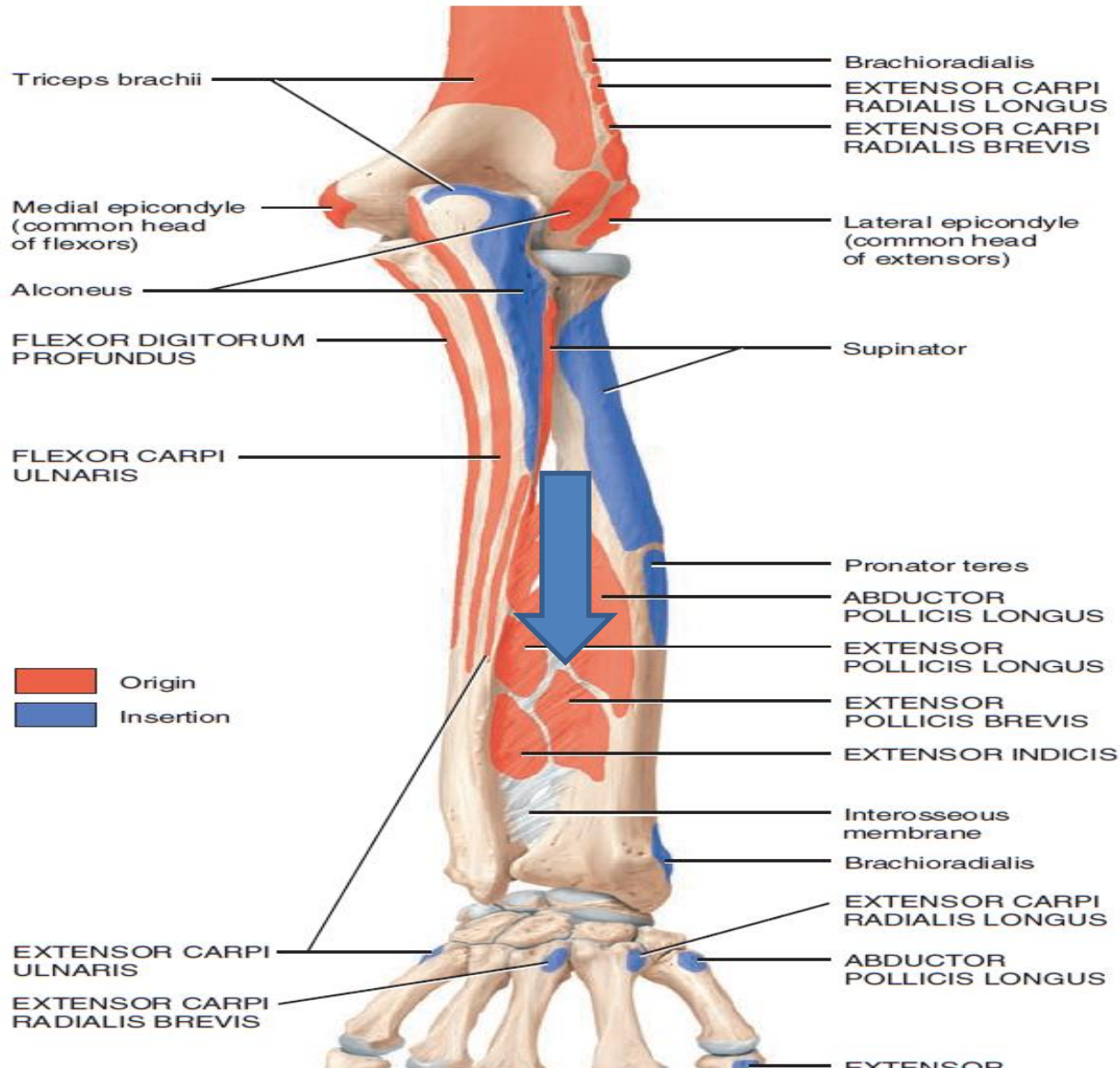
Posterior surface of  
middle 1/3 of ulna

Extends distal phalanx of  
thumb at carpometacarpal  
and interphalangeal joints





# EXTENSOR POLLICIS BREVIS



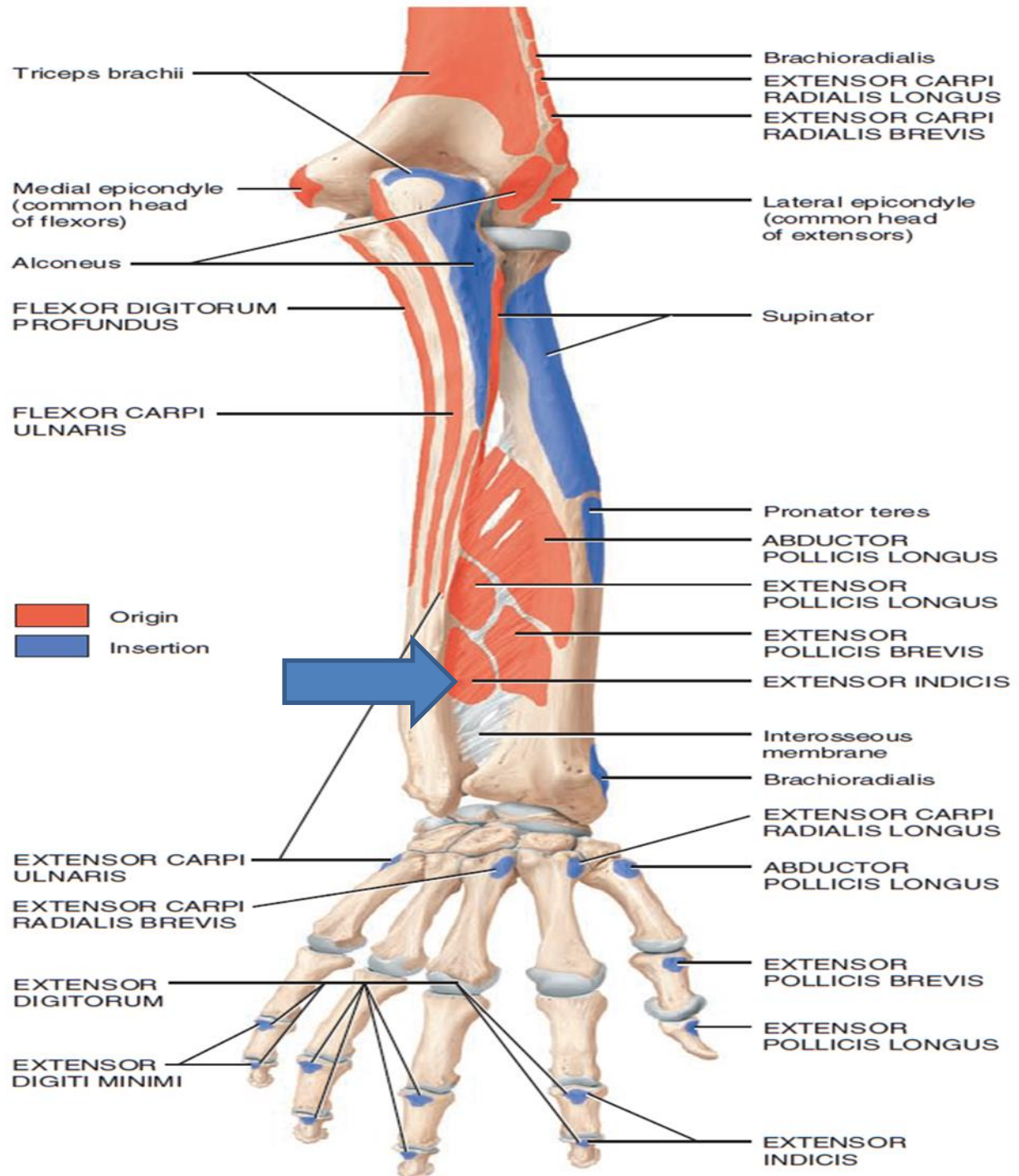
# Extensor Indicis

Distal aspect posterior surface of ulna

Extends index finger and hand







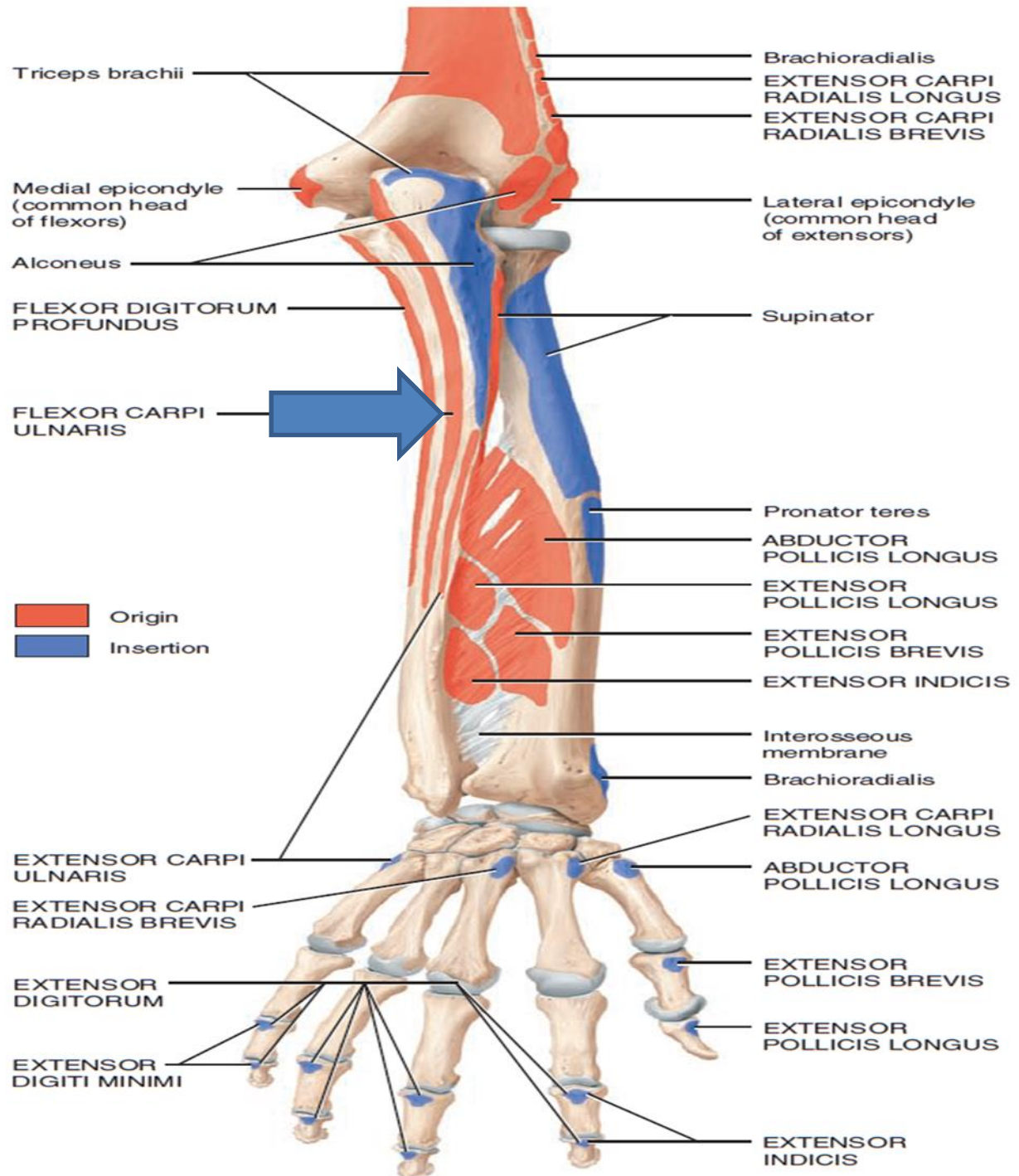
# Anterior Forearm

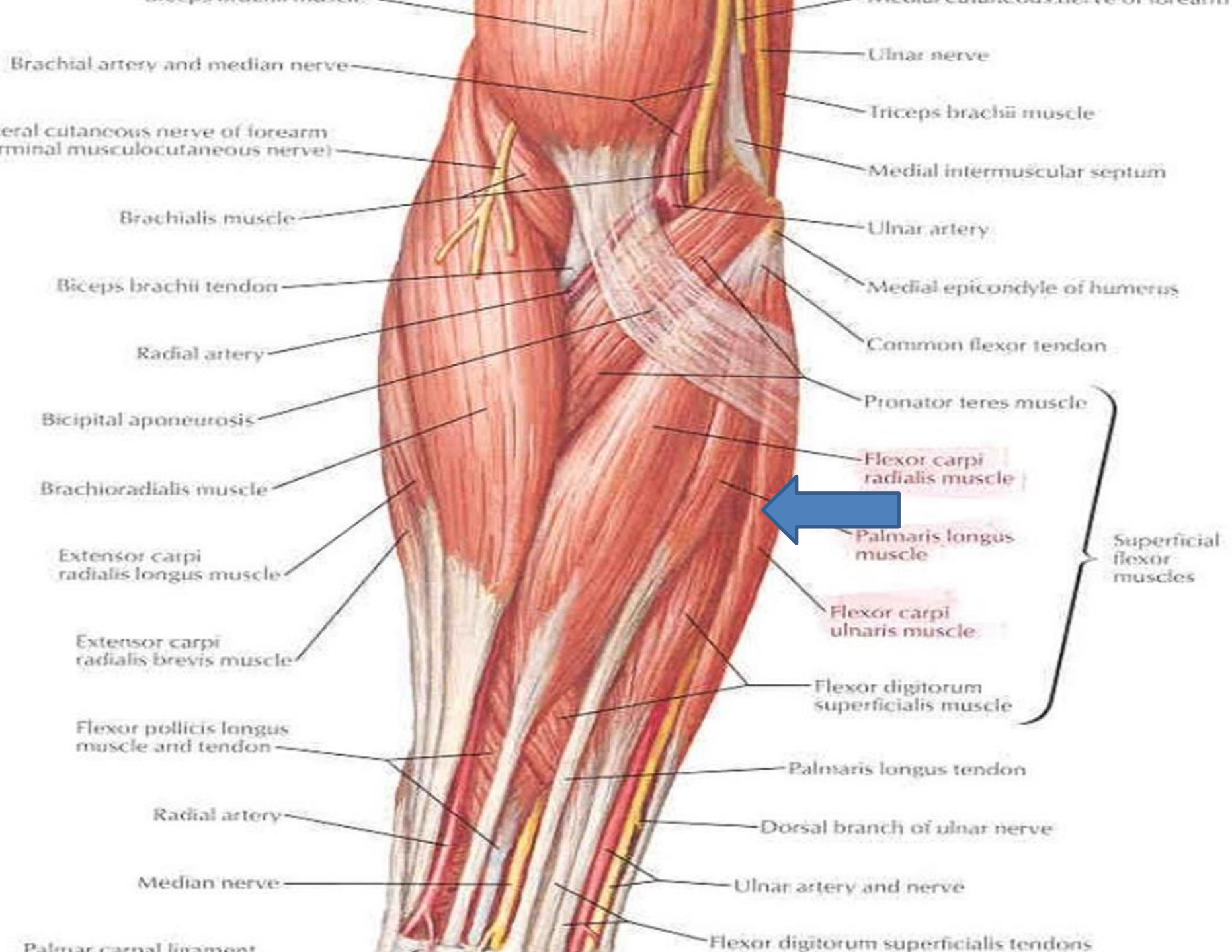


## Flexor Carpi Ulnaris

Origin	<b>Humeral head: common flexor origin, medial epicondyle of humerus</b> <b>Ulnar head: olecranon and upper 2/3rds posterior border of ulna</b>
Insertion	<b>Pisiform, hook of hamate, 5th metacarpal</b>
Action	<b>Flexes and adducts hand (at wrist)</b>
Nerve Supply	<b>Ulnar nerve (C7 and C8)</b>
Blood Supply	<b>Ulnar artery</b>







# Summary of Muscles attaching to the Ulna

Abductor Pollicis Longus

Flexor Digitorum Profundus

Anconeus

Flexor Digitorum Superficialis

Brachialis

Pronator Quadratus

Extensor Carpi Ulnaris

Pronator Teres

Extensor Indicis

Supinator

Extensor Pollicis Longus

Triceps

Flexor Carpi Ulnaris