

MUSCLES OF THE UPPER LIMB

MUSCULI (MM.) HUMERI

M. deltoideus

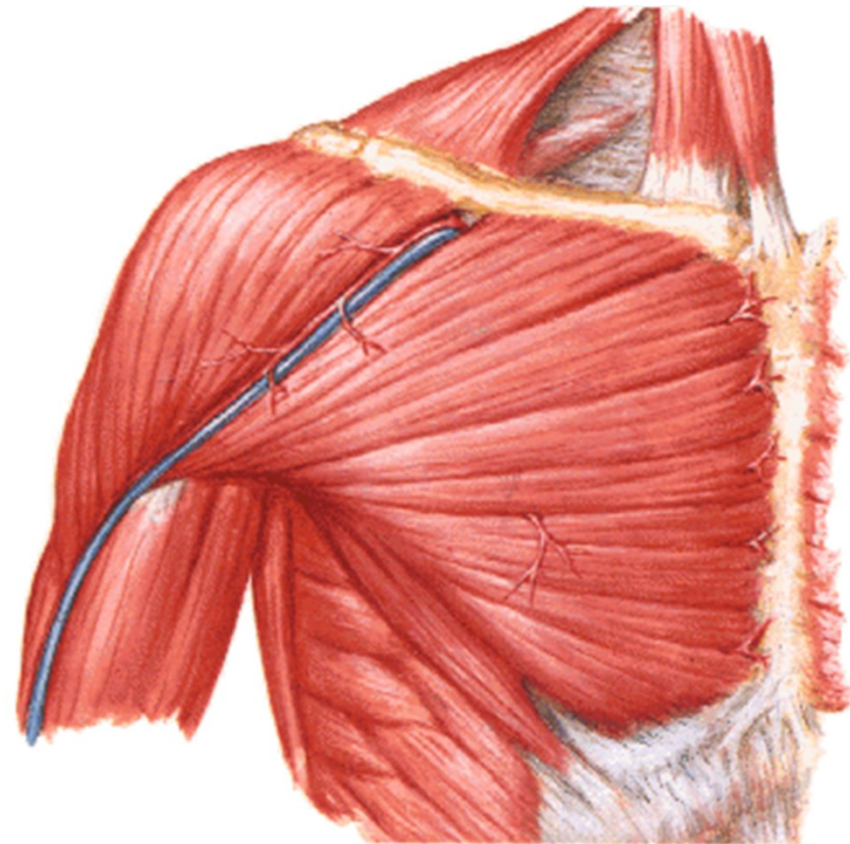
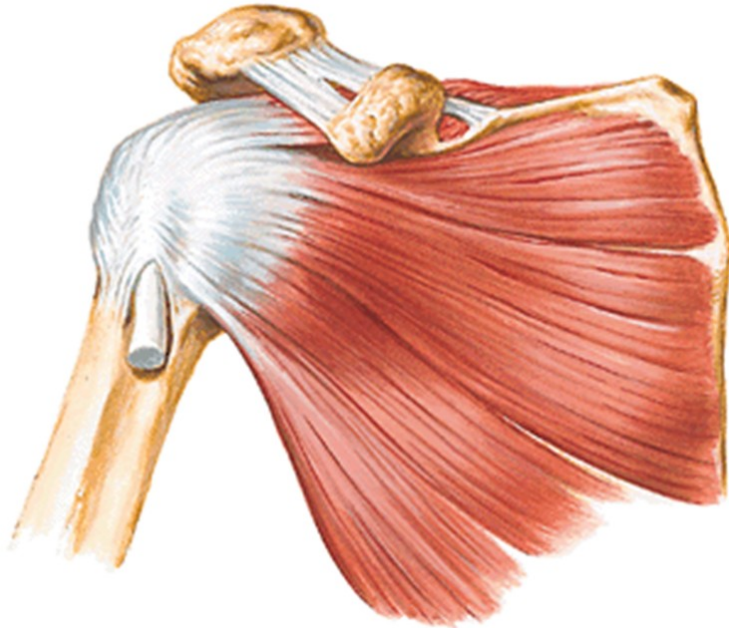
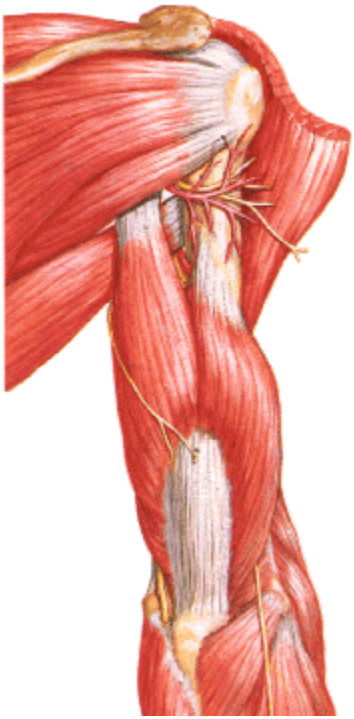
M. supraspinatus

M. infraspinatus

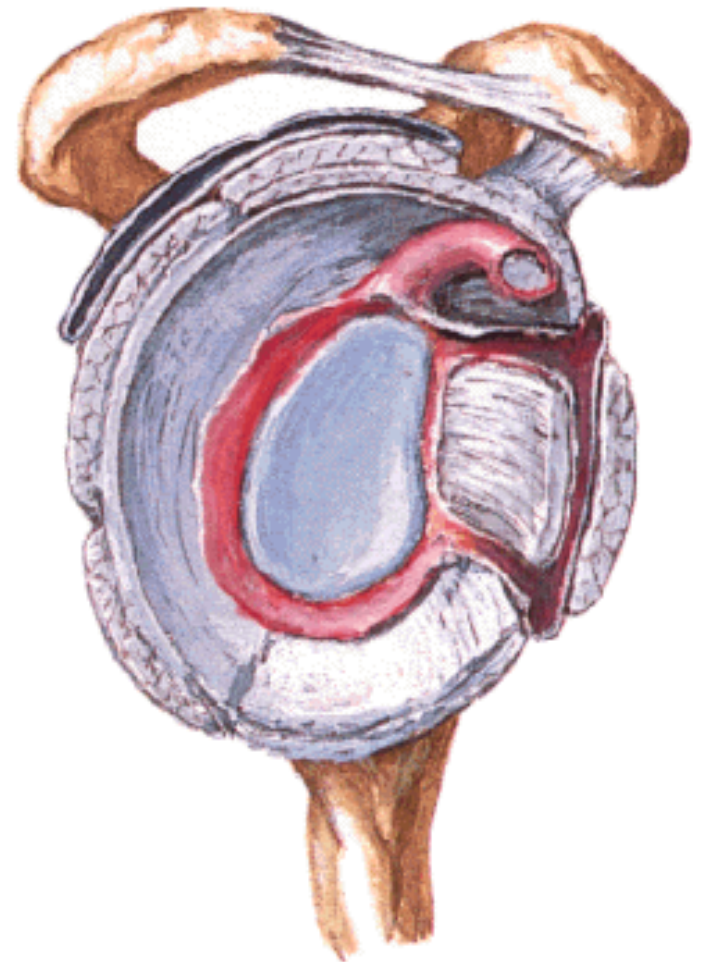
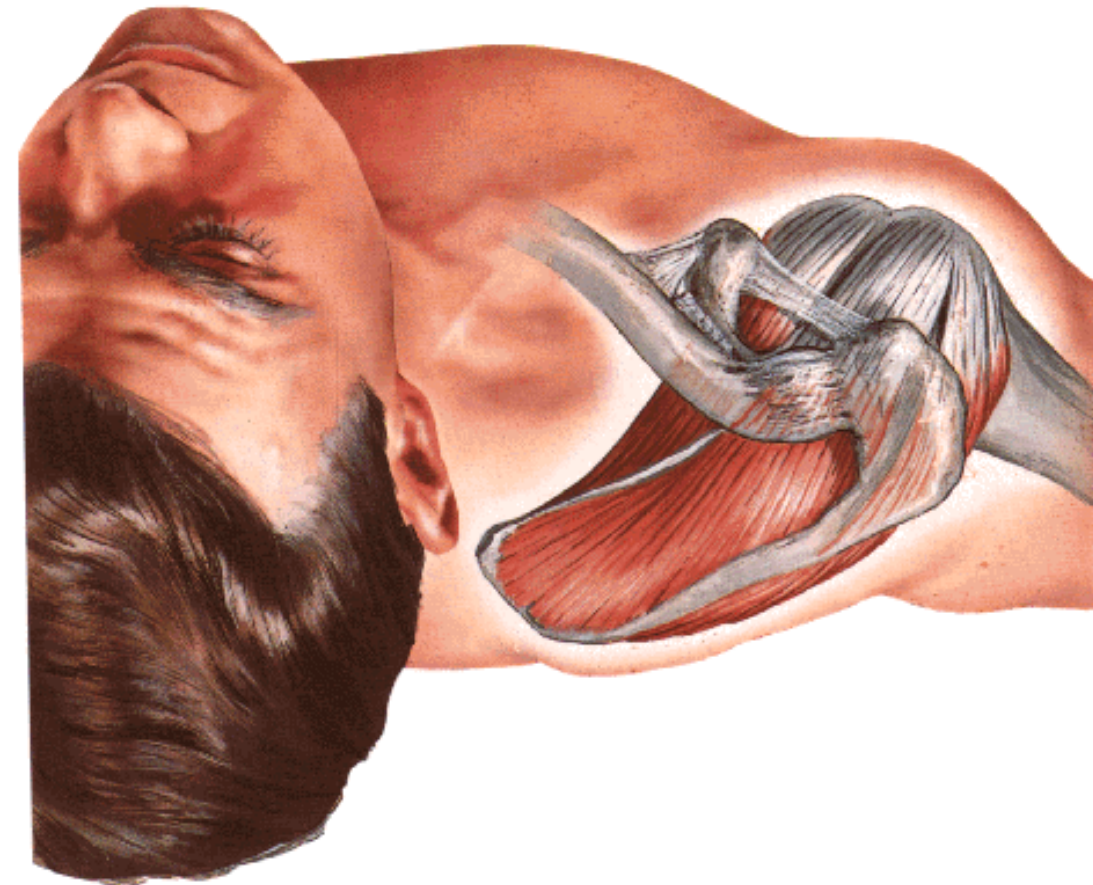
M. teres minor

M. teres major

M. subscapularis



Rotator cuff



MM. BRACHII

Anterior group of muscles:

M. biceps brachii

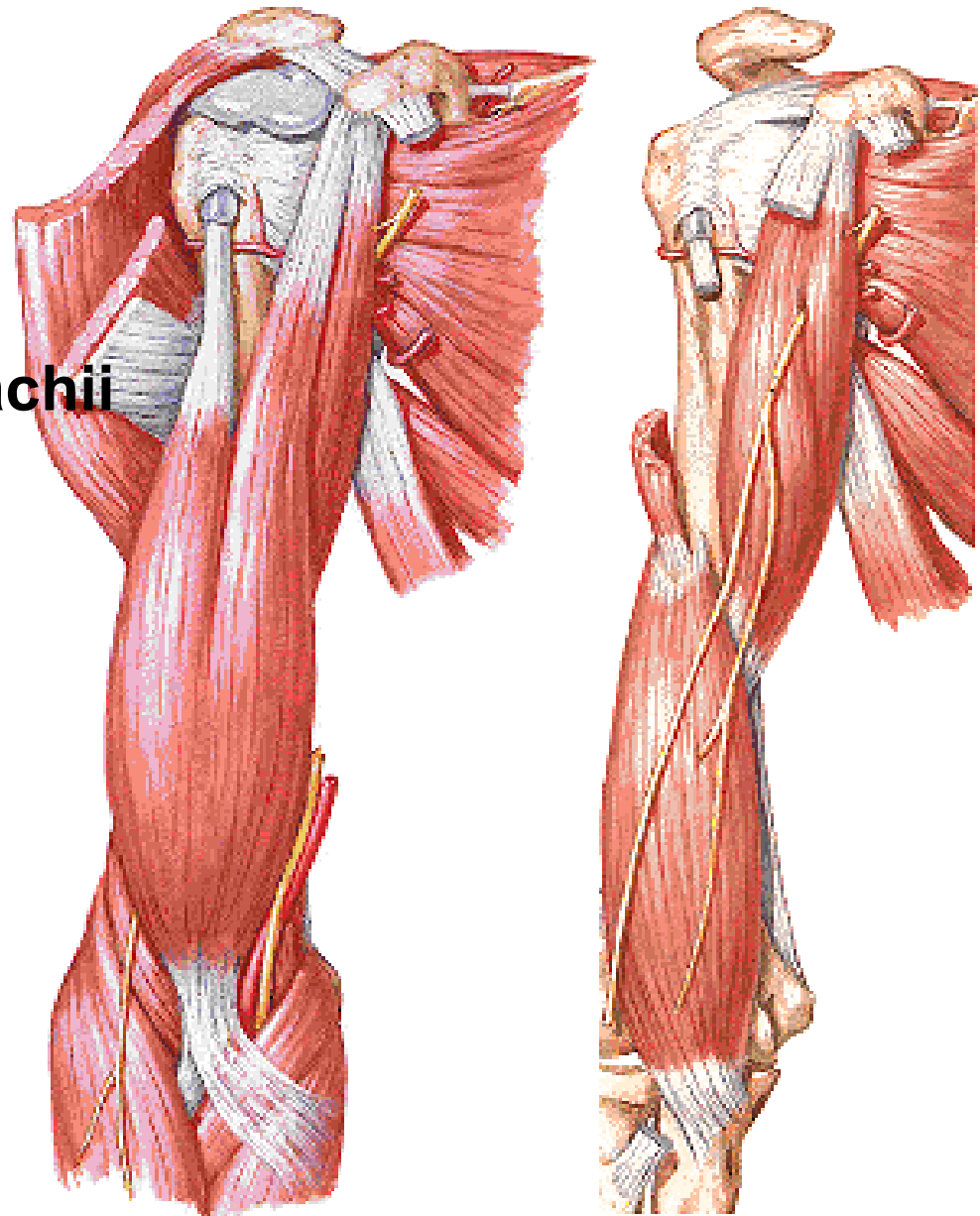
caput longum

caput breve

aponeurosis m. bicipitis brachii

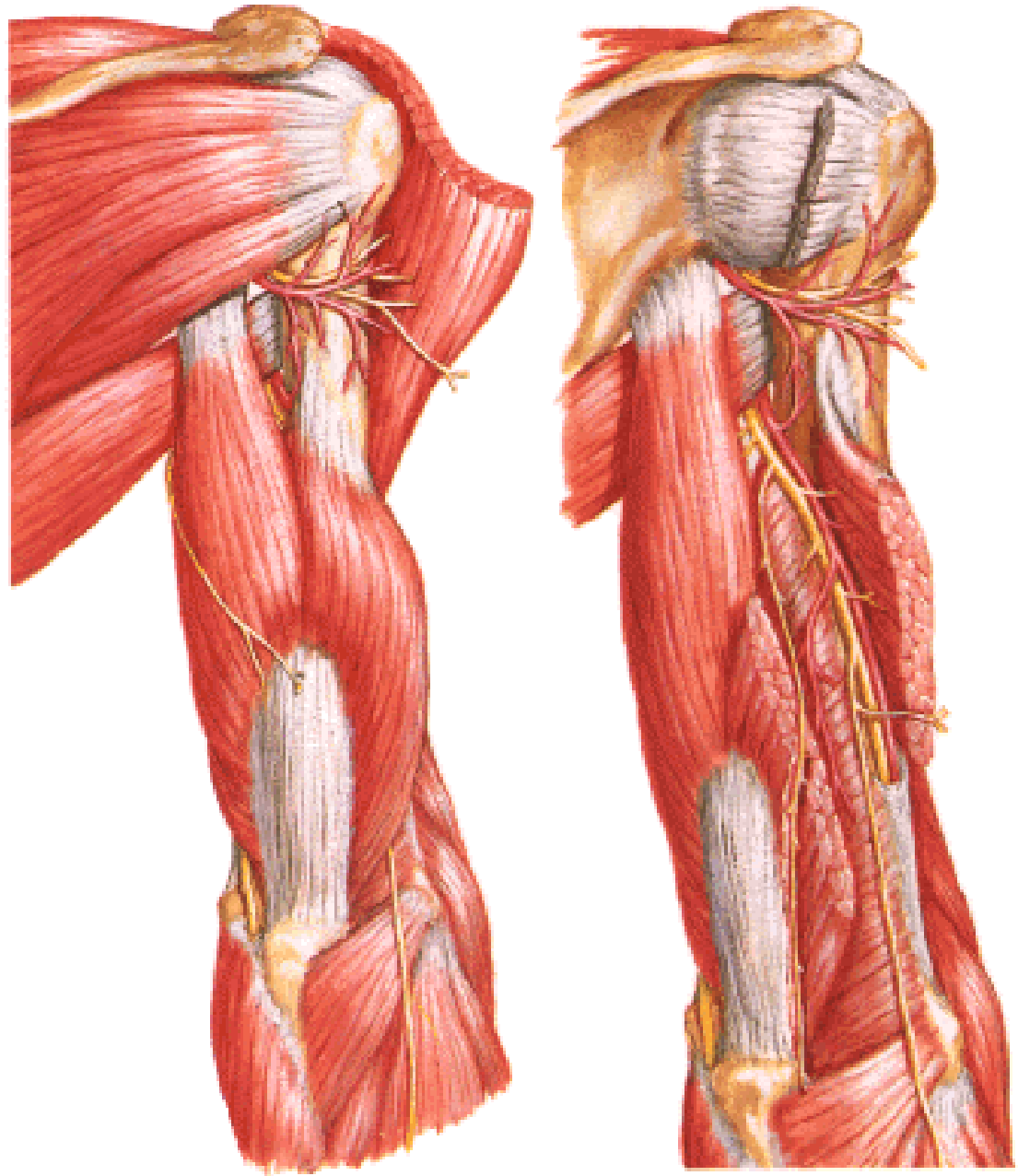
M. coracobrachialis

M. brachialis

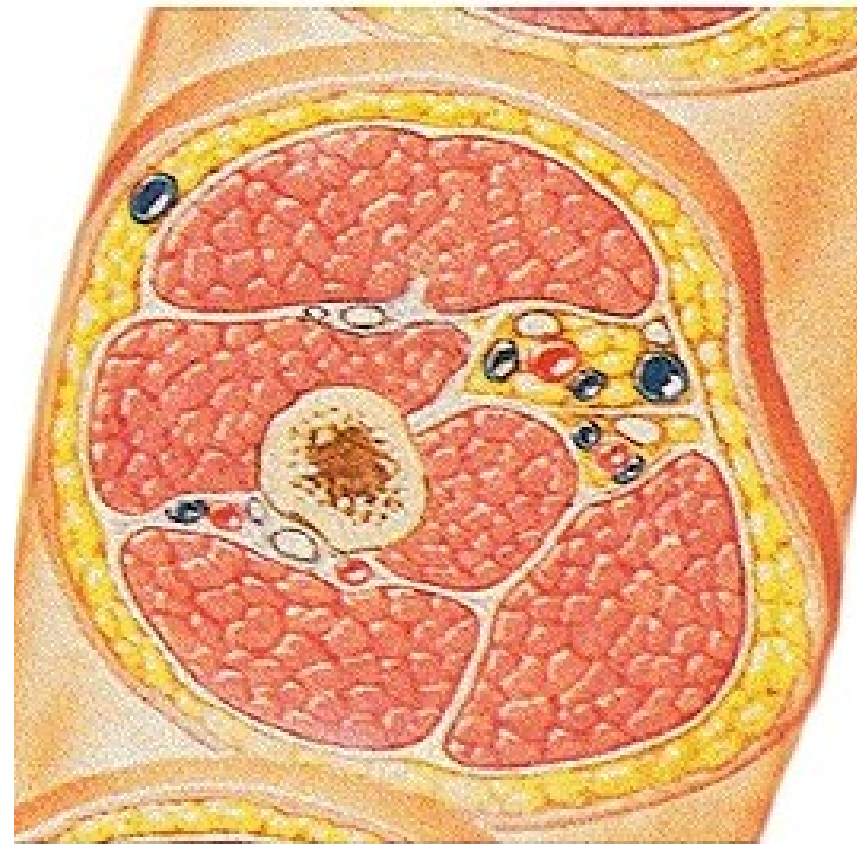
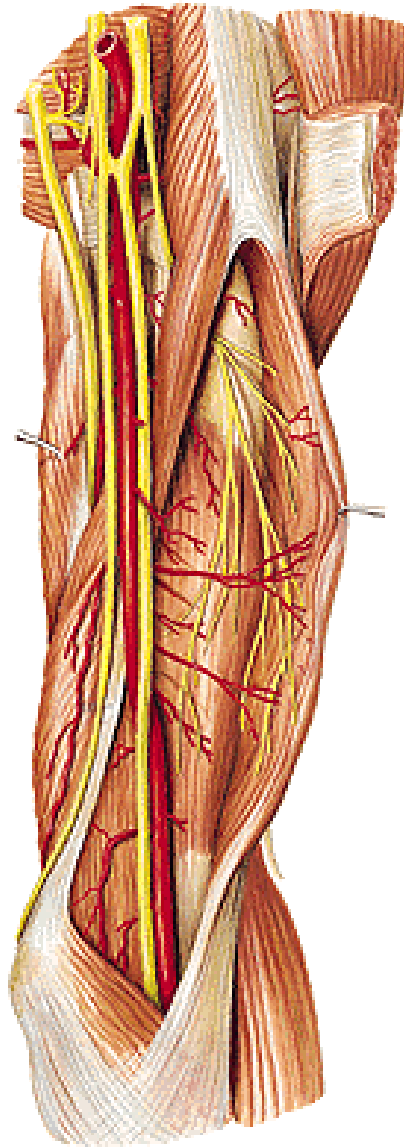
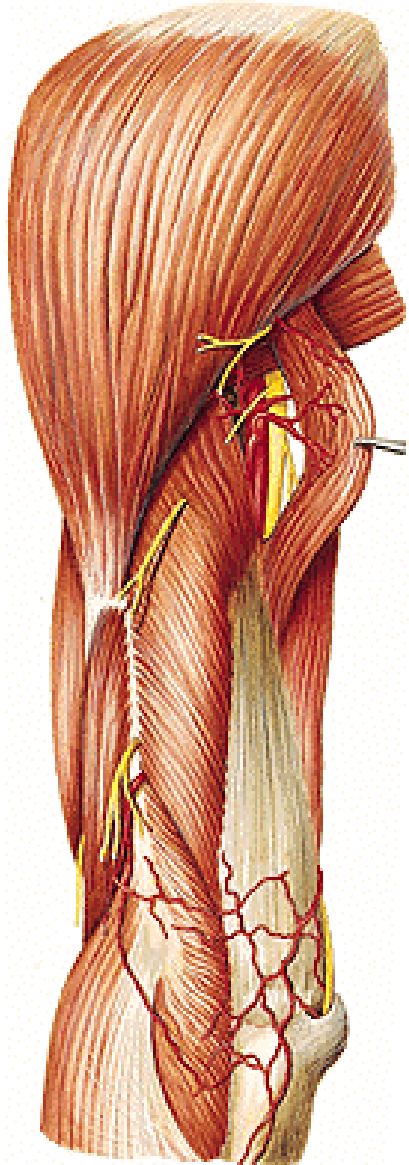


Posterior group of muscles:

M. triceps brachii
caput longum
caput laterale
caput mediale



Septum intermusculare mediale et laterale



MM. ANTEBRACHII

Anterior group of muscles:

M. pronator teres

M. flexor carpi radialis

M. palmaris longus

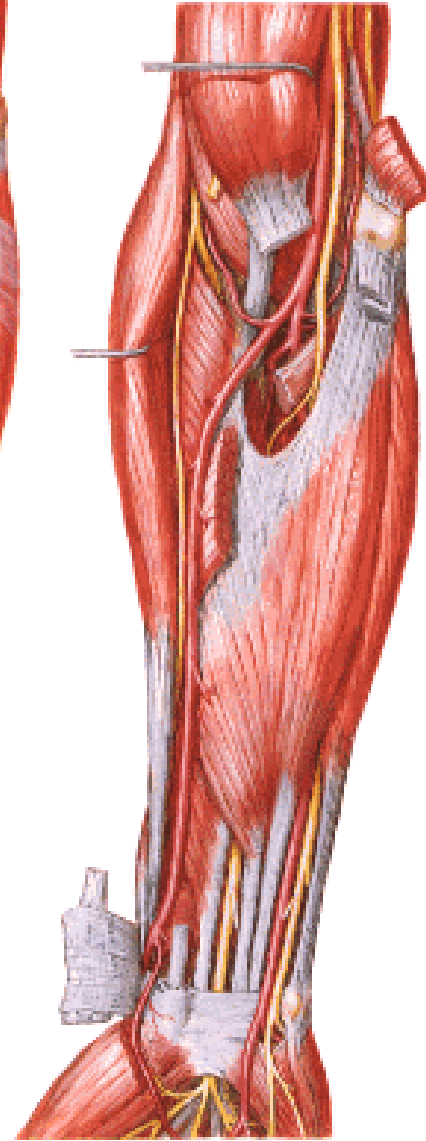
M. flexor carpi ulnaris

M. flexor digitorum spf.

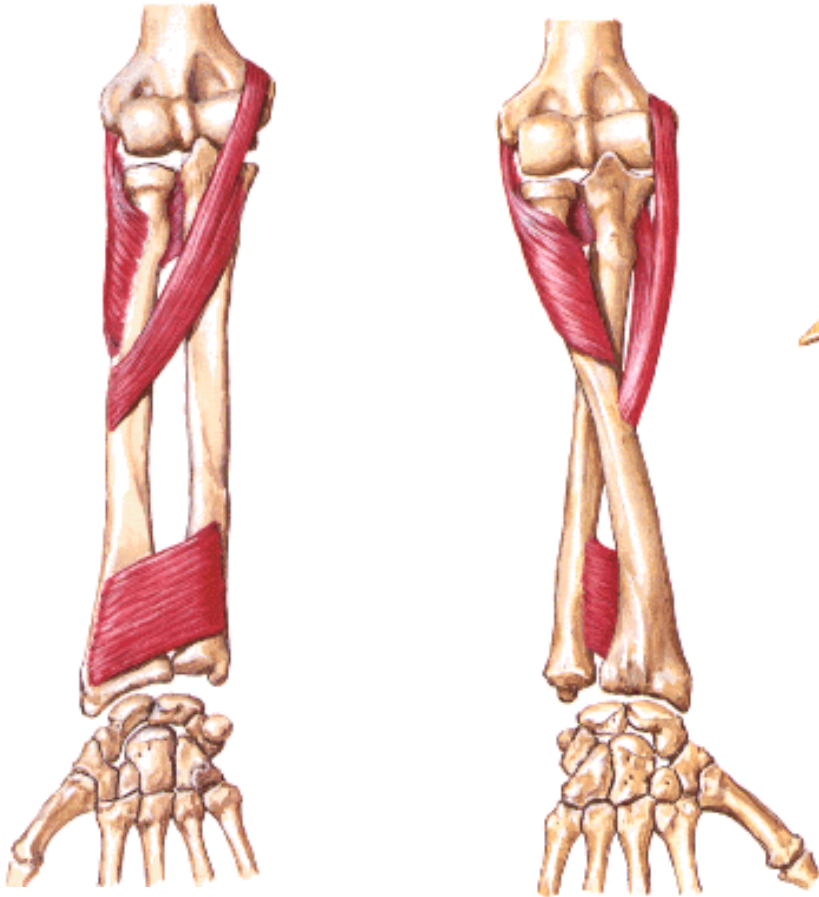
M. flexor pollicis longus

M. flexor digitorum prof.

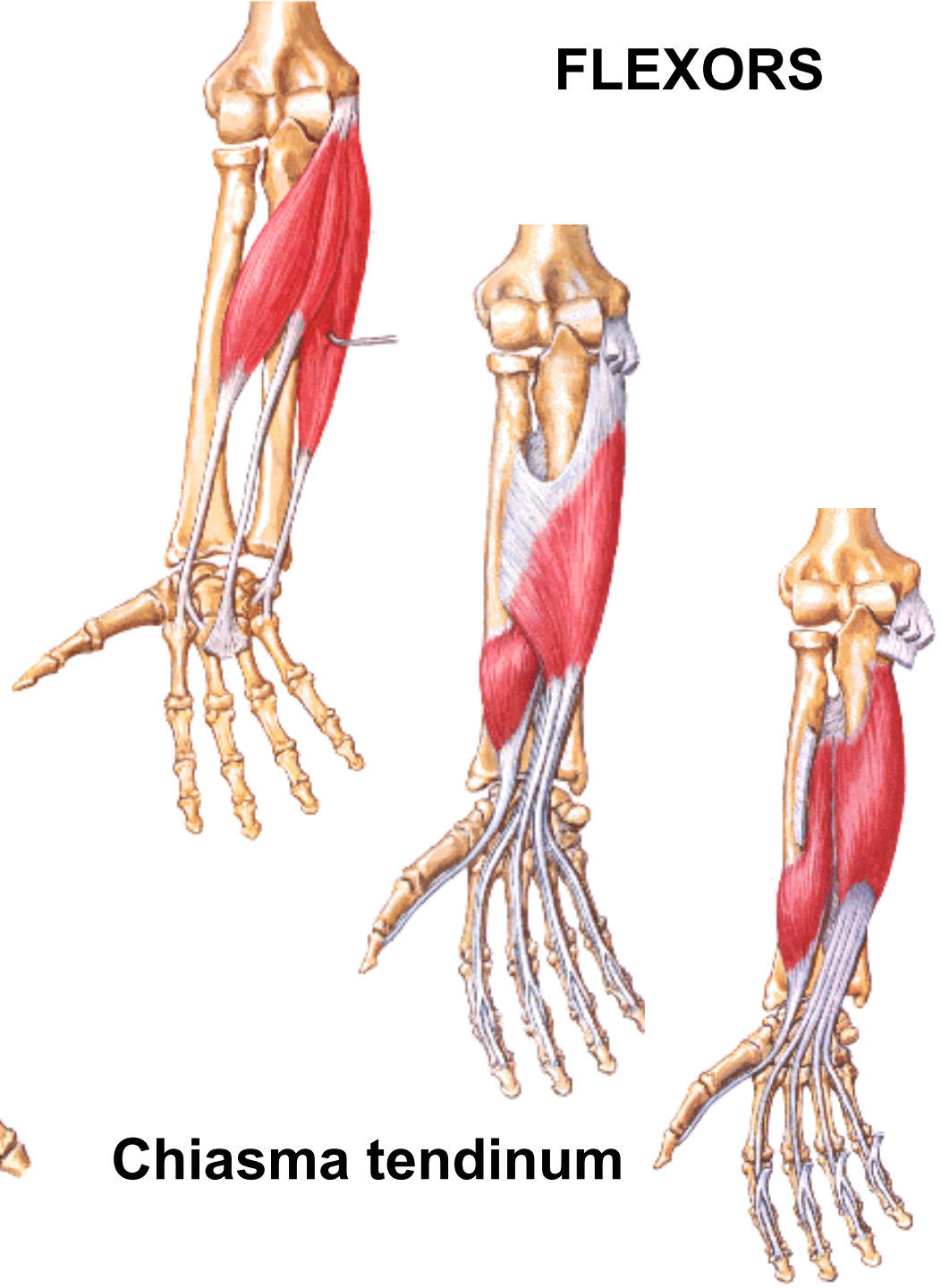
M. pronator quadratus



**PRONATION
-
SUPINATION**



FLEXORS



Chiasma tendinum

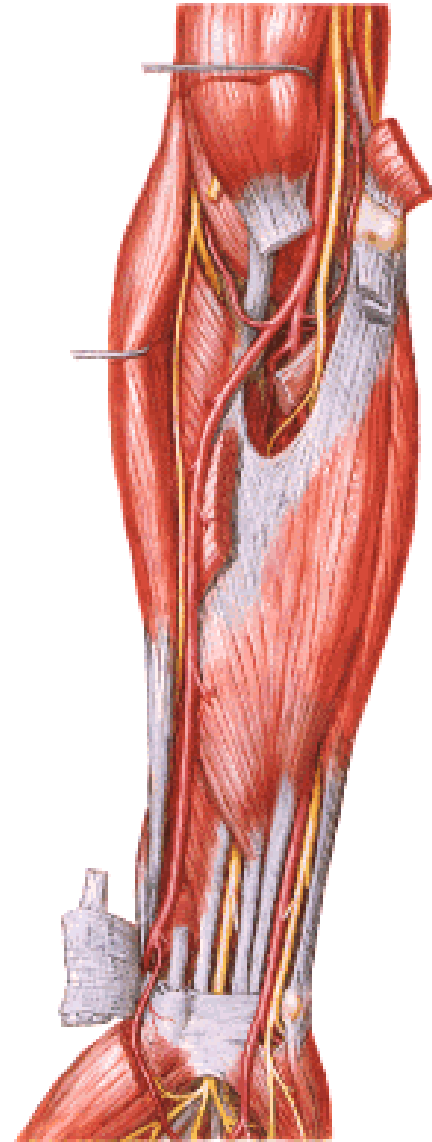
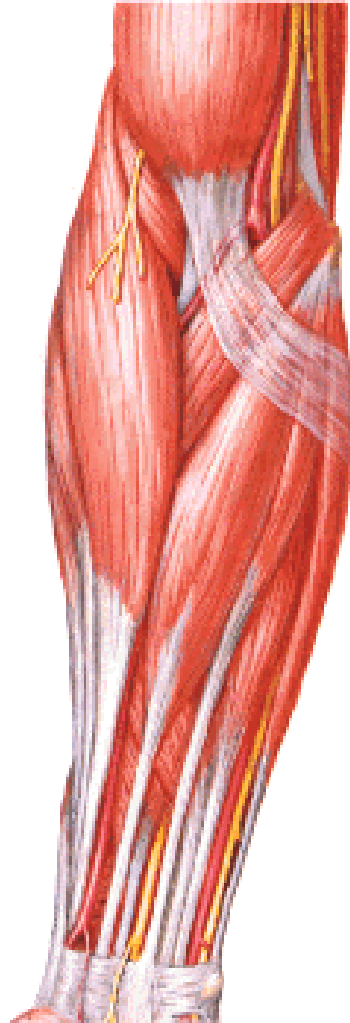
Lateral group of muscles:

M. brachioradialis

M. extensor carpi radialis longus

M. extensor carpi radialis brevis

M. supinator



Posterior group of muscles:

M. anconeus

M. extensor digitorum

M. extensor digiti minimi

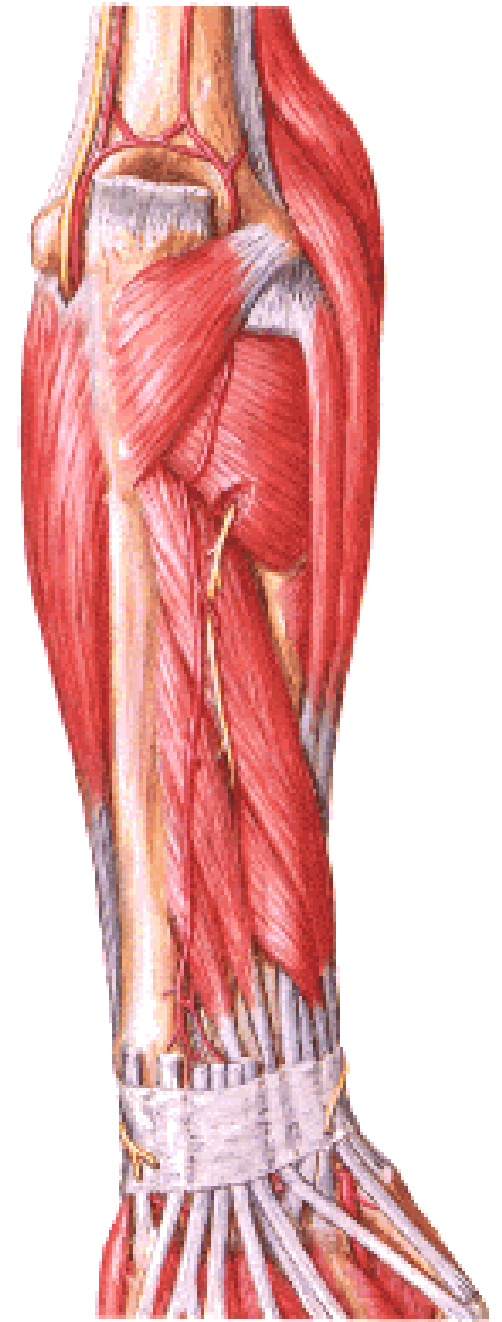
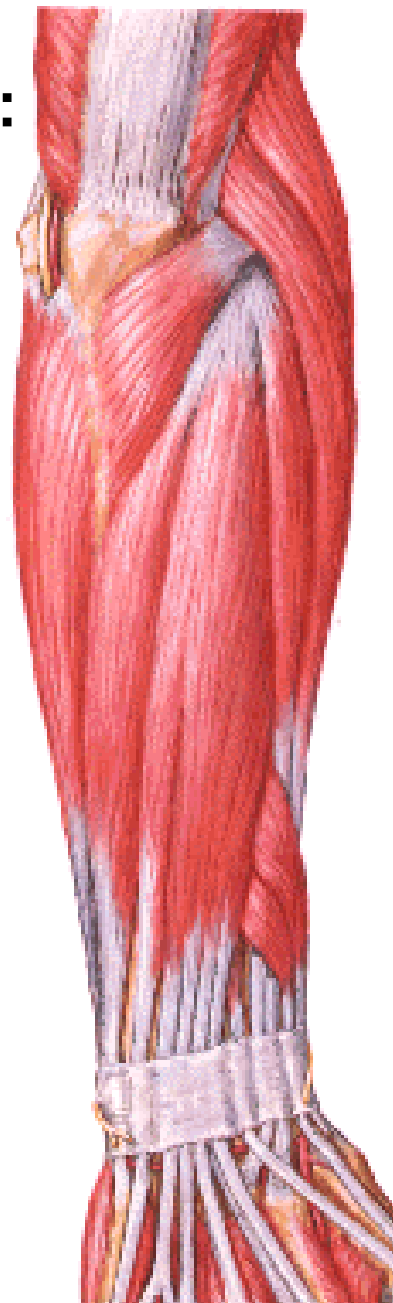
M. extensor carpi ulnaris

M. abductor pollicis longus

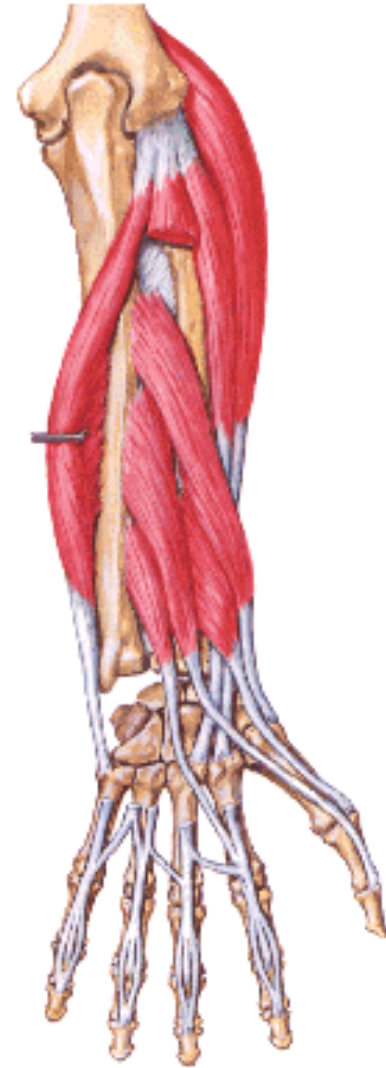
M. extensor pollicis brevis

M. extensor pollicis longus

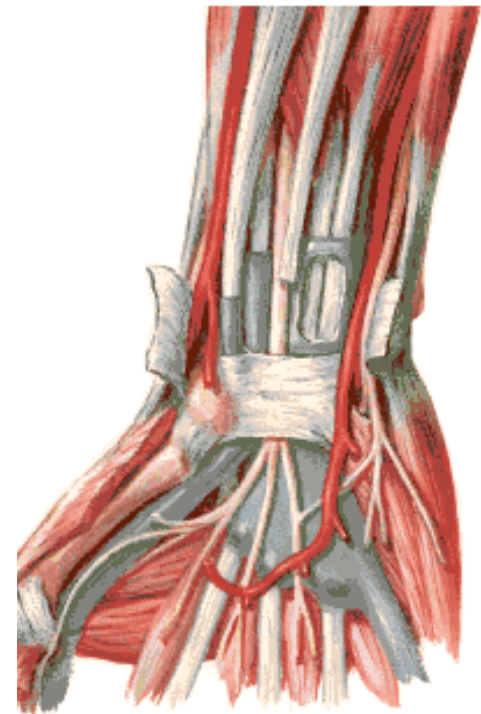
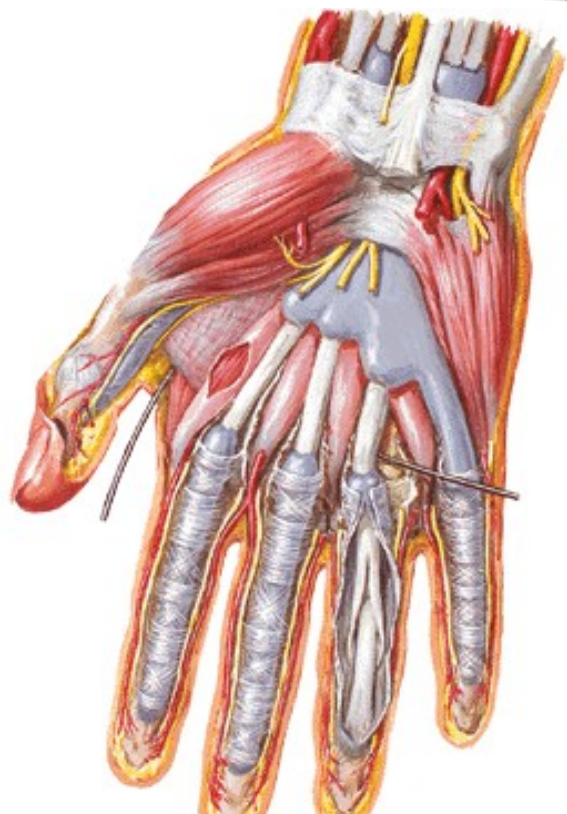
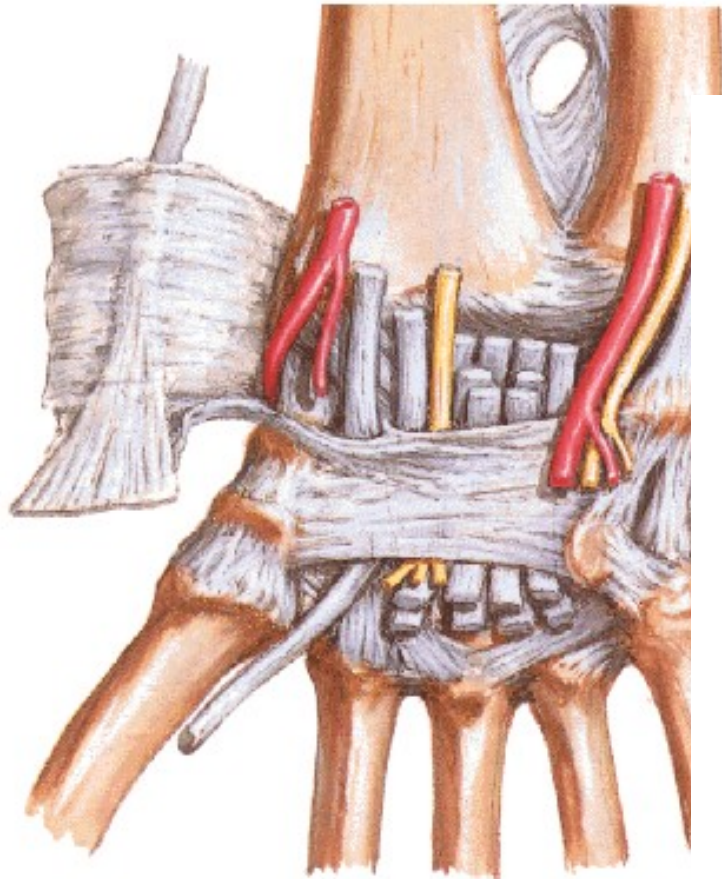
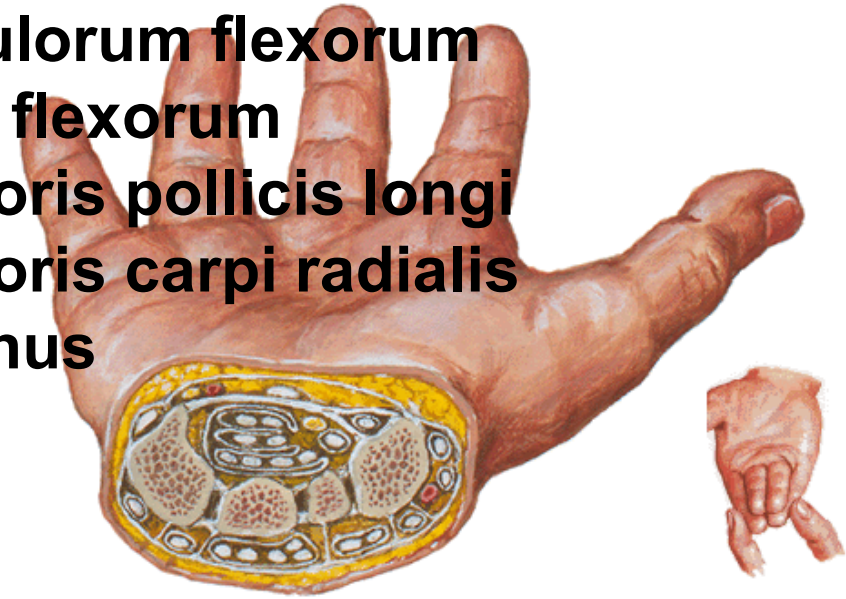
M. extensor indicis



EXTENSORS

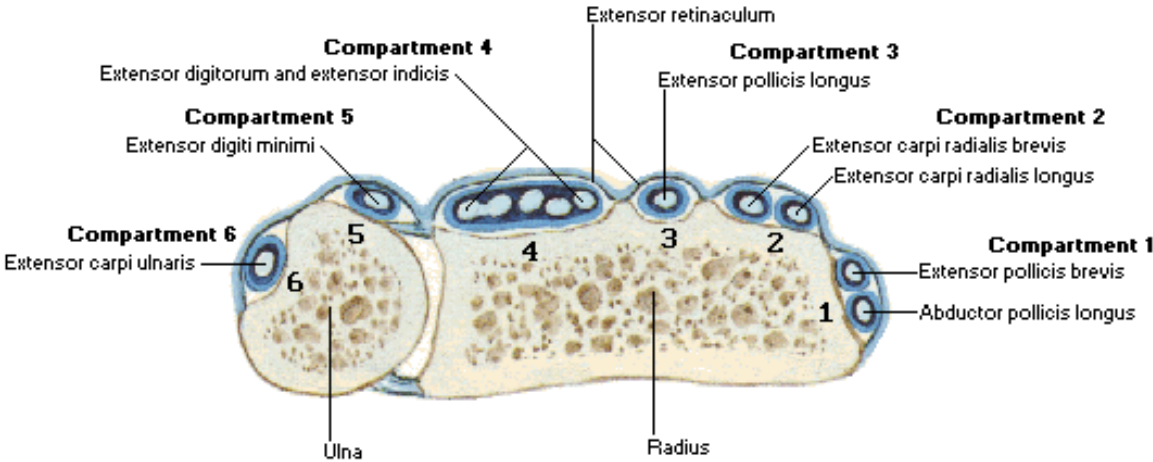
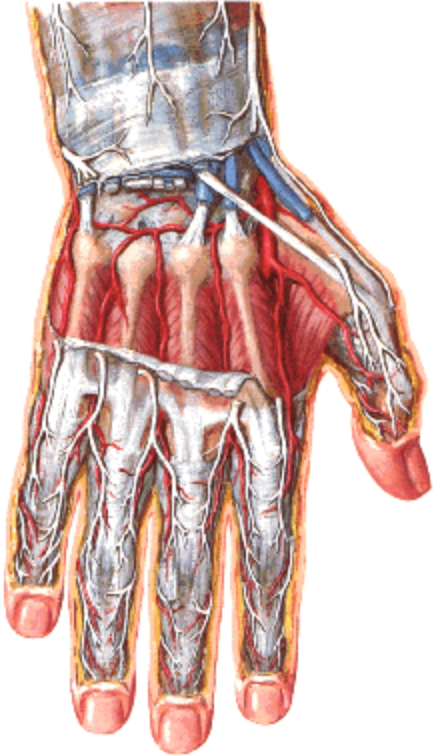


Canalis carpi - retinaculum musculorum flexorum
Vagina synovialis communis mm. flexorum
Vagina synovialis tendinis m. flexoris pollicis longi
Vagina synovialis tendinis m. flexoris carpi radialis
Vaginae synoviales digitorum manus

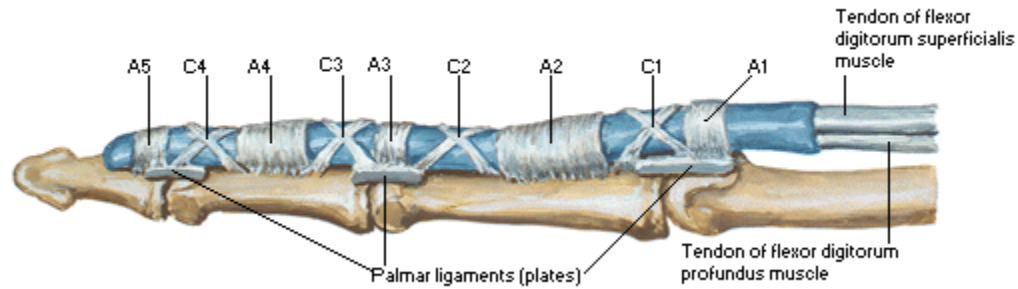


Retinaculum musculorum extensorum

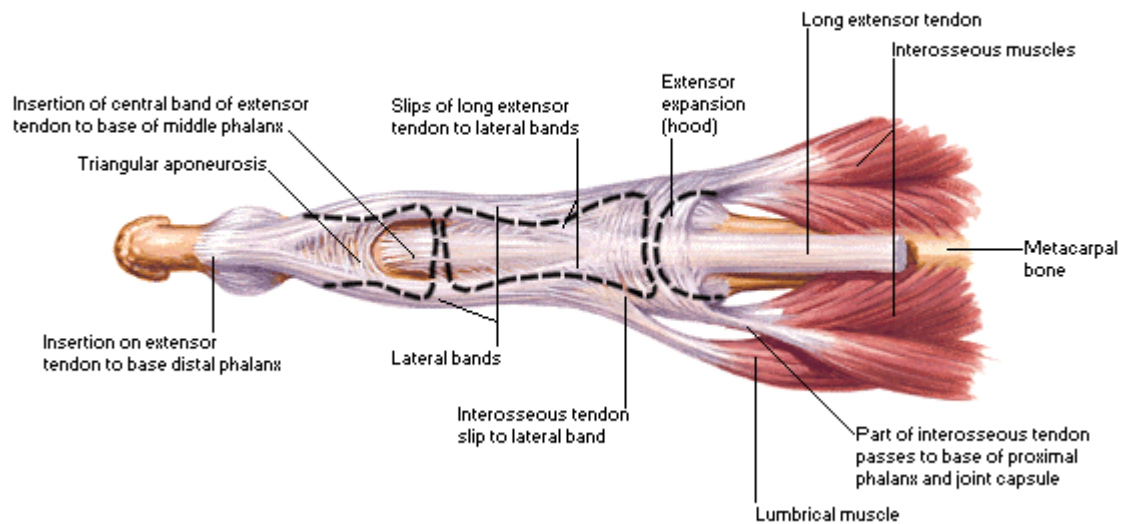
Extensor compartments



Vagina fibrosa digiti



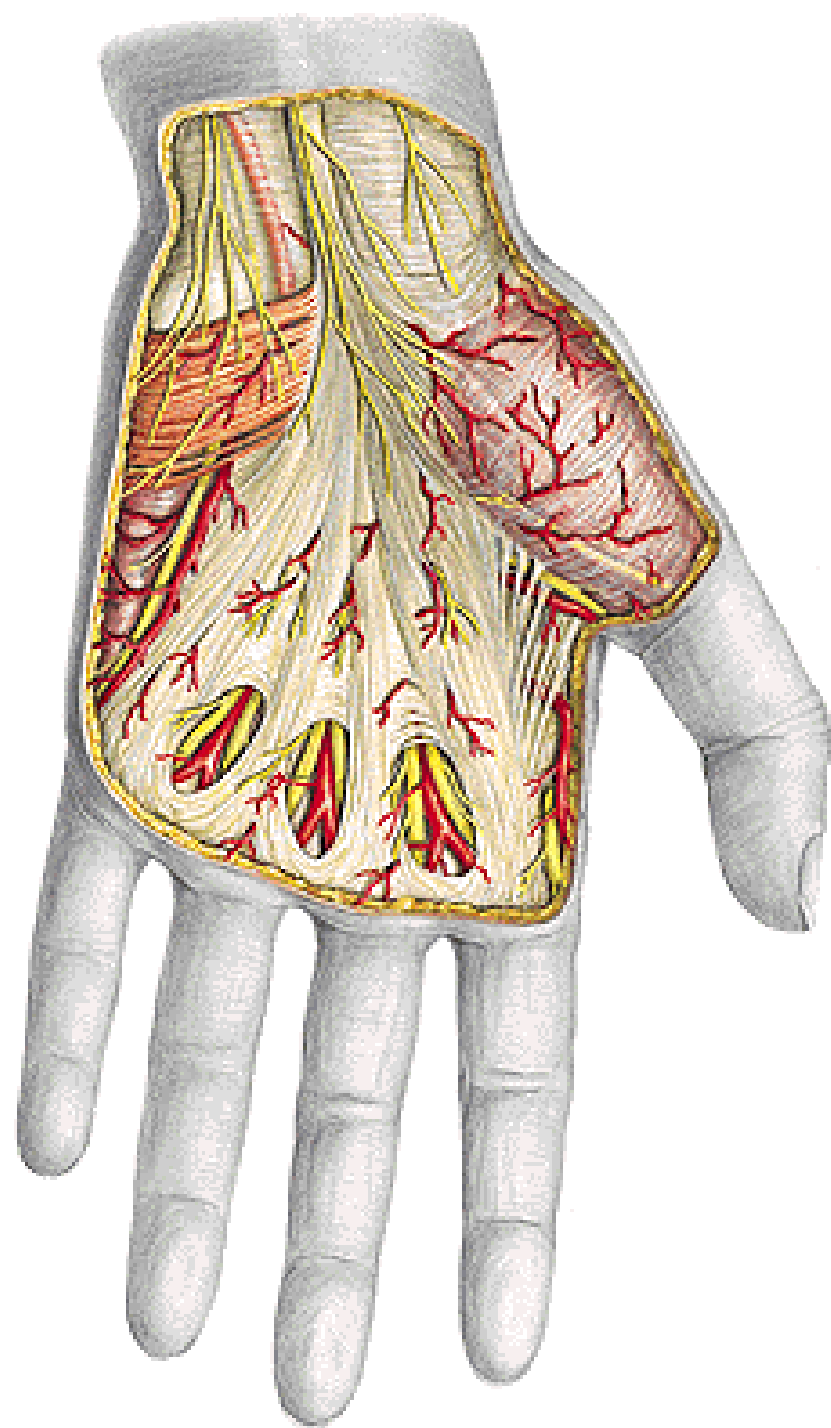
Aponeurosis dorsalis digiti



MM. MANUS

M. palmaris brevis

Aponeurosis palmaris



Thenar muscles:

M. abductor pollicis brevis

M. flexor pollicis brevis

M. opponens pollicis

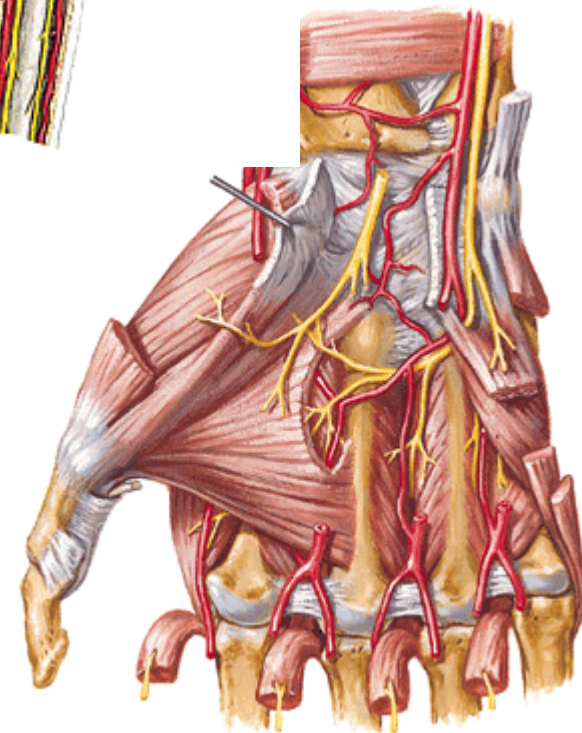
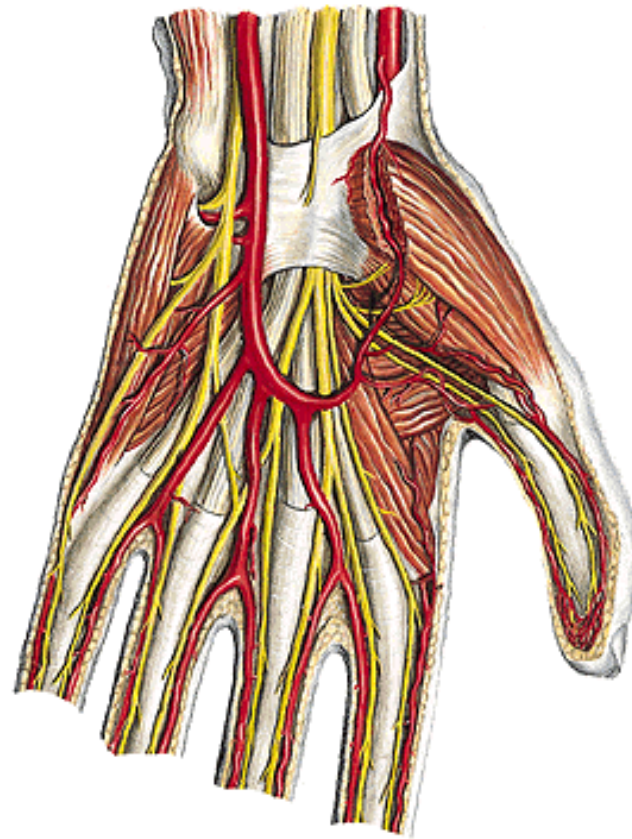
M. adductor pollicis

Hypothenar muscles:

M. abductor digiti minimi

M. flexor digiti minimi brevis

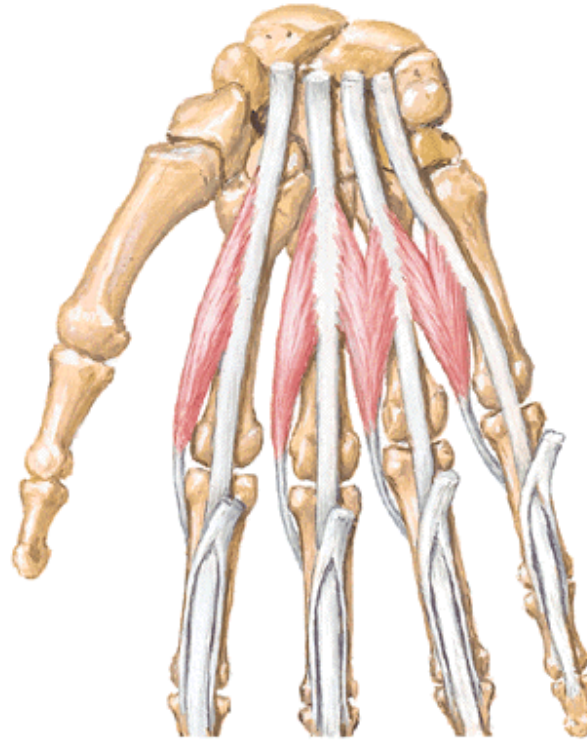
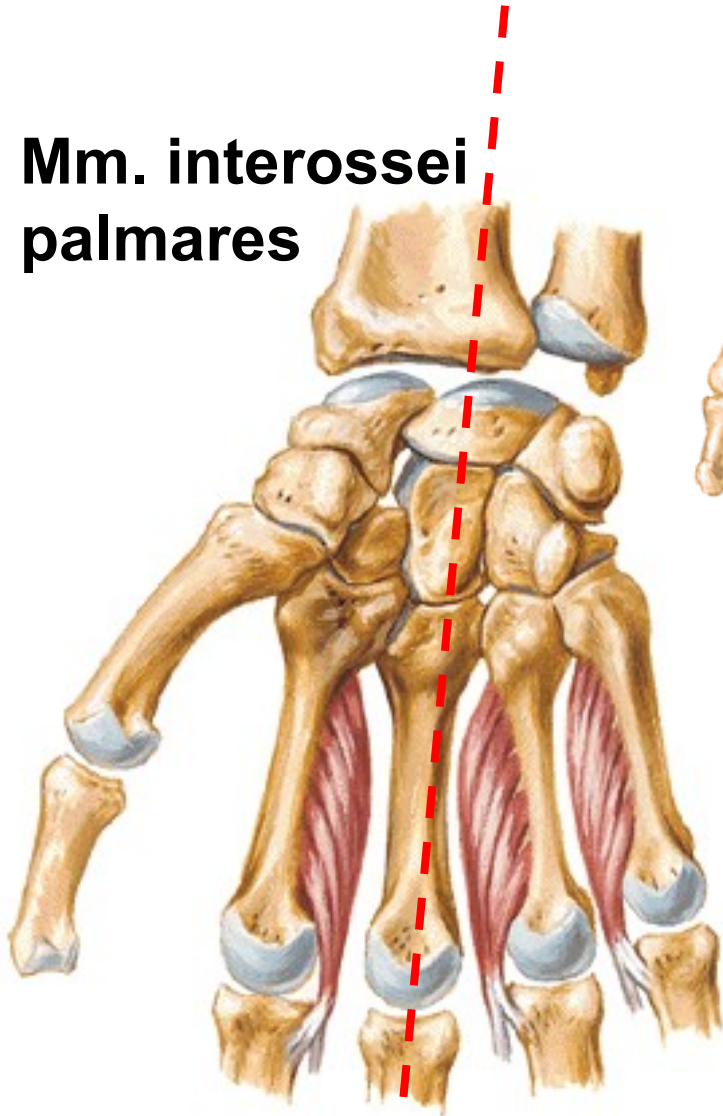
M. opponens digiti minimi



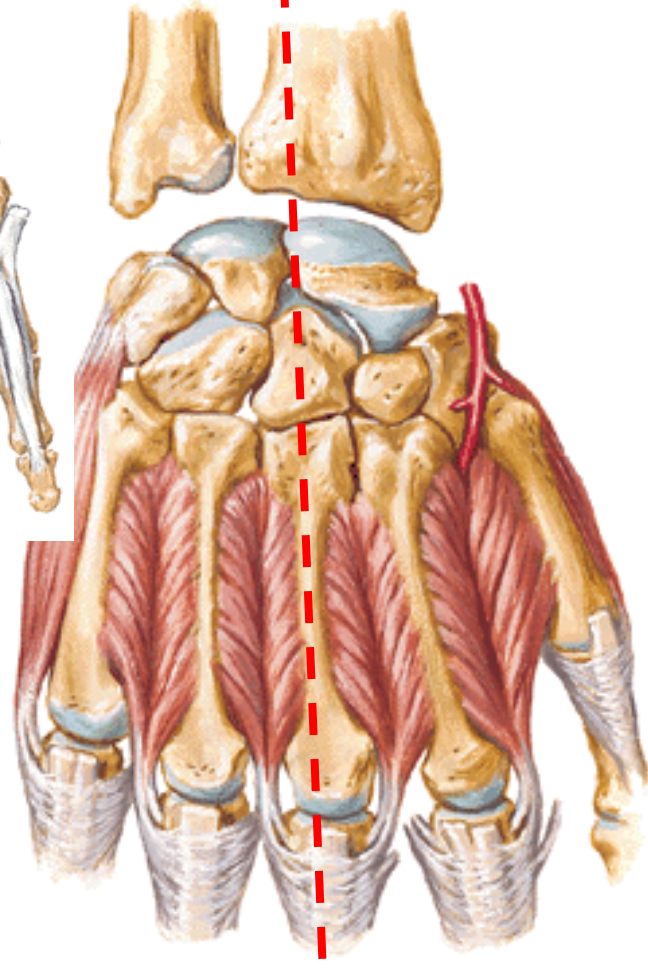
Middle group of muscles:

Mm. lumbricales

Mm. interossei palmares



Mm. interossei dorsales



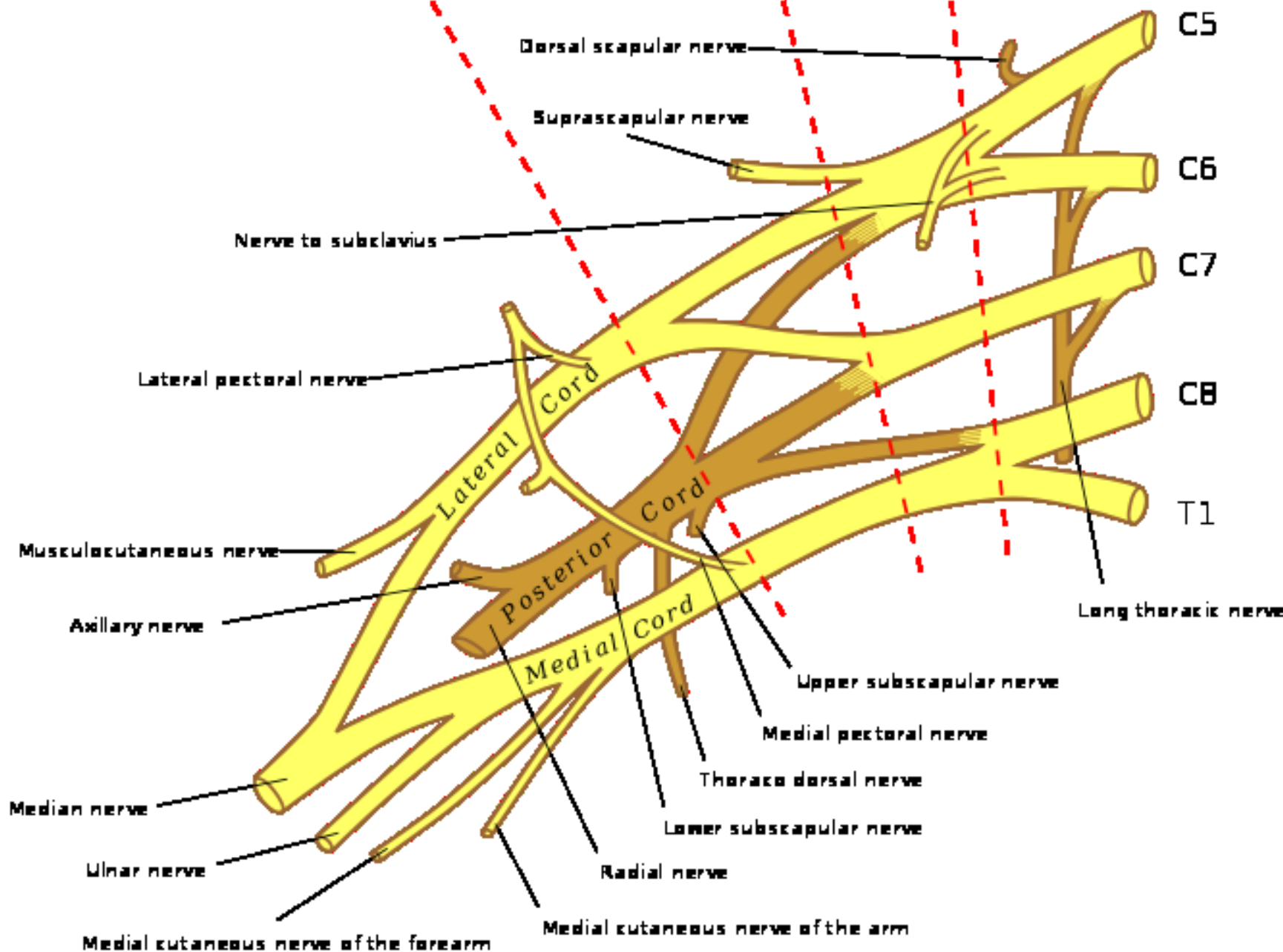
NERVES OF THE UPPER LIMB

Cords

Divisions

Trunks

Roots



Dorsal scapular nerve

Suprascapular nerve

Nerve to subclavius

Lateral pectoral nerve

Muscularcutaneous nerve

Axillary nerve

Median nerve

Ulnar nerve

Medial cutaneous nerve of the forearm

C5

C6

C7

C8

T1

Long thoracic nerve

Upper subscapular nerve

Medial pectoral nerve

Thoraco dorsal nerve

Lower subscapular nerve

Radial nerve

Medial cutaneous nerve of the arm

Lateral Cord

Posterior Cord

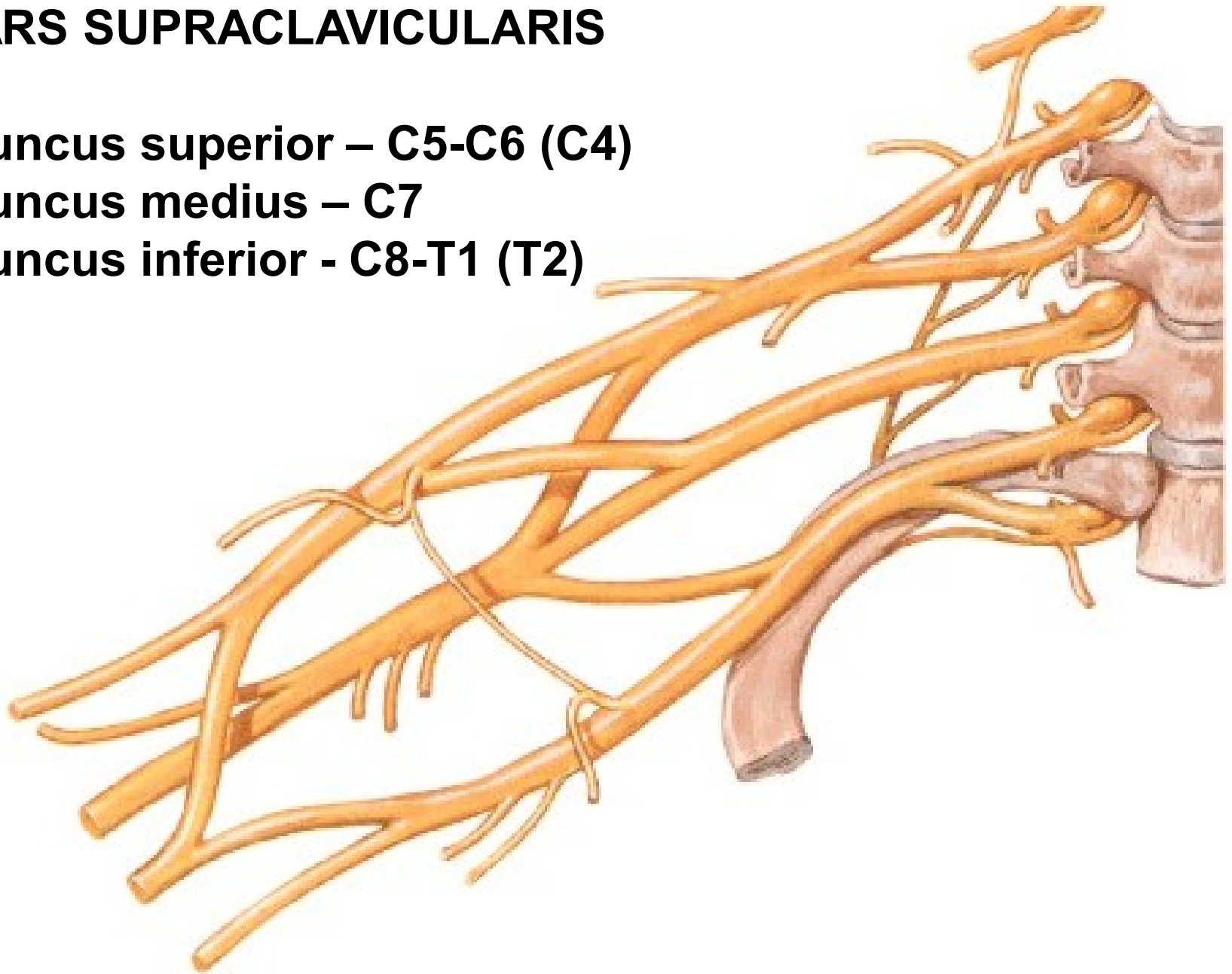
Medial Cord

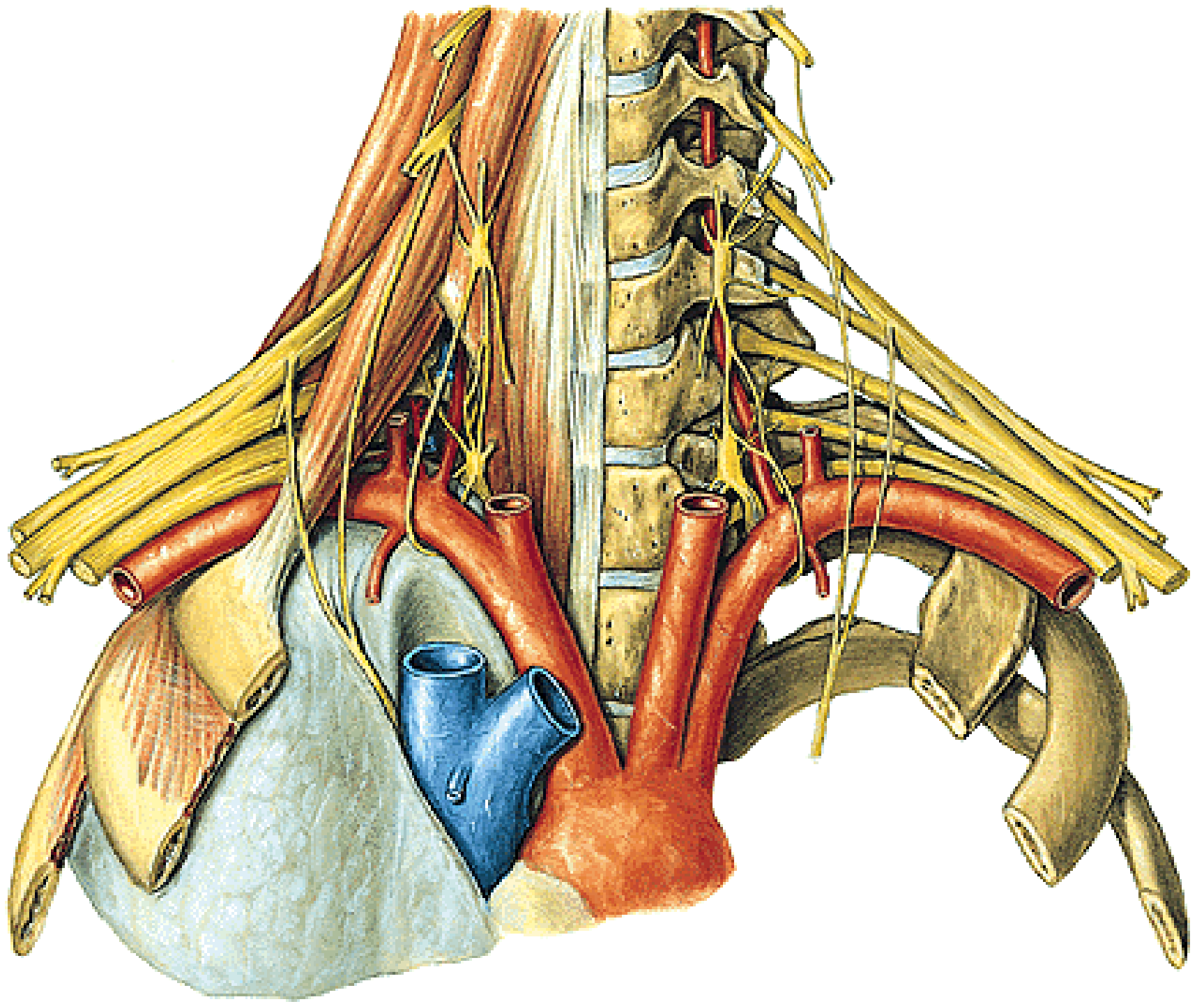
PARS SUPRACLAVICULARIS

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.

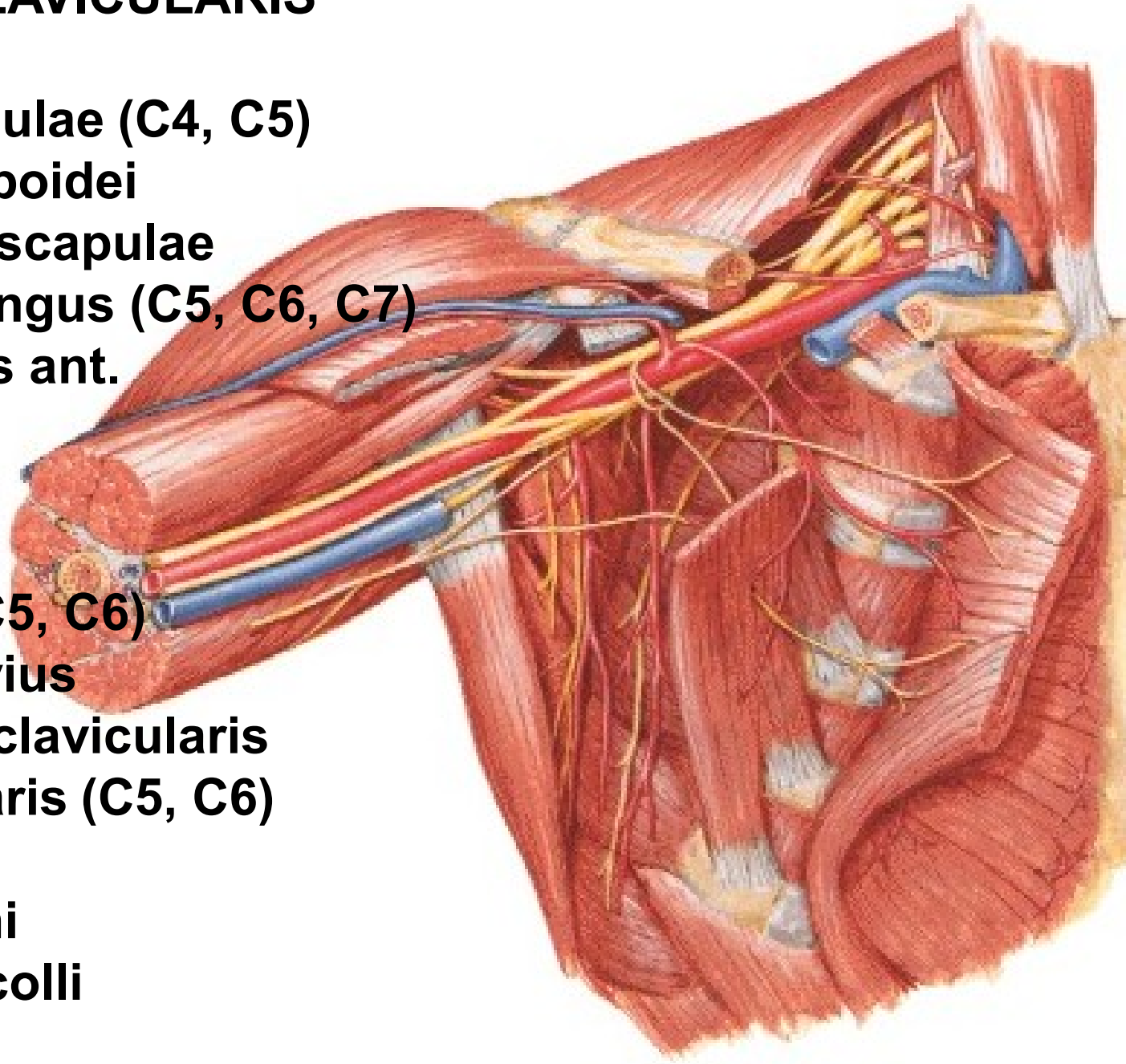
N. subclavius (C5, C6)

- m. subclavius
- art. sternoclavicularis

N. suprascapularis (C5, C6)

Rr. musculares

- mm. scaleni
- m. longus colli



N. pectoralis lateralis (C5, C6, C7)

- mm. pectorales

N. pectoralis medialis (C8, T1)

- mm. pectorales

N. subscapularis sup. (C5)

- m. subscapularis

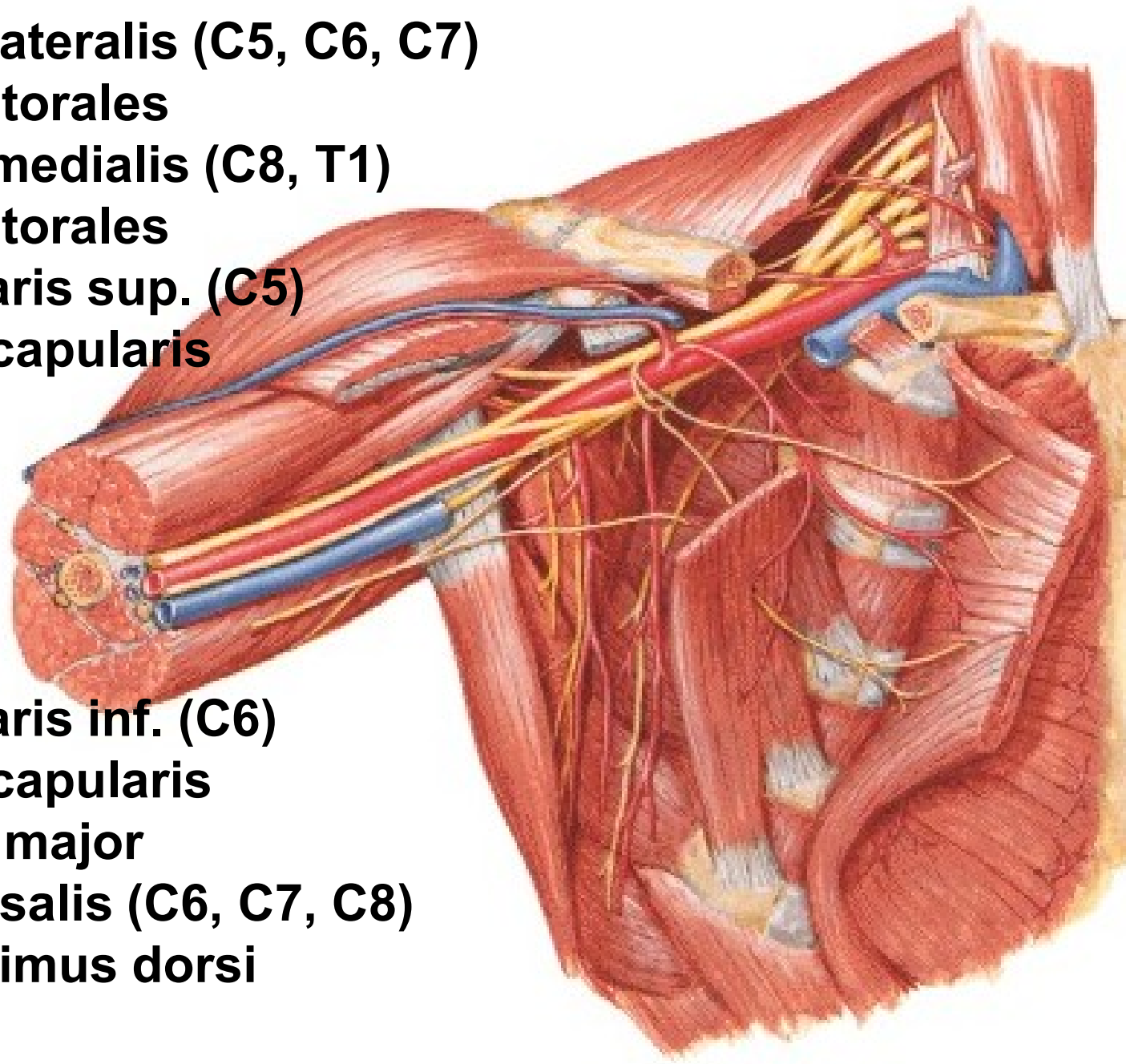
N. subscapularis inf. (C6)

- m. subscapularis

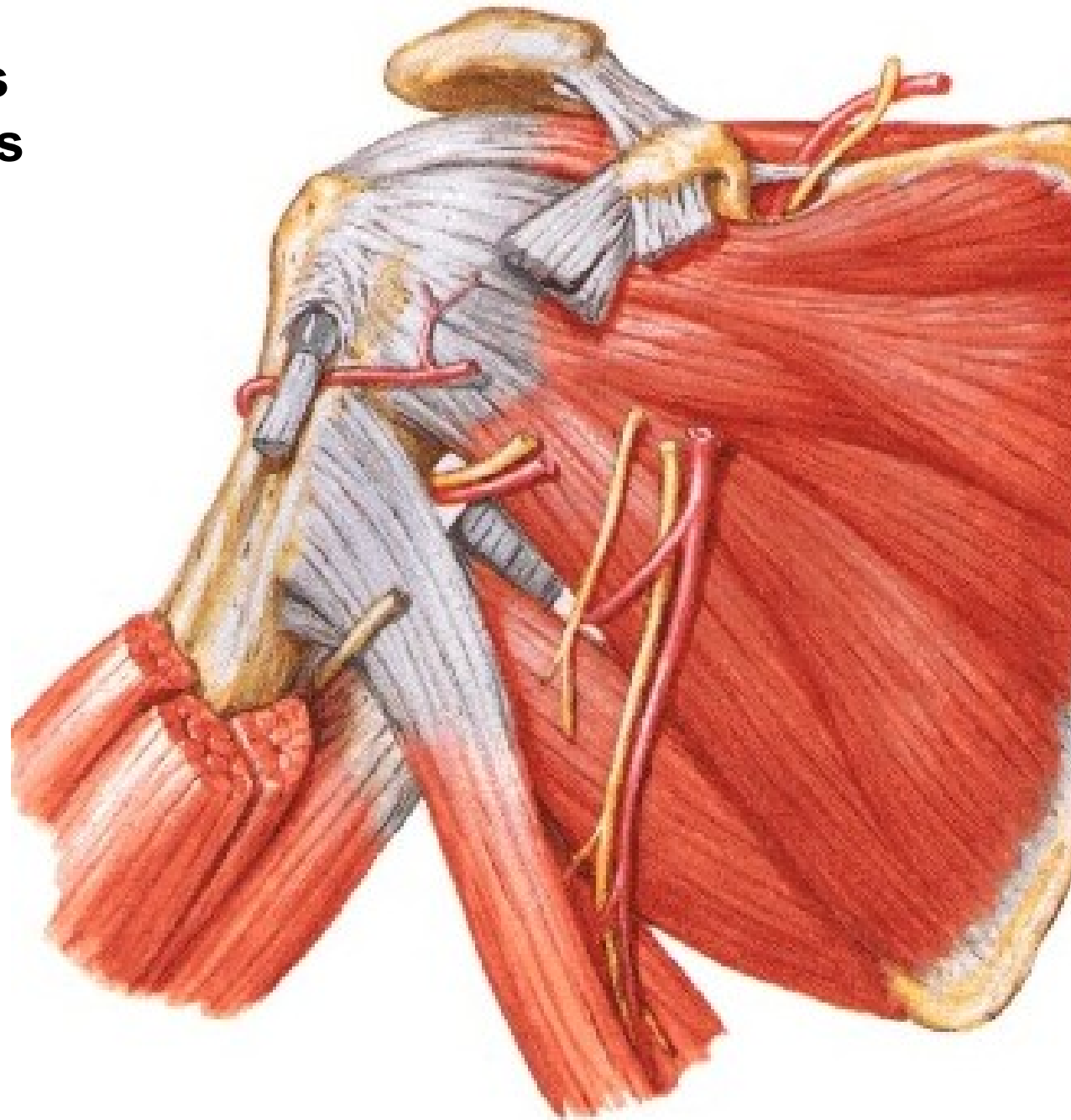
- m. teres major

N. thoracodorsalis (C6, C7, C8)

- m. latissimus dorsi



N suprascapularis
A. suprascapularis



PARS INFRACLAVICULARIS
(terminal branches)

Fasciculus lateralis

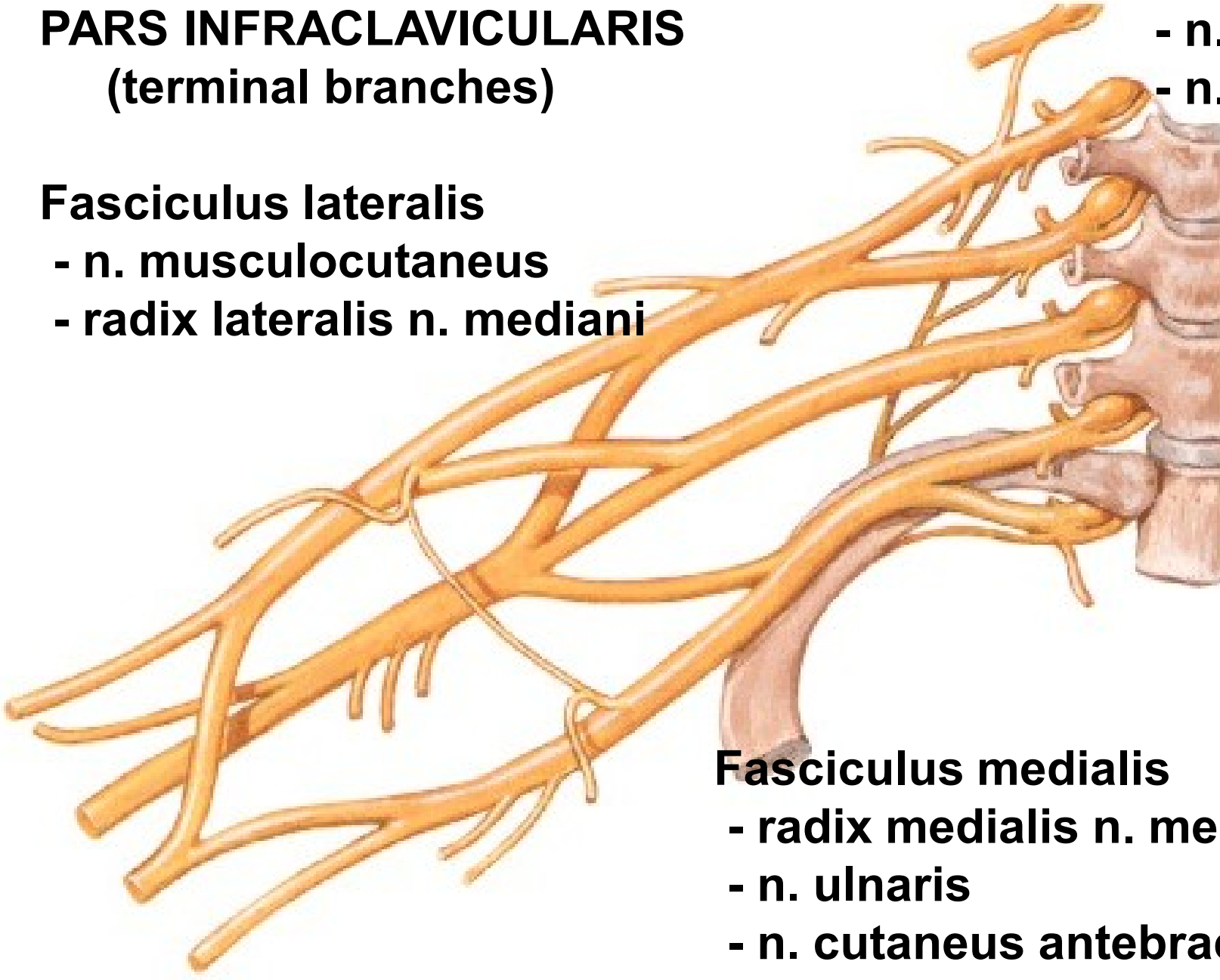
- n. musculocutaneus
- radix lateralis n. mediani

Fasciculus posterior

- n. axillaris
- n. radialis

Fasciculus medialis

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





klíční kost

18

17

16

15

14

13

12

5

6

20

6

8

19

7

11

4

8

9

3

1

10

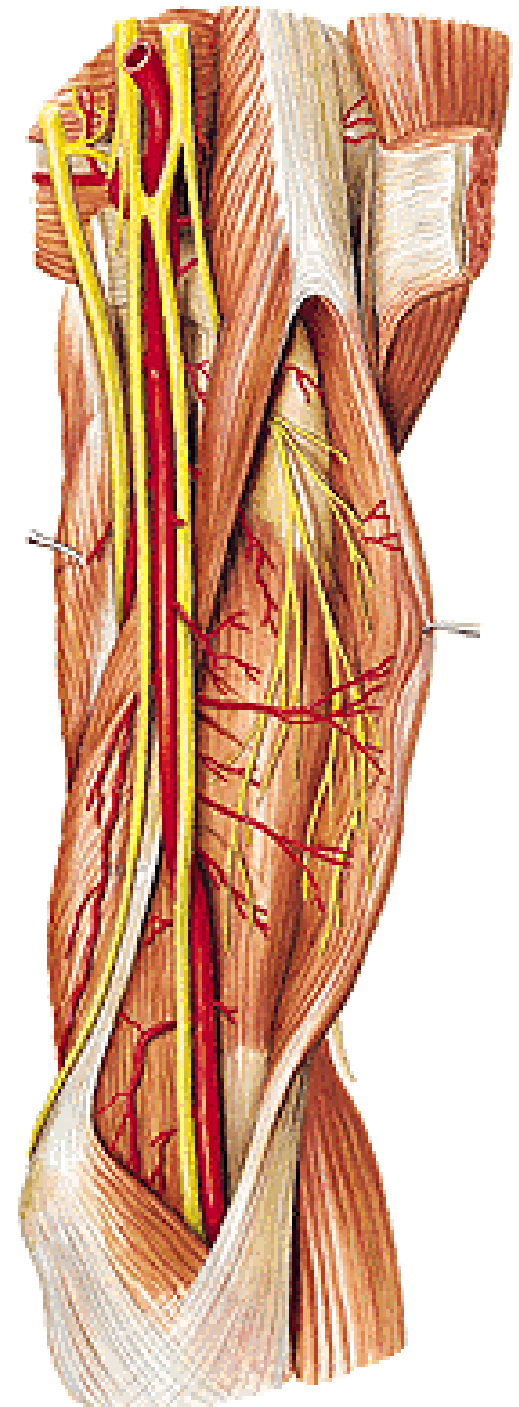
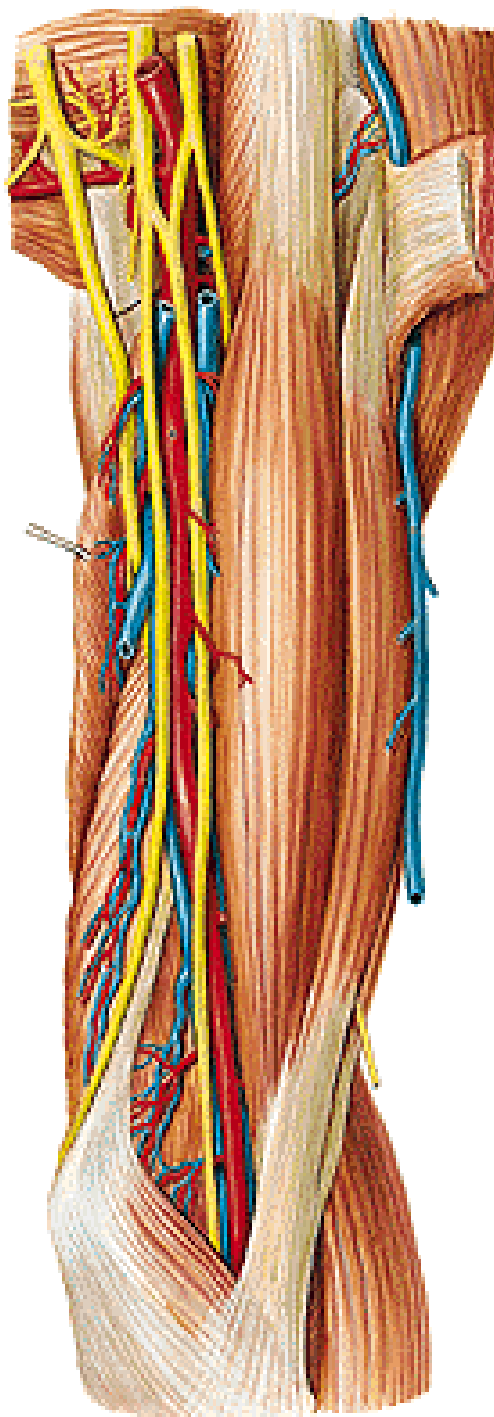
2

1

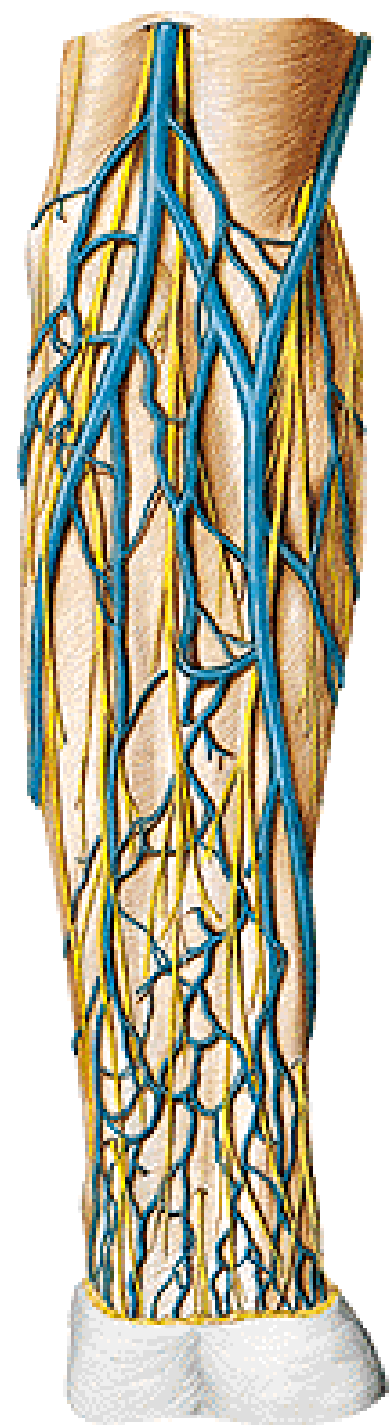
1

N. MUSCULOCUTANEUS

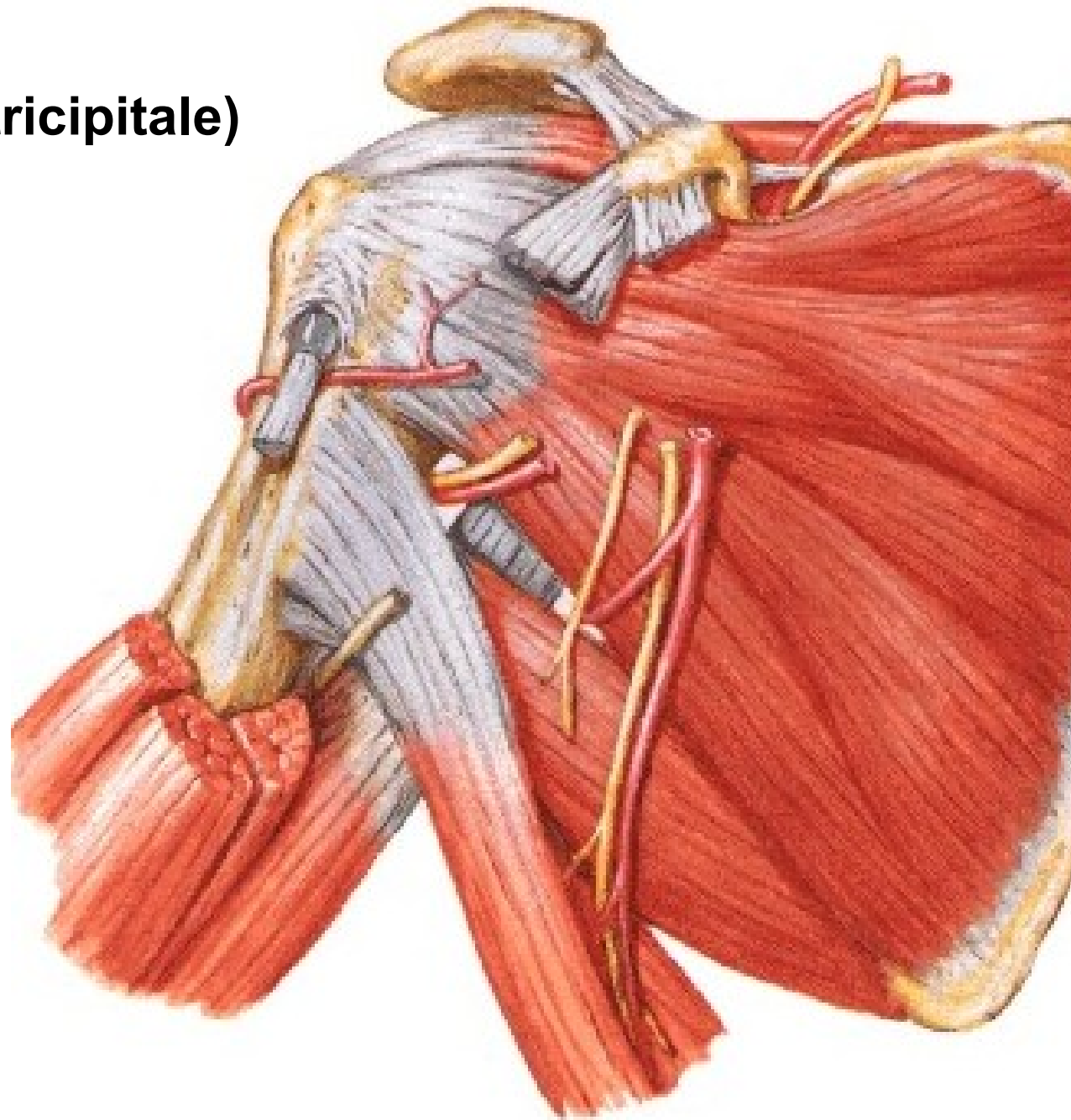
- m. coracobrachialis
- m. biceps brachii
- m. brachialis



N. cutaneus antebrachii lat.

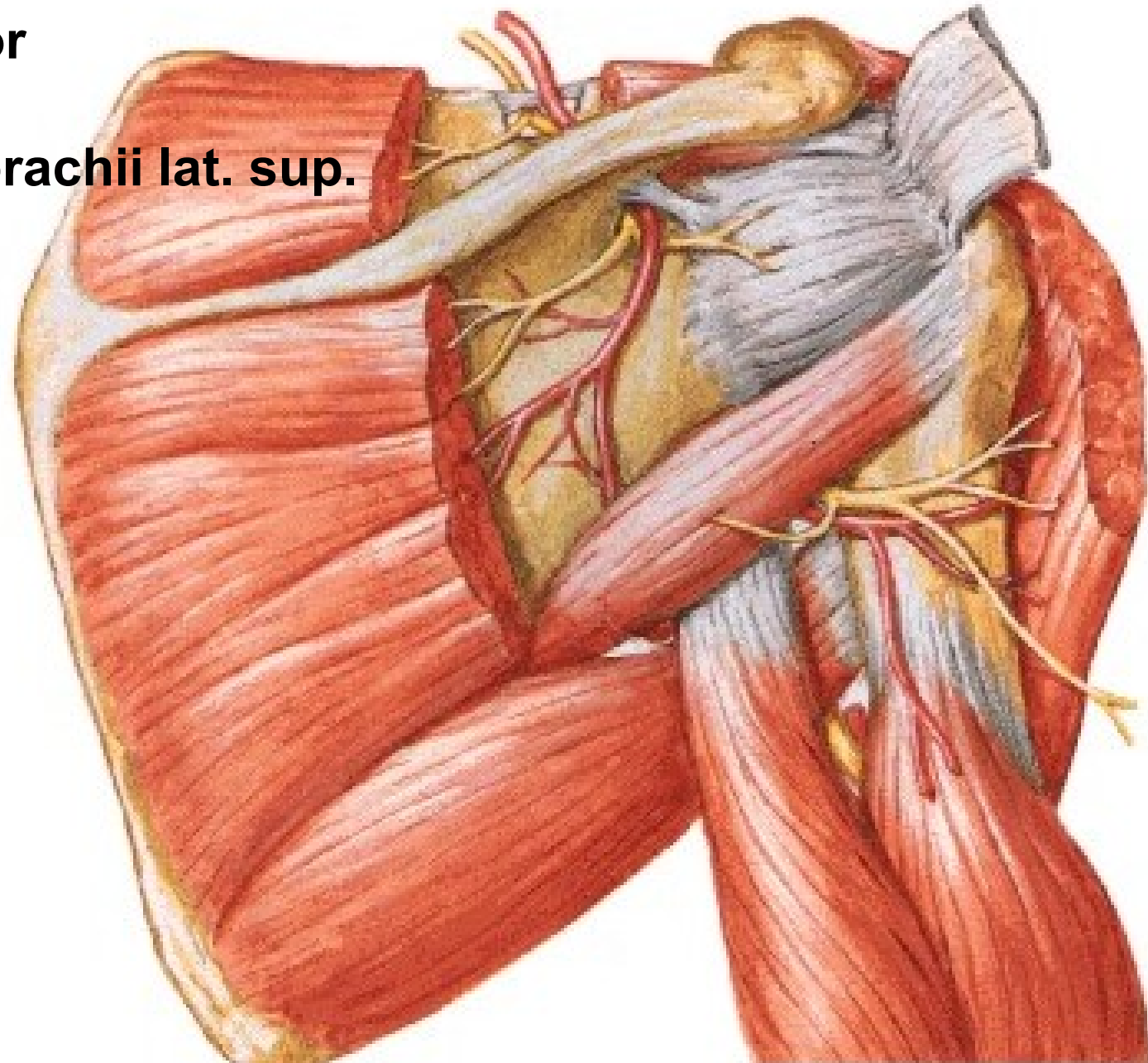


N. AXILLARIS
(foramen humerotricipitale)

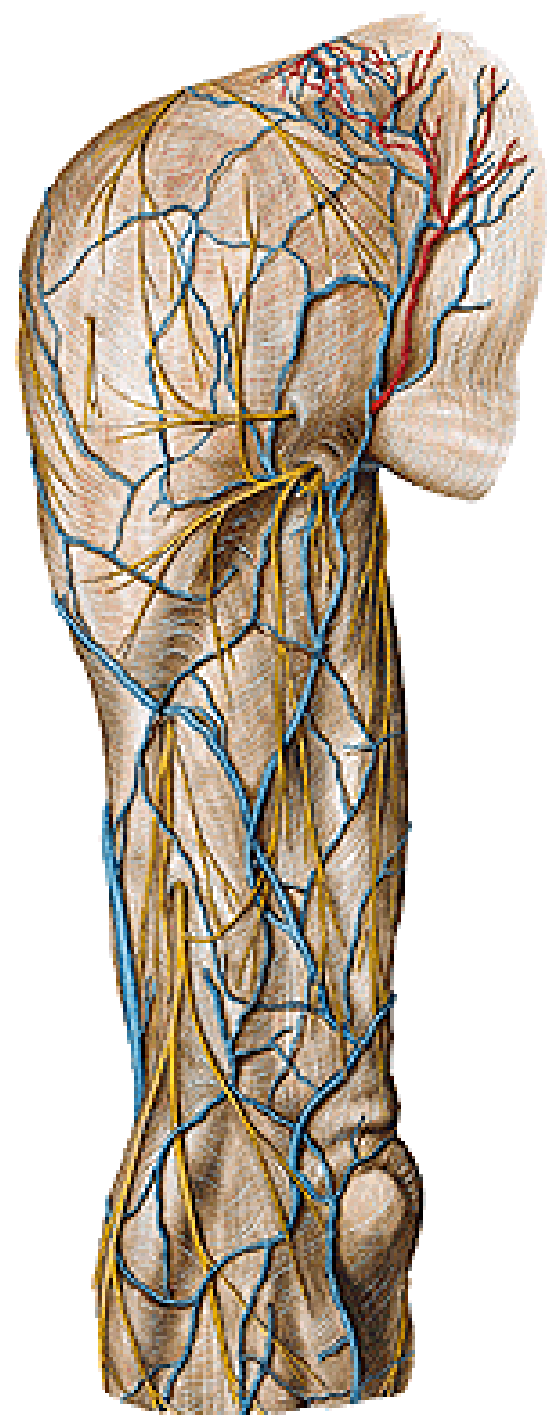


N. AXILLARIS

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



N. cutaneus brachii lat. sup.

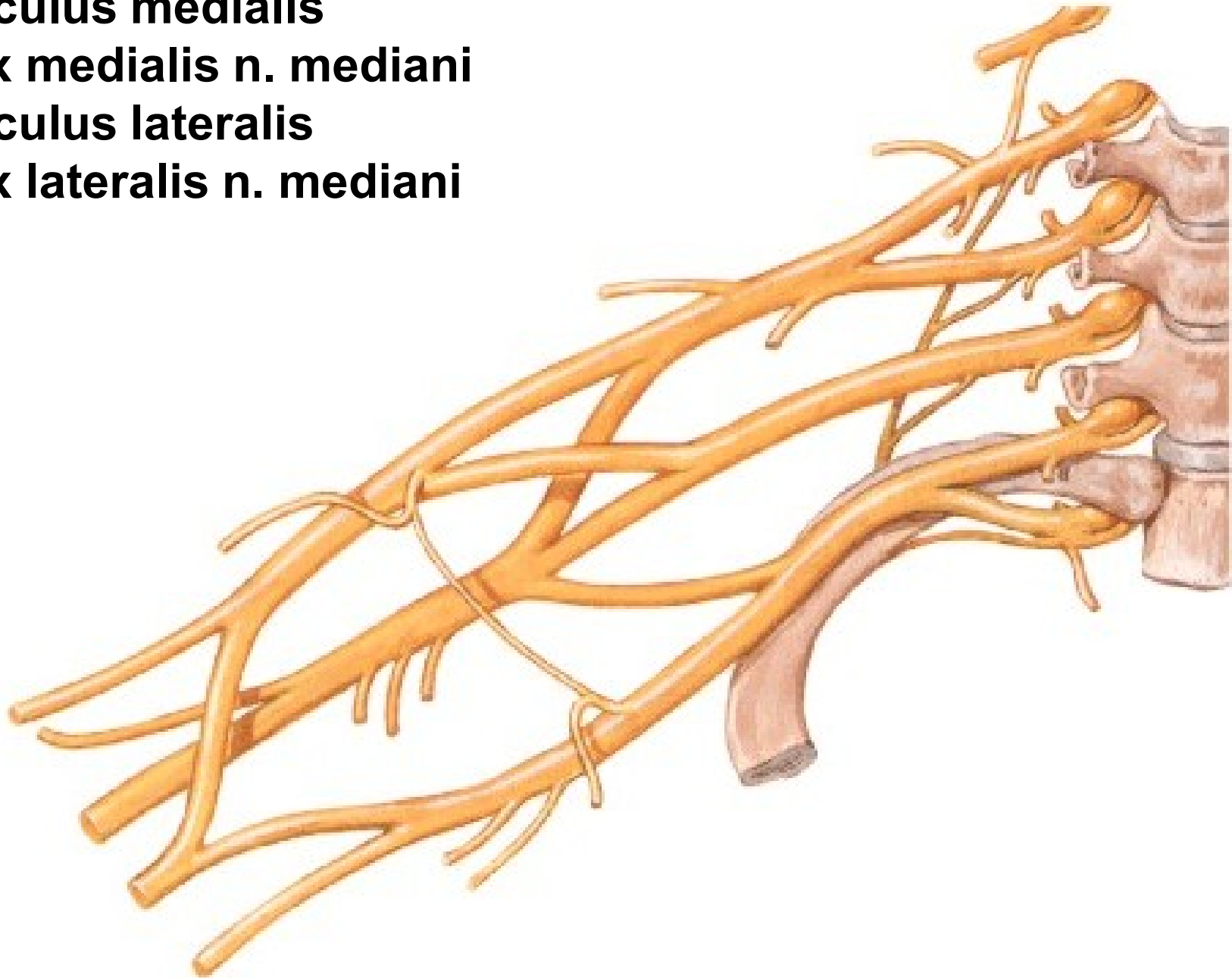


Fasciculus medialis

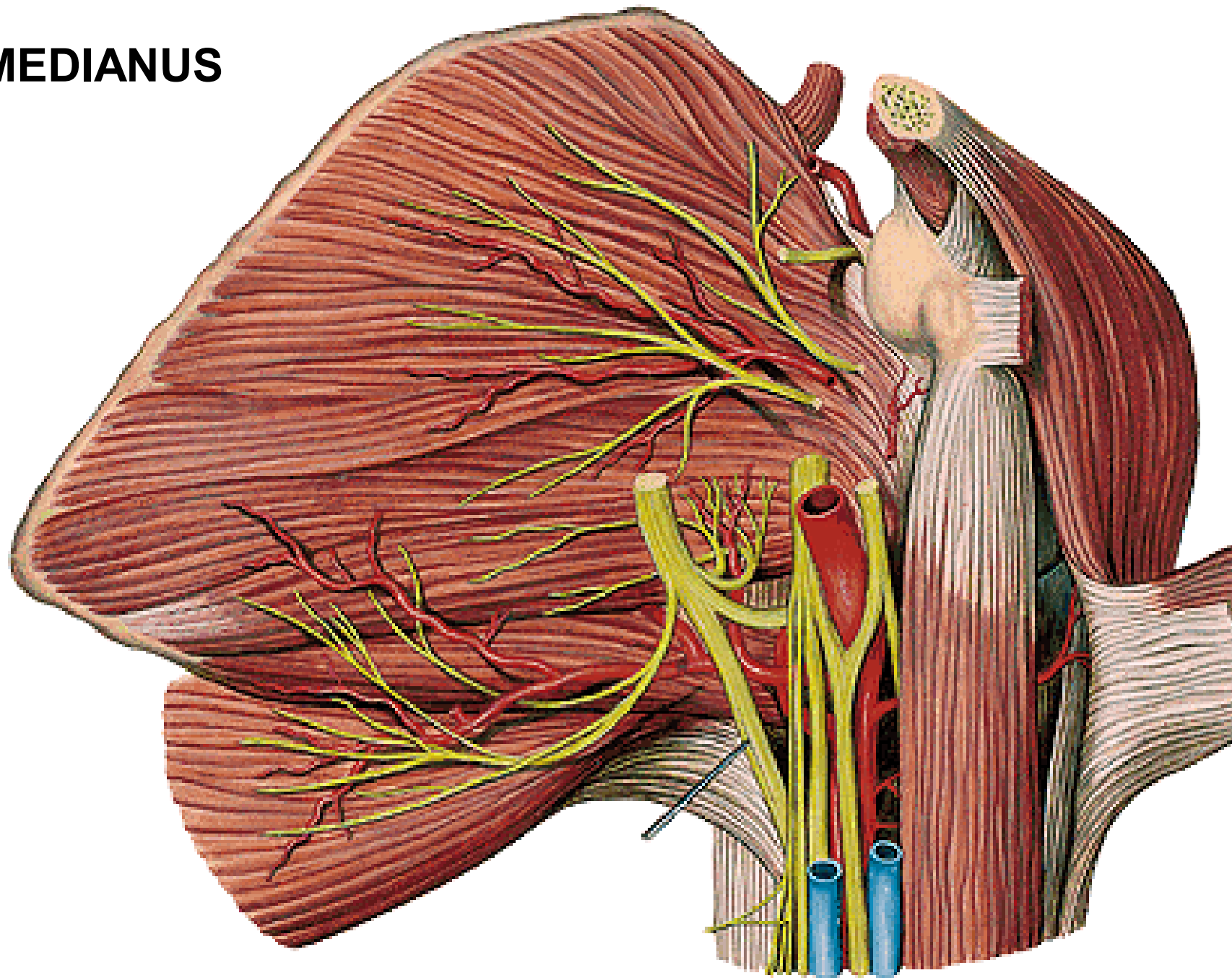
- radix medialis n. mediani

Fasciculus lateralis

- radix lateralis n. mediani

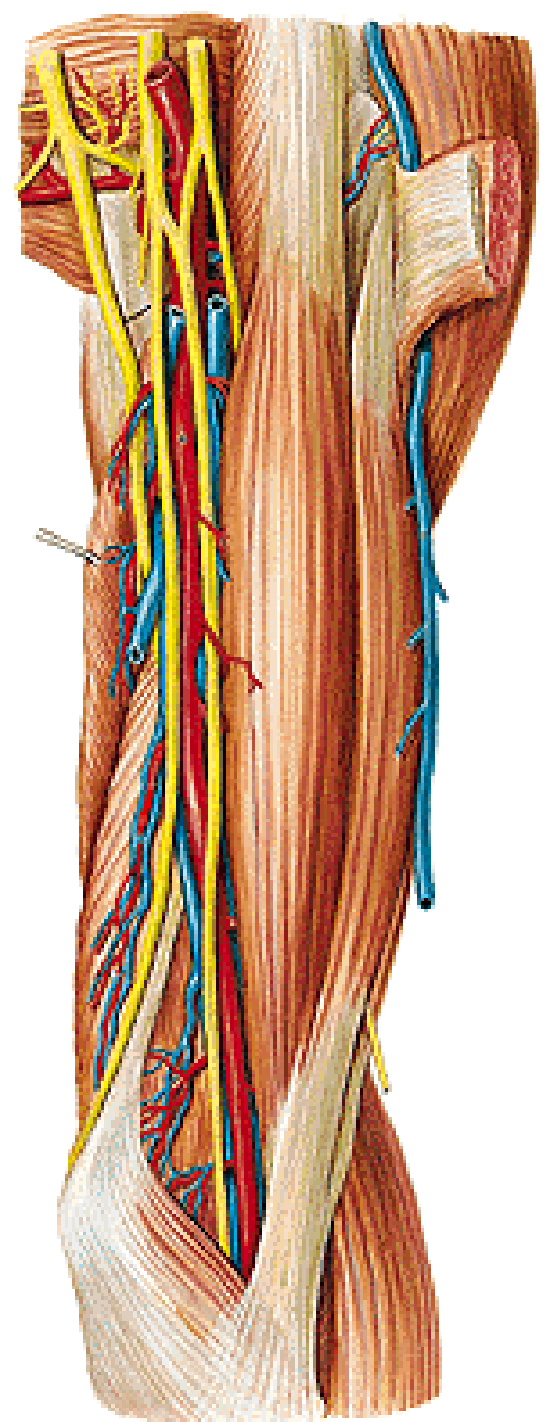


N. MEDIANUS

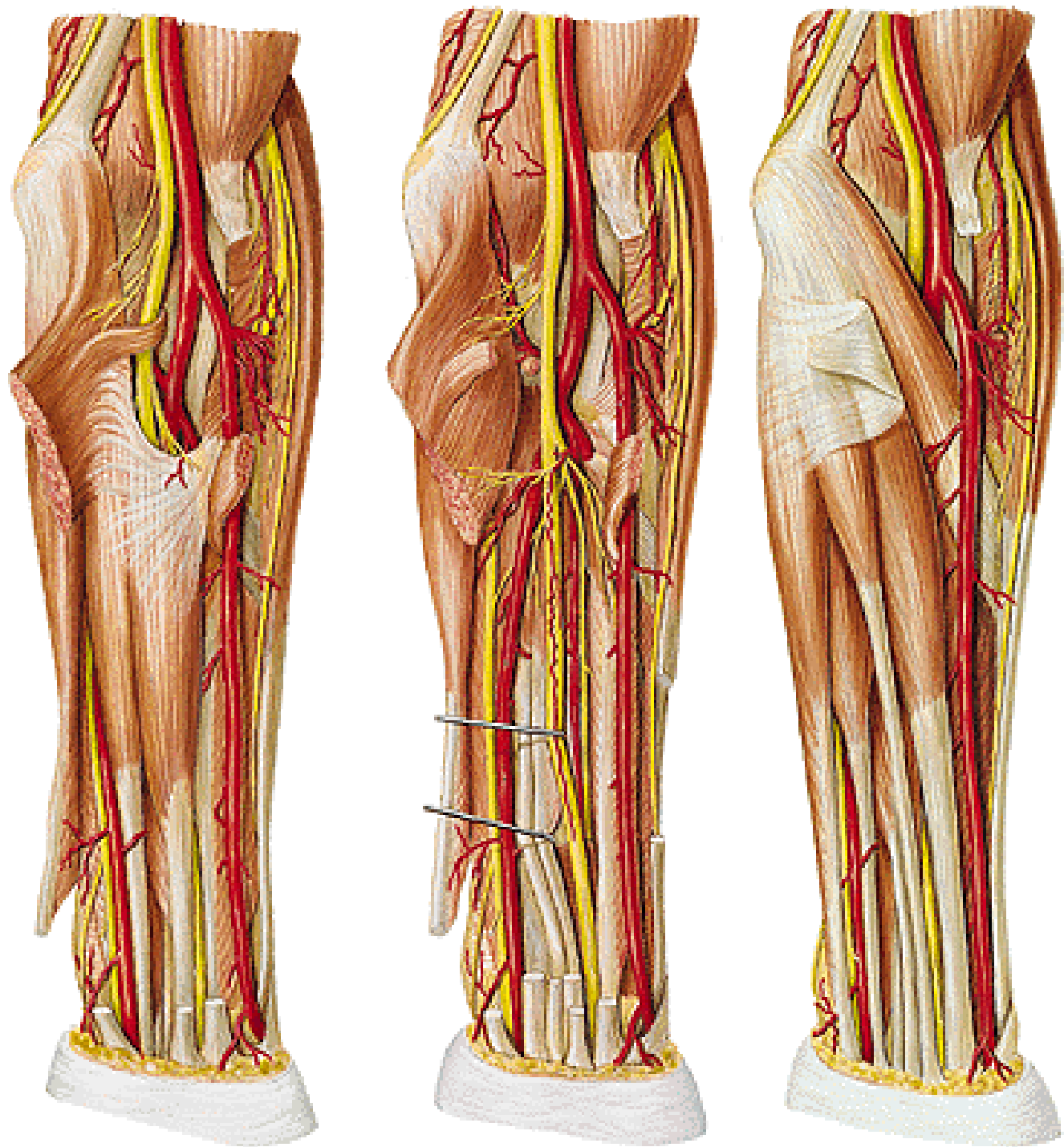


N. MEDIANUS

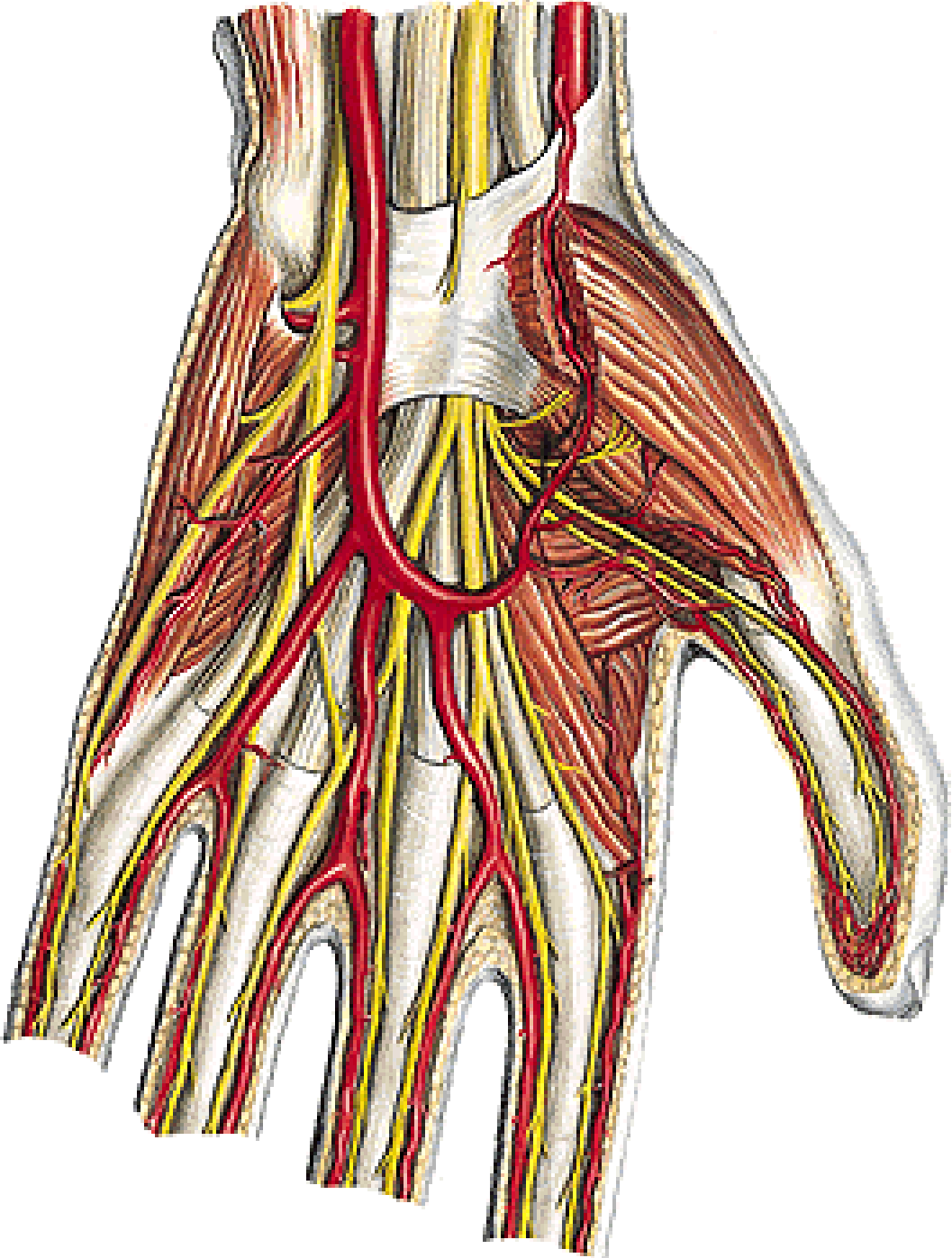
(Sulcus bicipitalis medialis)



N. MEDIANUS

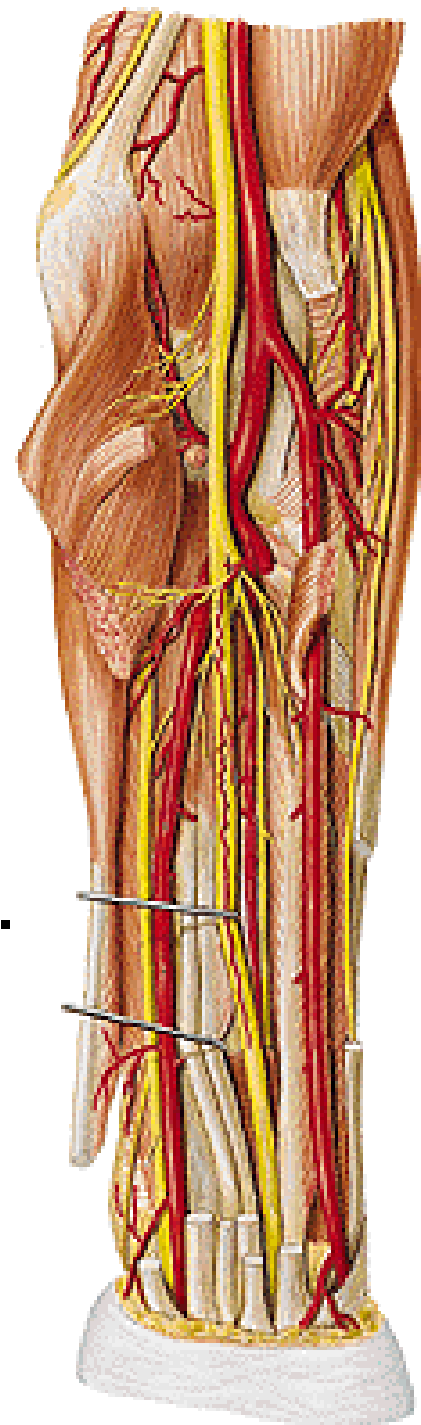


N. MEDIANUS



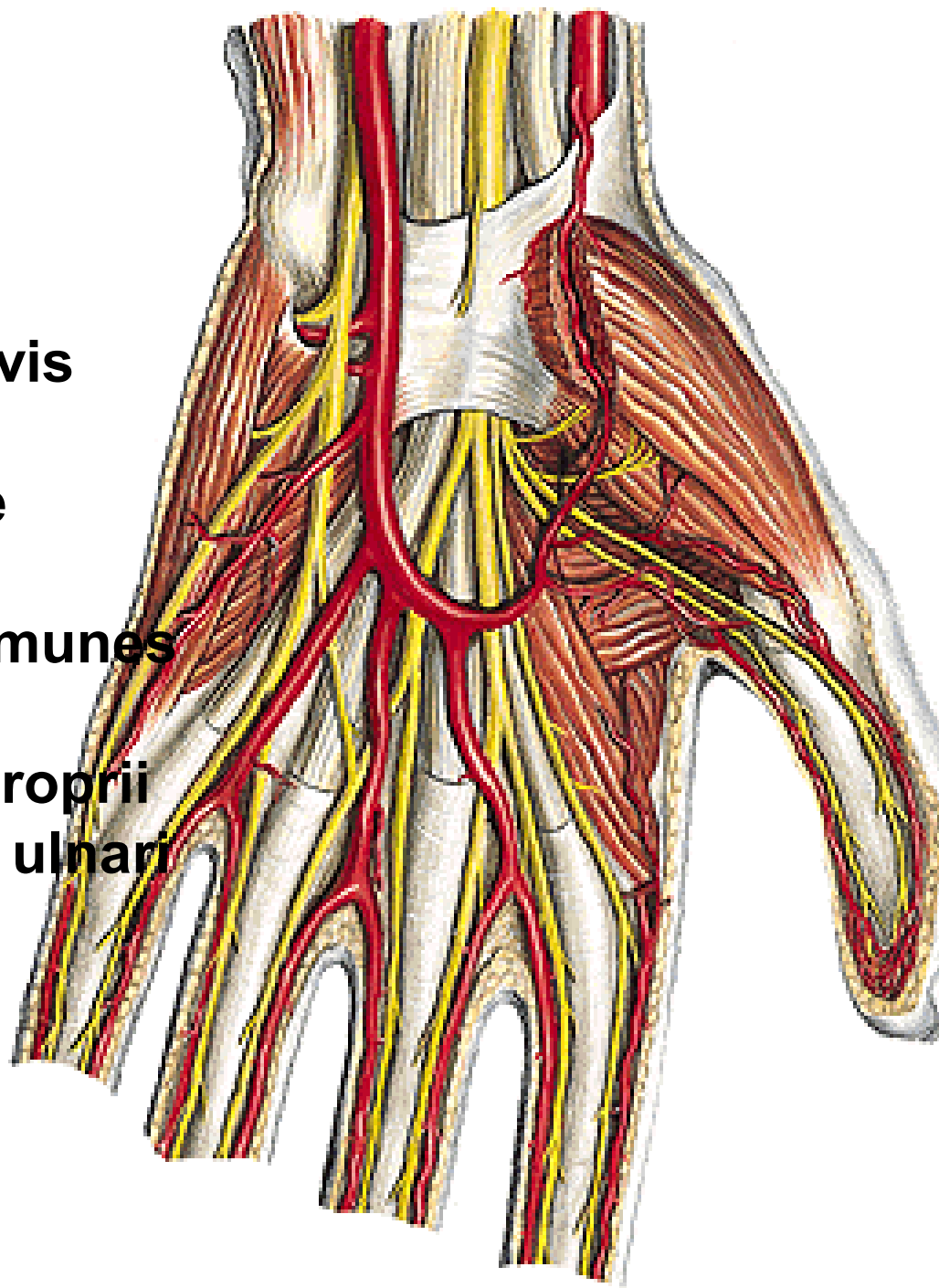
N. MEDIANUS

- 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

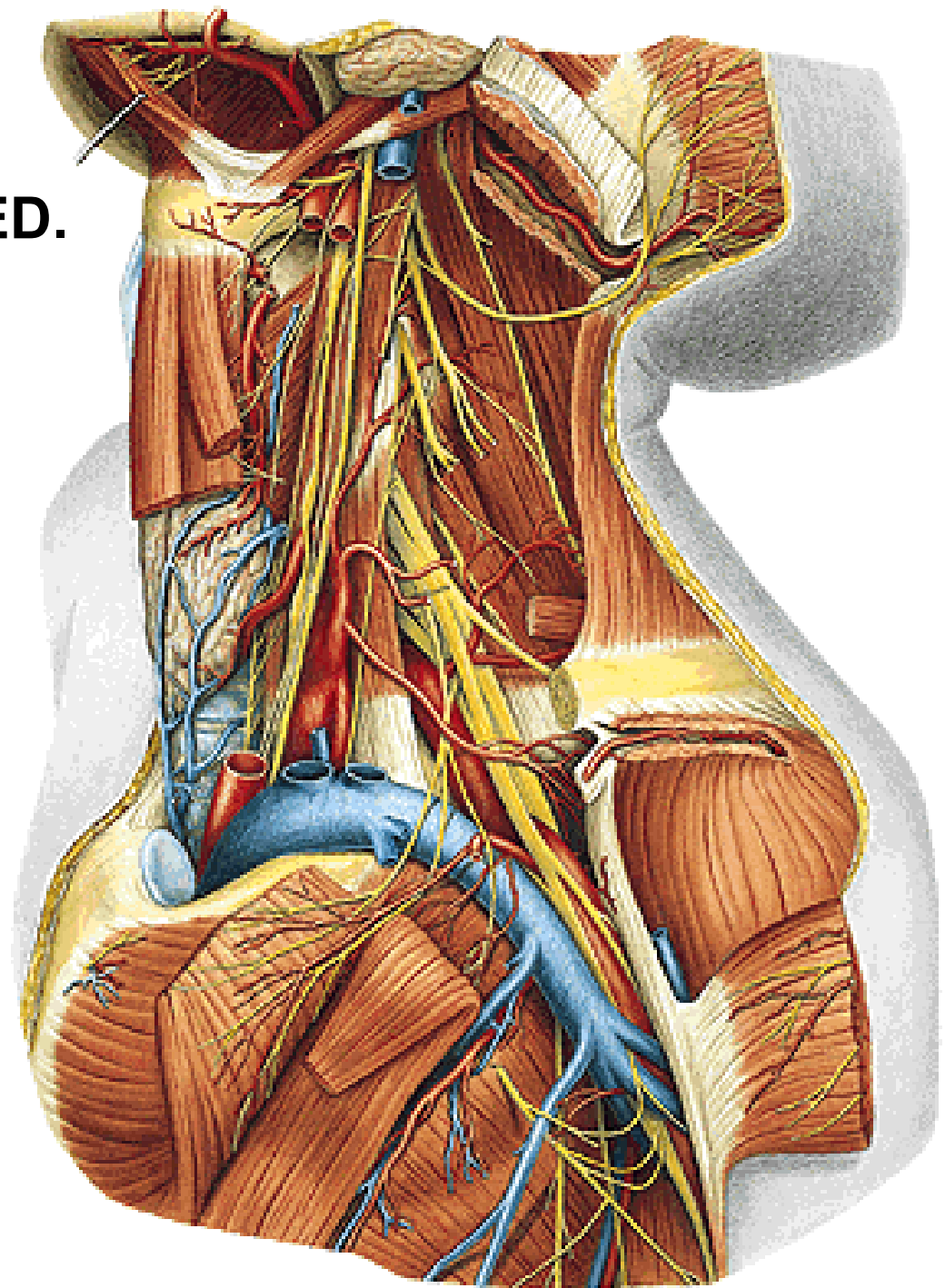
- r. thenaris
 - m. abductor pollicis brevis
 - m. flexor pollicis brevis
 - caput superficiale
 - m. opponens pollicis
- nn. digitales palmares communes
 - mm. lumbricales (I, II)
 - nn. digitales palmares proprii
- r. communicans cum nervo ulnari



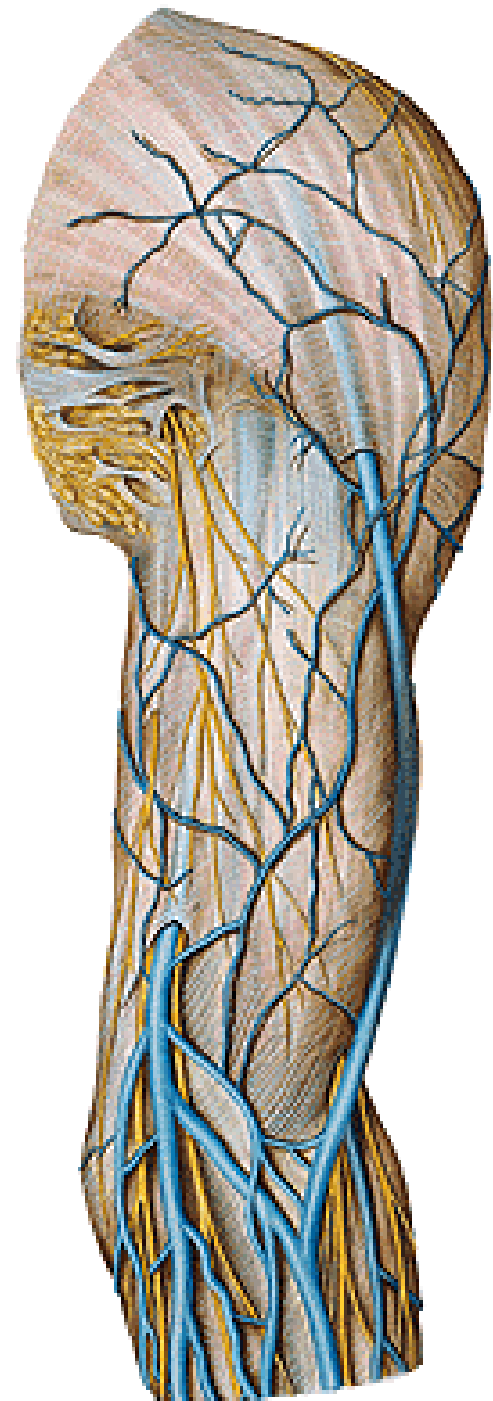
Hand of Benediction



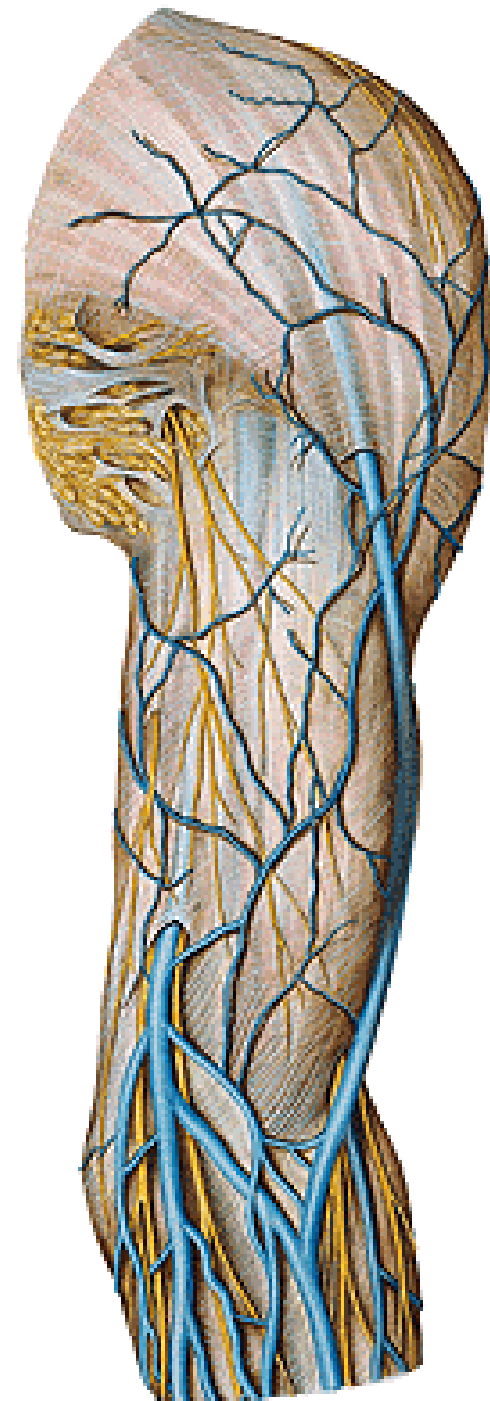
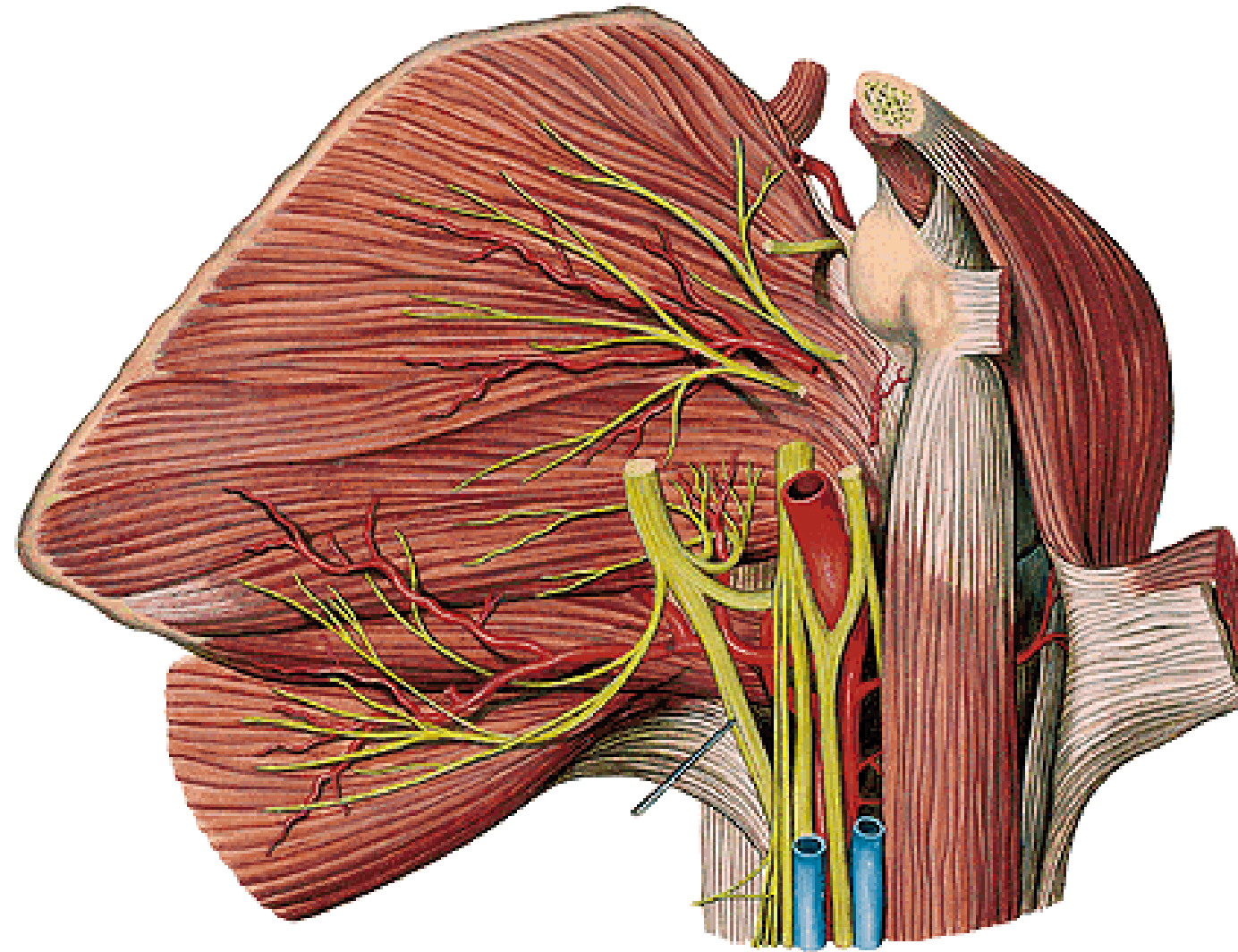
**N. CUTANEUS BRACHII MED.
(nn. intercostobrachiales)**



N. CUTANEUS BRACHII MED.

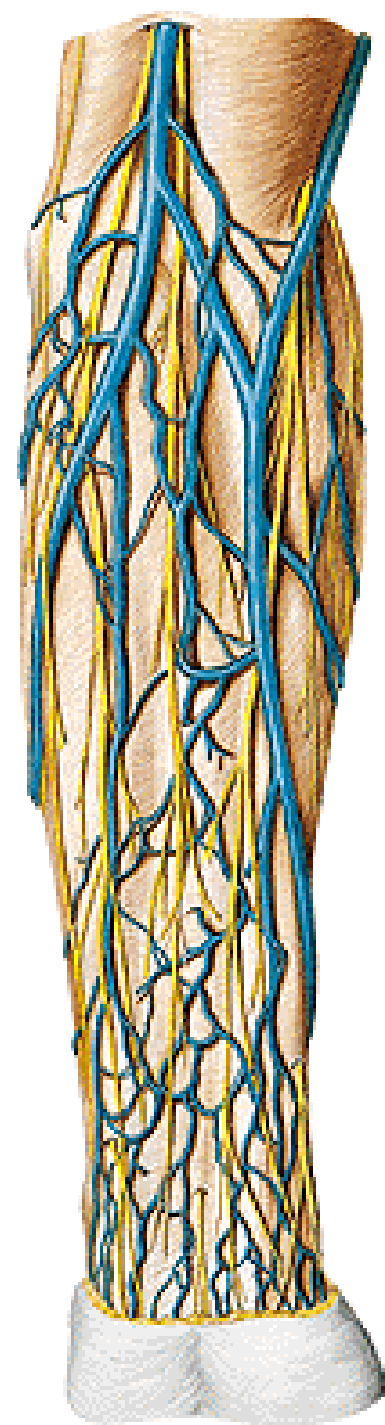


N. CUTANEUS ANTEBRACHII MED.



N. CUTANEUS ANTEBRACHII MED.

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

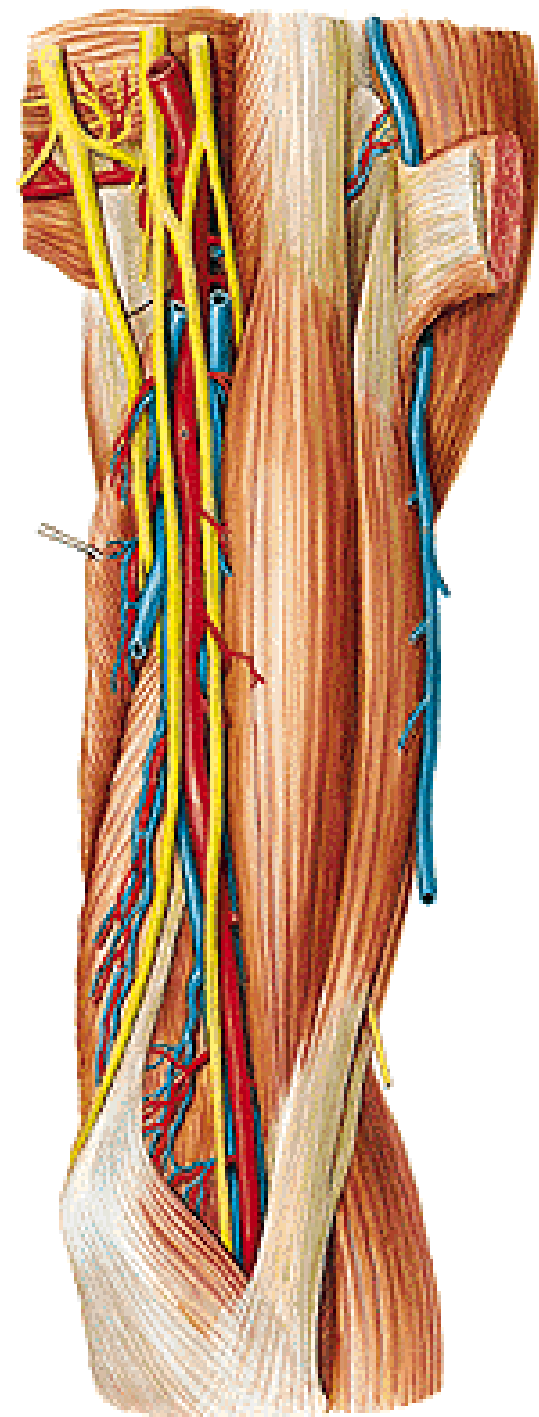
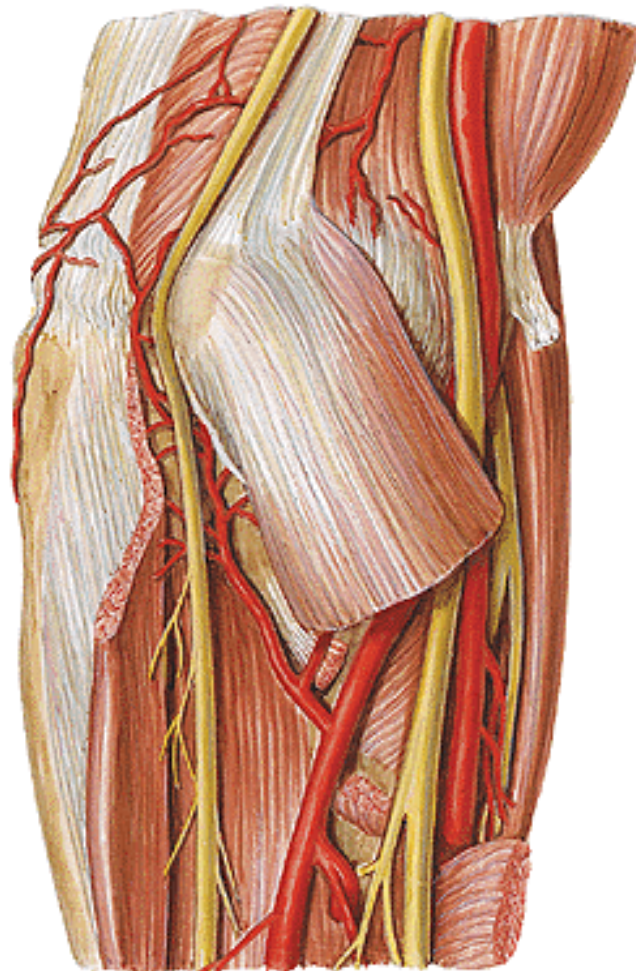


N. ULNARIS

sulcus bicipitalis medialis

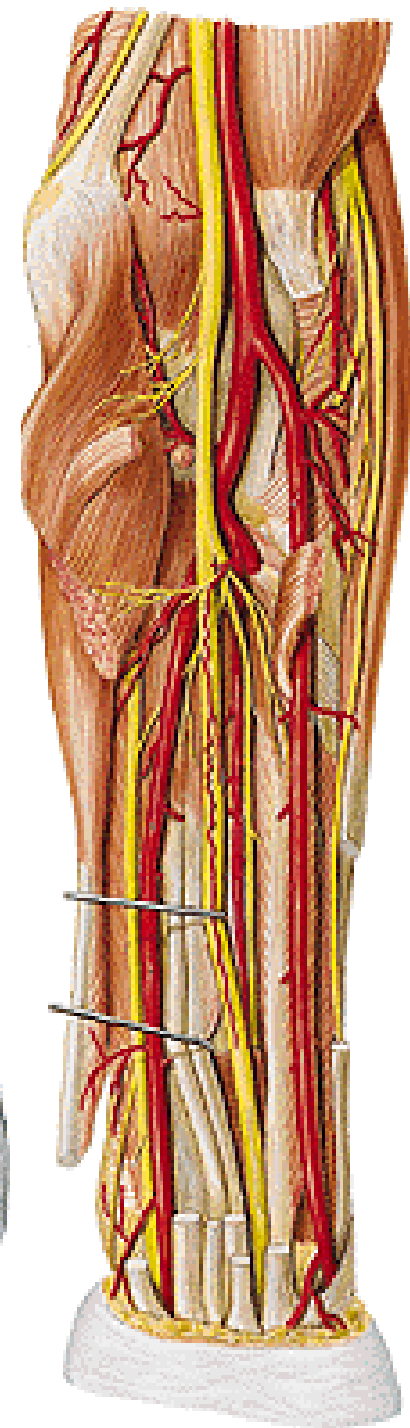
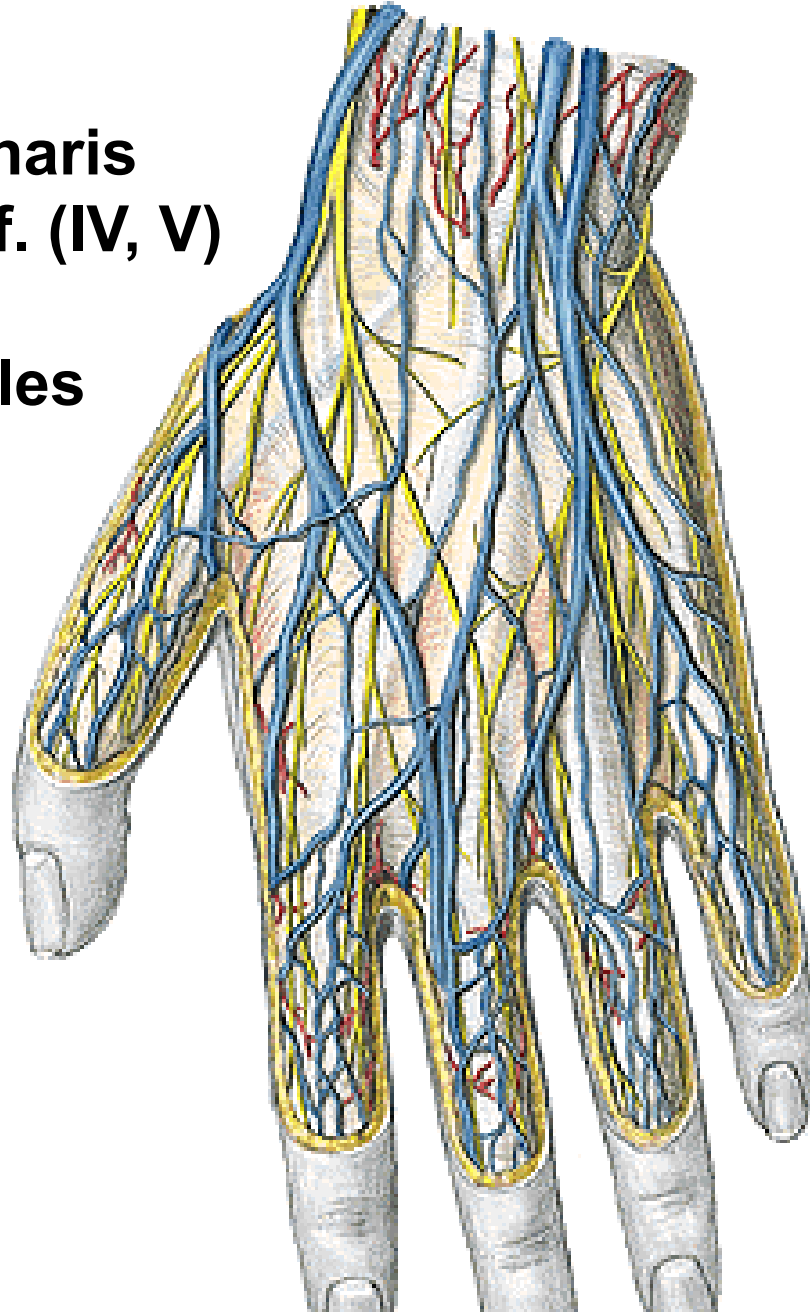
septum intermusculare brachii mediale

sulcus n. ulnaris



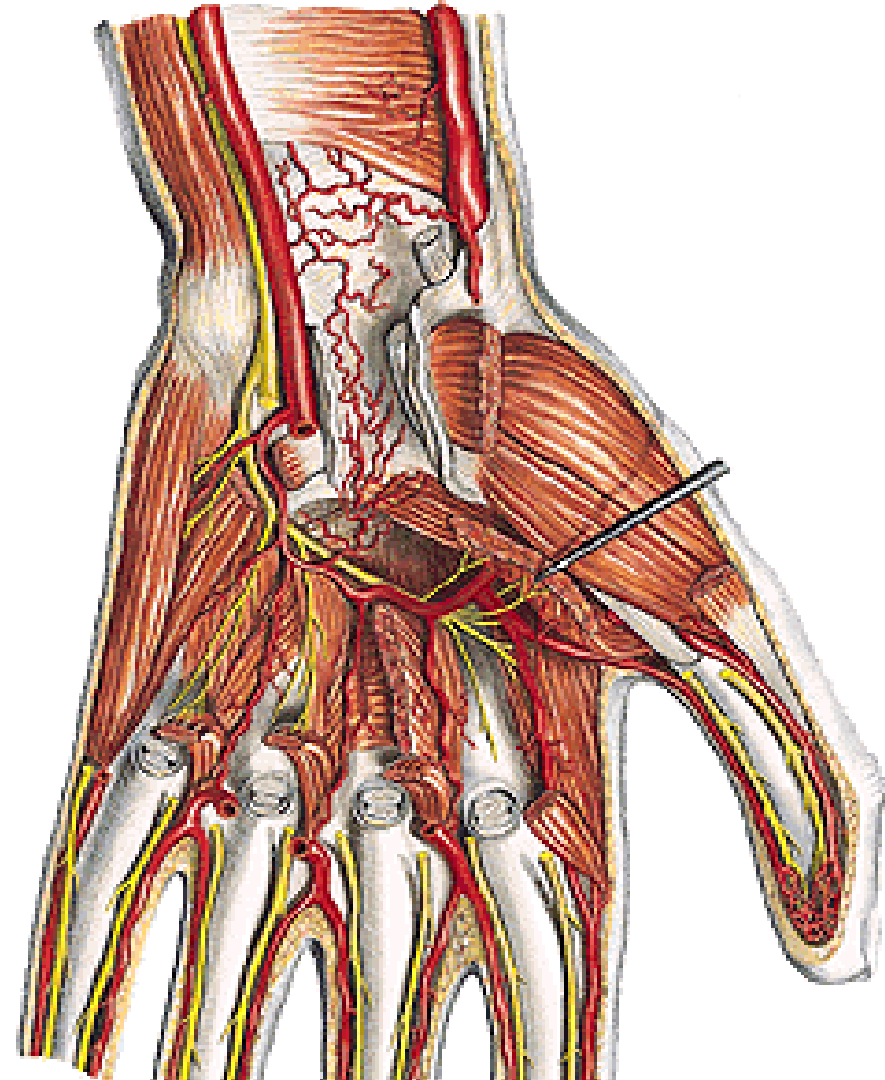
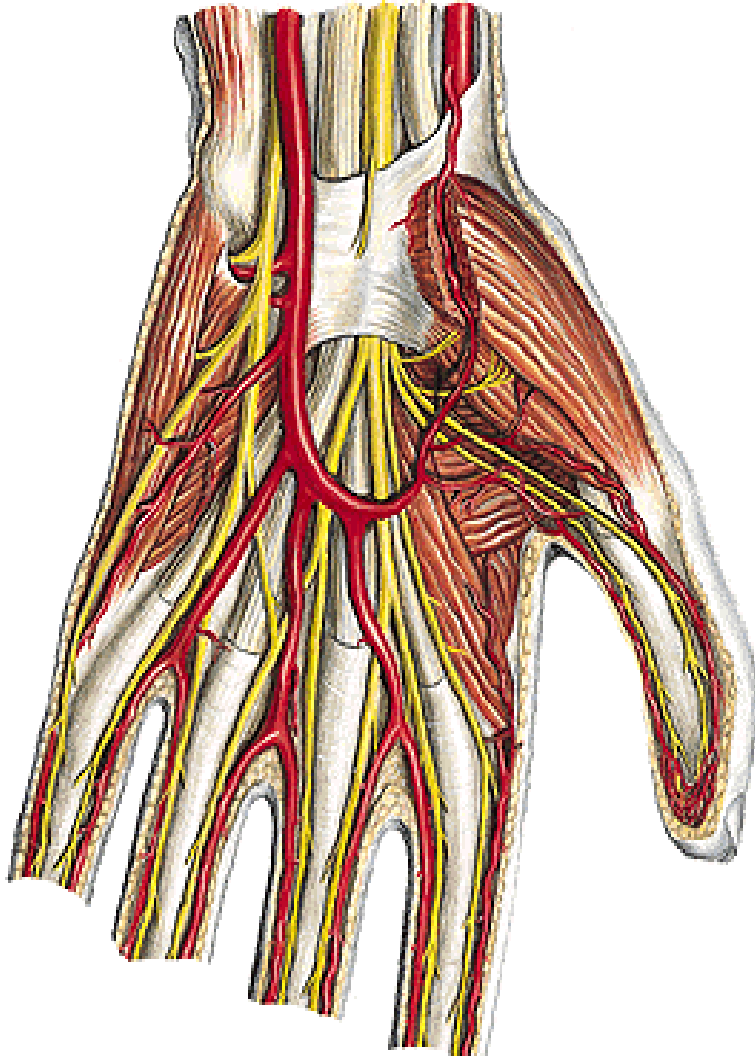
N. ULNARIS

- rr. articulares
- rr. musculares
 - m. flexor carpi ulnaris
 - m. flexor dig. prof. (IV, V)
- r. dorsalis
- nn. digitales dorsales



N. ULNARIS

- r. palmaris
- r. superficialis - nn. dig. palmares comm. et proprii
- r. profundus - rr. musculares

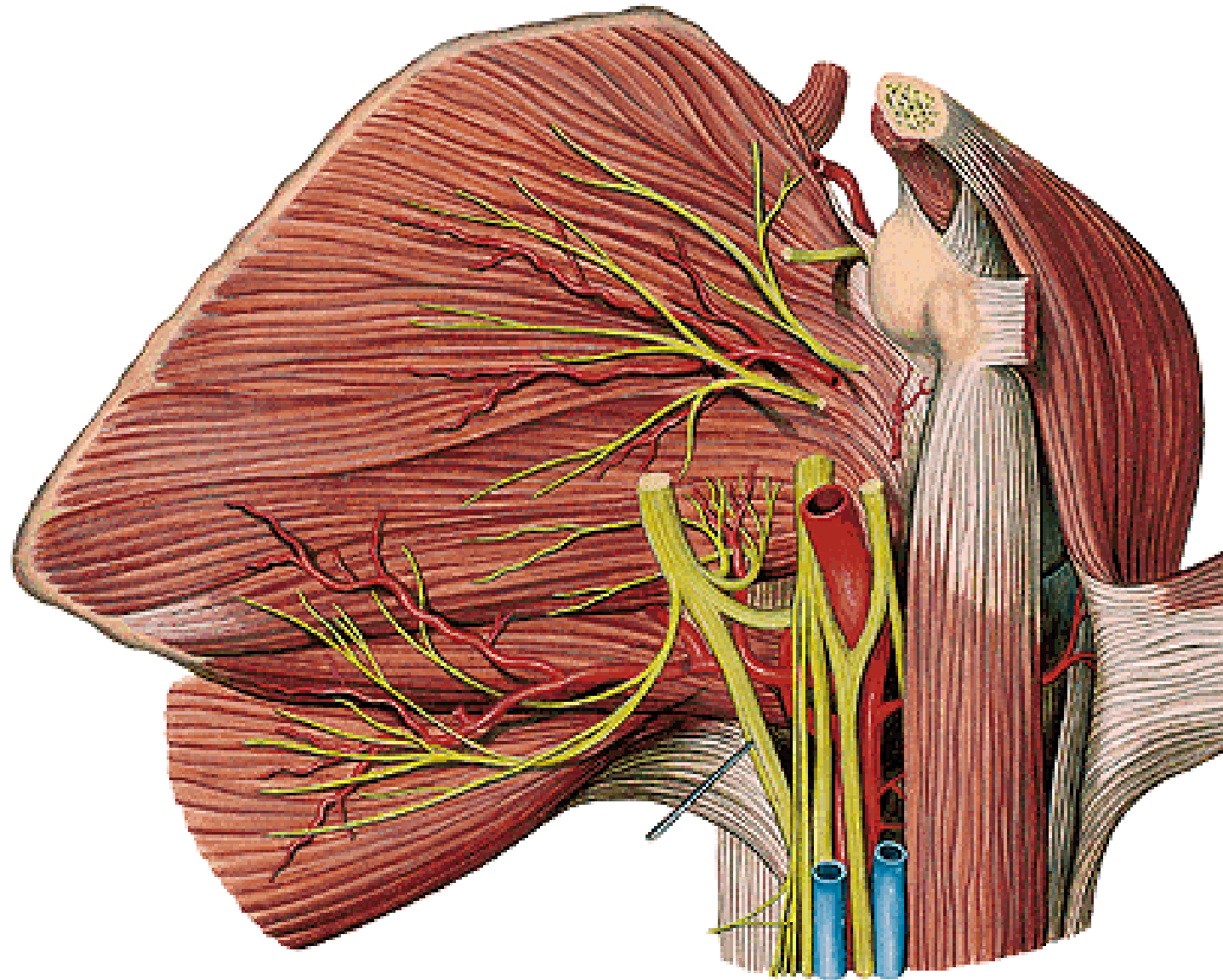


Claw hand



Claw hand of
the first and
second finger

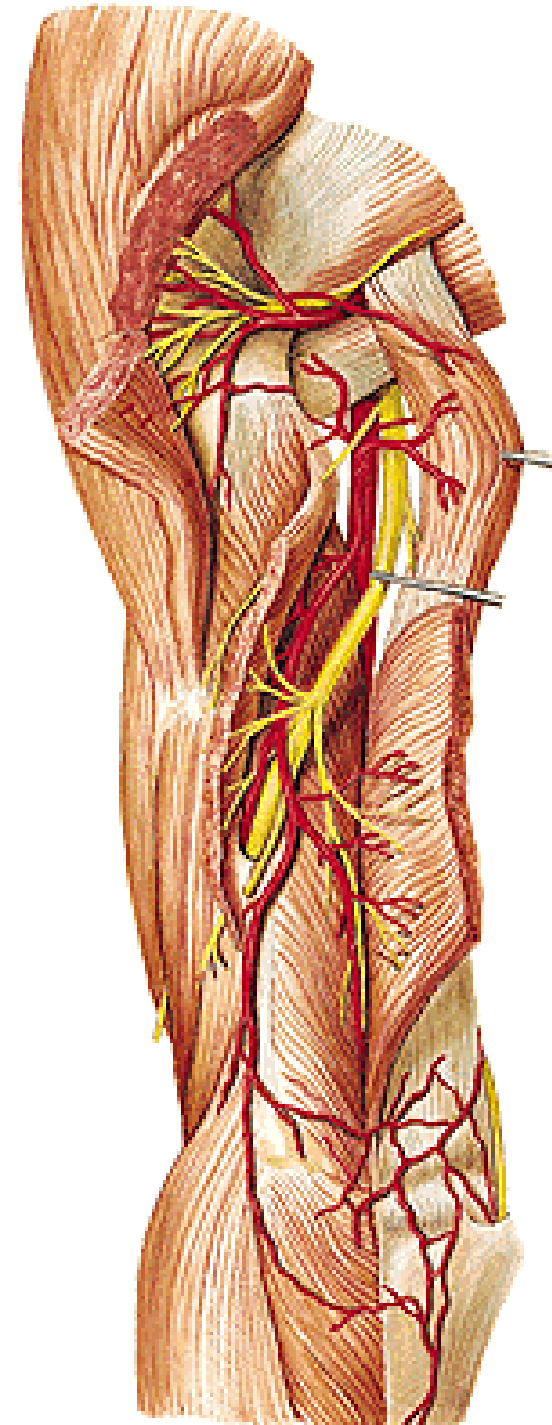
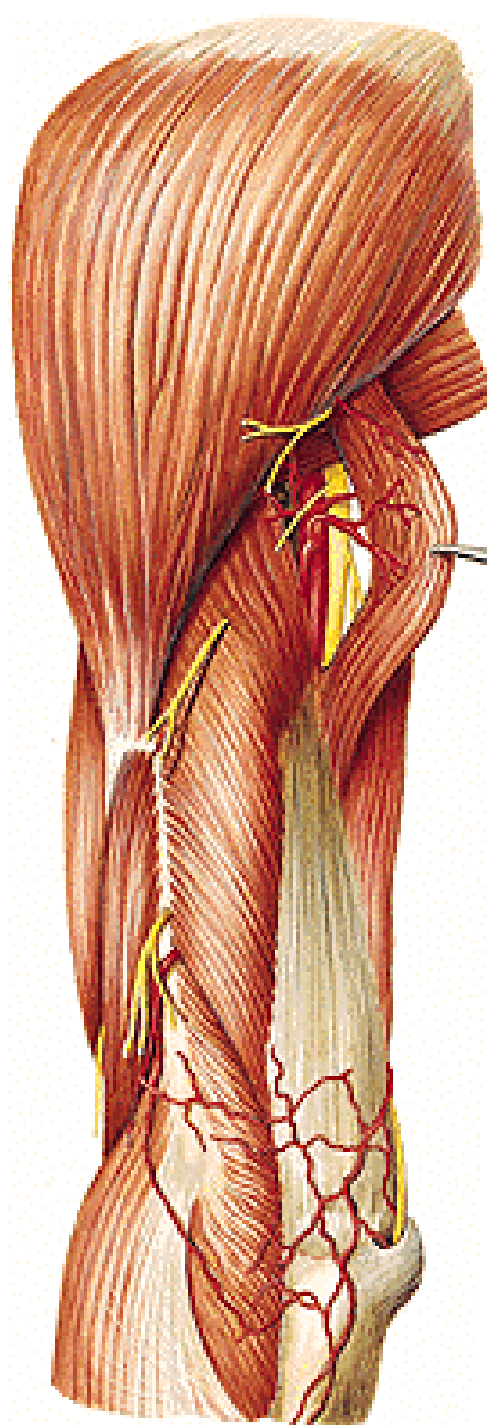
N. RADIALIS



N. RADIALIS

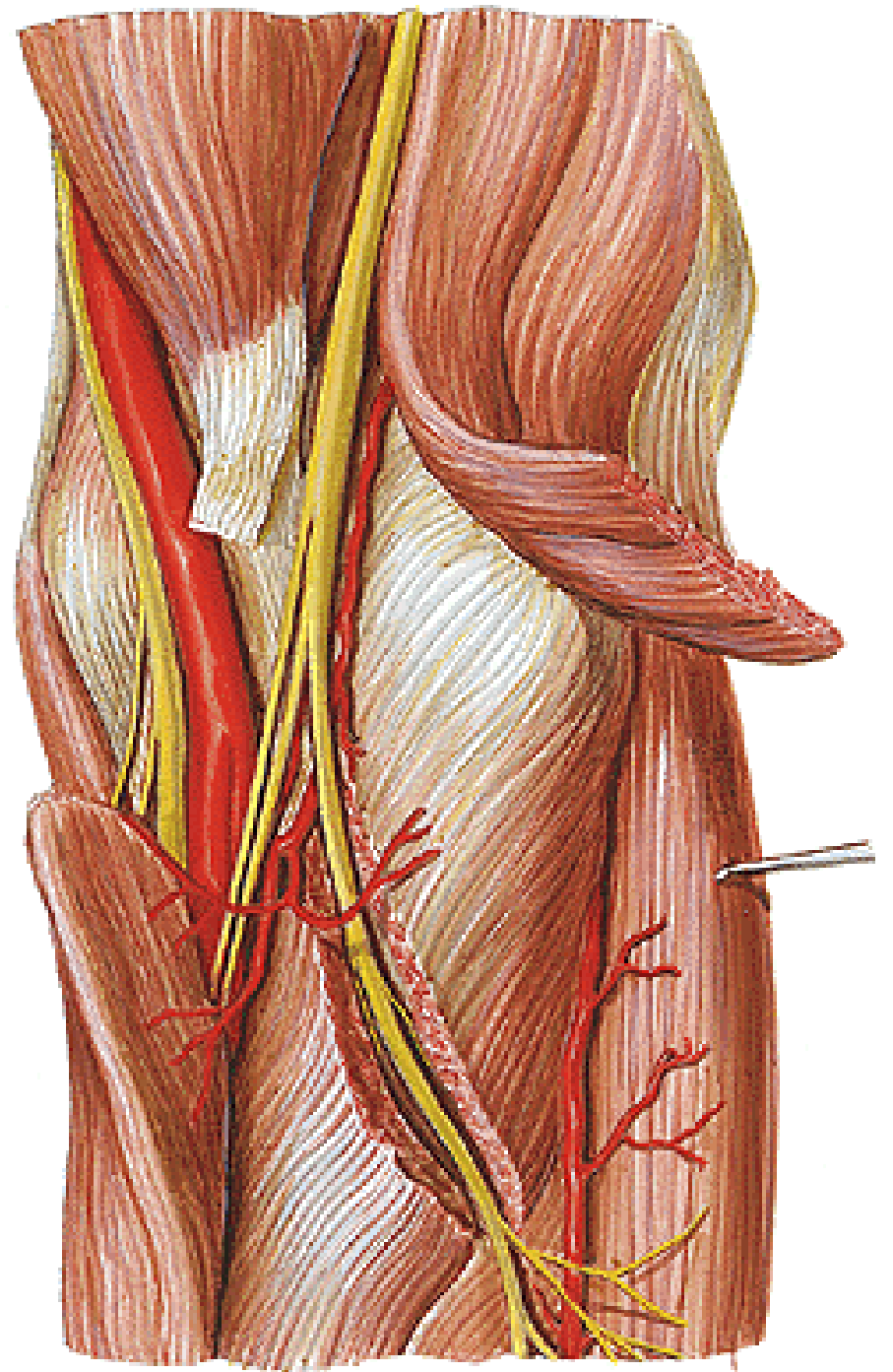
sulcus n. radialis

(a. profunda brachii)



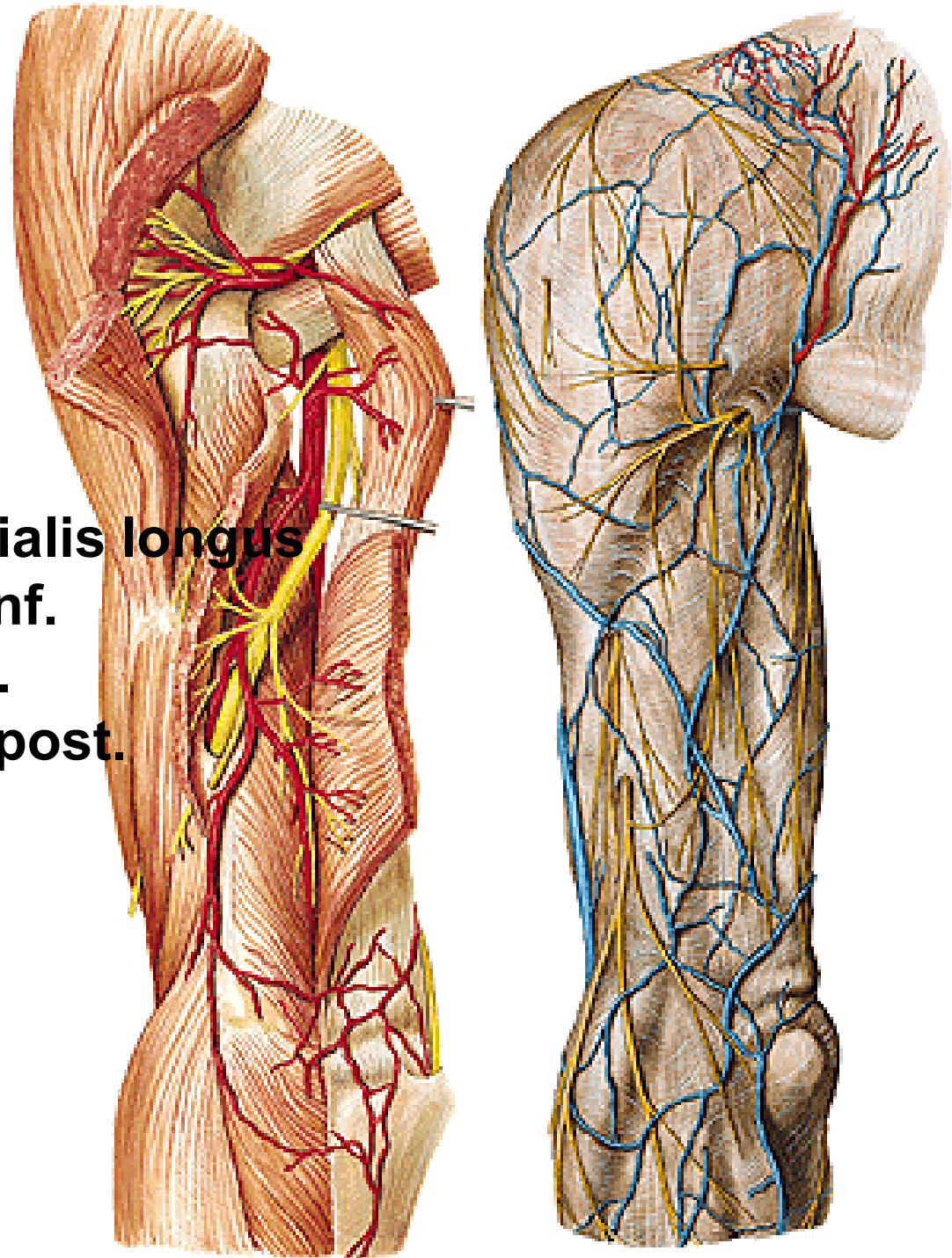
N. RADIALIS

- r. superficialis
- r. profundus



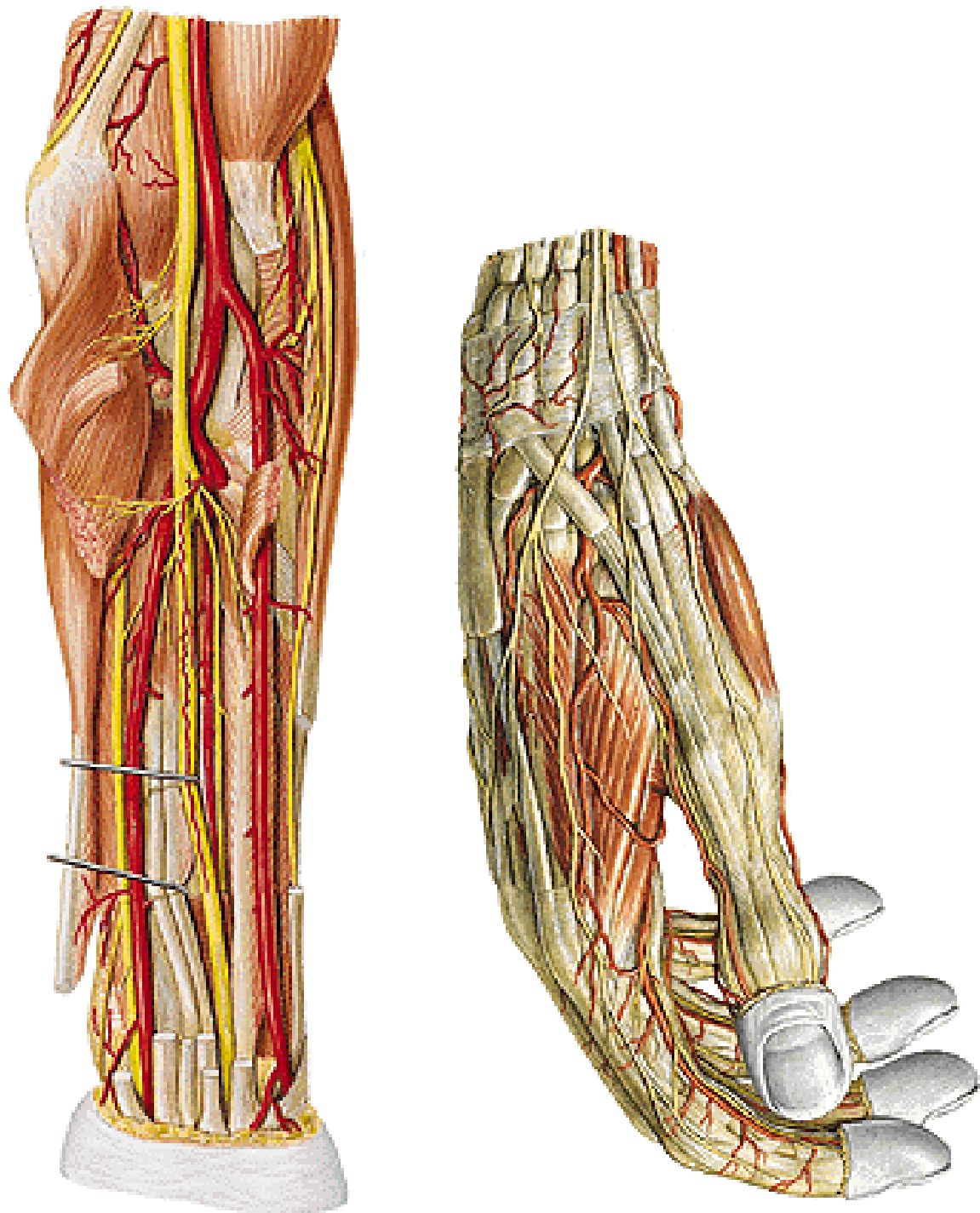
N. RADIALIS

- 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.



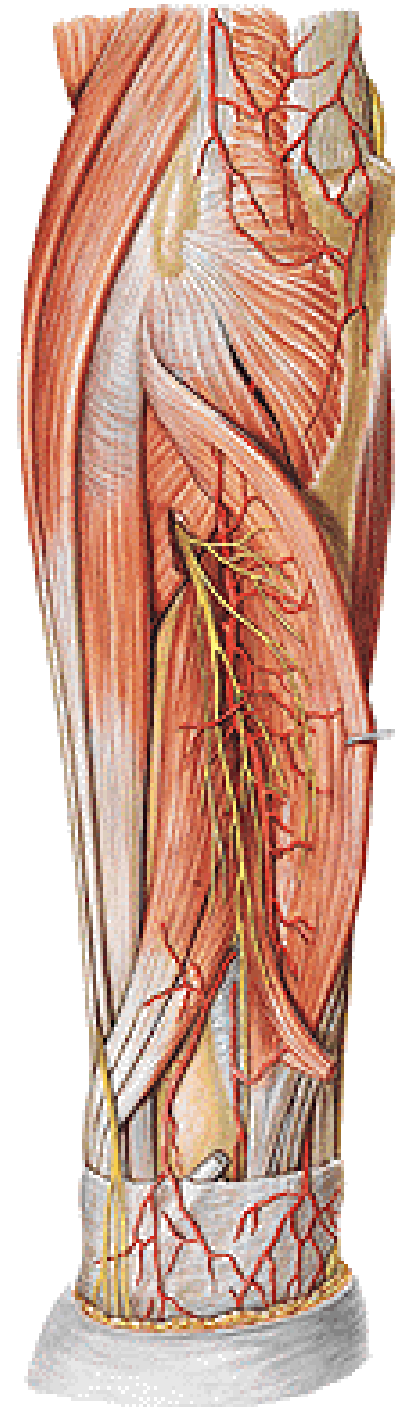
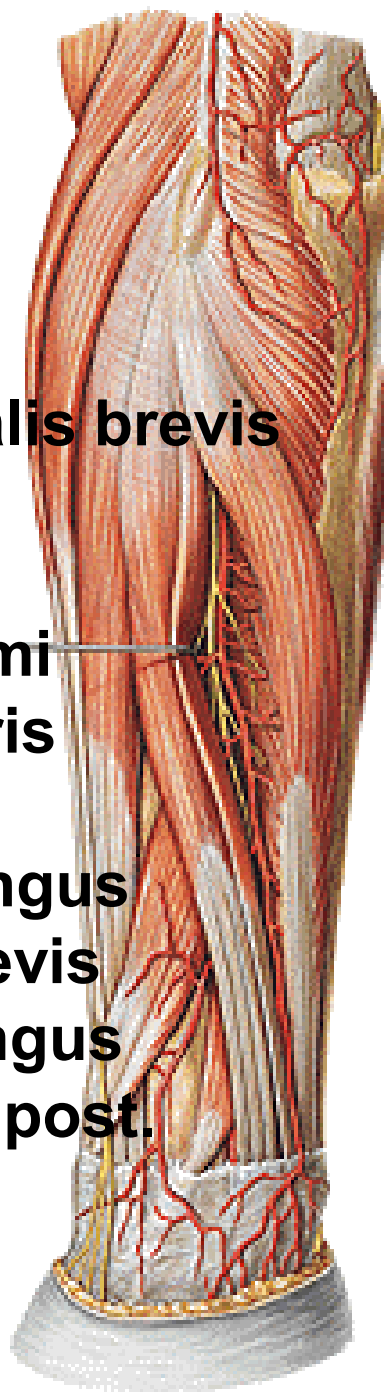
N. RADIALIS

- r. superficialis
- nn. digitales dorsales



N. RADIALIS

- r. profundus
- rr. musculares
 - 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
- n. interosseus antebrachii post.



Wrist drop



Innervation of upper limb muscles:

Nn. subscapulares – subscapularis, teres major

N. axillaris – deltoideus, teres minor

N. suprascapularis – supraspinatus et infraspinatus

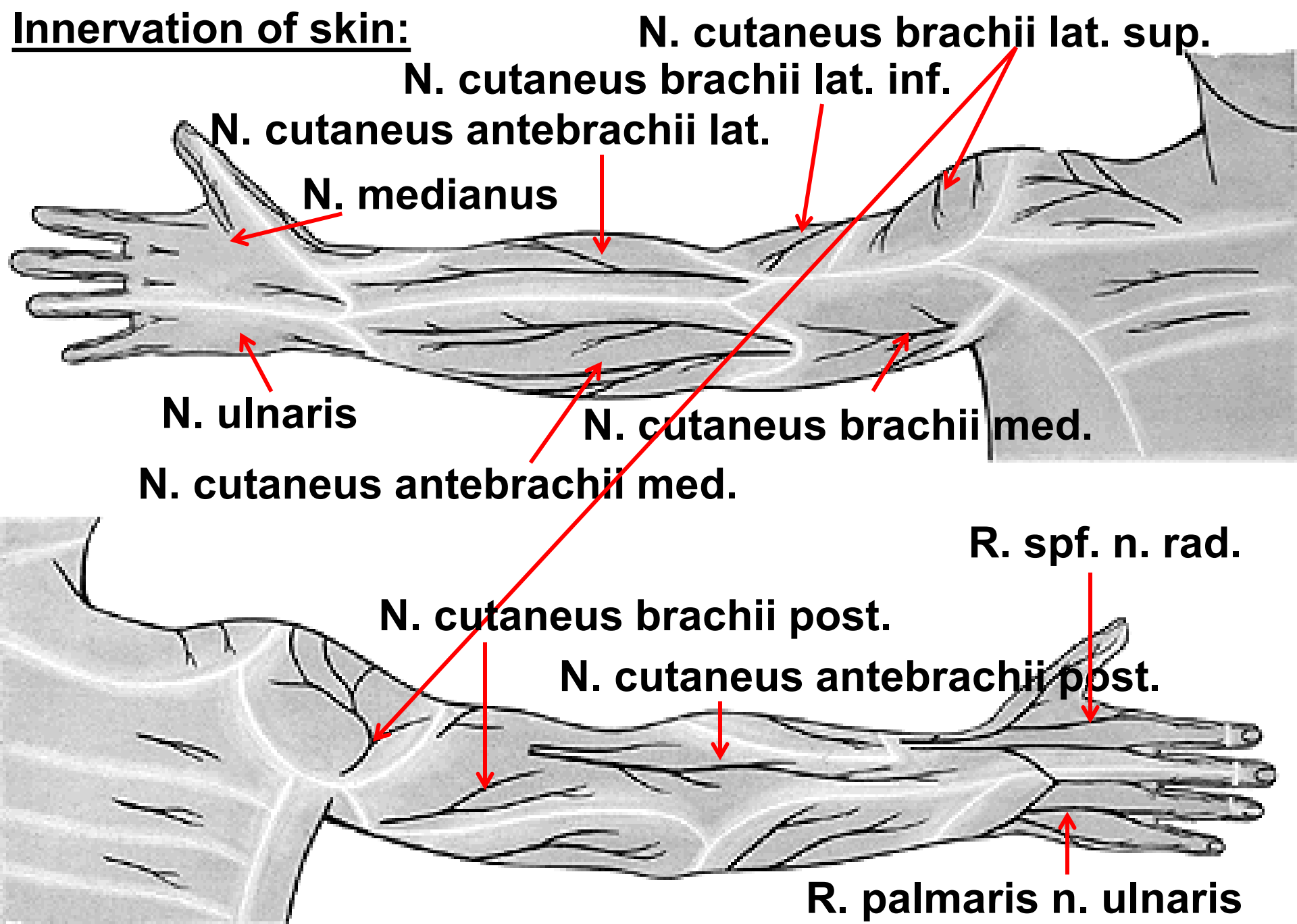
N. musculocutaneus – anterior compartment of arm

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

Innervation of skin:



N. cutaneus brachii lat. sup.

N. cutaneus brachii lat. inf.

N. cutaneus antebrachii lat.

N. medianus

N. ulnaris

N. cutaneus brachii med.

N. cutaneus antebrachii med.

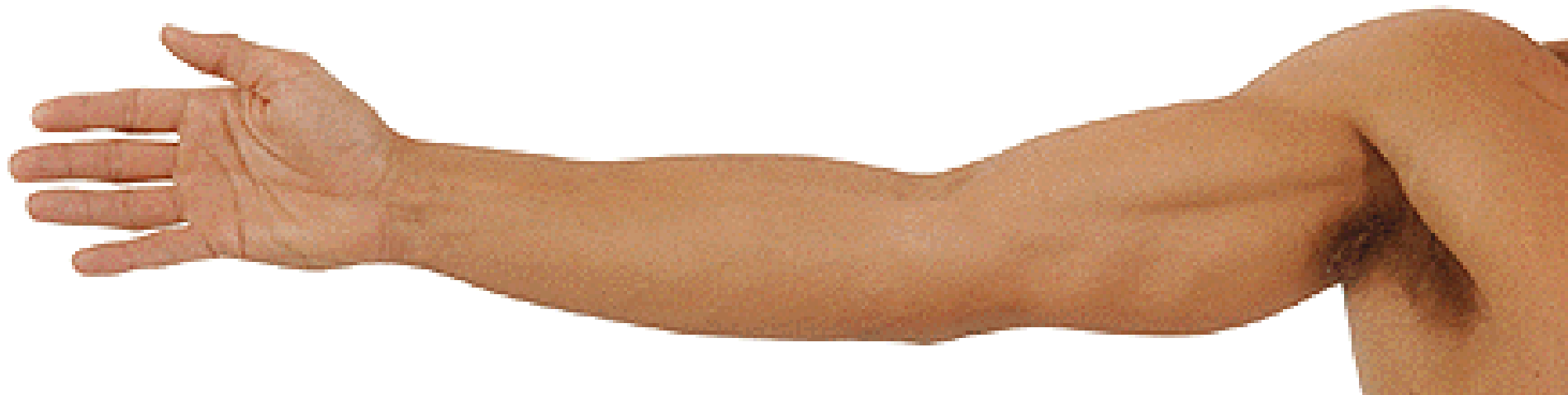
R. spf. n. rad.

N. cutaneus brachii post.

N. cutaneus antebrachii post.

R. palmaris n. ulnaris

REGIONAL ANATOMY OF THE UPPER LIMB



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

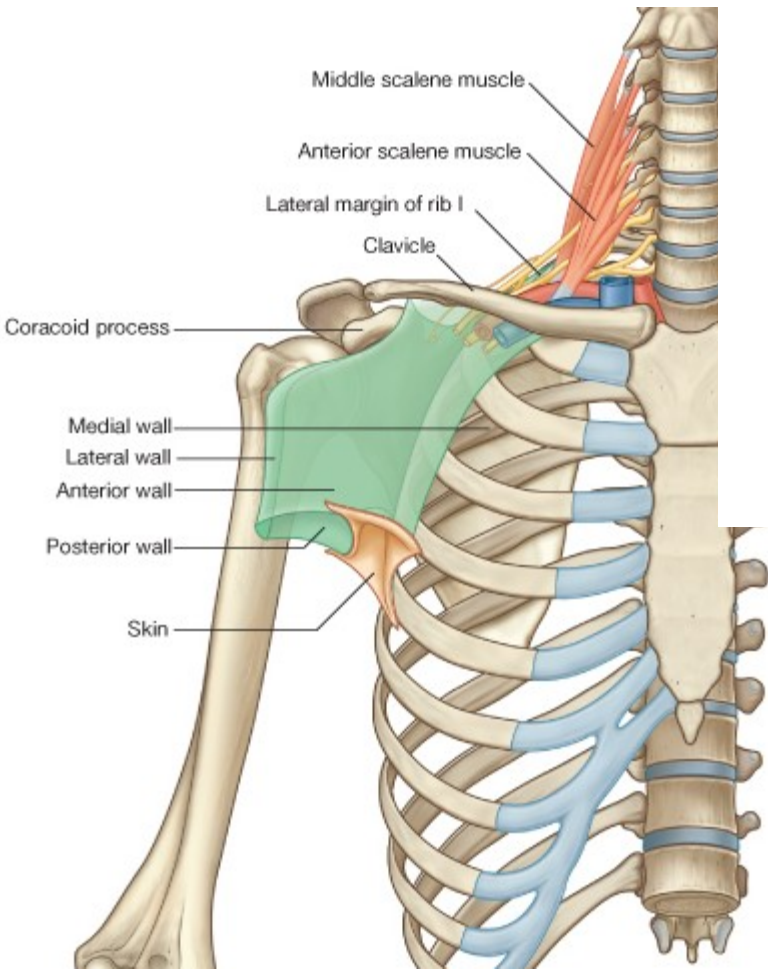


**Regio scapularis, reg. brachii post., reg. cubiti post.,
reg. antebrachii post., dorsum manus**

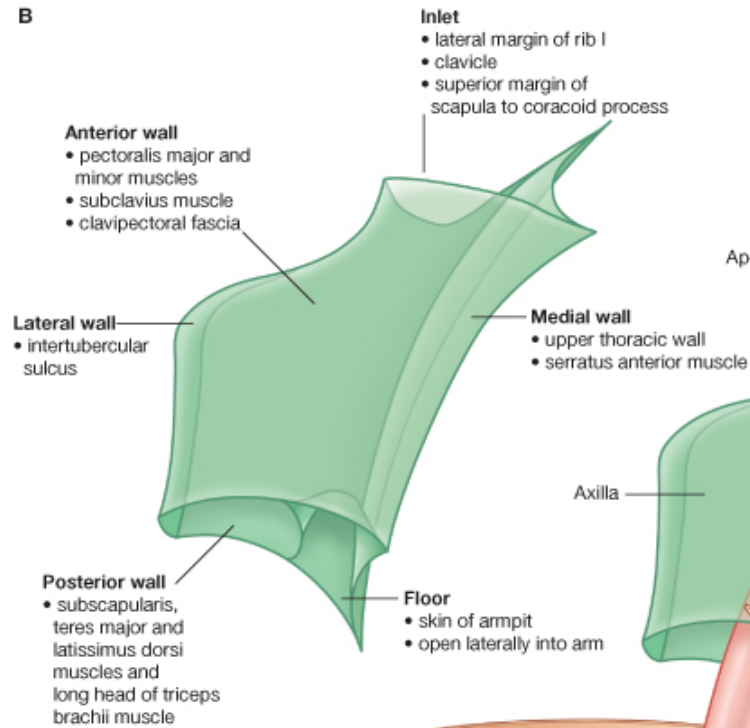
Regio axillaris

AXILLA

inlet
4 sides
floor



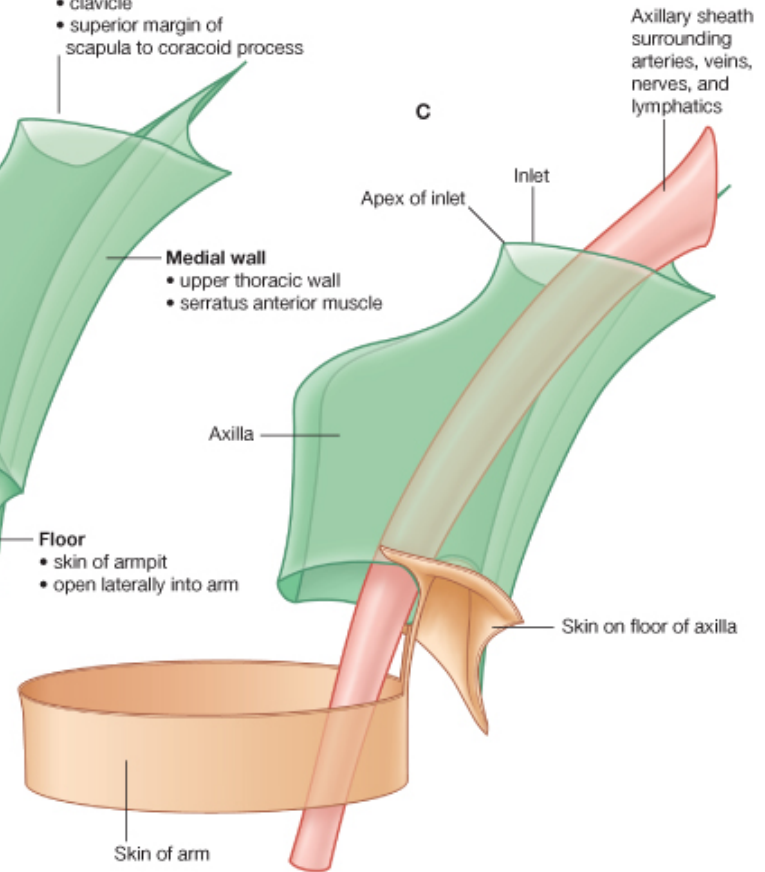
B



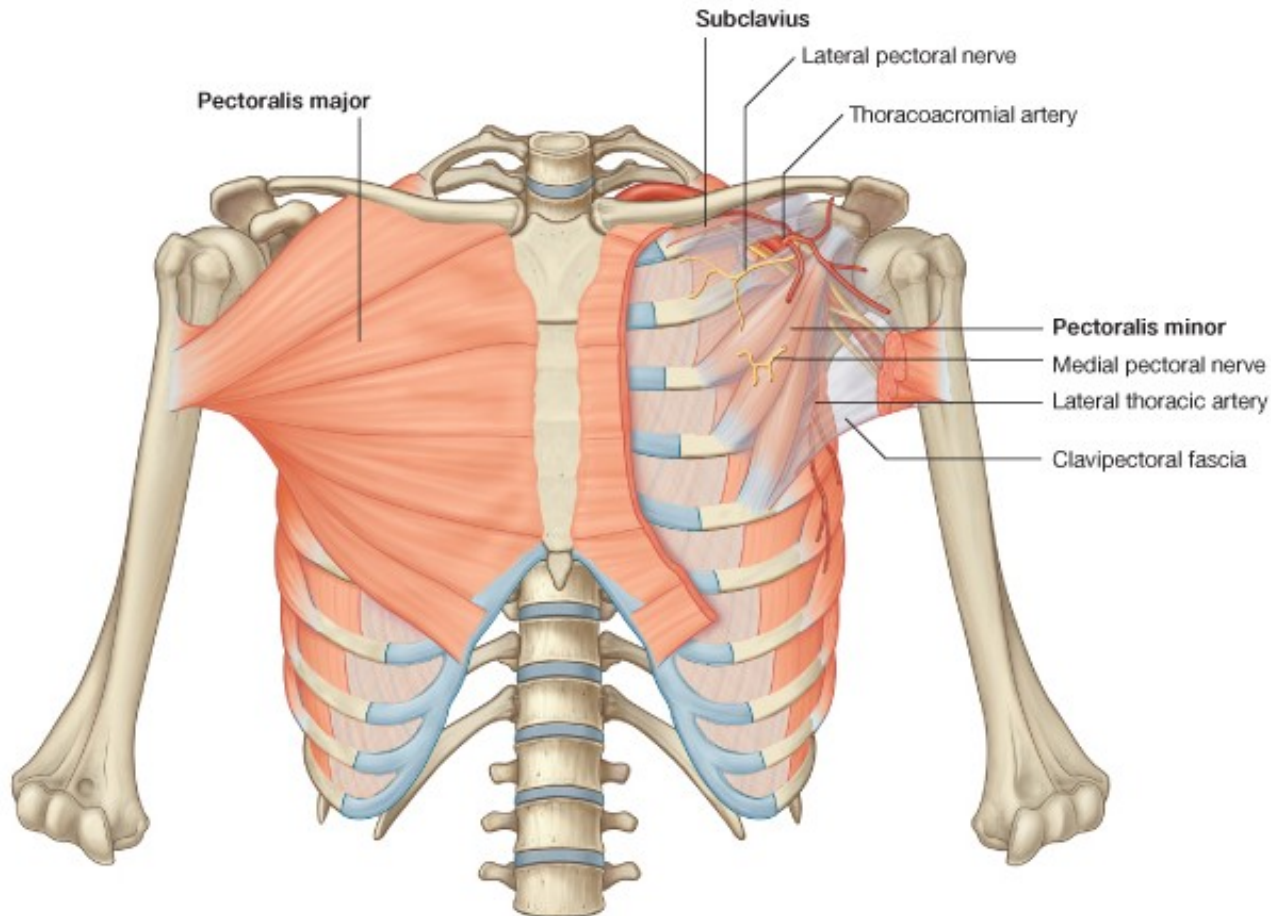
Inlet

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

C

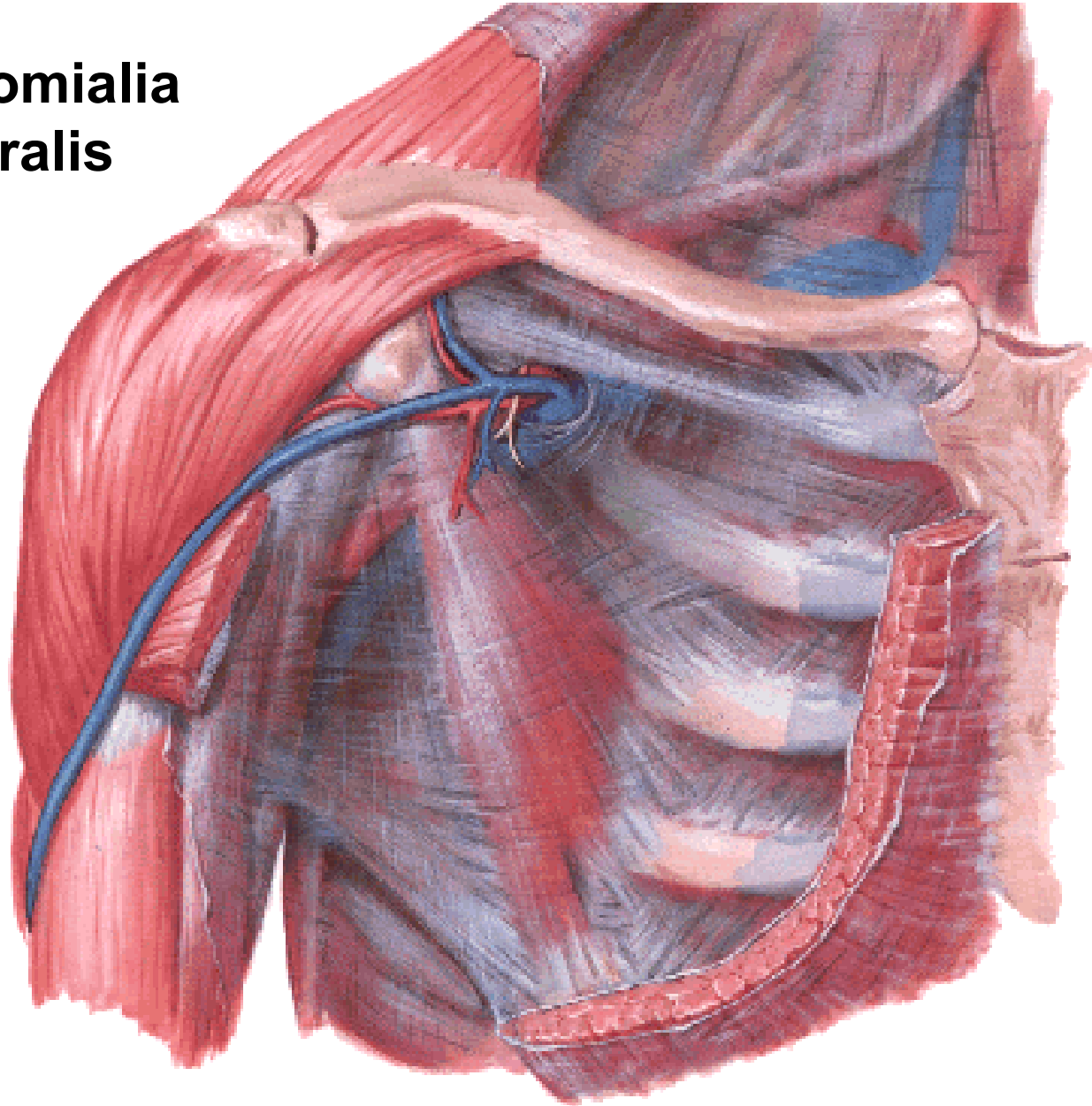


Anterior wall: m. pectoralis major (n. pectoralis med. et lat.)
m. pectoralis minor (n. pectoralis med.)
m. subclavius (n. subclavius)
fascia clavipectoralis
a. thoracoacromialis, a. pectoralis sup.



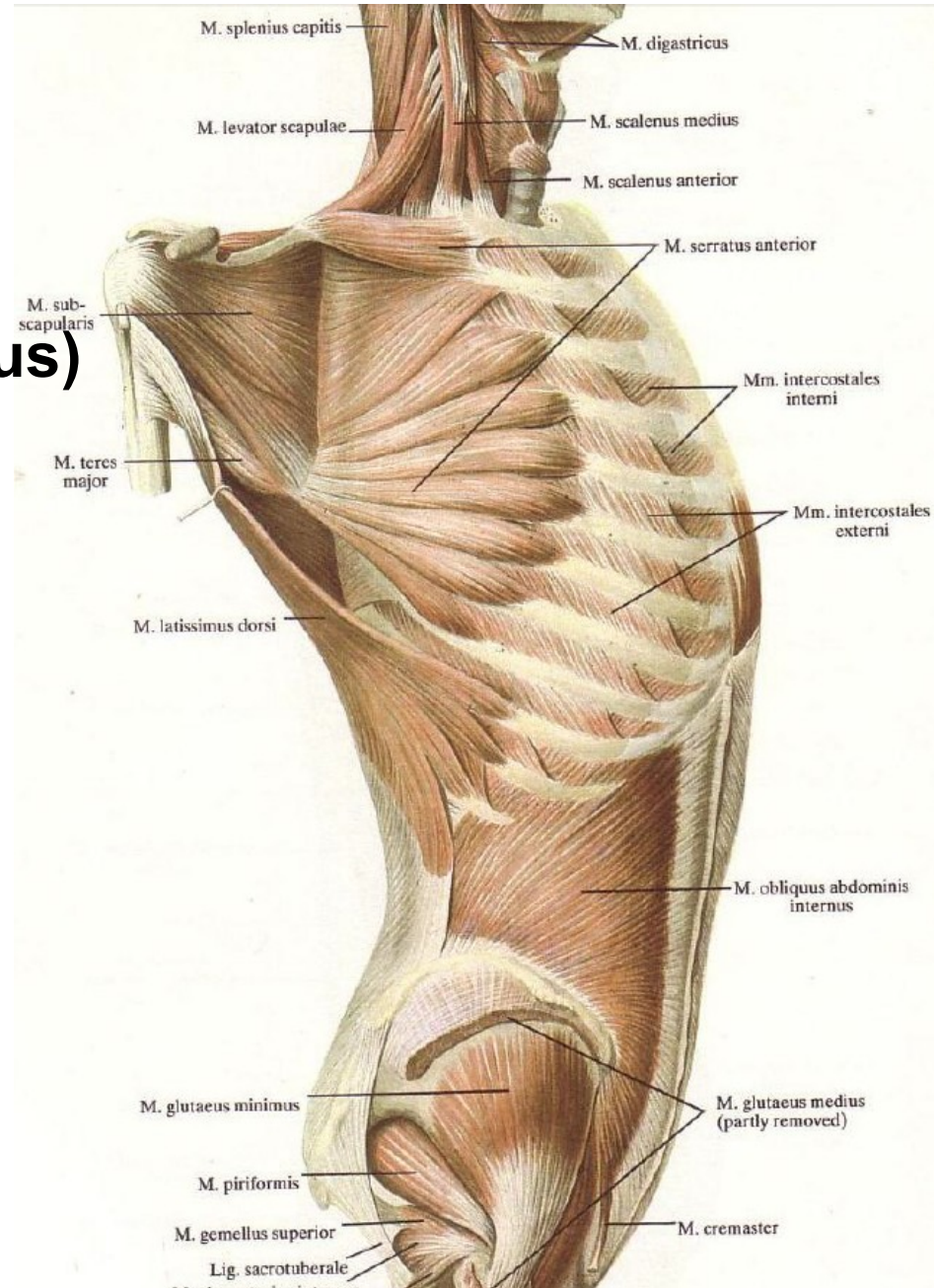
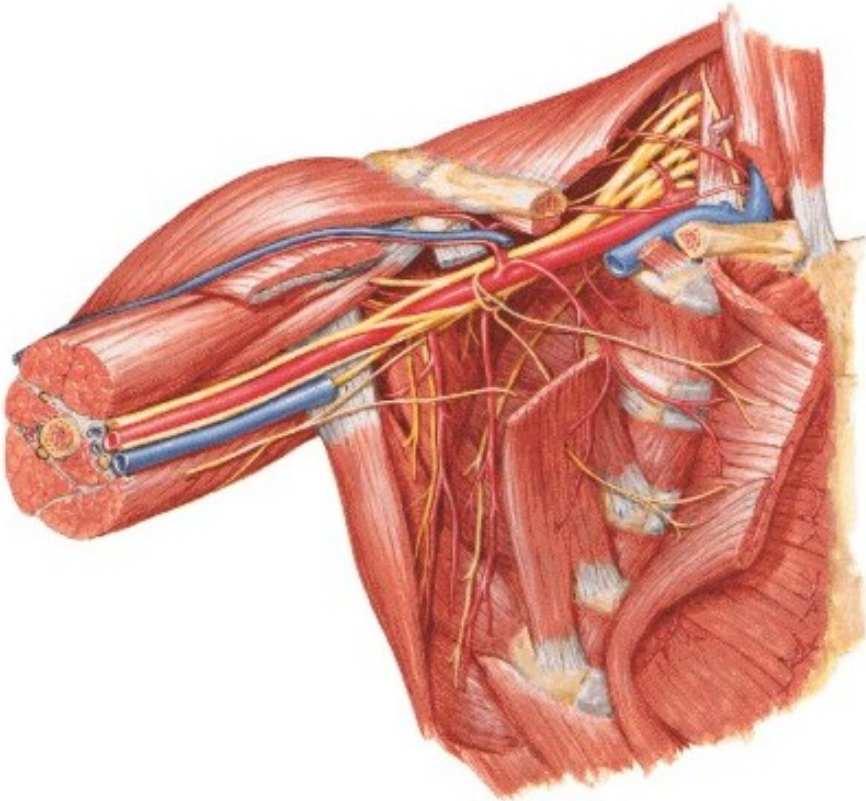
Fascia clavipectoralis

- **v. cephalica**
- **vasa thoracoacromialia**
- **n. pectoralis lateralis**

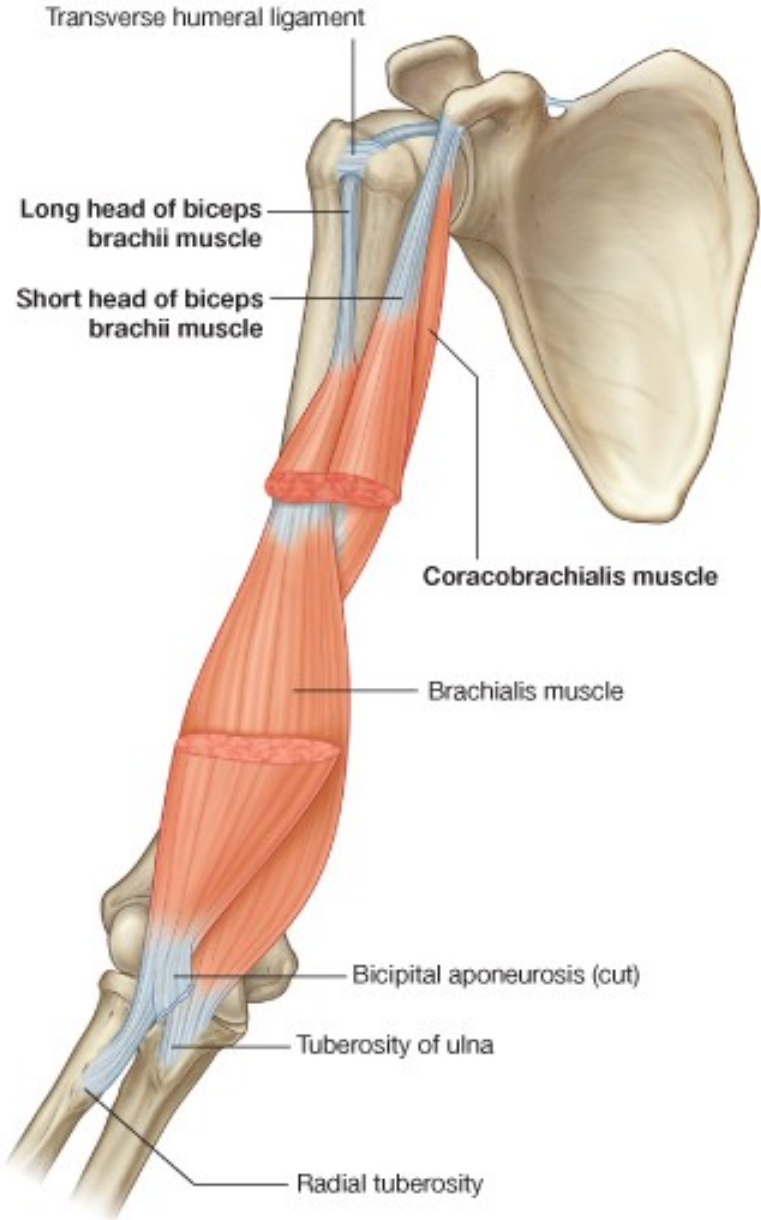


Medial wall: thorax

**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

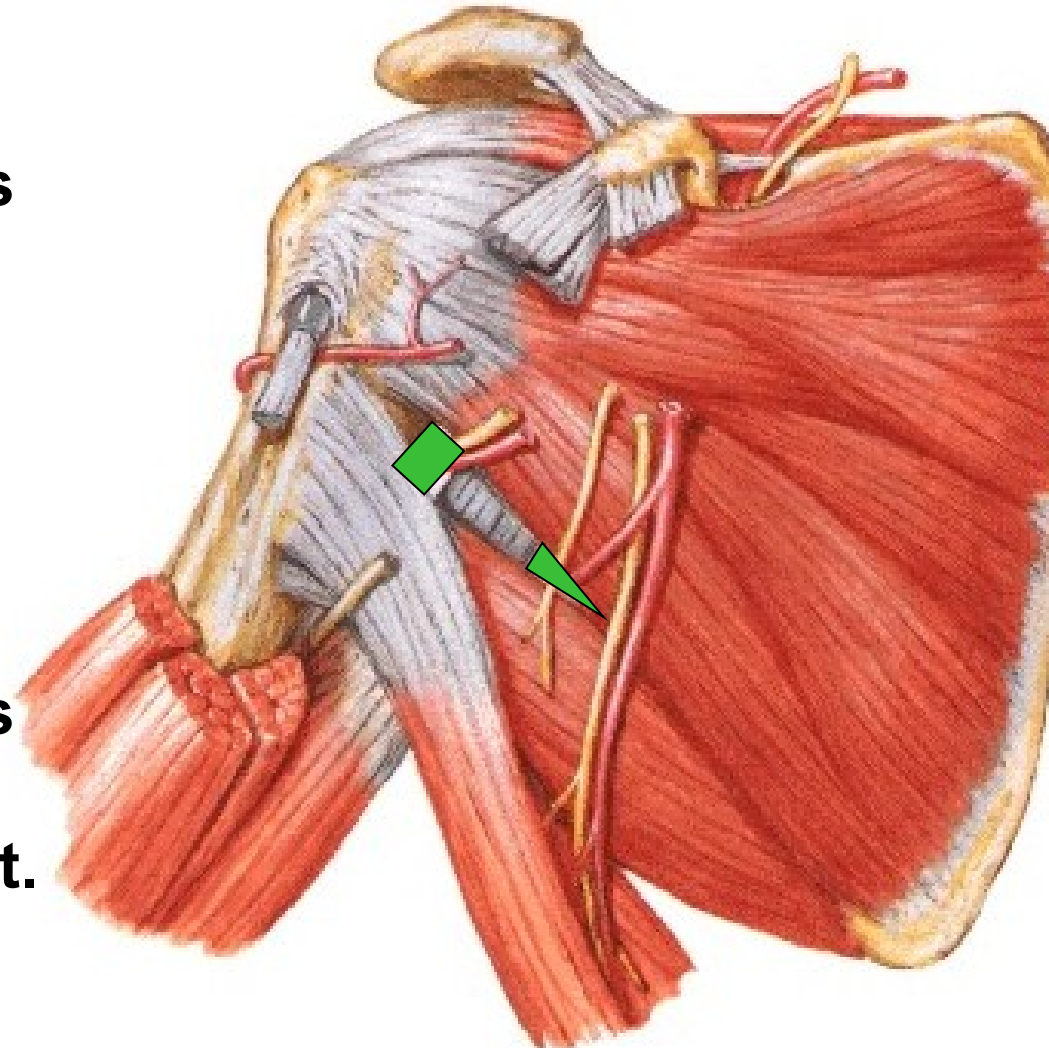
m. teres major

caput longum m. tricipitis

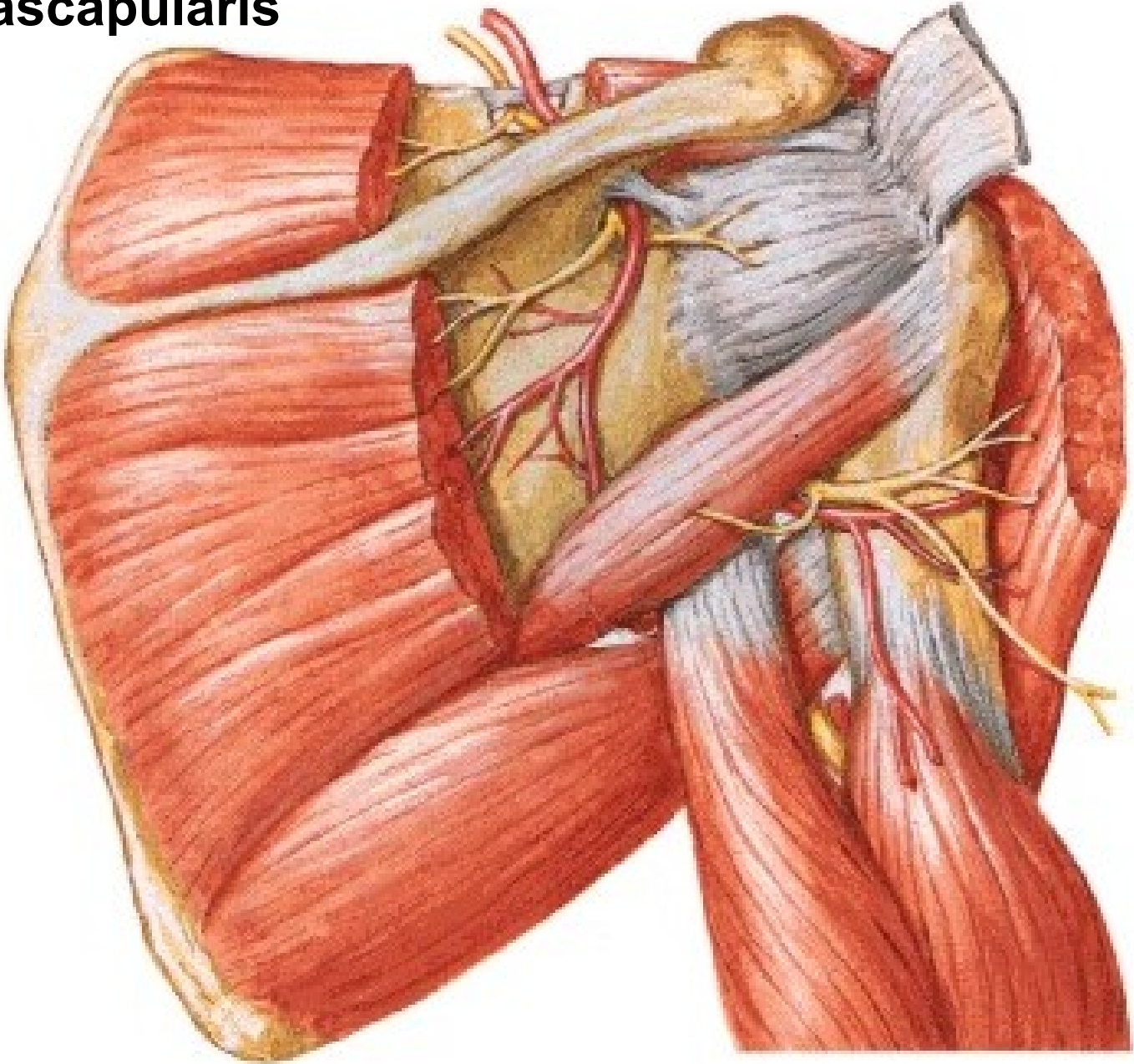
humerus

A. circumflexa humeri post.

N. axillaris

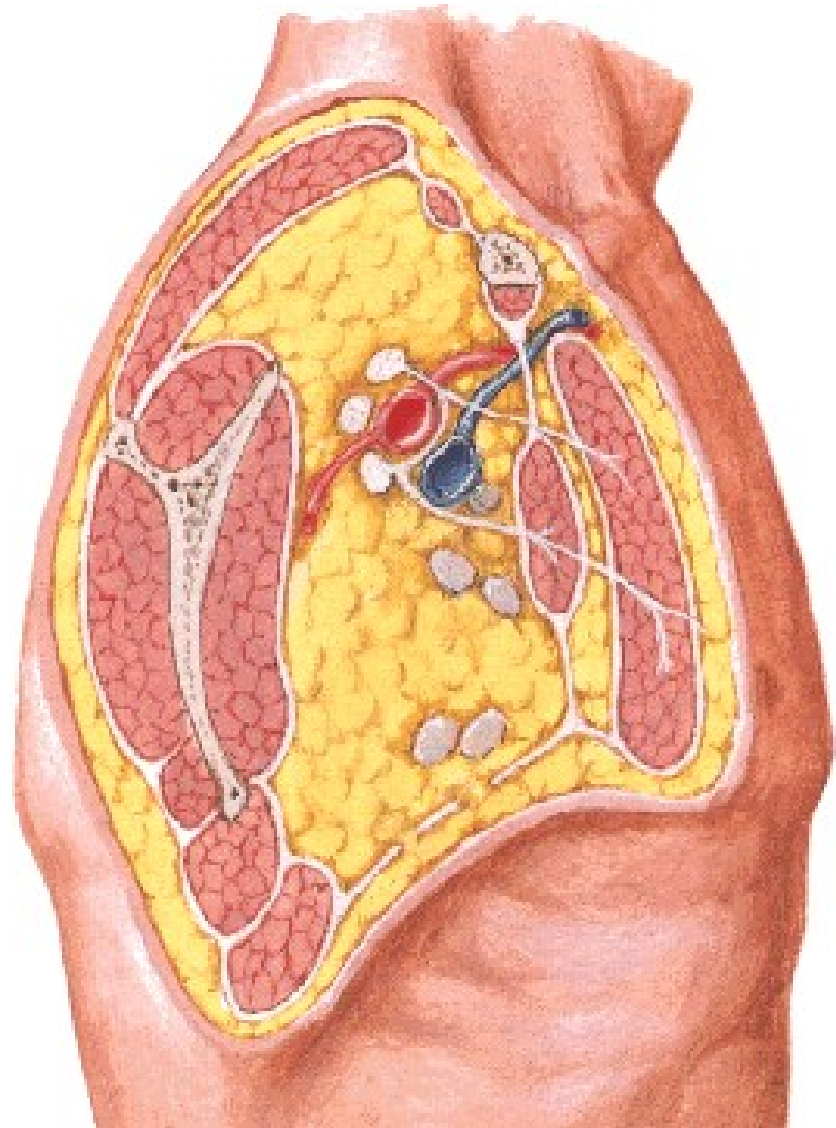


N. suprascapularis
A. suprascapularis



Floor: Fascia axillaris

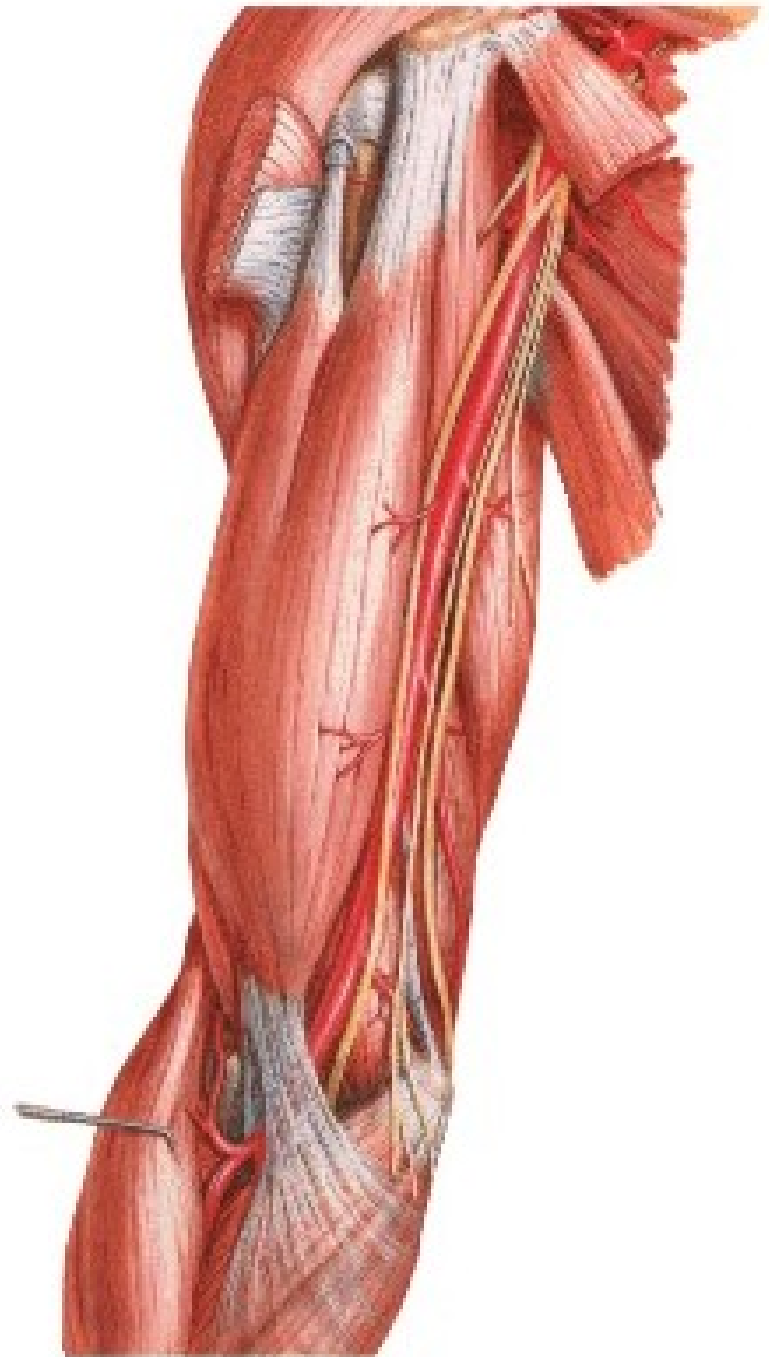
Plica axillaris ant.
(m. pectoralis major)
Plica axillaris post.
(m. latissimus dorsi)



Contents:

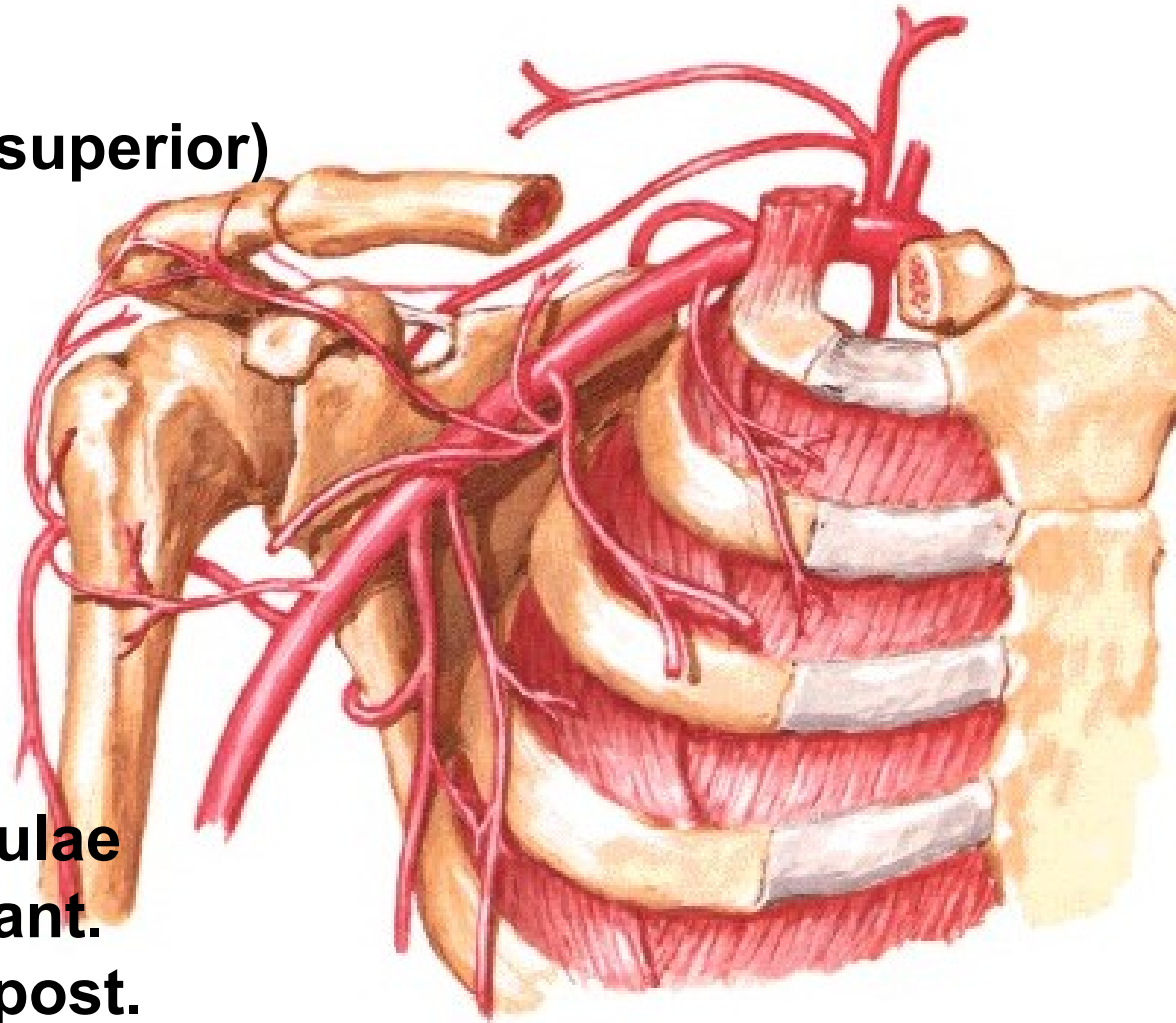
M. biceps brachii

M. coracobrachialis



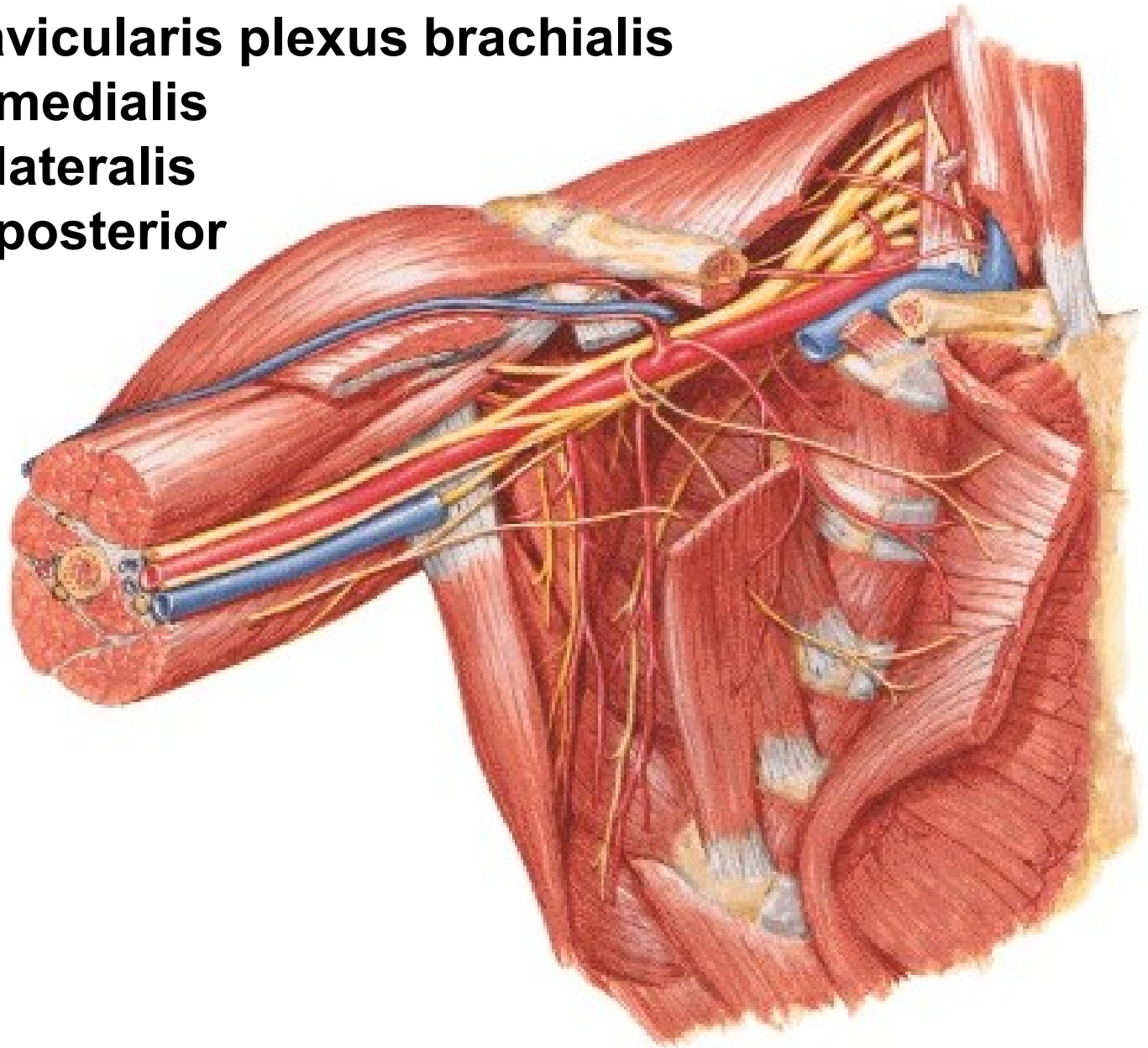
A. axillaris

- 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

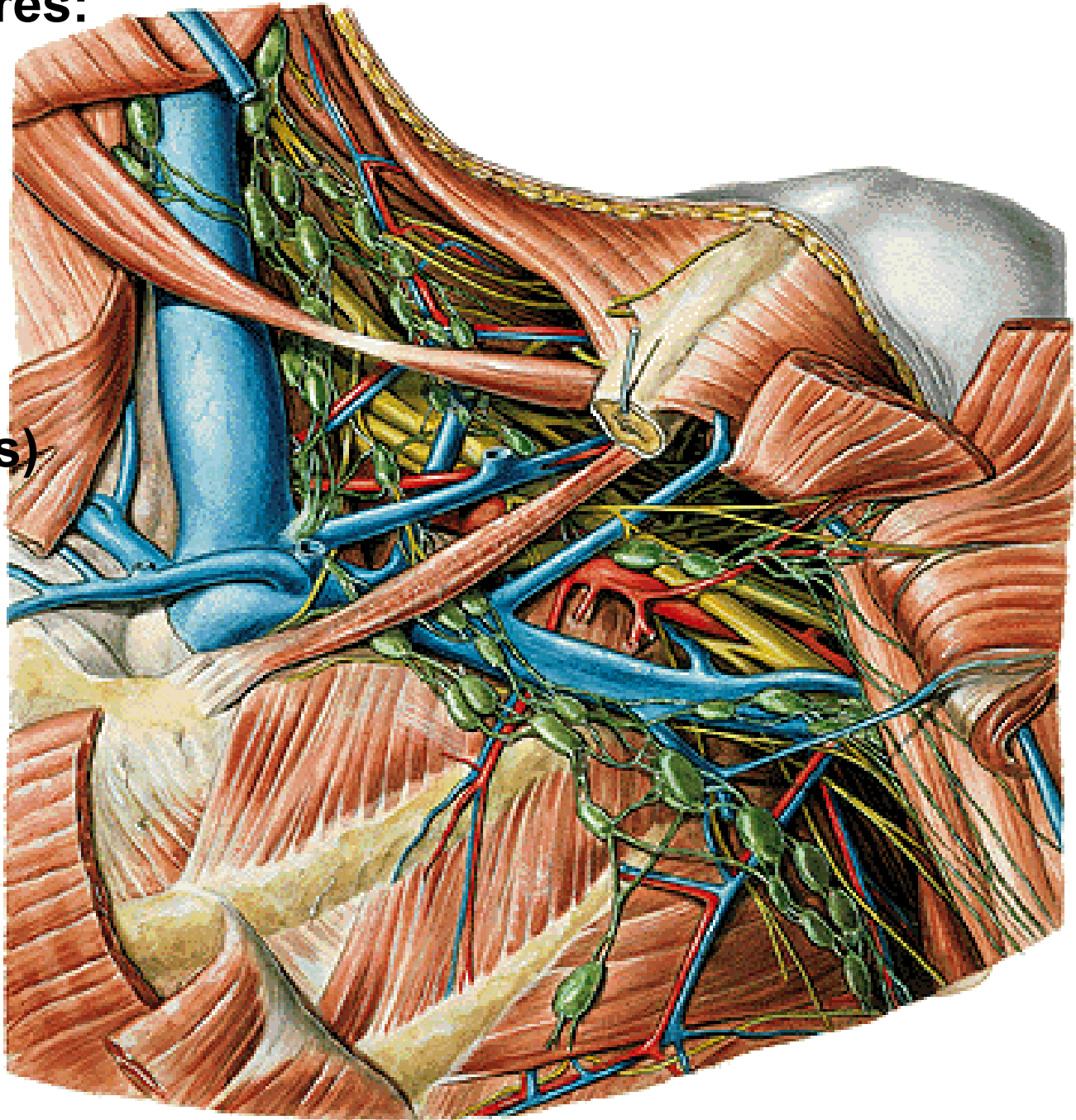
- fasciculus medialis**
- fasciculus lateralis**
- fasciculus posterior**



Nodi lymph. axillares:

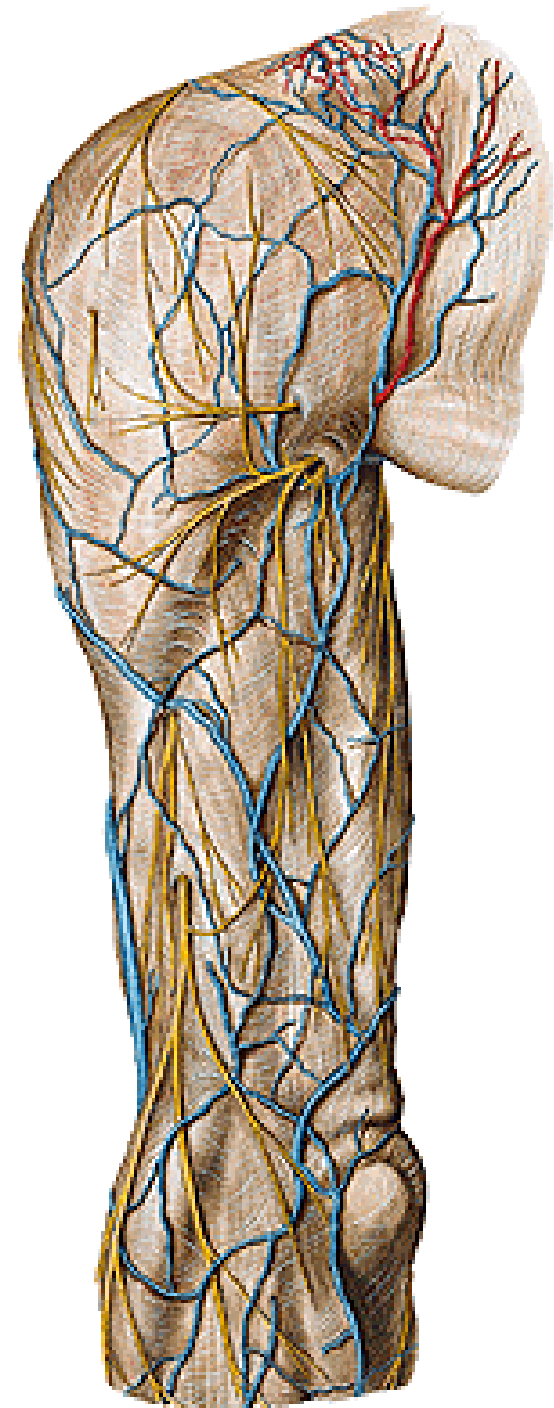
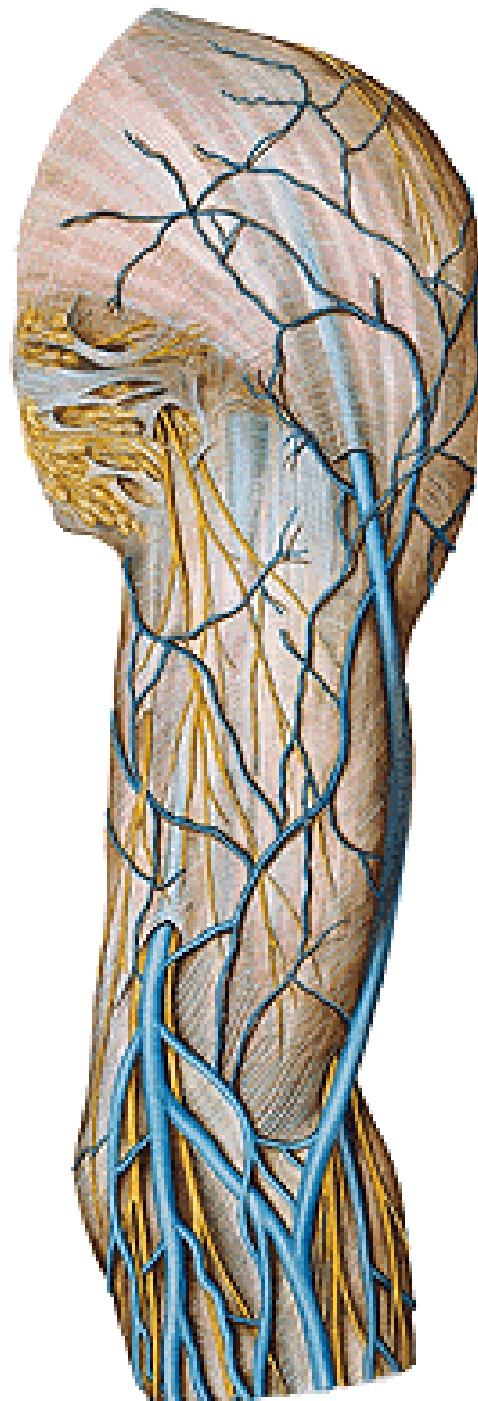
- laterales**
- pectorales (Sorgius)**
- subscapulares**
- centrales**
- apicales (infraclaviculares)**

→ tr. subclavius

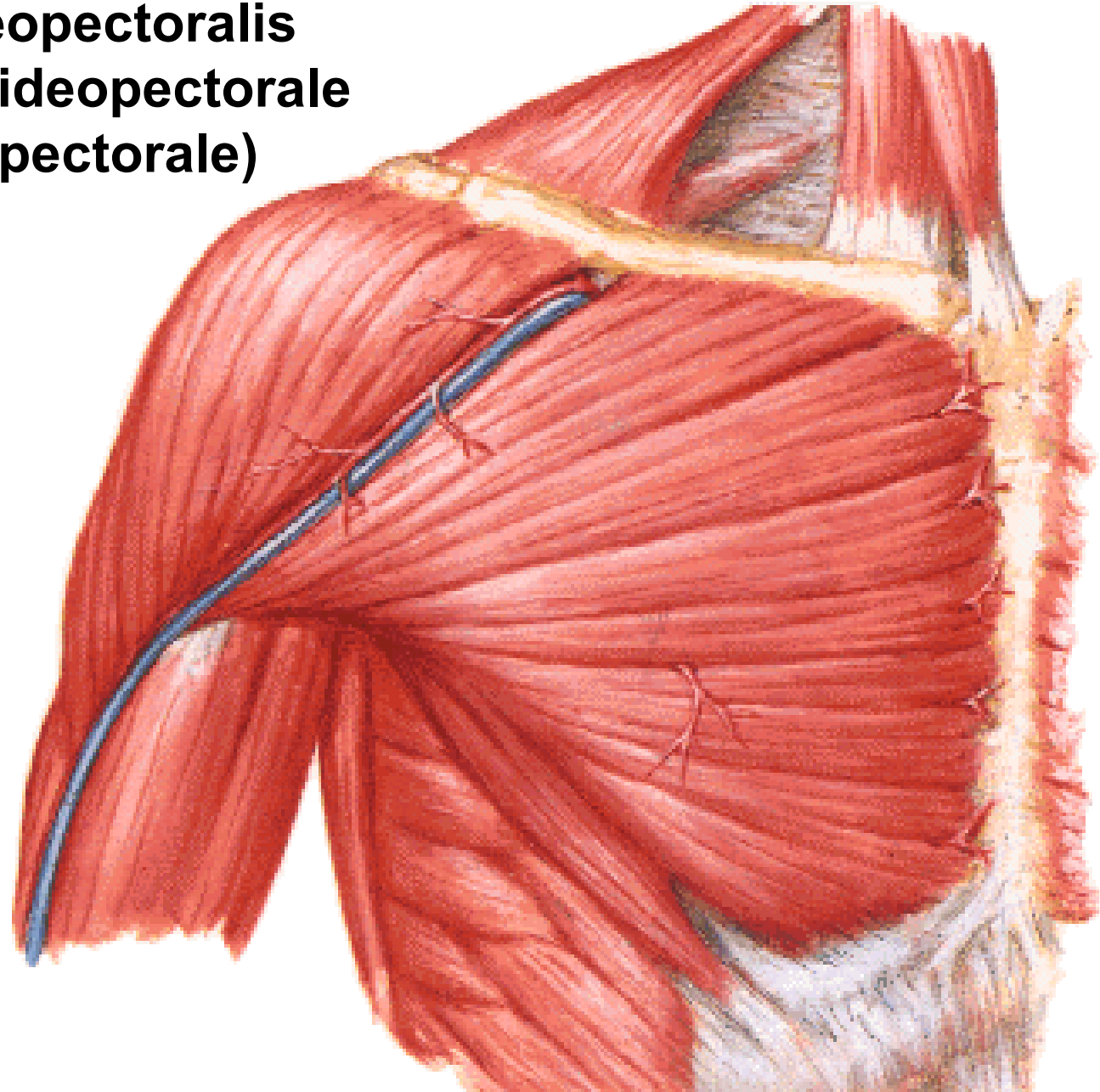


Regio deltoidea

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

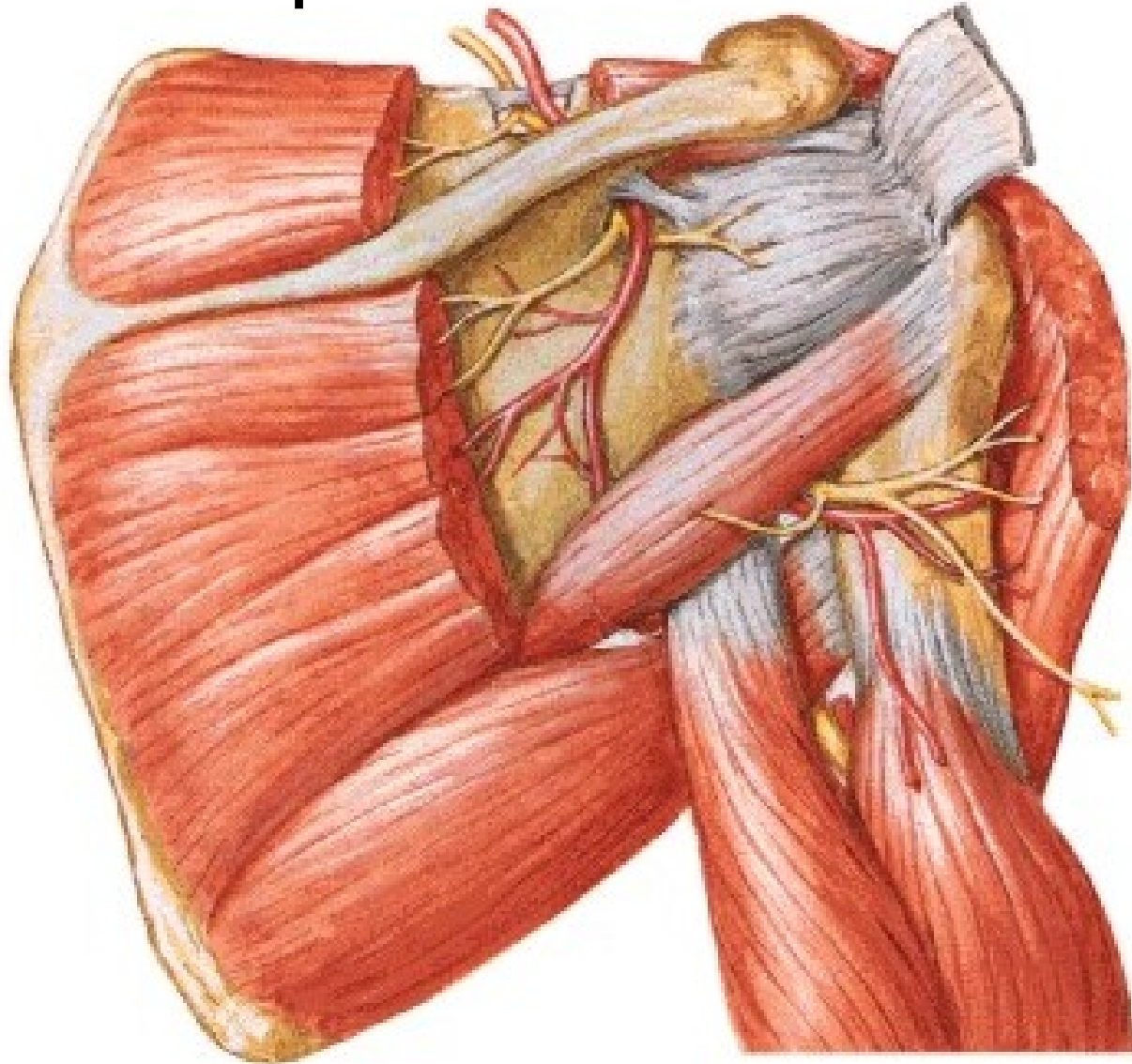


Sulcus deltoideopectoralis
Trigonum deltoideopectorale
(clavipectorale)

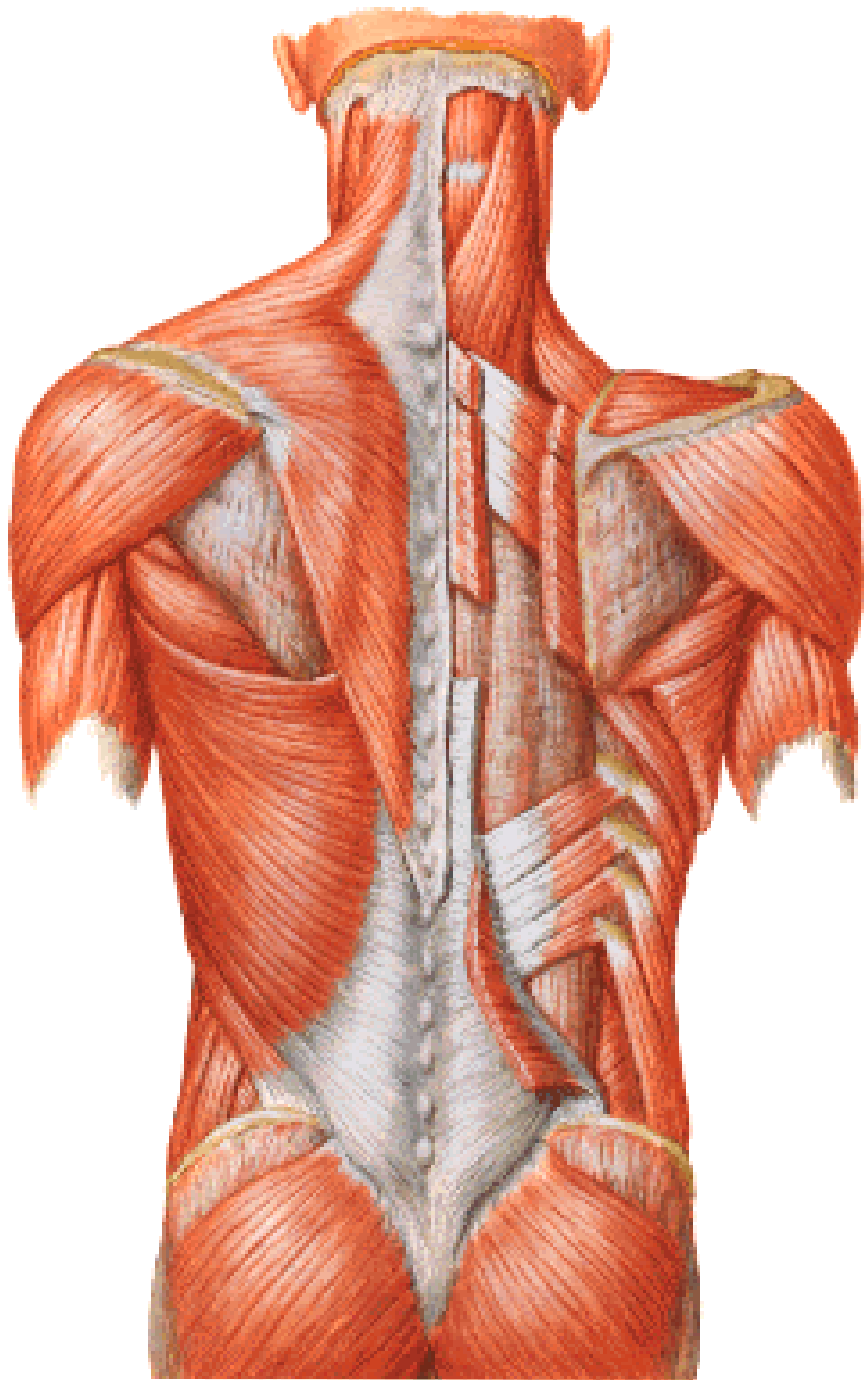


M. deltoideus (n. axillaris)

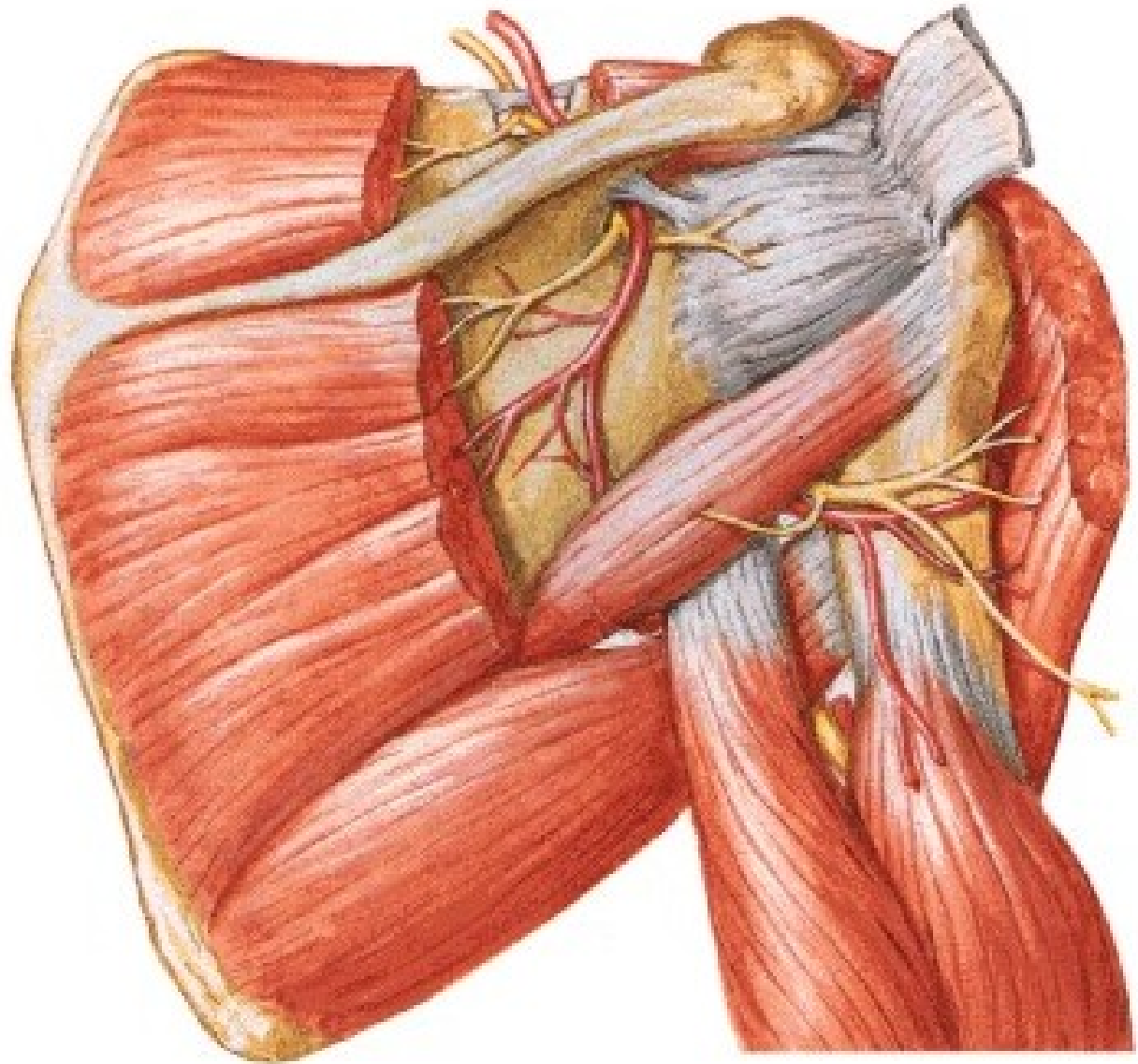
A. circumflexa humeri post. et ant.



Regio scapularis

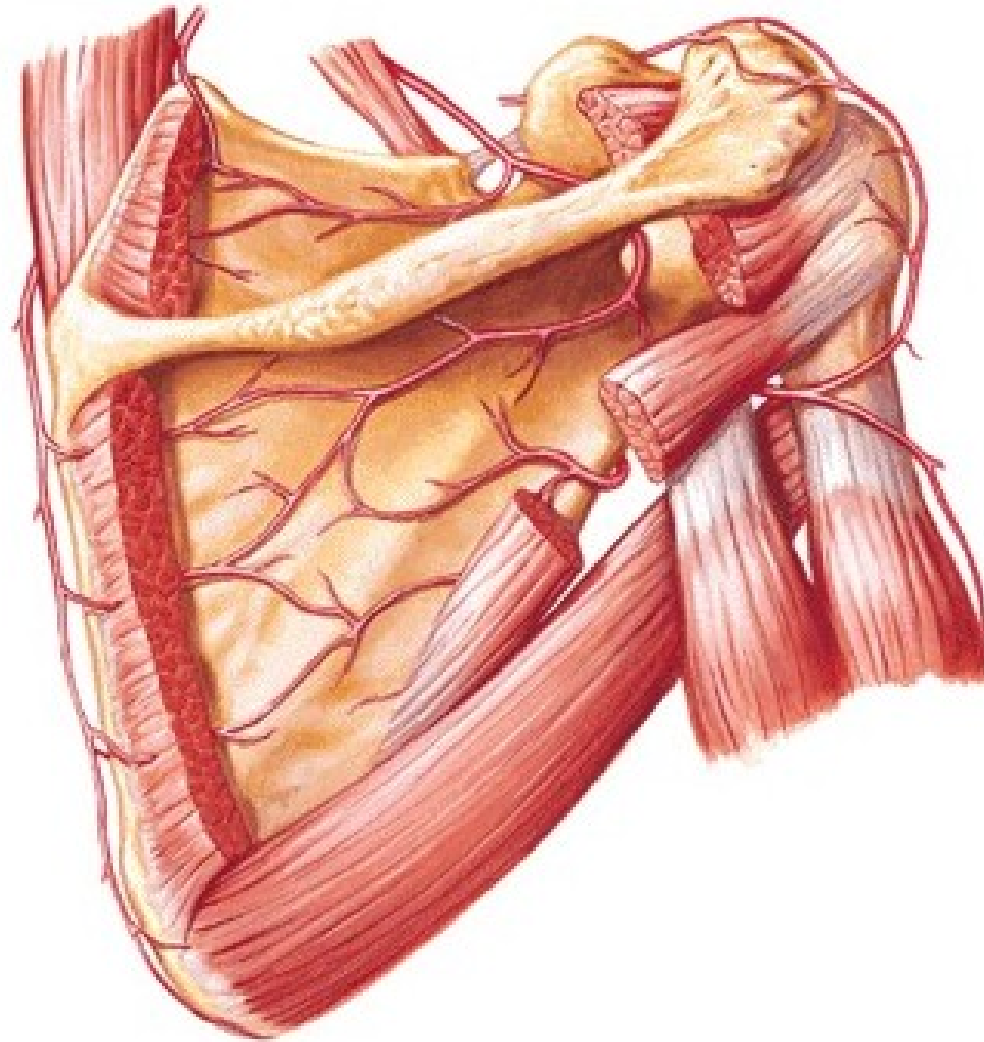
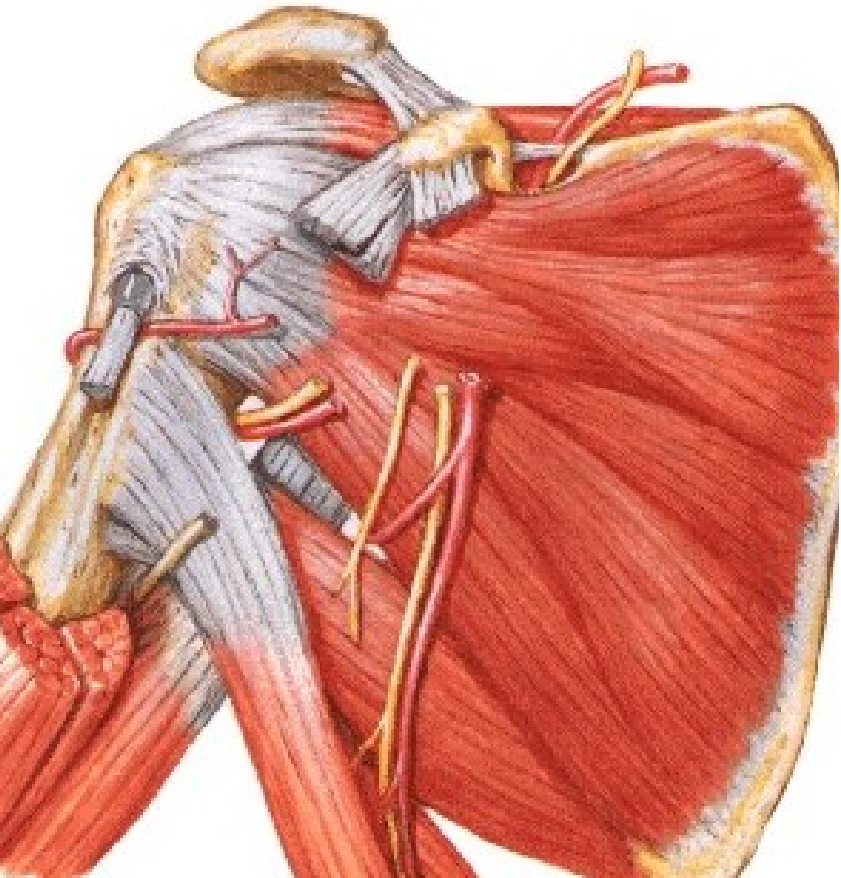


N. suprascapularis
N. axillaris

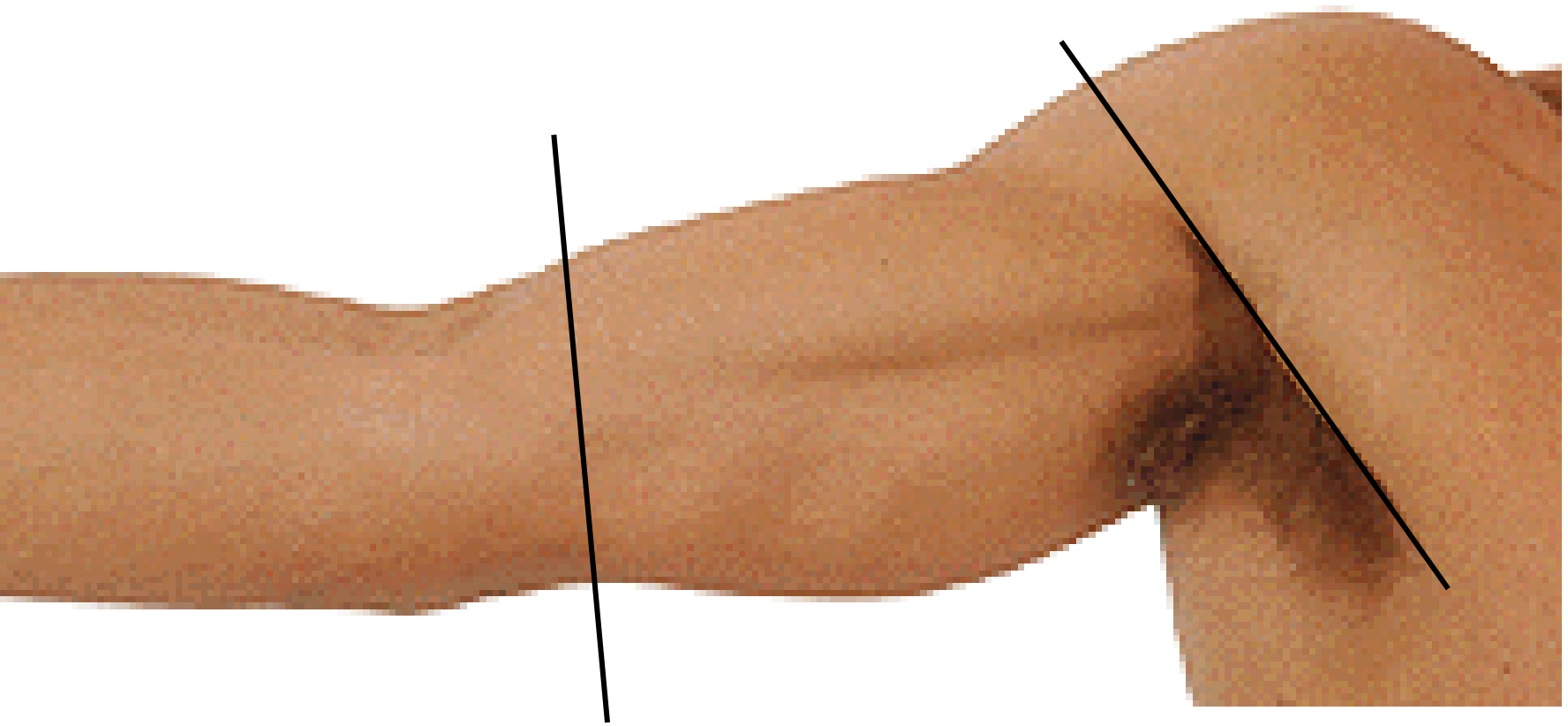


ARTERIAL ANASTOMOSES AROUND THE SCAPULA

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



Regio brachii anterior



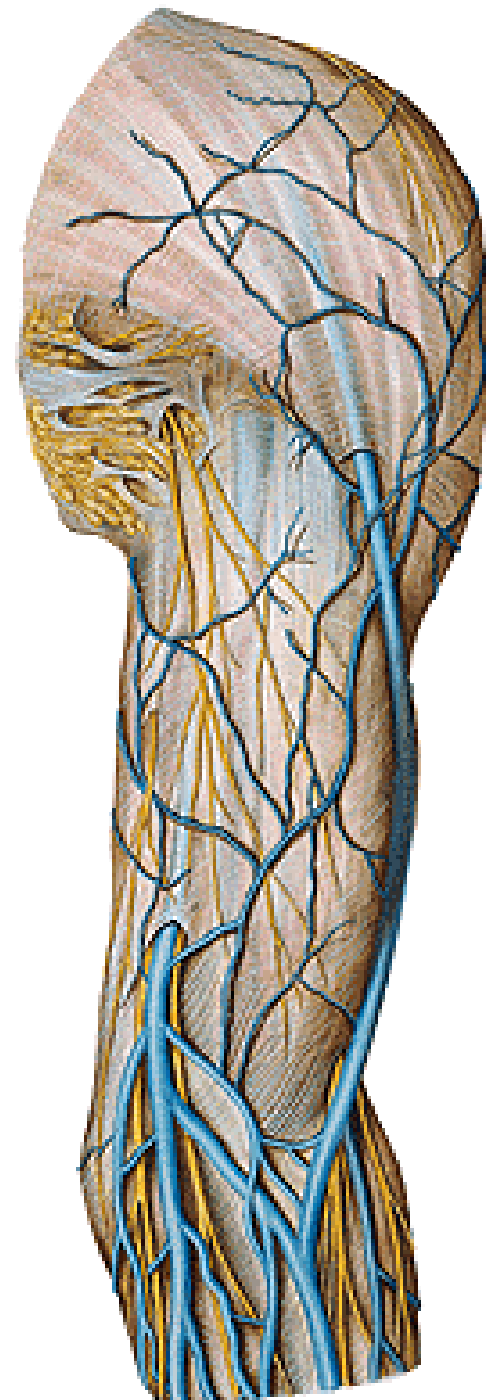
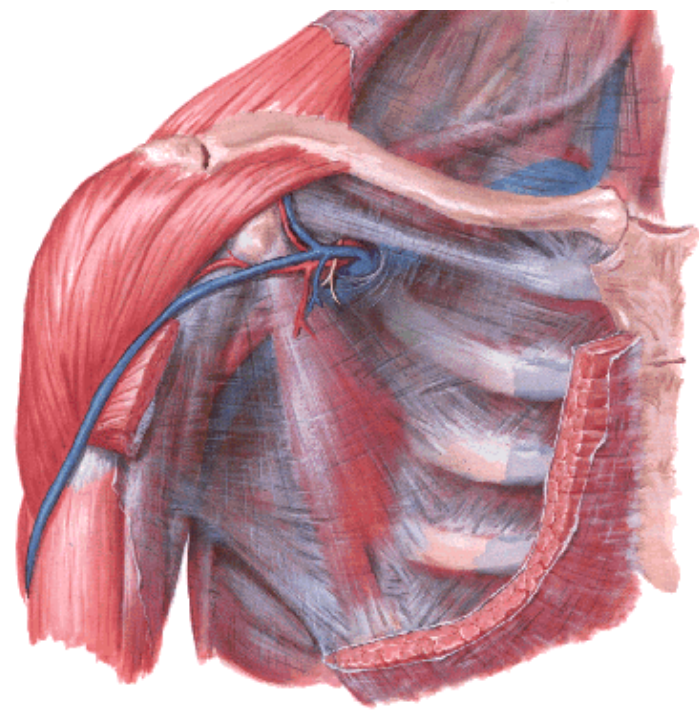
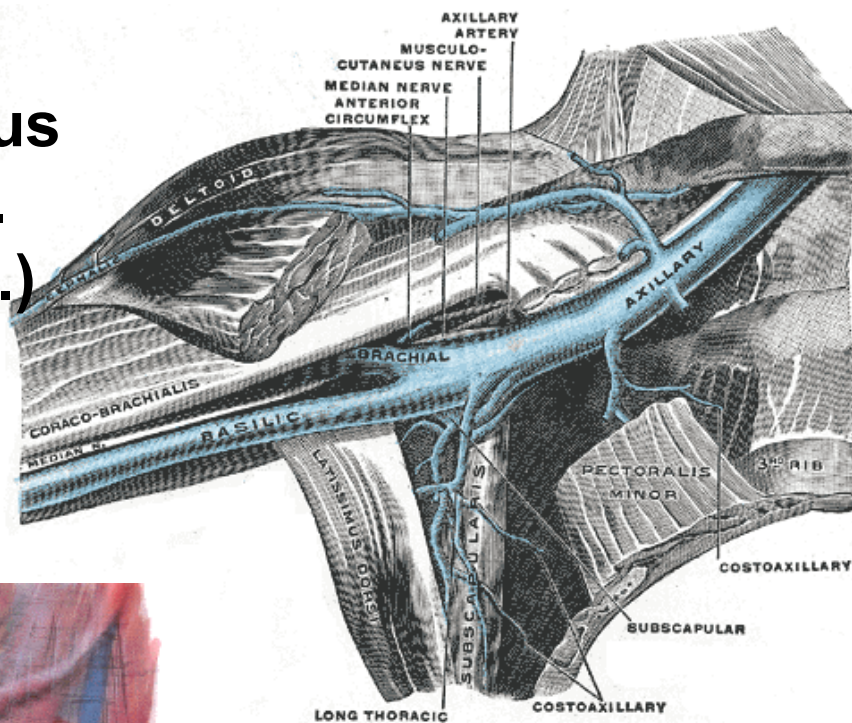
N. cut. brachii lat. inf.

N. cut. brachii med.

V. cephalica

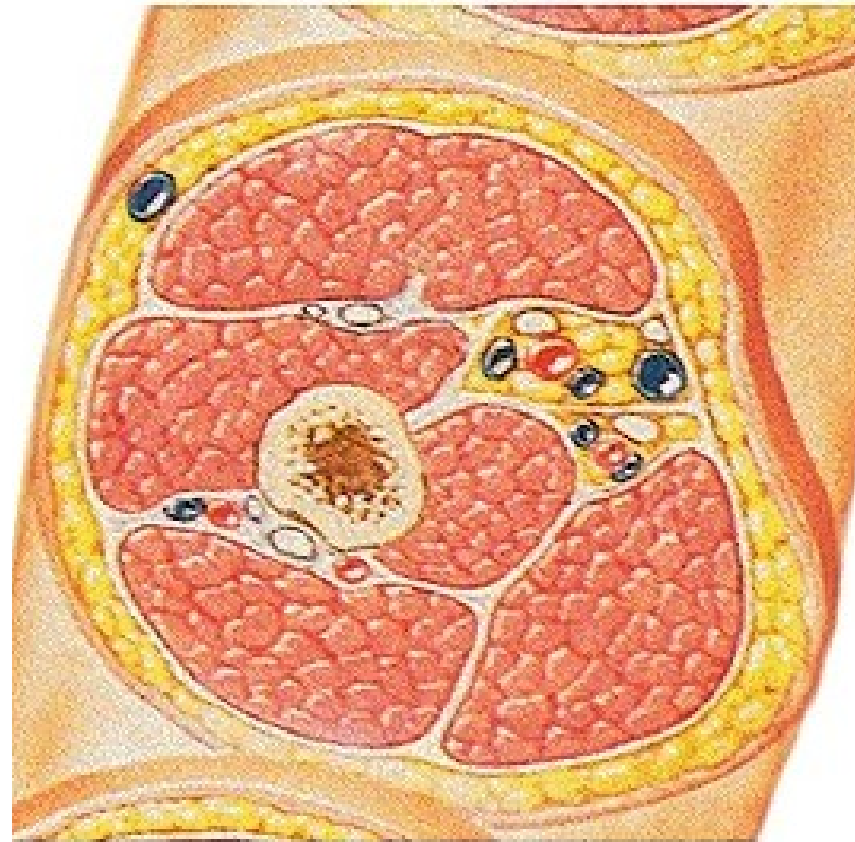
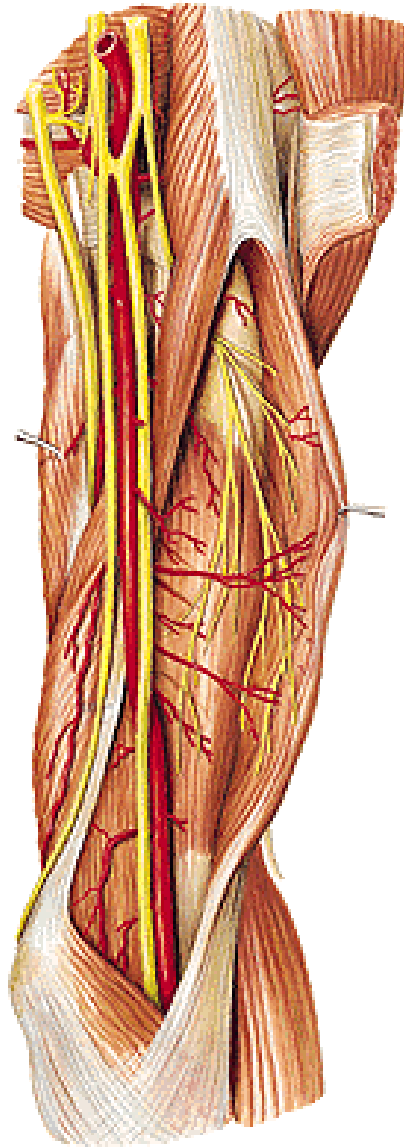
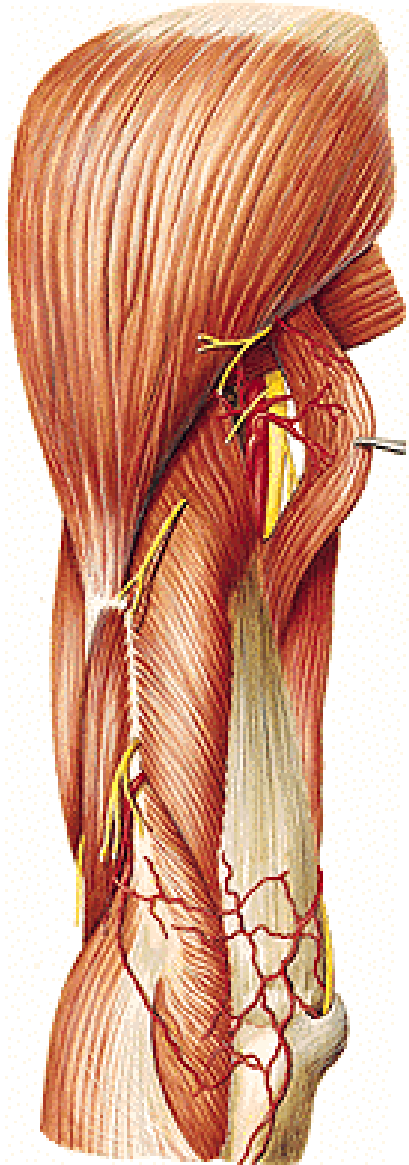
V basilica – hiatus

basilicus (n. cut. antebrachii med.)



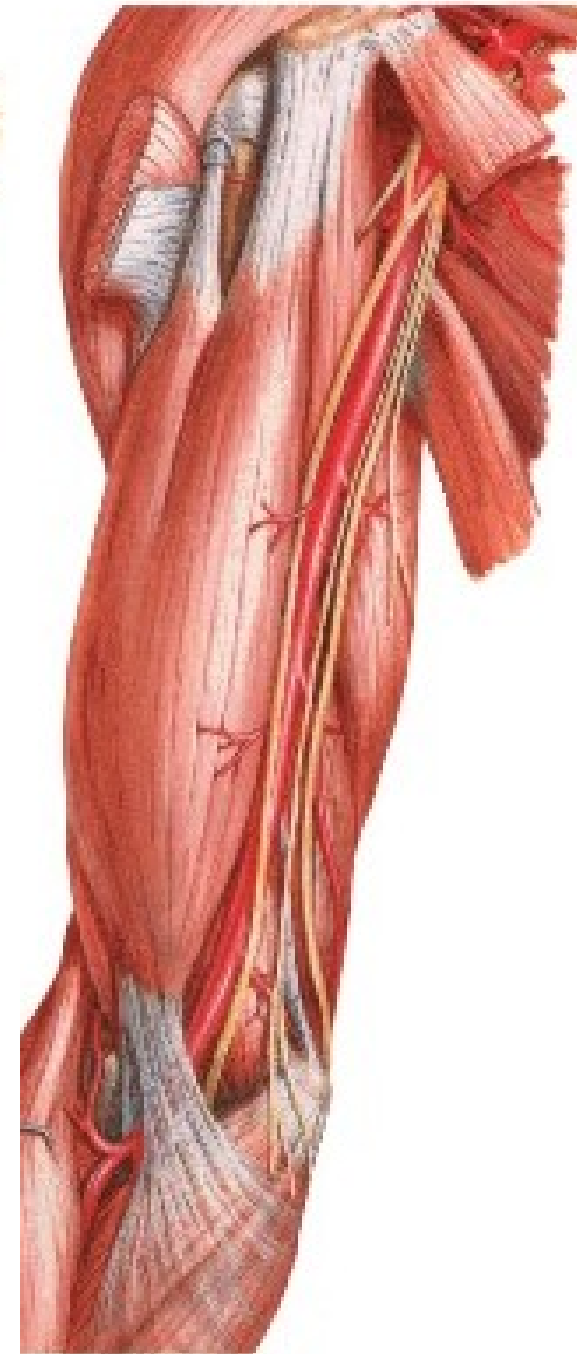
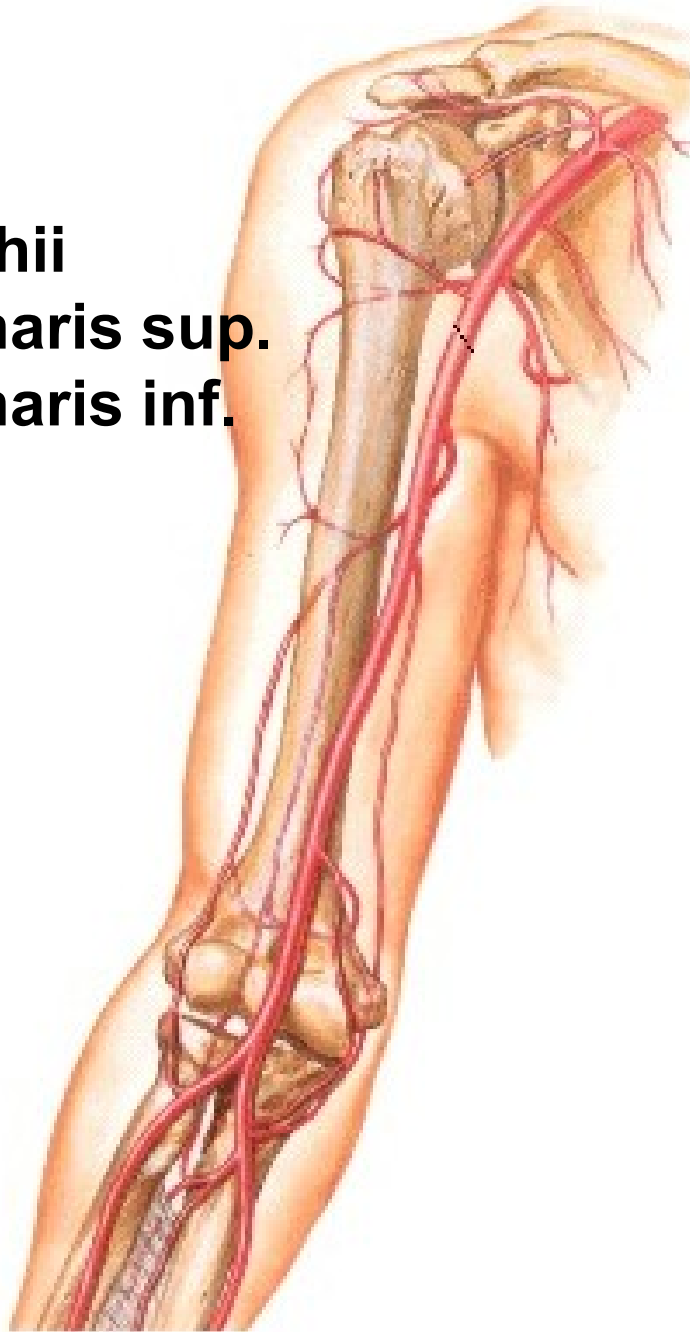
Septum intermusculare mediale et laterale

Sulcus bicipitalis medialis



A. BRACHIALIS

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

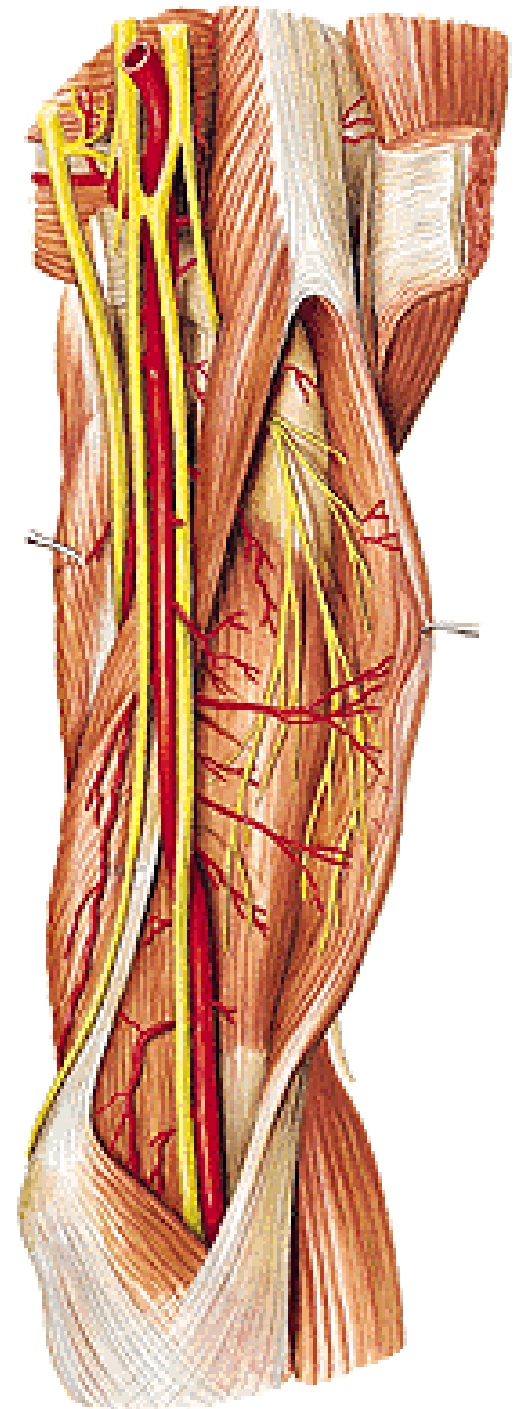


A. collateralis ulnaris sup.

A. collateralis ulnaris inf.

N. medianus

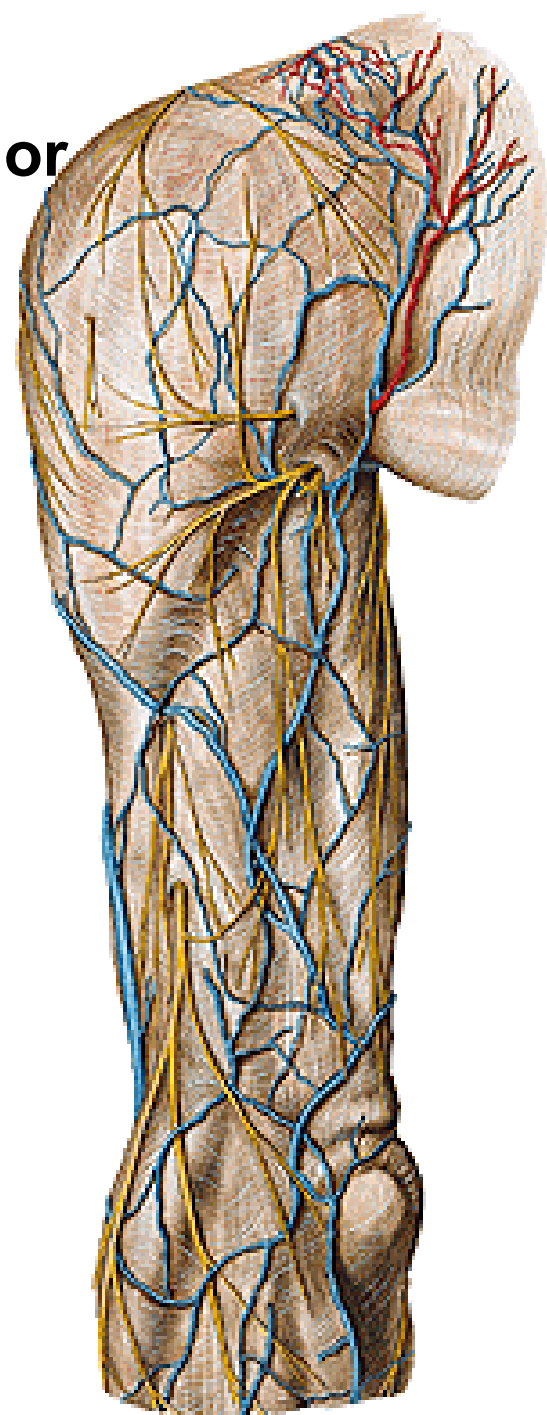
N. ulnaris



Regio brachii posterior



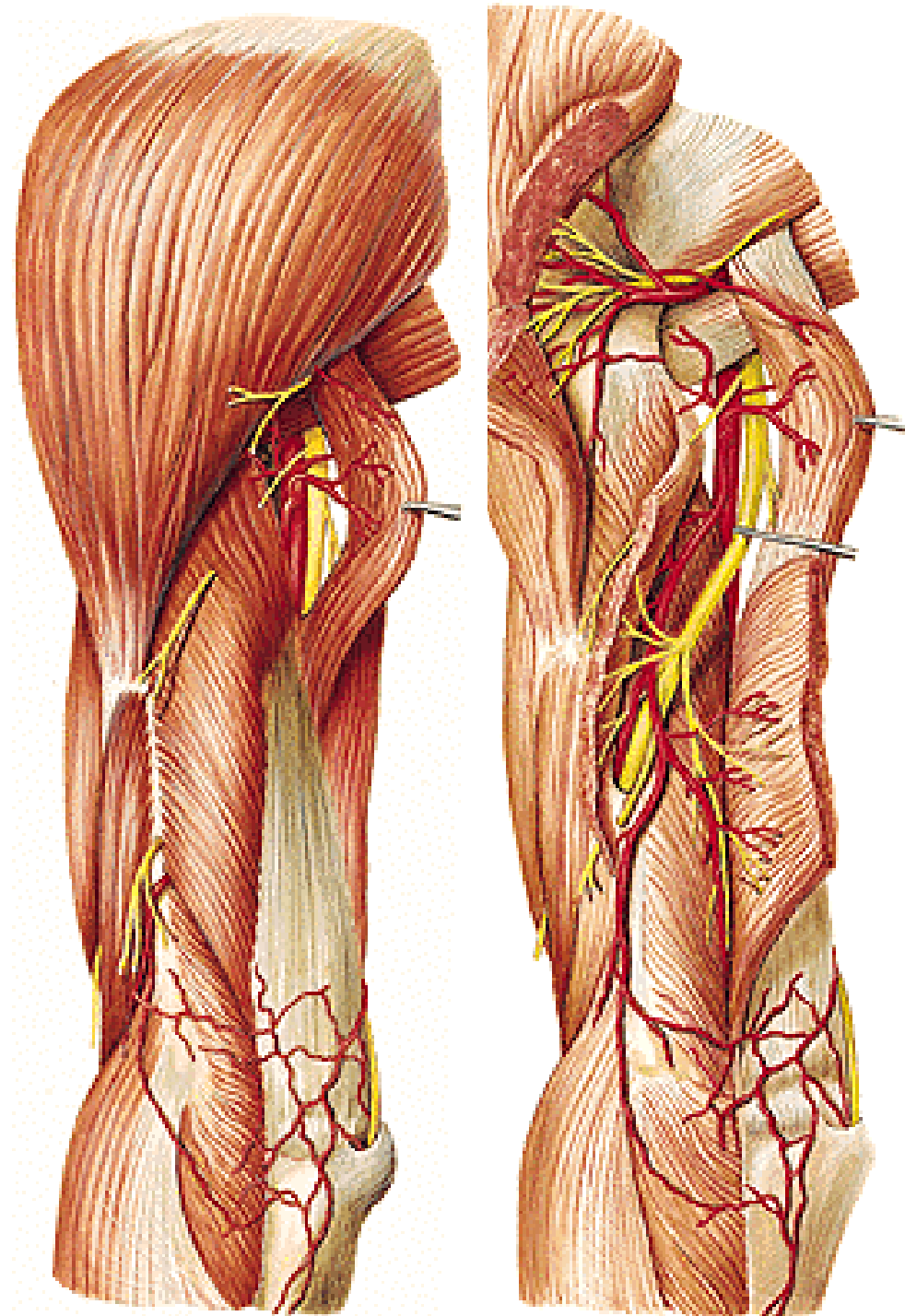
N. cutaneus brachii lateralis inferior
N. cutaneus brachii posterior
N. cutaneus antebrachii post.
(n. radialis)



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

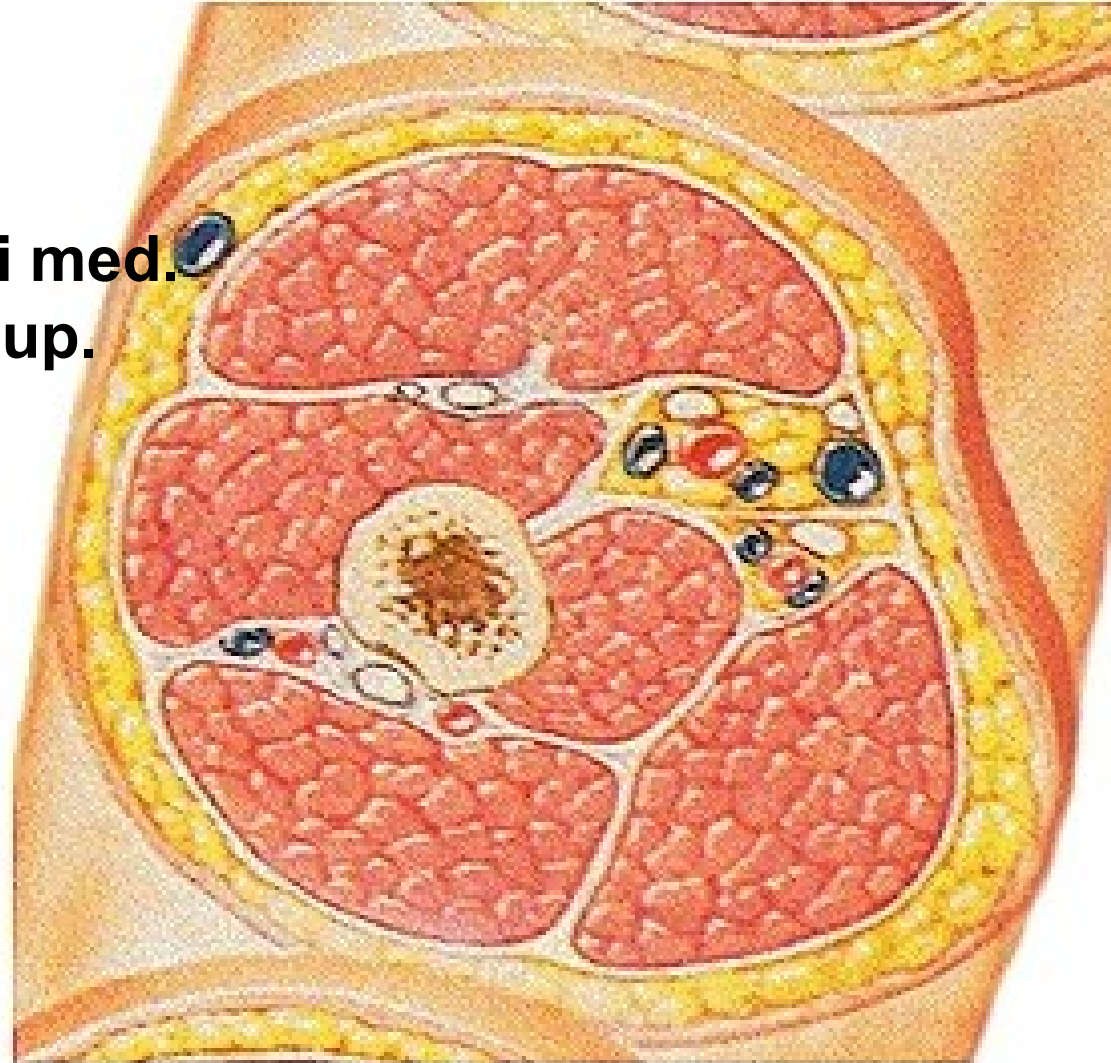
N. musculocutaneus

N. radialis

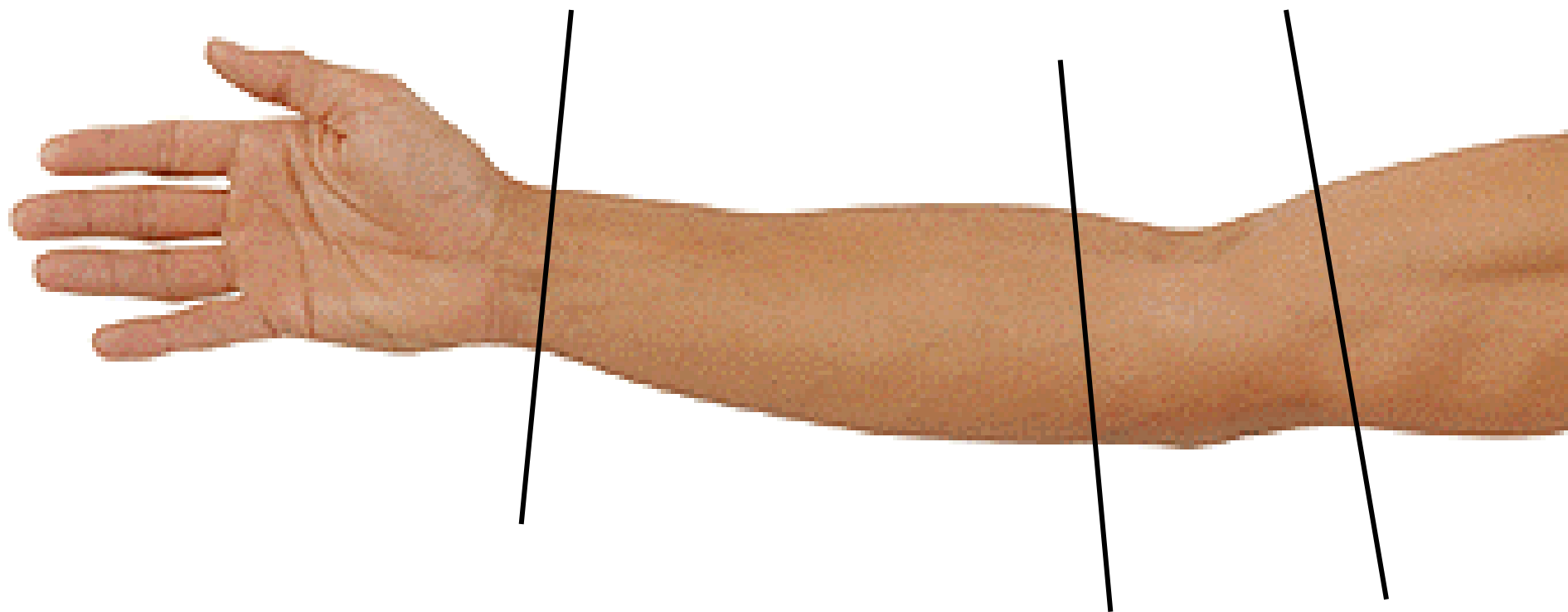
A. coll. radialis

A. coll. media

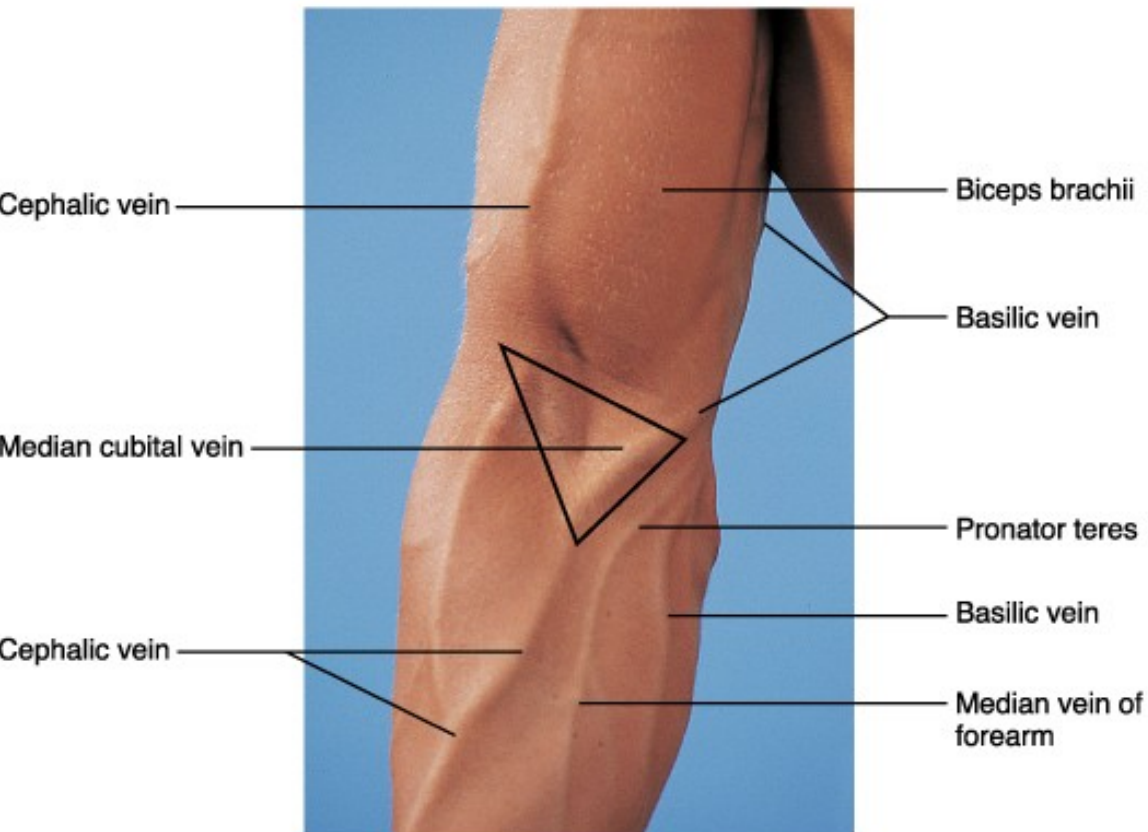
V. profunda brachii



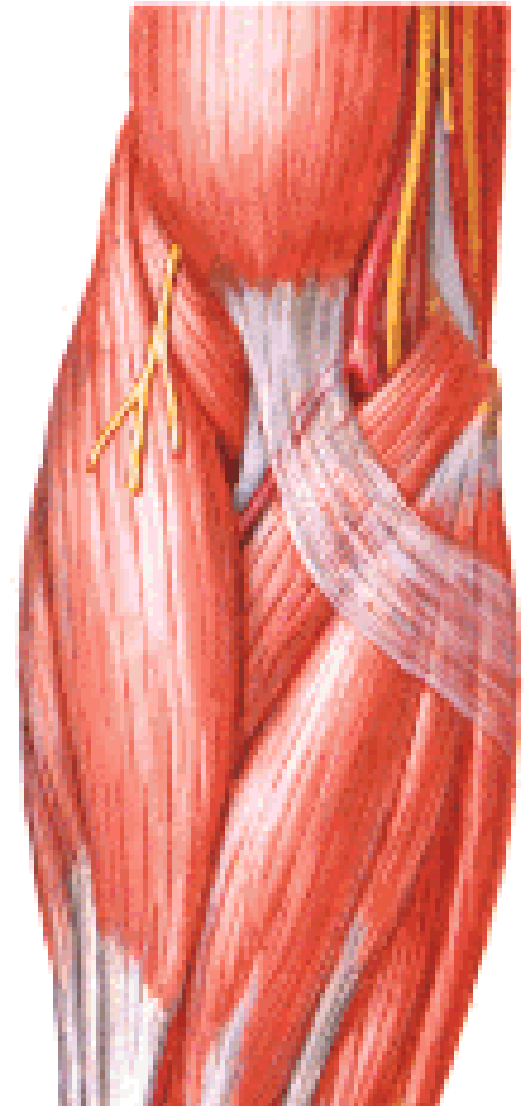
Regio cubiti et antebrachii anterior



Fossa cubitalis

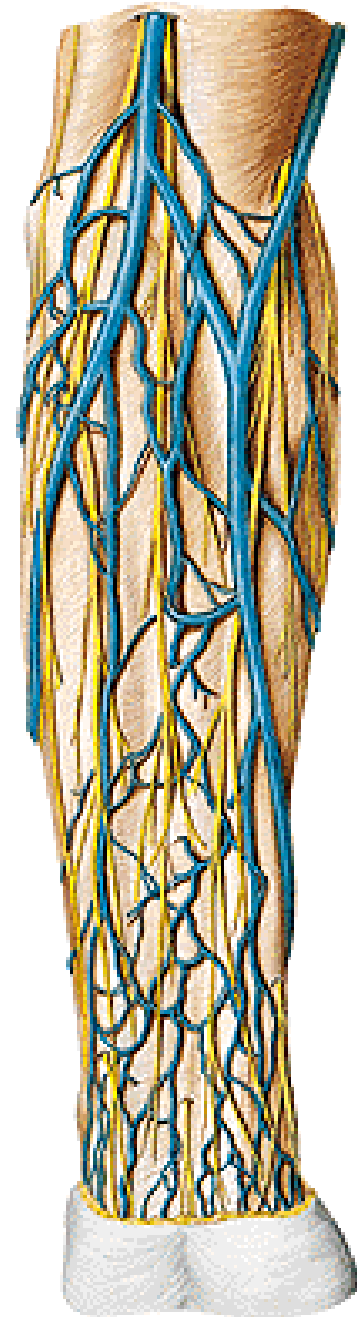


Copyright © 2001 Benjamin Cummings, an imprint of Addison Wesley Longman, Inc.



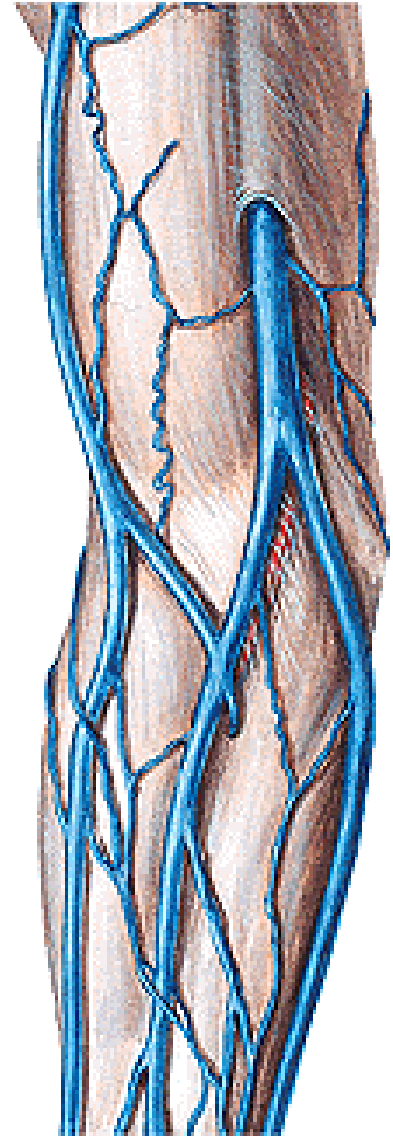
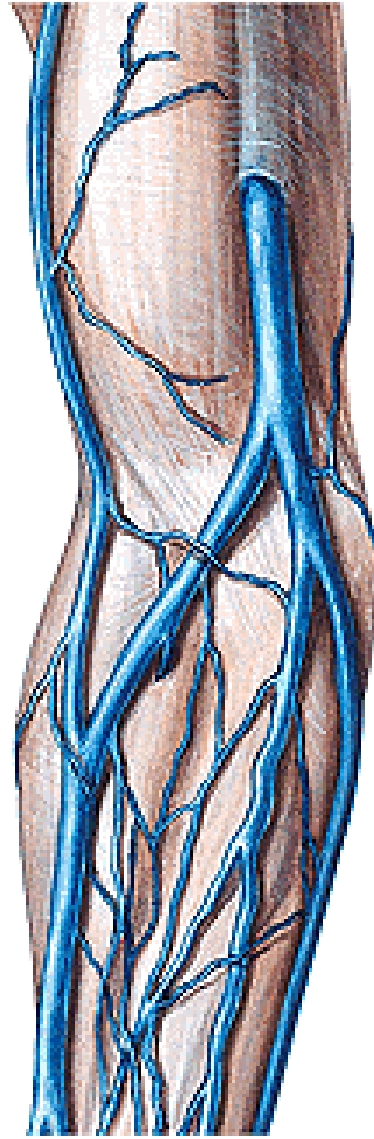
N. cutaneus brachii med.
N. cutaneus antebrachii med.
- r. anterior
- r. posterior
N. cutaneus antebrachii lat.
(n. musculocutaneus)

V. cephalica
V. basilica



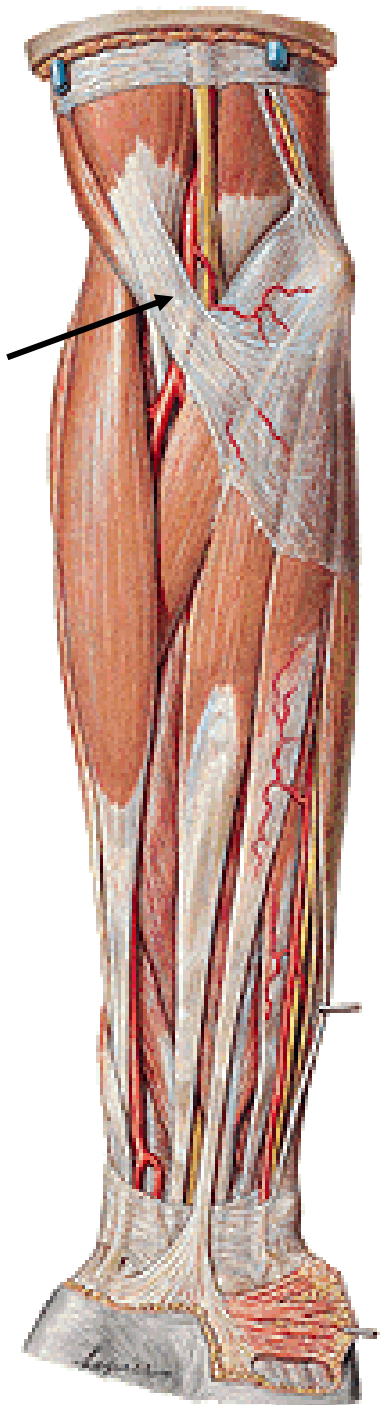
V. mediana cubiti

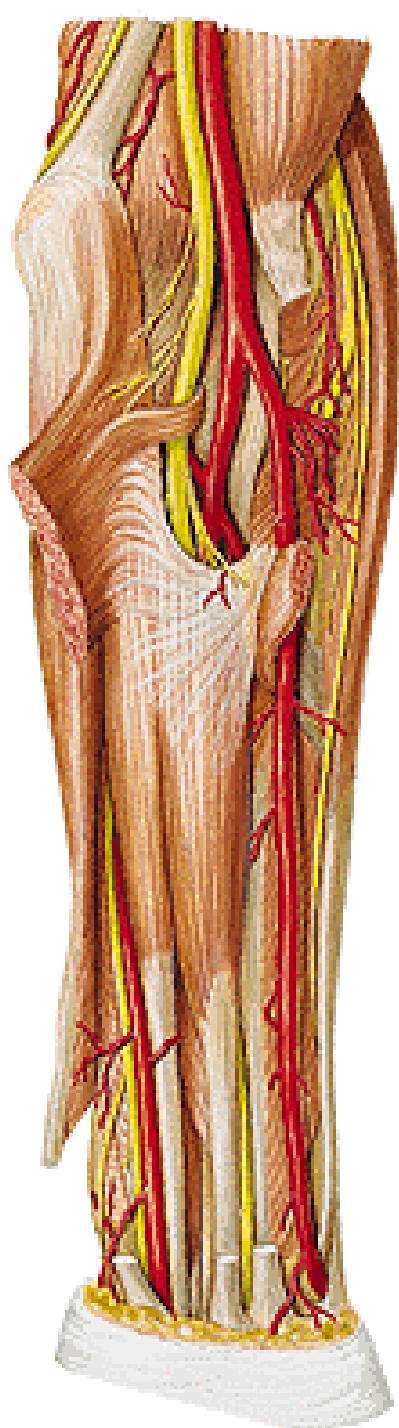
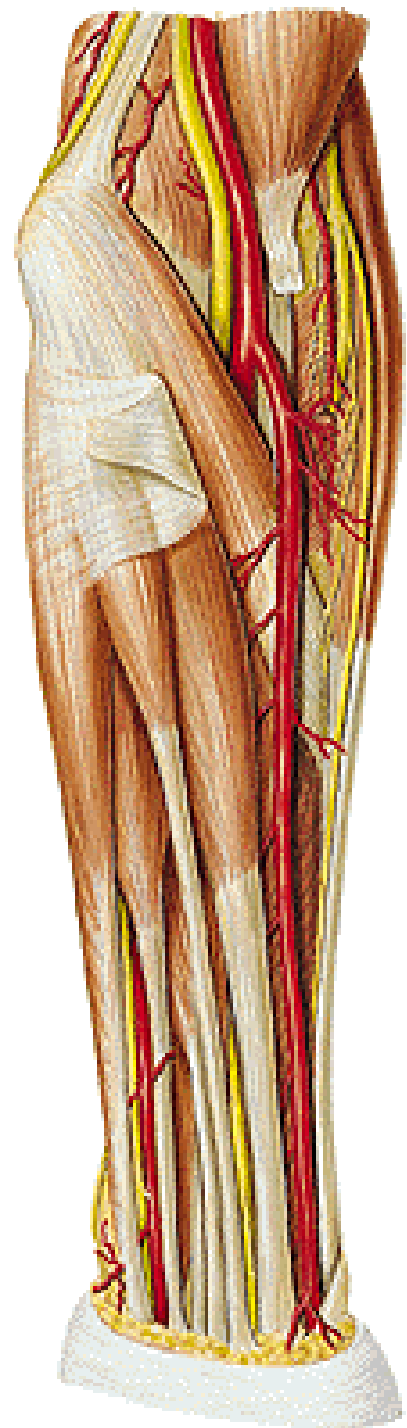
V. mediana antebrachii – v. mediana cephalica et basilica



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

**aponeurosis m. bicipitis
brachii**





A. radialis

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

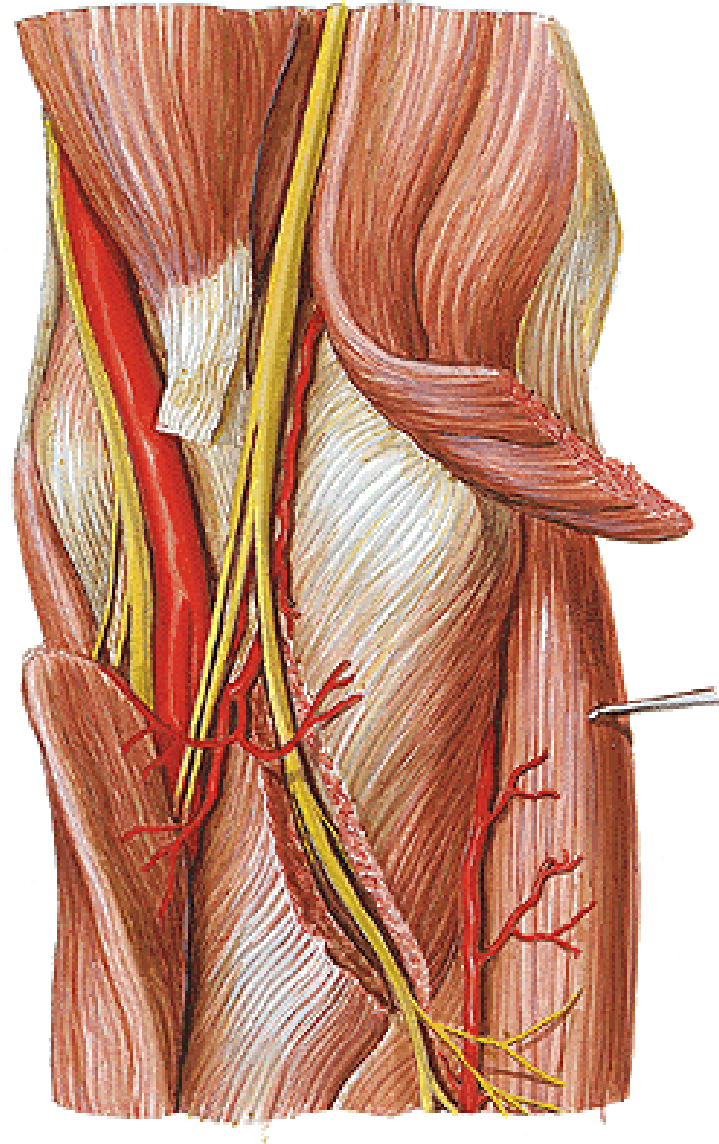
R. spf. n. radialis

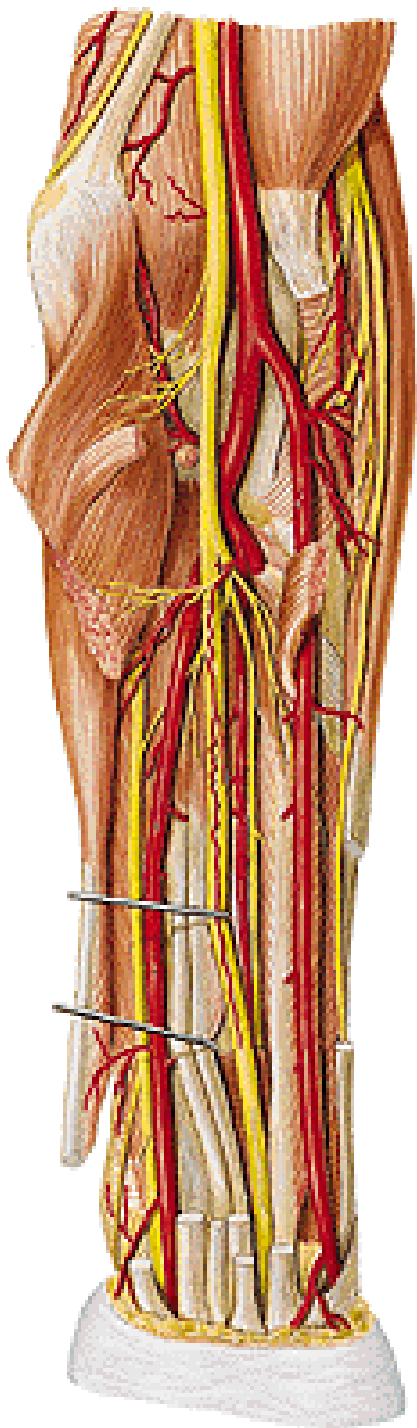
N. medianus

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**

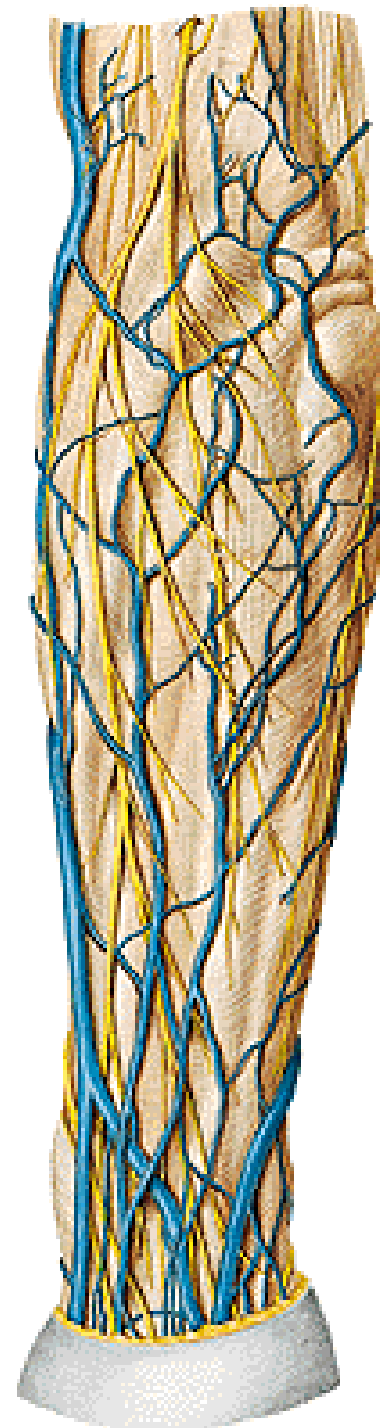
**N. cutaneus antebrachii post.
(n. radialis)**

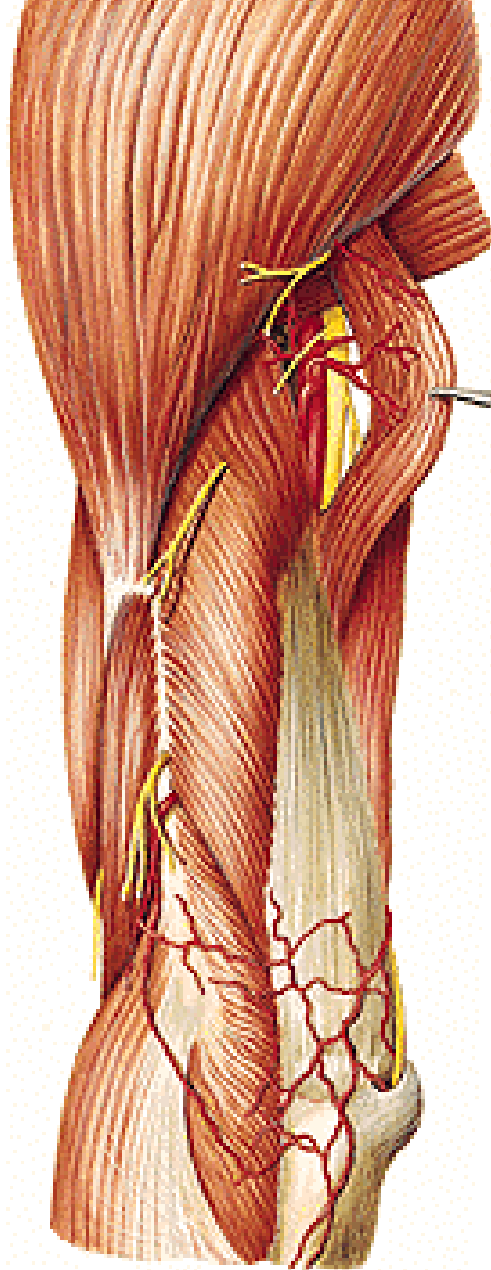
R. superficialis n. radialis

R. dorsalis n. ulnaris

V. cephalica

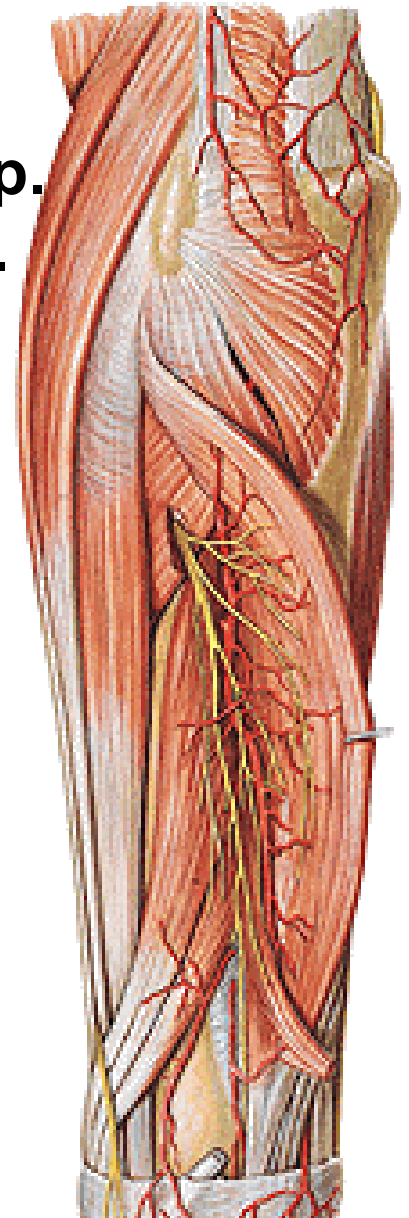
V. basilica





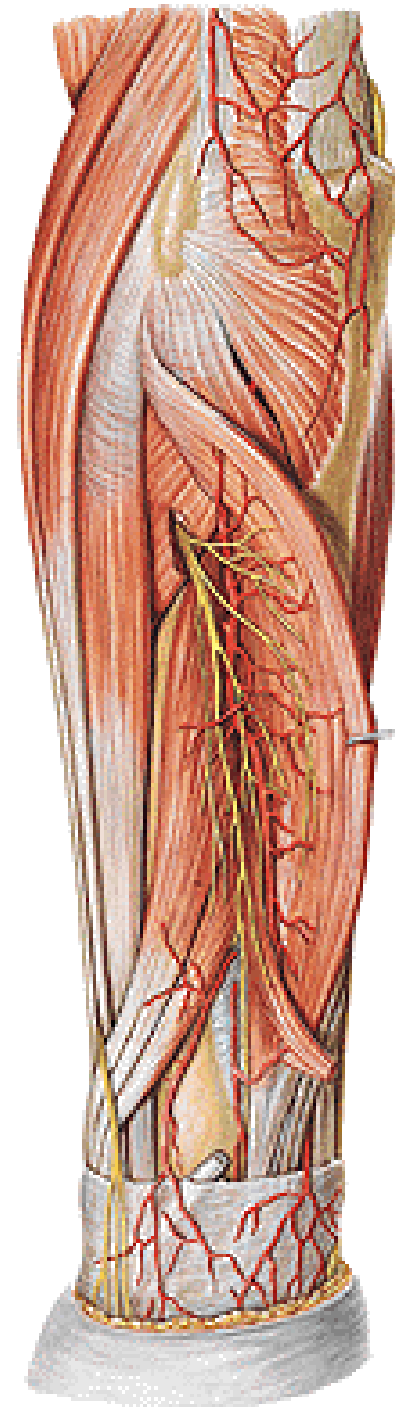
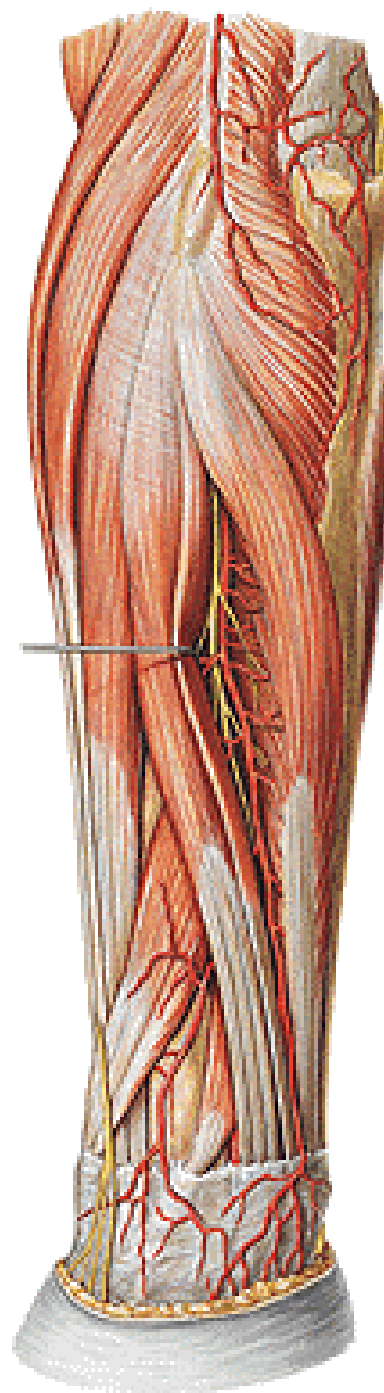
Rete articulare cubiti

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



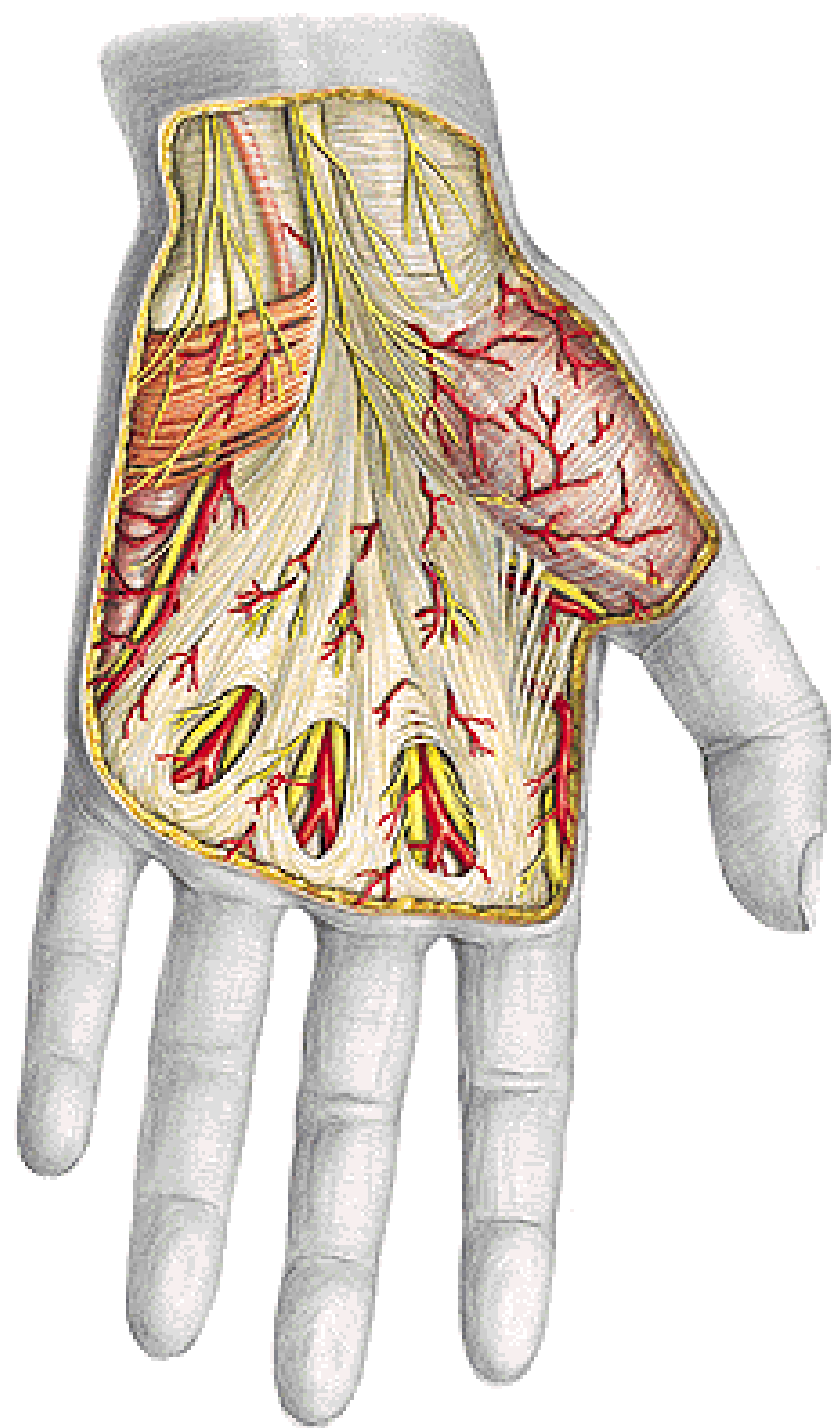
R. prof. n. radialis
- n. interosseus post.

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

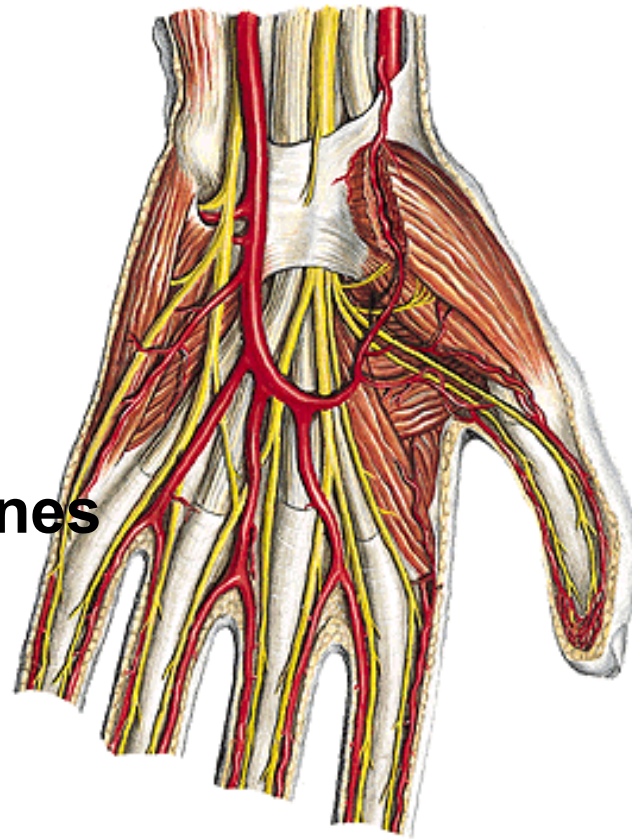


Regio carpi palmaris et palma manus

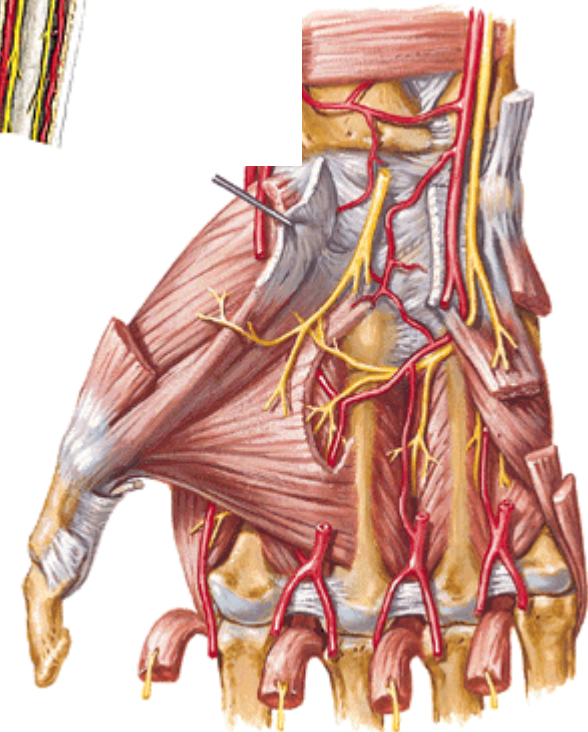
N. ulnaris – r. palmaris
N. medianus – r. palmaris
M. palmaris brevis
Aponeurosis palmaris



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



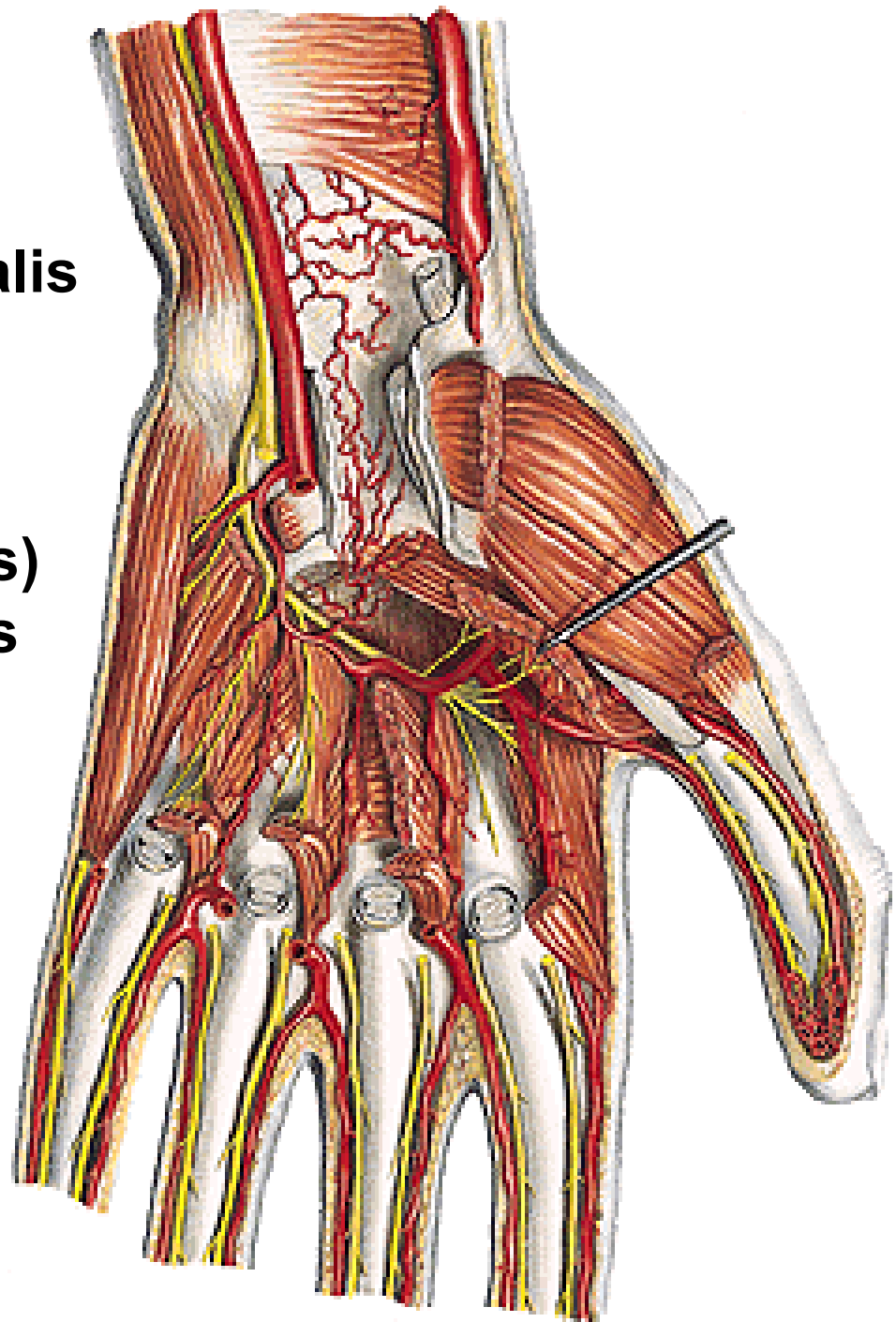
Thenarus:
M. abductor pollicis brevis
M. flexor pollicis brevis
M. opponens pollicis
M. adductor pollicis
Hypothenarus:
M. abductor digiti minimi
M. flexor digiti minimi brevis
M. opponens digiti minimi



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



Regio carpi dorsalis et dorsum manus

Rete venosum dorsale manus

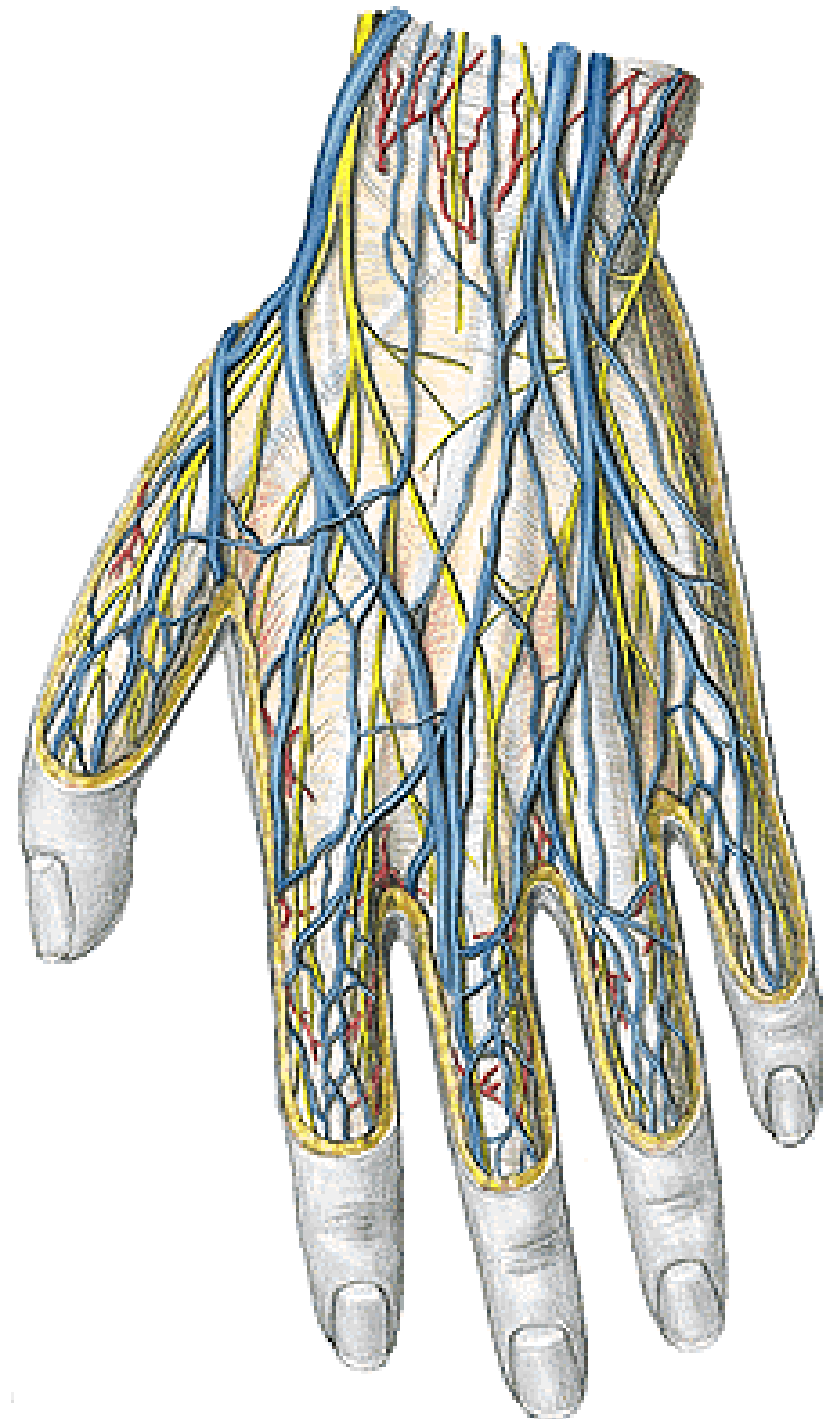
R. spf. n. radialis

- nn. digitales dorsales

R. dorsalis n. ulnaris

- nn. digitales dorsales

Retinaculum extensorum

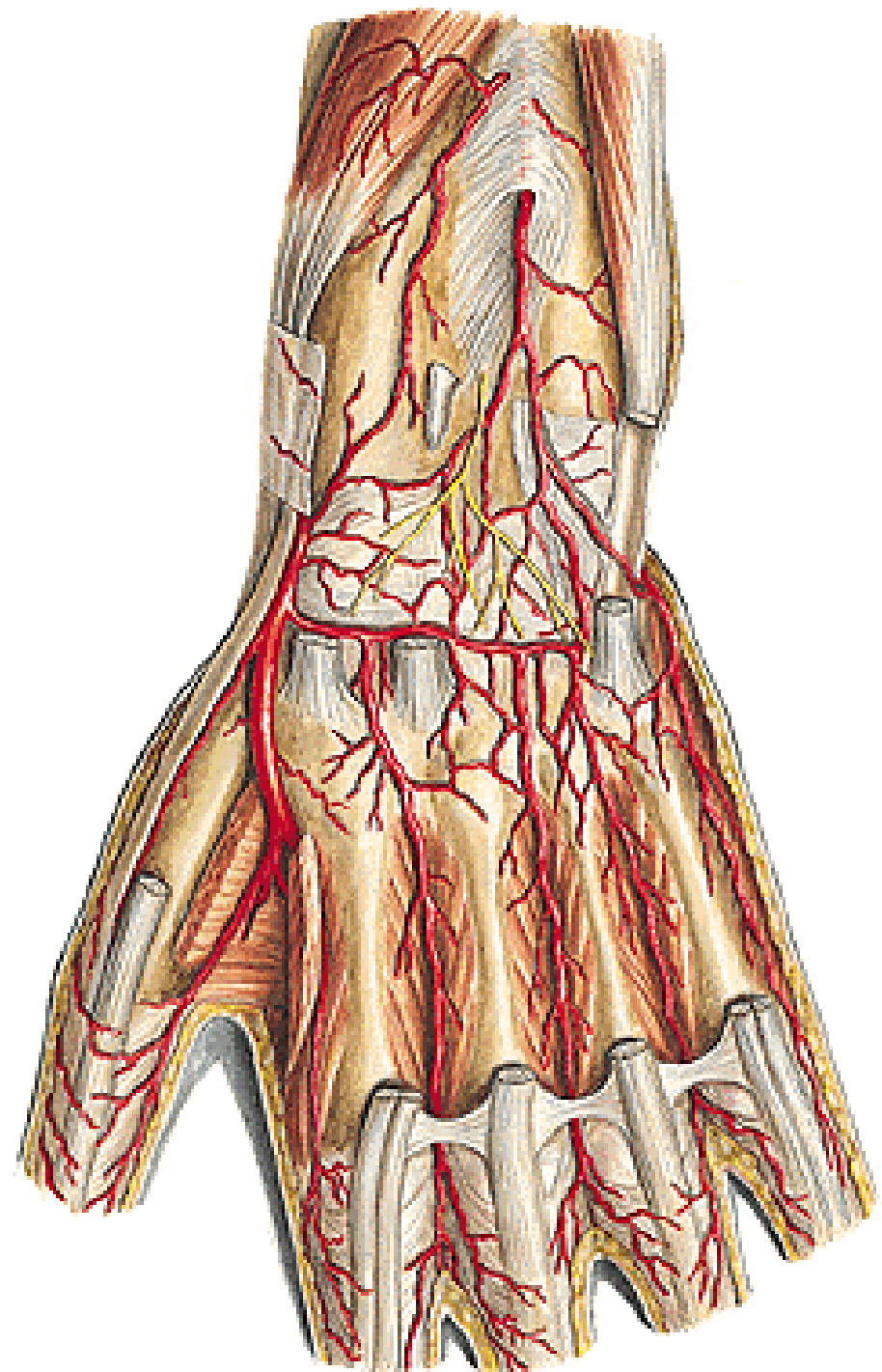


Rete carpi dorsale

Aa. metacarpeae dorsales

- aa. digitales dorsales

A. metacarpea dorsalis prima



CROSS SECTION THROUGH THE ARM

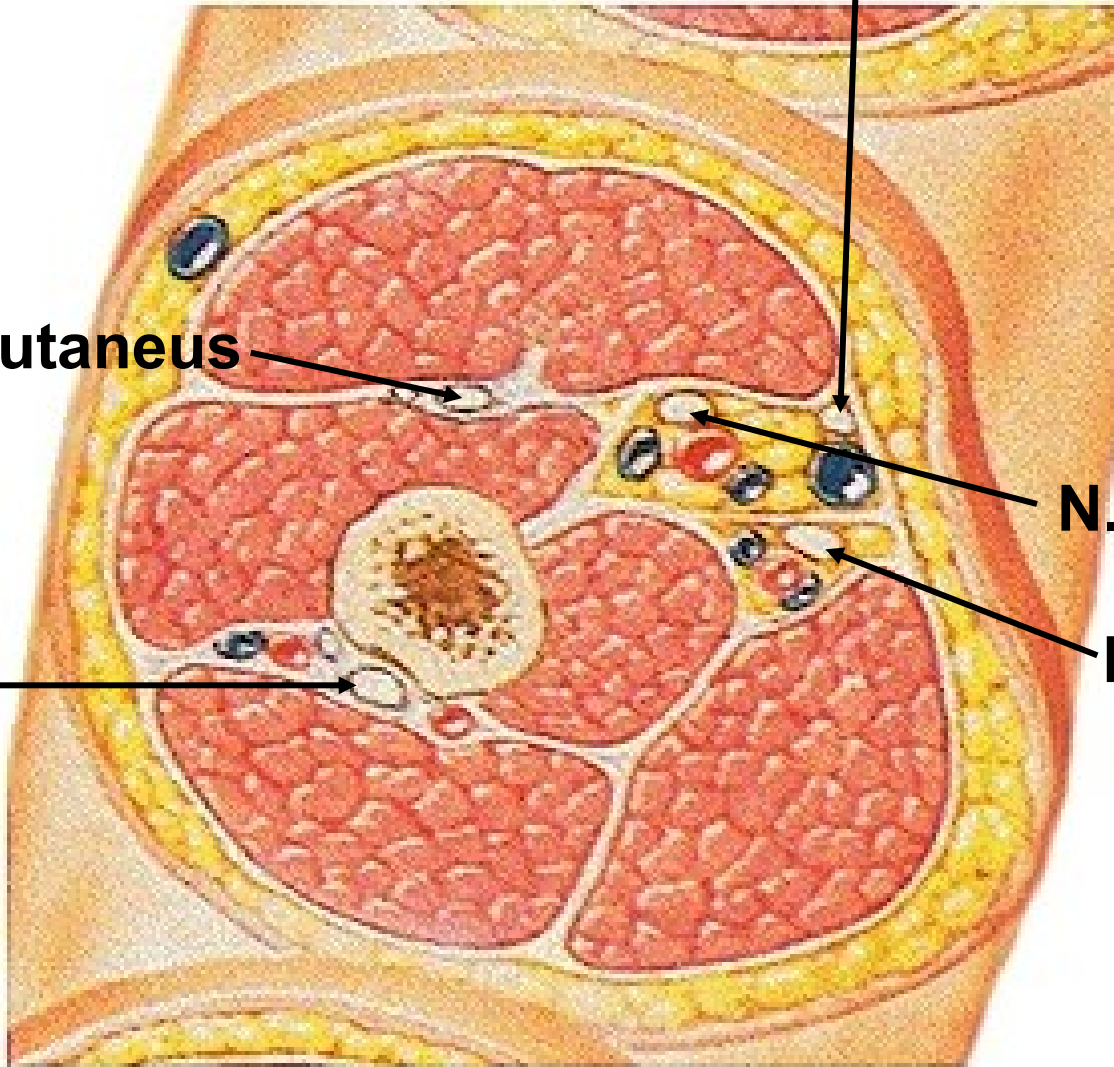
N. cutaneus antebrachii med.

N. musculocutaneus

N. medianus

N. ulnaris

N. radialis

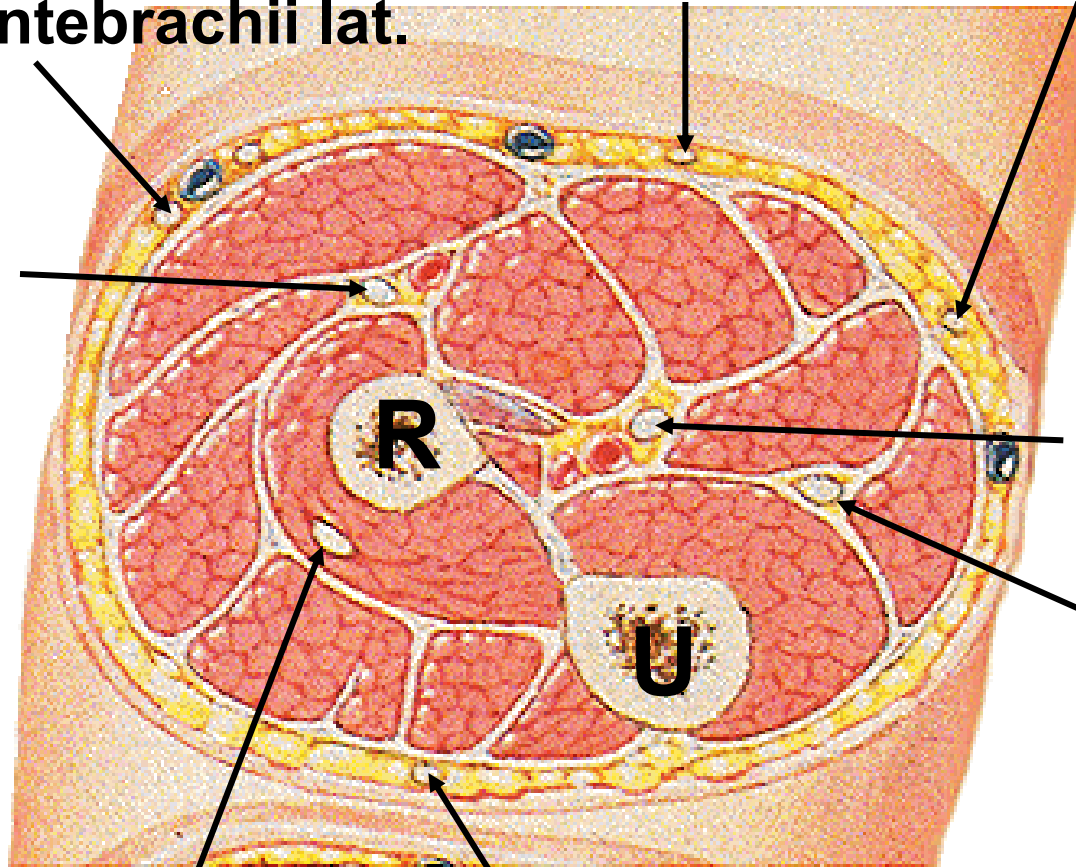


FOREARM – PROXIMAL CROSS SECTION

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.

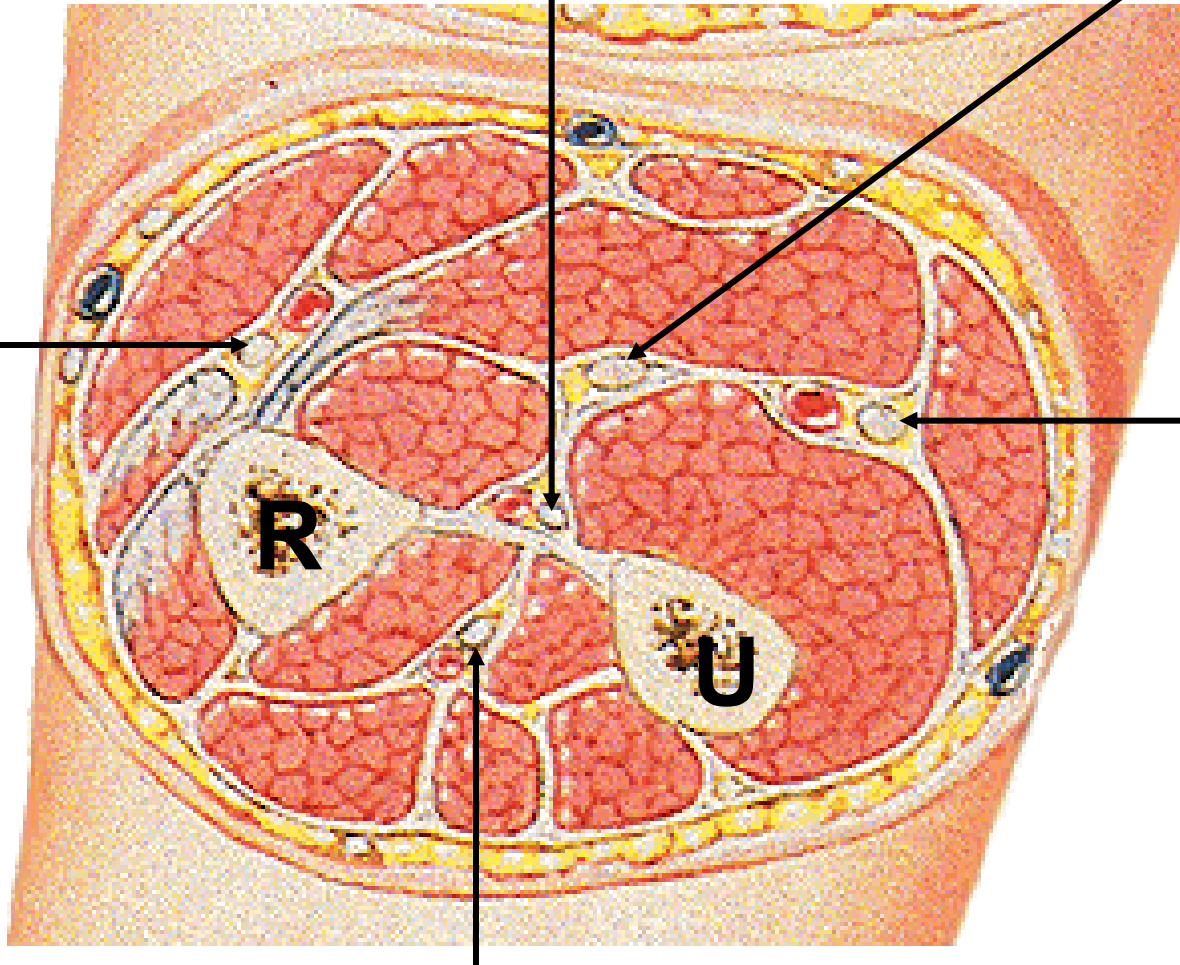
FOREARM – MIDDLE CROSS SECTION

N. interosseus anterior

N. medianus

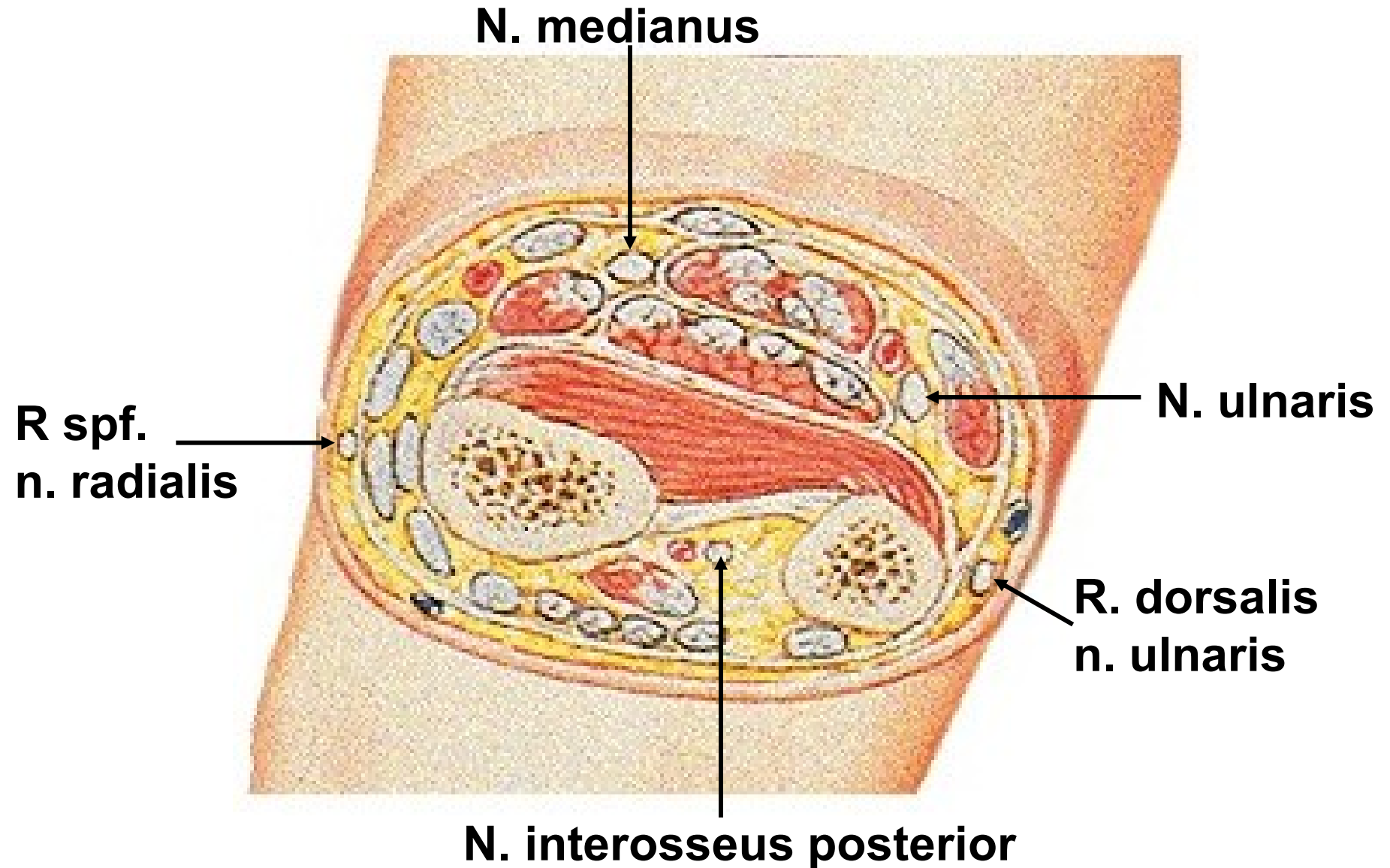
**R. spf.
n. radialis**

N. ulnaris



N. interosseus posterior

FOREARM – DISTAL CROSS SECTION



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