Practical

Muscles and vessels of upper limb

OBJECTIVES

- Identify the different group of muscles of upper limb, (pectoral, scapular, flexors and extensors of arm and forearm, muscles of the hand).

- List the name of each muscle group.

- Briefly mention the attachment (origin & insertion) of these muscular groups, the action and nerve supply of these groups of muscles.

- Describe the course, and distribution of the nerves of upper limb (radial, ulnar, median, musculocutaneous and axillary nerves).

- Describe the course and branches of the main arteries of the upper limb (axillary, brachial, radial and ulnar arteries).

- Describe the course, and tributaries of the superficial and deep veins of the upper limb (cephalic, basilic, brachial and axillary vein).

Muscles of pectoral region:

- Pectoralis major
- Pectoralis minor
- Subclavius
- Serratus anterior

Muscles of scapular region:

- Deltoid
- Supraspinatus
- Infraspinatus
- Teres minor
- Teres major
- Subscapularis

Muscles of arm:

Anterior compartment (flexors):

- Biceps brachii
- Coracobrachialis
- Brachialis

Posterior compartment (extensors):

- Triceps

Muscles of forearm:

Anterior compartment (flexors):

- Pronator teres
- Flexor carpi radialis
- Palmaris longus
- Flexor carpi ulnaris
- Flexor digitorum superficialis
- Flexor digitorum profundus
- Flexor pollicis longus
- Pronator quadratus

Posterior compartment (extensors):

- Brachioradialis
- Extensor carpi radialis longus
- Extensor carpi radialis brevis
- Extensor digitorum
- Extensor digiti minimi
- Extensor carpi ulnaris
- Anconeus
- Supinator
- Abductor pollicis longus
- Extensor pollicis brevis
- Extensor pollicis longus
- Extensor indices

Muscles of the hand:

- Plamaris brevis

- Hypothenar eminence:

- Abductor digiti minimi

- Flexor digiti minimi

- Opponens digiti minimi

- Thenar eminence:

- Abductor pollicis brevis

- Flexor pollicis brevis

- Opponens pollicis

- Adductor pollicis brevis

- Lumbrical muscles

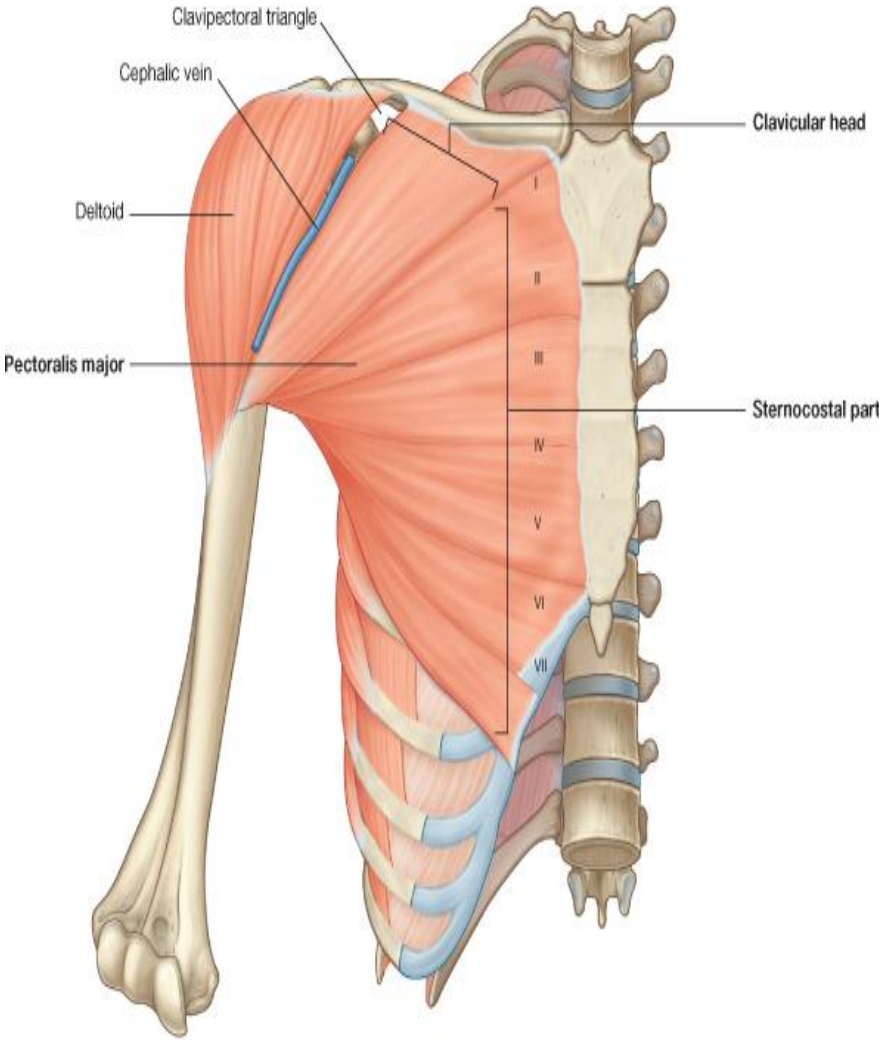
- Palmar interossei

- Dorsal interossei

Muscles of pectoral region

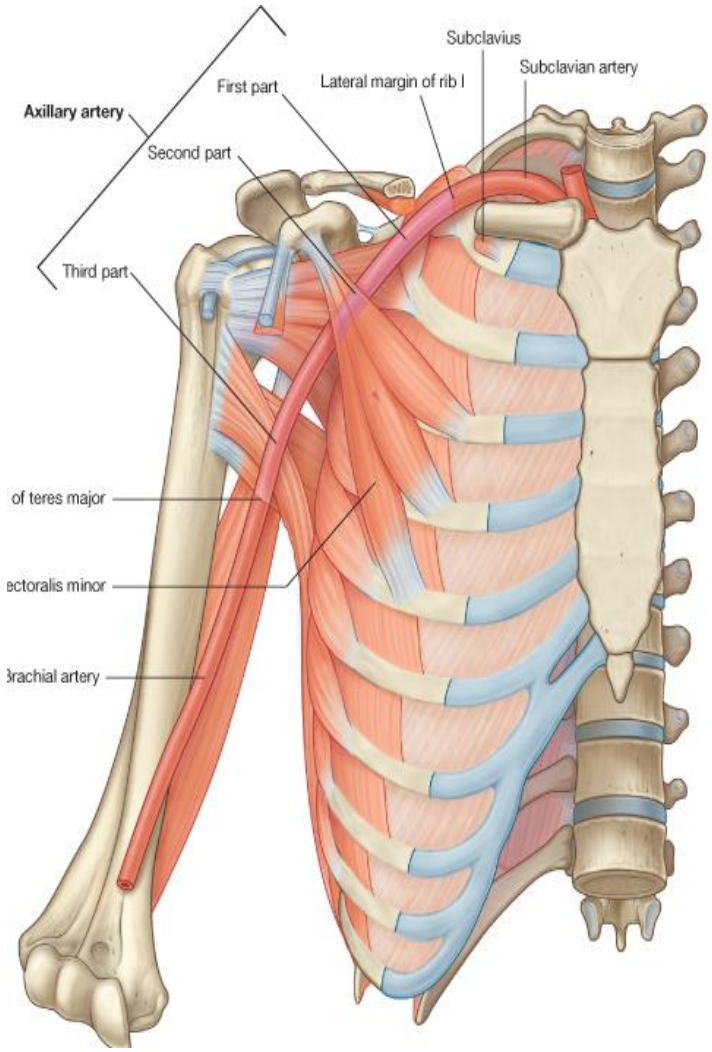
Pectoralis Major

- **Origin :** 2 heads;
- **Clavicular head: From;**
- Medial ½ of the front of the clavicle.
- **Sternocostal head: From;**
- Sternum.
- Upper 6 costal cartilages.
- Aponeurosis of the external oblique muscle.
- **Insertion :**
- **Lateral lip of bicipital groove.**
- **Nerve supply :**
- **Medial & lateral pectoral nerves.**
- **Action :**
- **Adduction and medial rotation of the arm.**
- **Clavicular head helps in flexion of arm (shoulder).**



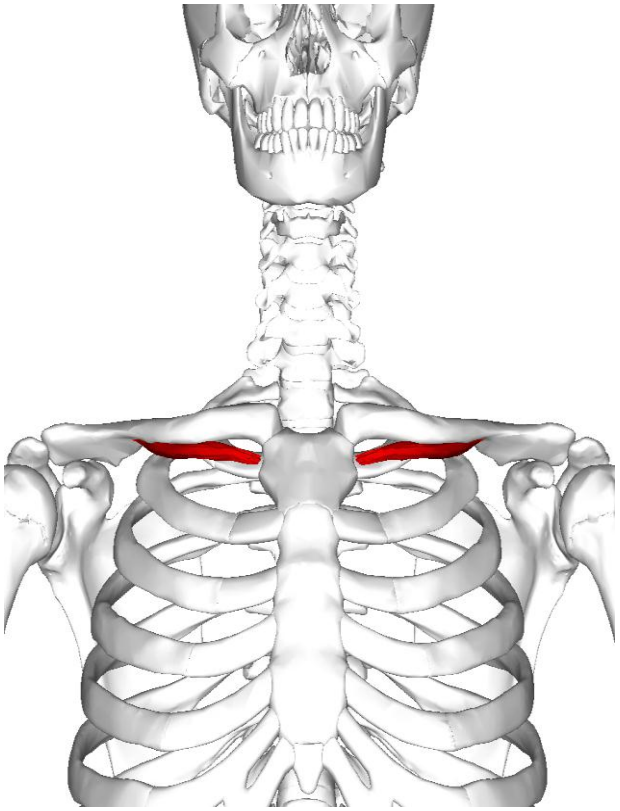
Pectoralis Minor

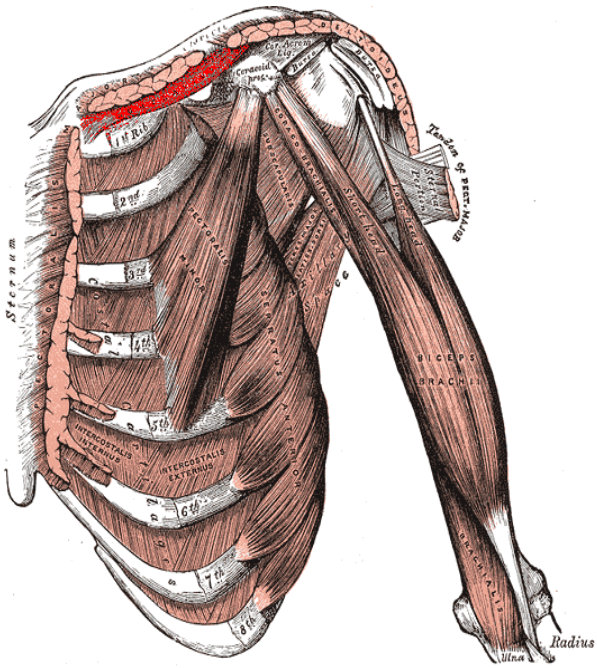
- **Origin:**
- From 3rd ,4th , & 5th ribs close to their costal cartilages.
- **Insertion:**
- Coracoid process.
- **Nerve supply:**
- Medial pectoral nerve.
- **Action:**
- Depression of the shoulder.
- Draw the ribs upward and outwards during deep inspiration.



Subclavius

- **Origin:**
- From 1st rib at its costal cartilage.
- **Insertion:**
- Subclavian groove in the middle 1/3 of the inferior surface of clavicle.
- **Nerve supply:**
- Nerve to subclavius from upper trunk of brachial plexus.
- **Action:**
- Fixes the clavicle during movement of shoulder joint.

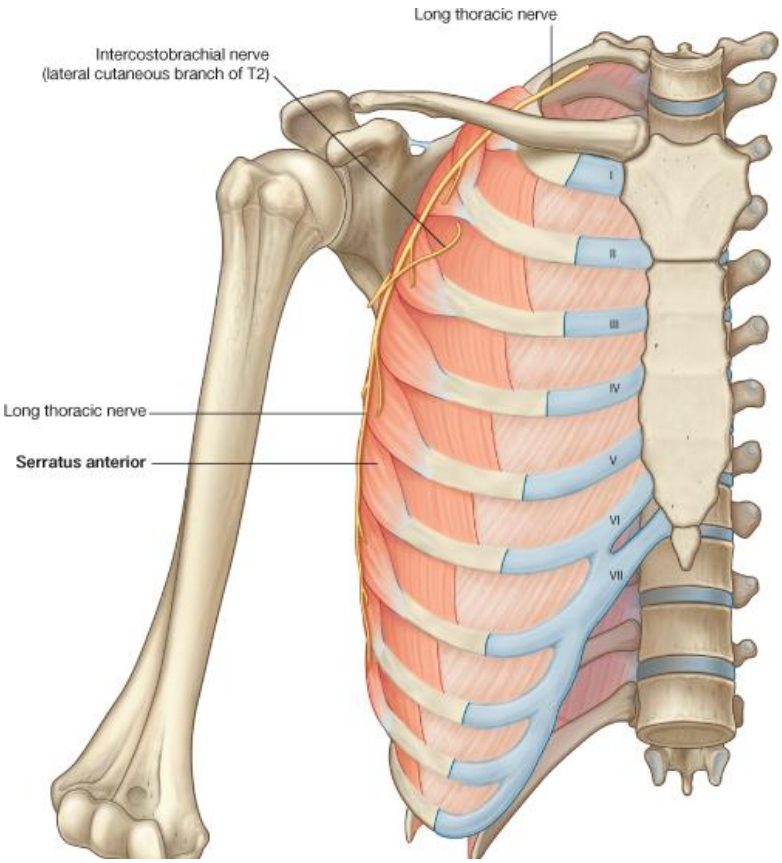


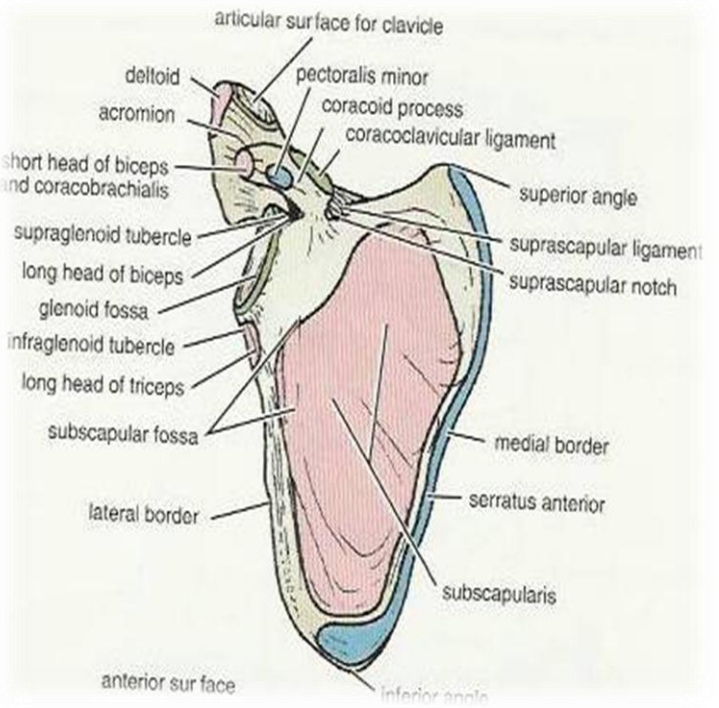


Serratus anterior

Origin:

- Upper eight ribs.
- **Insertion:**
- anterior aspect of the medial border and inferior angle of scapula.
- **Nerve supply:**
- Long thoracic nerve.
- **Action:**
- Draws the scapula forward in boxing, (protrusion).
- Rotates scapula outwards in raising the arm above 90 degree.





Muscles of scapular region

DELTOID

A **triangular muscle** that forms the contour of the shoulder

Origin: lateral 1/3 of clavicle + acromion and spine of scapula ((look to insertion of trapezius

Insertion: deltoid tuberosity of humerus

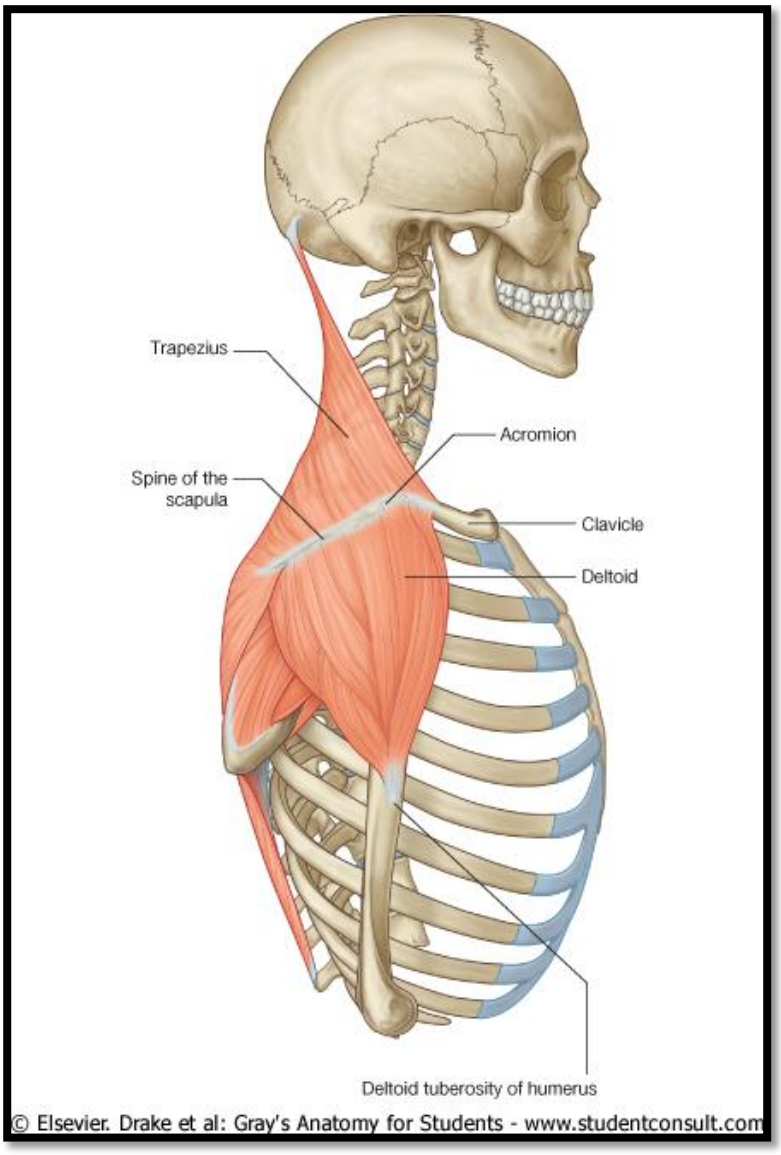
Nerve supply: axillary nerve

Actions:

Anterior fibers: flexion & medial rotation of humerus ((arm, shoulder joint

Middle fibers: abduction of humerus from **15° - 90°**

Posterior fibers: extension & lateral rotation of humerus



SUPRASPINATUS & INFRASPINATUS

Origin:

Supraspinatus: supraspinous fossa

Infraspinatus: infraspinaous fossa

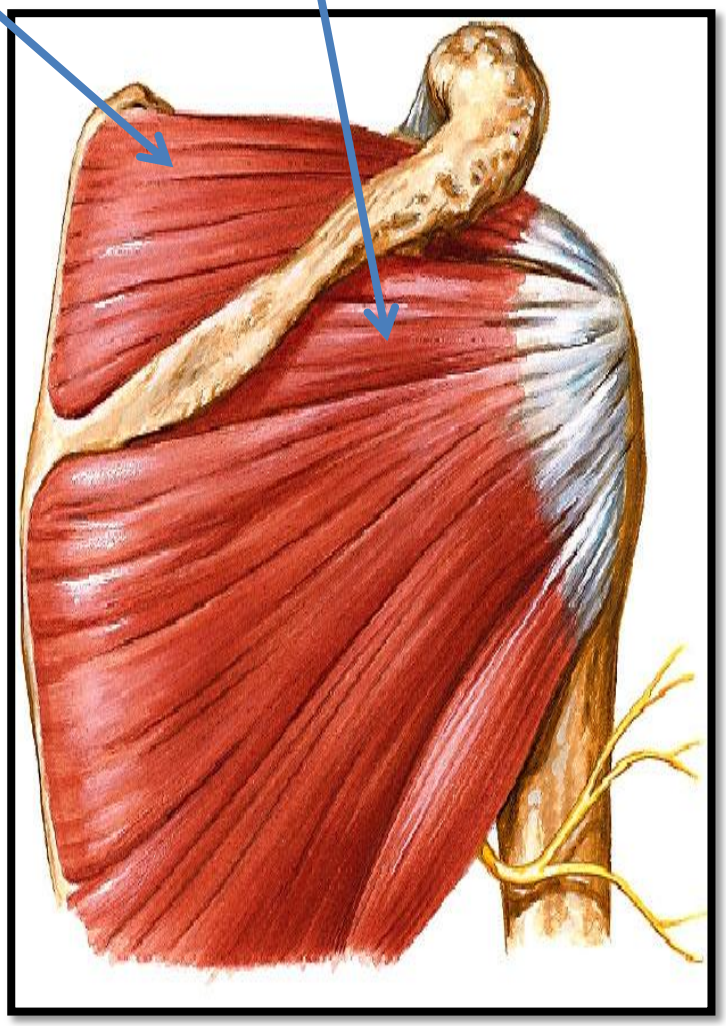
Insertion: greater tuberosity of humerus

Nerve supply: suprascapular nerve

Action:

Supraspinatus: abduction of humerus from **0° - 15°**

Infraspinatus: lateral rotation of humerus



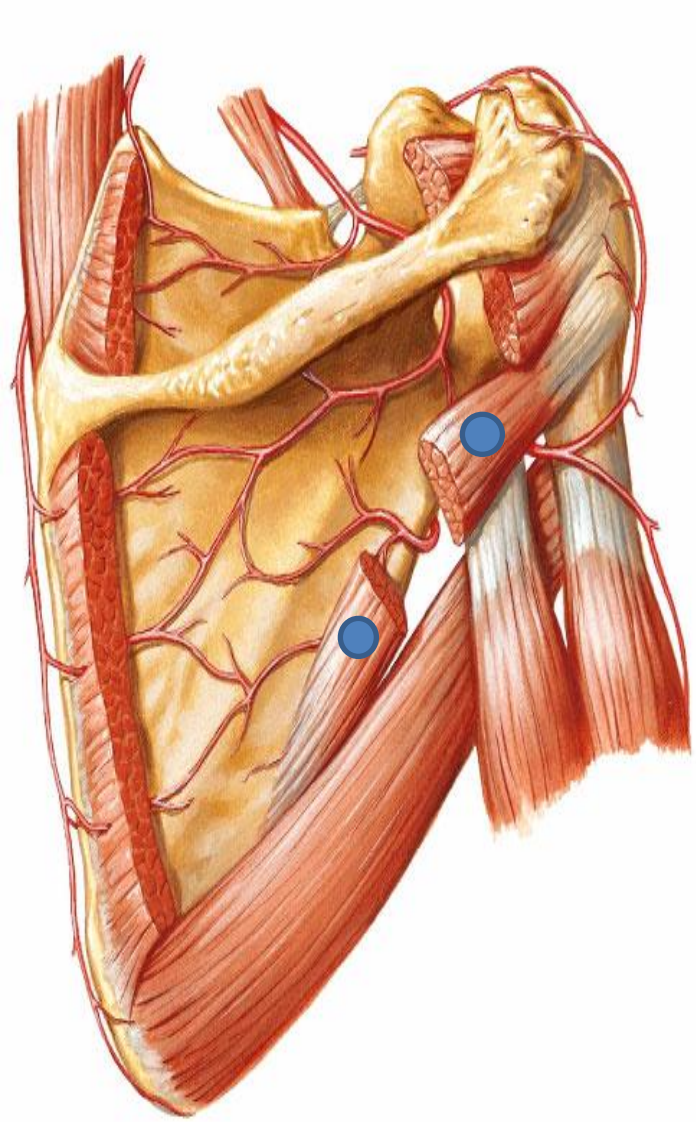
Teres Minor

Origin: lateral border of scapula

Insertion: greater tuberosity of humerus

Nerve supply: axillary nerve

Action: lateral rotation of humerus



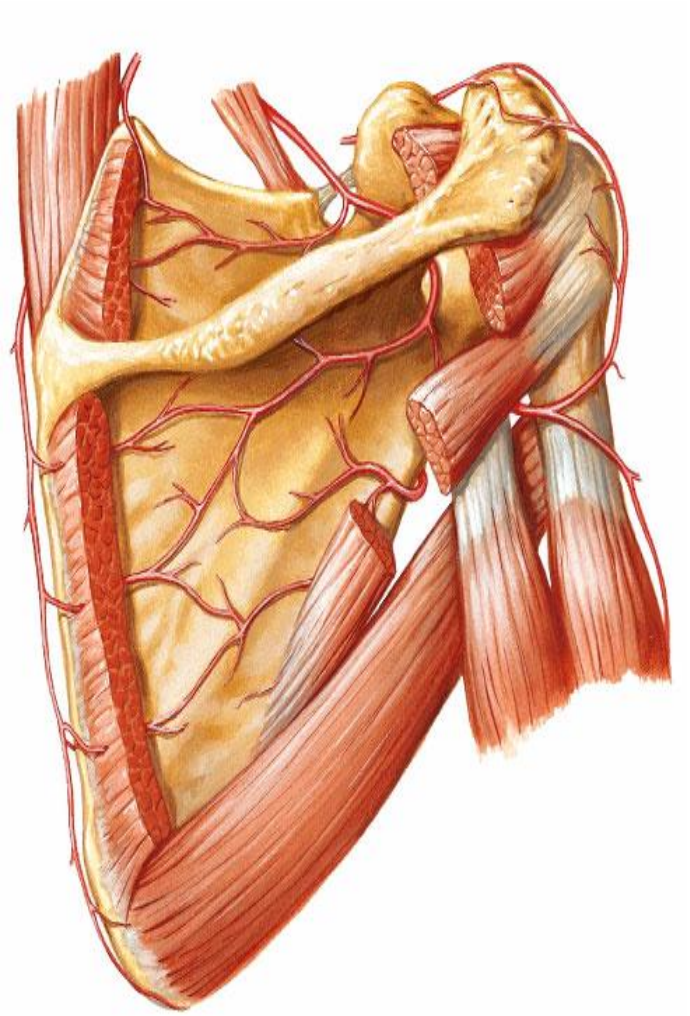
TERES MAJOR

Origin: lateral border of scapula

Insertion: bicipital groove of humerus

Nerve supply: lower subscapular nerve

Actions: extension, adduction & medial rotation of humerus



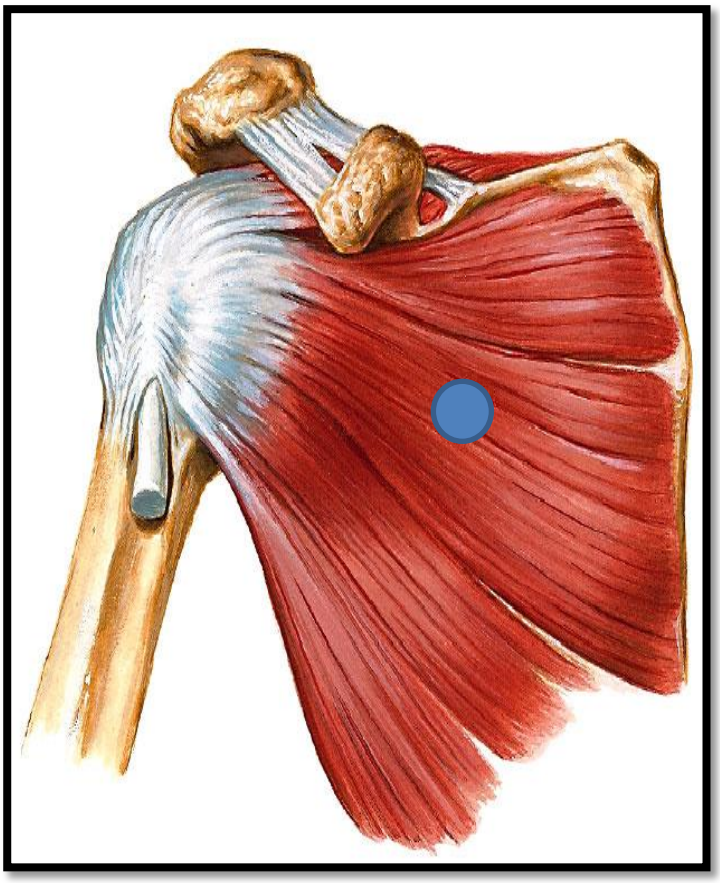
SUBSCAPULARIS

Origin: subscapular fossa

Insertion: lesser tuberosity of humerus

Nerve supply: upper & lower subscapular nerves

Action: medial rotation of humerus



Muscles of the arm

Anterior compartmenr

Biceps Brachii

Origin: Two heads:

Long Head: from supraglenoid tubercle of (scapula (intracapsular

Short Head: from the tip of coronoid process of scapula

*** The two heads join in the middle of the arm**

Insertion:

- in the posterior part of the radial tuberosity

- into the deep fascia of the medial aspect of the forearm through bicipital aponeurosis

Nerve supply:

Musculocutaneous

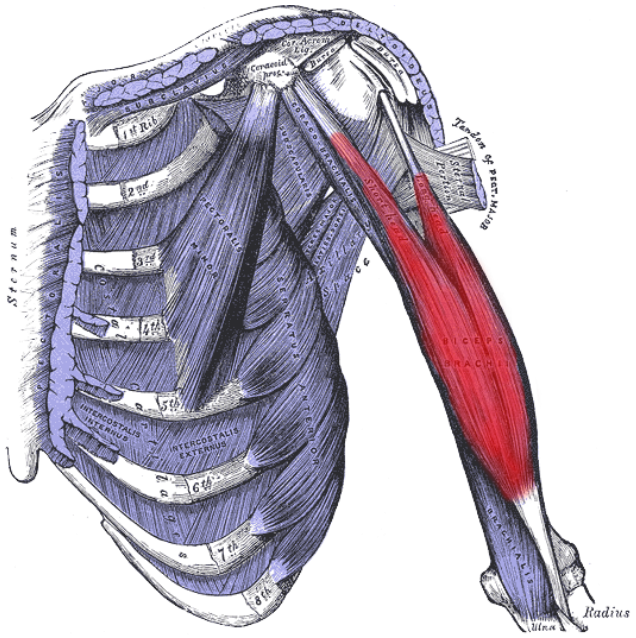
Action:

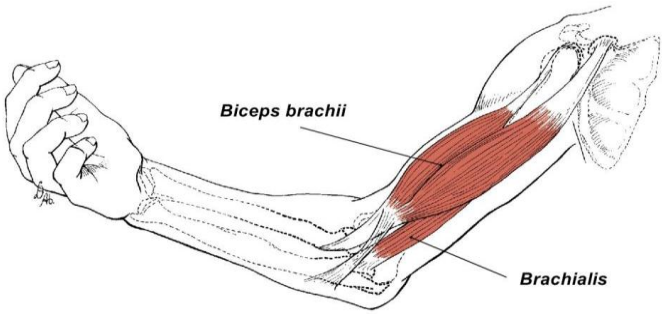
- Strong supinator of the forearm

(used in screwing)

- Powerful flexor of elbow

- Weak flexor of shoulder





Coracobrachialis

Origin:

Tip of the coracoid process

Insertion:

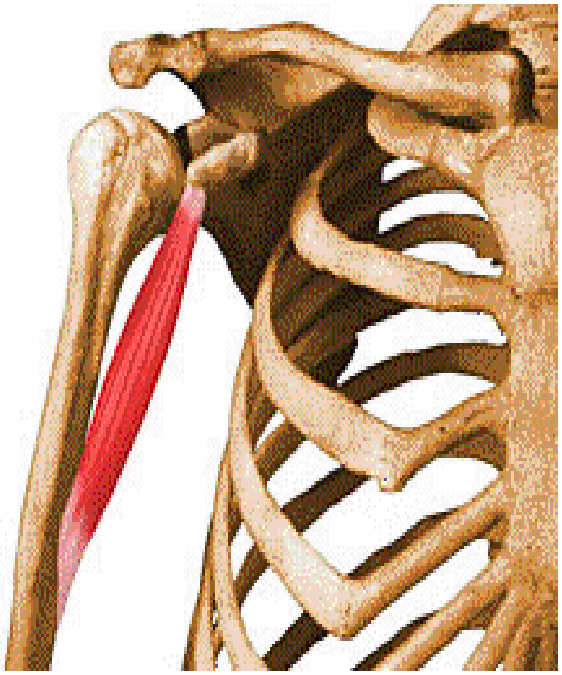
Middle of the medial side of the shaft of the humerus

Nerve supply:

Musculocutaneous

Action:

Flexor & a weak adductor of the arm



Brachialis

Origin:

Front of the lower half of humerus

Insertion:

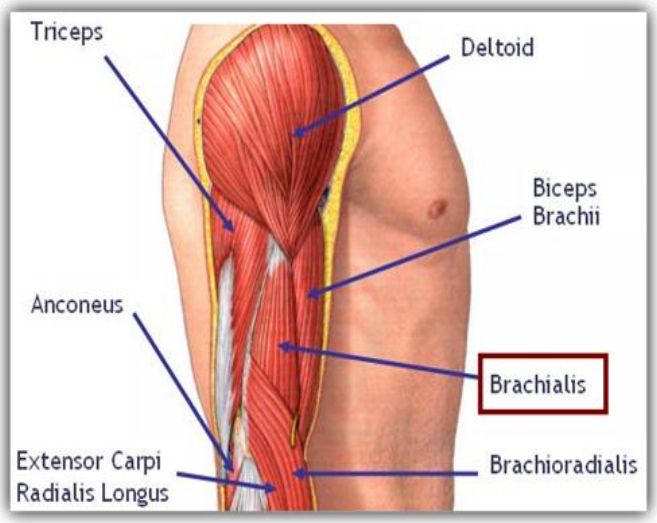
Anterior surface of coronoid process of ulna

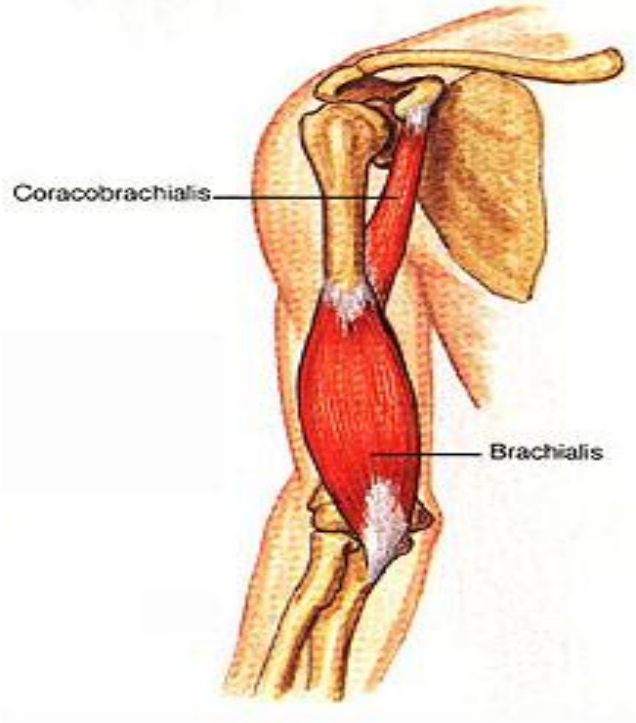
Nerve supply:

Musculocutaneous & Radial

Action:

Strong flexor of the forearm





Posterior compartment

Triceps Brachii

Origin: Three heads:

Long Head: from infrglenoid tubercle of the scapula

Lateral Head: from the upper half of the posterior surface of the shaft of humerus above the spiral groove

Medial Head: from the lower half of the posterior surface of the shaft of humerus below the spiral groove

Insertion:

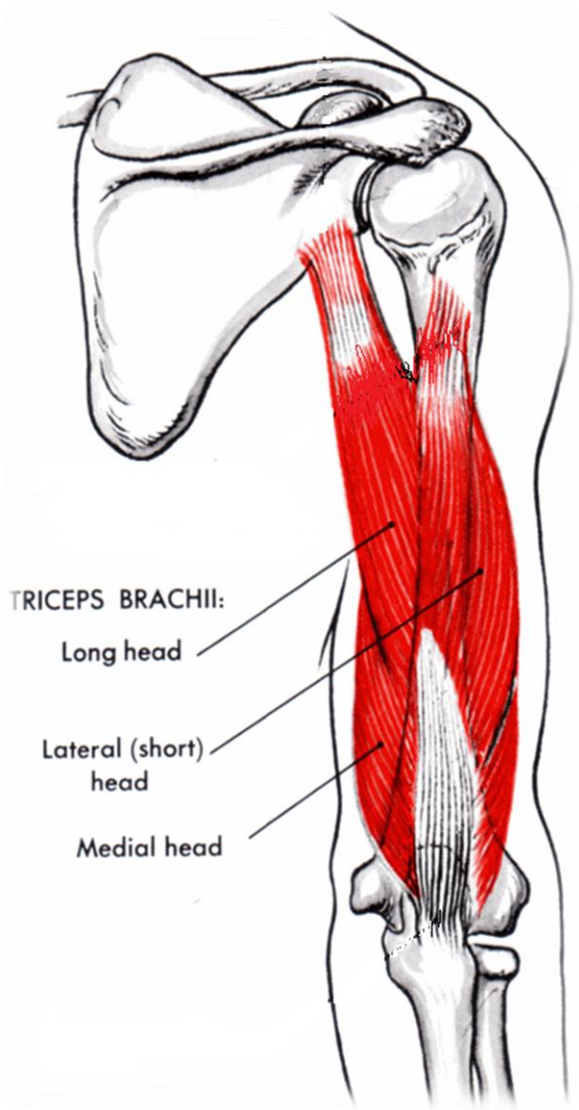
Common tendon inserted into the upper surface of the olecranon process of ulna

Nerve supply:

Radial nerve

Action:

Strong extensor of the elbow joint

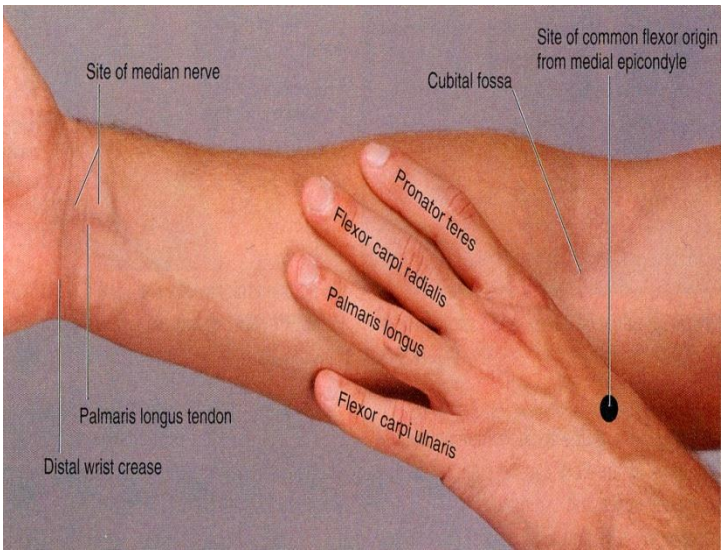


Muscles of forearm

Anterior compartment

I-Superficial: 4

- Pronator teres
- Flexor carpi radialis
- Palmaris longus
- Flexor carpi ulnaris

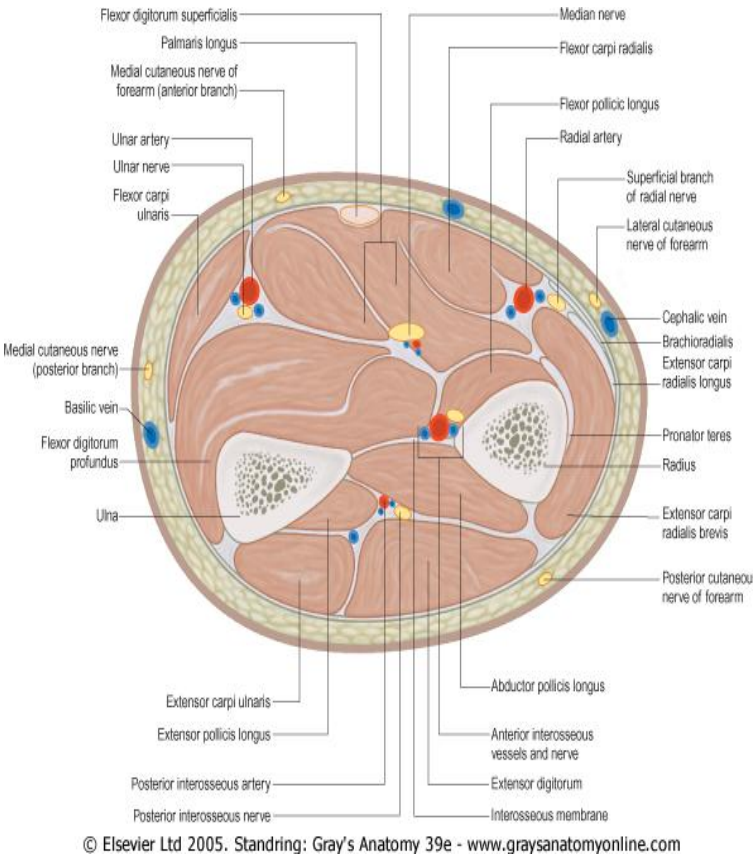


II-Intermediate: 1

- Flexor digitorum superficialis

III- Deep: 3

- Flexor digitorum profundus. U
- Flexor pollicis longus. R
- Pronator quadratus. R & U



Superficial group

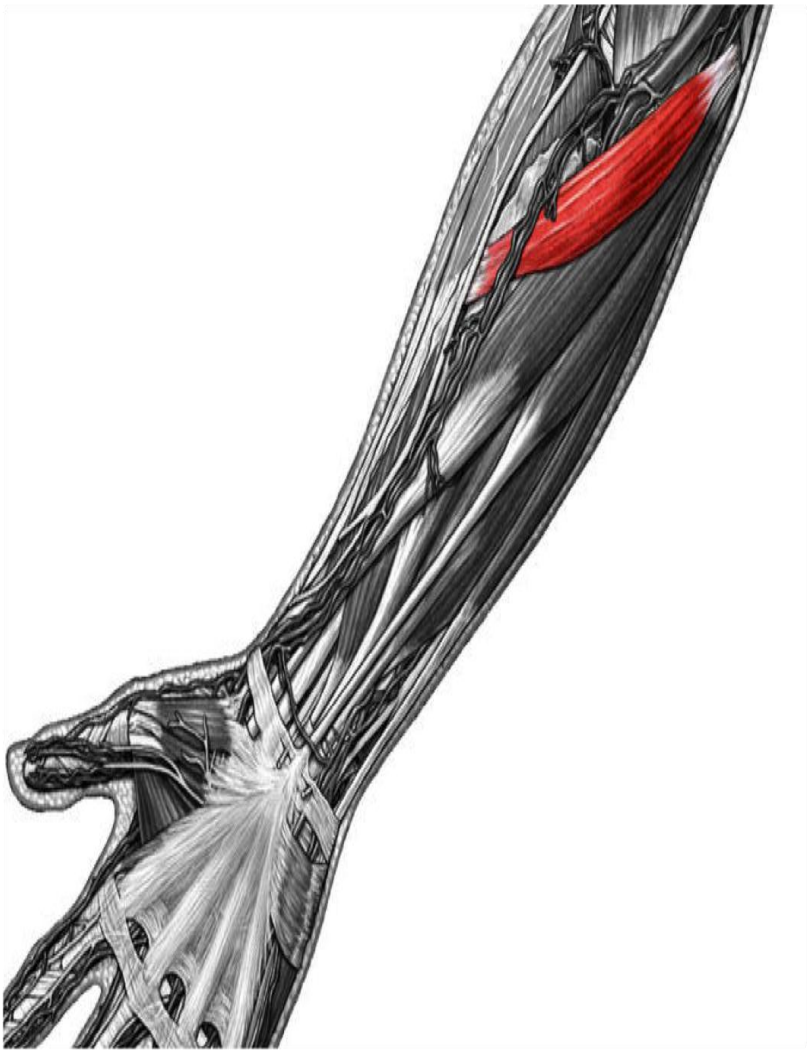
Pronator Teres

Origin: common flexor origin (front of medial epicondyle)

Insertion: middle of lat. surface of radius

Nerve supply: median nerve

Action: pronation & flexion of forearm



Pronator teres

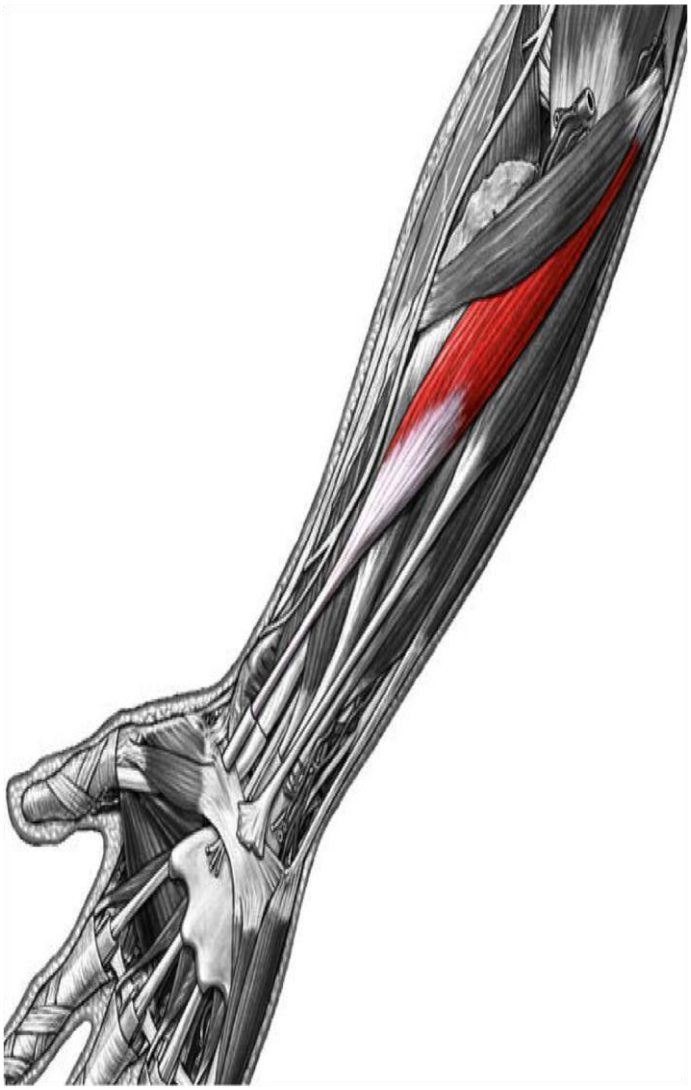
Flexor carpi radialis

Origin: common flexor origin (front of medial epicondyle)

Insertion: Base of 2nd metacarpal bone

Nerve supply: median nerve

Action: Flexion & abduction of the wrist



flexor carpi radialis

Palmaris longus

Origin: common flexor origin (front of medial epicondyle)

Insertion: into the flexor retinaculum & palmer aponeurosis

Nerve supply: median nerve

Action: Flexes hand & tightens the palmer aponeurosis

Palmaris longus

Flexor carpi ulnaris

Origin: common flexor origin (front of medial epicondyle)

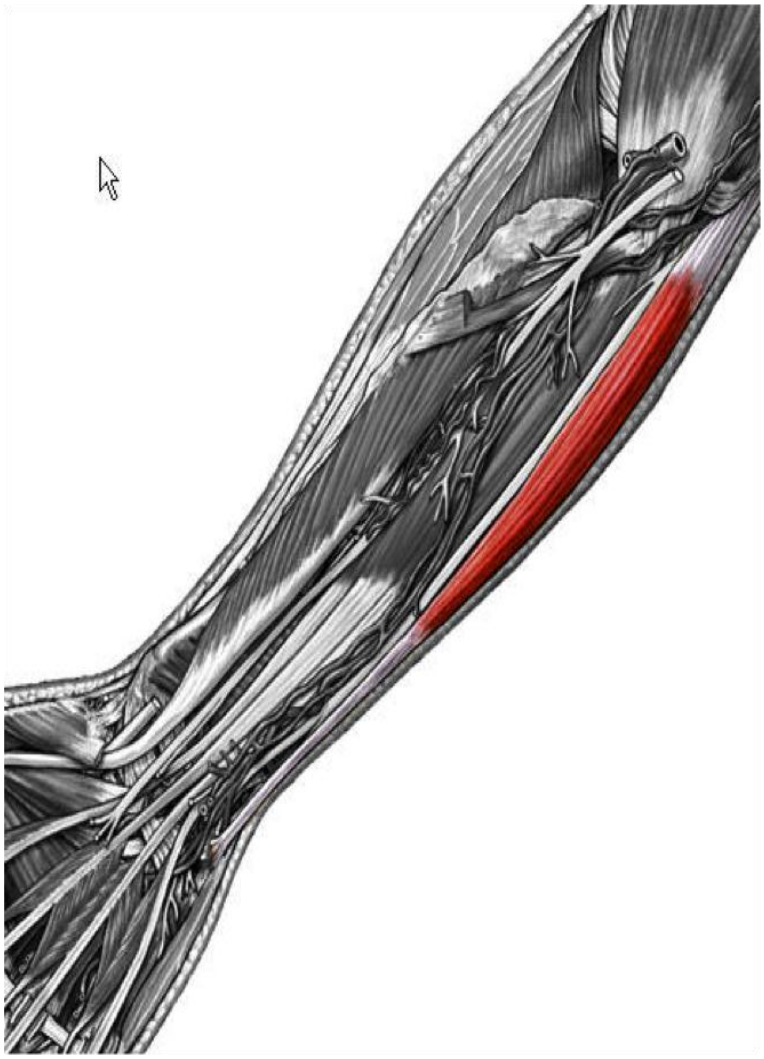
Insertion:

- Pisiform
- hook of hamate
- 5th metacarpal bone

Nerve supply: ulnar nerve

Action:

Flexion and adduction of the hand (wrist)



Flexor carpi ulnaris (anterior view)

Intermediate group

Flexor Digitorum Superficialis

Origin:

- Common flexor origin
- Coronoid process of ulna
- Anterior oblique line of radius

Insertion:

base of middle phalanges of the medial 4 fingers

Nerve supply: median nerve

Action:

- Flexes middle and proximal phalanges of medial 4 fingers
- Flexes the hand (wrist)

flexor digitorum superficialis

Deep group

Flexor digitorum profundus

Origin:

- Proximal 3/4 of medial and anterior surfaces of ulna

- interosseous membrane

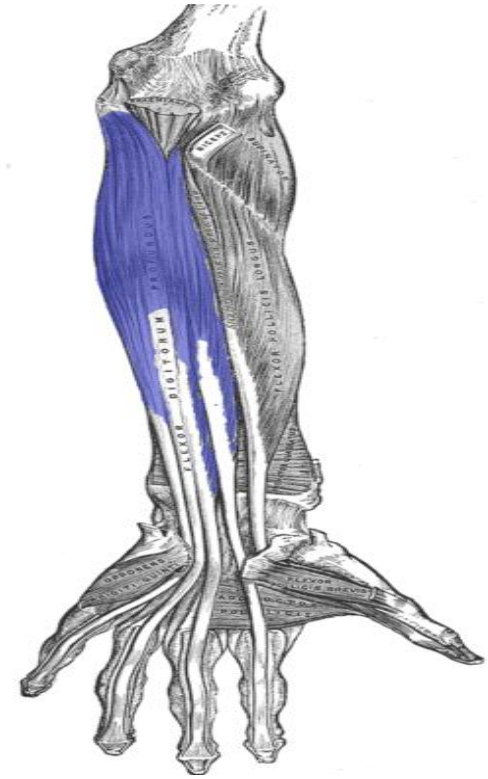
Insertion: bases of the distal phalanges of the medial four digits

Nerve supply:

- Median nerve (anterior interosseous)

- ulnar nerve

Action: Flexes distal phalanges of medial four digits



Flexor Pollicis Longus

Origin:

- Anterior surface of middle 1/2 of radius

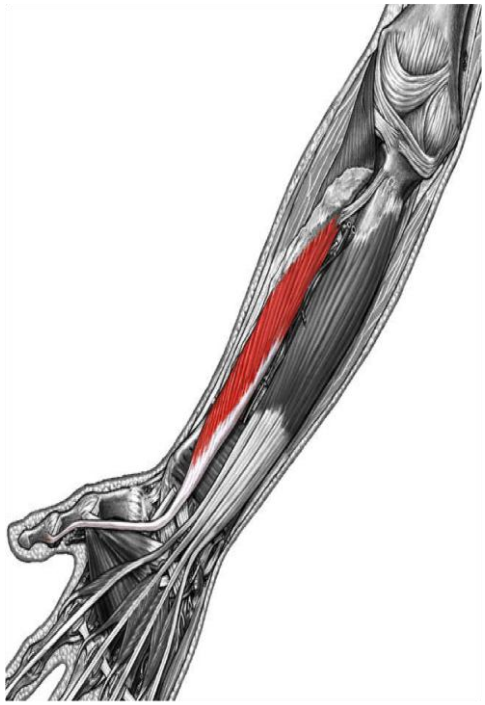
- Adjacent interosseous membrane

Insertion: Base of distal phalanx of thumb

Nerve supply: median (as anterior interosseous nerve)

Action:

flexes (all joints of the thumb), interphalangeal, metacarpophalangeal & carpometacarpal joints



flexor pollicus longus

Pronator Quadratus

Origin:

Distal 1/4 of anterior surface of ulna

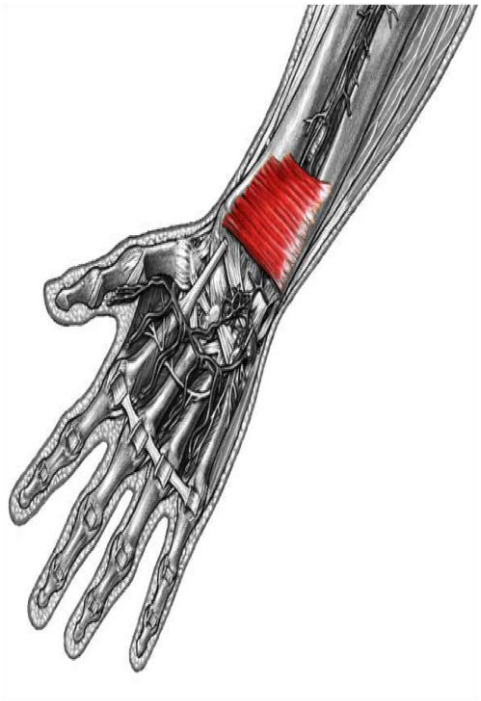
Insertion: distal one fourth of ant. surface of radius

Nerve supply: median (as (anterior interosseous nerve

Action:

- pronates the forearm (primover)

- Hold the two bones together



Pronator quadratus

Posterior compartment

Lateral group 2: (superficial)

1. Brachioradialis.
2. Extensor carpi radialis longus.

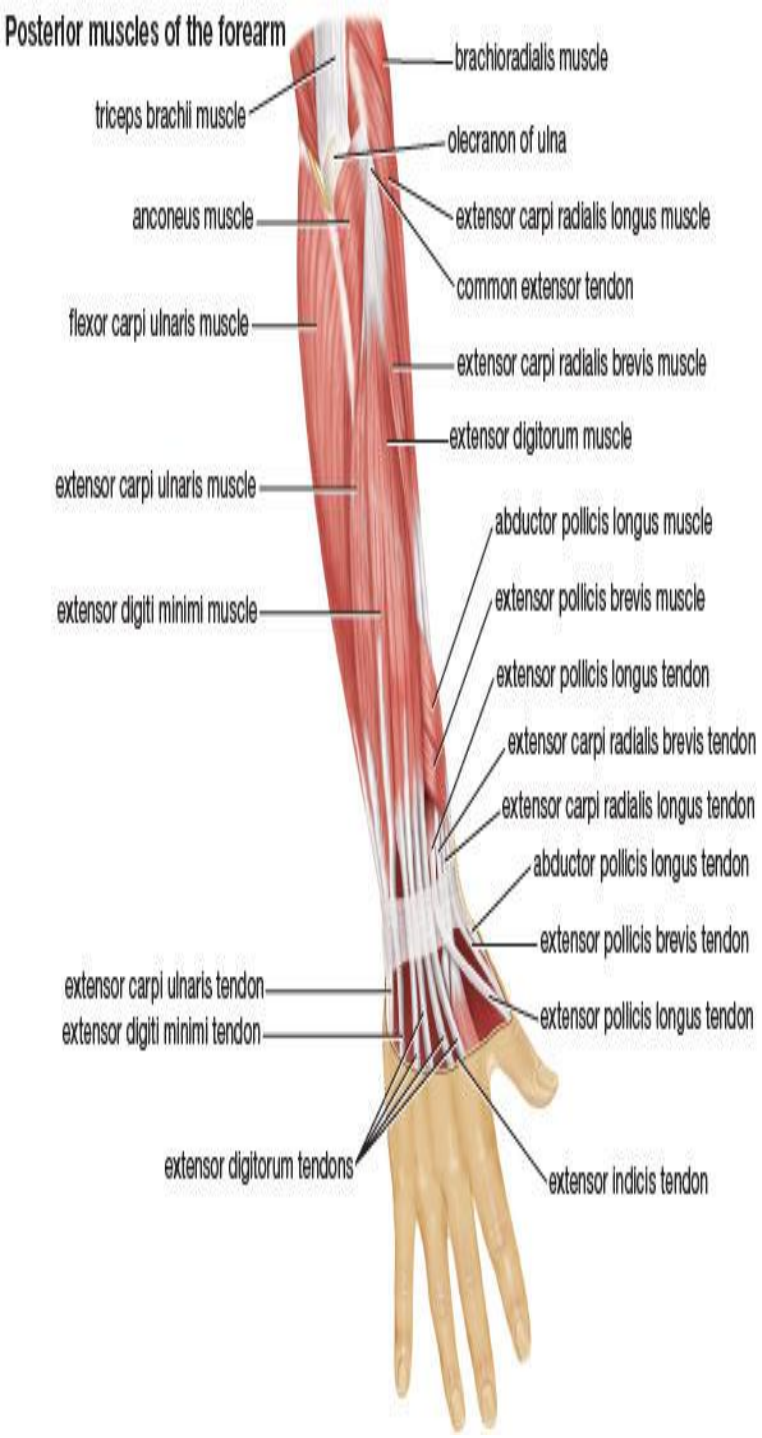
(These two muscles arises from the *lateral supracondylar ridge*).

Deep group 5: (3 to thumb+ 1 to index + supinator)

- Supinator.
- Abductor pollicis longus.
- Extensor pollicis brevis.
- Extensor pollicis longus.
- Extensor indices.

Superficial group 5:

1. Extensor carpi radialis brevis.
2. Extensor digitorum .
3. Extensor digiti minimi.
4. Extensor carpi ulnaris.
5. Anconeus .



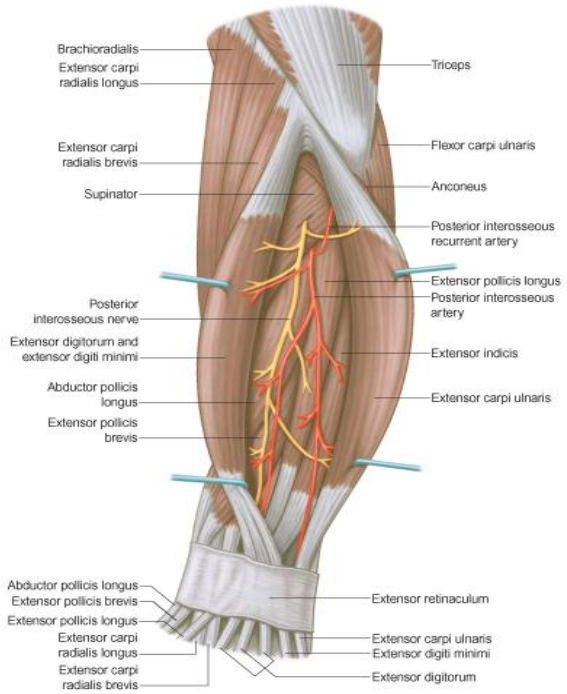
I- Superficial group (extensors)

Medial to lateral

- Brachioradialis
- Extensor carpi radialis longus
- Extensor carpi radialis brevis
- Extensor digitorum
- Extensor digiti minimi
- Extensor carpi ulnaris
- Anconeus

All arises from the **common extensor origin**, (front of lateral epicondyle of the humerus), **EXCEPT:**

- Brachioradialis
- Extensor Carpi radialis longus



Insertion:

Extensor carpi radialis brevis:

base of 3rd metacarpal bone

Extensor digitorum:

Extensor expansion of the medial 4 fingers

Extensor digiti minimi:

Extensor expansion of the little finger

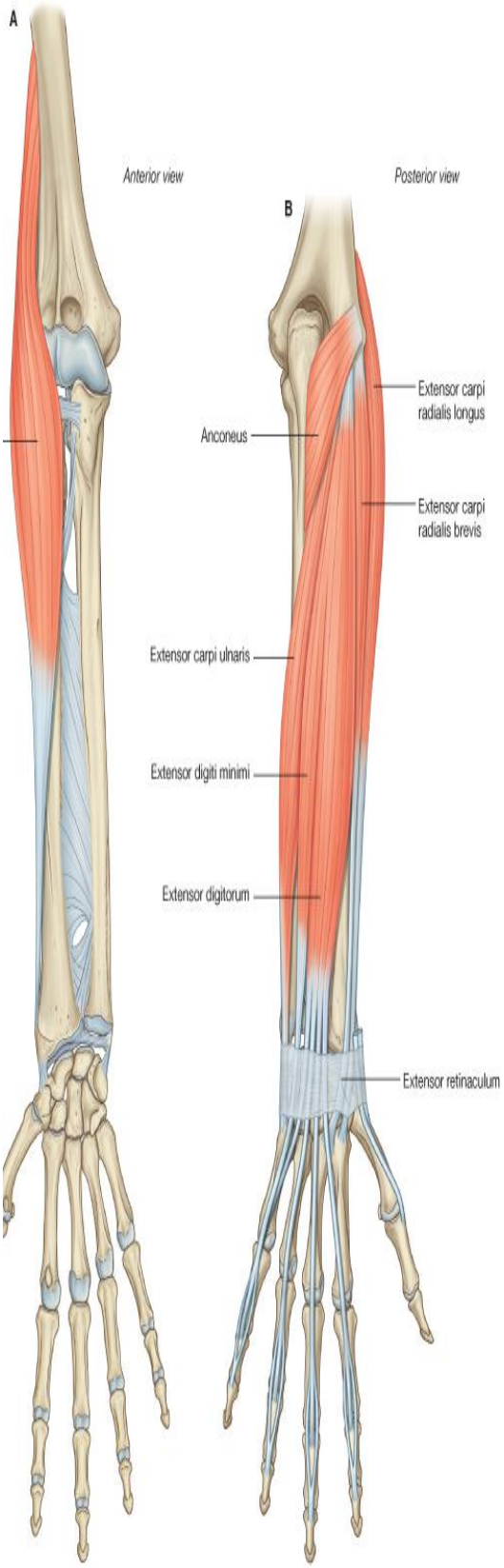
Extensor carpi ulnaris:

Base of the 5th metacarpal bone

Anconeus:

Lateral surface of olecranon and superior part of posterior surface of ulna

- **Brachioradialis**
- **Origin:**
- Lateral supracondylar ridge of humerus
- **Insertion:**
- Base of styloid process of radius
- **Action:**
- Flexes forearm; (elbow).
- Rotates forearm to the midprone position



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- **Extensor Carpi radialis longus**
- **Origin:**
- Lateral supracondylar ridge of humerus
- **Insertion:**
- Posterior surface of base of second metacarpal bone
- **Action:**
- Extends and abducts hand at wrist joint

II- Deep group:

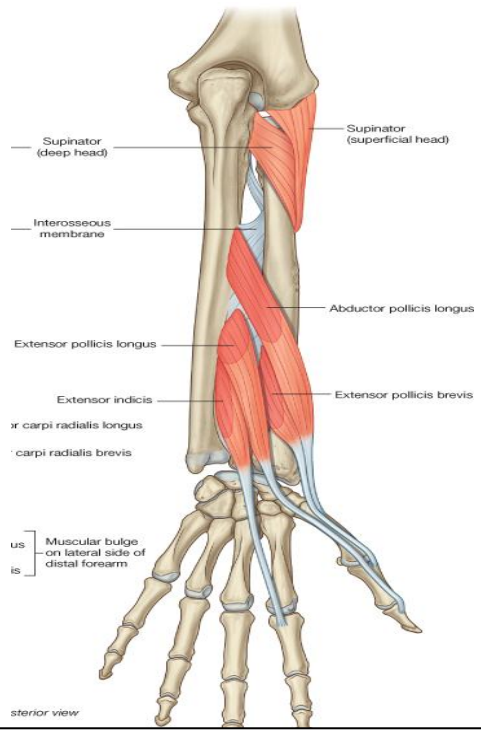
1- Abductor pollicis longus

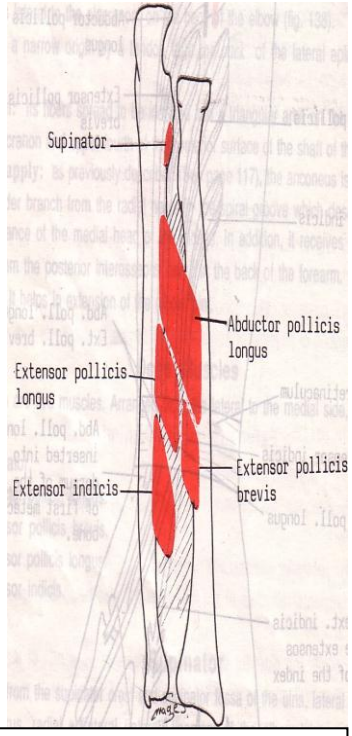
2- Extensor pollicis brevis

3- Extensor pollicis longus

4- Extensor indicis

5- Supinator





Origin:

Abductor pollicis longus:

Posterior surfaces of ulna, radius and interosseous membrane

Extensor pollicis brevis:

Posterior surfaces of radius and interosseous membrane

Extensor pollicis longus:

Posterior surface of middle 1/3 of ulna and interosseous membrane

Extensor indicis:

Posterior surface of ulna and interosseous membrane

Supinator:

Lateral epicondyle of humerus, radial collateral and annular ligaments, supinator fossa and crest of ulna

Insertion:

Abductor pollicis longus:

Base of 1st metacarpal

Extensor pollicis brevis:

Base of proximal phalanx of thumb

Extensor pollicis longus:

Base of distal phalanx of thumb

Extensor indicis:

Extensor expansion of 2nd digit

Supinator:

Lateral, posterior and anterior surfaces of proximal 1/3 of radius

All posterior compartment of forearm are supplied by Deep branch of radial nerve **(posterior interosseous nerve), EXCEPT ABE**

A, **A**nconeus

B, **B**rachioradialis

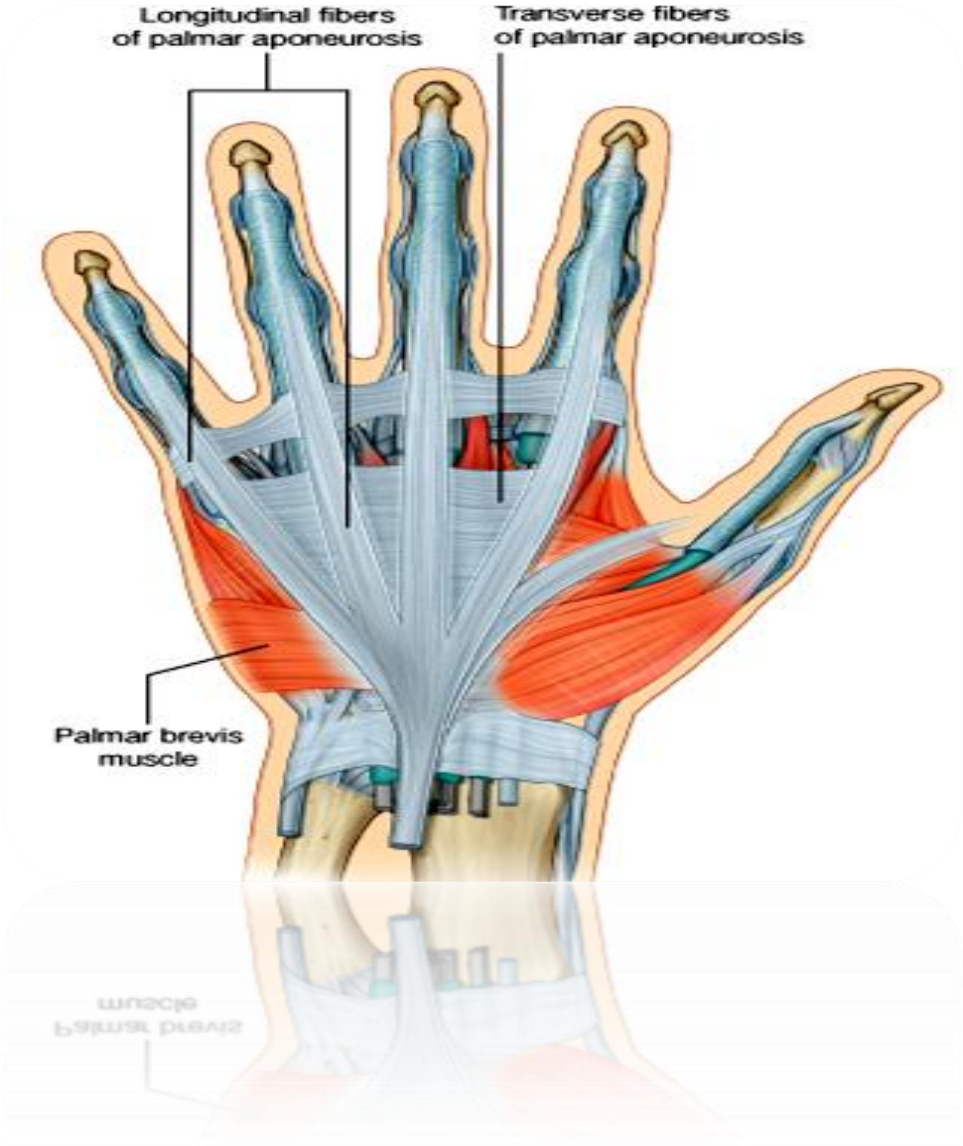
E, **E**xtensor carpi radialis longus

These 3 muscles are supplied by the **radial nerve itself**

Muscles of Hand

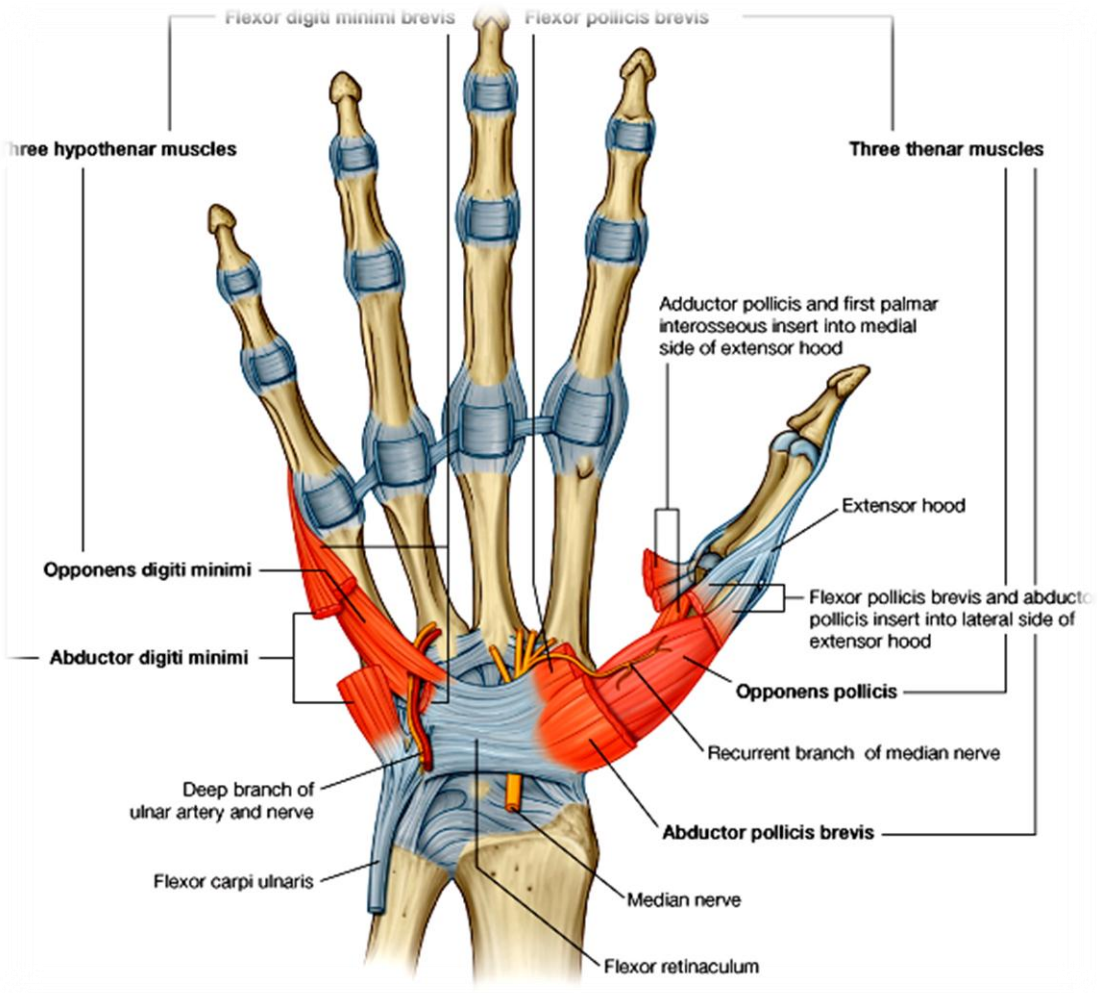
Palmaris Brevis

ORIGIN	INSERTION	Nerve supply	ACTION
Flexor retinaculum & Palmar aponeurosis	*Skin of Palm*	*Ulnar* *(Superior Branch)*	*Corrugation of skin to improve grip of palm*



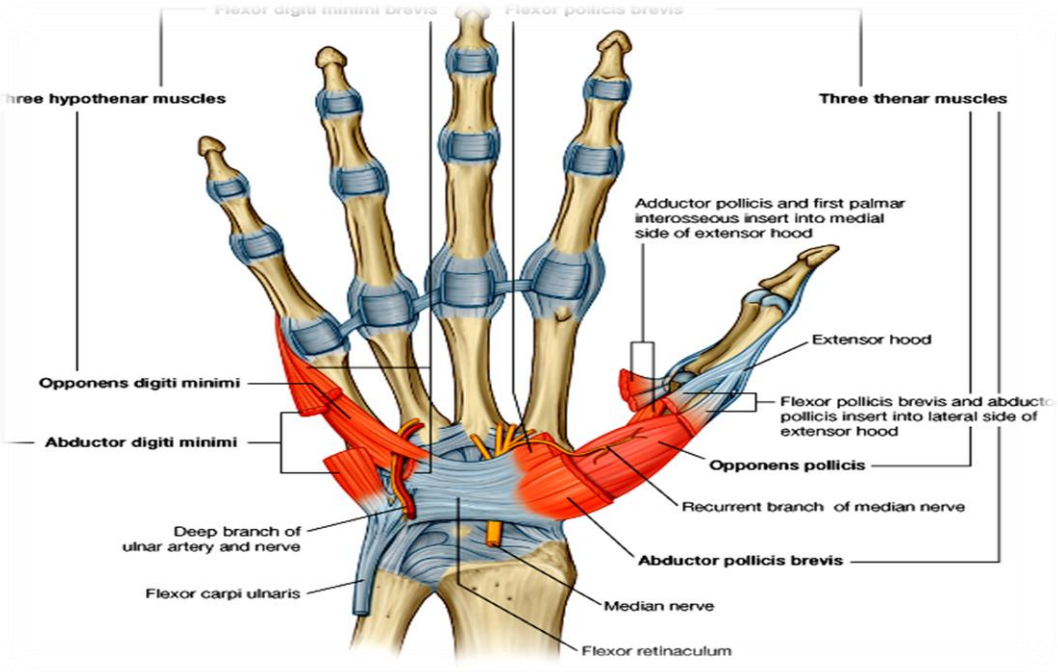
Thenar Eminence

Name	*Origin*	*Insertion*	Nerve supply	Action
Abductor Digiti minimi	**Pisiform**	Base of proximal phalanx	**Ulnar**	Abduction
Flexor Digiti minimi	**Flexor retinaculum**	Base of proximal phalanx		Flexion
Opponens Digiti minimi	**Flexor retinaculum**	Medial Border of 5th Metacarpal		Pulls the 5th metacarpal forward (Cupping the palm)



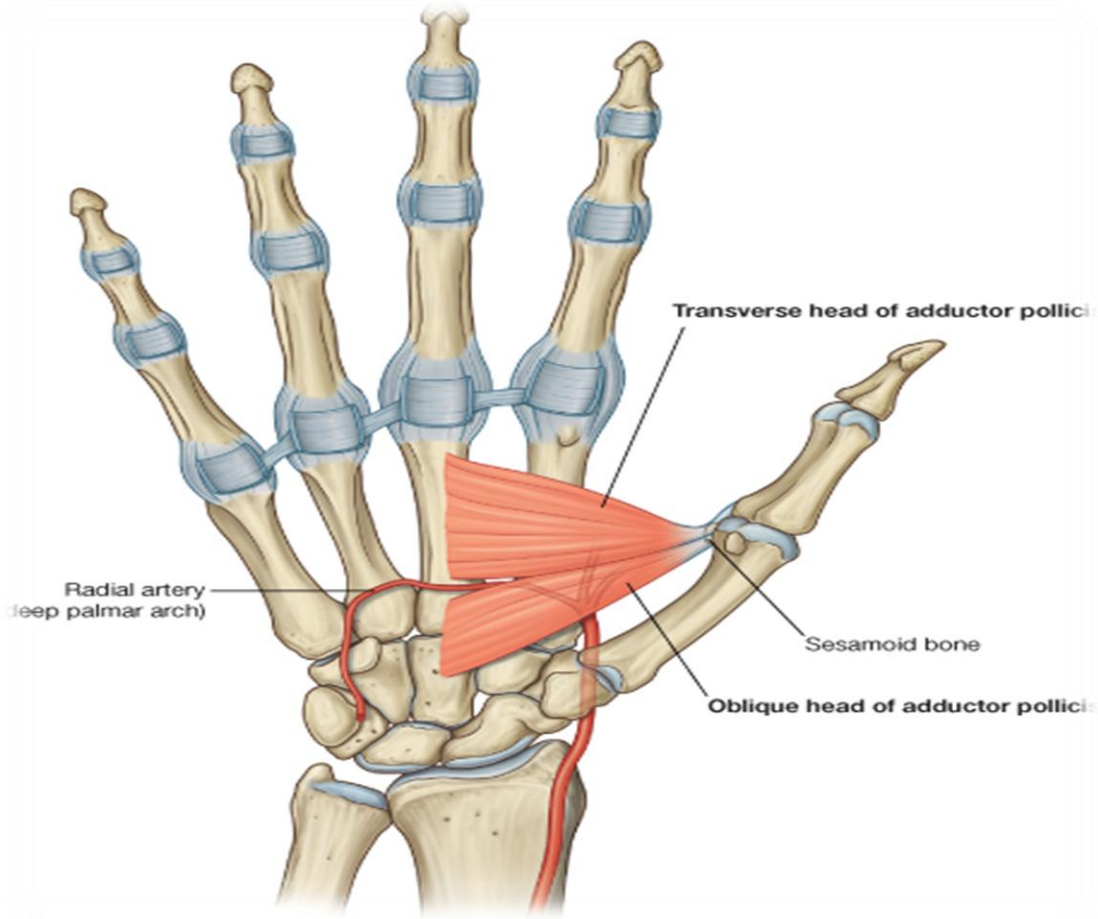
Thenar Eminence

Name	Origin	Insertion	Nerve supply	Action
Abductor pollicis brevis	- Flexor retinaculum - Scaphoid - Trapezium	Base of proximal phalanx of thumb	Median nerve	Abduction
Flexor Pollicis brevis	Flexor retinaculum	Base of proximal phalanx of thumb		Flexion
Opponens pollicis	Flexor retinaculum	Shaft of the metacarpal of thumb		opposition



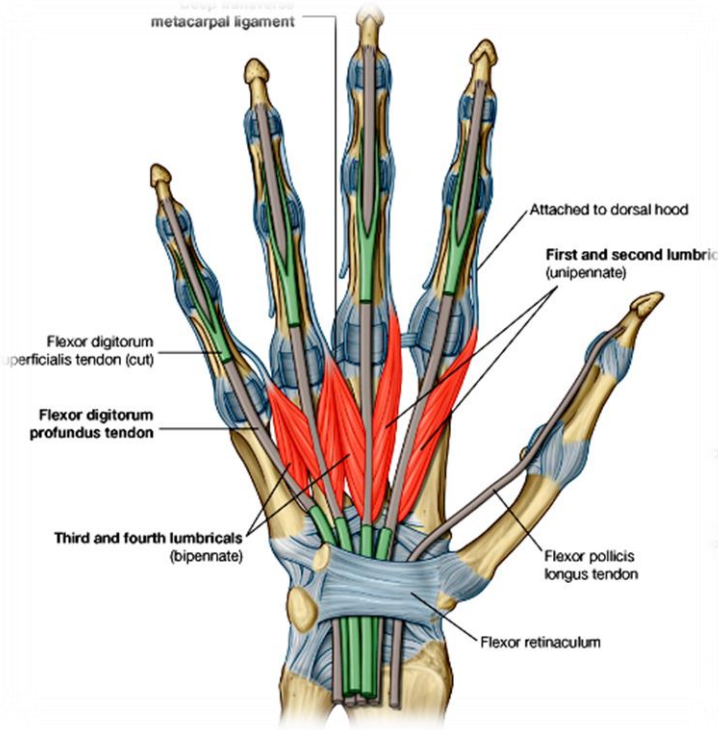
Adductor Pollicis Brevis

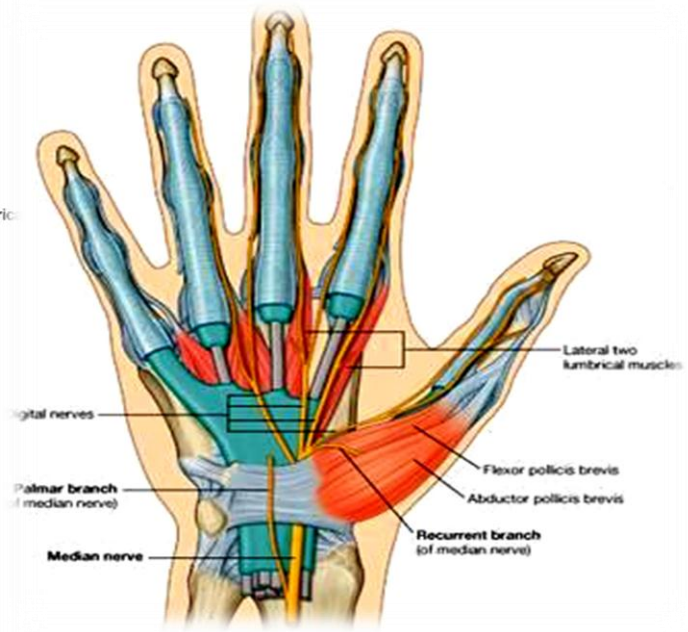
Origin	Insertion	Action	Nerve supply
Oblique head : 2^{nd} & 3^{rd} metacaral **Transverse head:** 3^{rd} metacarpal	base of proximal phalanx of thumb	Adduction of thumb	Ulnar



Lumbrical Muscles (4)

ORIGIN	*INSERTION*	NS	Action
Tendons of Flexer digitorum profundus	*Extensor Expansion*	1ST & 2ND : *(MEDIAN nerve).* *3RD & 4TH : ULNAR N (Deep branch)*	Flex the metacarpophalangeal joints & extend interphalangeal joints except thumb

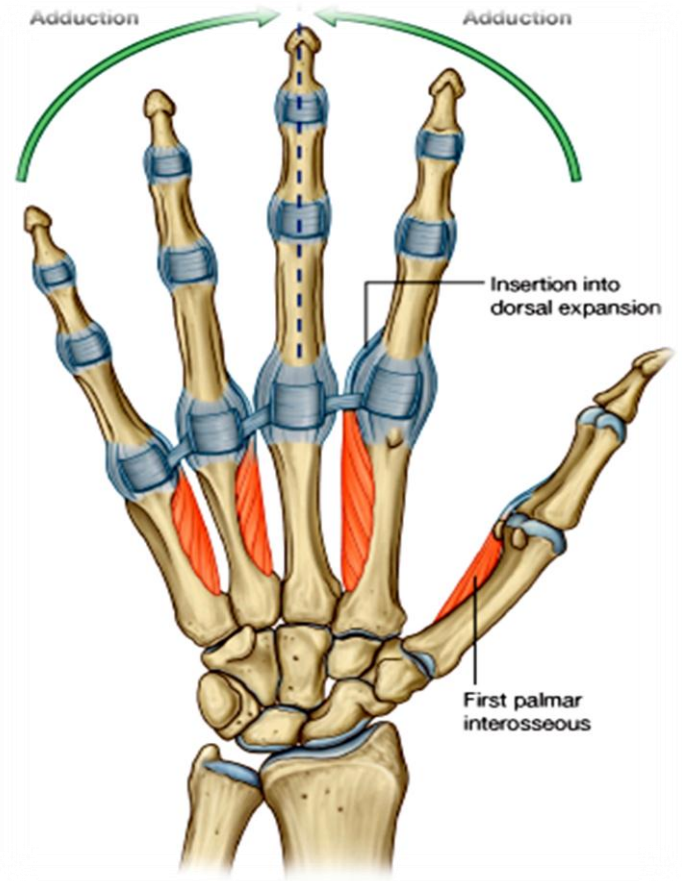




Interossei muscles

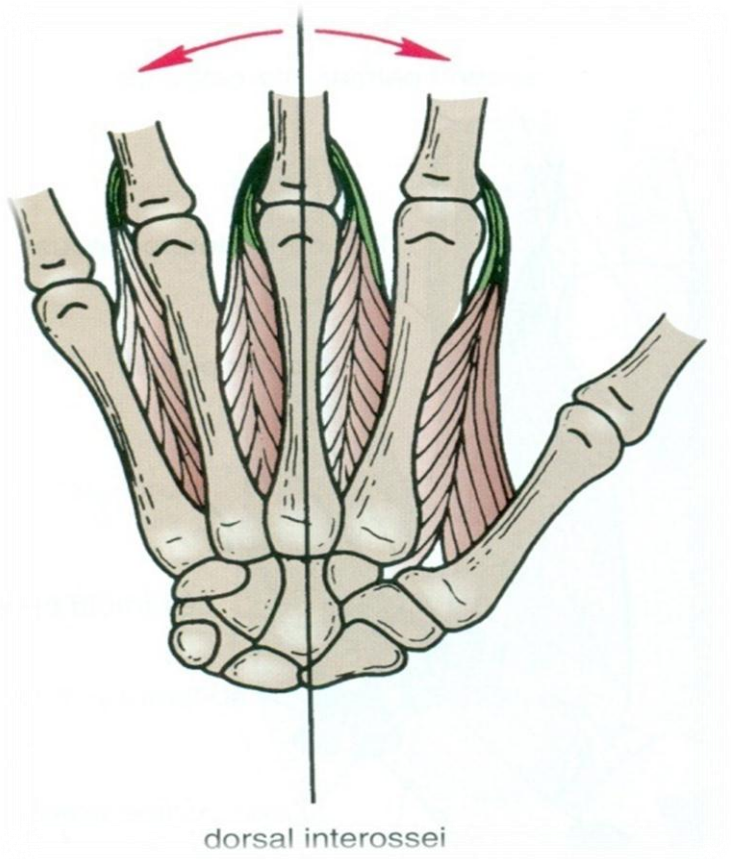
Palmar interossei (4)

ORIGIN	*INSERTION*	Nerve supply	ACTION
1st : base of 1st metacarpal. **Other three**: From anterior surface of shafts of 2nd , 4th & 5th metacarpals.	Proximal phalanges of thumb, index, ring, & little fingers and dorsal extensor expansion of each finger	**Deep branch of Ulnar nerve**	Adduct fingers toward center of the 3rd finger



Dorsal interossei (4)

ORIGIN	INSERTION	Nerve supply	Action
Contiguous sides of shafts of metacarpals	Proximal Phalanges of index, middle & ring finger & dorsal extensor expansion	**Deep branch of ulnar nerve**	Abduct fingers away from center of 3rd finger flex metacarpo-phalangeal & extend inter phalangeal joints



The course, and distribution of the nerves of upper limb

Axillary nerve:

Origin: Root value; (C 5 & 6)

Posterior cord of brachial plexus

Course:

- It passes downward and laterally along the posterior wall of the axilla, then it exit the axilla

- Then, it passes posteriorly around the surgical neck of the humerus

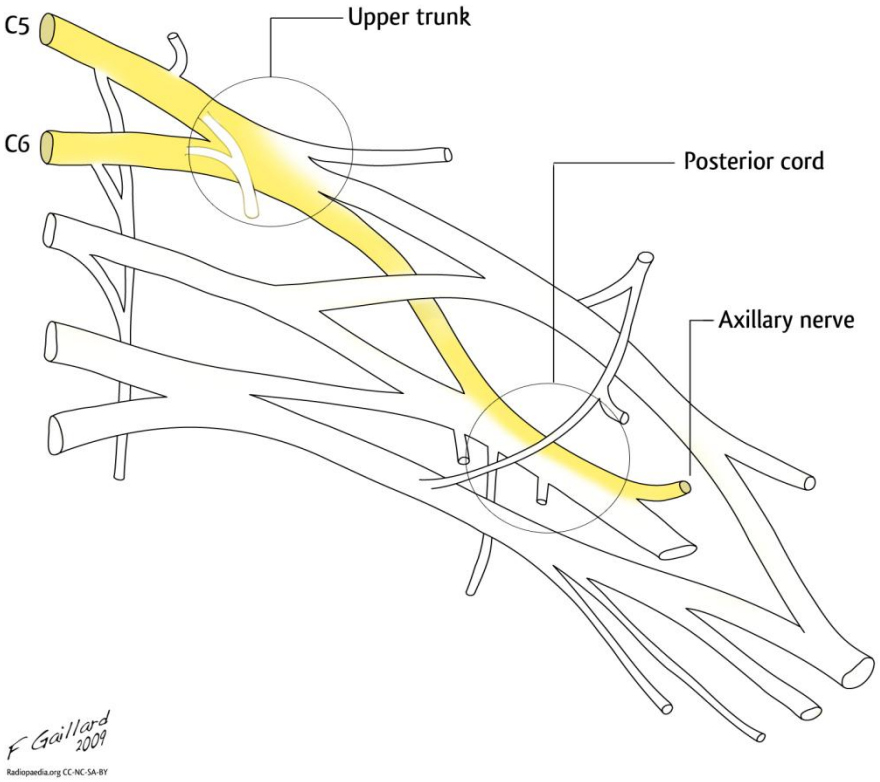
Branches:

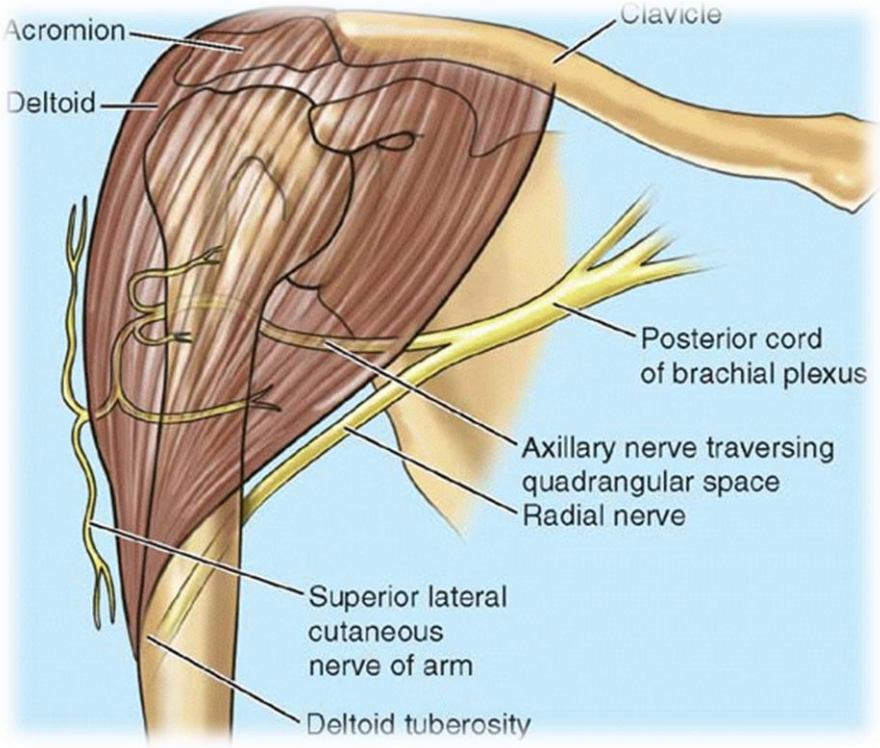
- Motor to:

Deltoid and teres minor muscles

- Sensory to:

Superior lateral cutaneous nerve of arm





Median nerve:

Origin: Root value; (C5,6,7, 8, T1)

Posterior cord of brachial plexus

Course:

In the arm:

- It enters the arm from the axilla at the inferior margin of the teres major muscle

- It passes downwards along the medial side of the arm in the anterior compartment

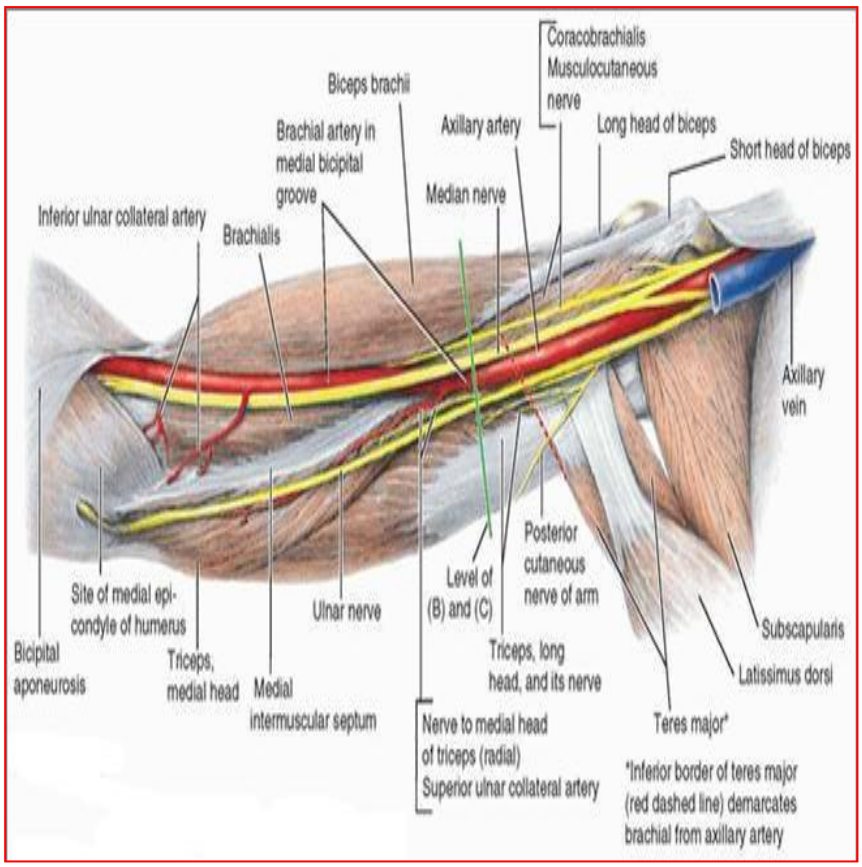
- **In upper ½ of the arm**, it lies lateral to the brachial artery

- **In the middle of the arm**, it crosses the artery and descends along its medial side

- Then descends anterior to the elbow joint

Branches:

-No major branches except one branch for a muscle of forearm (Pronator teres)



Median nerve:

In the forearm:

Median nerve enters the forearm from the cubital fossa between the 2 heads of pronator teres

Branches:

Innervate all muscles of anterior compartment of forearm, **EXCEPT:**

- Flexor carpi ulnaris

- Medial half of flexor digitorum profundus

(Ulnar neve)

In the hand:

Pass deep to flexor retinaculum

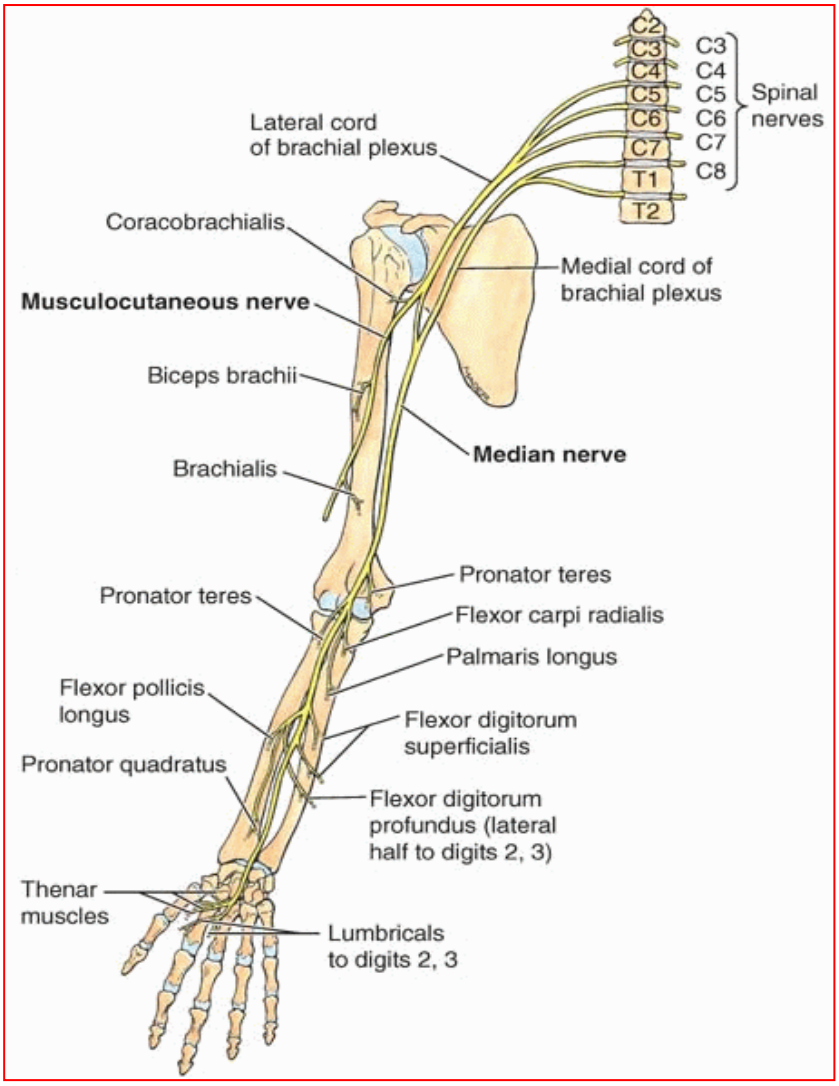
Innervates:

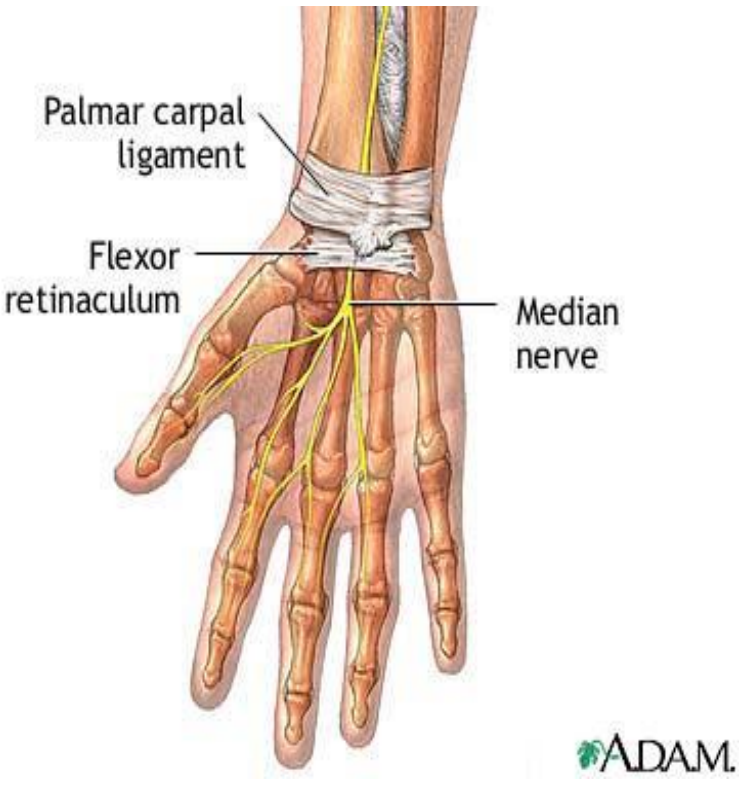
- 3 thenar eminence

- 2 lateral lumrical muscles

- Skin over the palmar surface of the lateral three and one-half fingers

- lateral 2/3rd of the palm of the hand





Radial nerve:

Origin:

Posterior cord of the brachial plexus

Supplies:

All Muscles of the posterior compartment of the arm & the fore arm

Course:

In the arm:

- winds around the back of the arm in the **Spiral Groove**

- accompanied by the **Profunda Vessels**

- lies directly in **contact** with the shaft of the humerus

In the forearm:

- pierces the Lateral **Intermuscular septum**

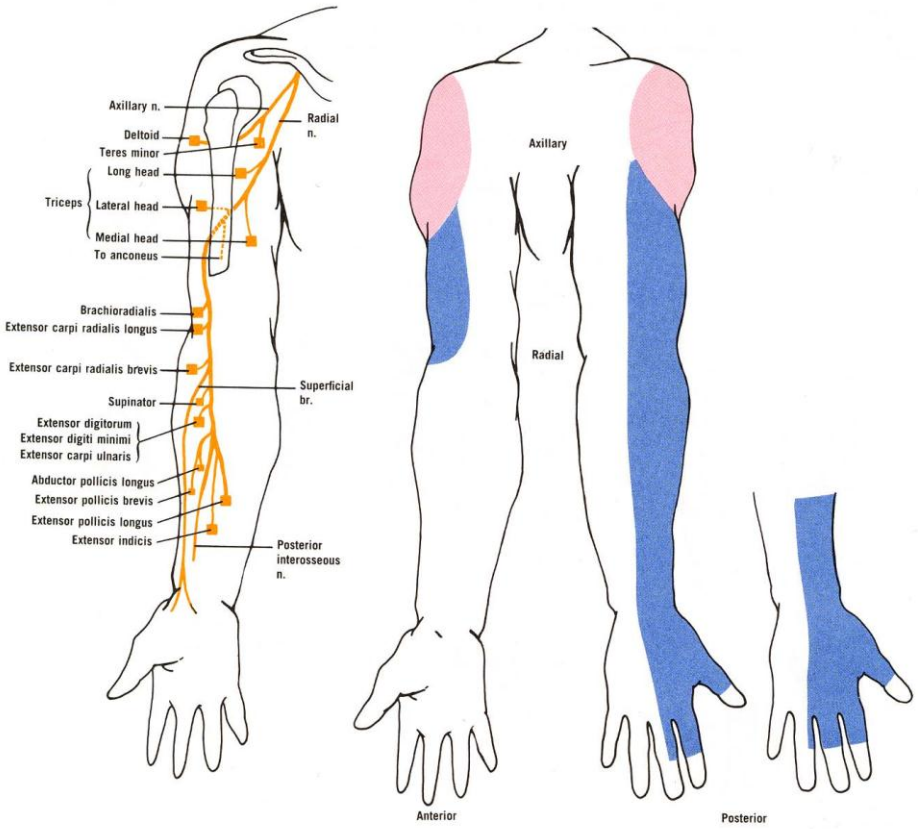
- Descends in front of the **Lateral Epicondyle**

- Passes forward into the **Cubital Fossa**

Branches:

- Superficial

- Deep



Branches

Arising in the Axilla:

Cutaneous:

Posterior cutaneous nerve of arm.

Muscular:

Long & Medial Heads of Triceps.

Arising in the Spiral Groove:

Cutaneous:

1. *Lower lateral cutaneous nerve of arm.*
2. *Posterior cutaneous nerve of forearm.*

Muscular:

- *Lateral & Medial heads of triceps.*
- *Anconeus.*

Arising close to Lateral Epicondyle:

Muscular to:

Brachioradialis.

Extensor carpi radialis longus.supinator.

Articular *to the elbow joint*

Superficial branch:

- It descends under cover of Brachioradialis

- Lateral to radial artery

- It emerges beneath the brachioradialis tendon

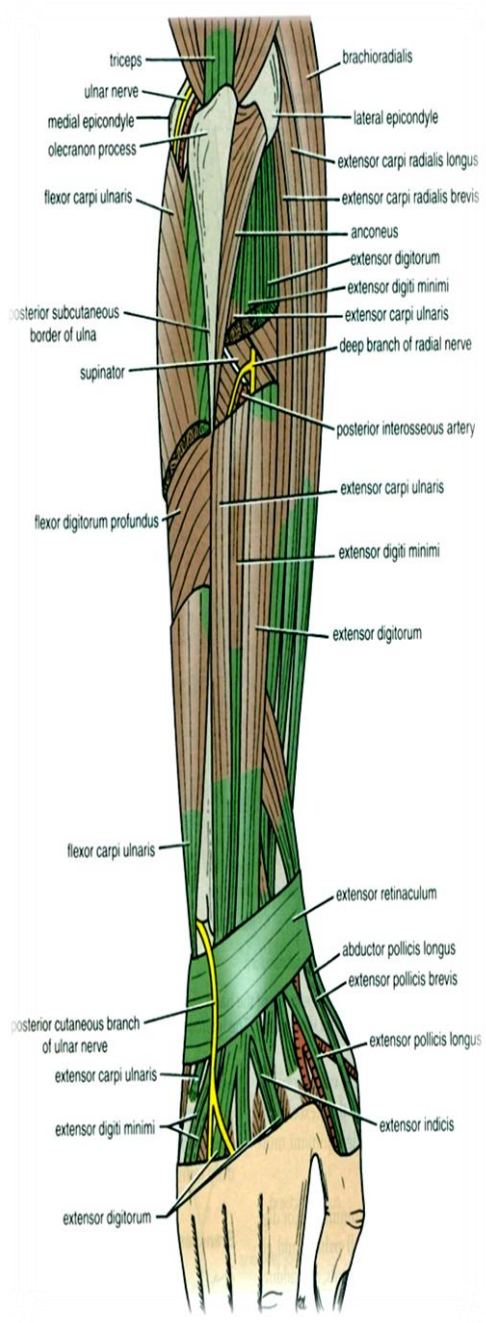
Termination:

At the posterior surface of the wrist, it divides into:

***terminal branches** that supply the skin on the:*

*- lateral **two thirds** of the posterior surface of the hand*

*- posterior surface over the proximal phalanges of the lateral **three and a half fingers***



Deep branch:

- Winds around the neck of the radius, within the supinator muscle

- enters the posterior compartment of the forearm

It supplies:

- Extensor carpi radialis brevis

- Extensor carpi ulnaris

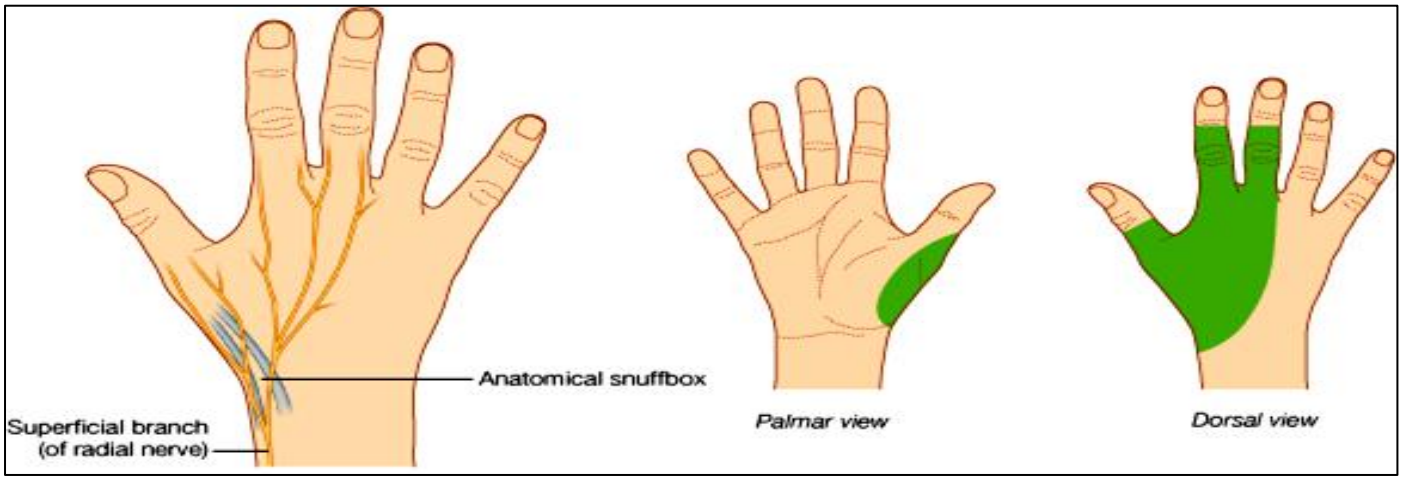
- Supinator

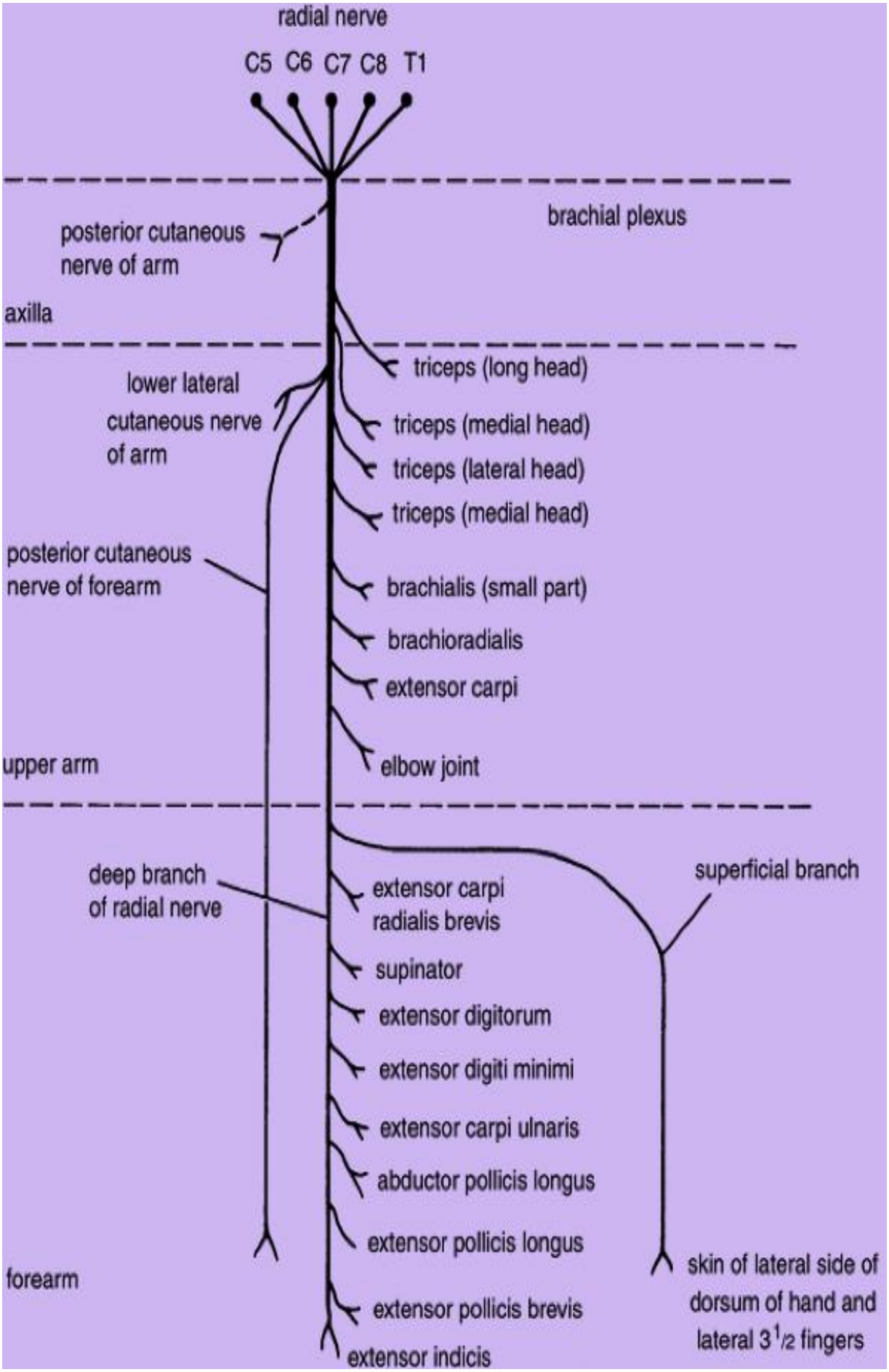
- Abductor pollicis longus

- Extensor pollicis brevis

- Extensor pollicis longus

- Extensor indicis




radial nerve
C5 C6 C7 C8 T1
brachial plexus
posterior cutaneous nerve of arm
axilla
triceps (long head)
lower lateral cutaneous nerve of arm
triceps (medial head)
triceps (lateral head)
triceps (medial head)
posterior cutaneous nerve of forearm
brachialis (small part)
brachioradialis
extensor carpi
upper arm
elbow joint
deep branch of radial nerve
superficial branch
extensor carpi radialis brevis
supinator
extensor digitorum
extensor digiti minimi
extensor carpi ulnaris
abductor pollicis longus
extensor pollicis longus
forearm
skin of lateral side of dorsum of hand and lateral 3 1/2 fingers
extensor pollicis brevis
extensor indicis

Ulnar nerve:

Origin:

Medial cord of BP.

Course:

- Descends along the ***medial side of the following arteries:***

Axillary.

Brachial.

- *Pierces the Medial Intermuscular Septum.*

- *Passes behind the Medial Epicondyle of the humerus.*

In the forearm

- Enters the anterior compartment

- Descends Behind the Flexor Carpi Ulnaris

- Medial to Ulnar Artery.

In the wrist:

Passes:

- Anterior to Flexor Retinaculum

- Lateral to Pisiform bone.

- Medial to Ulnar artery.

Branches:

- Superficial

- Deep

Branches

In the Forearm:

A. Muscular to *(1 & 1/2 muscles)*

- Flexor Carpi Ulnaris

- Medial 1l2 of Flexor Digitorum Profundus

b. Articular to *Elbow joint*

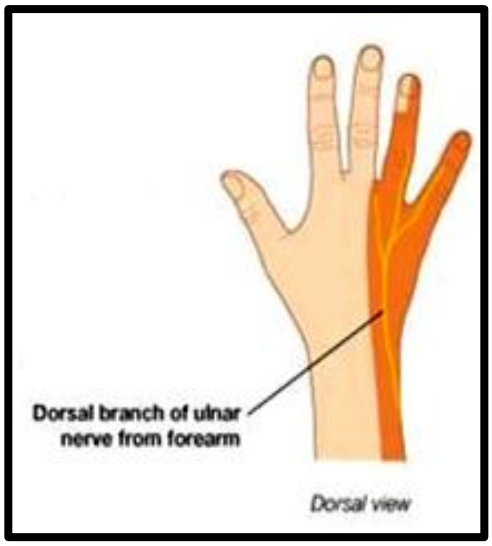
C. Cutaneous

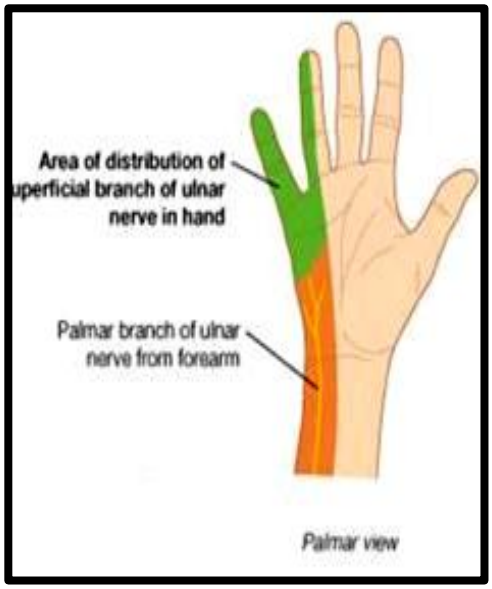
1. Dorsal (posterior) cutaneous

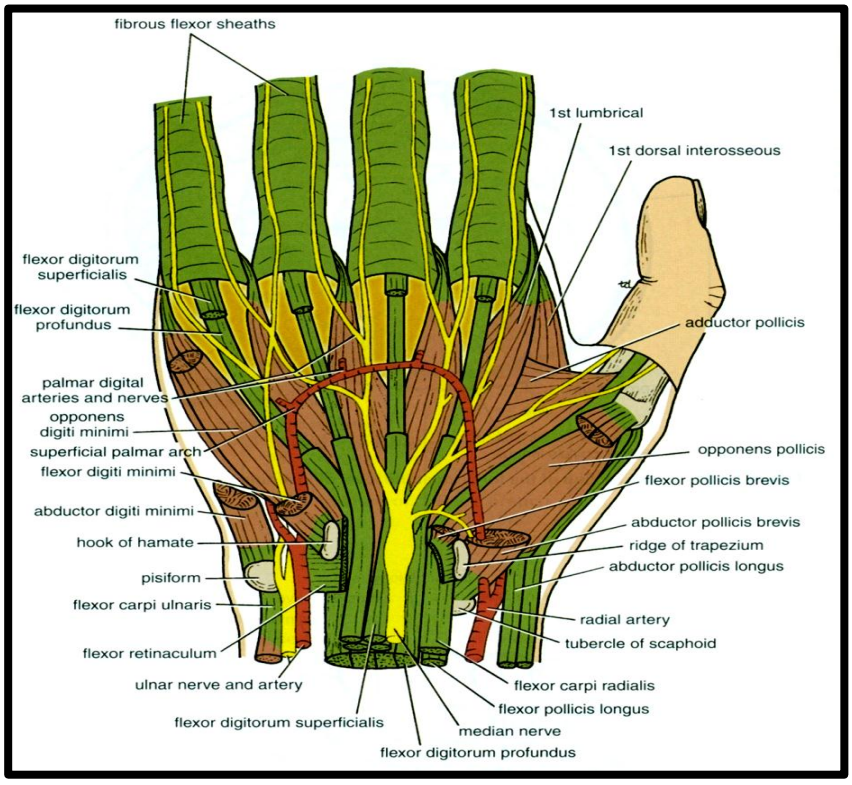
Supplies the skin over the back of Medial side of the hand & Medial 1+1/2 fingers

2. Palmar cutaneous

Supplies the skin over the Medial part of the palm







Superficial Terminal Branch:

Gives:

*- **Muscular** branches to Palmaris Brevis*

*- **Cutaneous** branches to the skin over the Palmar aspect of the **medial 1+ ½ fingers** (including nail beds)*

Deep Terminal Branch:

(A) Muscular branches to:

-Hypothenar Eminence

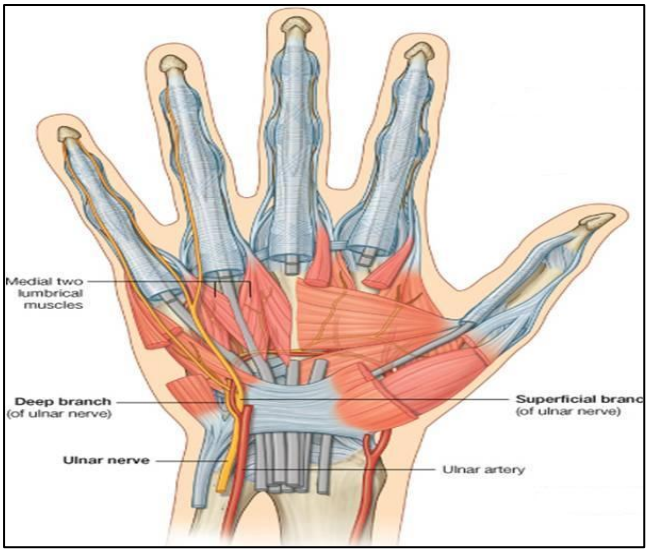
- All Interossei (Palmar & Dorsal)

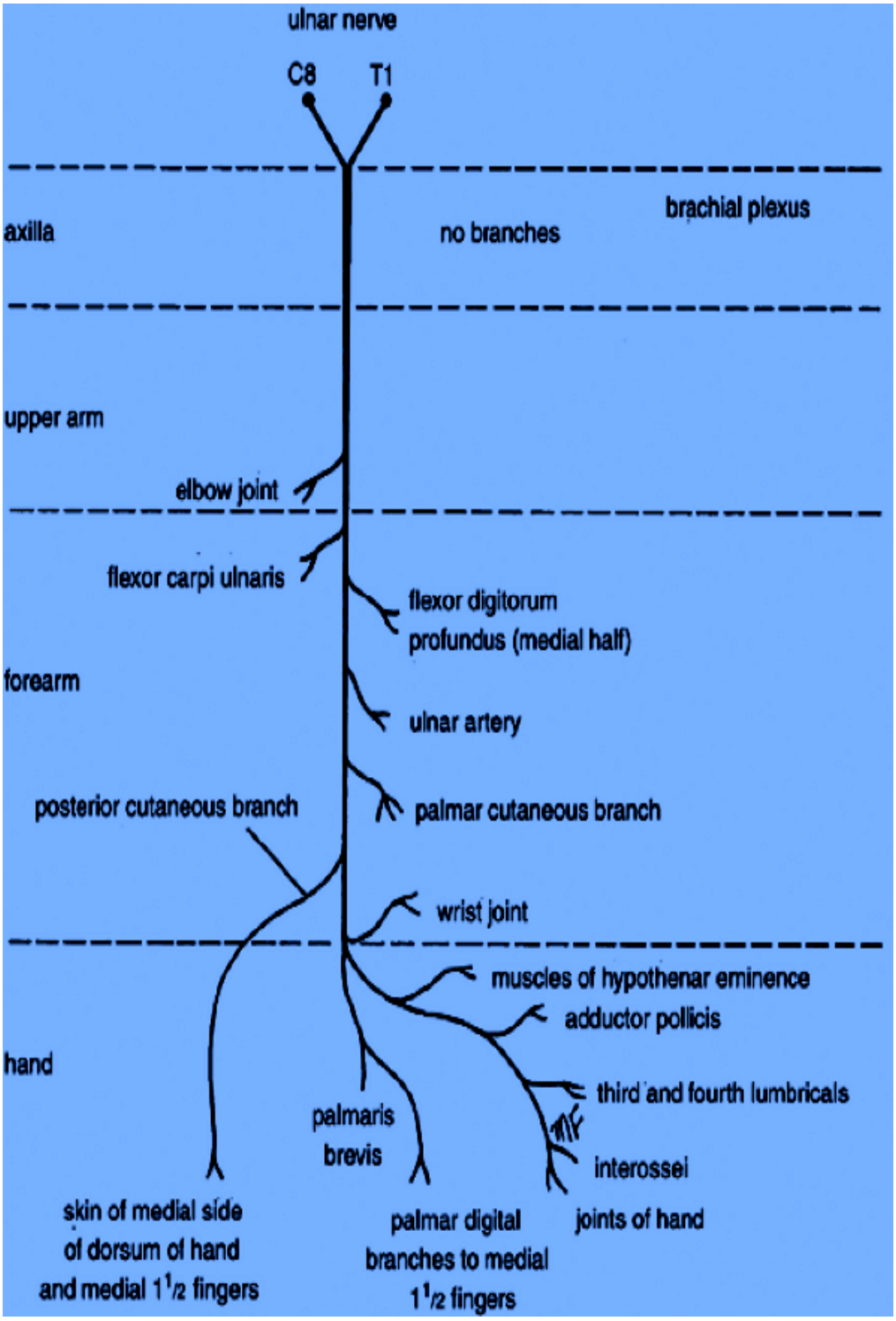
3rd & 4th Lumbricals

- Adductor pollicis

(B) Articular branches to:

Carpal joints





Musculocutaneous nerve:

Origin:

- lateral cord of the brachial plexus

- derived from C5, C6 and C7

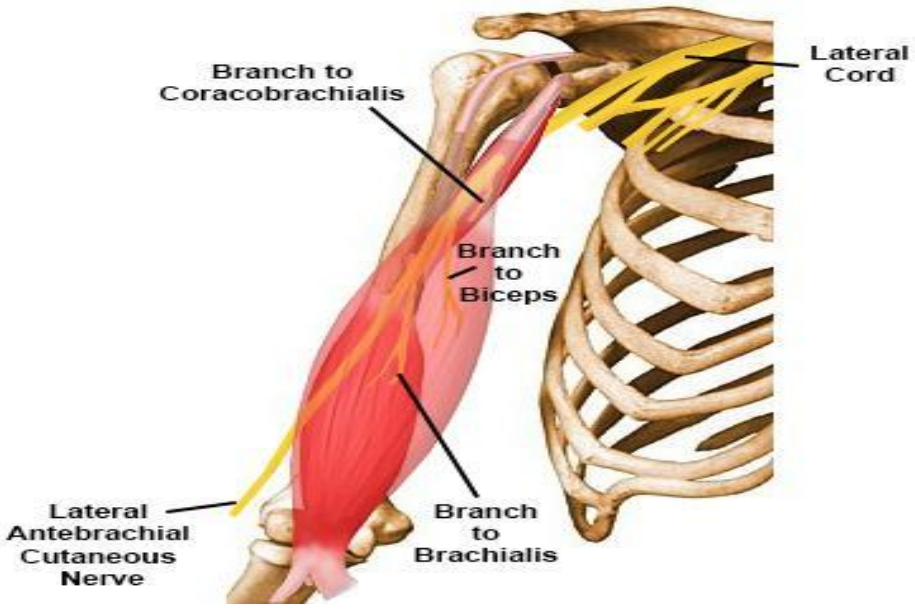
Course:

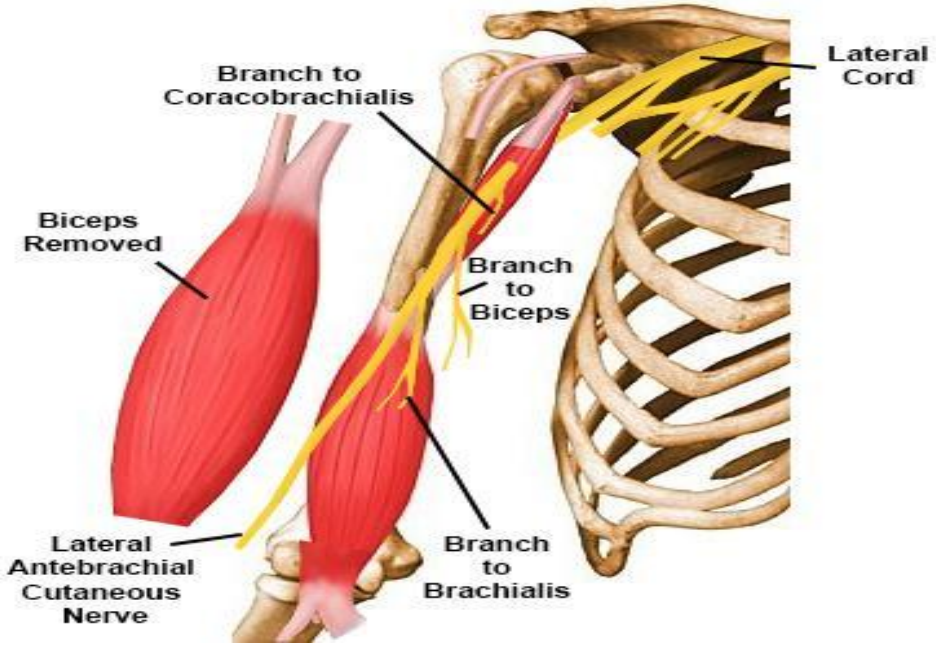
- pierces coracobrachialis

- runs between biceps and brachialis in the anterior compartment to enter the lataeral aspect of the arm

- a little above the elbow it pierces the deep fascia lateral to the tendon of the Biceps brachii

- emerges lateral to distal bicep tendon and brachoradialis to form ***lateral antebrachial cutaneous nerve***





Innervation:

- *Motor*
  - *coracobrachialis*
  - *biceps*
  - *medial brachialis*
- *Sensory*
  - *lateral antebrachial cutaneous nerve*
    - *forearm sensory*

The course and braches of main arteries of upper limb

Axillary artery:

Begins at:

the lateral border of the 1st rib as continuation *of the subclavian artery*

1st part:

- Extends from the lateral border of 1st rib to upper border of the pectoralis minor muscle

Branches:

Highest thoracic artery

2nd part:

- Lies behind the pectoralis minor muscle

Branches:

- Thoracoacromial artery

- Lateral thoracic artery

3rd part:

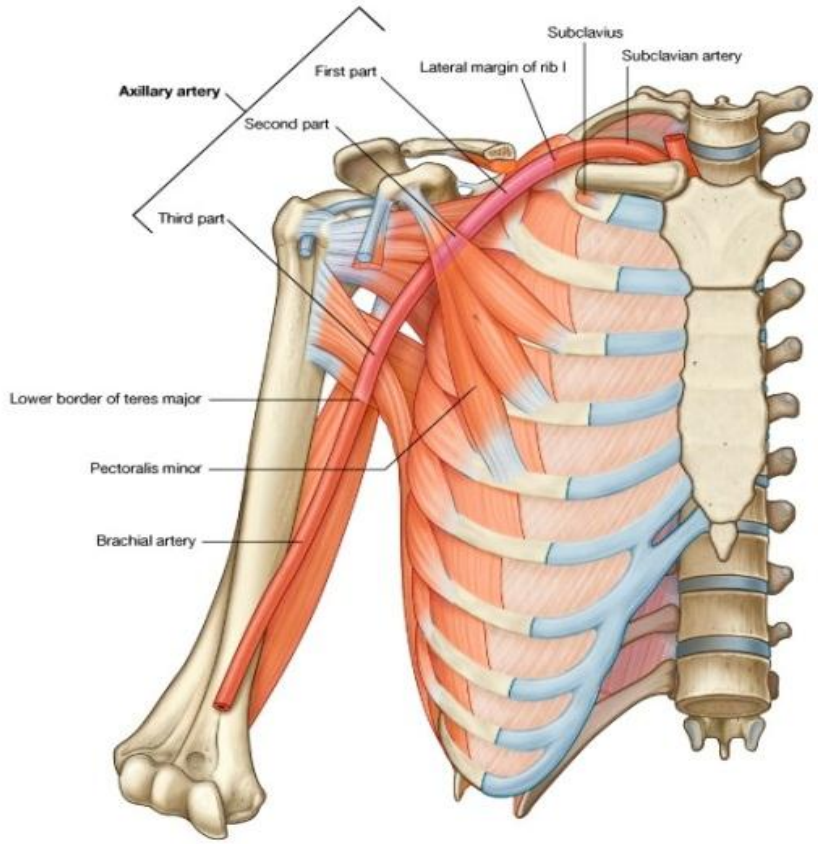
Extends from the lower border of pectoralis minor muscle to the lower border teres major muscle

Branches:

- Subscabular

- Anterior circumflex humeral

- Posterior circumflex humeral



Brachial artery:

- *continuation of the axillary artery at the lower border of teres major muscle*

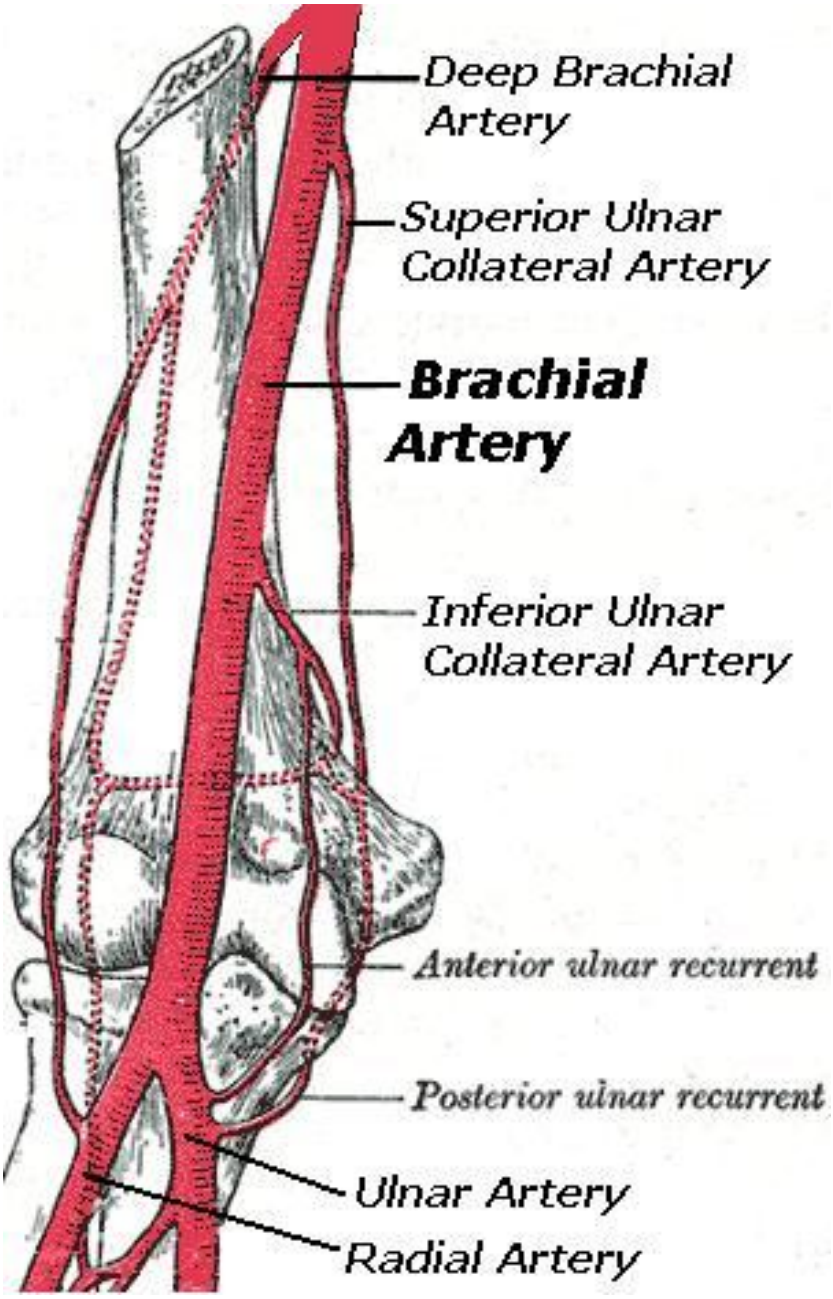
- *Terminates **opposite neck of radius** by dividing into radial & ulnar arteries*

Branches:

- *Profunda brachii*

- *Superior ulnar collateral*

- *Inferior ulnar collateral*



Ulnar Artery:

In the forearm:

Course:

- The larger of the two terminal branches of the brachial artery

- Begins in the cubital fossa at the level of neck of radius

-Descends through the anterior compartment of the forearm

- Pass anterior to flexor retinaculum

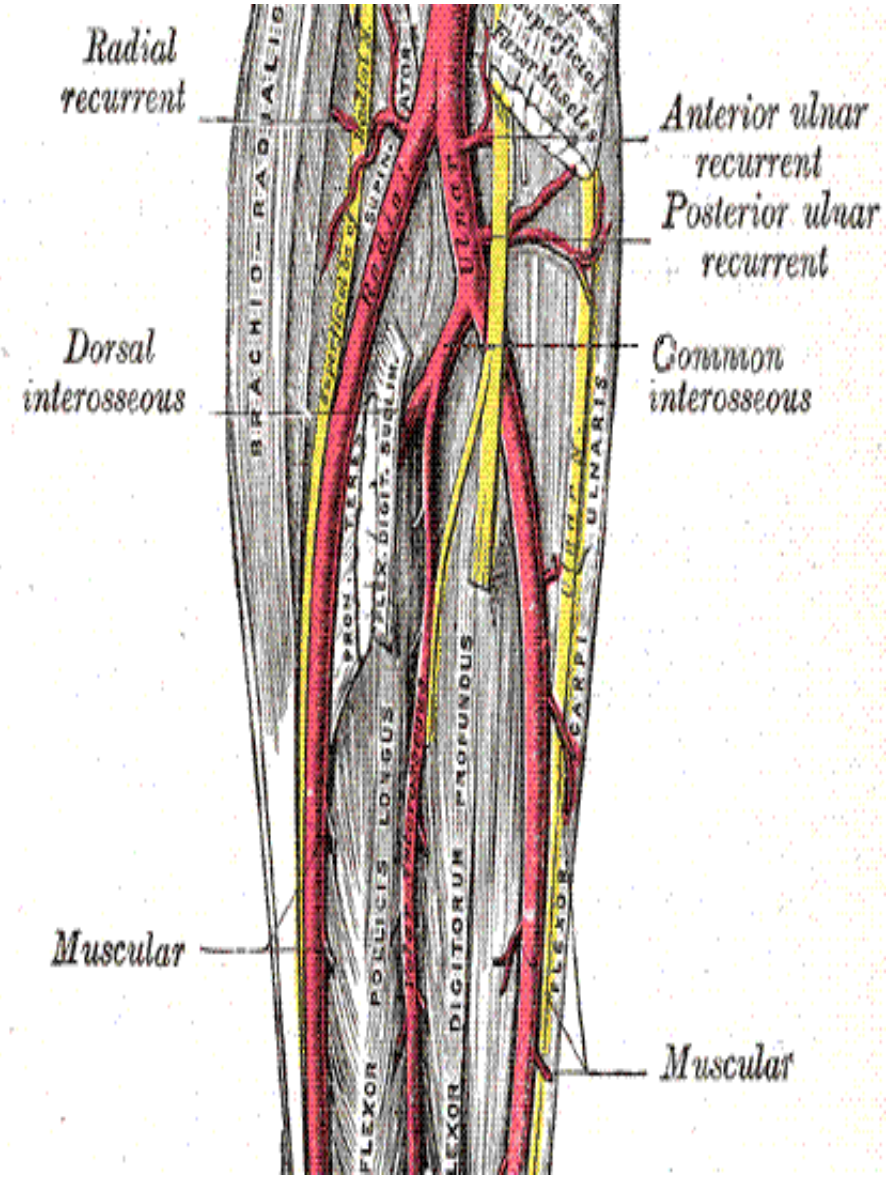
- Ends by forming the superficial palmer arch

Branches:

- Recurrent branch for anastomosis around the elbow joint

- Common interosseous artery , which gives: **anterior** and **posterior** interosseous arteries

- Branch to anastomoses around the wrist joint



Radial artery:

In the forearm:

Course:

- The smaller of the two terminal branches of the brachial artery

- Begins in the cubital fossa at the level of neck of radius

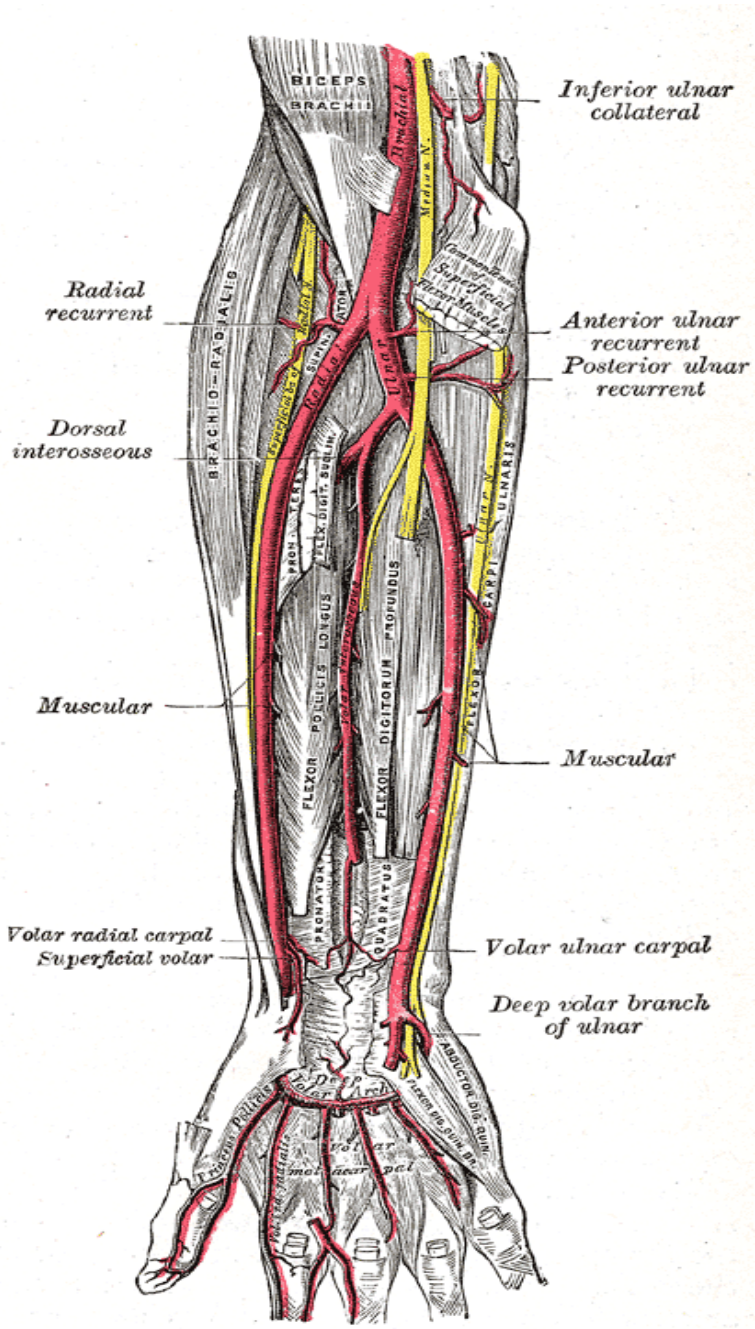
- Descends downward and laterally

- Leaves the forearm by winding around the lateral aspect of the wrist to reach the dorsum of the hand

Branches:

- Recurrent branch for anastomosis around the elbow joint

*- **Superficial palmar branch**, joins the ulnar artery to form the **superficial palmar arch***



Ulnar artery:

In the hand:

Enters the hand:

- anterior to the flexor retinaculum

- on the lateral side of the ulnar nerve and pisiform bone

- Gives a deep branch

- Continue as the superficial palmar arch

Radial artery:

In the hand:

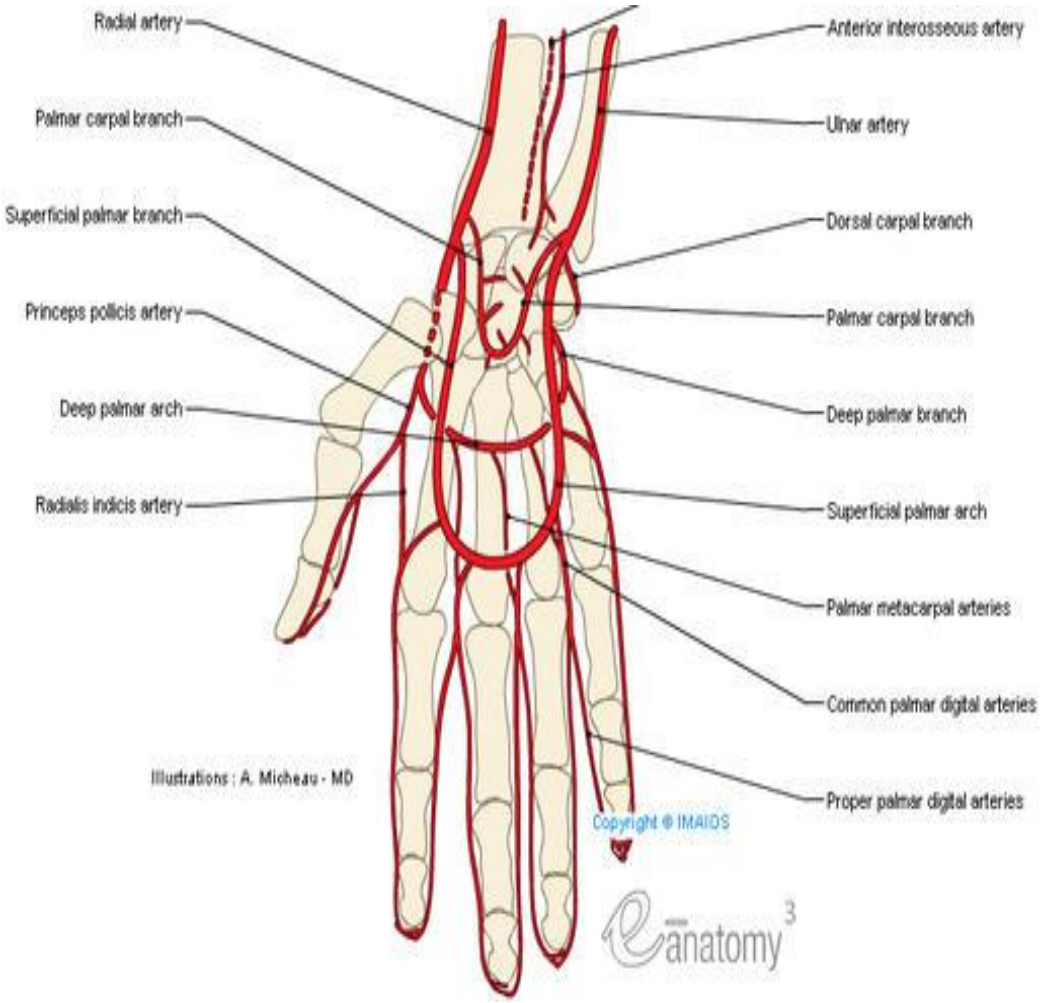
*- Leaves dorsum of the hand by **turning forward** between the proximal ends of the 1st and 2nd metacarpal bones and two heads of the 1st dorsal inerossous muscle*

*- On entering the palm it continues as **deep palmar arch***

It gives:

- arteria radialis indecis

- arteria princeps policis



The course and tributaries of the superficial and deep veins of the upper limb

Superficial Veins

Dorsal Venous Arch:

Course:

- *The dorsal digital veins drain into dorsal metacarpal veins*

- *unite to form a **dorsal venous arch or network***

Drains into the:

- *cephalic vein **laterally***

- *basilic vein **medially***

Cephalic vein:

Course:

- *Arises from the lateral end of the dorsal venous arch of hand*

- *Ascends on radial side of the forearm to the elbow*

- *continues up the arm in the deltopectoral groove*

- *Pierces clavipectoral fascia to drain into the **axillary vein***

Basilic vein:

Course:

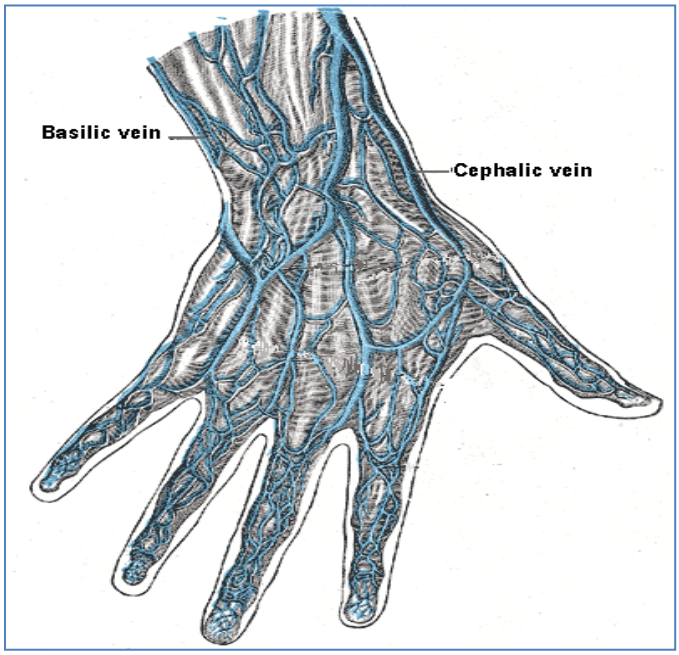
- *Arises from the medial side of the dorsal venous arch of hand*

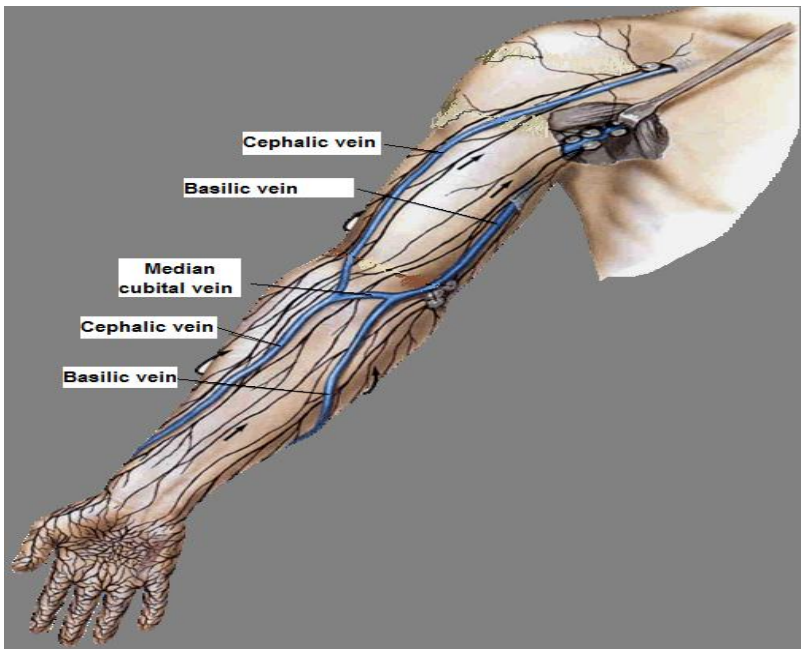
- *Ascends on the ulnar side of forearm to the elbow*

In the middle of arm:

- *it pierces the deep fascia*

- *joins the **brachial vein** and ends as **axillary vein***





Deep veins

- *Accompany the arteries of the same region and* ***bear similar names***

Venae commitantes:

- *They are generally arranged in pairs*

- *situated one on either side of the corresponding artery*

- *The* ***deep veins of the forearm*** *are the venæ comitantes of the radial and ulnar veins*

- *The* ***brachial veins*** *are placed one on either side of the brachial artery*

Axillary vein:

Course:

- ***Begins*** *at the lower border of the Teres major,*

(as the continuation of the basilic vein)

- ***Ends*** *at the outer border of the first rib as the subclavian vein*

- *Receives the brachial veins and, close to its termination, the cephalic vein*

Brachial vein:

Course:

- ***begin*** *where radial veins and ulnar veins join*

- *end at the* ***inferior border*** *of the teres major muscle*

At this point:

- *the* ***brachial veins*** *join the* ***basilic vein*** *to form the* ***axillary vein***