

# **REGIONAL ANATOMY OF THE UPPER LIMB**



**Regio deltoidea, reg. axillaris, reg. brachii ant., reg. cubiti ant.,  
reg. antebrachii ant., palma manus**

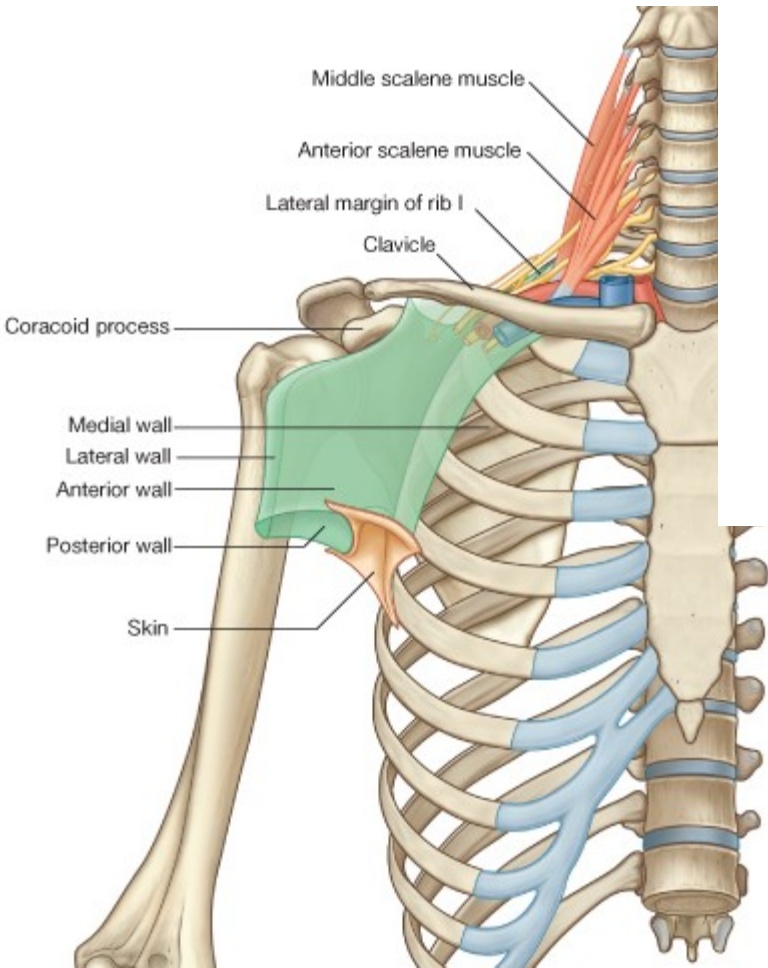


**Regio scapularis, reg. brachii post., reg. cubiti post.,  
reg. antebrachii post., dorsum manus**

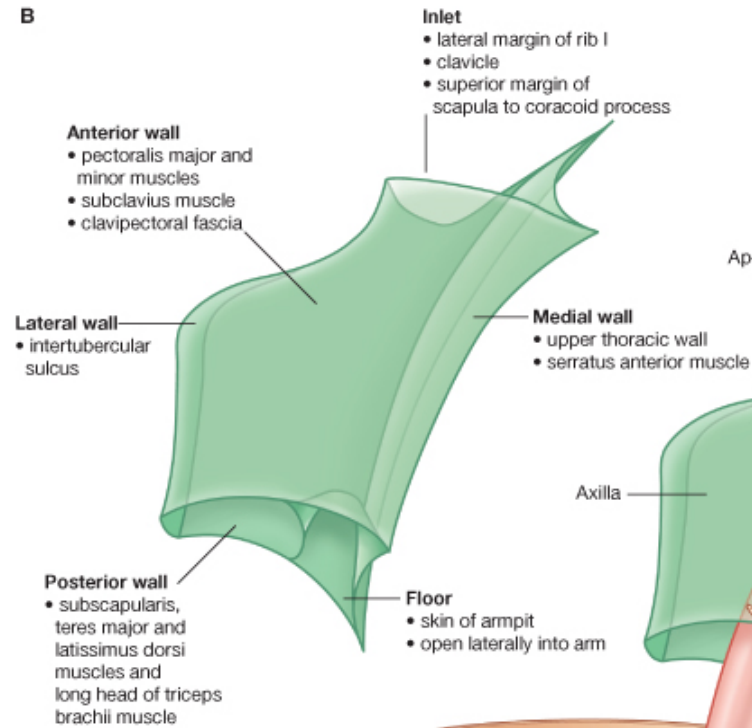
# **Regio axillaris**

# AXILLA

**inlet**  
**4 sides**  
**floor**



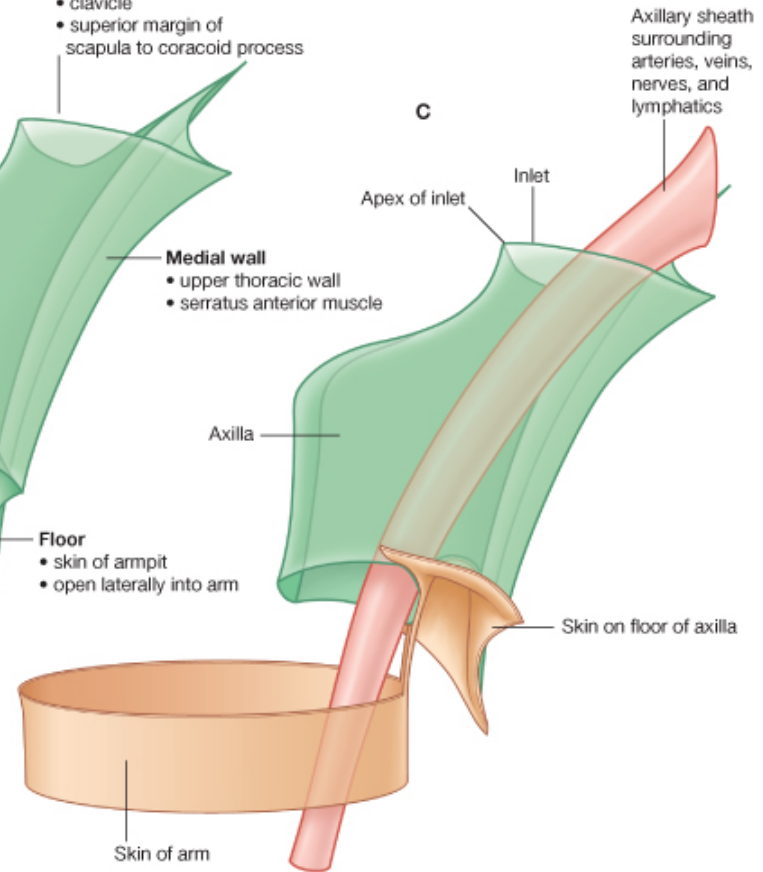
**B**



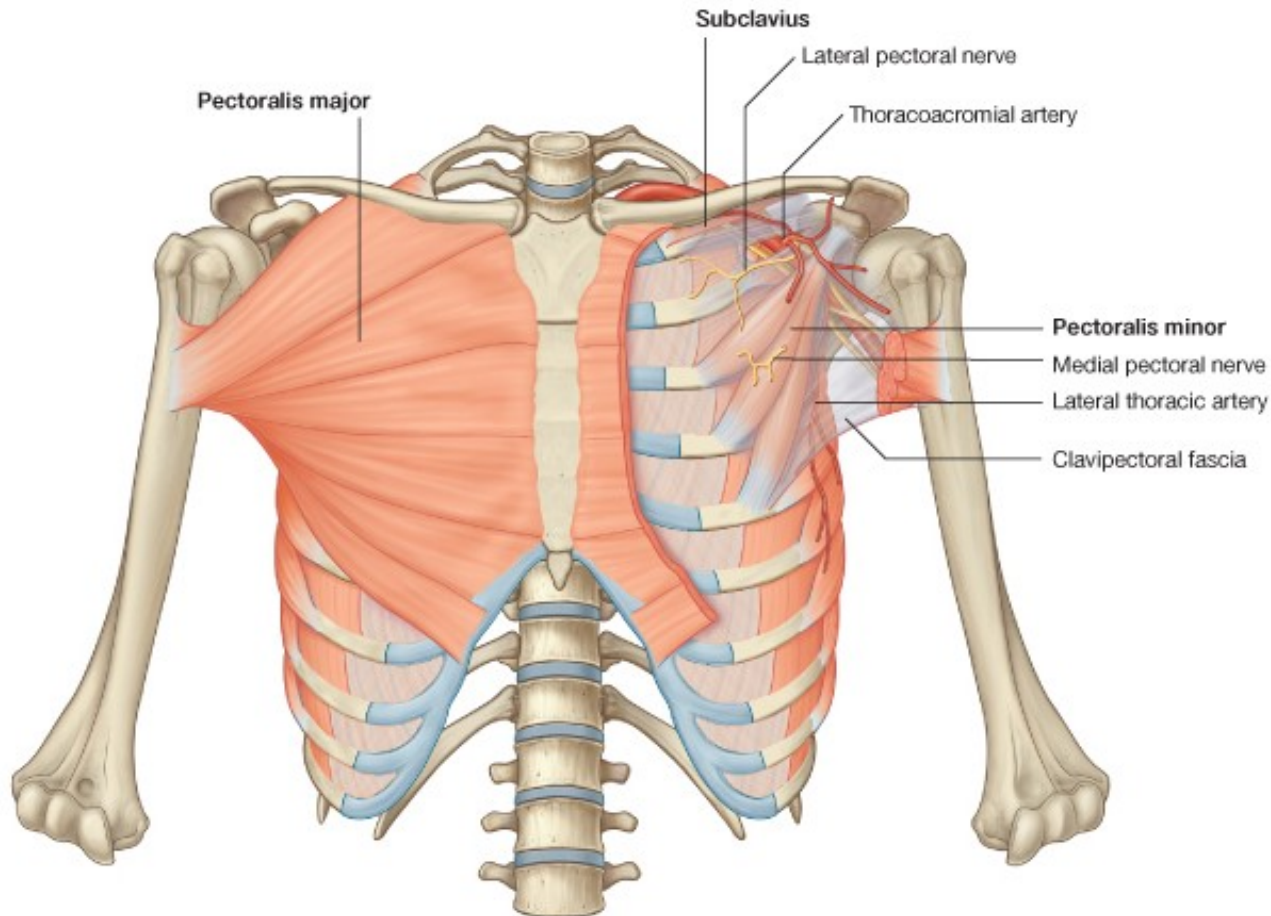
**Inlet**

- lateral margin of rib I
- clavicle
- superior margin of scapula to coracoid process

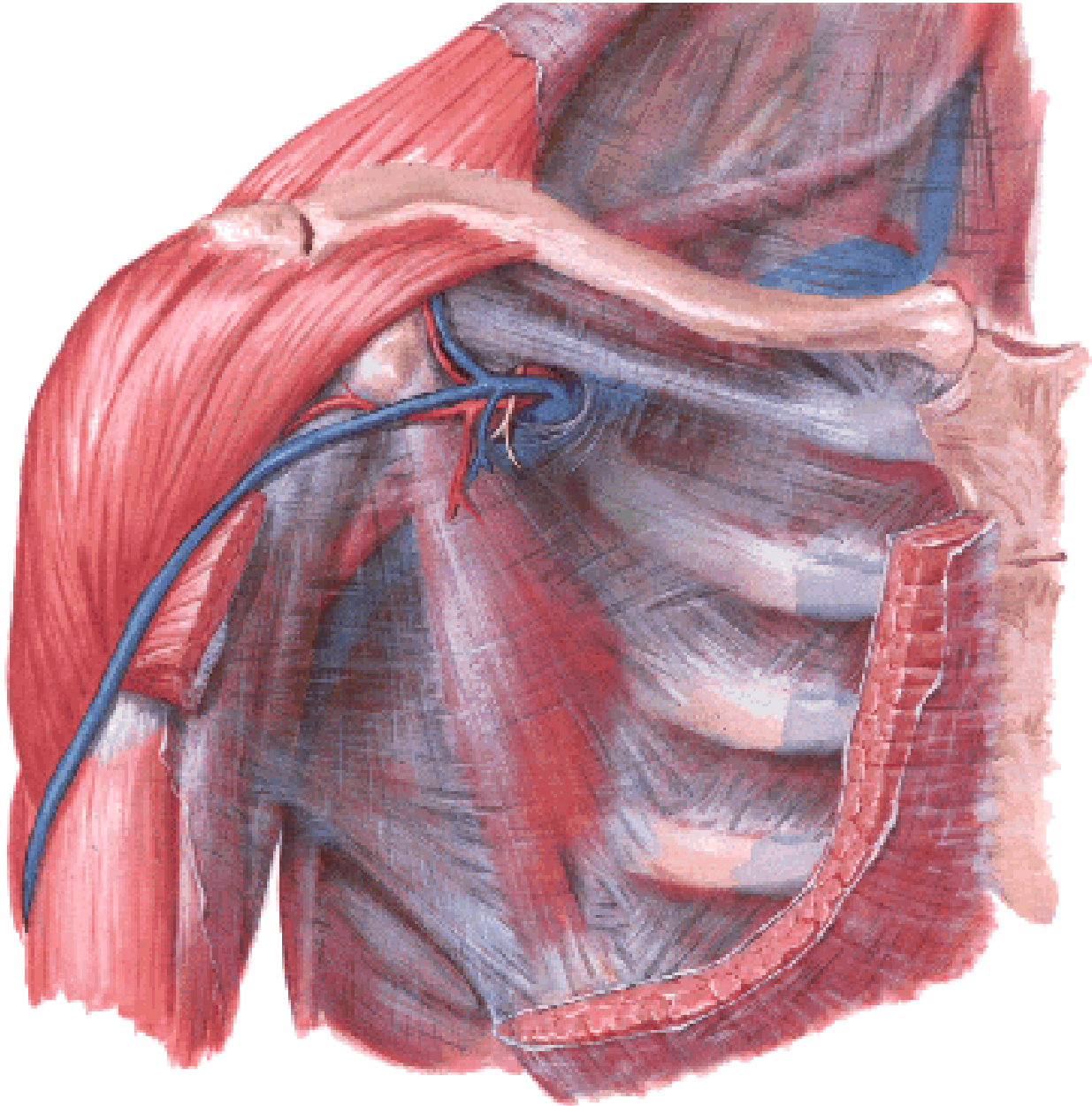
**C**



**Anterior wall: m. pectoralis major (n. pectoralis med. et lat.)**  
**m. pectoralis minor (n. pectoralis med.)**  
**m. subclavius (n. subclavius)**  
**fascia clavipectoralis**  
**a. thoracoacromialis, a. pectoralis sup.**



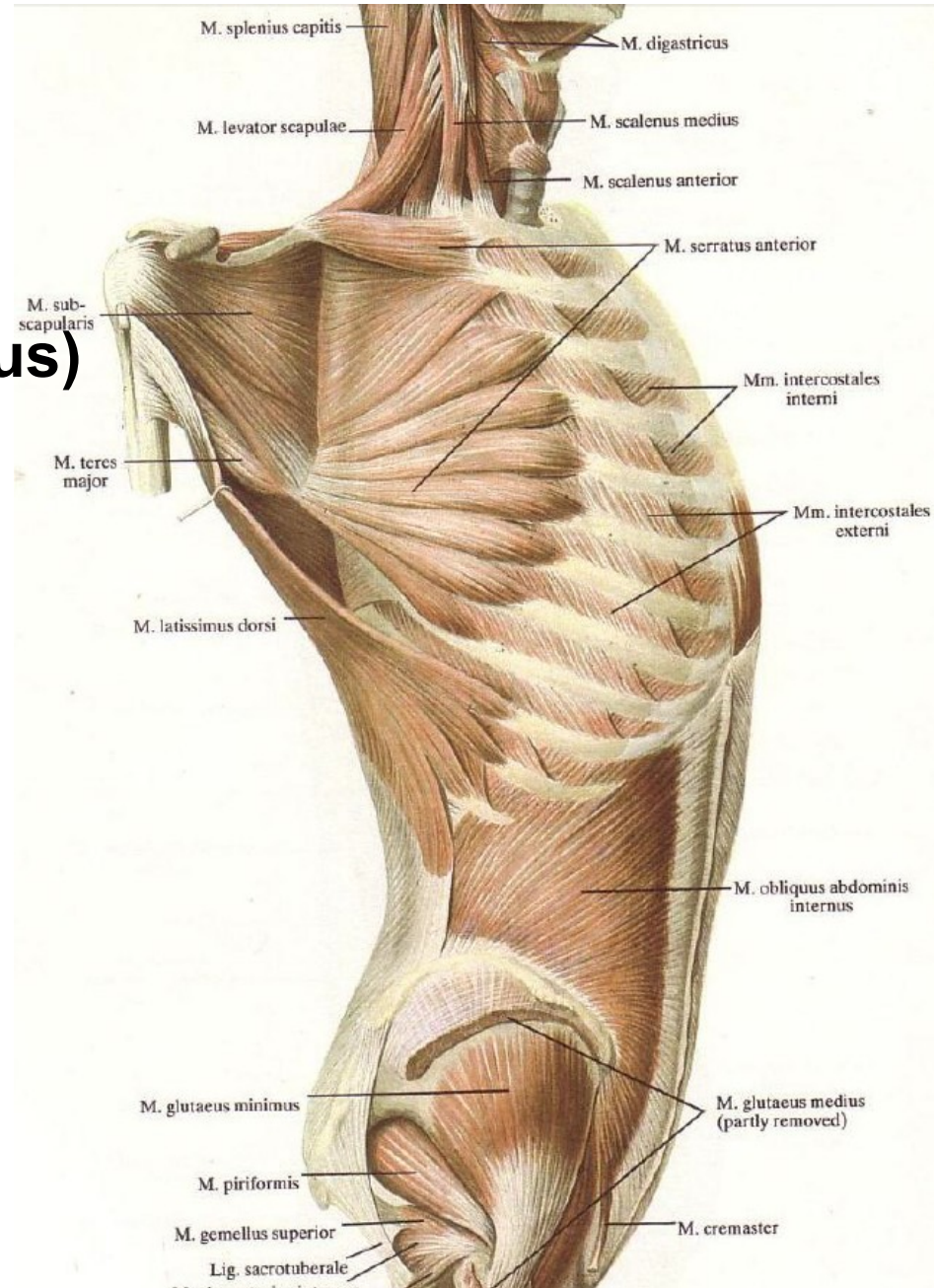
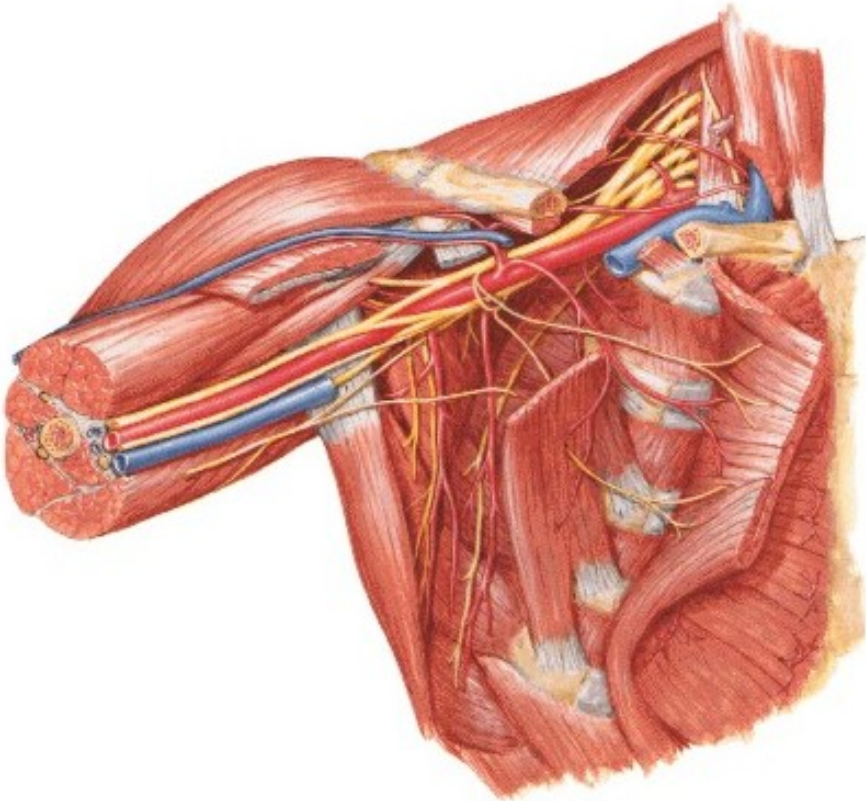
# Fascia clavipectoralis



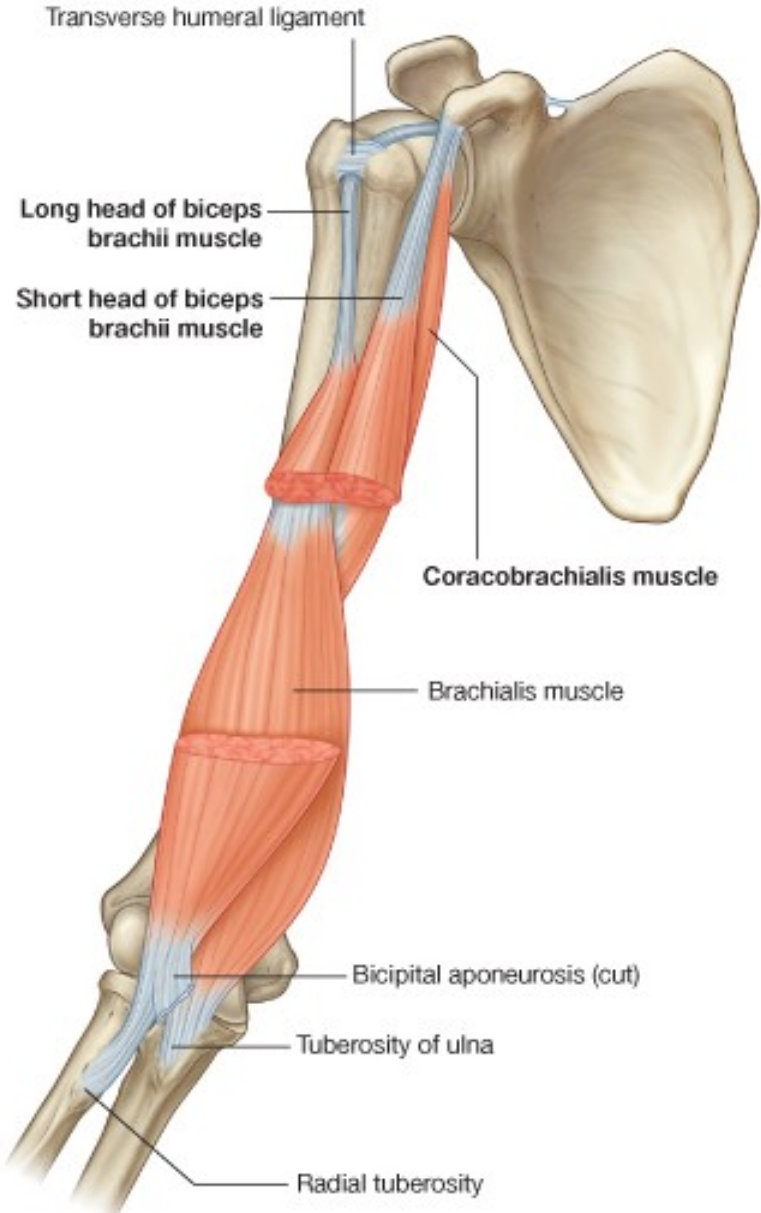


# Medial wall: thorax

**m. serratus ant.  
(a. thoracica lat.,  
n. thoracicus longus)**



# Lateral wall: humerus, m. biceps brachii





**Posterior wall: m. subscapularis, m. teres minor, m. teres major, m. latissimus dorsi**

**– foramen omotricipitale (trilaterum):**

**m. teres minor**

**m. teres major**

**caput longum m. tricipitis**

**A. circumflexa scapulae**

**- foramen humerotricipitale (quadrilaterum):**

**m. teres minor**

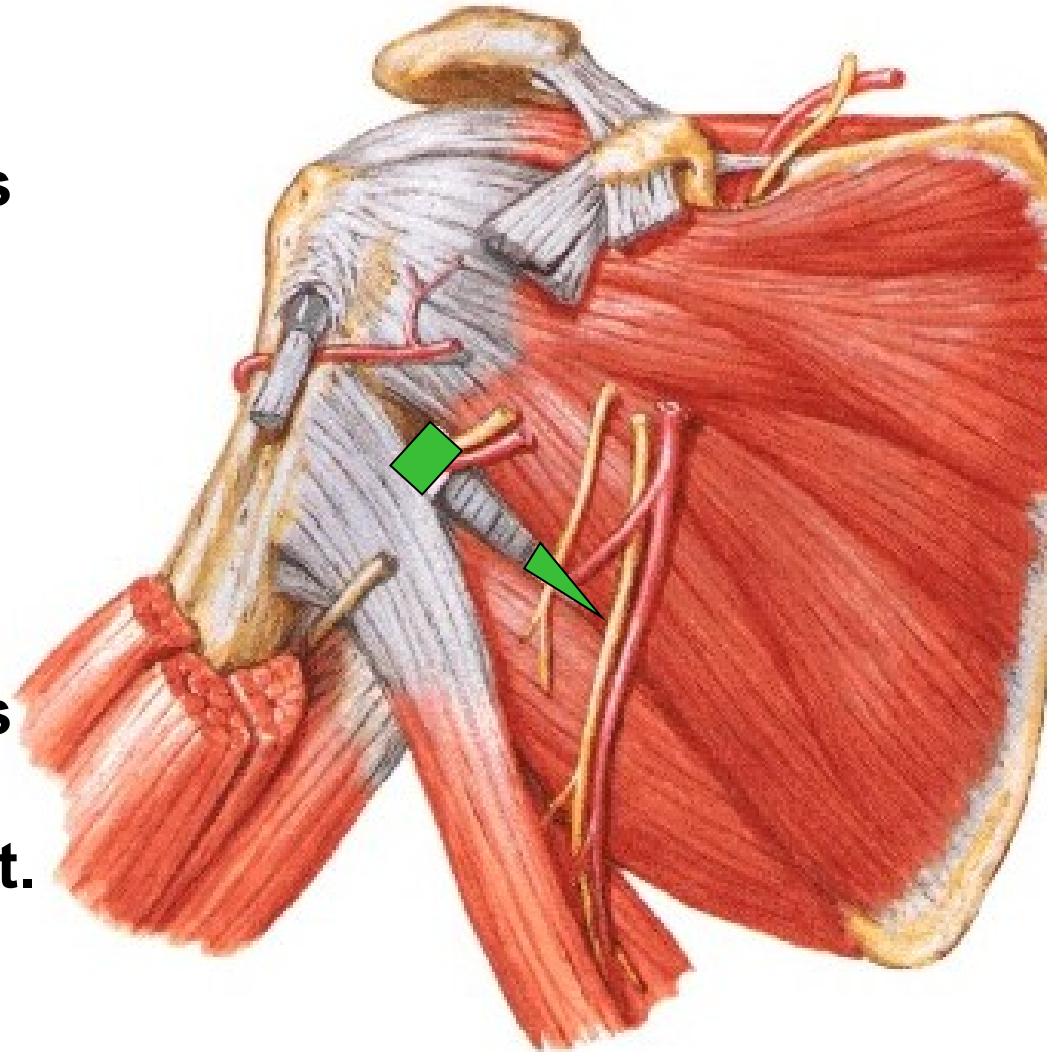
**m. teres major**

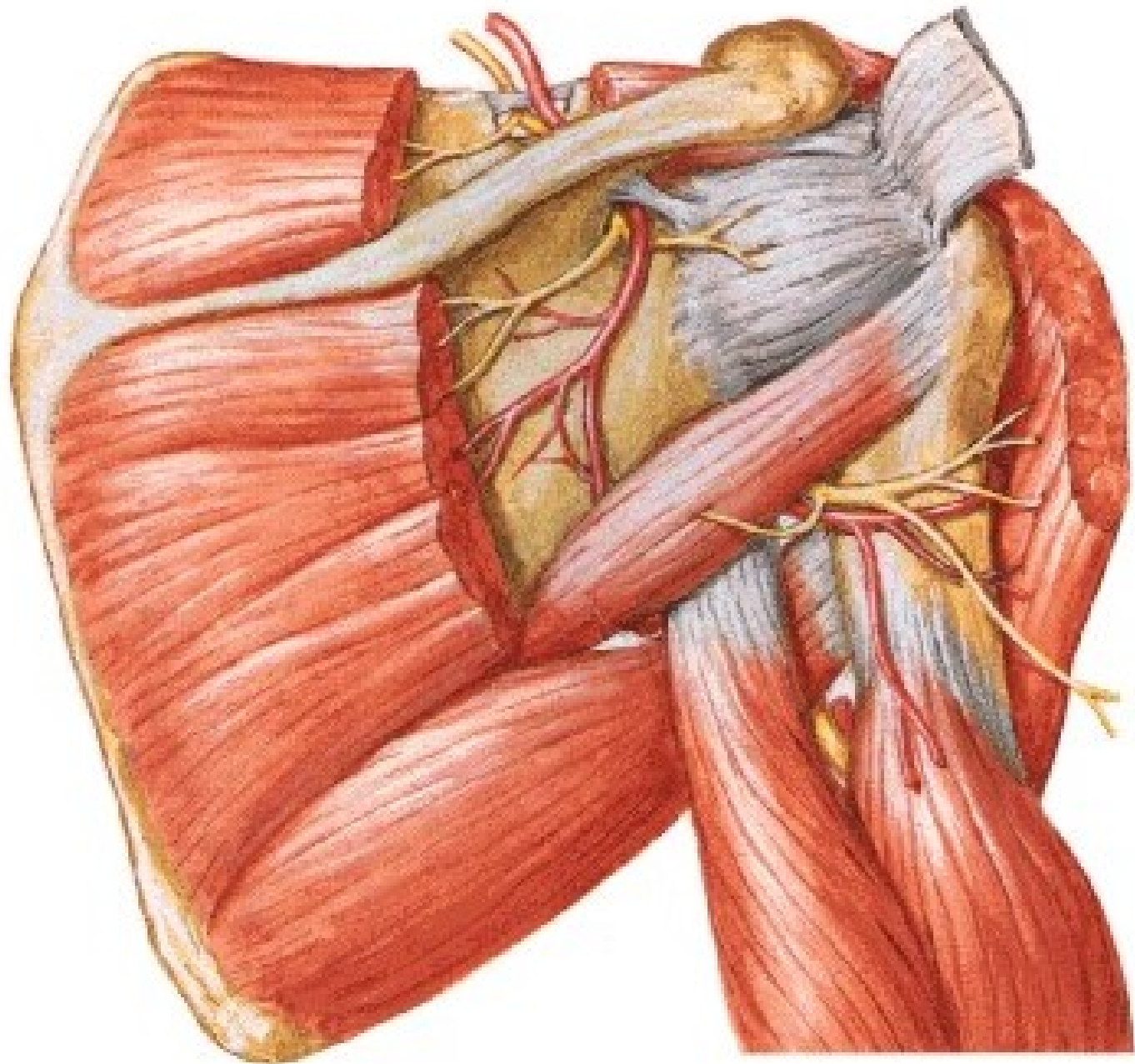
**caput longum m. tricipitis**

**humerus**

**A. circumflexa humeri post.**

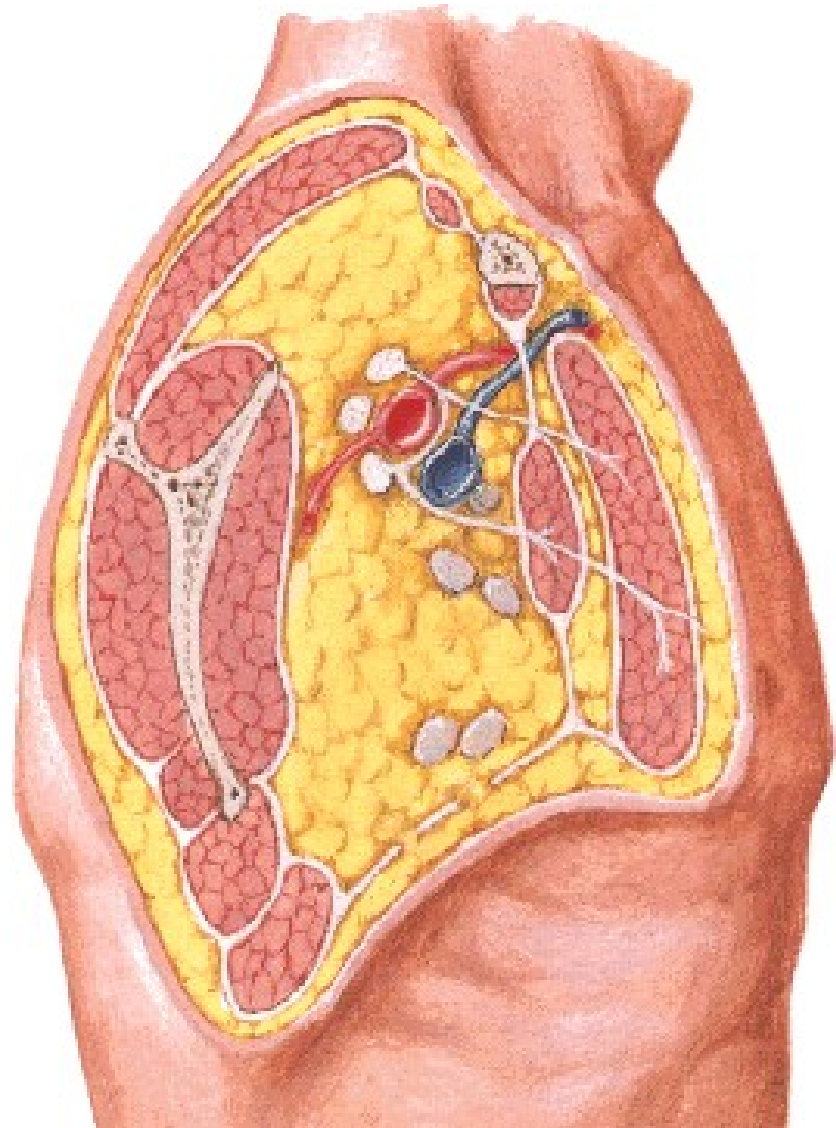
**N. axillaris**





## Floor: Fascia axillaris

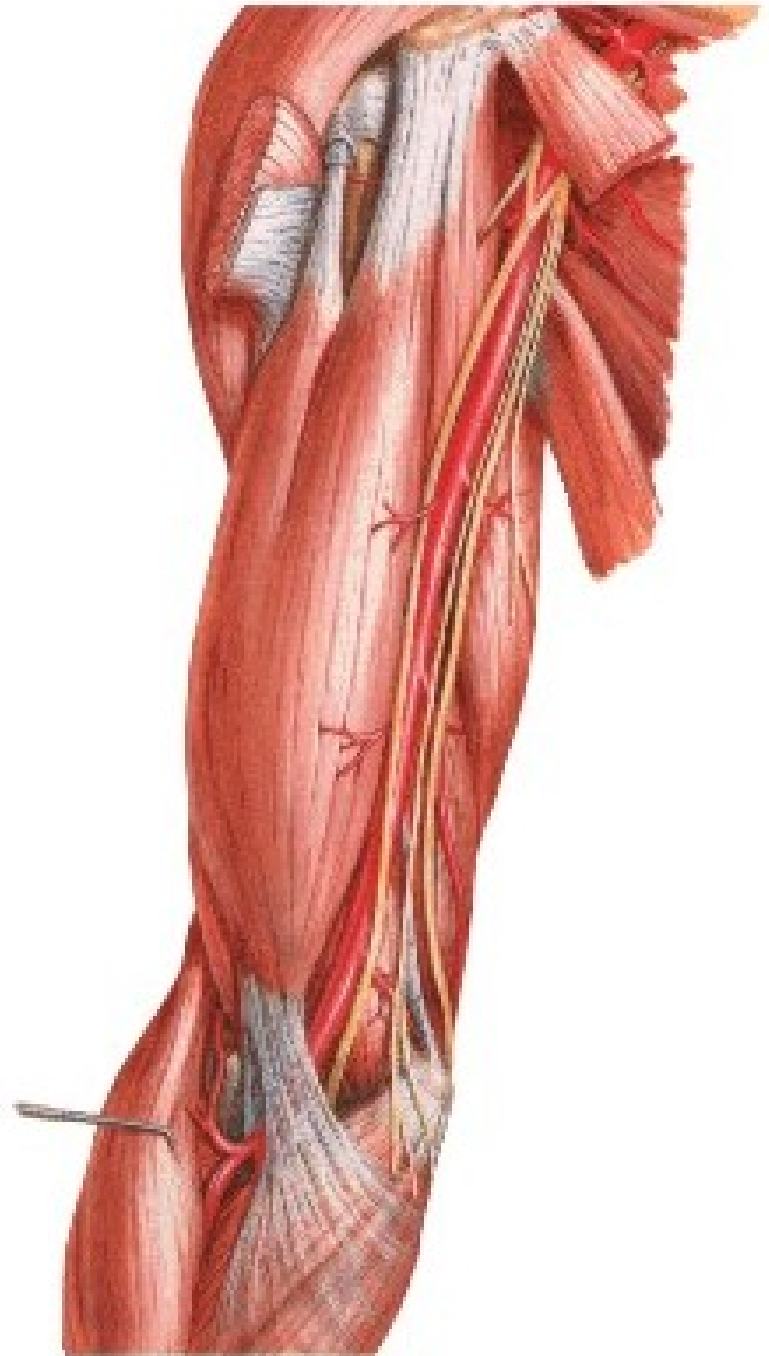
**Plica axillaris ant.**  
(m. pectoralis major)  
**Plica axillaris post.**  
(m. latissimus dorsi)



## **Contents:**

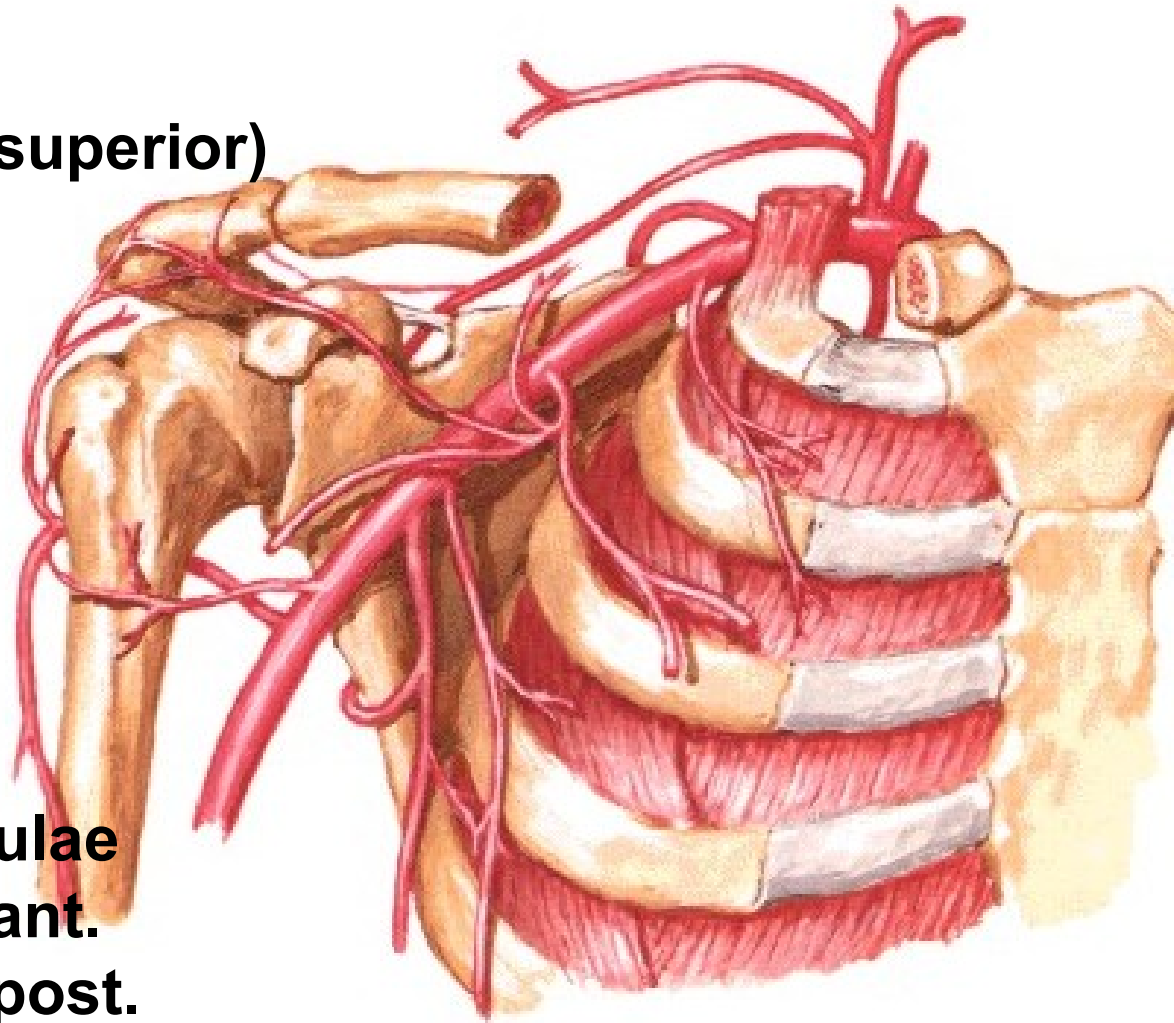
**M. biceps brachii**

**M. coracobrachialis**



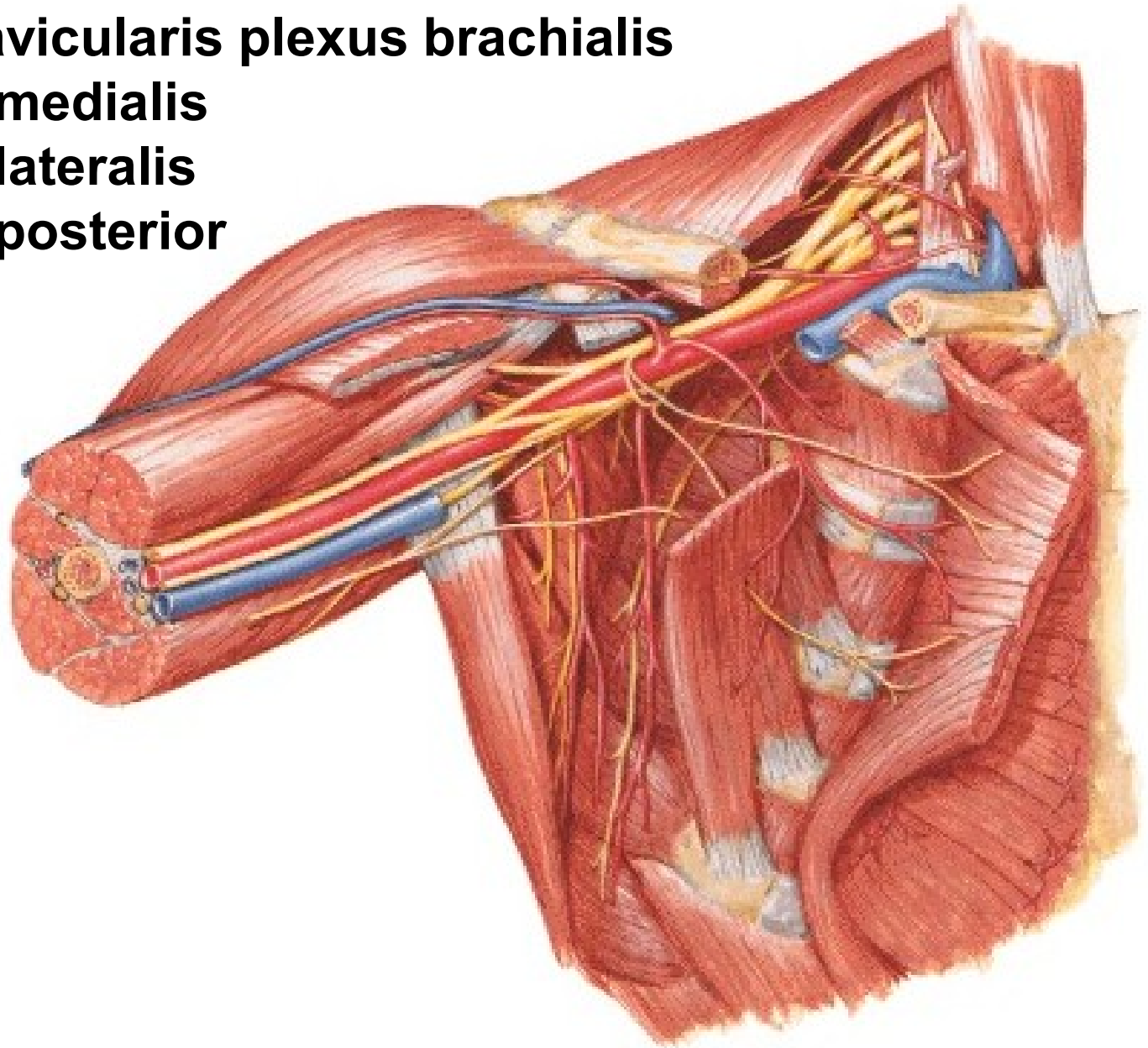
## **A. axillaris**

- rr. subscapulares
- a. thoracica suprema (superior)
- a. thoracoacromialis
  - r. deltoideus
  - r. acromialis
  - rr. pectorales
- a. thoracica lateralis
  - rr. mammarii lat.
- a. subscapularis
  - a. thoracodorsalis
  - a. circumflexa scapulae
- a. circumflexa humeri ant.
- a. circumflexa humeri post.



## **Pars infraclavicularis plexus brachialis**

- fasciculus medialis**
- fasciculus lateralis**
- fasciculus posterior**



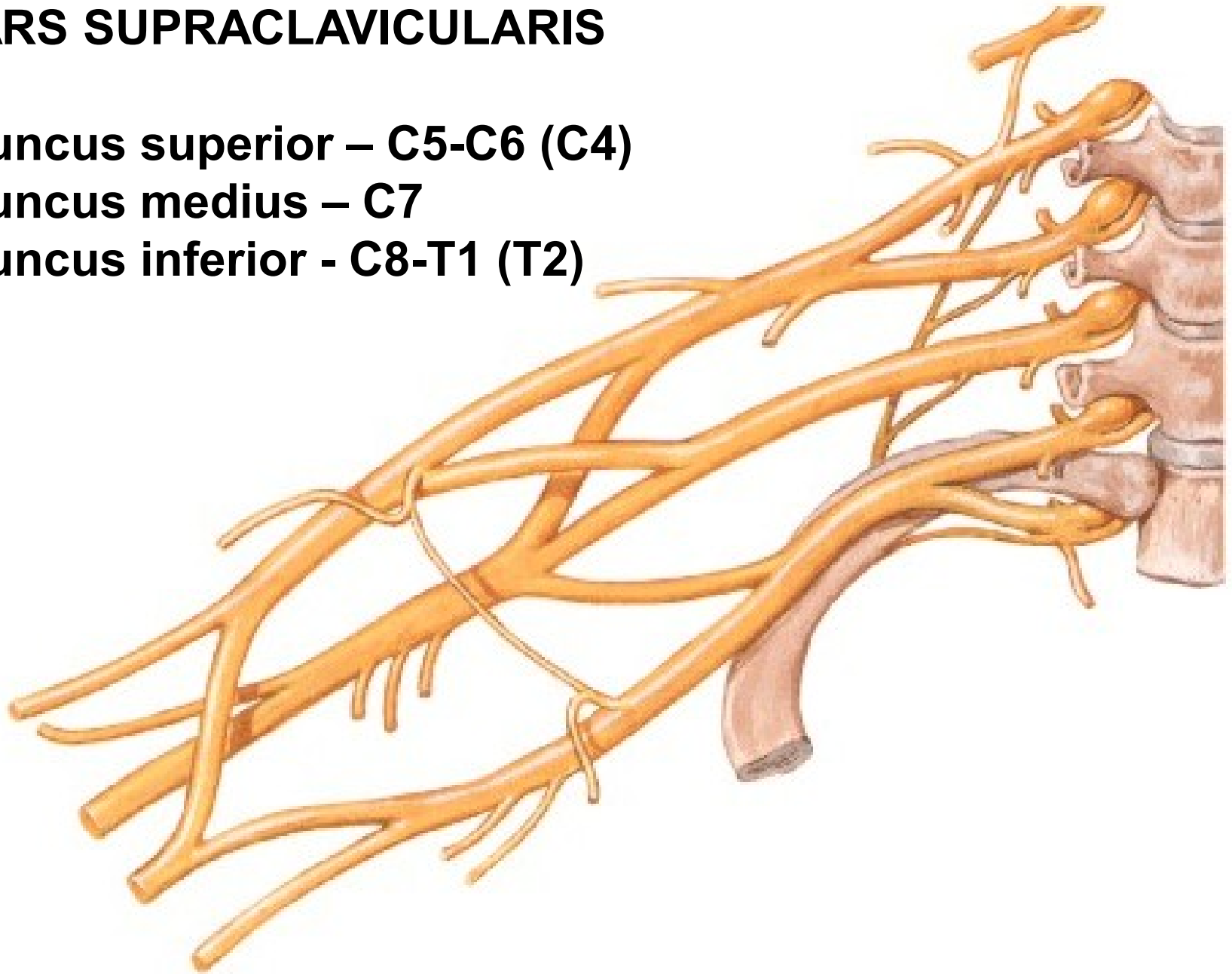


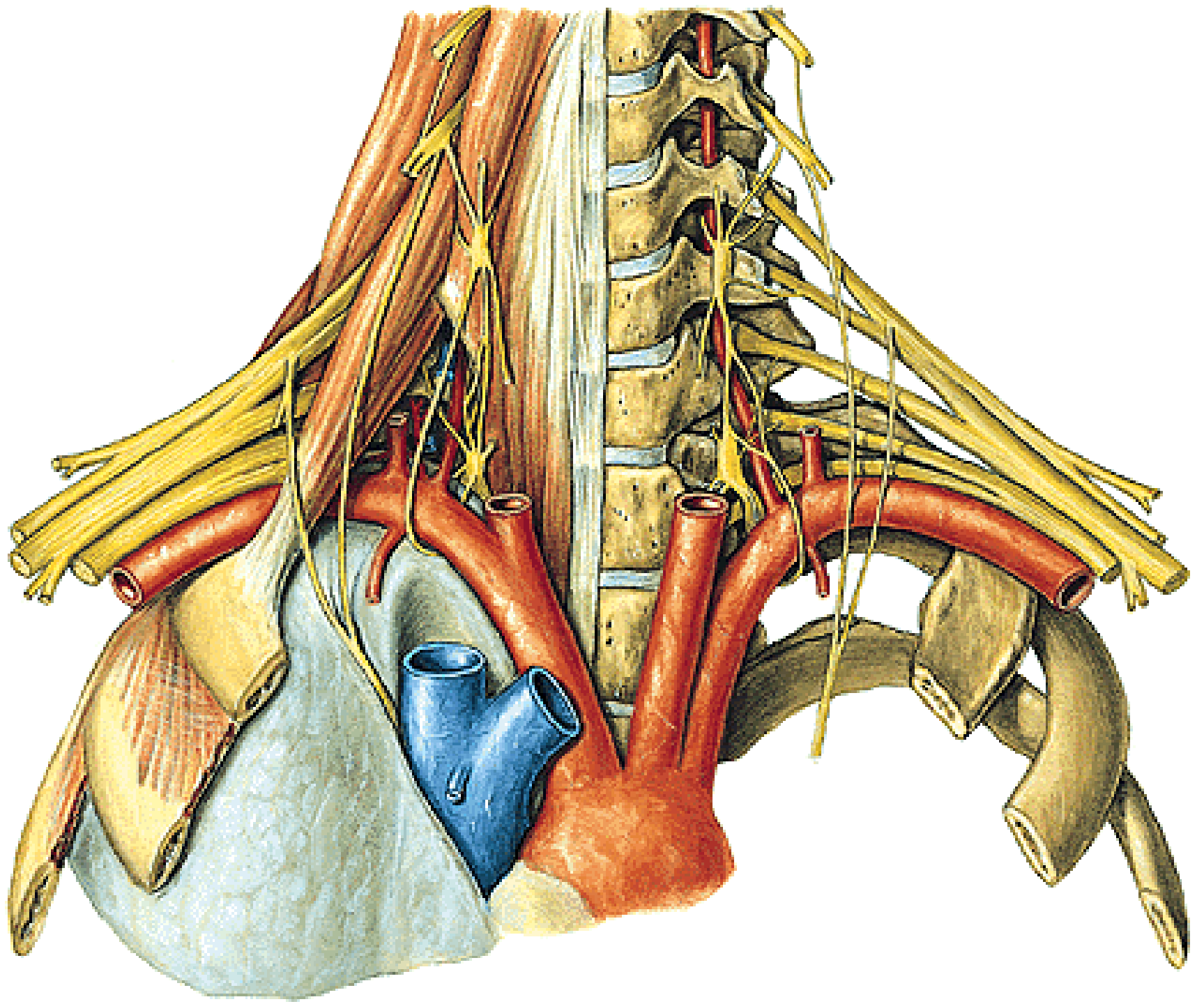
# PARS SUPRACLAVICULARIS

**Truncus superior – C5-C6 (C4)**

**Truncus medius – C7**

**Truncus inferior - C8-T1 (T2)**





# PARS SUPRACLAVICULARIS

**N. dorsalis scapulae (C4, C5)**

- mm. rhomboidei
- m. levator scapulae

**N. thoracicus longus (C5, C6, C7)**

- m. serratus ant.

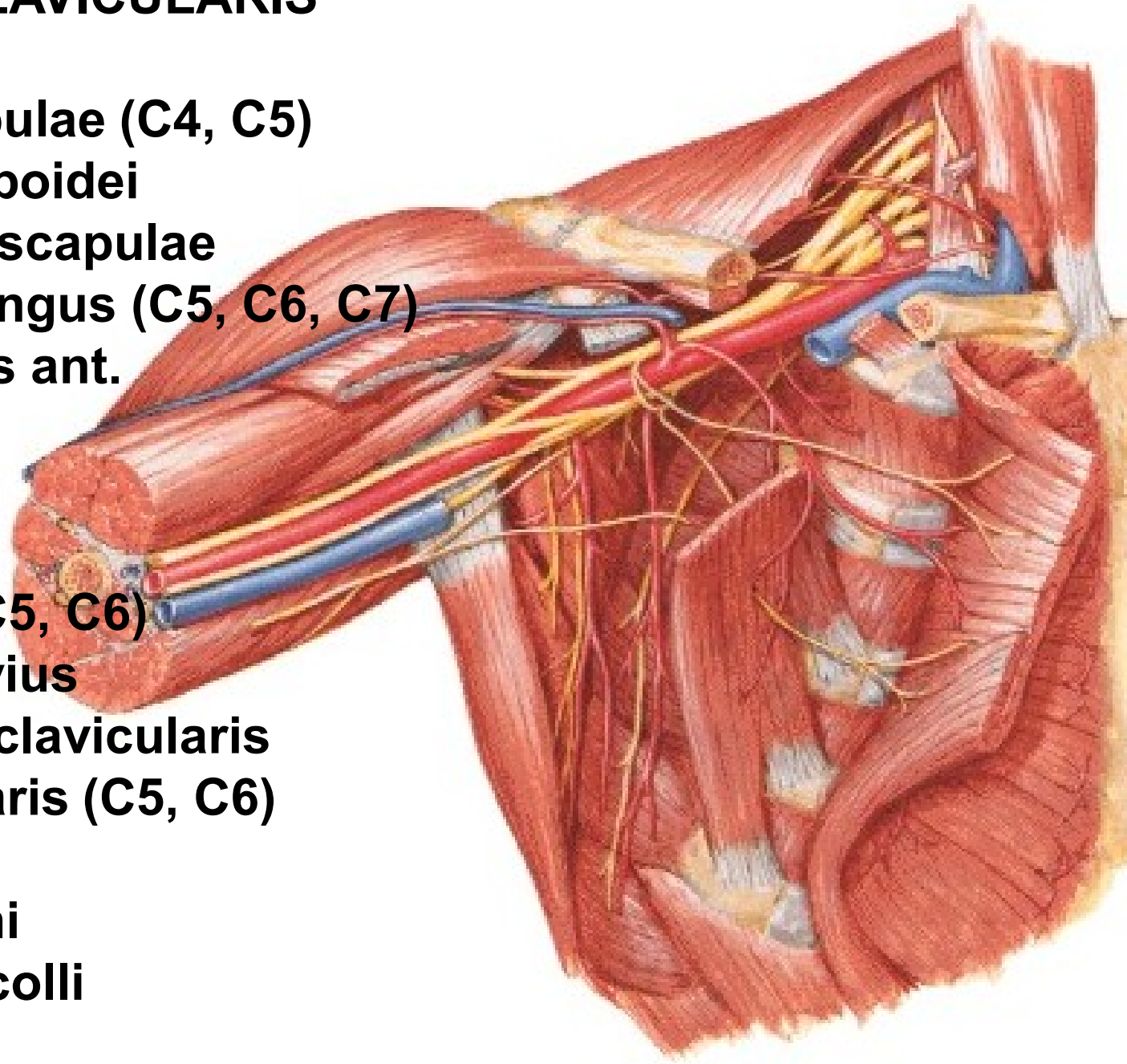
**N. subclavius (C5, C6)**

- m. subclavius
- art. sternoclavicularis

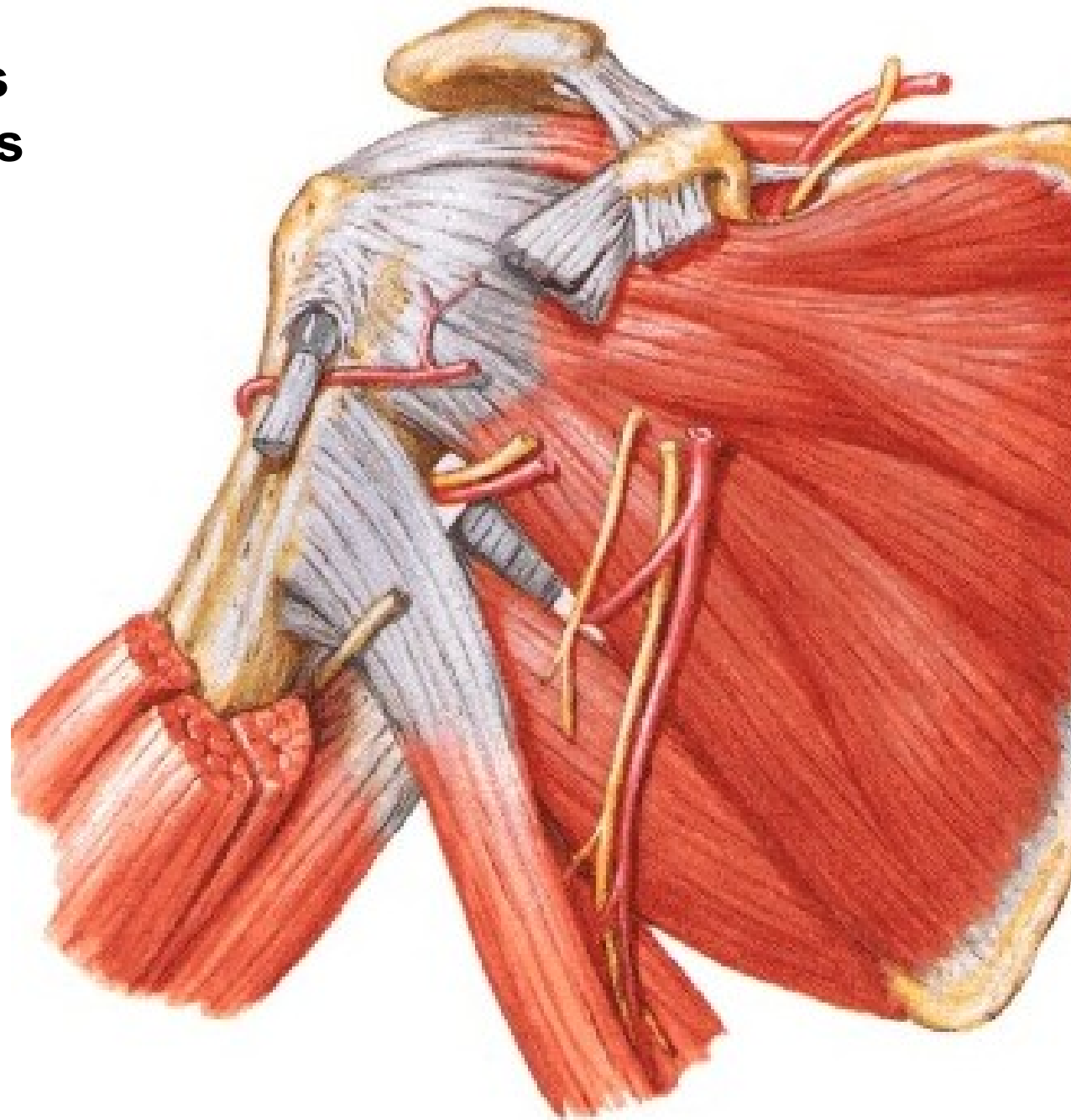
**N. suprascapularis (C5, C6)**

**Rr. musculares**

- mm. scaleni
- m. longus colli



**N suprascapularis**  
**A. suprascapularis**



**N. pectoralis lateralis (C5, C6, C7)**

- mm. pectorales

**N. pectoralis medialis (C8, T1)**

- mm. pectorales

**N. subscapularis sup. (C5)**

- m. subscapularis

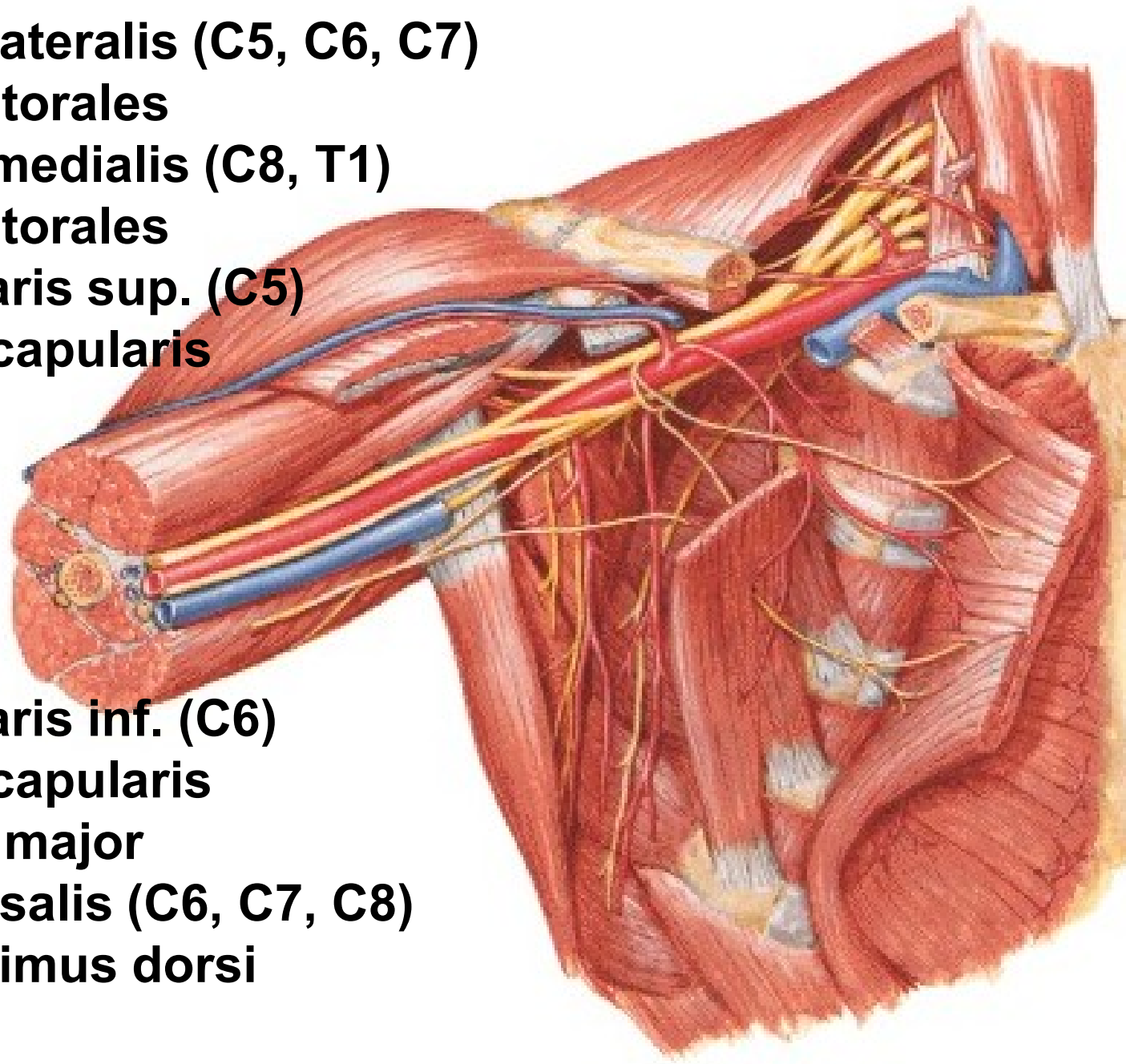
**N. subscapularis inf. (C6)**

- m. subscapularis

- m. teres major

**N. thoracodorsalis (C6, C7, C8)**

- m. latissimus dorsi



**PARS INFRACLAVICULARIS**  
(terminal branches)

**Fasciculus lateralis**

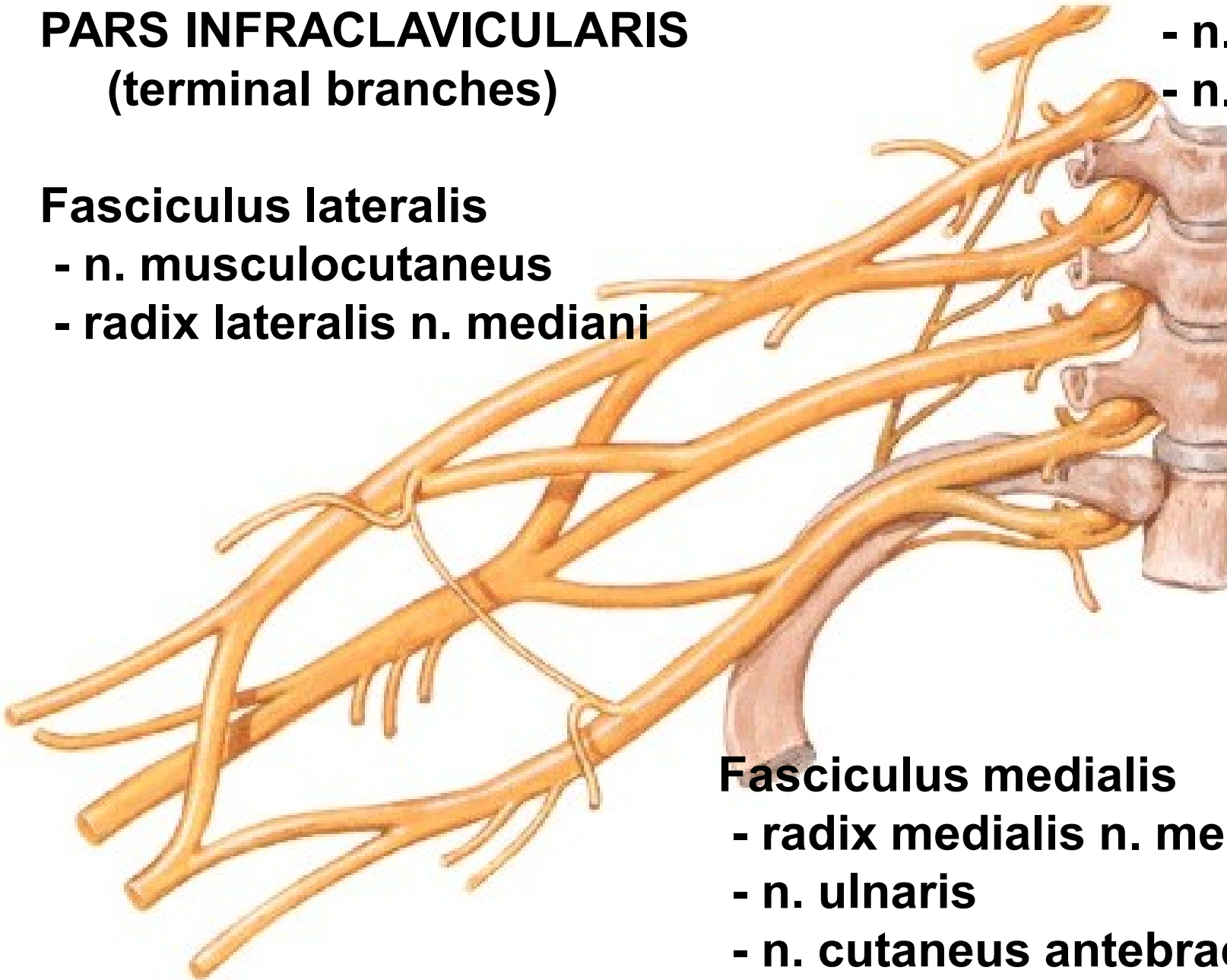
- n. musculocutaneus
- radix lateralis n. mediani

**Fasciculus posterior**

- n. axillaris
- n. radialis

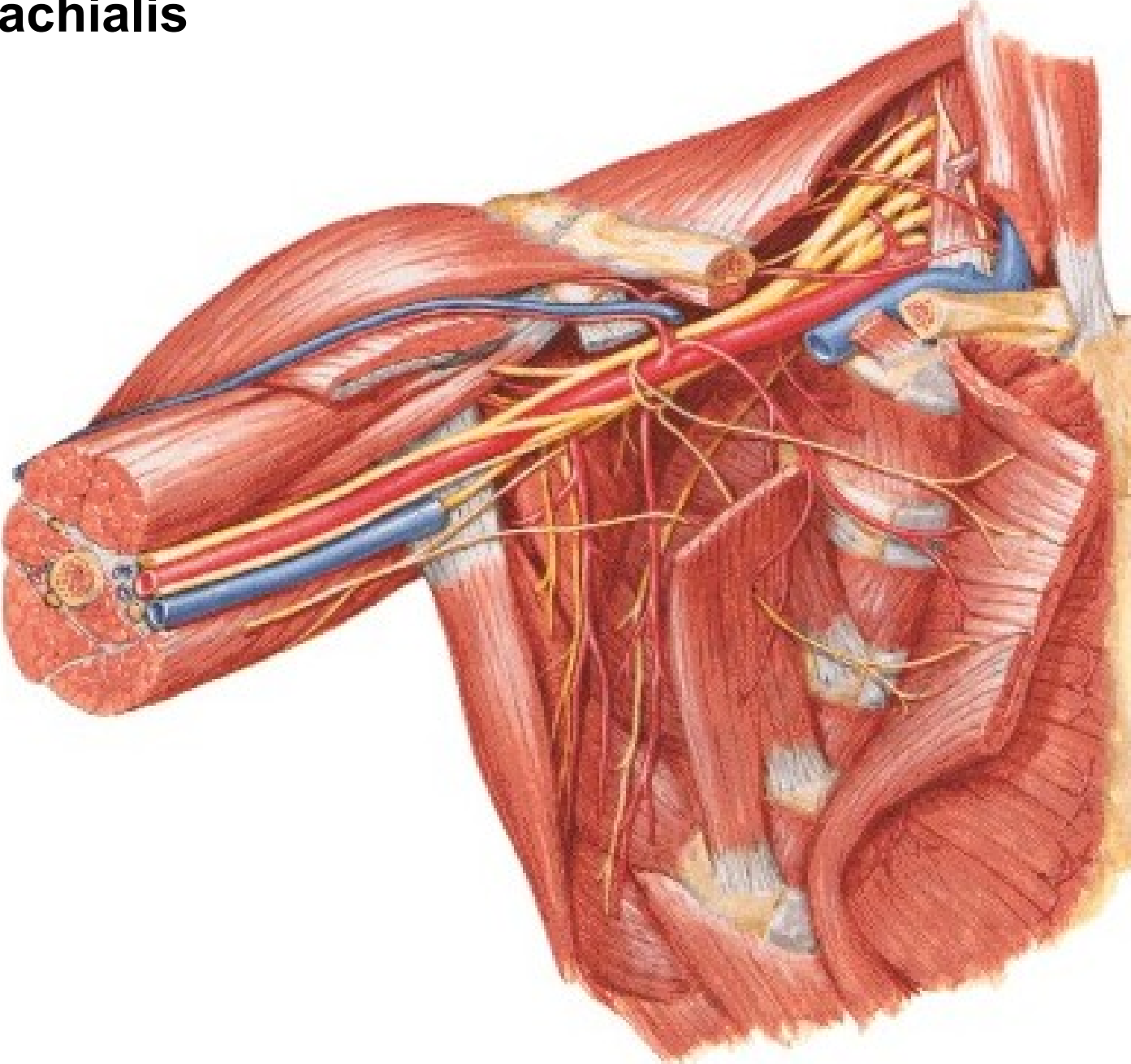
**Fasciculus medialis**

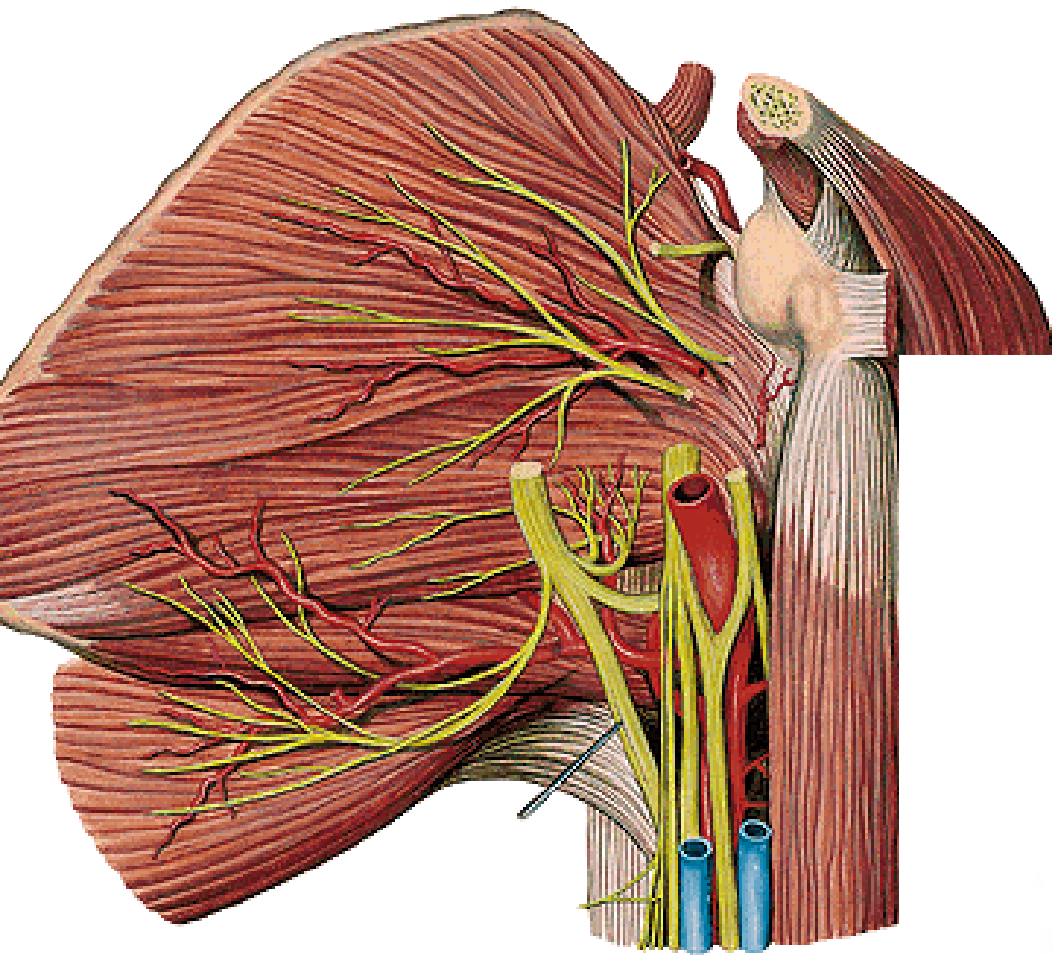
- radix medialis n. mediani
- n. ulnaris
- n. cutaneus antebrachii med.
- n. cutaneus brachii medialis



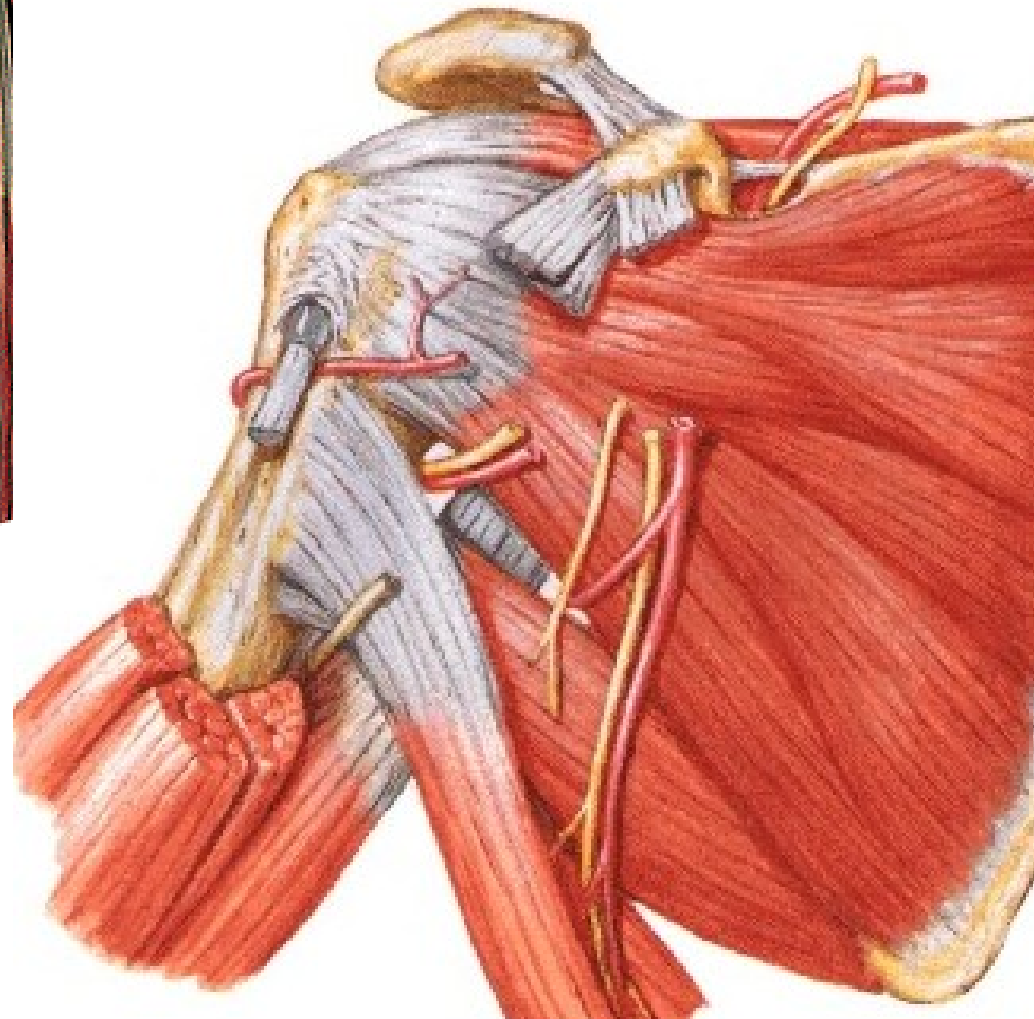


**N. intercostobrachialis**





**N. axillaris**

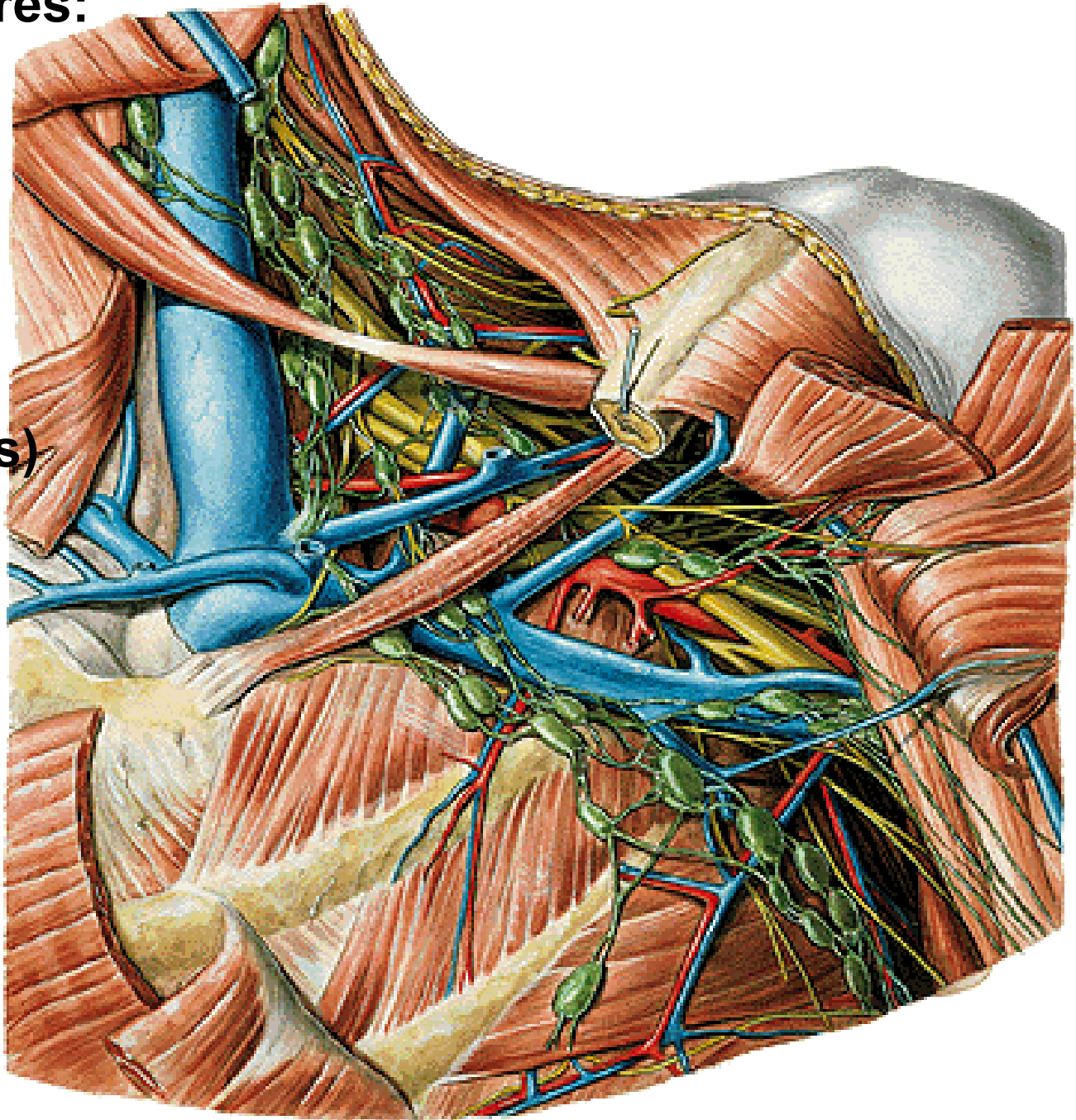


**N. radialis**

## **Nodi lymph. axillares:**

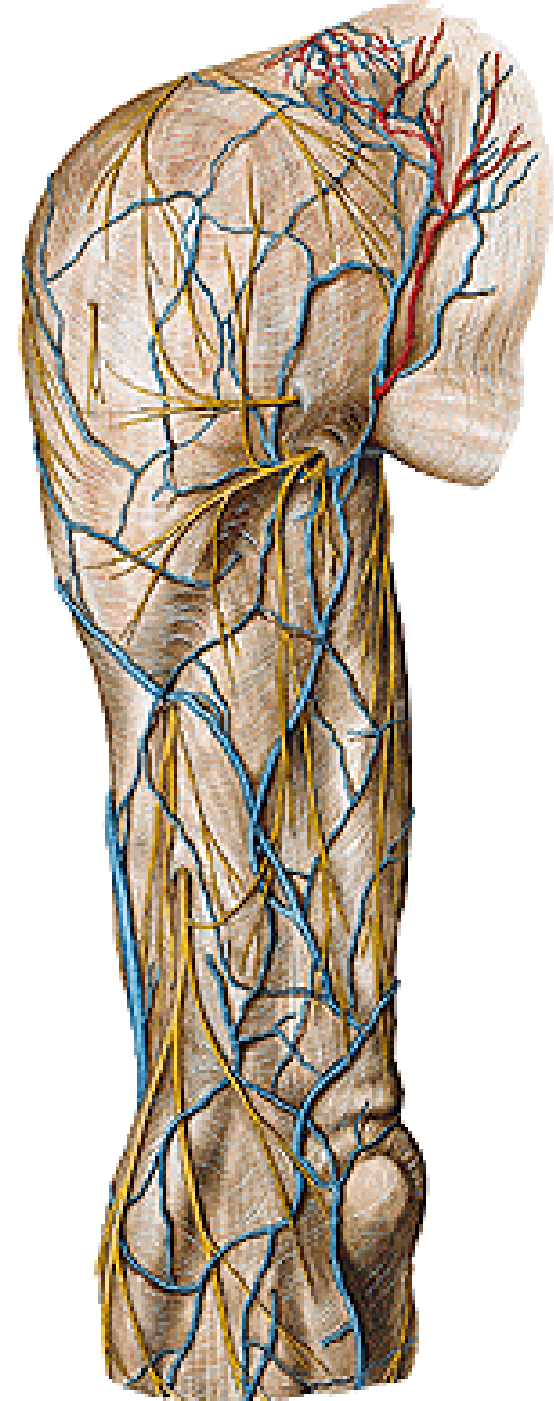
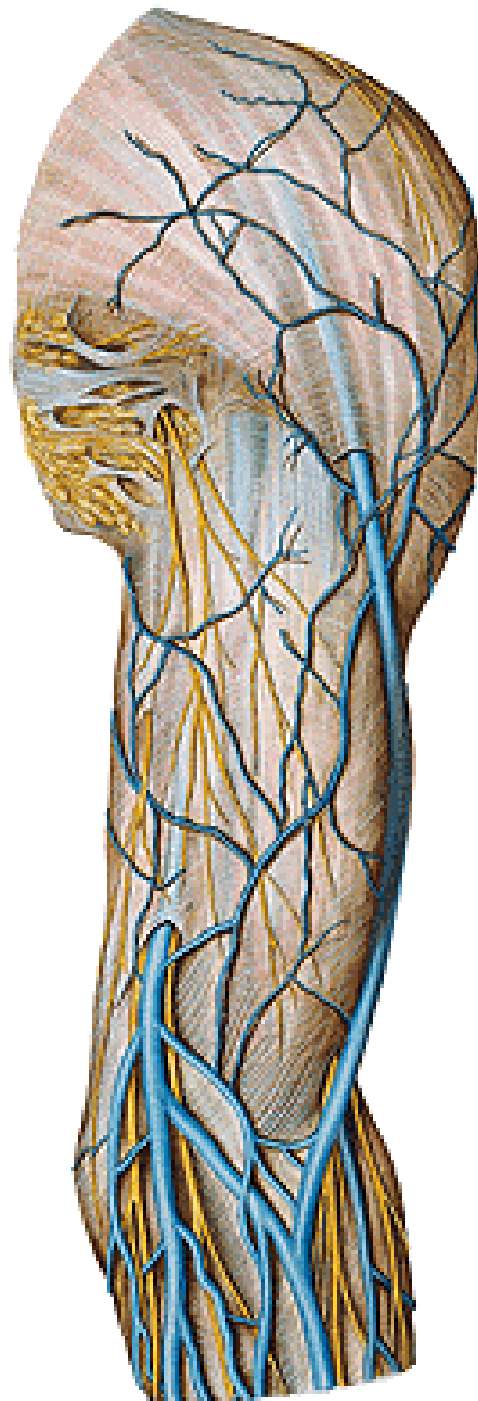
- laterales**
- pectorales (Sorgius)**
- subscapulares**
- centrales**
- apicales (infraclaviculares)**

**→ tr. subclavius**

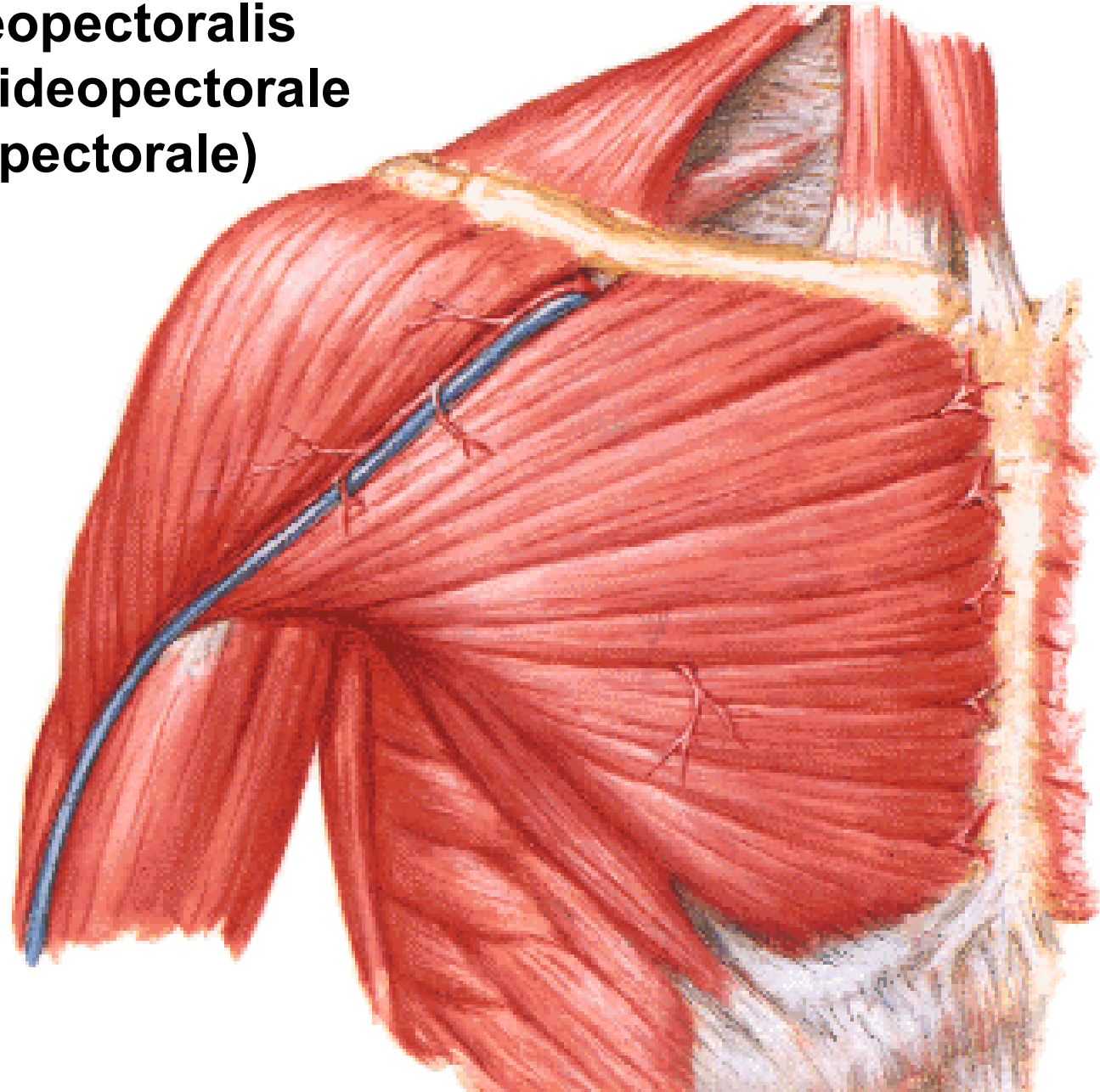


**Regio deltoidea**

**N. cut. brachii lat. sup.**  
**Nn. supraclaviculares**  
**V. cephalica**



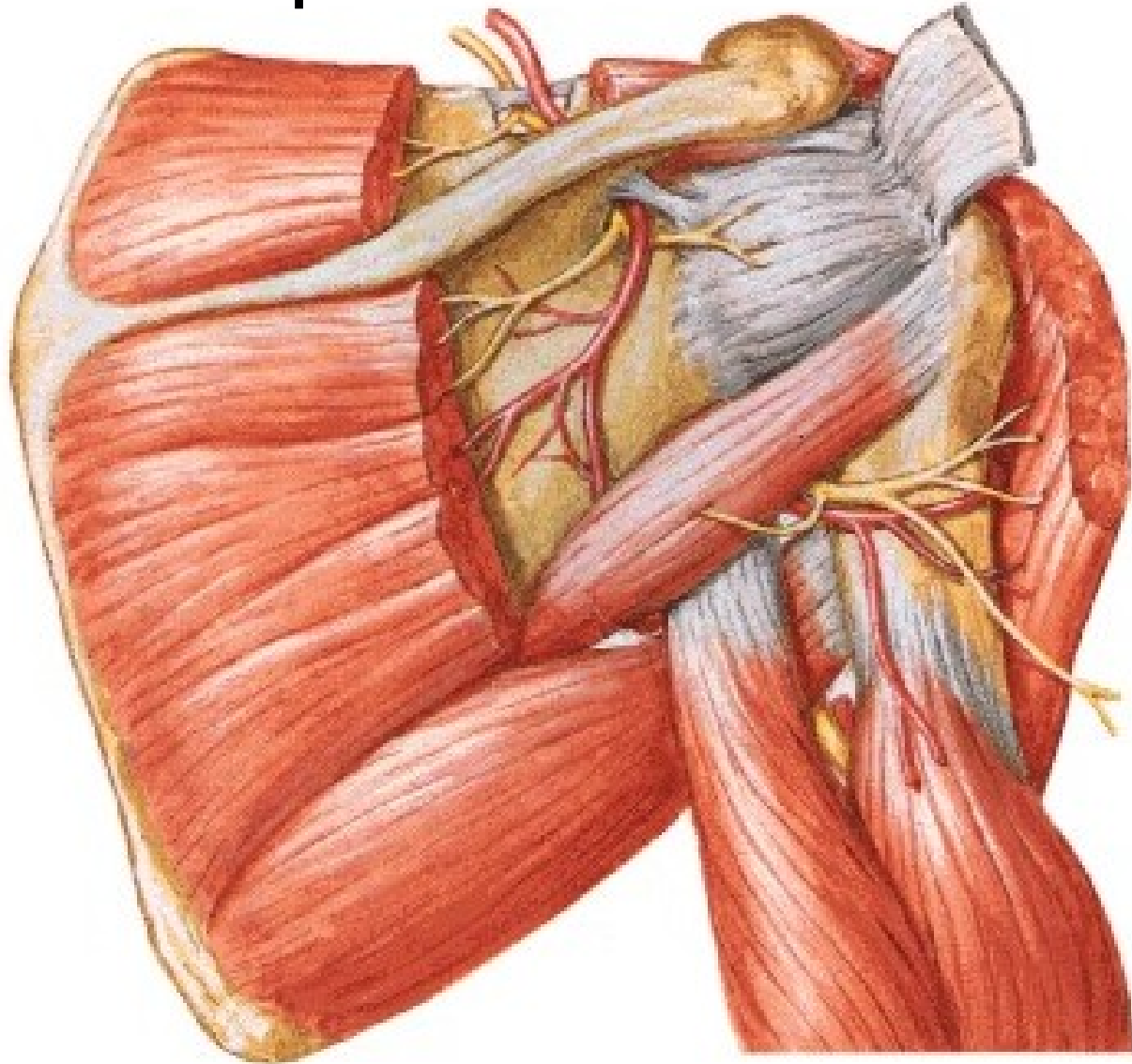
**Sulcus deltoideopectoralis**  
**Trigonum deltoideopectorale**  
**(clavipectorale)**



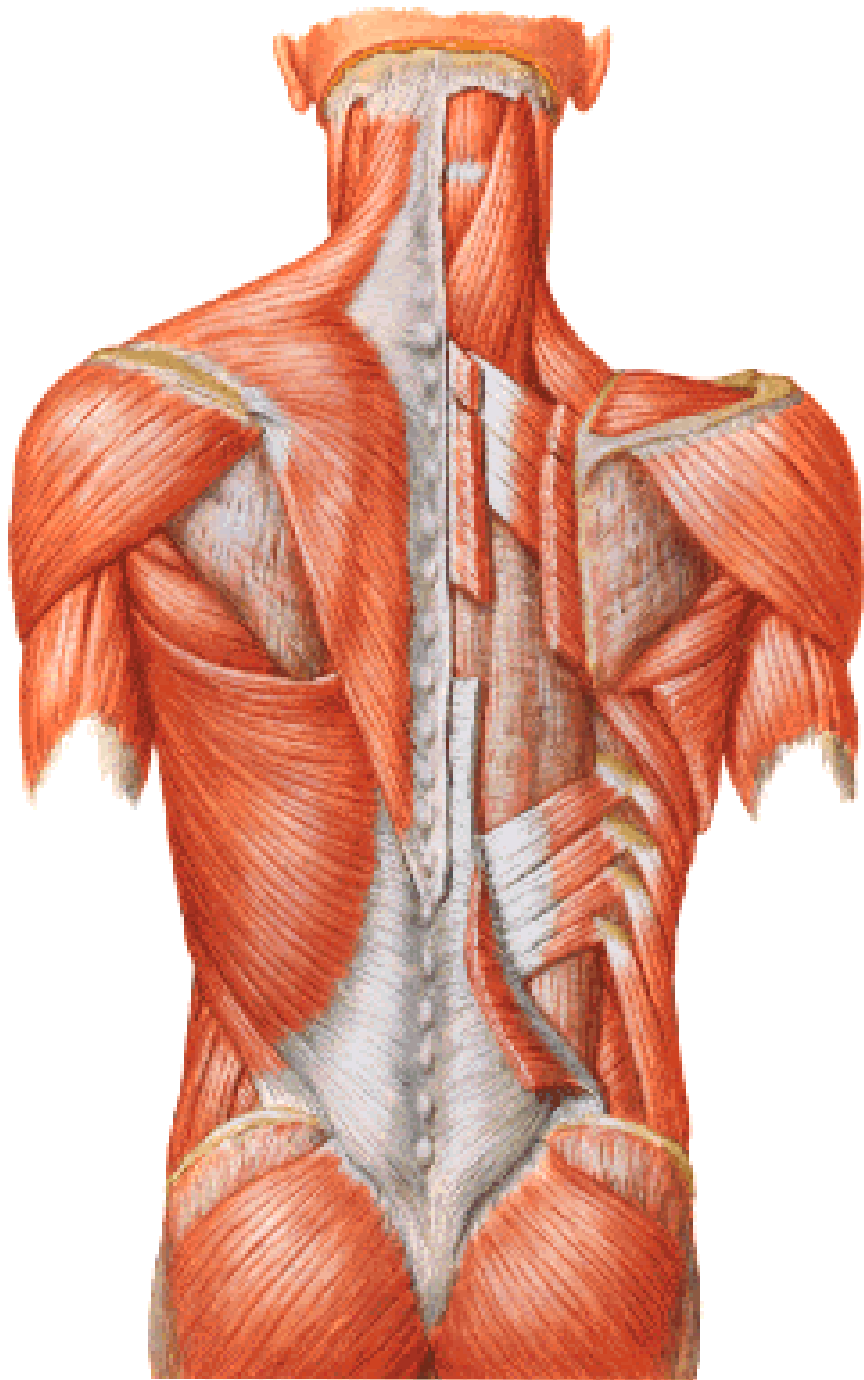


**M. deltoideus (n. axillaris)**

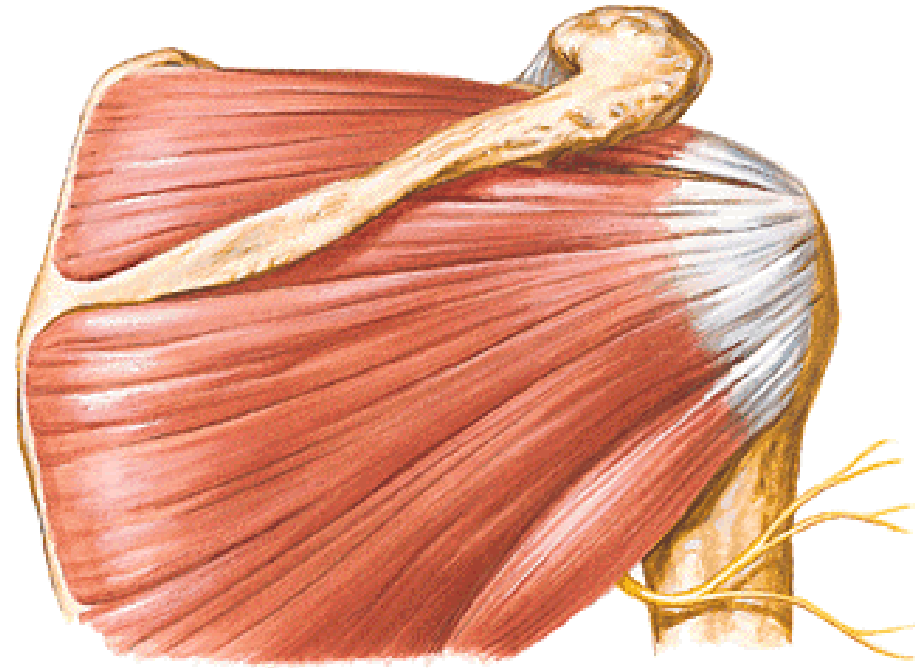
**A. circumflexa humeri post. et ant.**



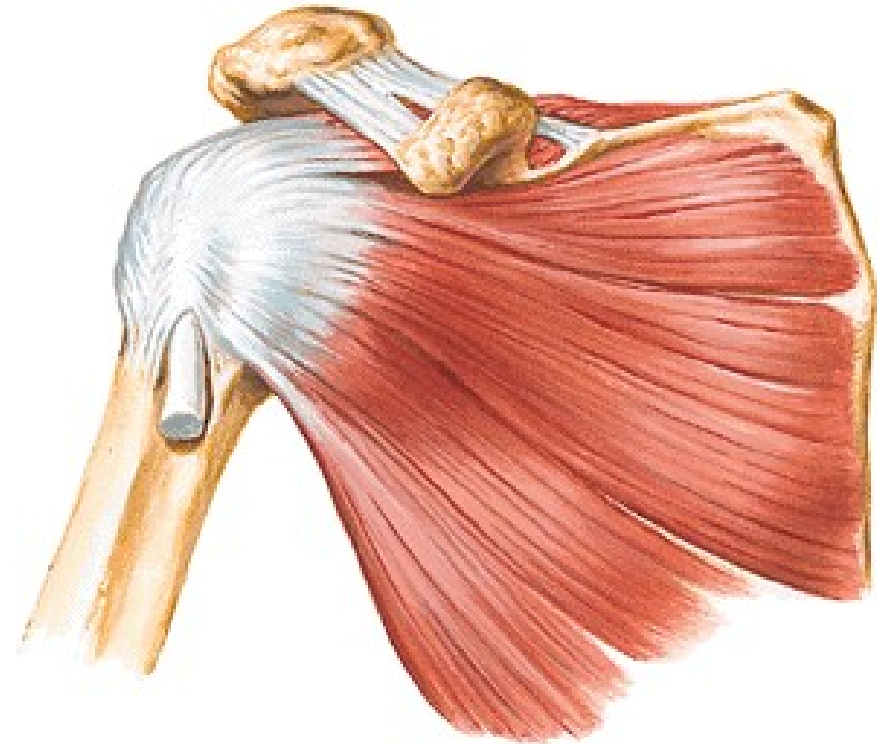
# **Regio scapularis**



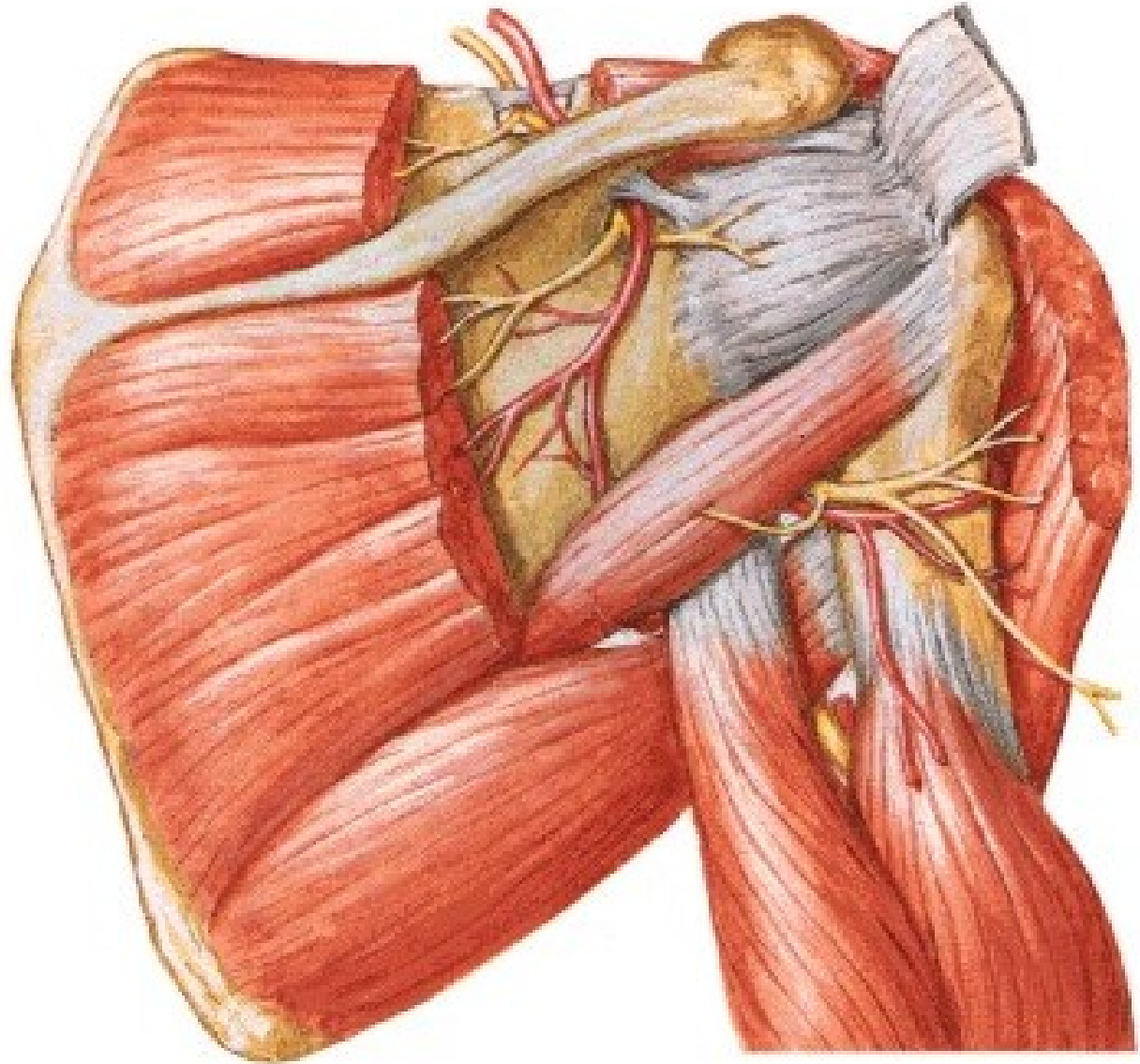
**M. supraspinatus**  
**M. infraspinatus**  
**M. teres minor**  
**M. teres major**



**M. subscapularis**

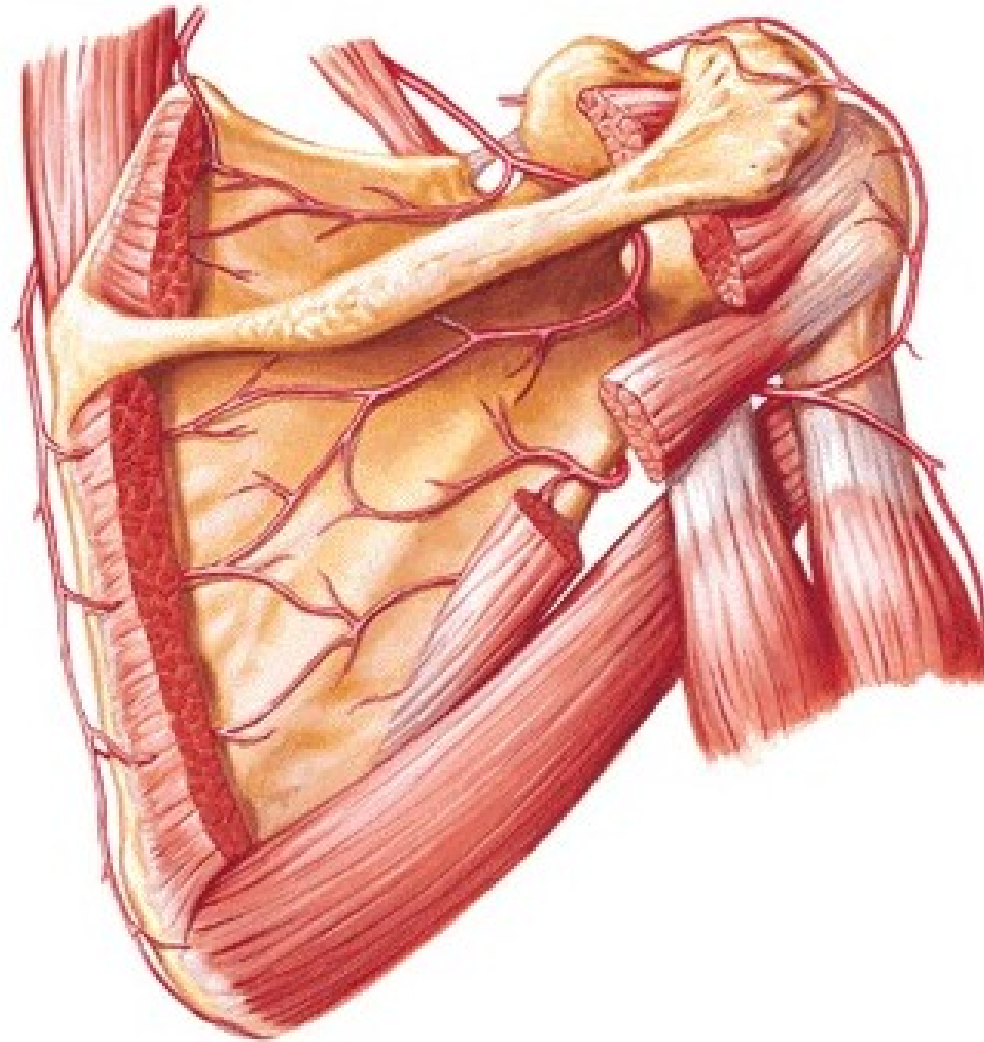
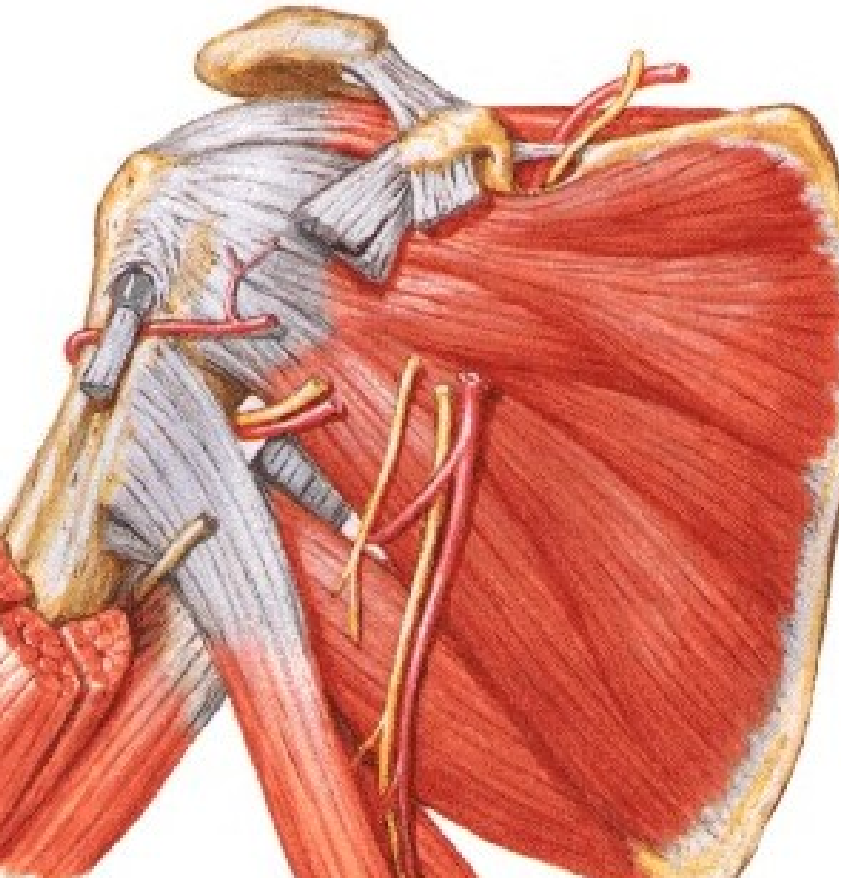


**N. suprascapularis**  
**N. axillaris**



# ARTERIAL ANASTOMOSES AROUND THE SCAPULA

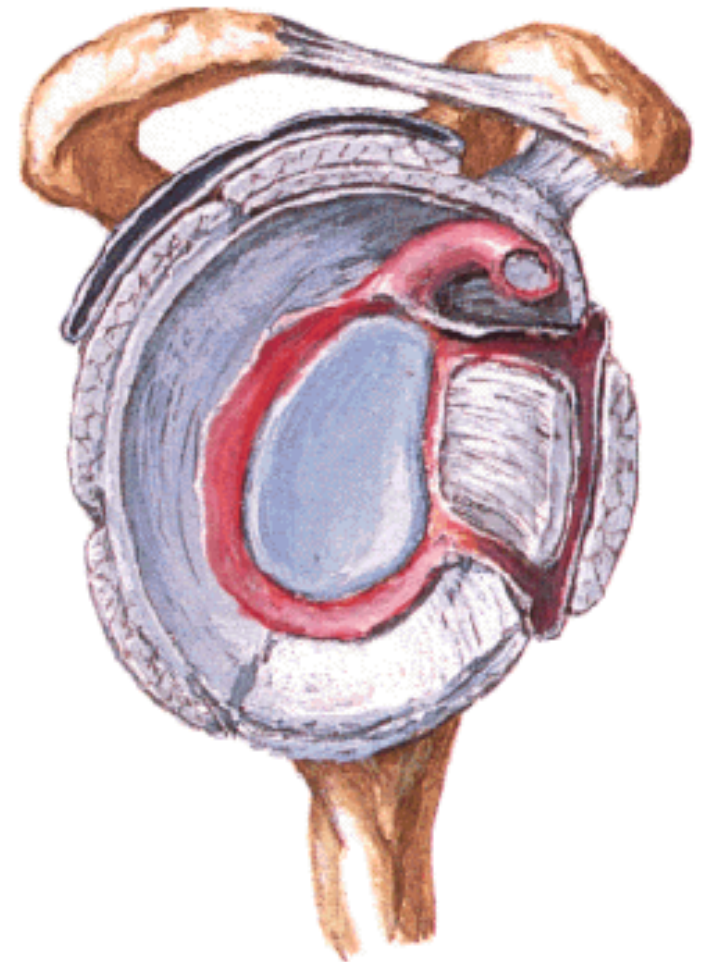
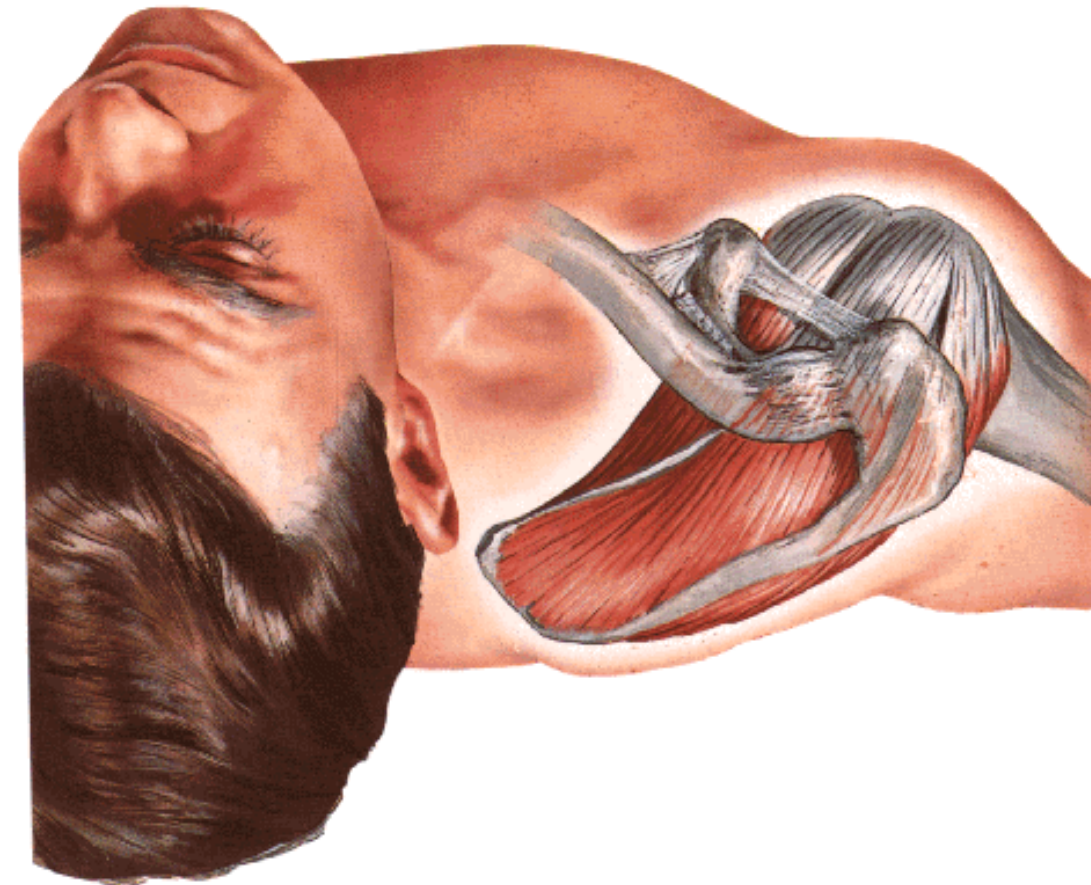
- A. transversa colli**
- A. suprascapularis**
- A. circumflexa scapulae**
- A. circumflexa humeri post.**



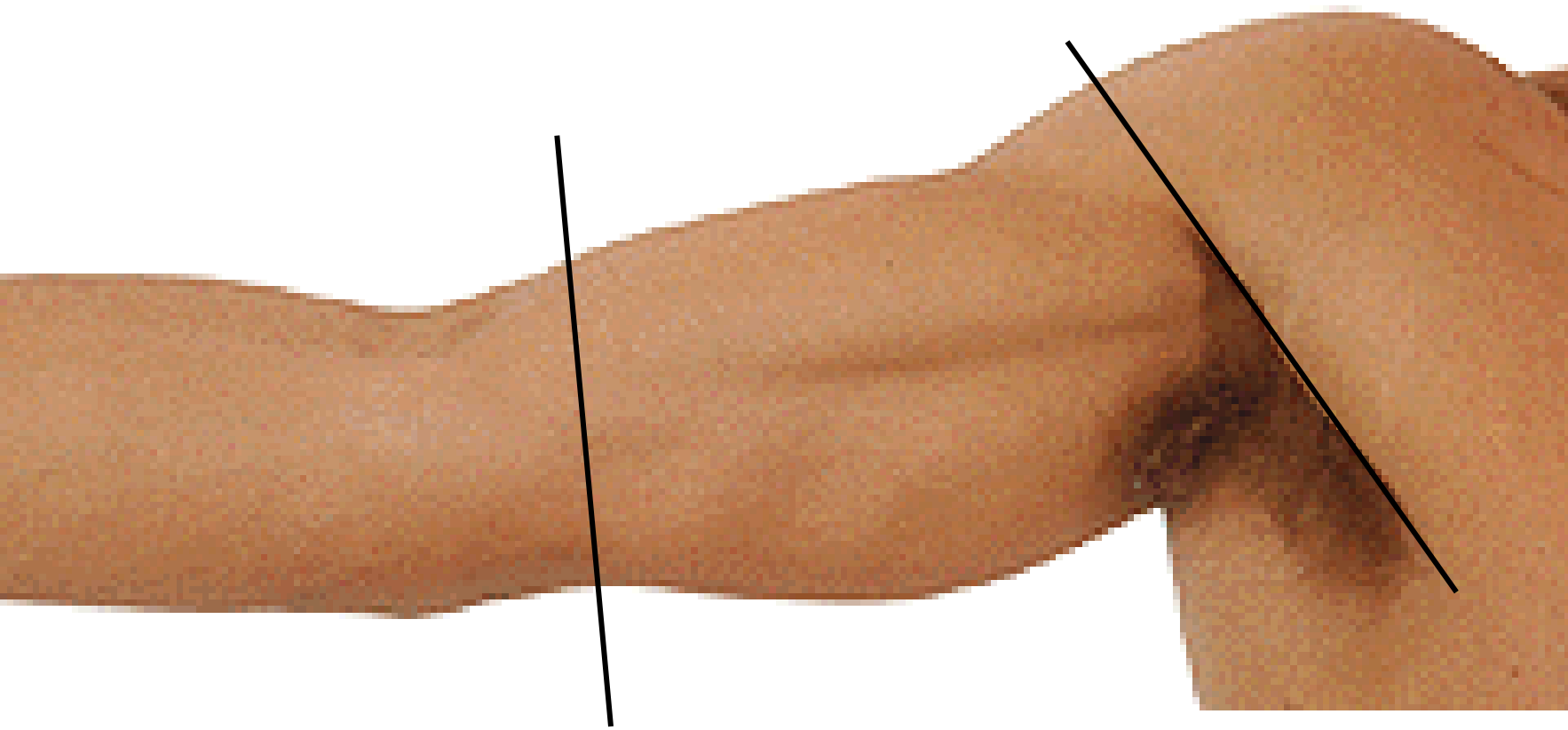


# Rotator cuff

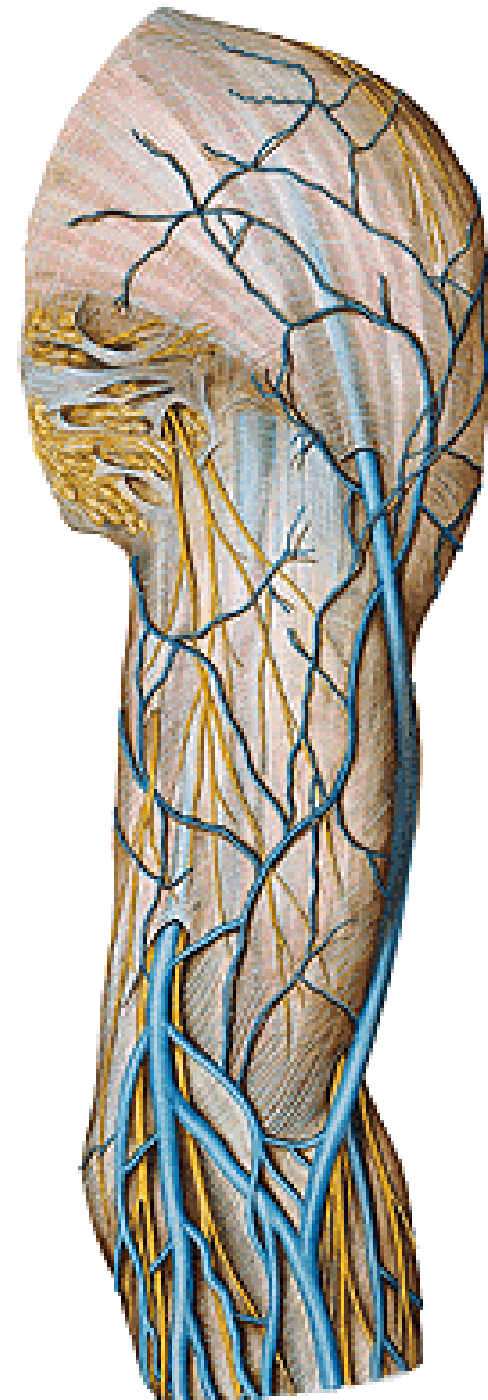
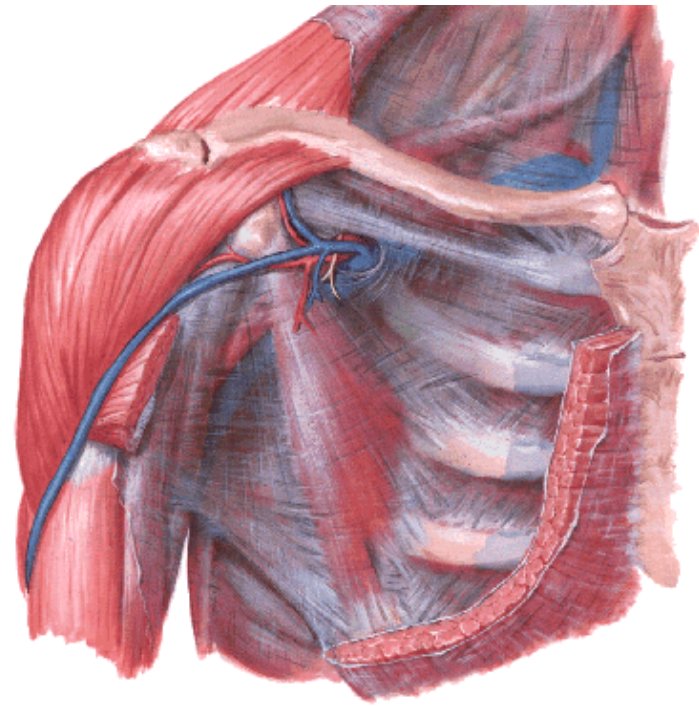
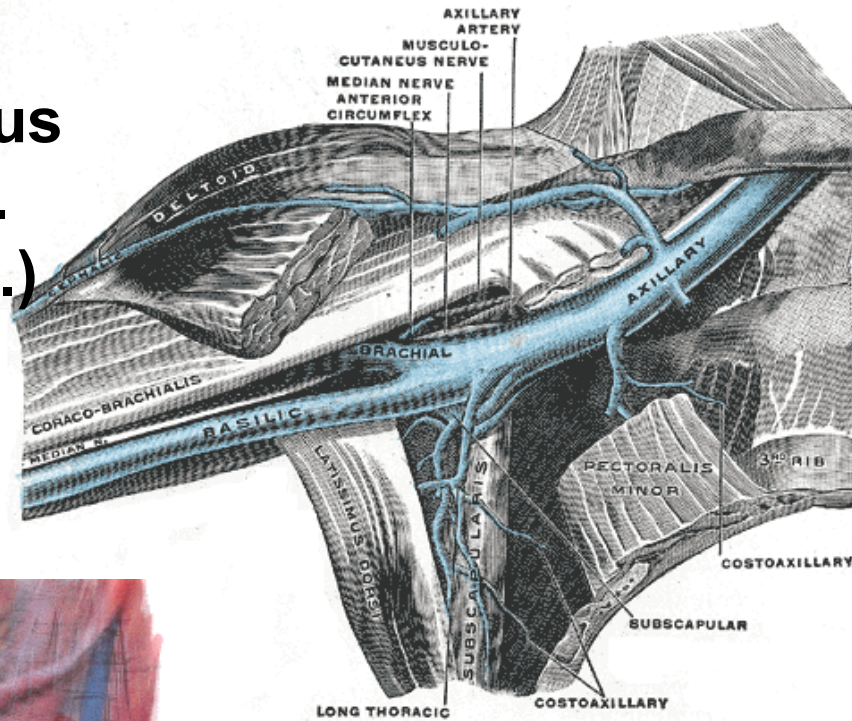
**bursa subacromialis subdeltoidea**



# **Regio brachii anterior**

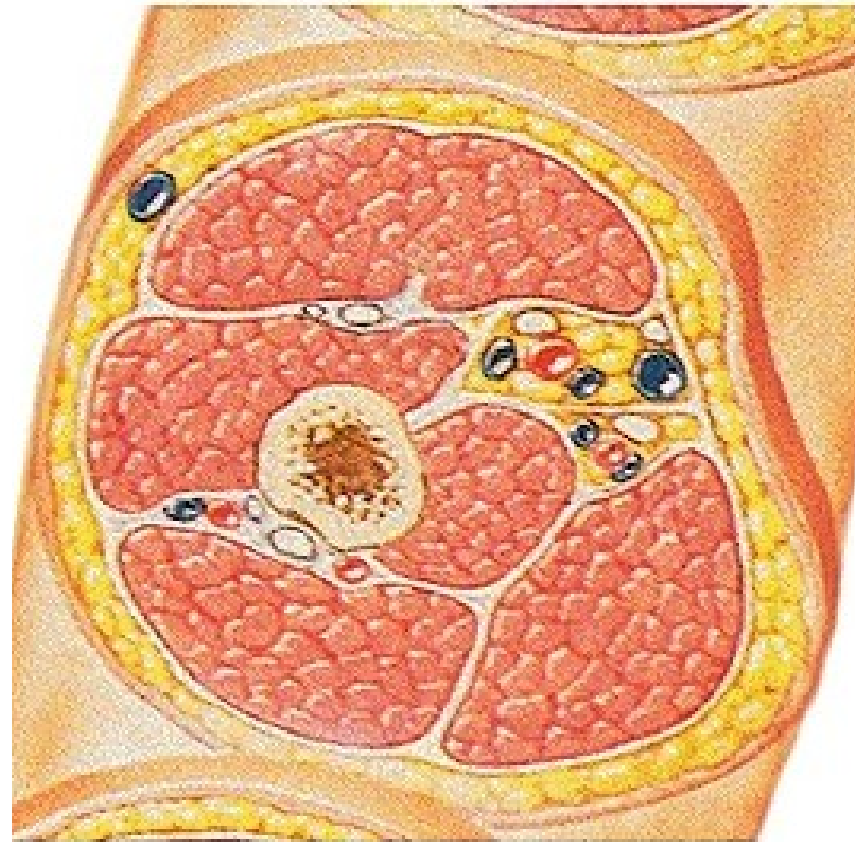
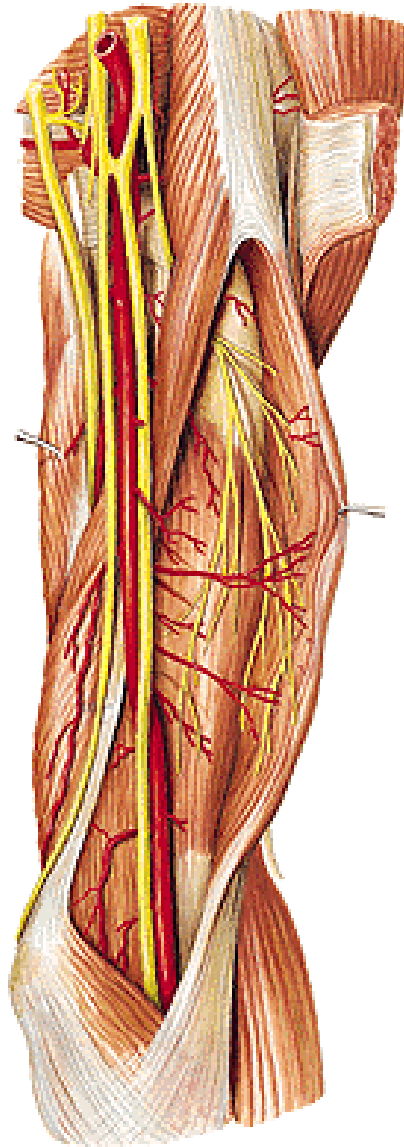
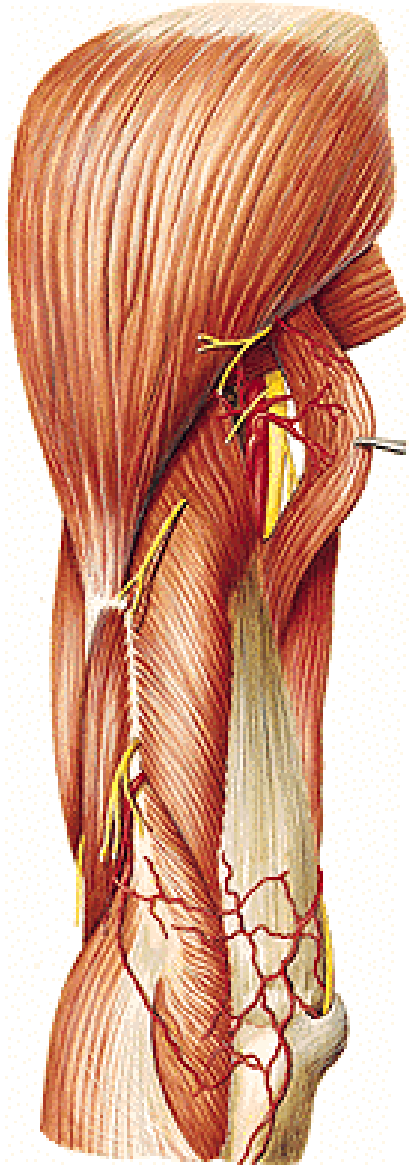


**N. cut. brachii lat. inf.**  
**N. cut. brachii med.**  
**V. cephalica**  
**V. basilica – hiatus  
basilicus (n. cut.  
antebrachii med.)**



# Septum intermusculare mediale et laterale

## Sulcus bicipitalis medialis





## **Anterior group of muscles:**

**M. biceps brachii**

**caput longum**

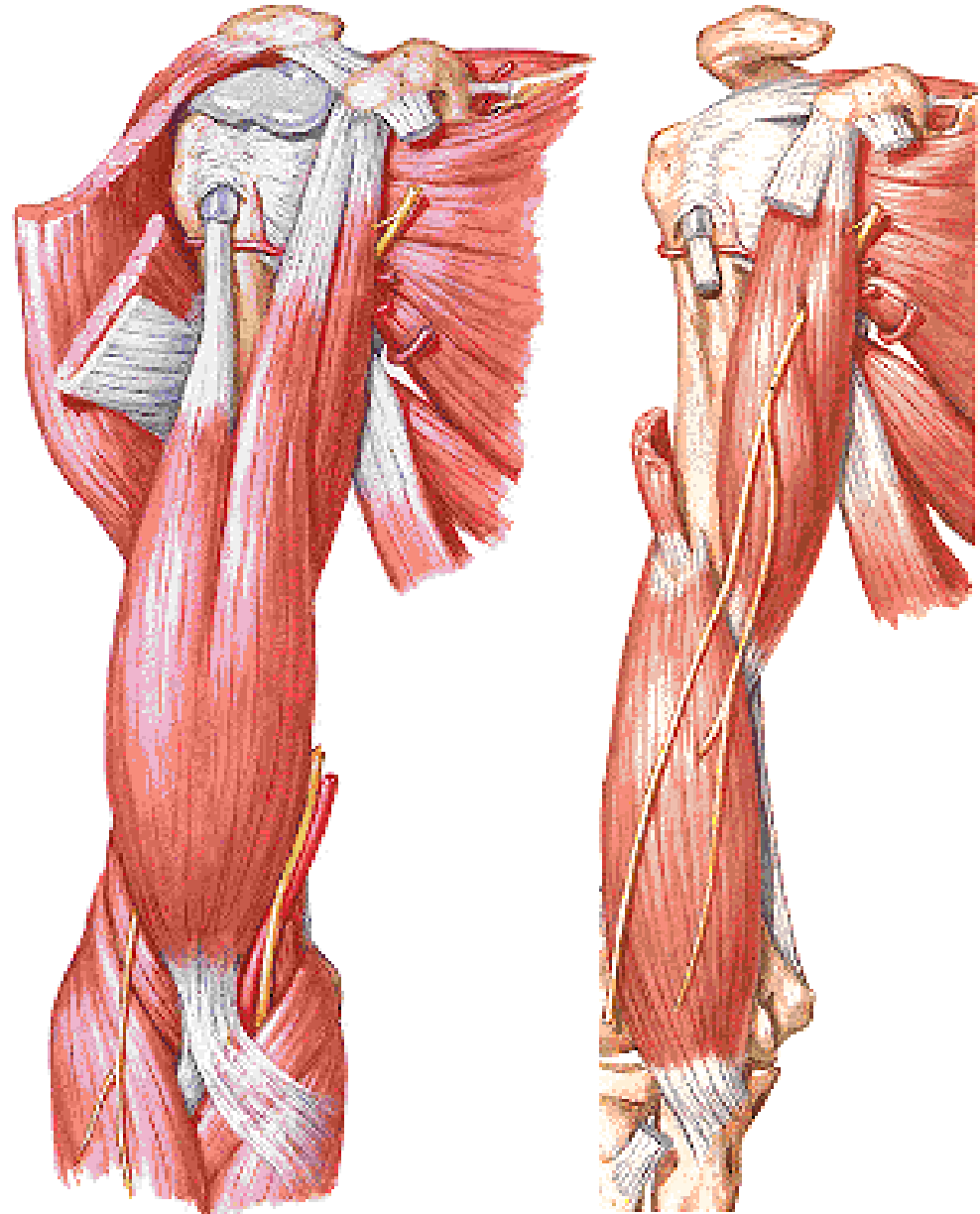
**caput breve**

**aponeurosis m. bicipitis**

**M. coracobrachialis**

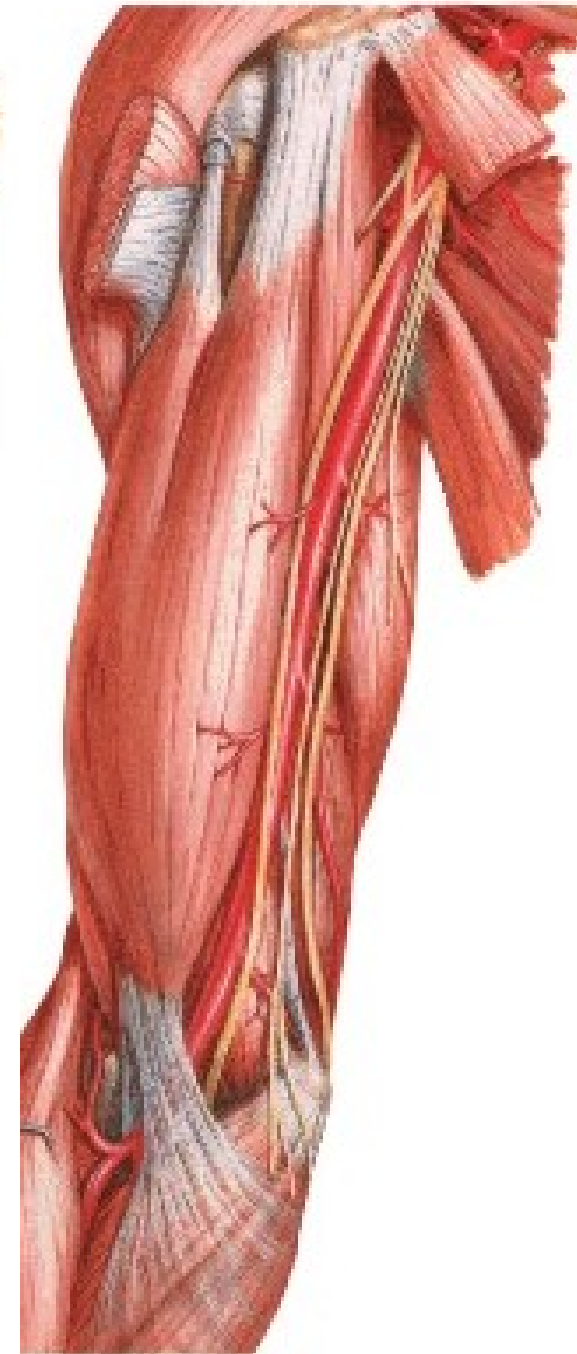
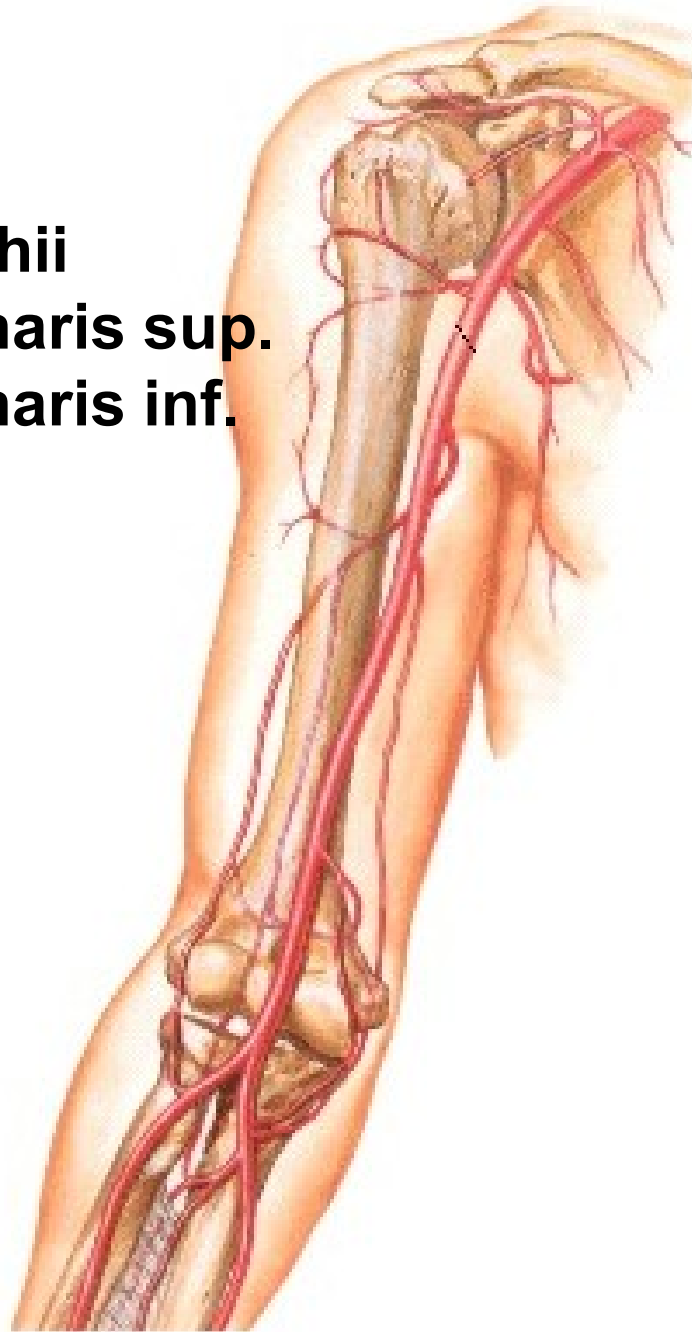
**M. brachialis**

**N. musculocutaneus**



## A. BRACHIALIS

- a. profunda brachii
- a. collateralis ulnaris sup.
- a. collateralis ulnaris inf.
- a. radialis
- a. ulnaris

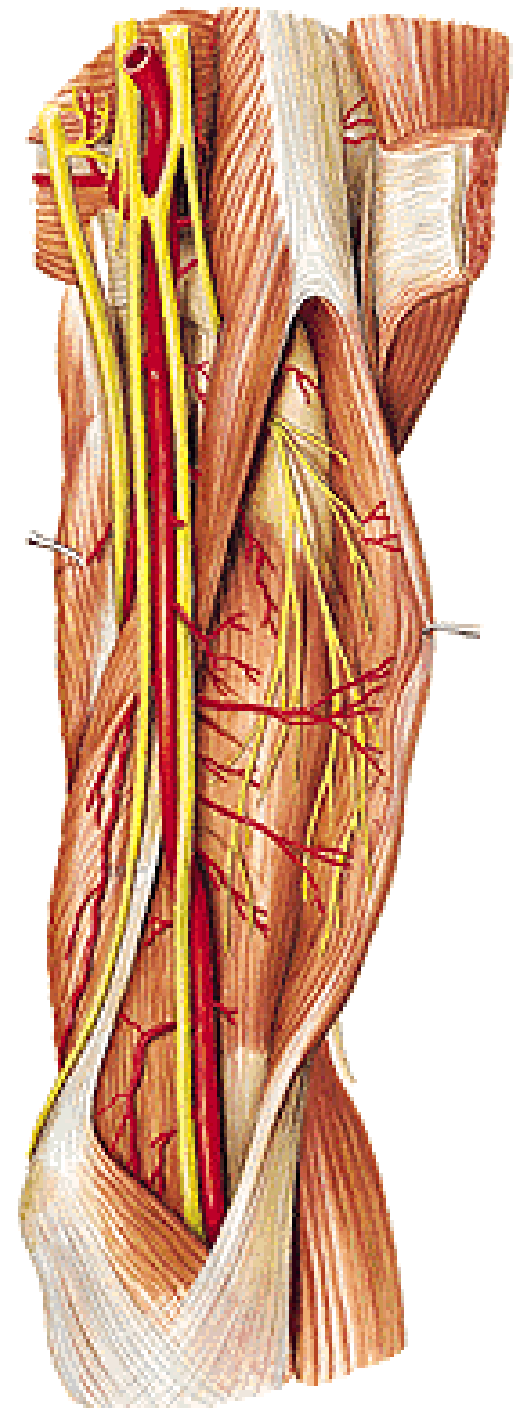


**A. collateralis ulnaris sup.**

**A. collateralis ulnaris inf.**

**N. medianus**

**N. ulnaris**

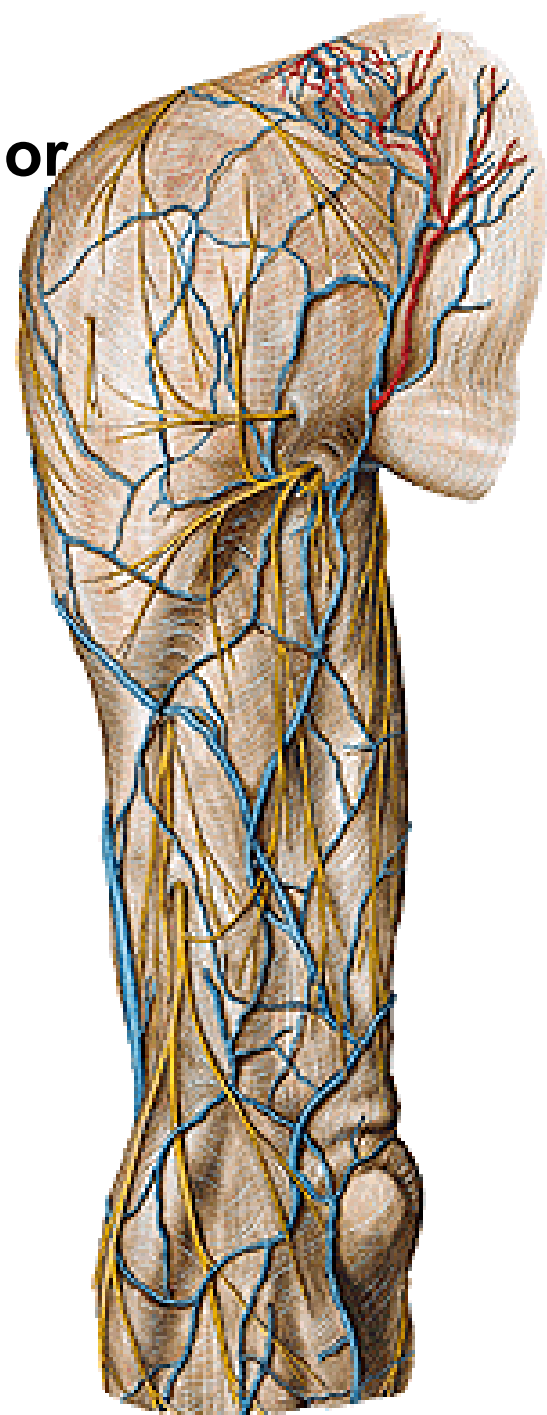




# **Regio brachii posterior**



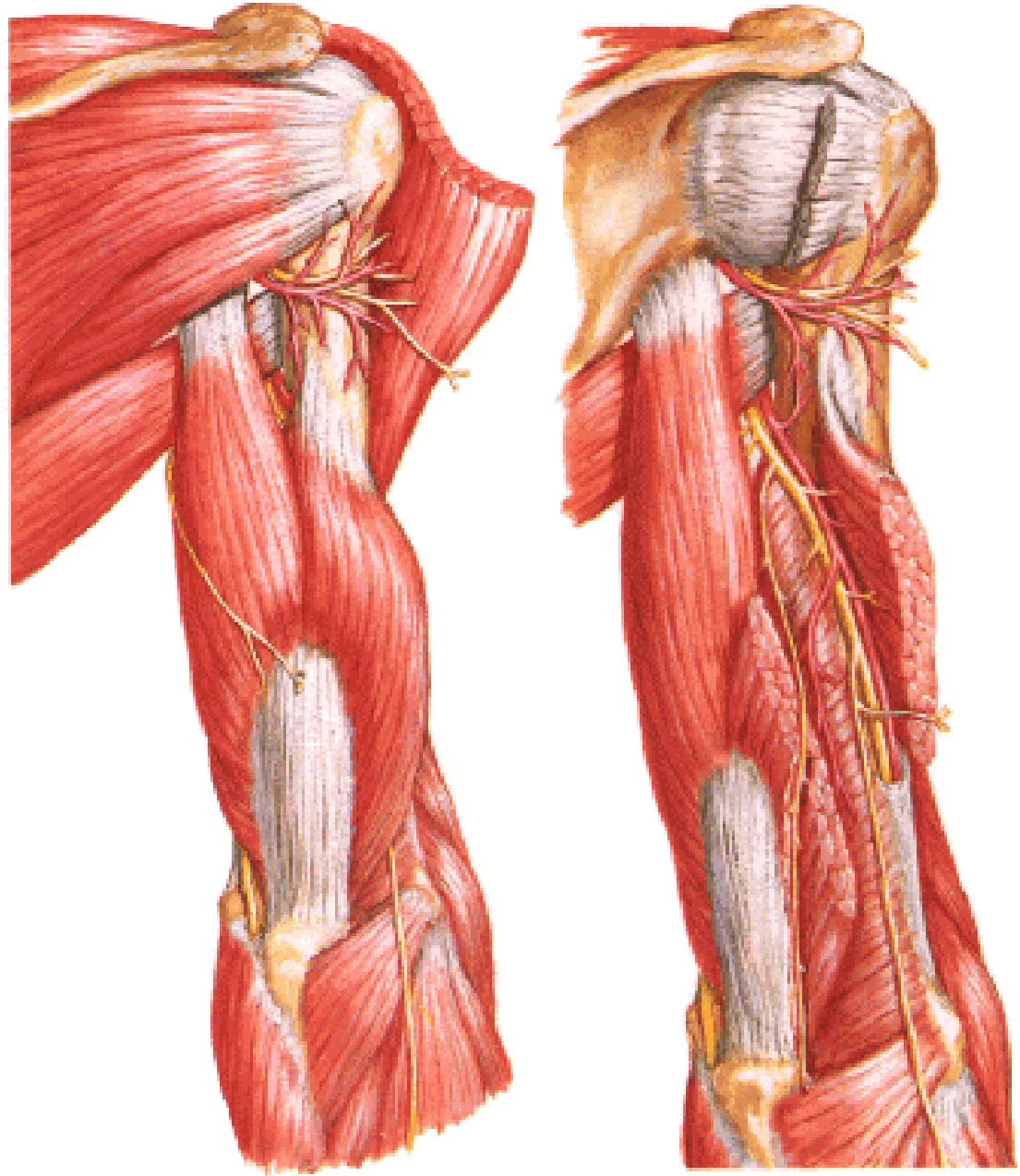
**N. cutaneus brachii lateralis inferior**  
**N. cutaneus brachii posterior**  
**N. cutaneus antebrachii post.**  
**(n. radialis)**



## Posterior group of muscles:

**M. triceps brachii**  
caput longum  
caput laterale  
caput mediale

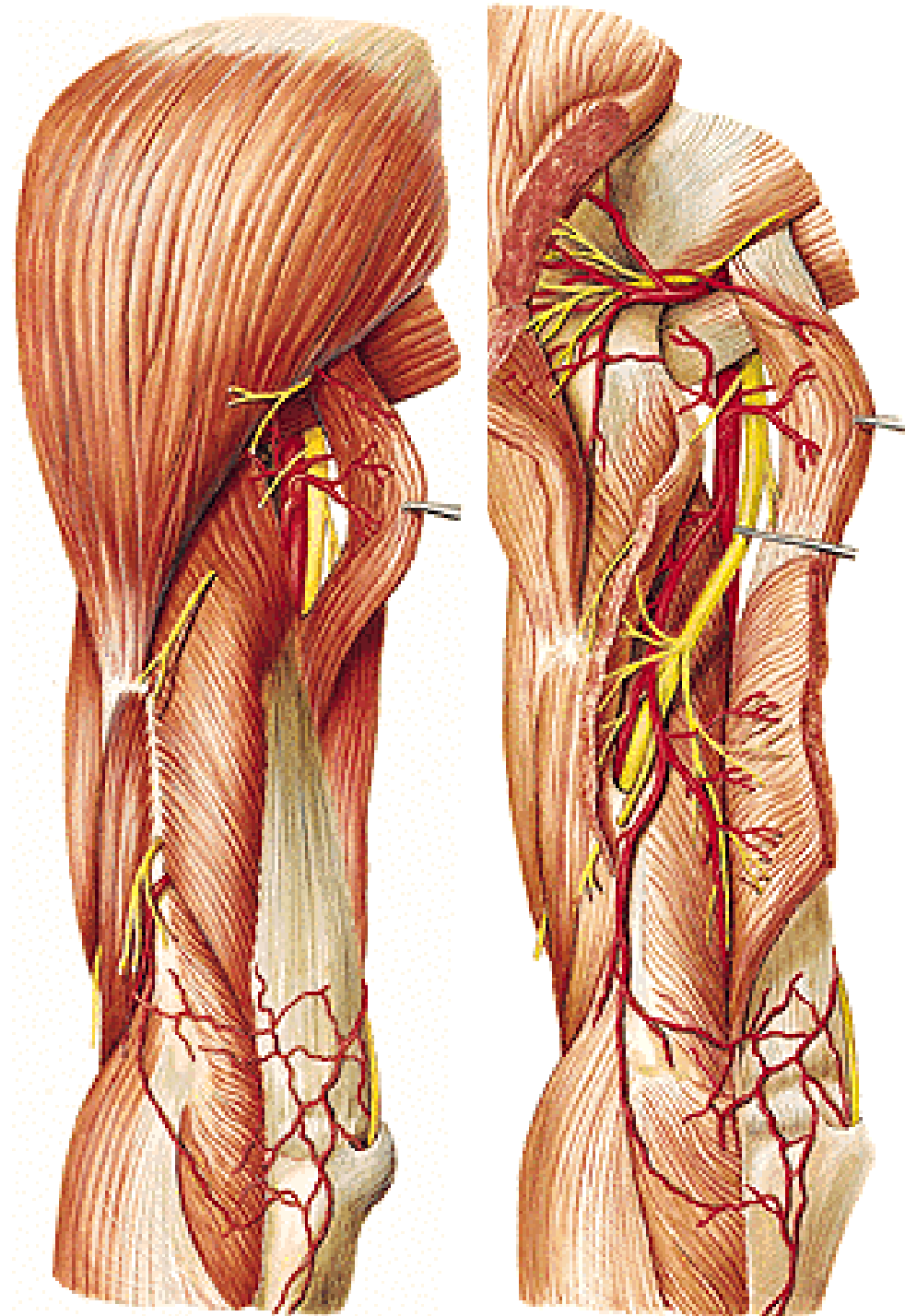
**N. radialis**



## A. PROFUNDA BRACHII

- r. deltoideus
- a. nutricia humeri
- a. collateralis media
- a. collateralis radialis

Rete articulare cubiti



## **Sulcus bicipitalis medialis**

- a. brachialis
- vv. brachiales
- n. medianus
- v. basilica
- n. cutaneus antebrachii med.
- a. collateralis ulnaris sup.
- vv. coll. ulnares sup.
- n. ulnaris

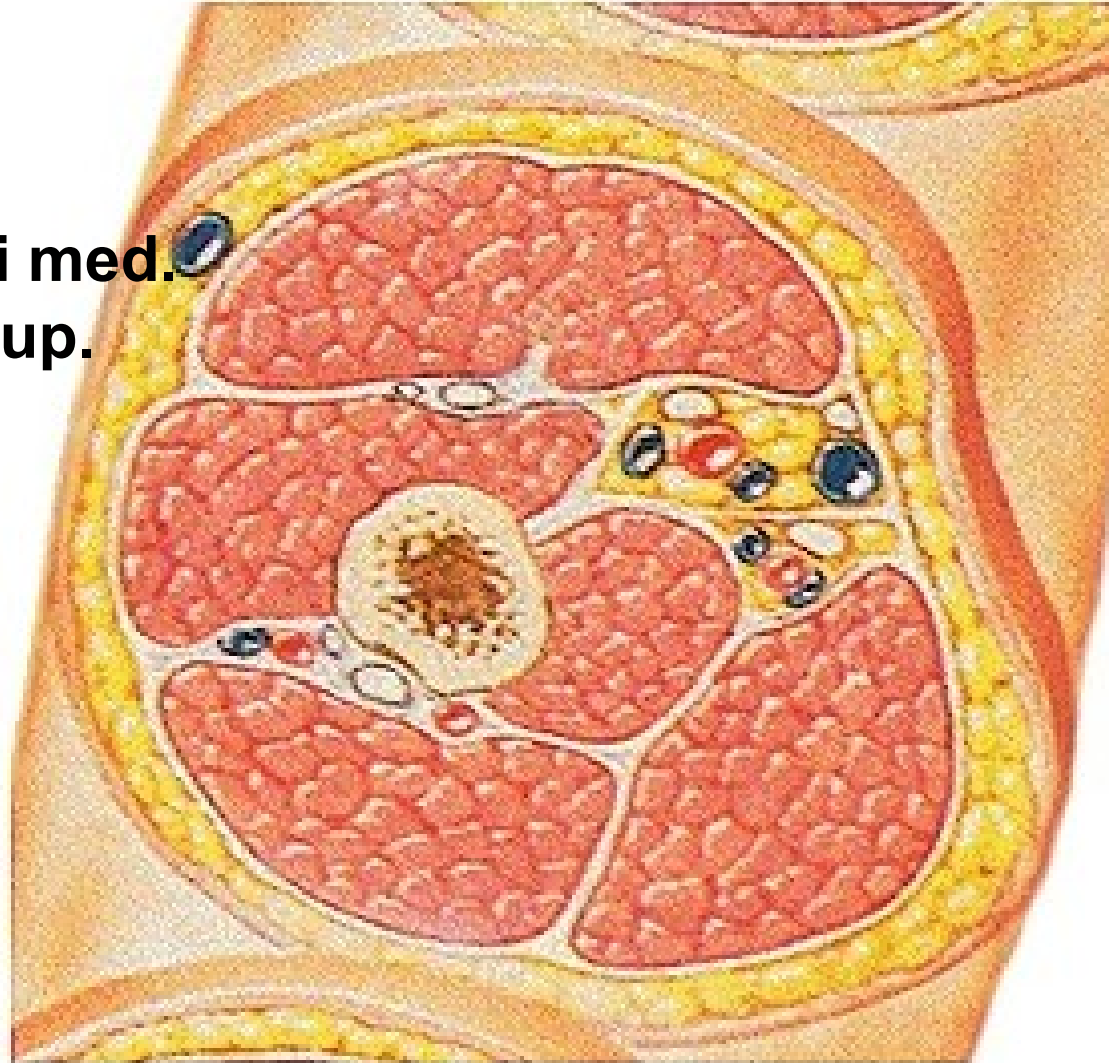
## **N. musculocutaneus**

### **N. radialis**

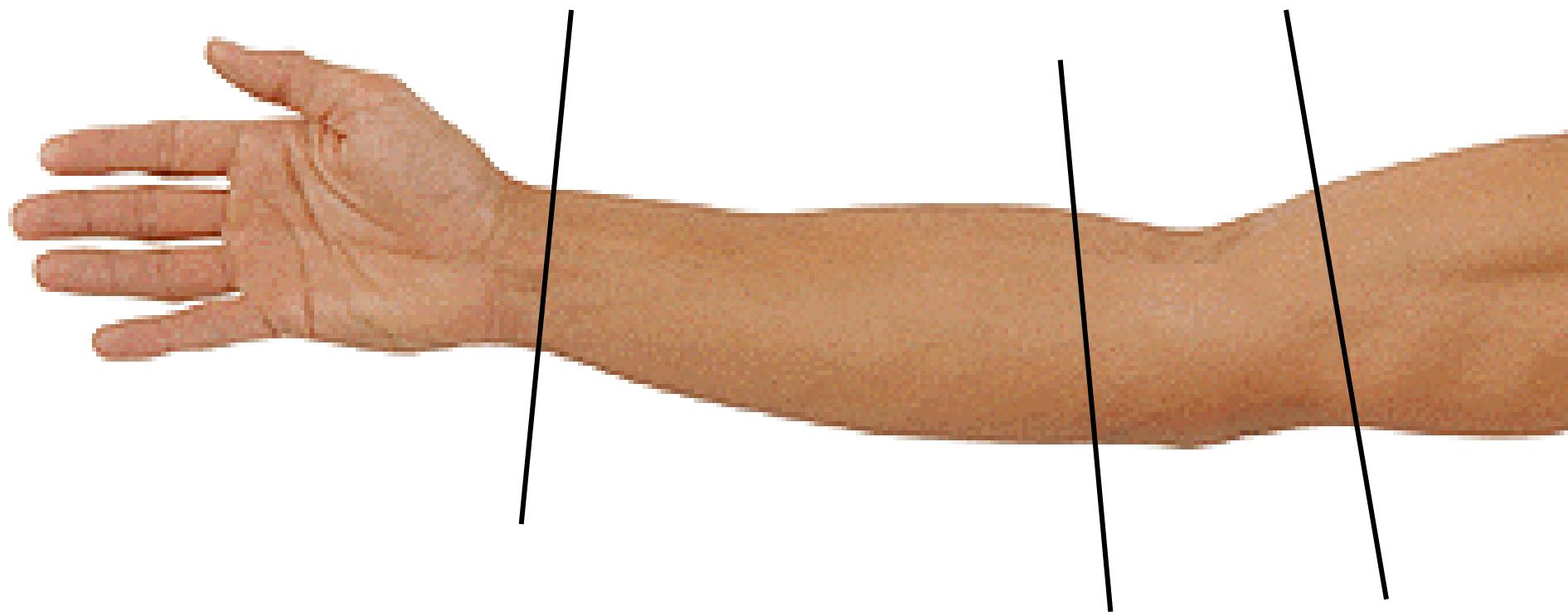
### **A. coll. radialis**

### **A. coll. media**

### **V. profunda brachii**

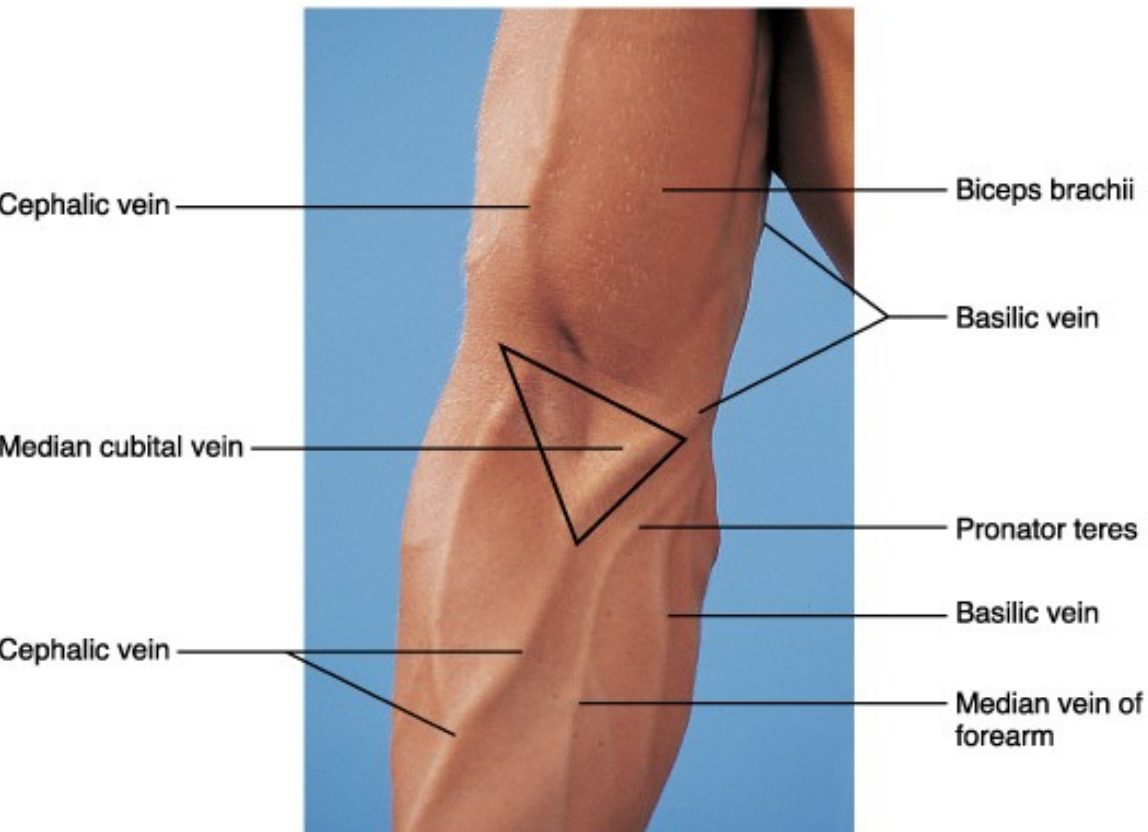


# **Regio cubiti et antebrachii anterior**

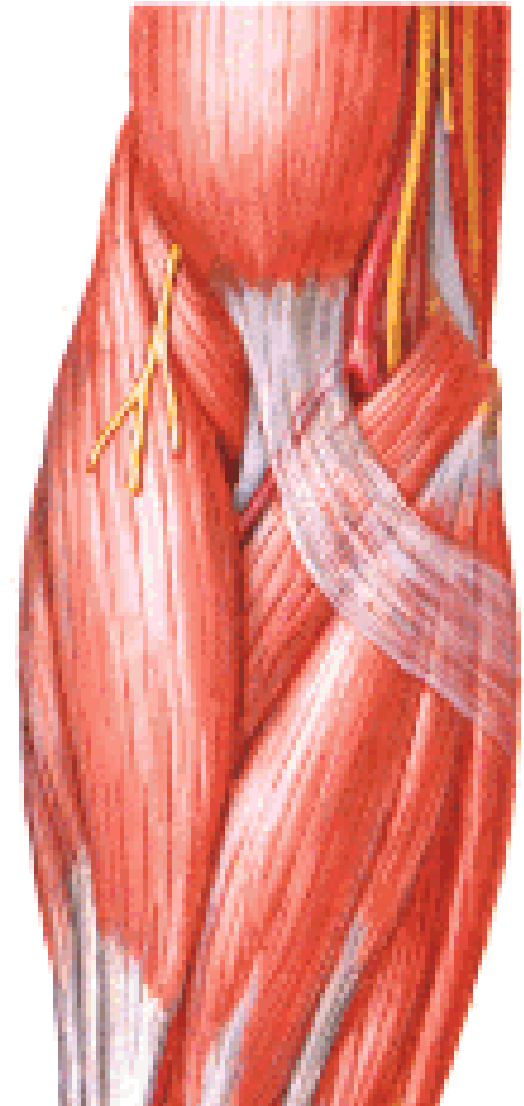




# Fossa cubitalis

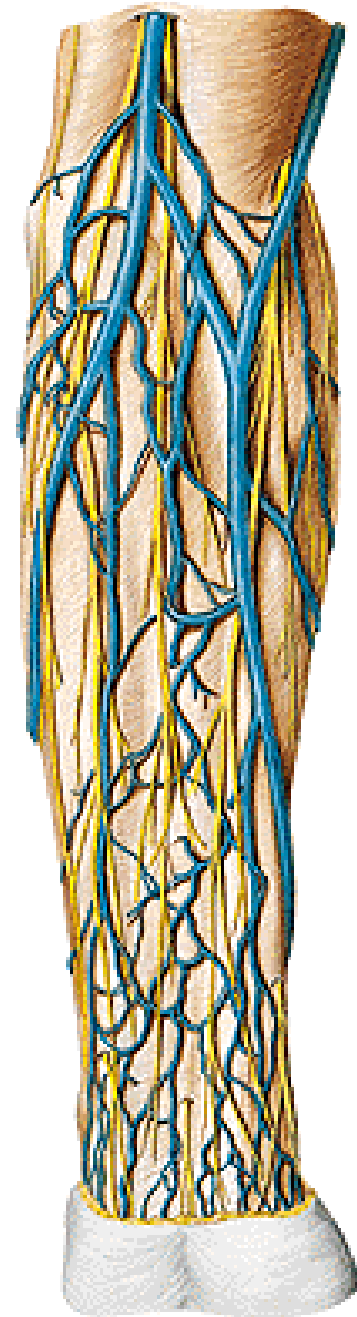


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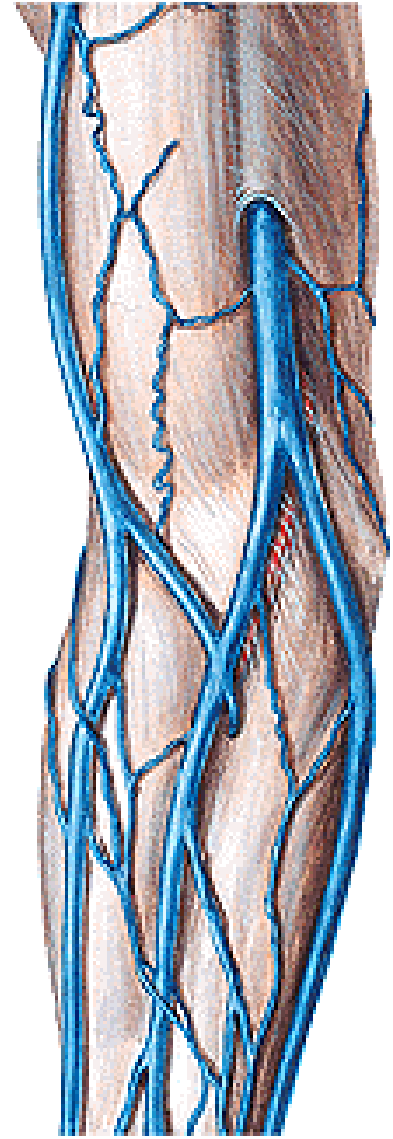
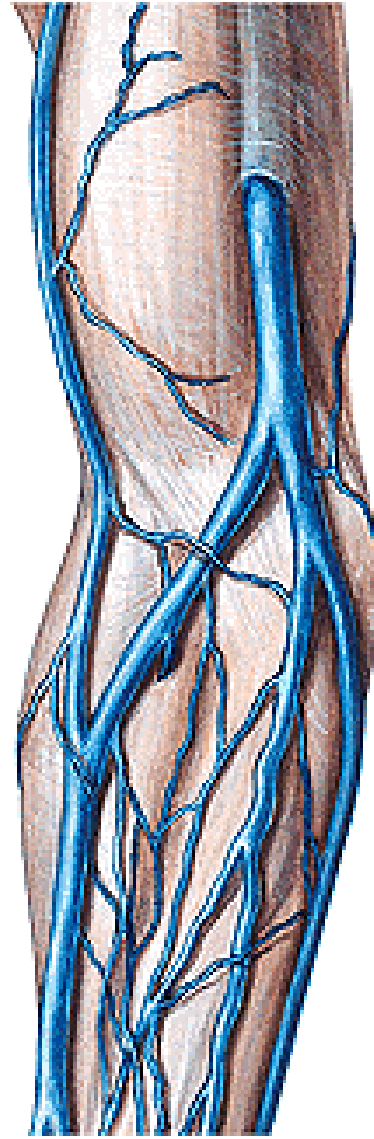
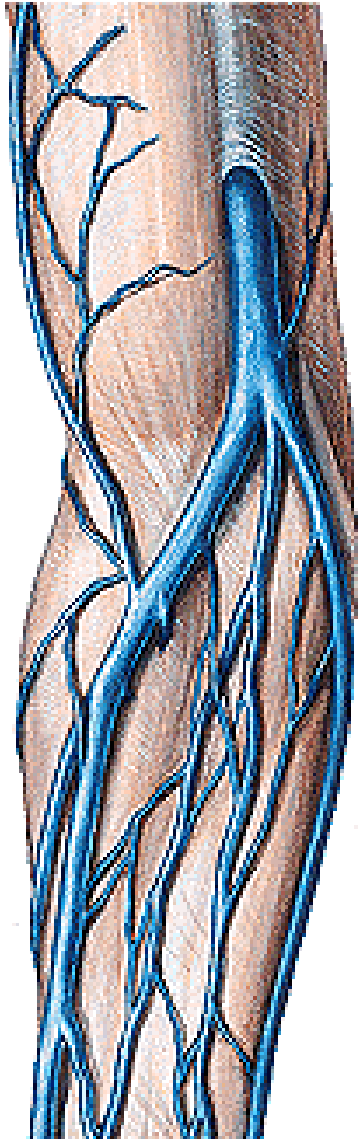
**N. cutaneus brachii med.**  
**N. cutaneus antebrachii med.**  
- r. anterior  
- r. posterior  
**N. cutaneus antebrachii lat.**  
(n. musculocutaneus)

**V. cephalica**  
**V. basilica**



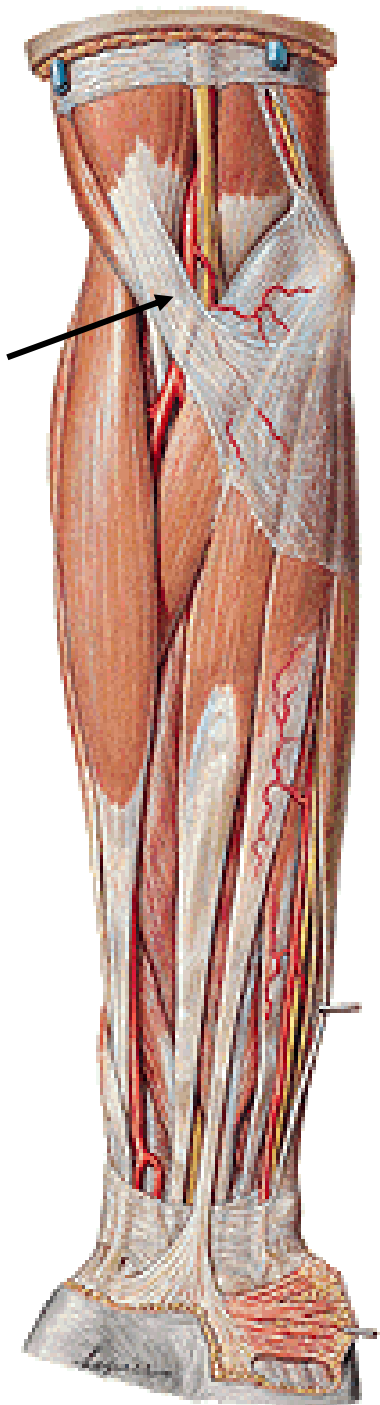
**V. mediana cubiti**

**V. mediana antebrachii – v. mediana cephalica et basilica**



- A. brachialis**  
- a. radialis  
- a. ulnaris

**aponeurosis m. bicipitis  
brachii**



## Anterior group of muscles:

**M. pronator teres**

**M. flexor carpi radialis**

**M. palmaris longus**

**M. flexor carpi ulnaris**

**M. flexor digitorum spf.**

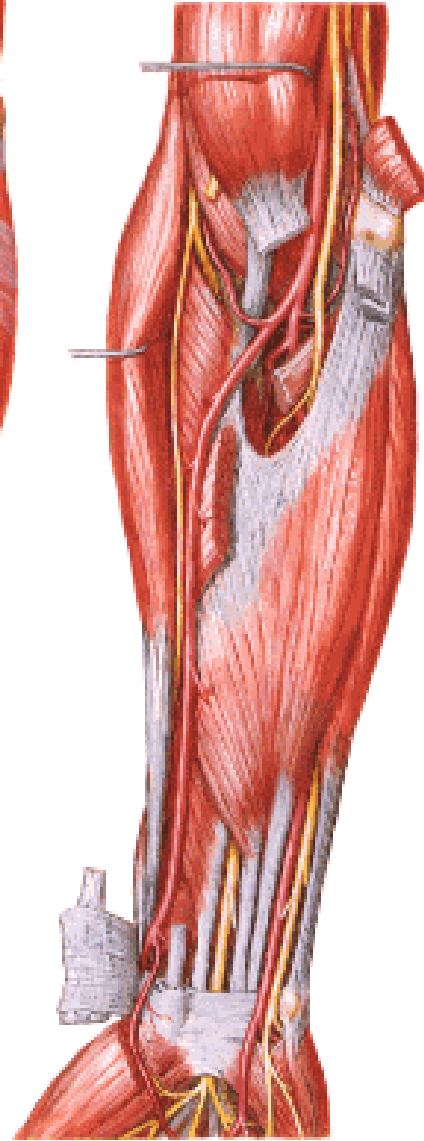
**M. flexor pollicis longus**

**M. flexor digitorum prof.**

**M. pronator quadratus**

**N. medianus**

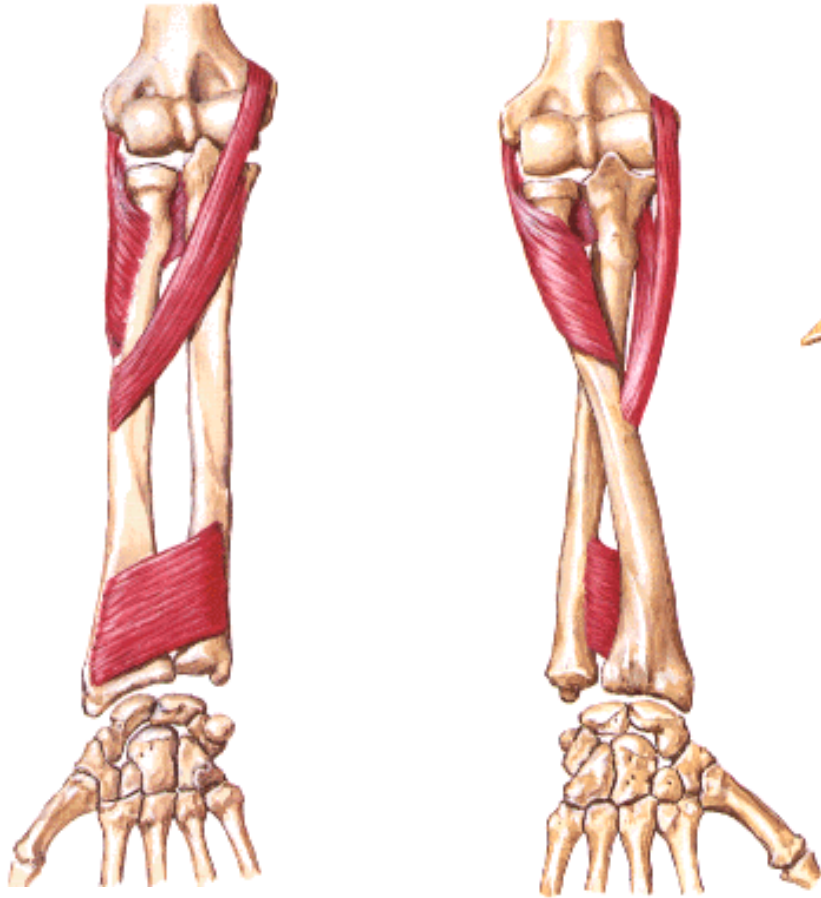
**N. ulnaris**



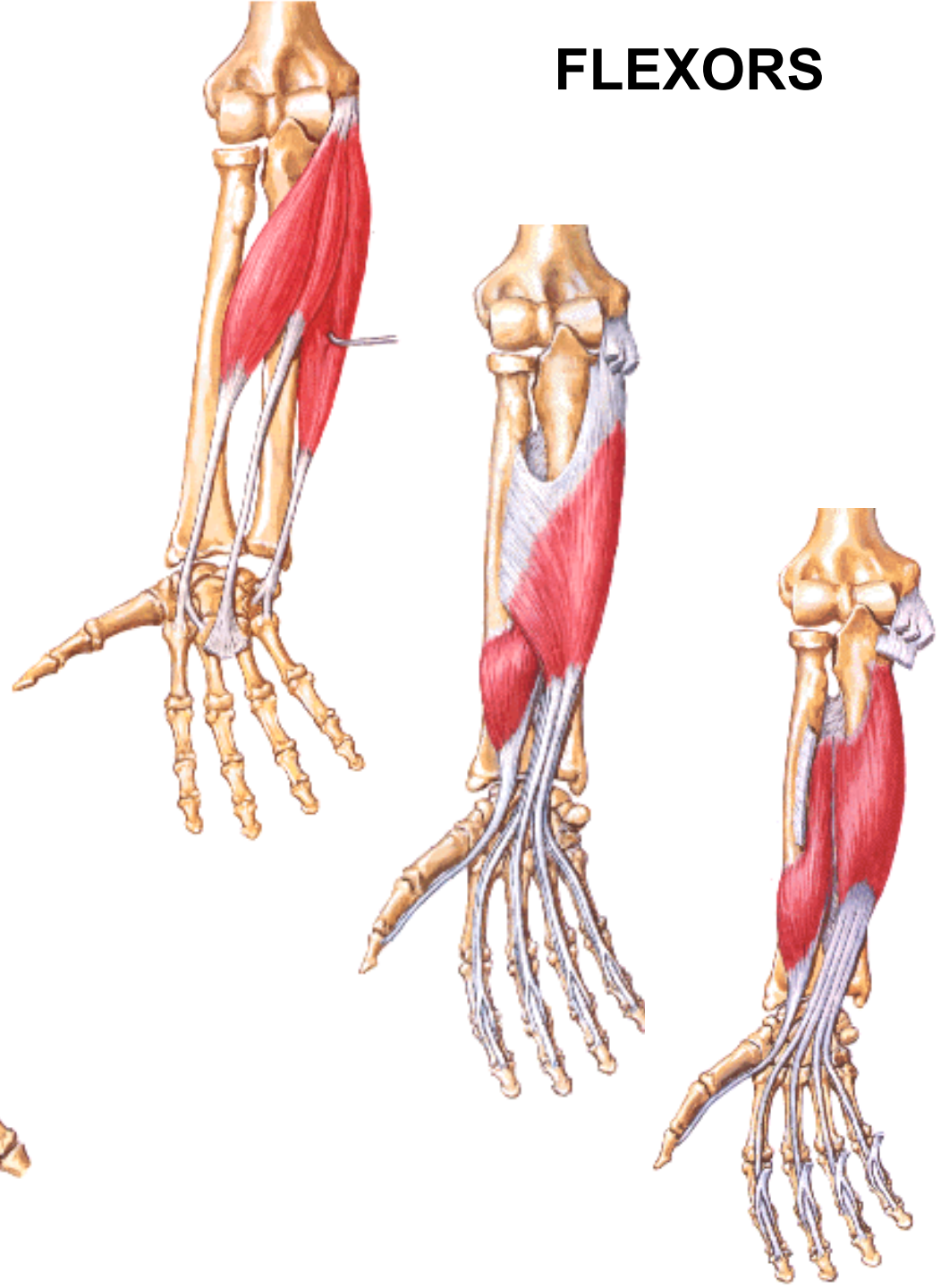
**PRONATION**

-

**SUPINATION**



**FLEXORS**



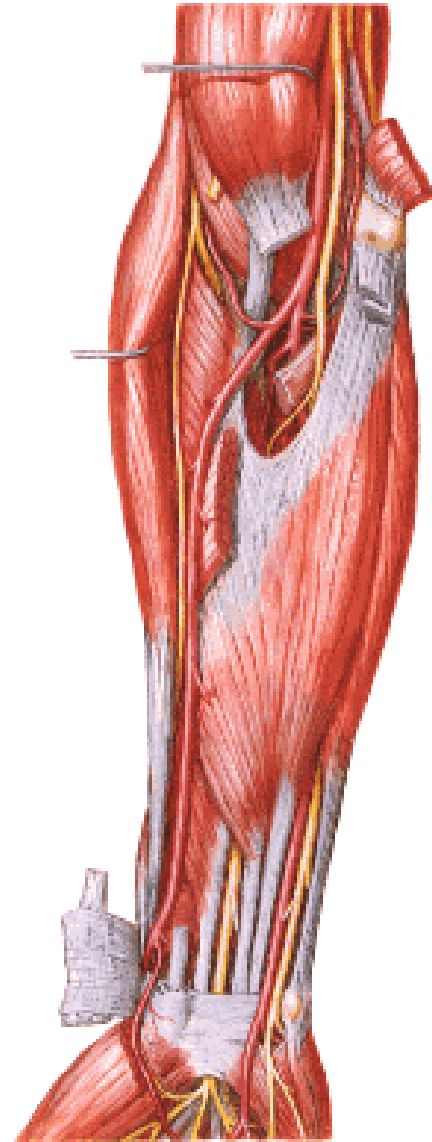
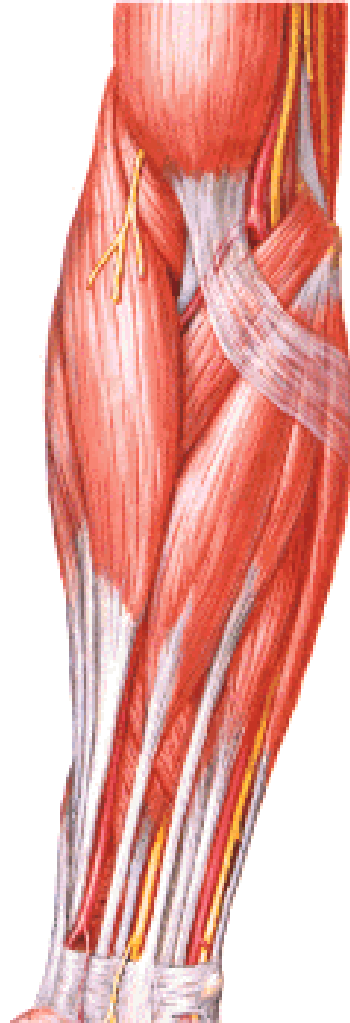
## Lateral group of muscles:

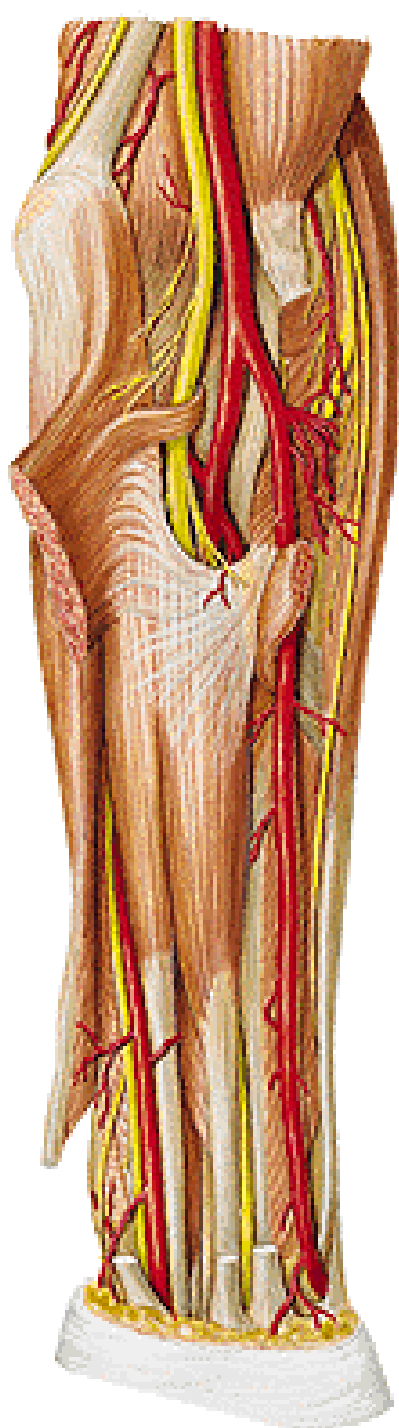
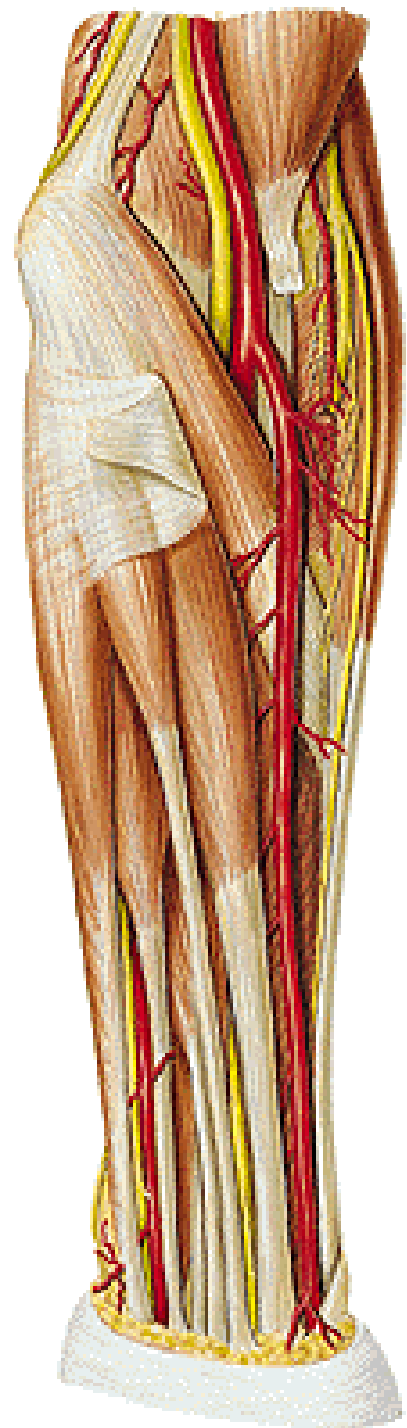
**M. brachioradialis**

**M. extensor carpi radialis longus**

**M. extensor carpi radialis brevis**

**M. supinator**





**A. radialis**

- a. recurrens radialis
- rr. musculares
- r. carpeus palmaris
- r. palmaris spf.

**R. spf. n. radialis**

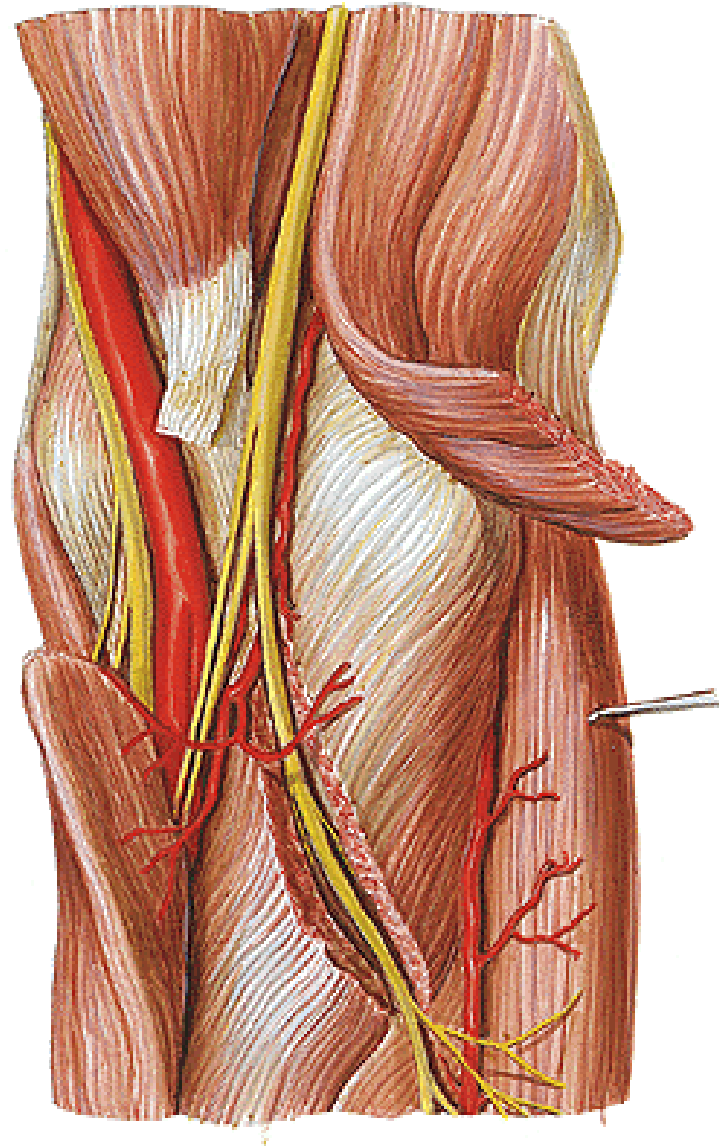
**N. medianus**

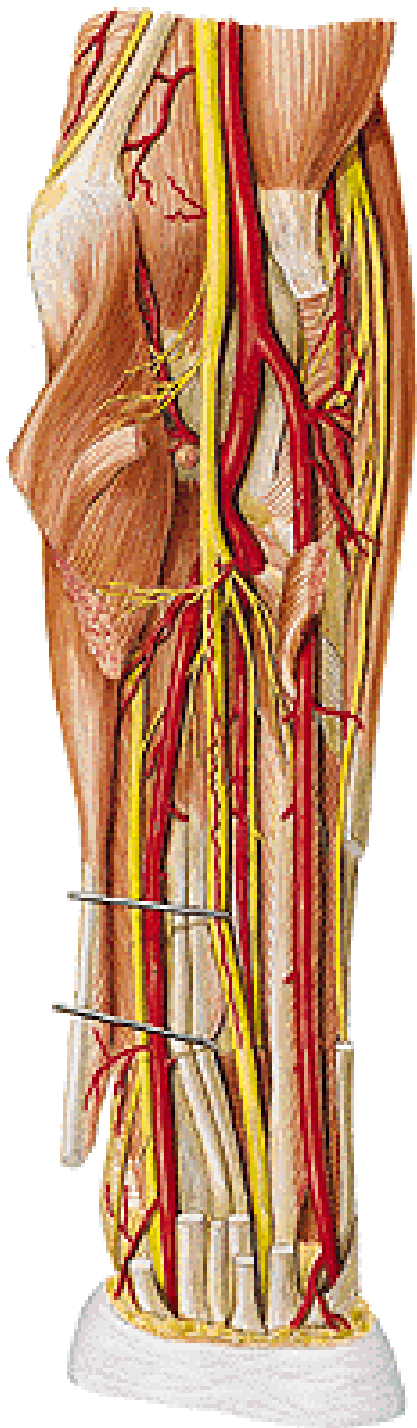
**A. ulnaris**

**N. ulnaris**



**N. radialis - r. spf.**  
**- r. prof.**  
**M. supinator**





## **N. medianus**

- rr. musculares
- n. interosseus ant.

## **A. ulnaris**

- a. recurrens ulnaris
- rr. musculares
- a. interossea communis
  - a. interossea ant.
  - a. interossea post.

# **Regio cubiti et antebrachii posterior**



**N. cutaneus antebrachii med.  
- r. posterior**

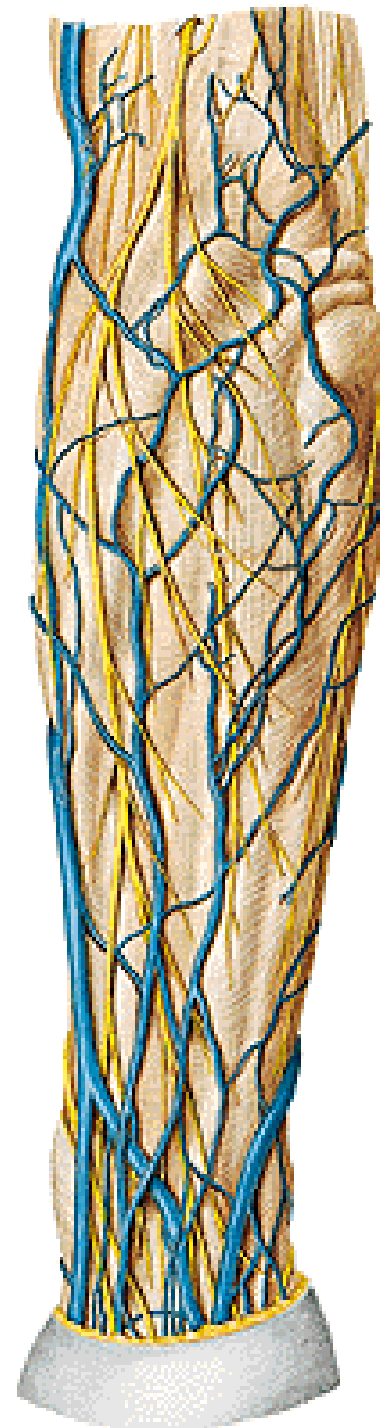
**N. cutaneus antebrachii post.  
(n. radialis)**

**R. superficialis n. radialis**

**R. dorsalis n. ulnaris**

**V. cephalica**

**V. basilica**



## Posterior group of muscles:

**M. anconeus**

**M. extensor digitorum**

**M. extensor digiti minimi**

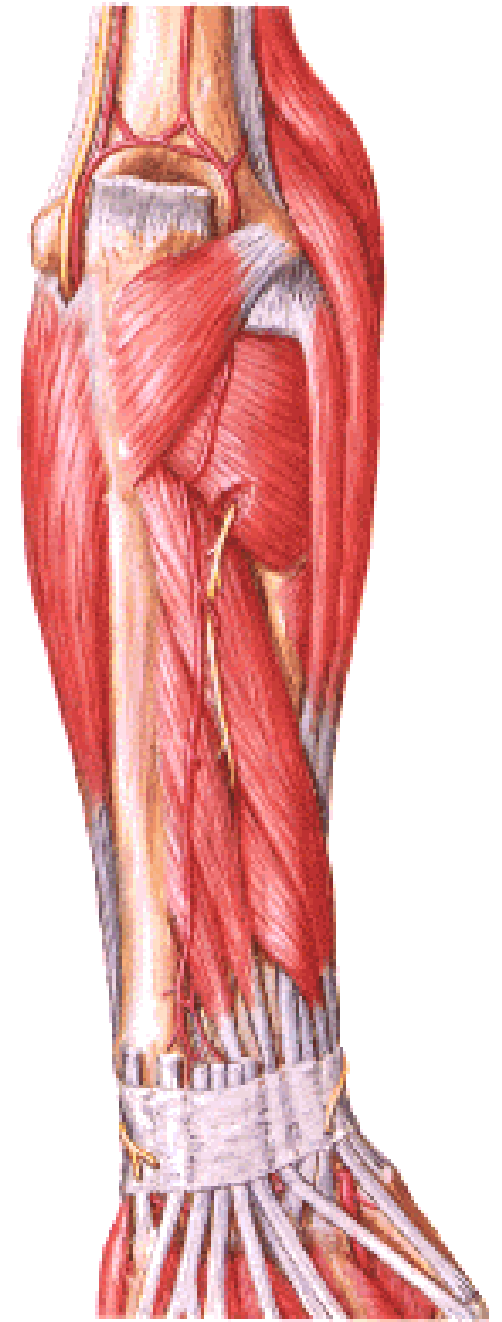
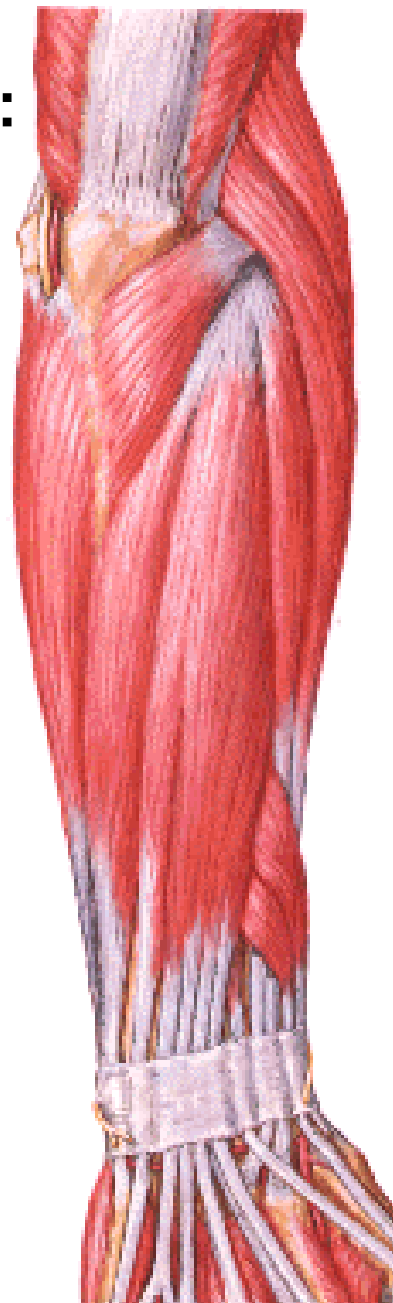
**M. extensor carpi ulnaris**

**M. abductor pollicis longus**

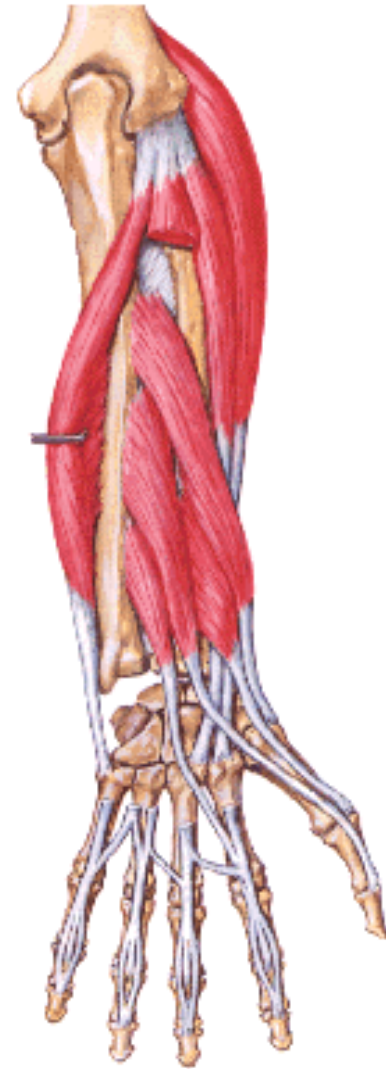
**M. extensor pollicis brevis**

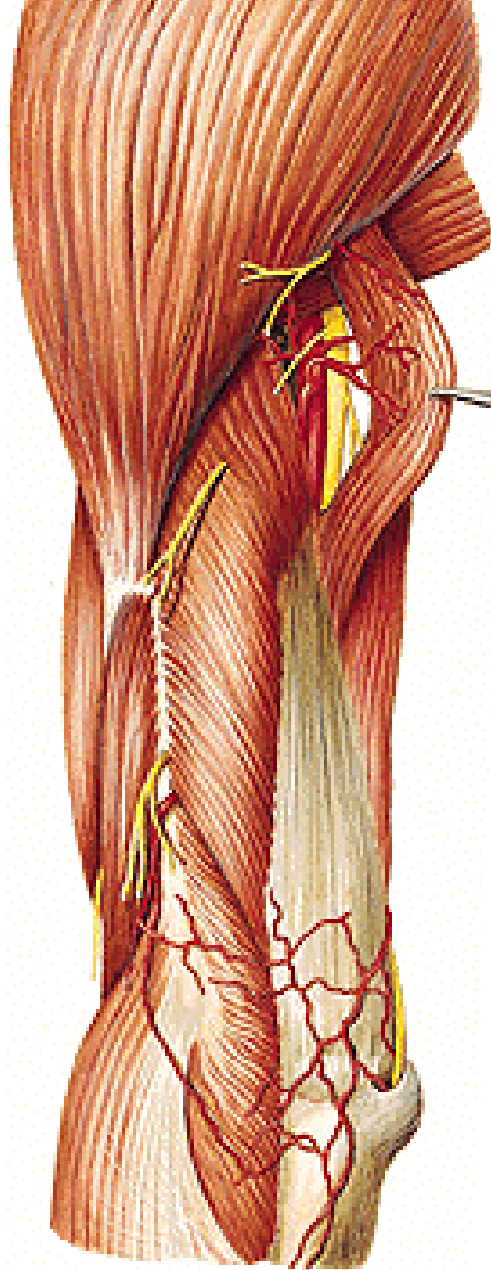
**M. extensor pollicis longus**

**M. extensor indicis**



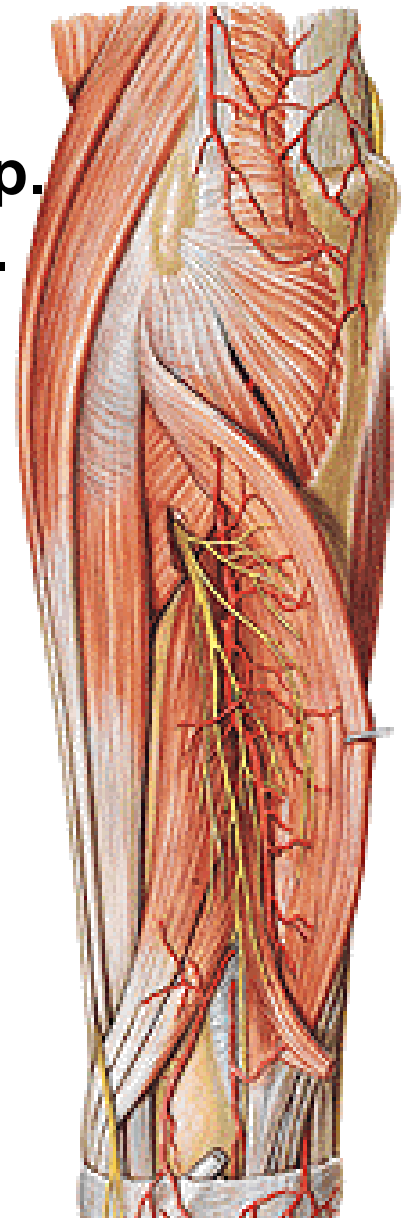
# EXTENSORS





## **Rete articulare cubiti**

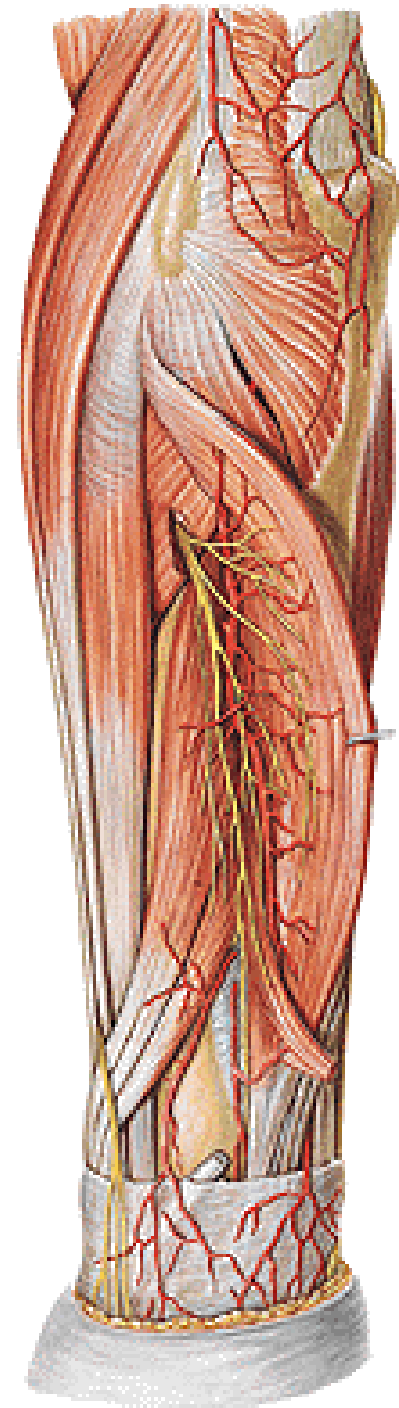
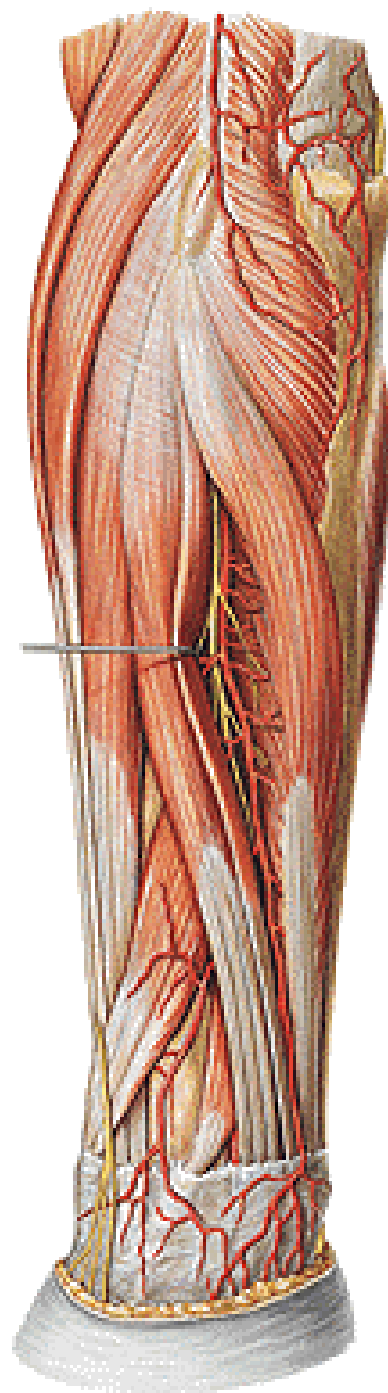
- A. collateralis ulnaris sup.**
- A. collateralis ulnaris inf.**
- A. collateralis media**
- A. collateralis radialis**
- A. recurrens ulnaris**
- A. recurrens radialis**
- A. recurrens interossea**





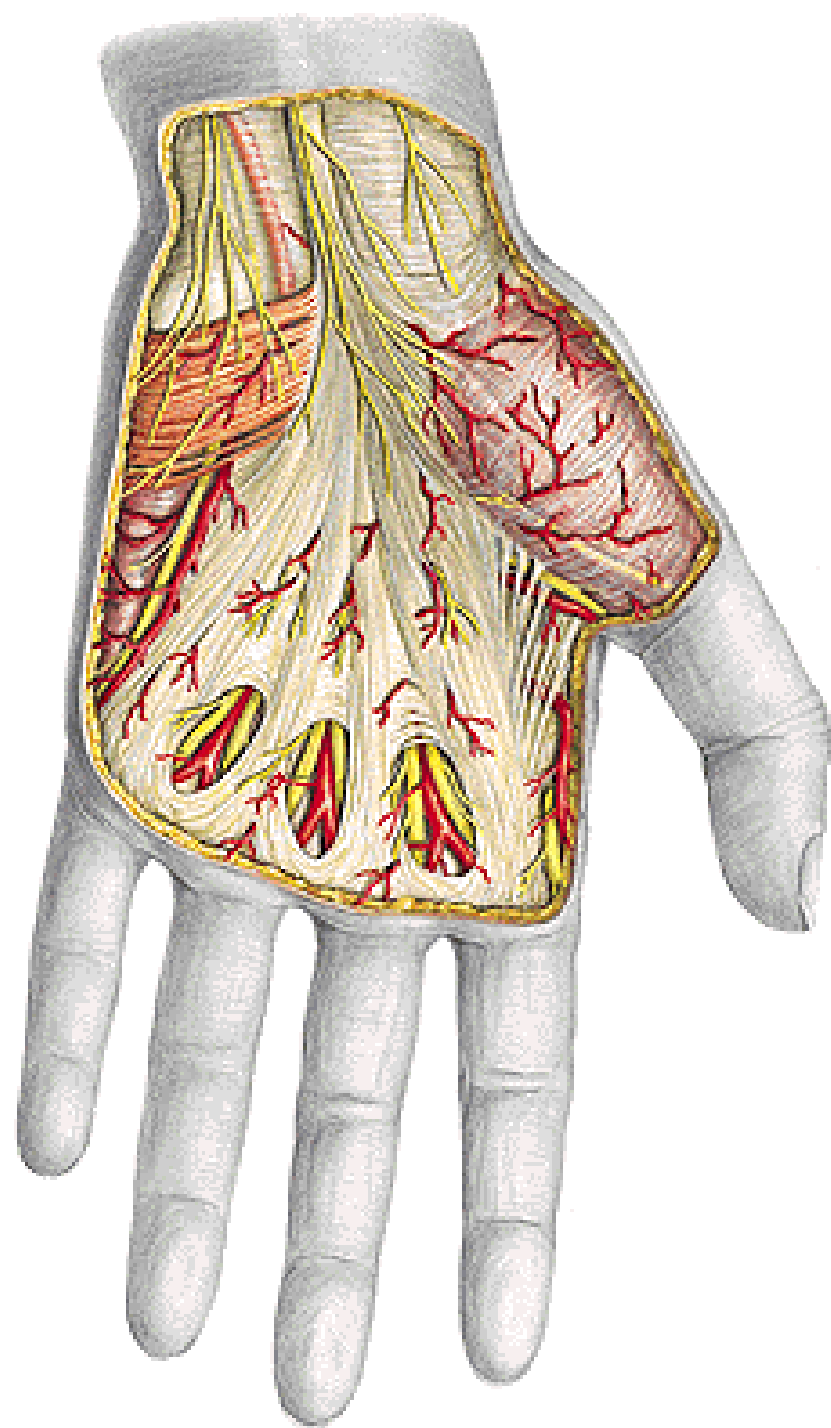
**R. prof. n. radialis**  
**- n. interosseus post.**

**A. interossea post.**  
**- a. recurrens interossea**  
**A. interossea ant.**

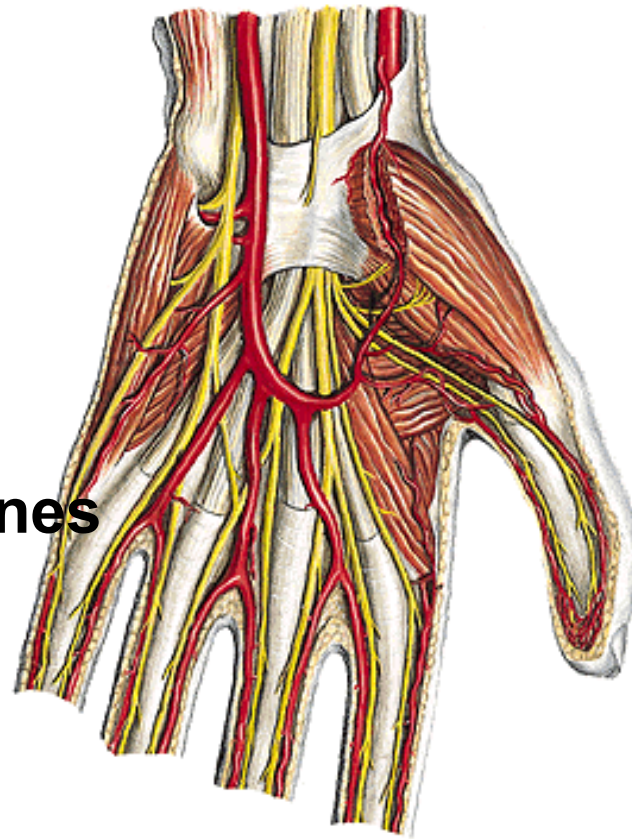


# **Regio carpi palmaris et palma manus**

**N. ulnaris – r. palmaris**  
**N. medianus – r. palmaris**  
**M. palmaris brevis**  
**Aponeurosis palmaris**

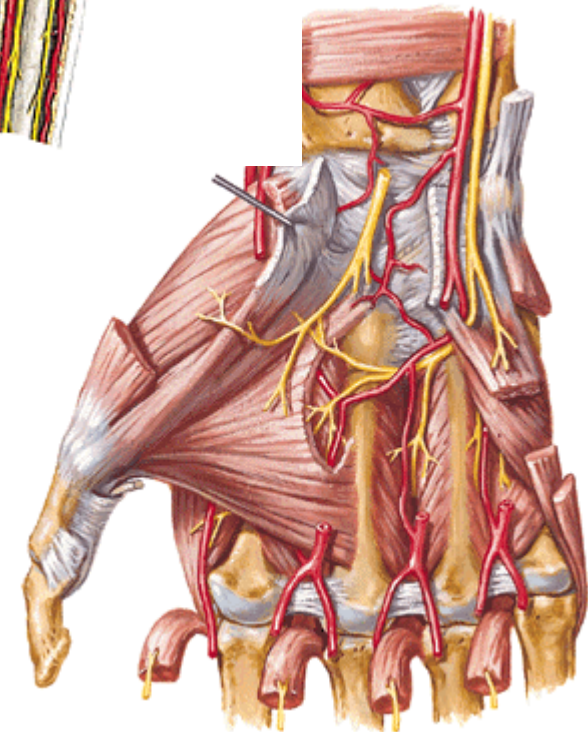


**Retinaculum flexorum**  
**Arcus palmaris spf.**  
**(+ r. palmaris spf. a. radialis)**  
**- aa. digitales palmares communes et propriae**  
**A. princeps pollicis**  
**Nn. digitales palmares communes**  
**Nn. digitales palmares proprii**

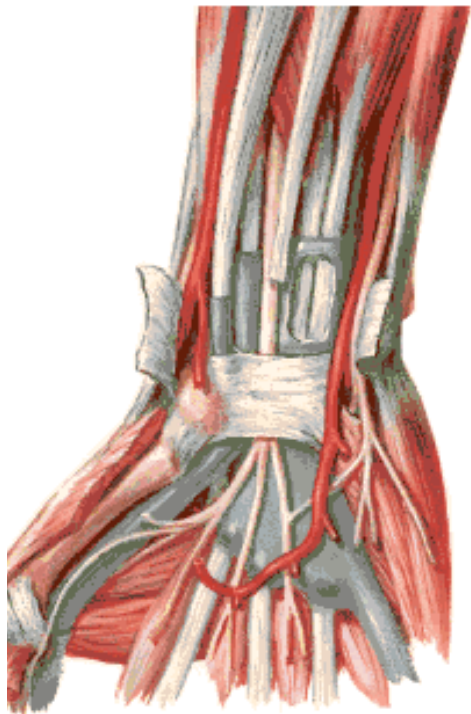
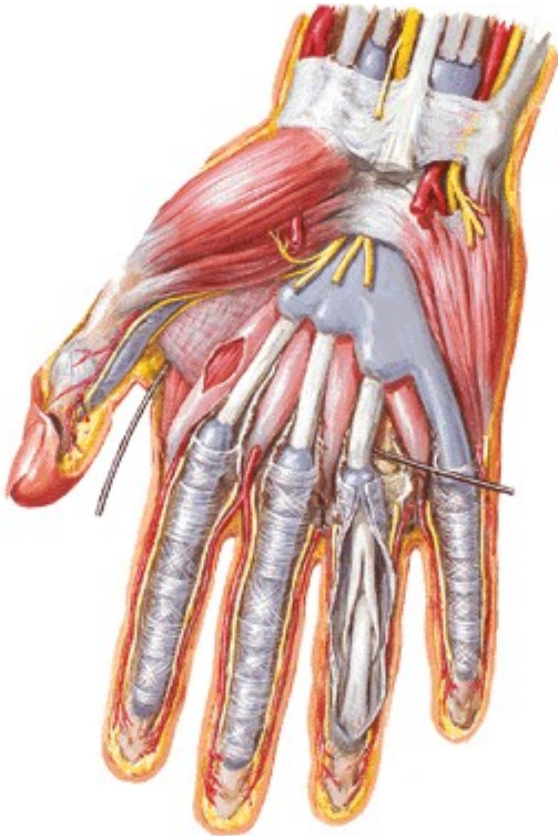
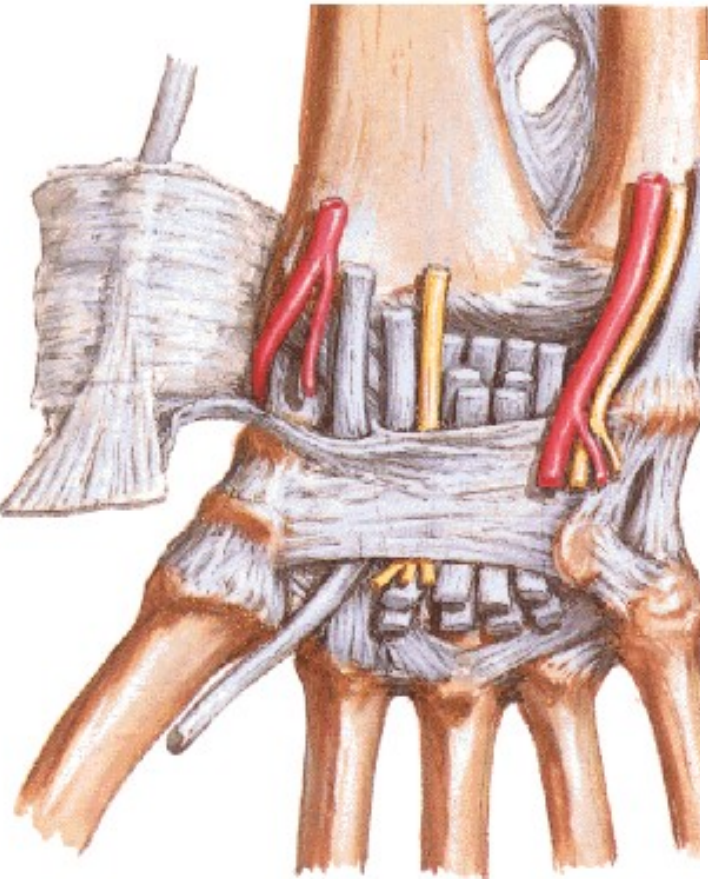


**Thenarus:**  
**M. abductor pollicis brevis**  
**M. flexor pollicis brevis**  
**M. opponens pollicis**  
**M. adductor pollicis**

**Hypothenarus:**  
**M. abductor digiti minimi**  
**M. flexor digiti minimi brevis**  
**M. opponens digiti minimi**



# Canalis carpi

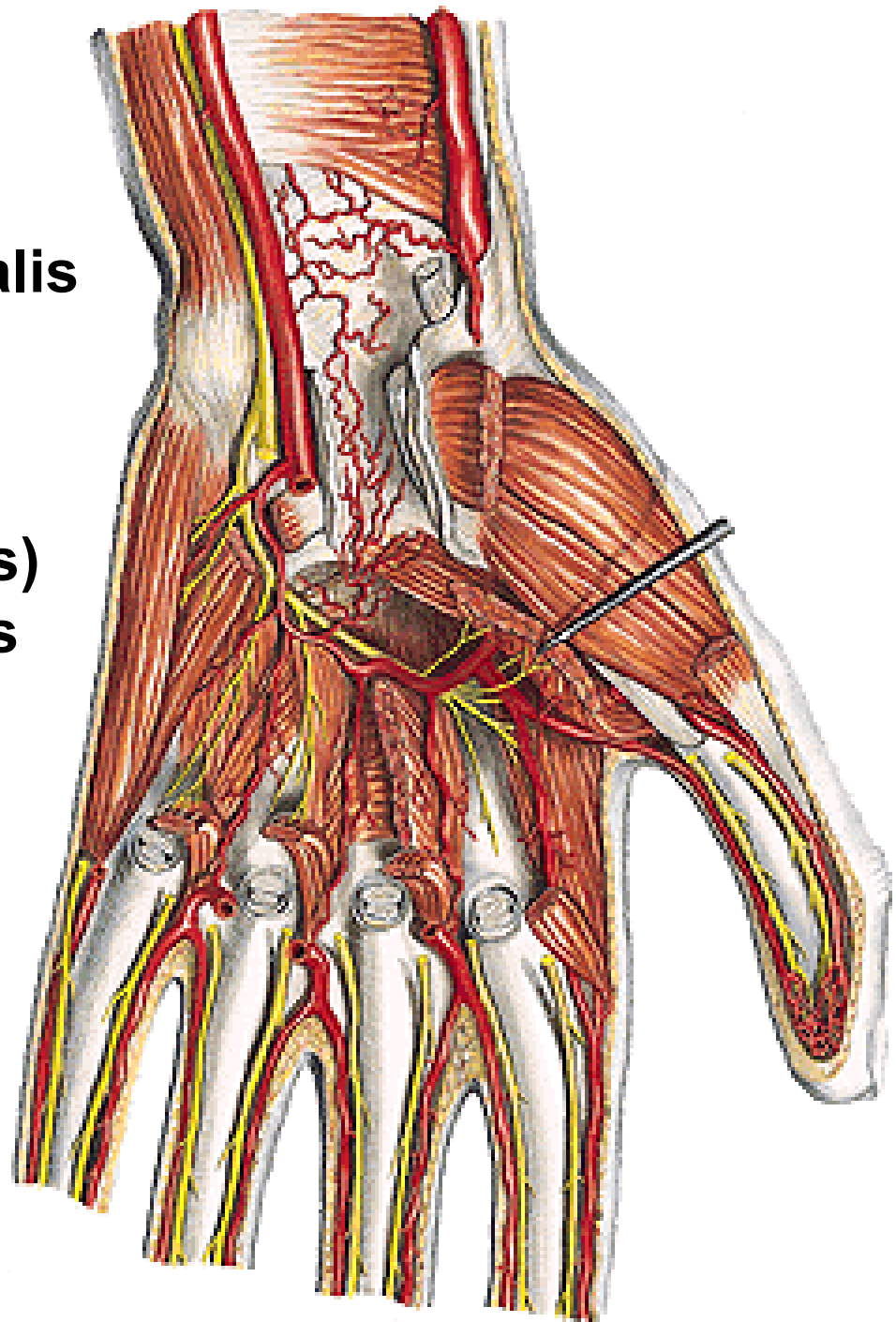




**Rete carpi palmare**  
(r. carpeus palmaris a. radialis  
et ulnaris)

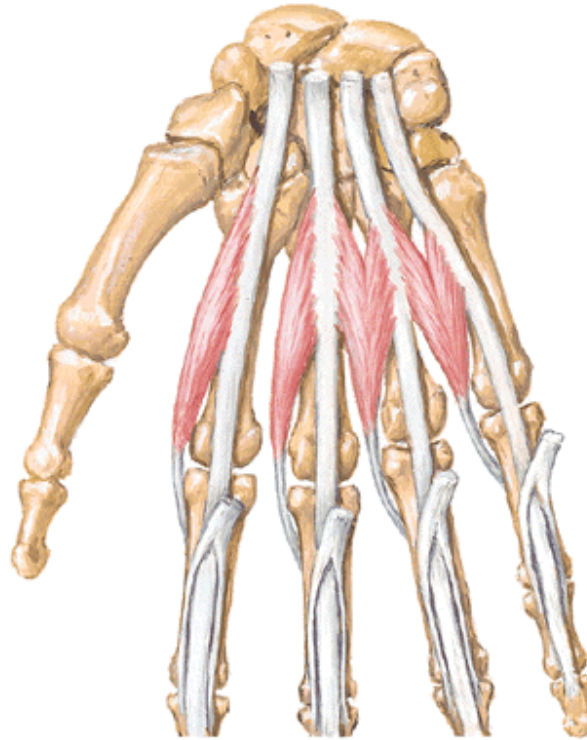
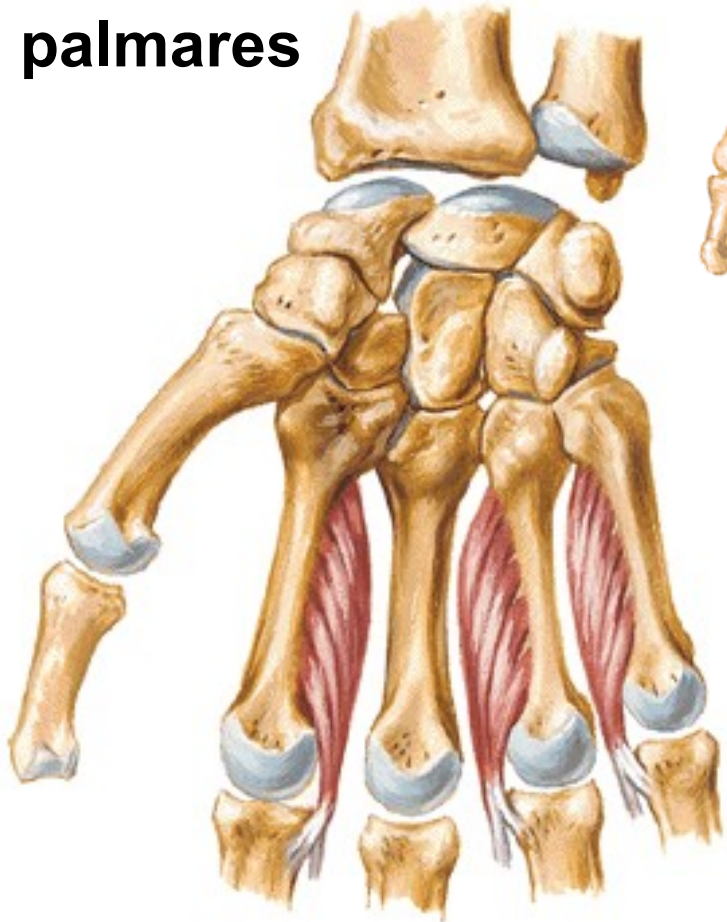
**Arcus palmaris prof.**  
(+ r. palmaris prof. a. ulnaris)  
- aa. metacarpeae palmares

**R. prof. n. ulnaris**

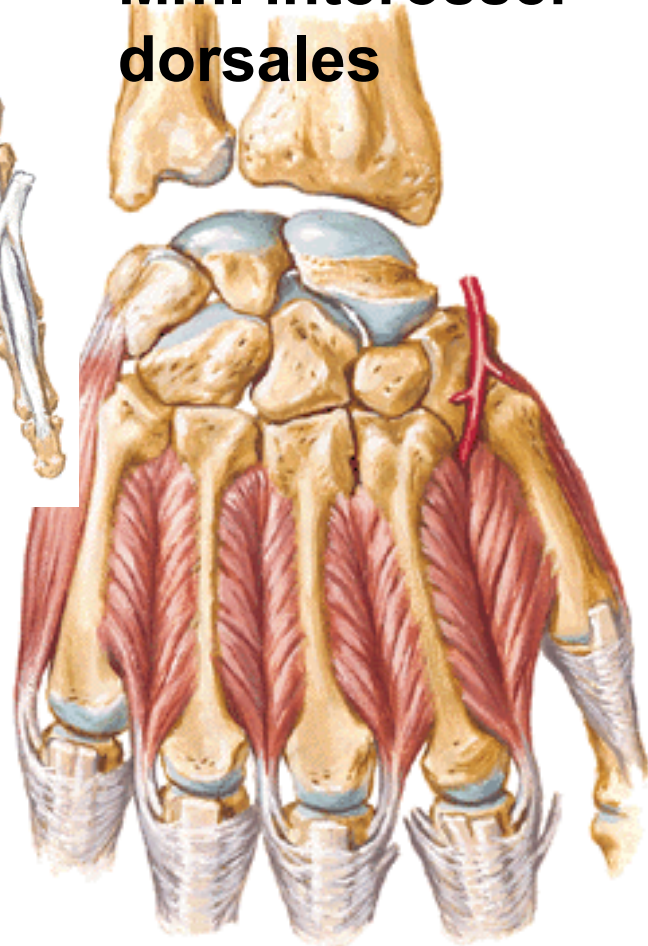


## Mm. lumbricales

### Mm. interossei palmares



### Mm. interossei dorsales



# **Regio carpi dorsalis et dorsum manus**



## **Rete venosum dorsale manus**

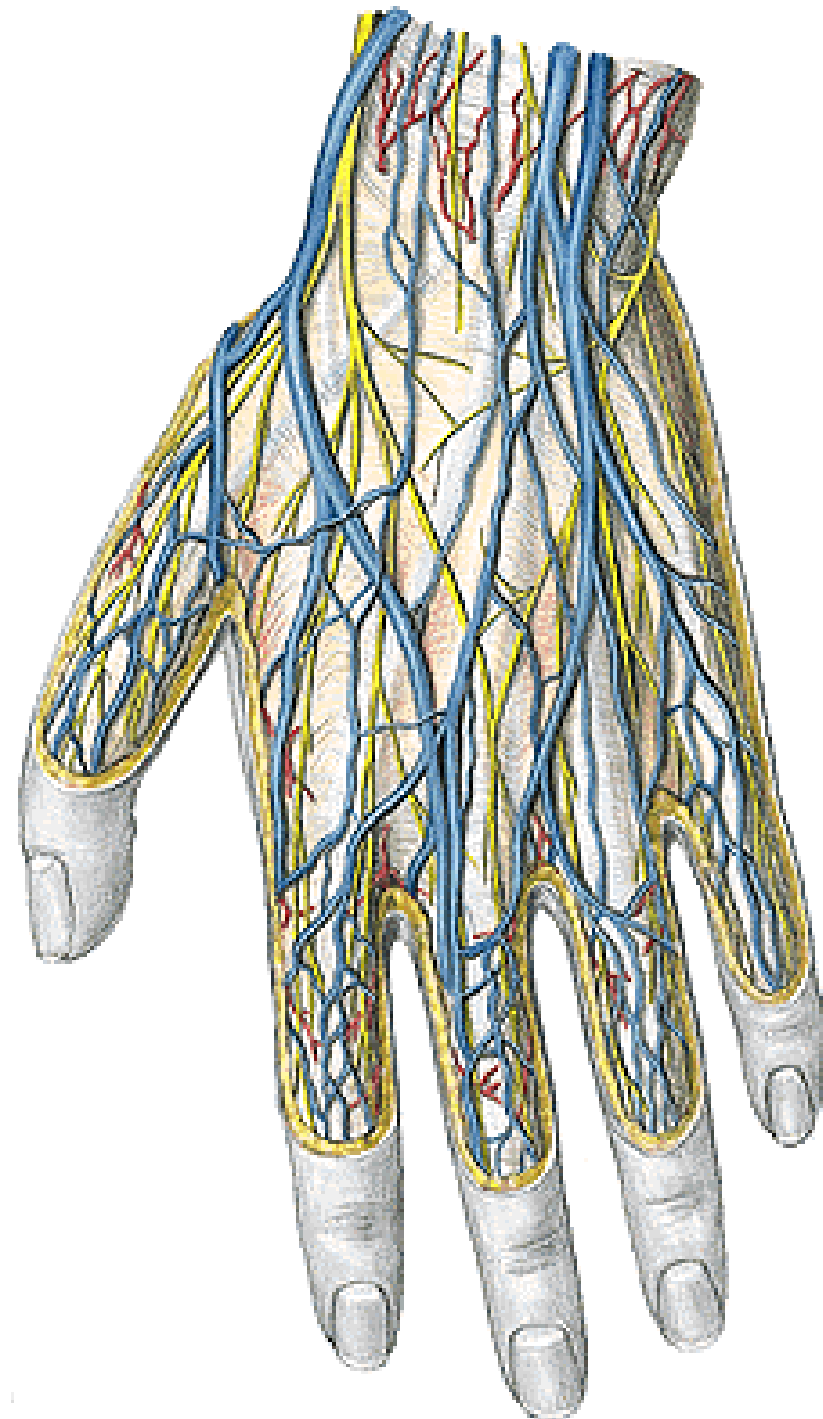
**R. spf. n. radialis**

**- nn. digitales dorsales**

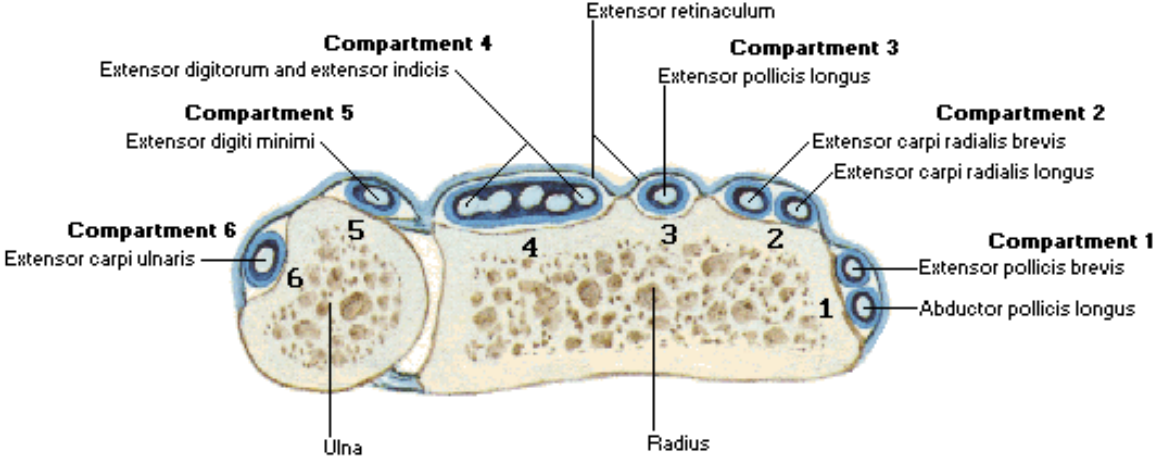
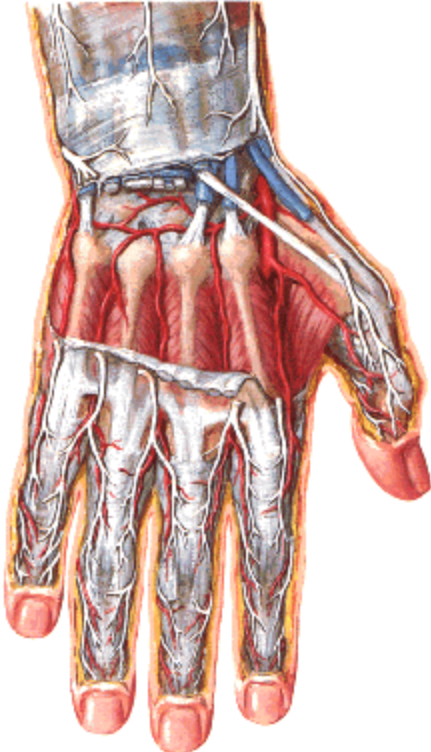
**R. dorsalis n. ulnaris**

**- nn. digitales dorsales**

**Retinaculum extensorum**



# Extensor compartments

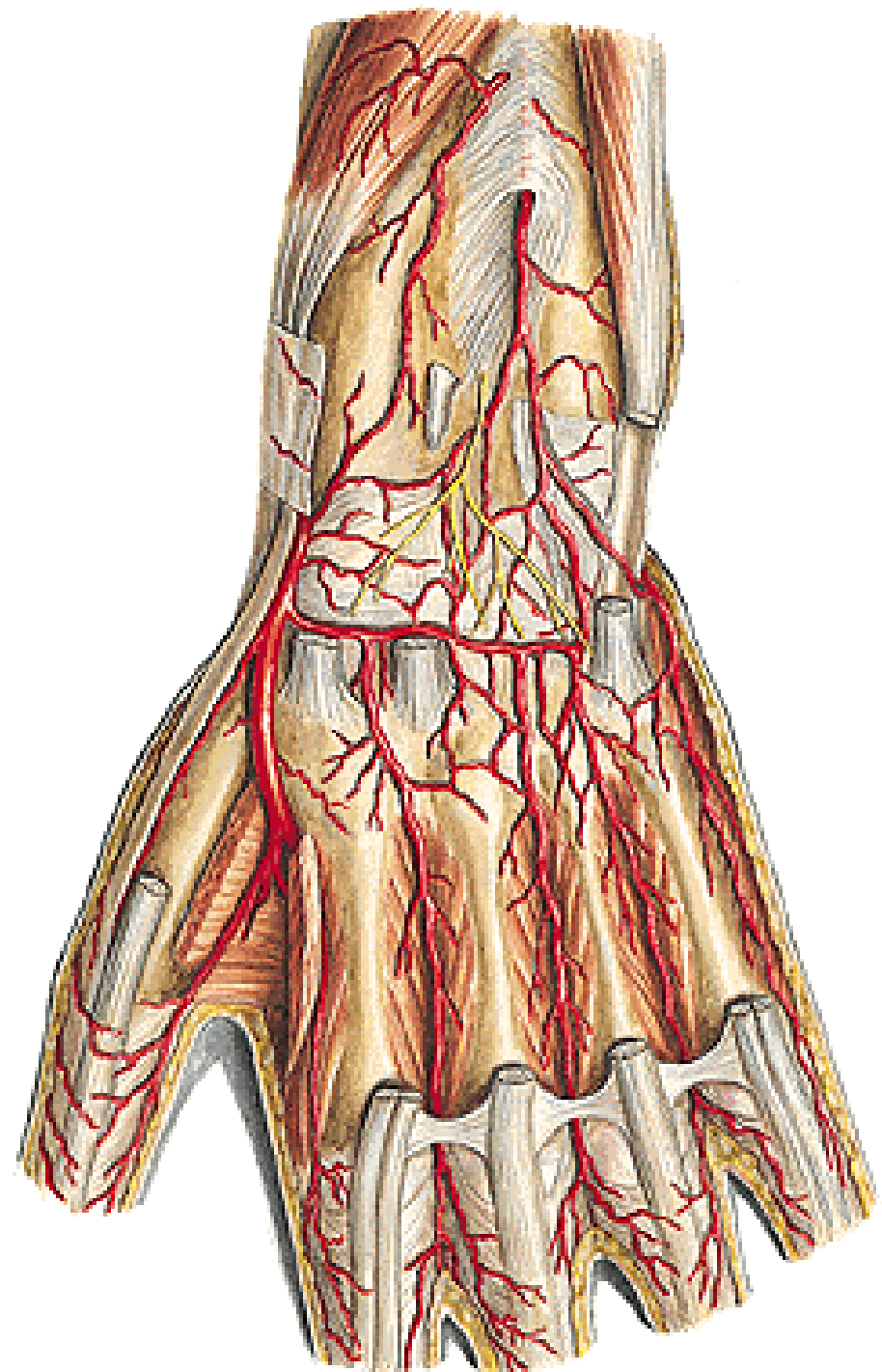


## **Rete carpi dorsale**

**Aa. metacarpeae dorsales**

**- aa. digitales dorsales**

**A. metacarpea dorsalis prima**



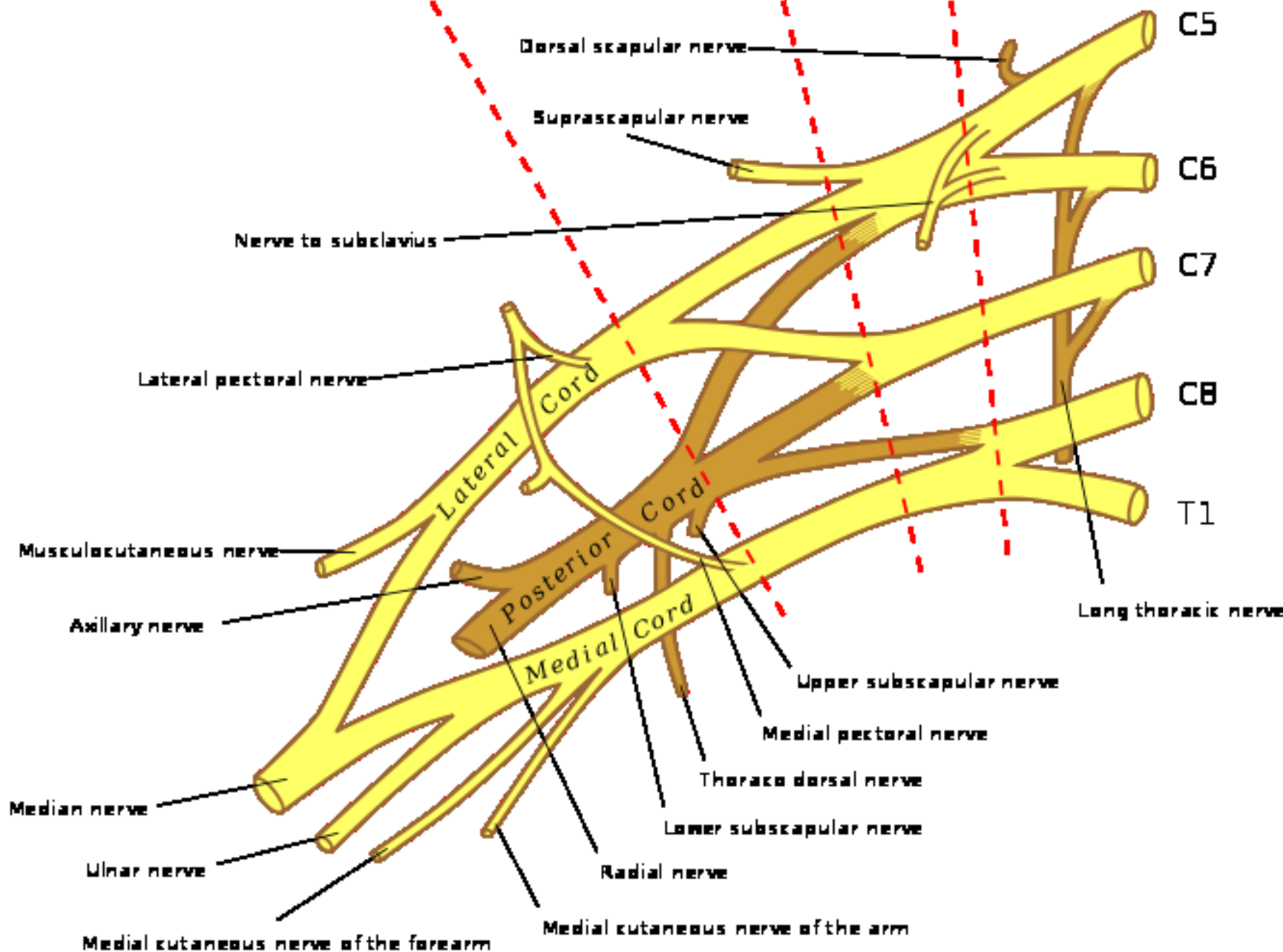
# **NERVES OF THE UPPER LIMB**

**Cords**

**Divisions**

**Trunks**

**Roots**



Dorsal scapular nerve

Suprascapular nerve

Nerve to subclavius

Lateral pectoral nerve

Muscularocutaneous nerve

Axillary nerve

Median nerve

Ulnar nerve

Medial cutaneous nerve of the forearm

Lateral Cord

Posterior Cord

Medial Cord

Radial nerve

Medial cutaneous nerve of the arm

C5

C6

C7

C8

T1

Long thoracic nerve

Upper subscapular nerve

Medial pectoral nerve

Thoraco dorsal nerve

Lower subscapular nerve





klíční kost

18

17

16

15

14

13

12

5

6

20

6

8

19

7

11

4

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9

3

1

10

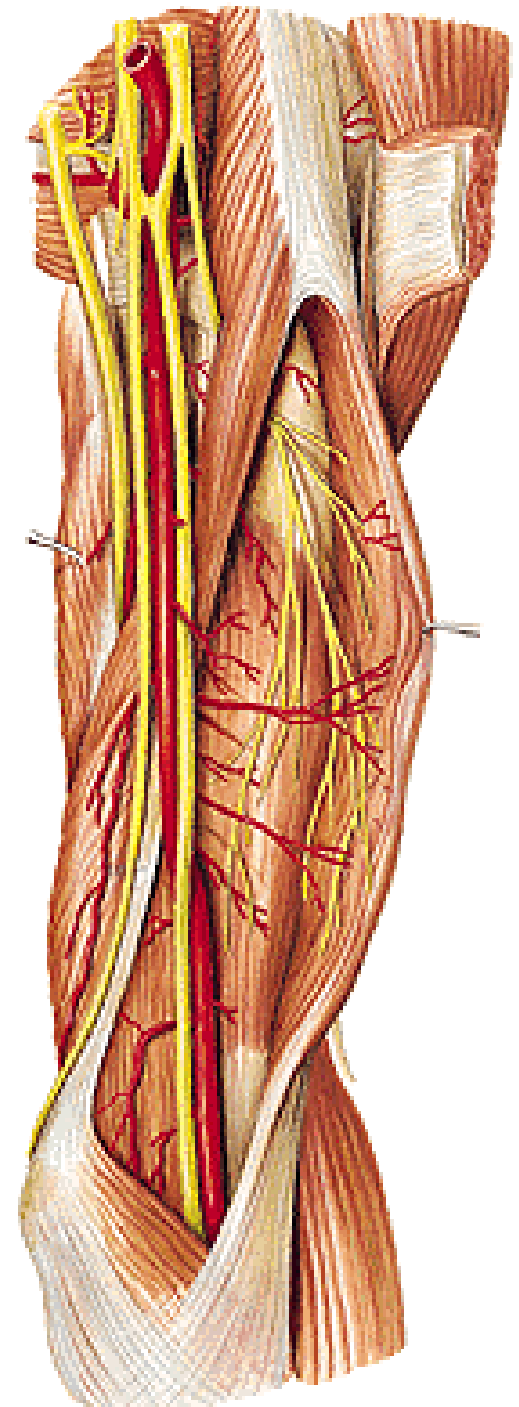
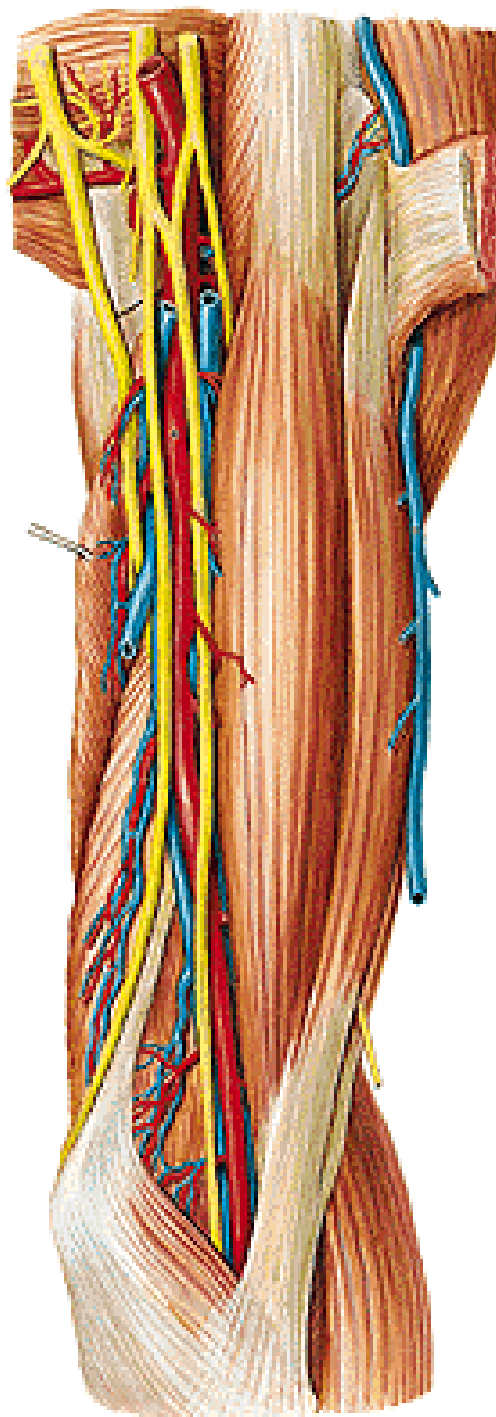
2

1

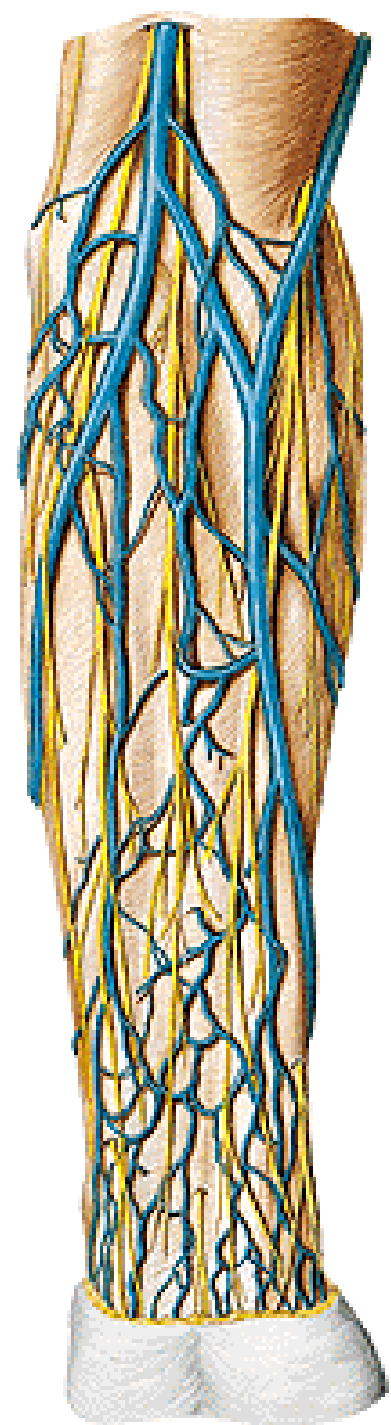
1

# **N. MUSCULOCUTANEUS**

- m. coracobrachialis
- m. biceps brachii
- m. brachialis

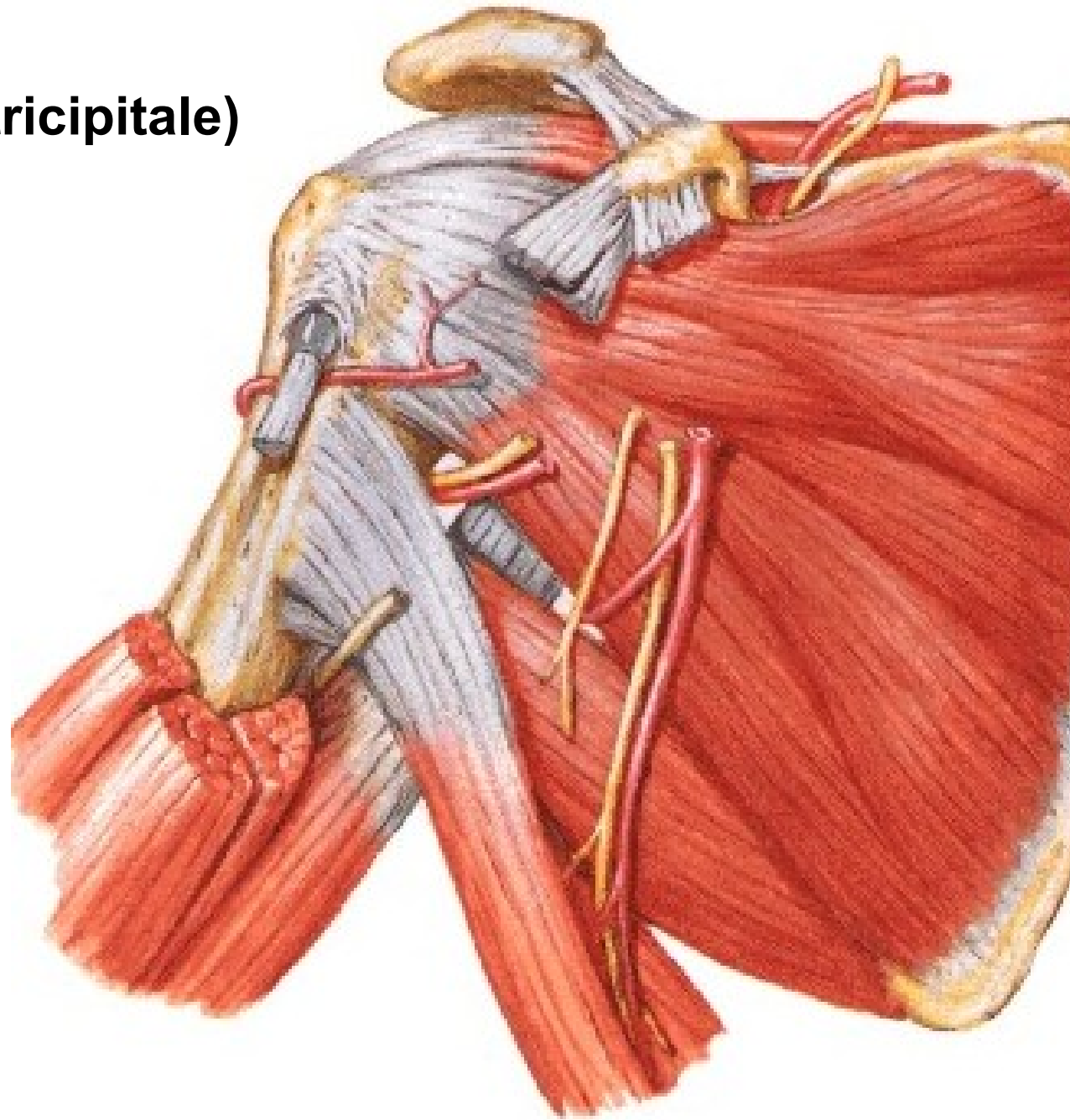


**N. cutaneus antebrachii lat.**





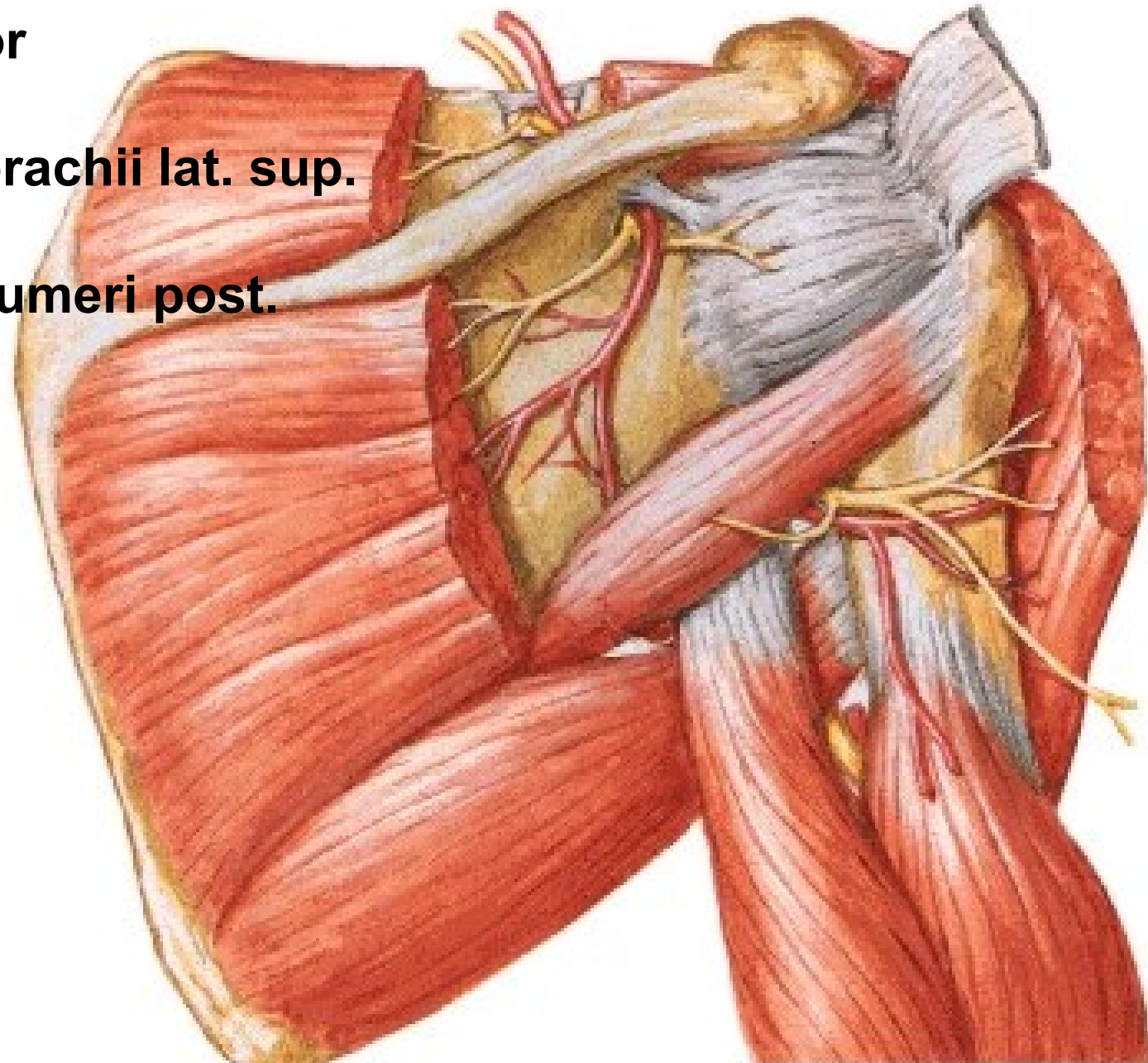
**N. AXILLARIS**  
**(foramen humerotricipitale)**



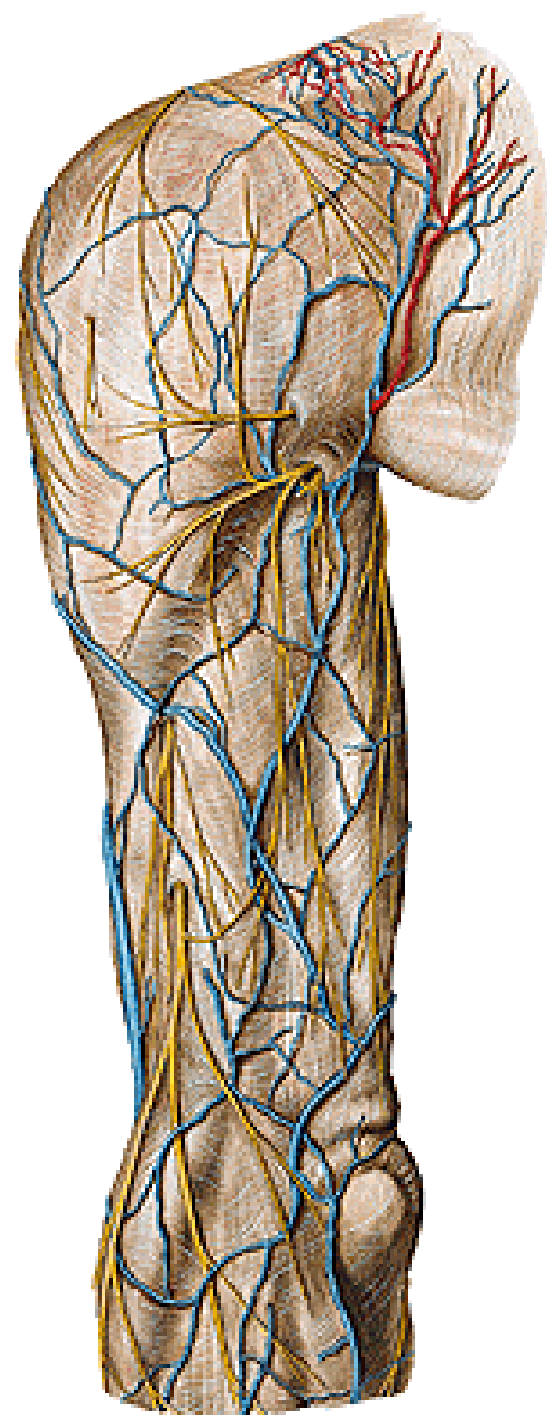
## **N. AXILLARIS**

- m. deltoideus
- m. teres minor
- art. humeri
- n. cutaneus brachii lat. sup.

## **A. circumflexa humeri post.**



**N. cutaneus brachii lat. sup.**

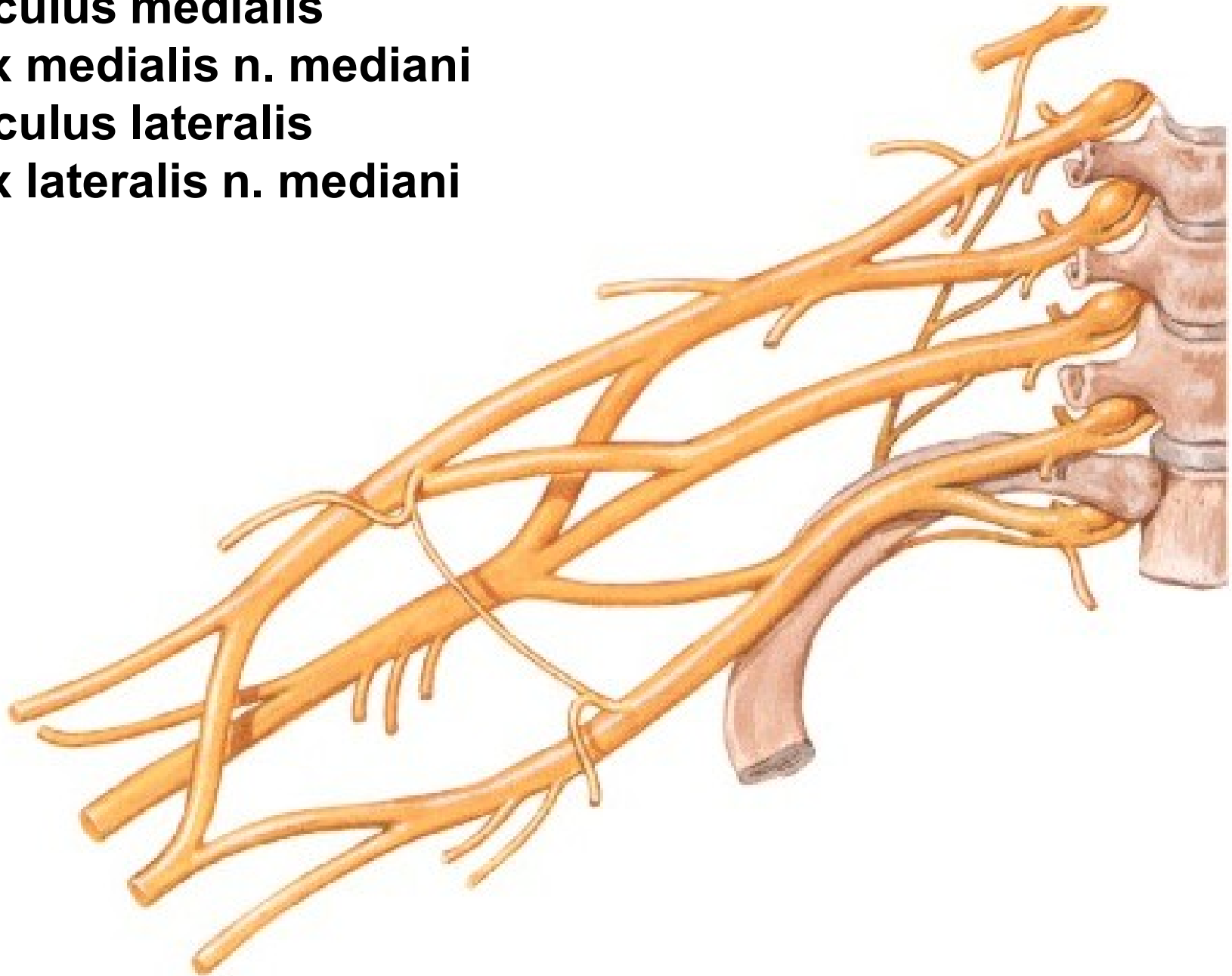


## **Fasciculus medialis**

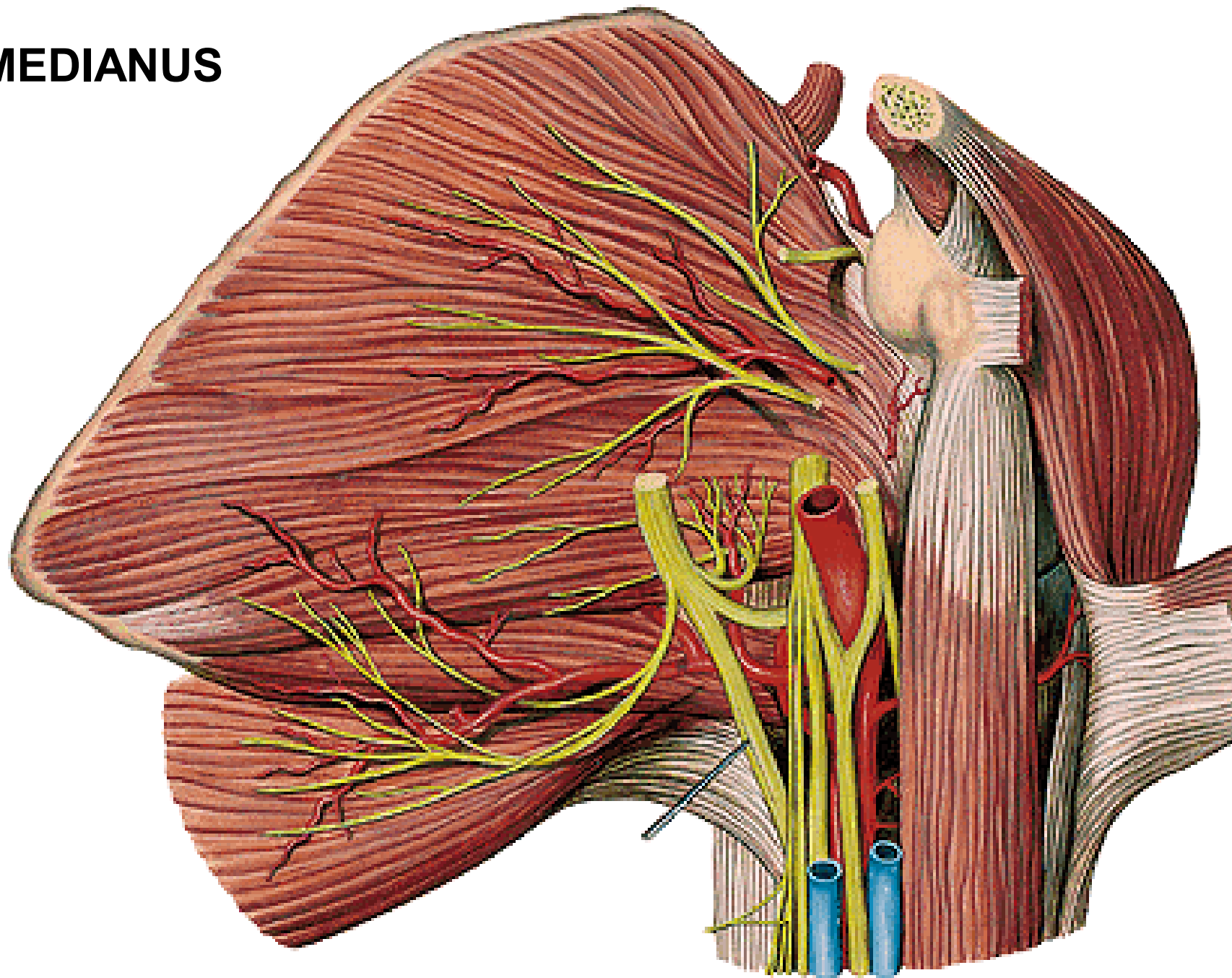
**- radix medialis n. mediani**

## **Fasciculus lateralis**

**- radix lateralis n. mediani**

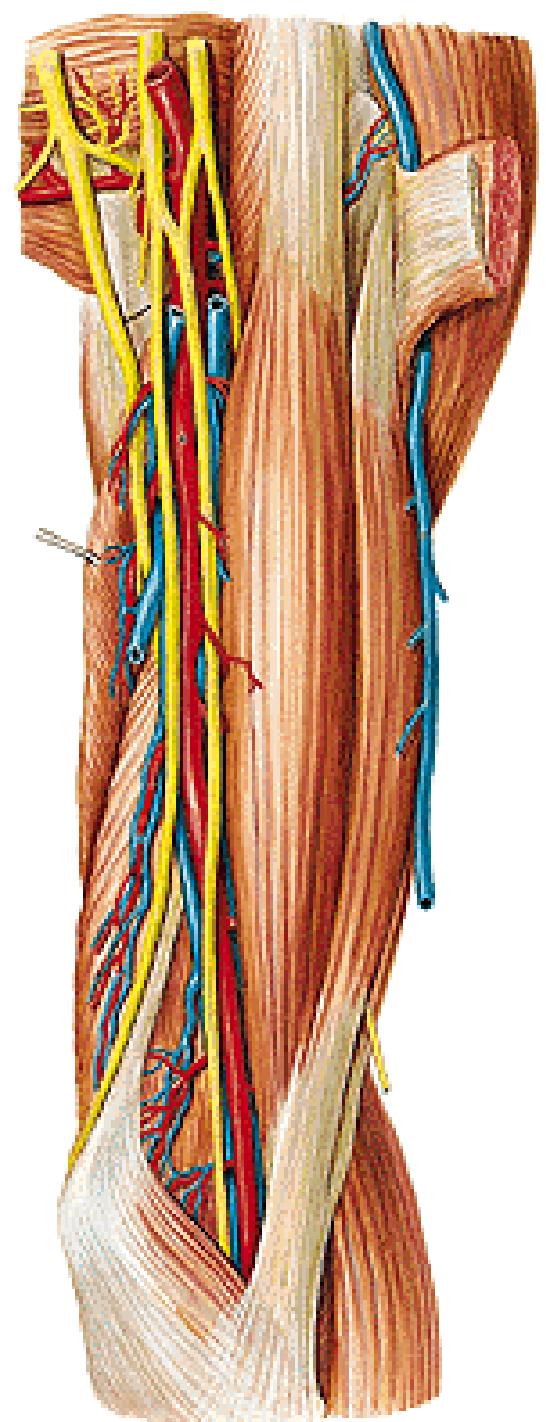


# N. MEDIANUS

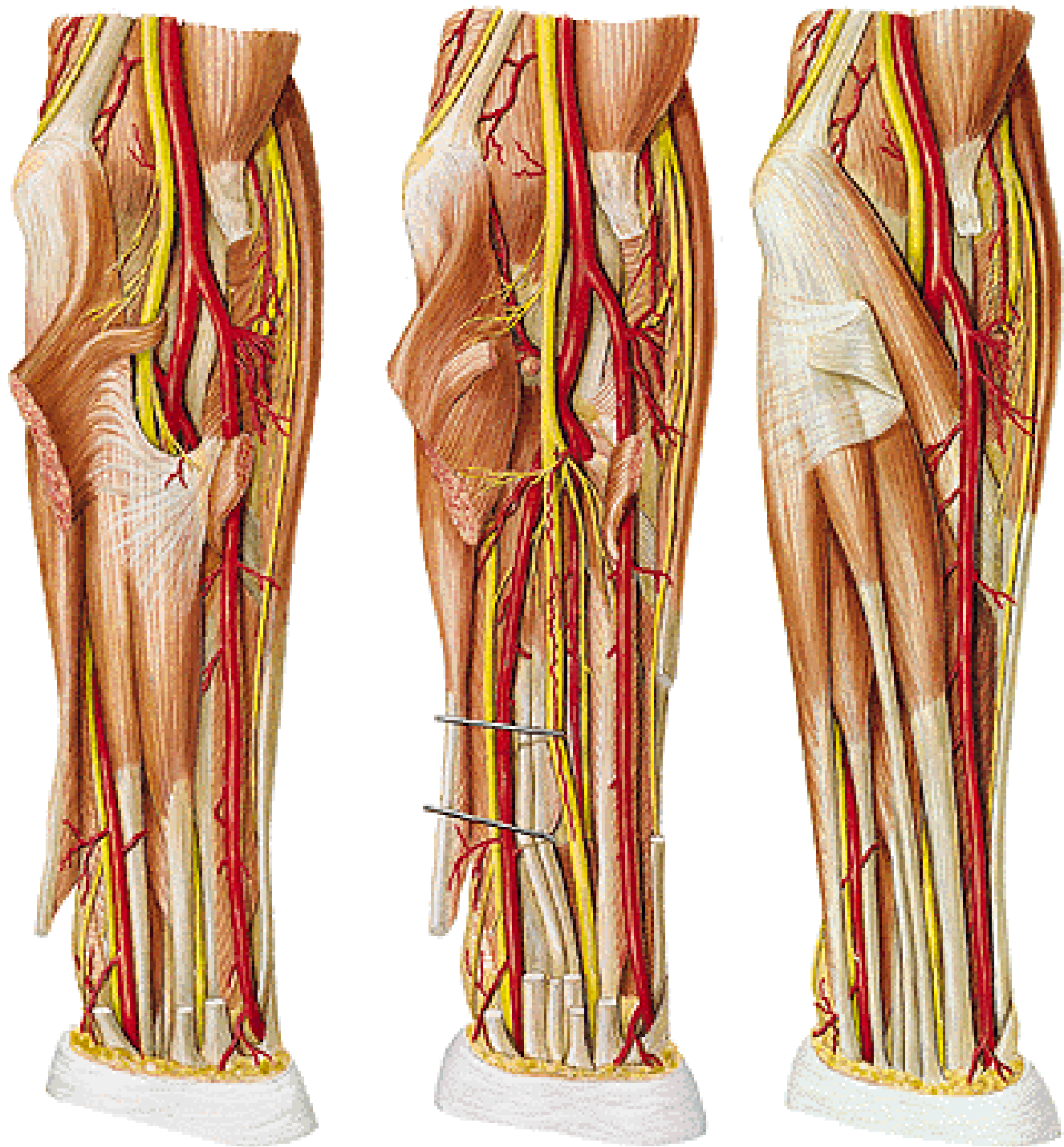


# **N. MEDIANUS**

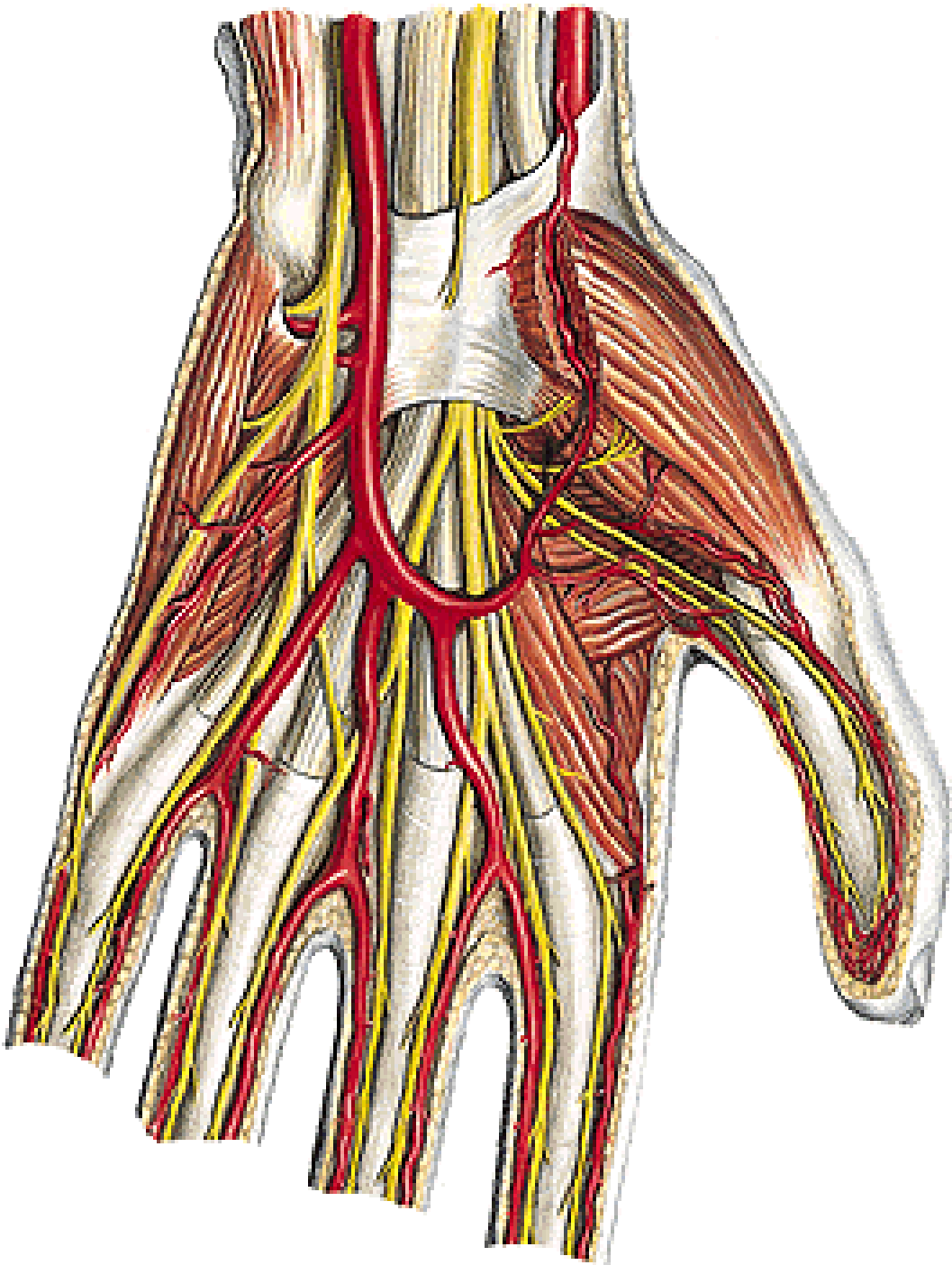
**(Sulcus bicipitalis medialis)**



# N. MEDIANUS



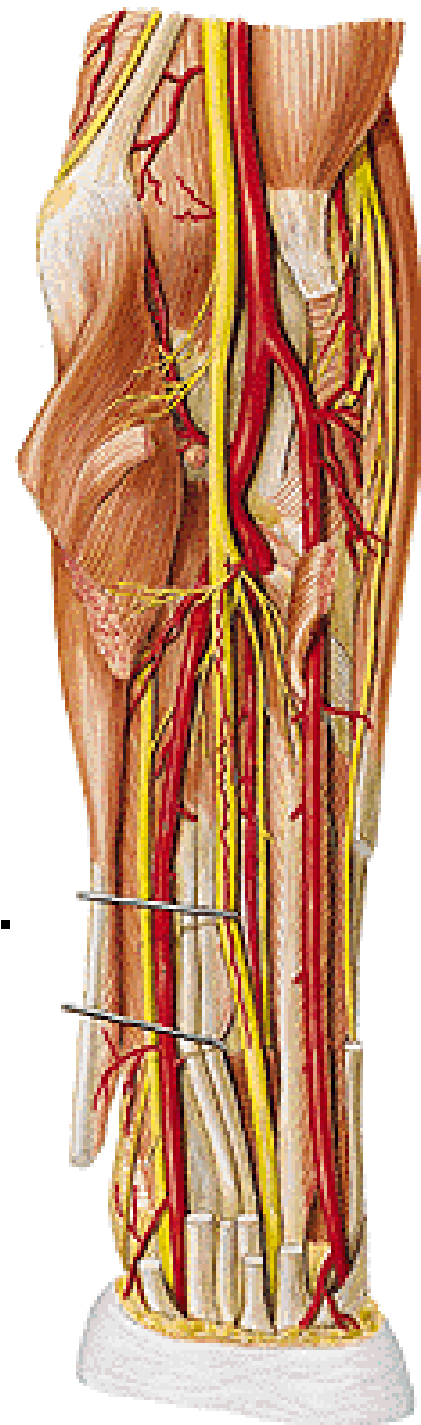
# N. MEDIANUS





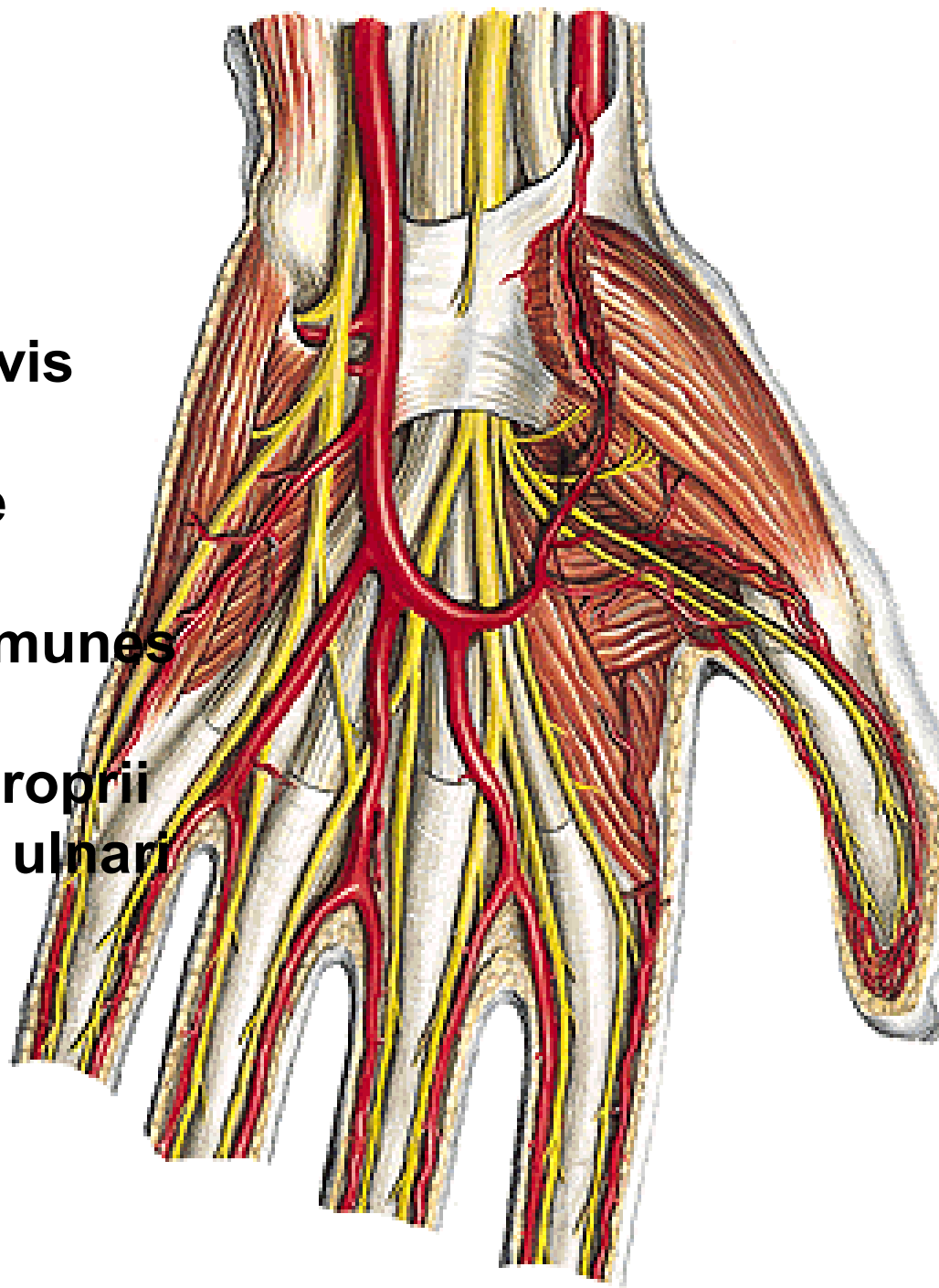
## **N. MEDIANUS**

- rr. articulares
- rr. musculares
  - m. pronator teres
  - m. flexor carpi radialis
  - m. palmaris longus
  - m. flexor digitorum spf.
- n. interosseus antebrachii ant.
  - m. flexor pollicis longus
  - radial half of m. flexor dig. prof.
  - m. pronator quadratus
- r. palmaris



# **N. MEDIANUS**

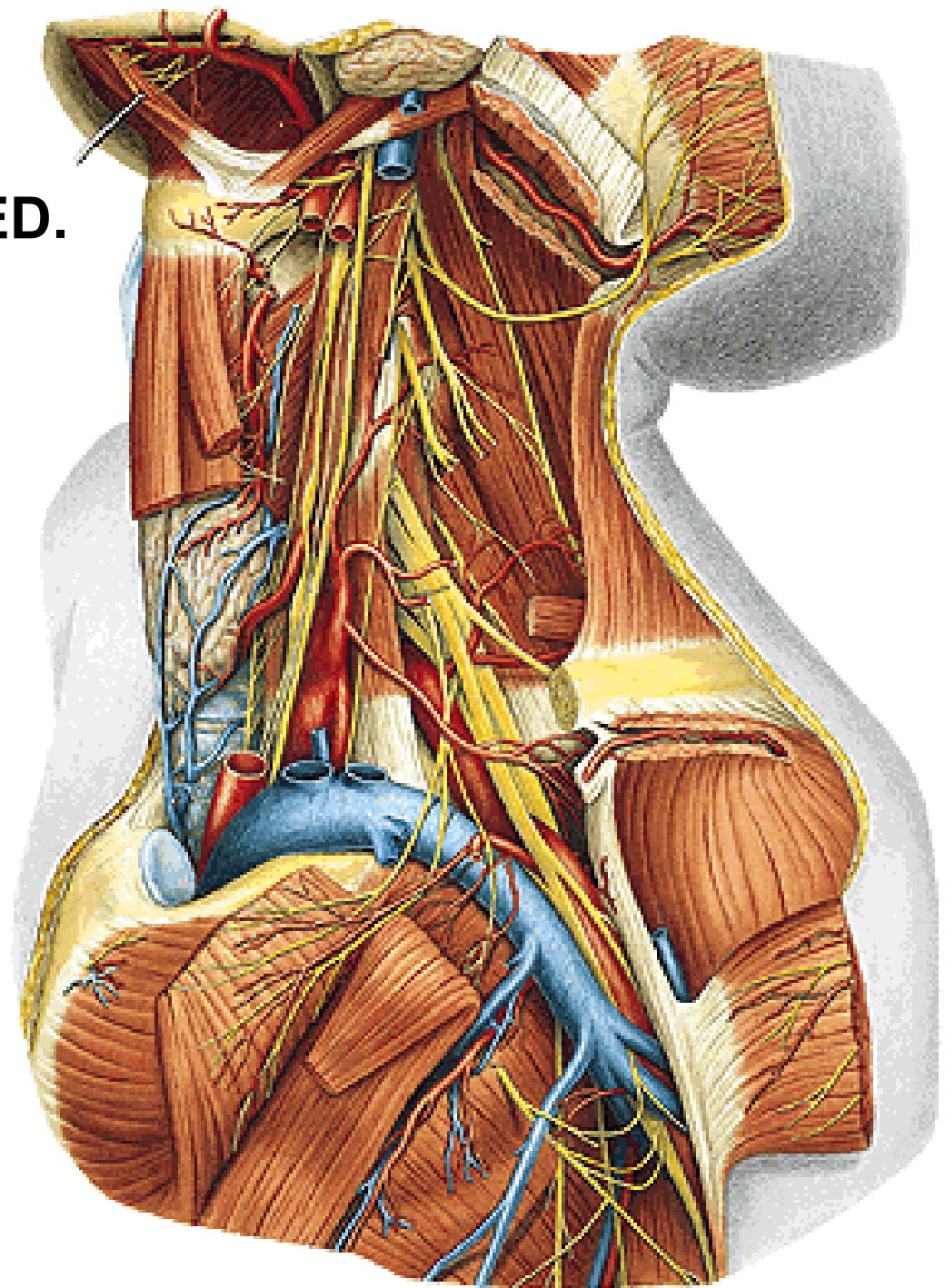
- r. thenaris
  - m. abductor pollicis brevis
  - m. flexor pollicis brevis
    - caput superficiale
  - m. opponens pollicis
- nn. digitales palmares communes
  - mm. lumbricales (I, II)
  - nn. digitales palmares proprii
- r. communicans cum nervo ulnari



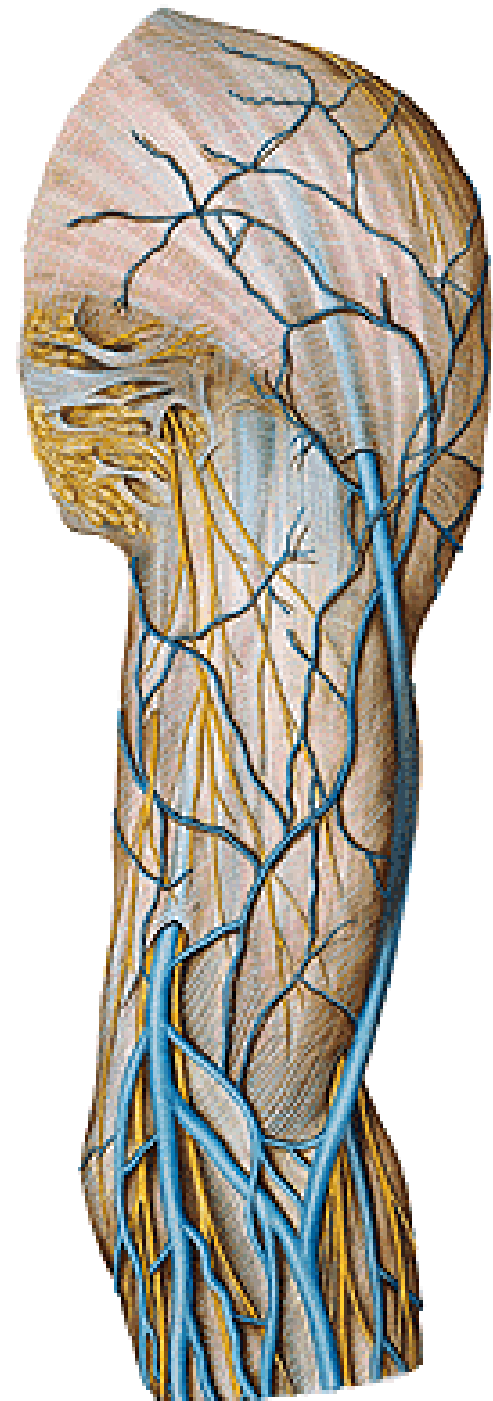
# Hand of Benediction



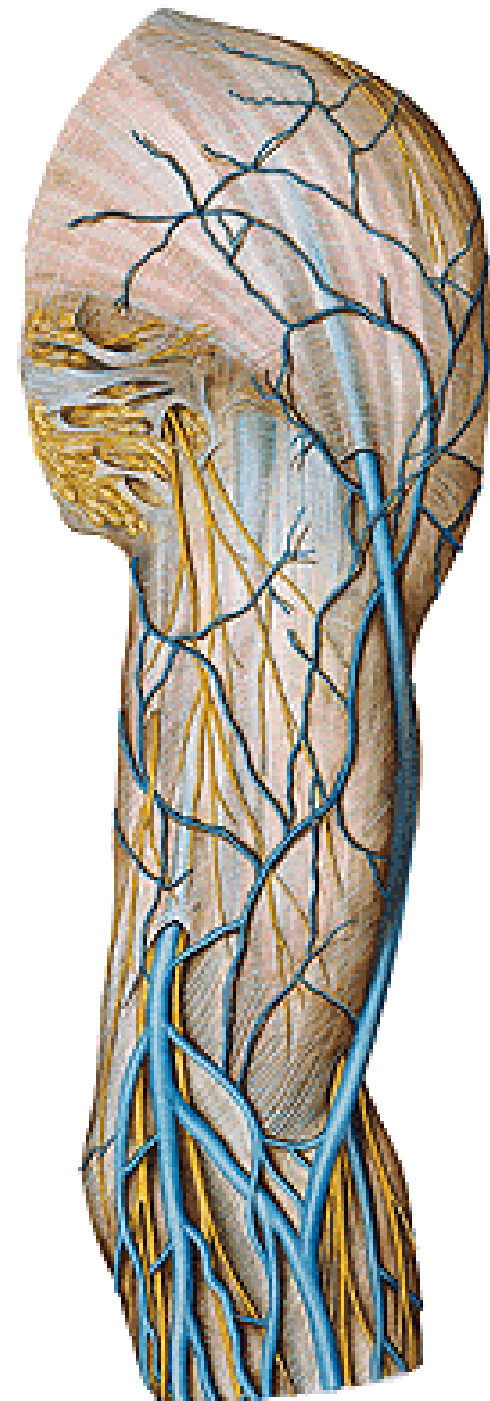
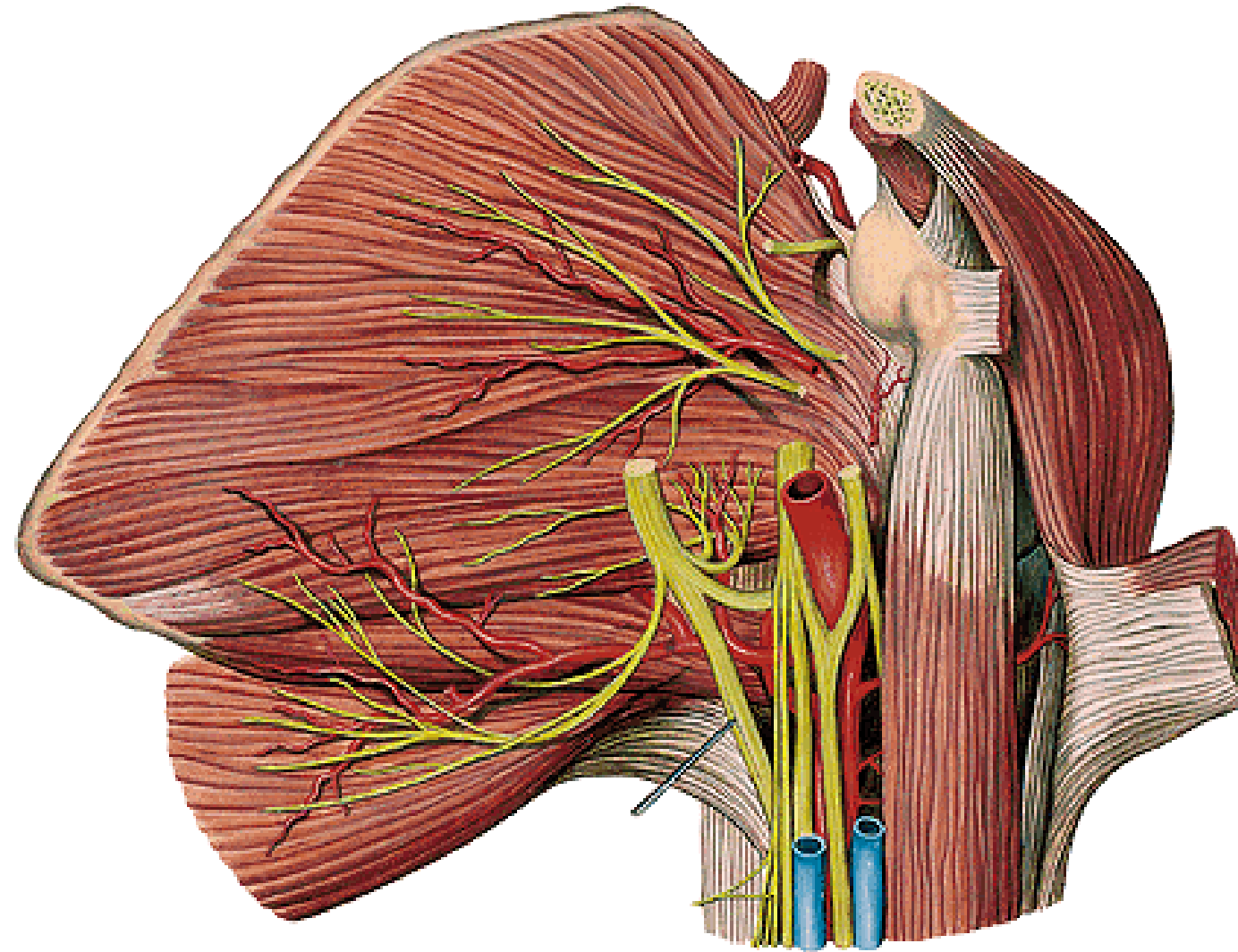
**N. CUTANEUS BRACHII MED.**  
**(nn. intercostobrachiales)**



# N. CUTANEUS BRACHII MED.

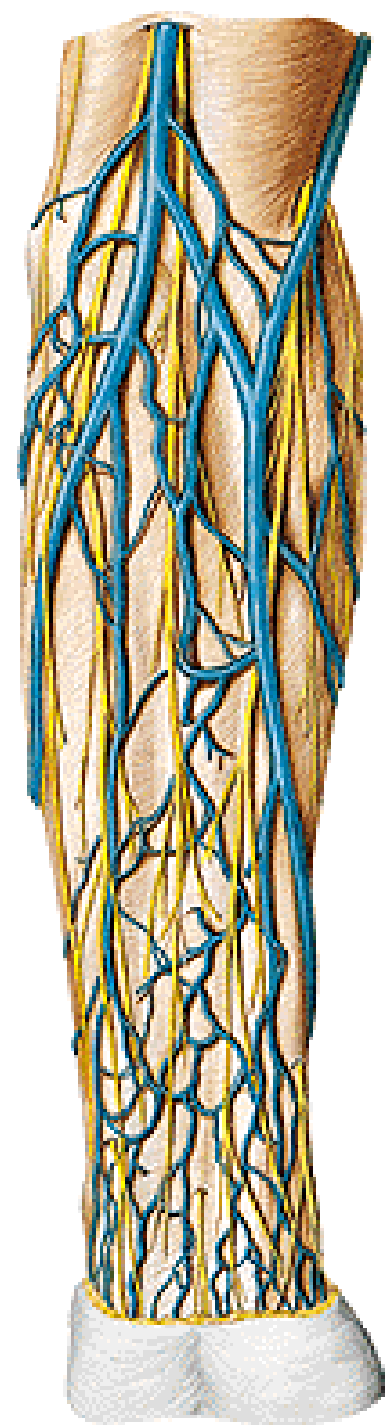


# N. CUTANEUS ANTEBRACHII MED.



# **N. CUTANEUS ANTEBRACHII MED.**

- r. anterior**
- r. posterior (ulnaris)**

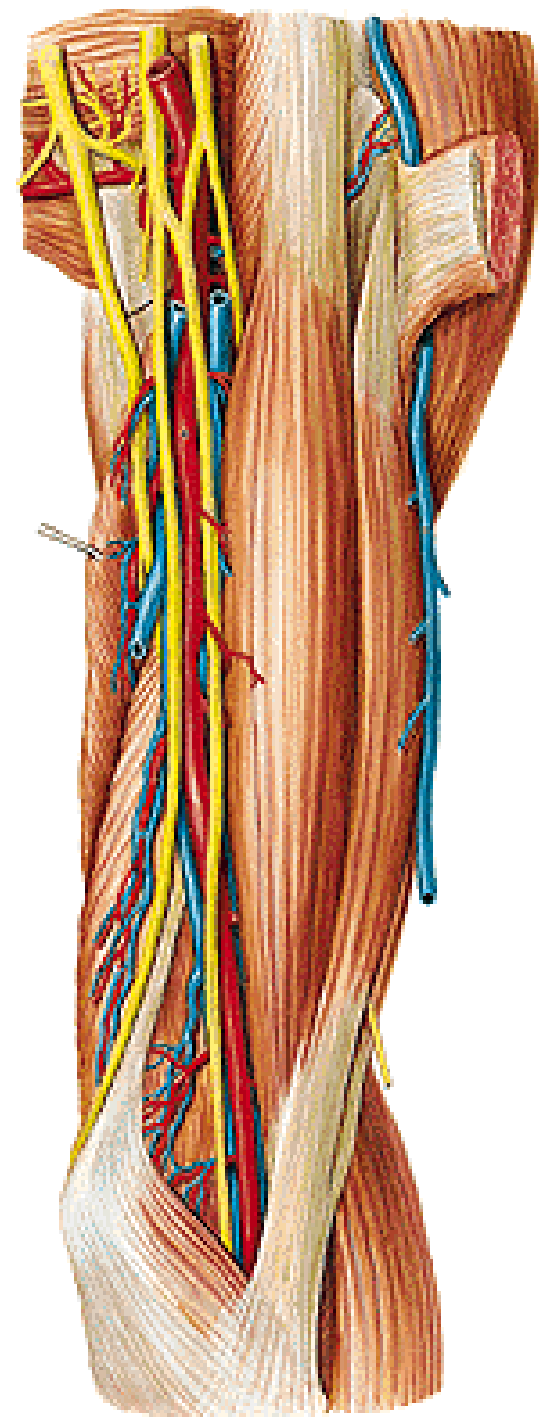
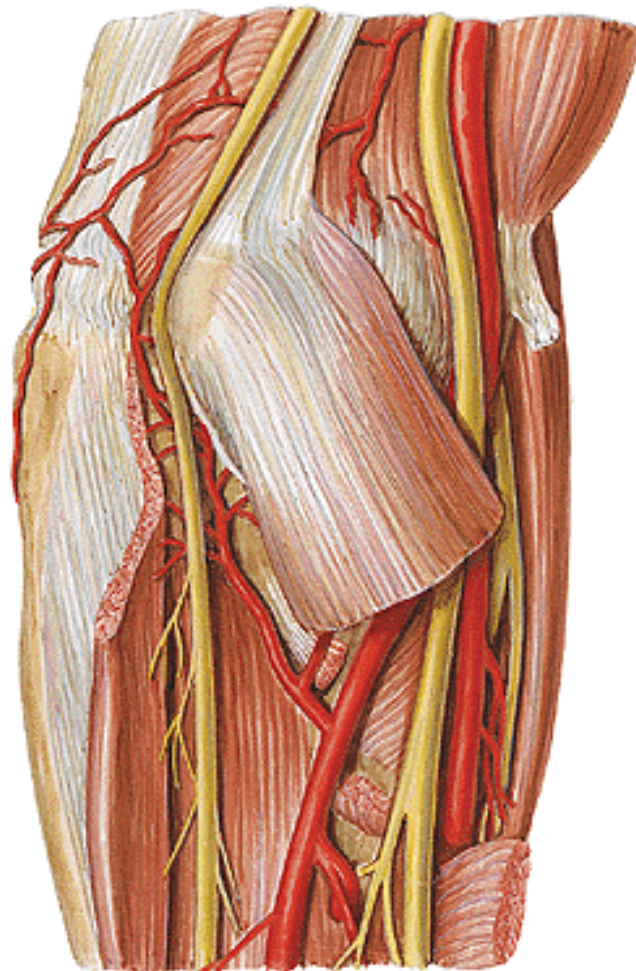


# **N. ULNARIS**

**sulcus bicipitalis medialis**

**septum intermusculare brachii mediale**

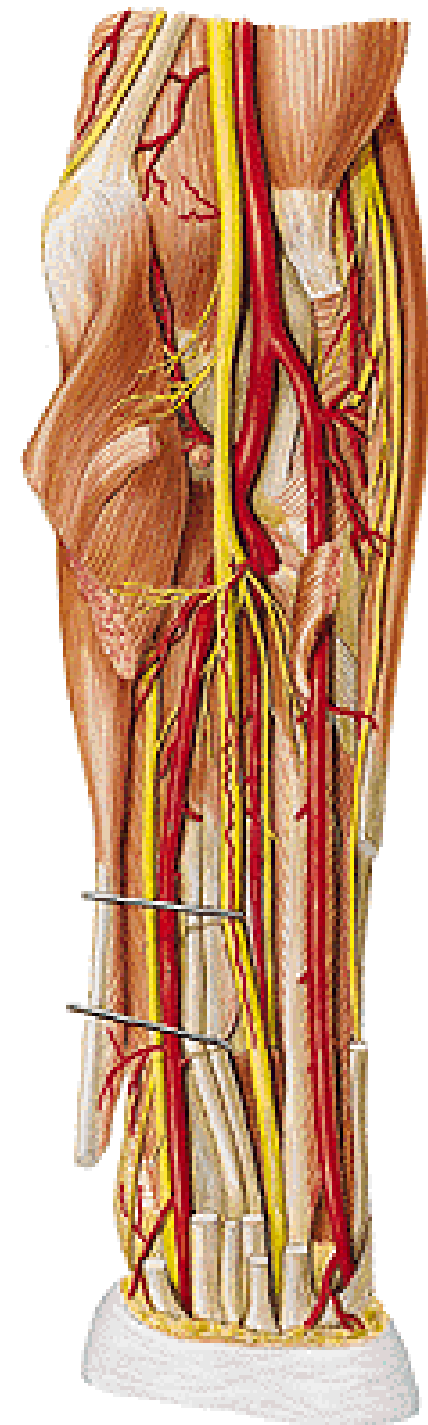
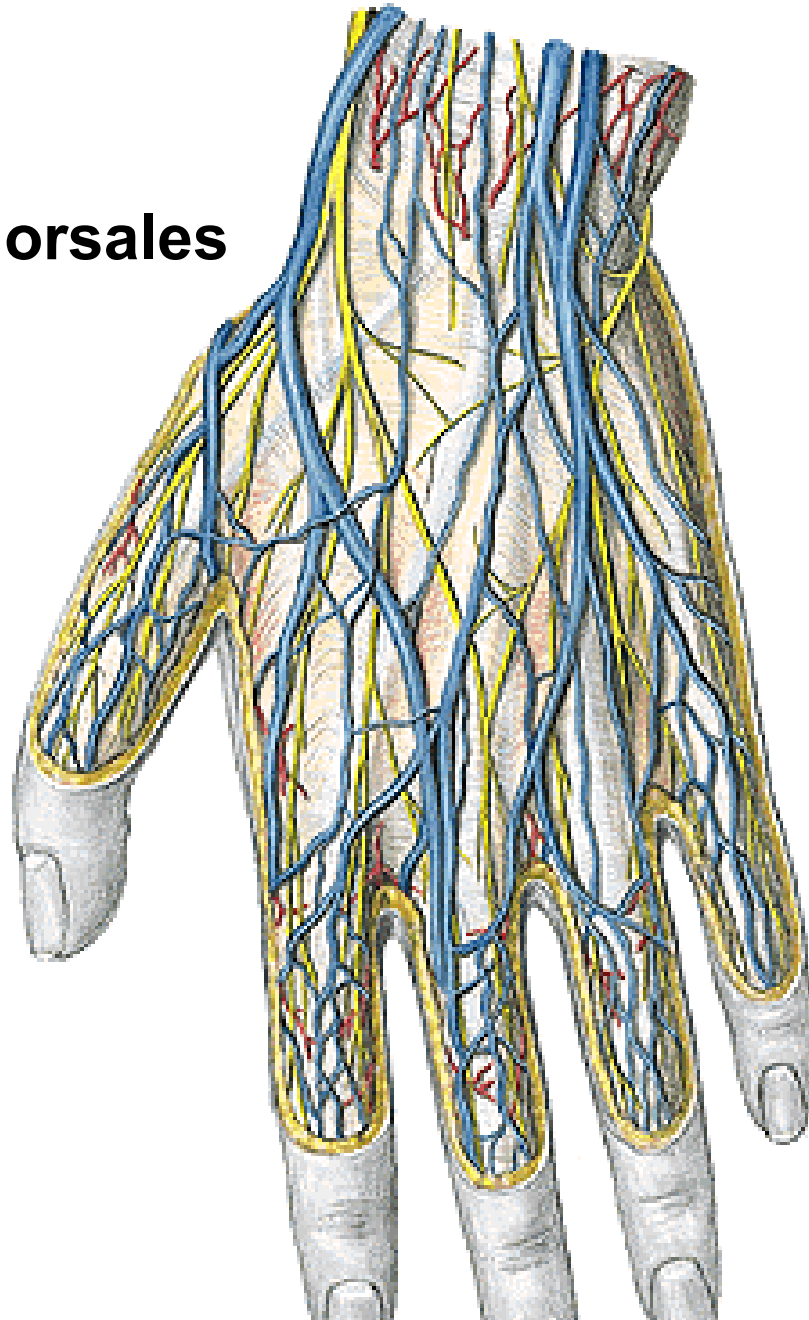
**sulcus n. ulnaris**





# N. ULNARIS

- rr. articulares
- rr. musculares
- r. dorsalis
- nn. digitales dorsales

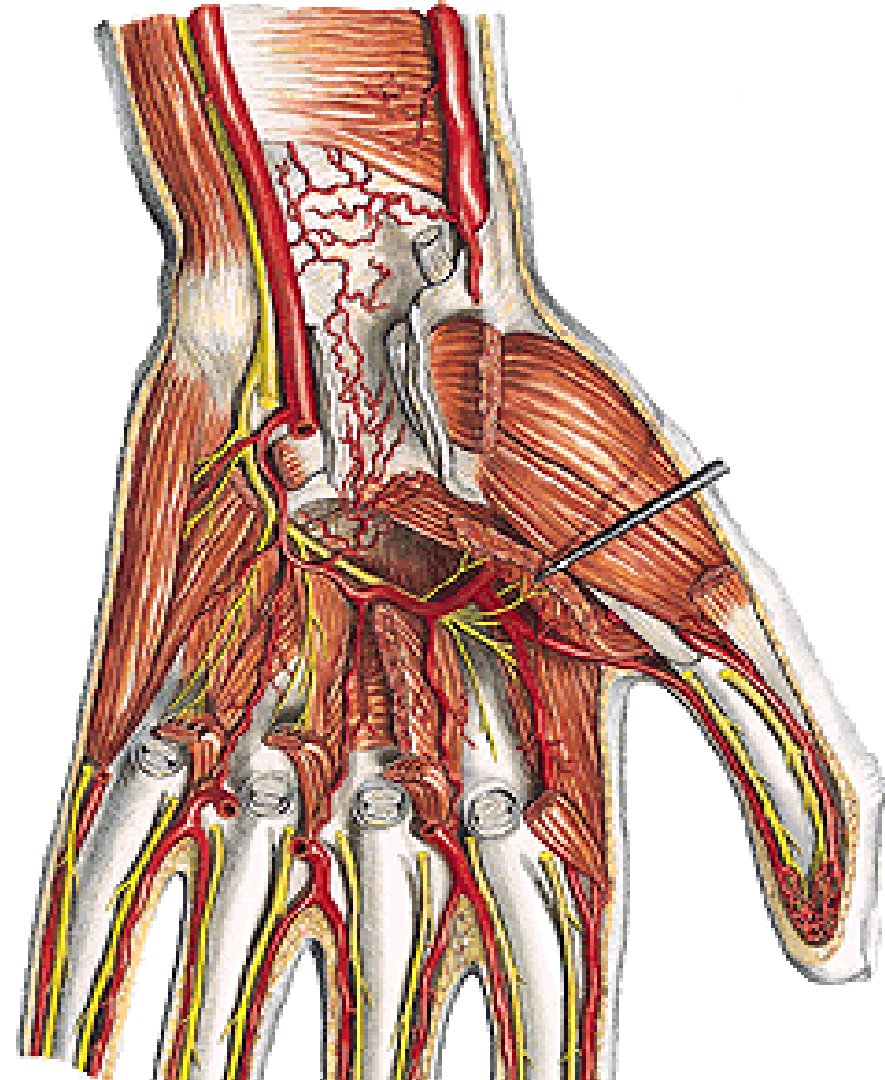
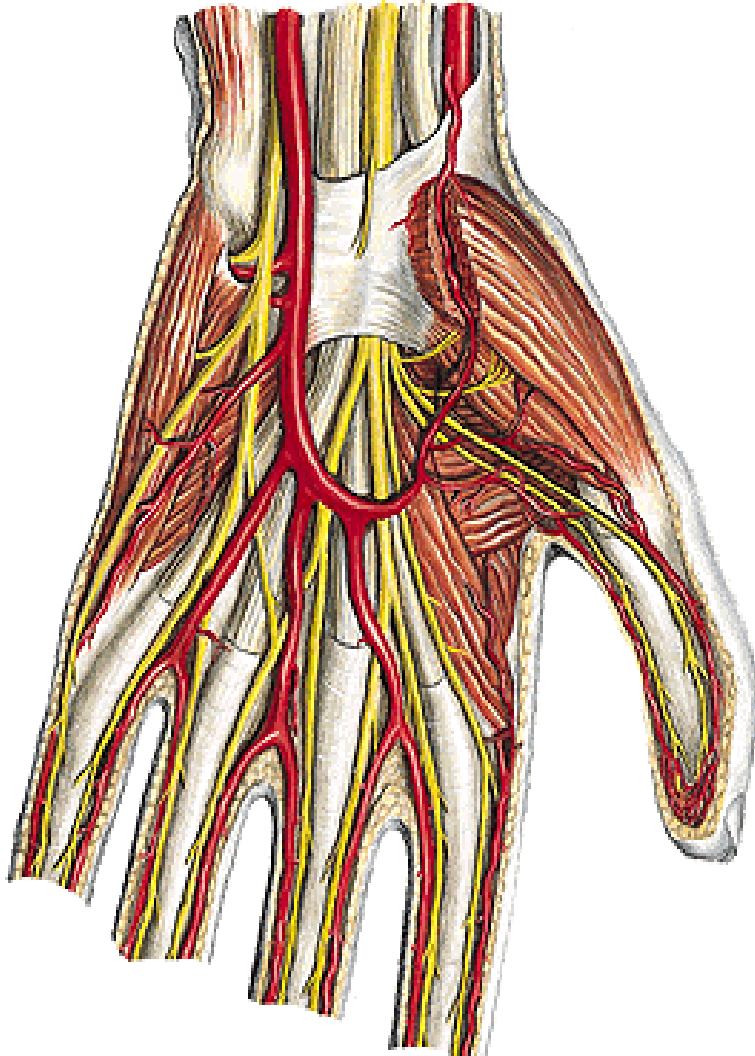


# N. ULNARIS

- r. palmaris

- r. superficialis - nn. dig. palmares comm. et proprii

- r. profundus - rr. musculares

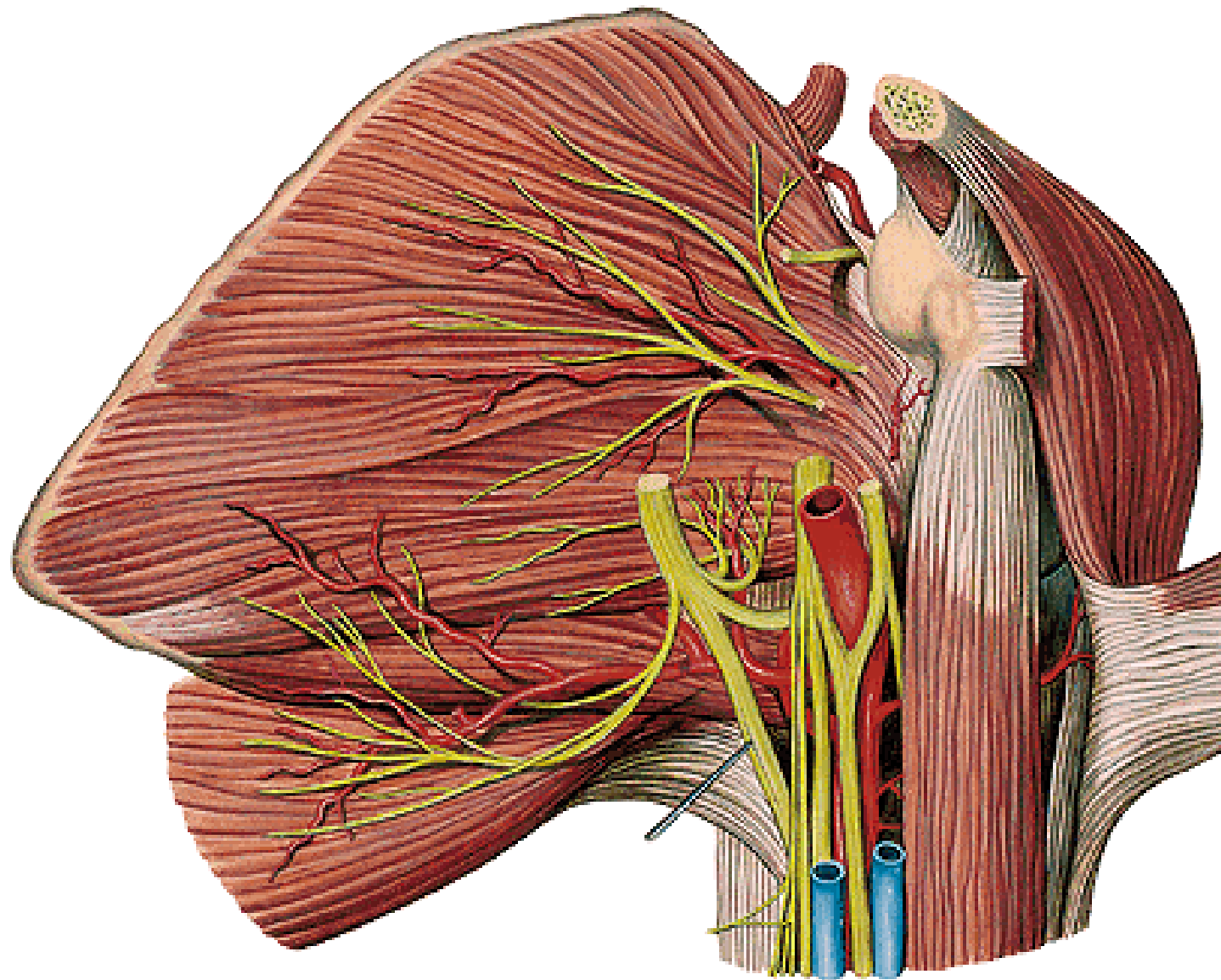


# Claw hand



Claw hand of  
the first and  
second finger

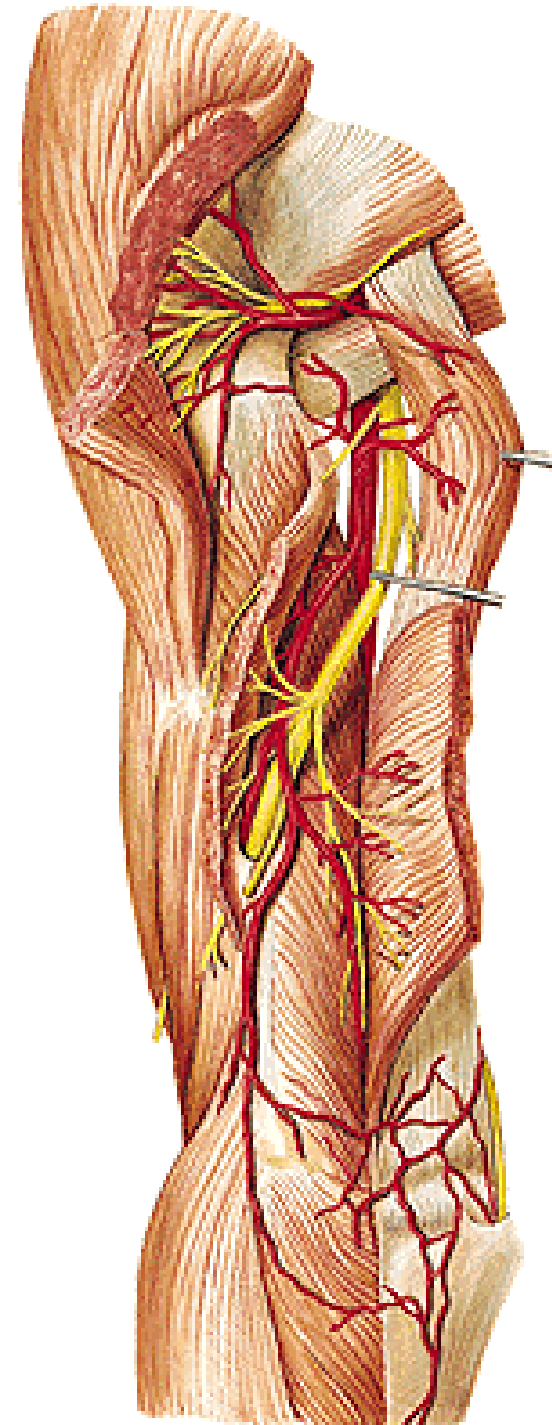
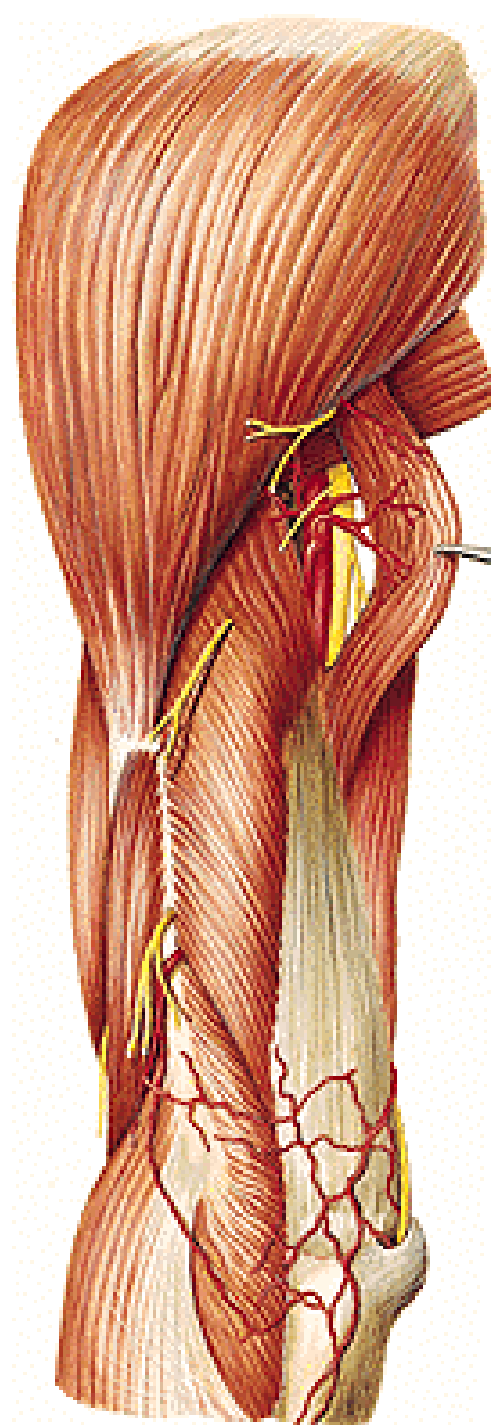
# N. RADIALIS



# N. RADIALIS

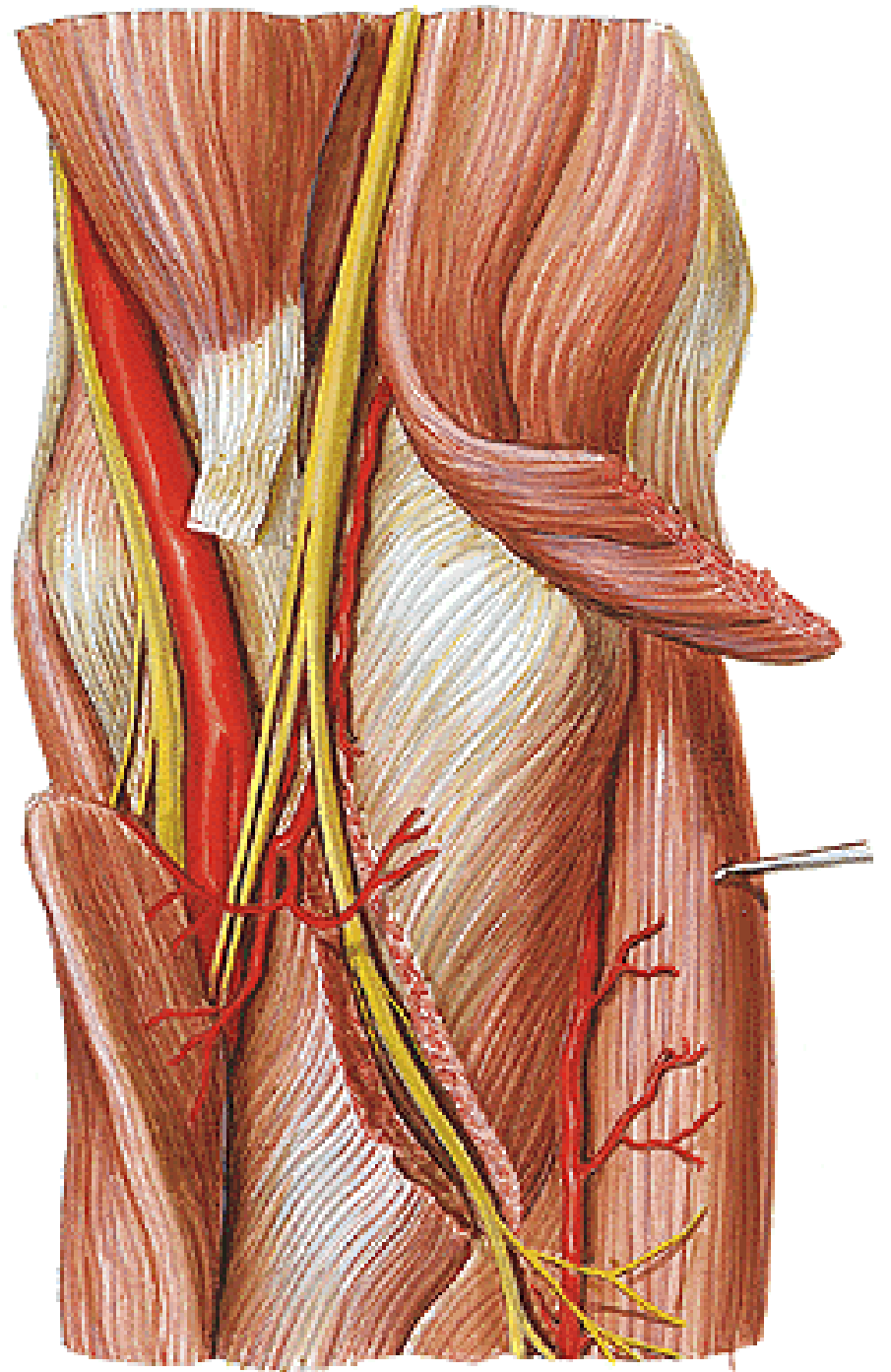
sulcus n. radialis

(a. profunda brachii)



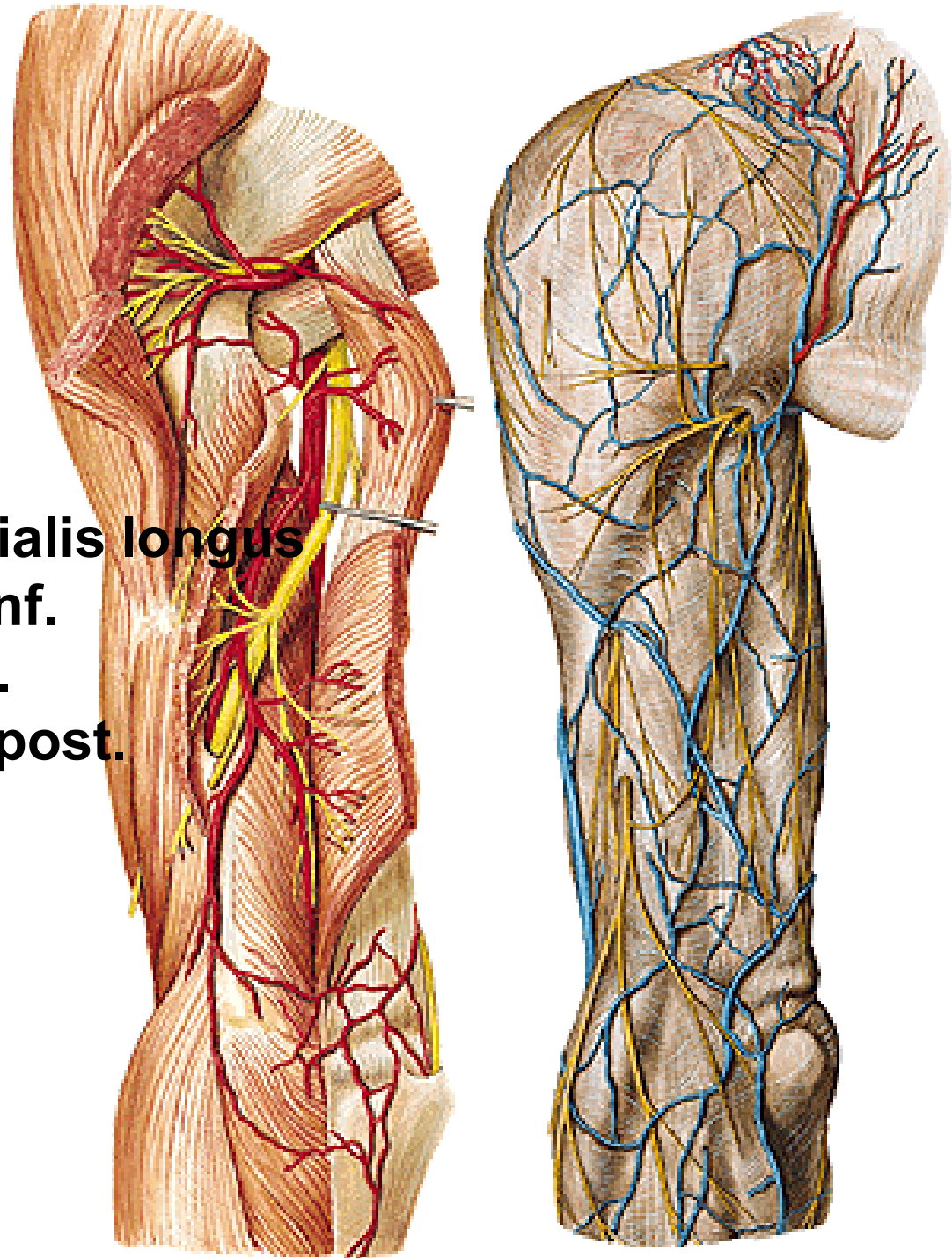
# **N. RADIALIS**

- r. superficialis**
- r. profundus**



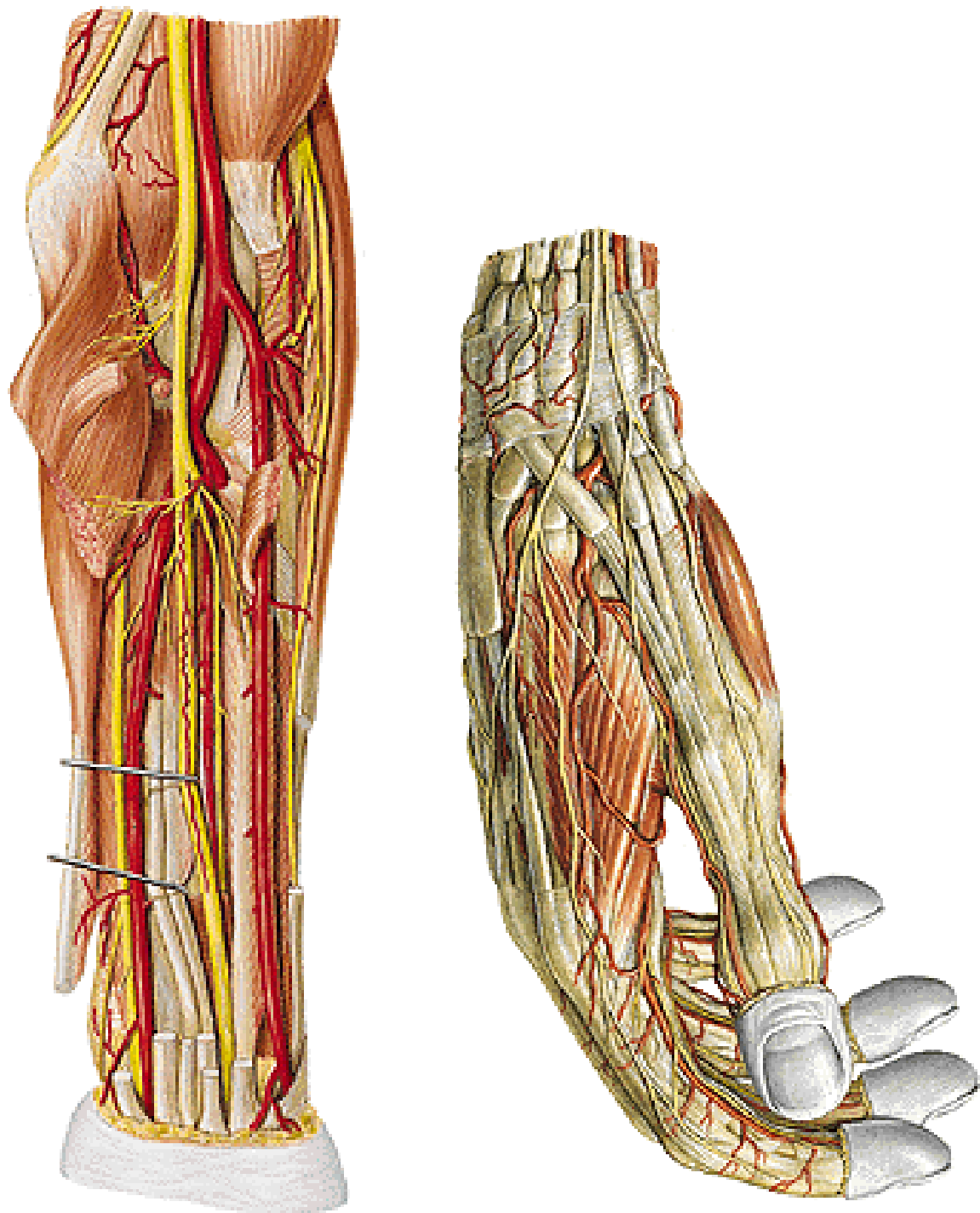
# **N. RADIALIS**

- rr. musculares
  - m. triceps brachii
  - m. anconeus
  - m. brachioradialis
  - m. extensor carpi radialis longus
- n. cutaneus brachii lat. inf.
- n. cutaneus brachii post.
- n. cutaneus antebrachii post.



# N. RADIALIS

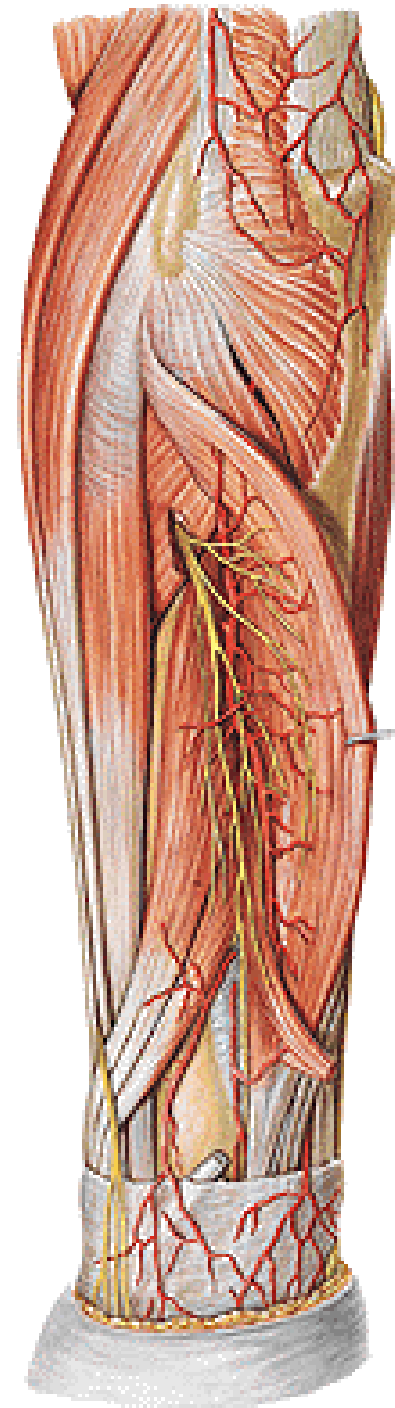
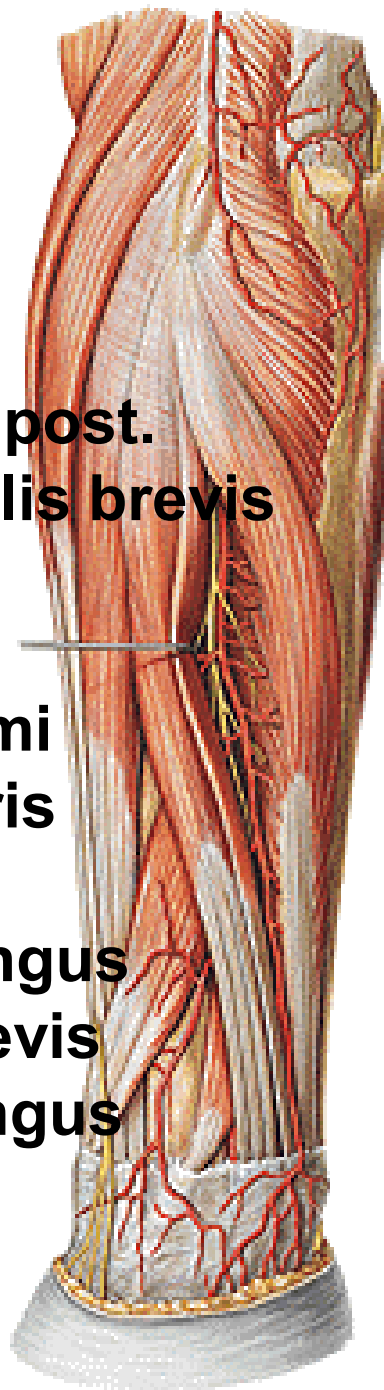
- r. superficialis
- nn. digitales dorsales





# **N. RADIALIS**

- r. profundus
- rr. musculares
- n. interosseus antebrachii post.
  - m. extensor carpi radialis brevis
  - m. supinator
  - m. extensor digitorum
  - m. extensor digiti minimi
  - m. extensor carpi ulnaris
  - m. extensor indicis
  - m. abductor pollicis longus
  - m. extensor pollicis brevis
  - m. extensor pollicis longus



# Wrist drop



# CROSS SECTION THROUGH THE ARM

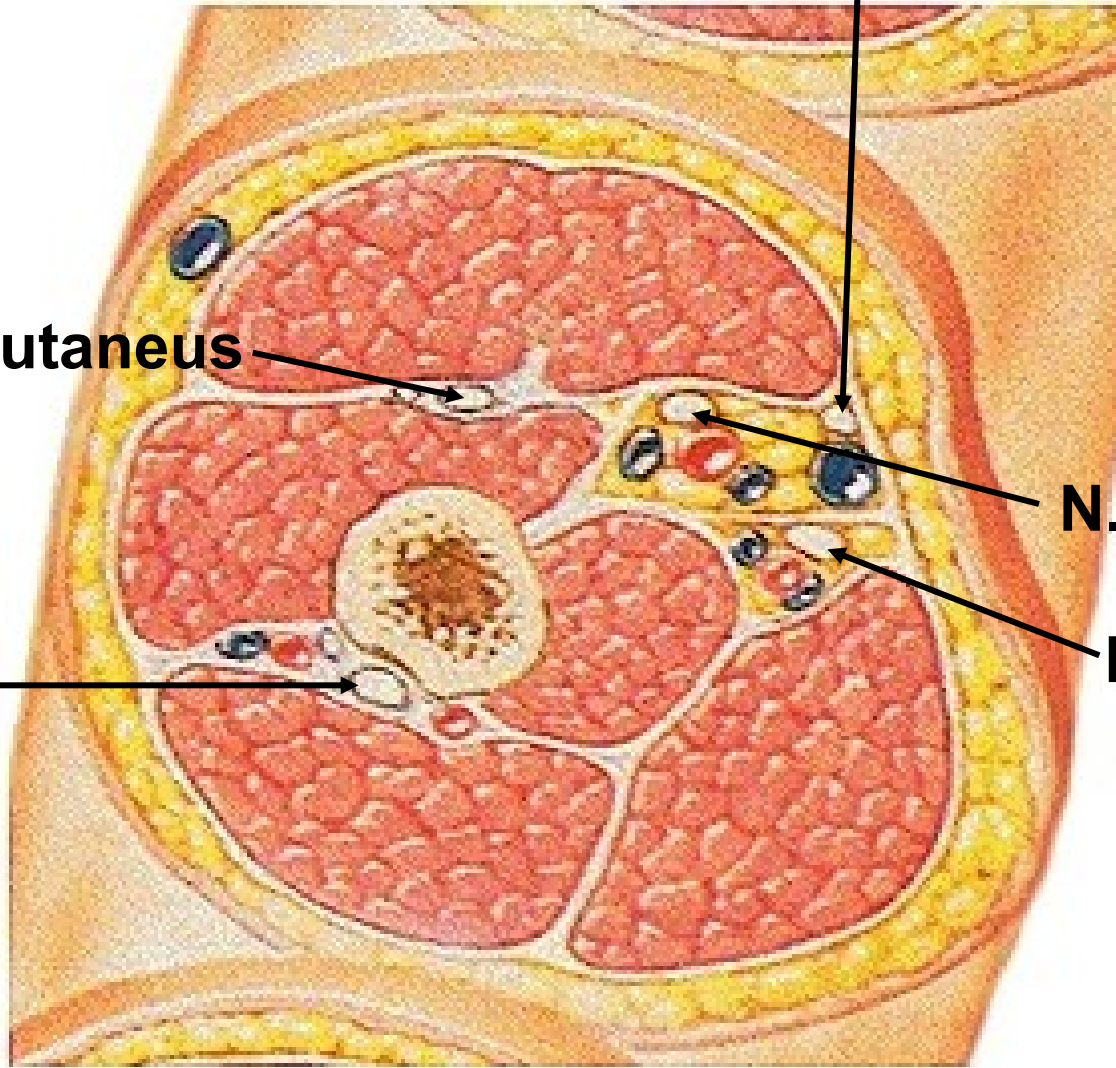
**N. cutaneus antebrachii med.**

**N. musculocutaneus**

**N. medianus**

**N. ulnaris**

**N. radialis**

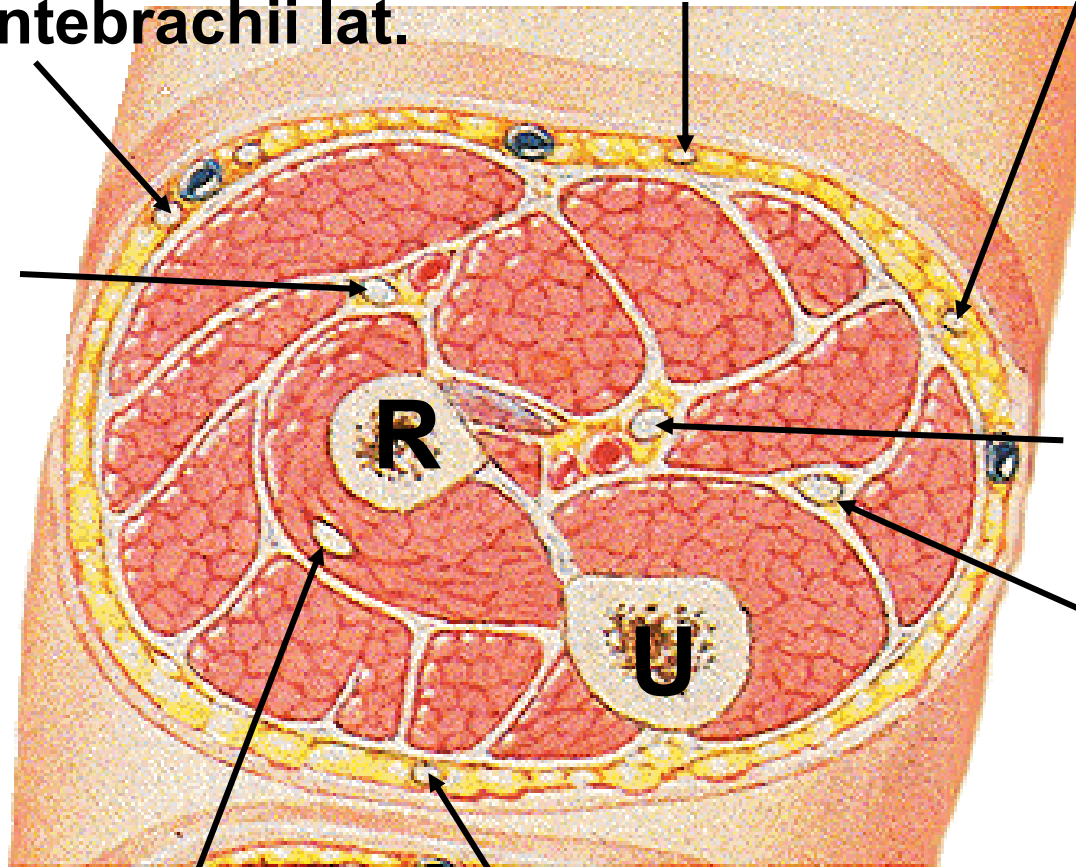


# FOREARM – PROXIMAL CROSS SECTION

N. cutaneus antebrachii med.  
- r. ant.      - r. post.

N. cutaneus antebrachii lat.

N. radialis  
- r. spf.



N. medianus

N. ulnaris

N. cutaneus antebrachii post.

N. radialis – r. prof.

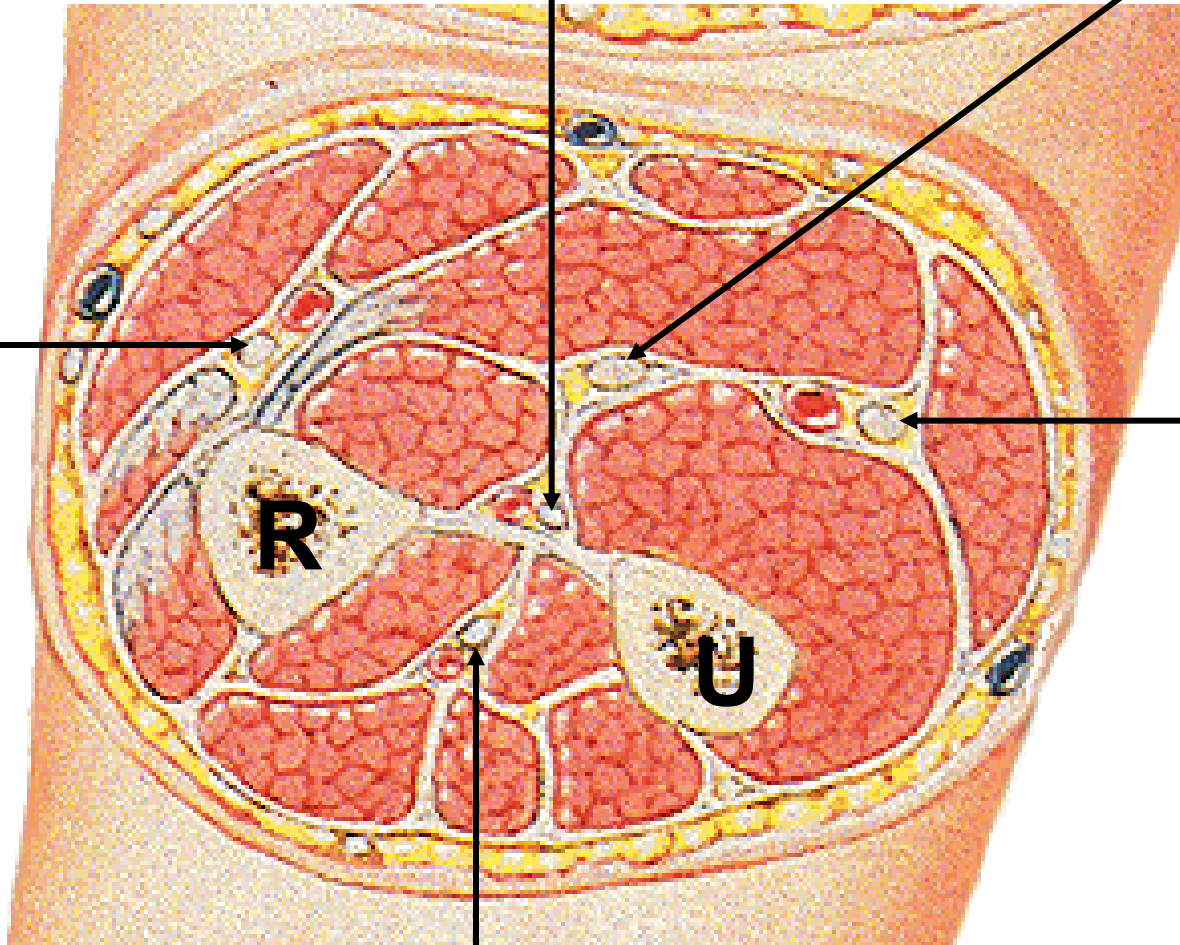
# FOREARM – MIDDLE CROSS SECTION

**N. interosseus anterior**

**N. medianus**

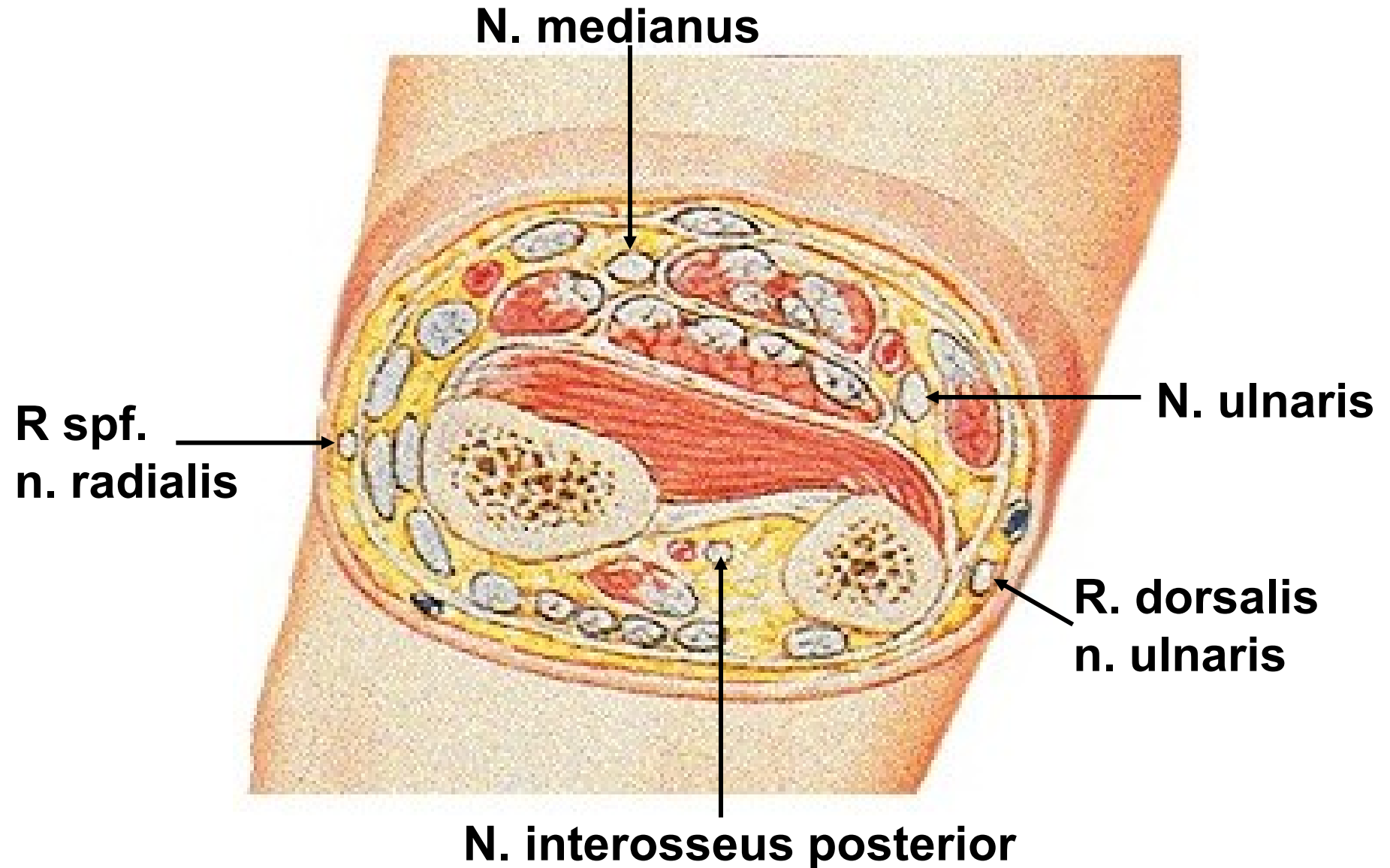
**R. spf.  
n. radialis**

**N. ulnaris**



**N. interosseus posterior**

# FOREARM – DISTAL CROSS SECTION



## **Innervation of upper limb muscles:**

**Nn. subscapulares – subscapularis, teres major**

**N. axillaris – deltoideus, teres minor**

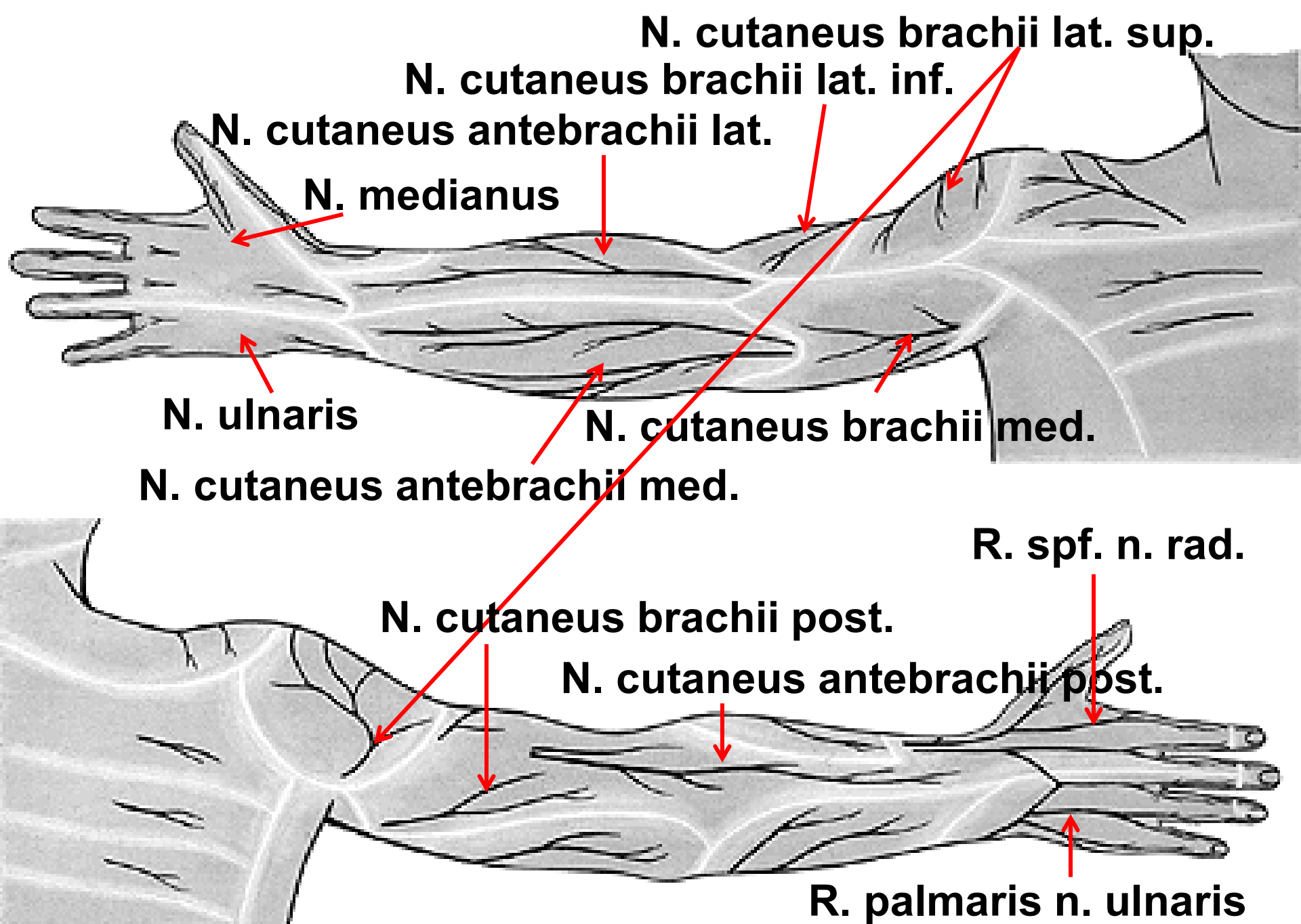
**N. suprascapularis – supraspinatus et infraspinatus**

**N. musculocutaneus – anterior compartment of arm**

**N. radialis – posterior compartment of arm, posterior compartment of forearm, lateral compartment of forearm**

**N. ulnaris – flexor carpi ulnaris, medial half of flexor dig. prof., most muscles of the hand**

**N. medianus – anterior compartment of forearm (except 2 muscles innervated by ulnar nerve), abductor pollicis brevis, flexor pollicis brevis (superficial head), opponens pollicis, 2 lateral lumbricals**





Illustrations and photographs were copied from:  
**Atlas der Anatomie des Menschen/Sobotta.**  
**Putz,R., und Pabst,R. 20. Auflage. München:**  
**Urban & Schwarzenberg, 1993**  
**Netter: Interactive Atlas of Human Anatomy.**  
**Windows Version 2.0**