

OVERVIEW OF UPPER LIMB

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MUSCLES

- 1) sport, fitness, injuries, tendinitis
- 2) Origin + insertion – function
- 3) Nerve usually common for one group of muscles
- 4) Orientation on the body – vessels and nerves
- 5) Osteofascial spaces – compartments – risk of compression

How to study?:

- 1) atlas, dissection room – group, origin, insertion, shape
- 2) crosssections – schemas, real, CT, MR
- 3) tables – Origin, insertion, innervation, function

Shoulder girdle muscles

Movement of all upper limb
Supplementara respiratory muscles

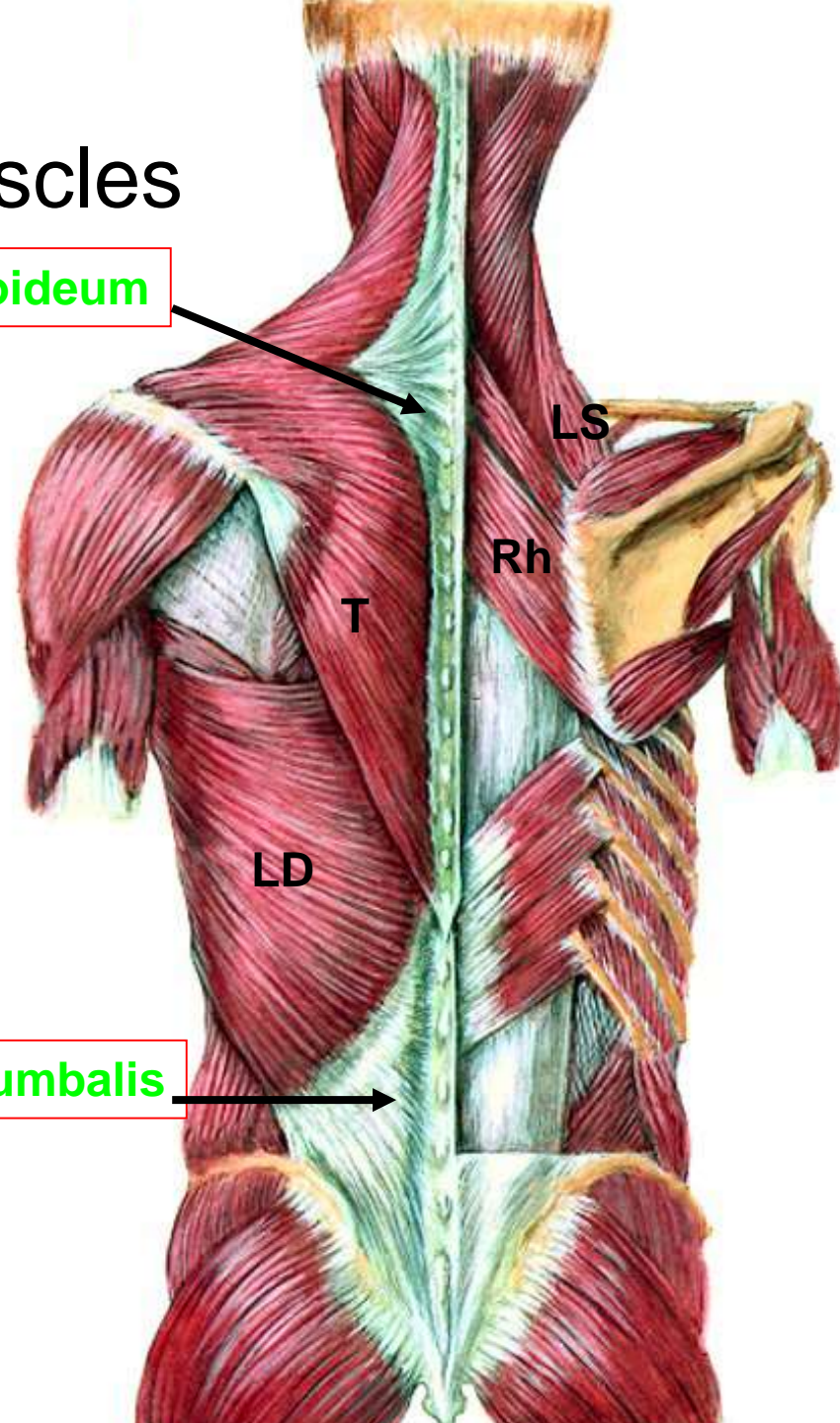
inervation: mostly from supraclavicular part of brachial plexus

- **1) vertebrohumeral** m. trapezius (n. accessorius), latissimus dorsi, mm. rhomboidei, m. levator scapulae
- **2) thoracohumeral** m. pectoralis major, m. pectoralis minor, m. subclavius, m. serratus anterior
- **3) scapular and shoulder** m. deltoideus (n. axillaris), supraspinatus, infraspinatus, teres minor, teres major, m. subscapularis

Vertebrohumeral muscles

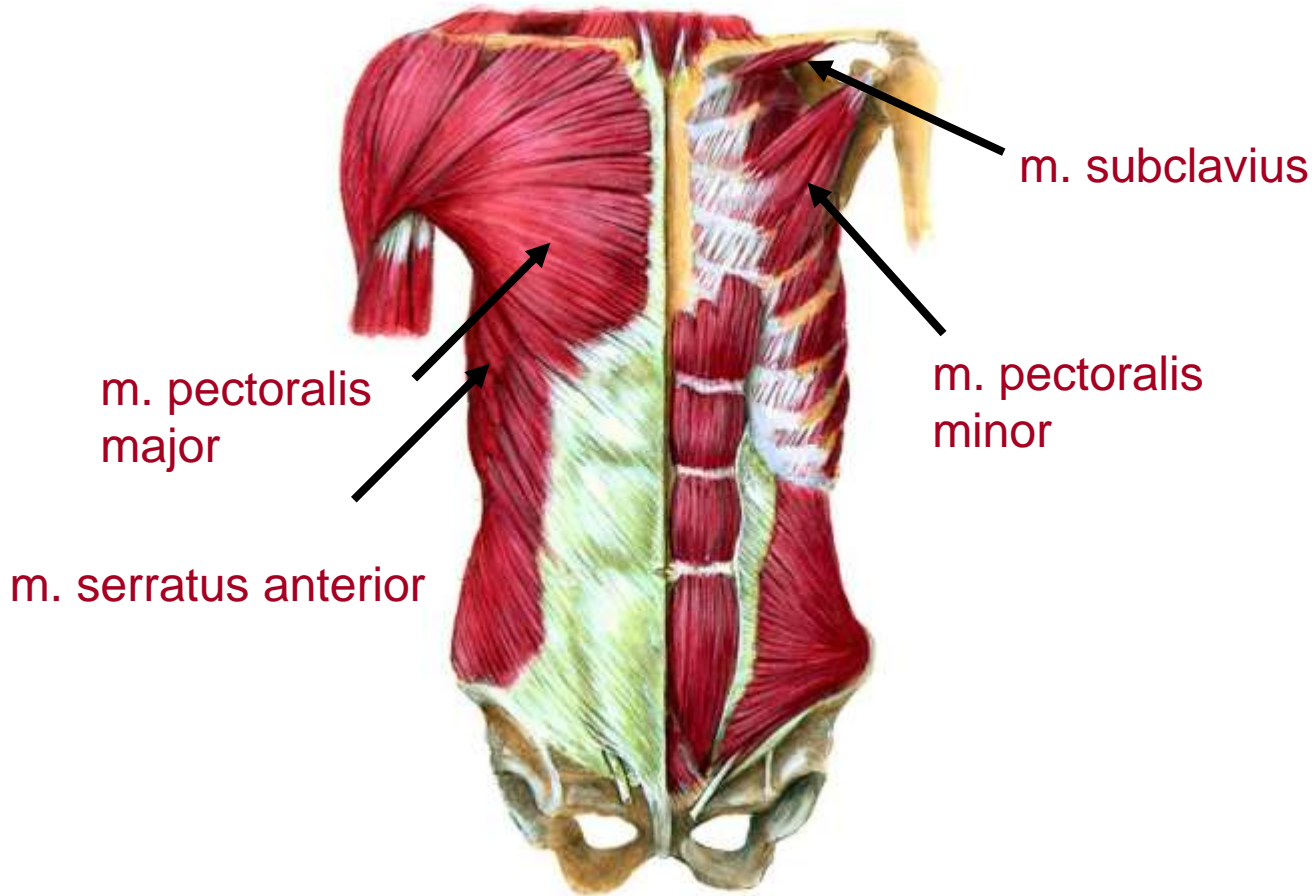
Speculum rhomboideum

- m. trapezius
- m. latissimus dorsi
- mm. rhomboidei
- m. levator scapulae



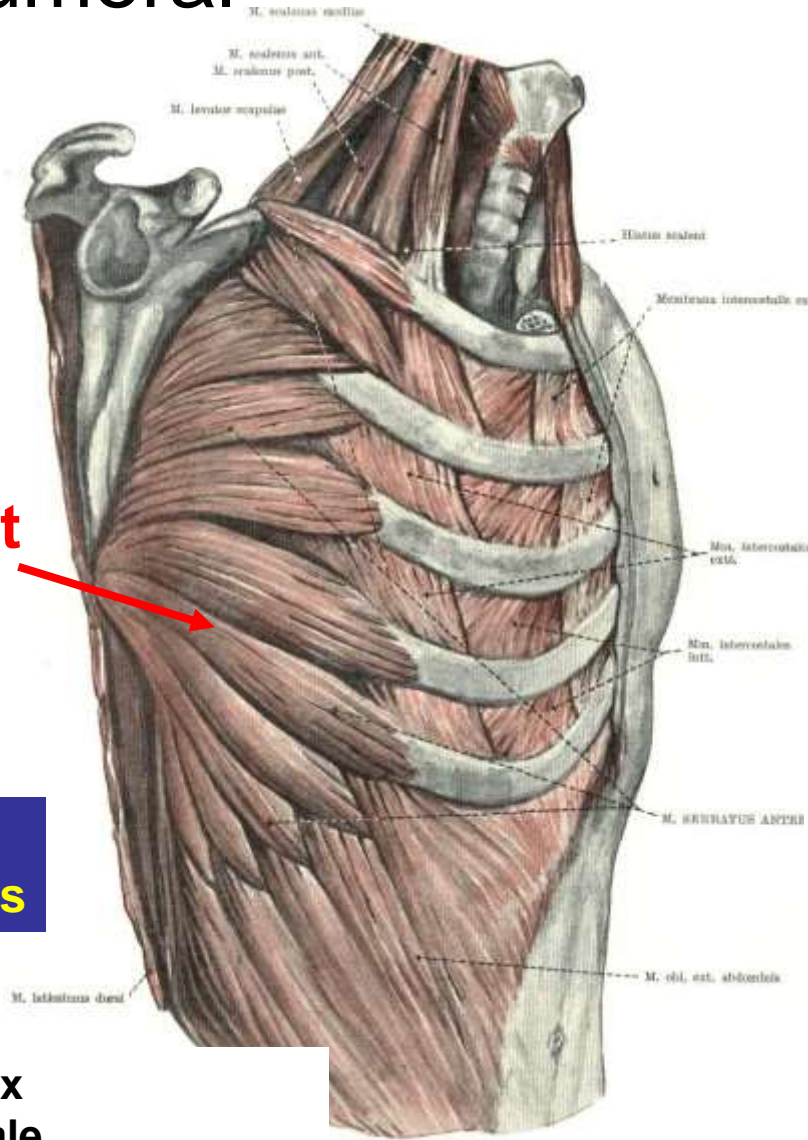
Fascia thoracolumbalis

Thoracohumeral



Thoracohumeral

M.serratus ant
9 teeth



Inervation
N.thoracicus longus



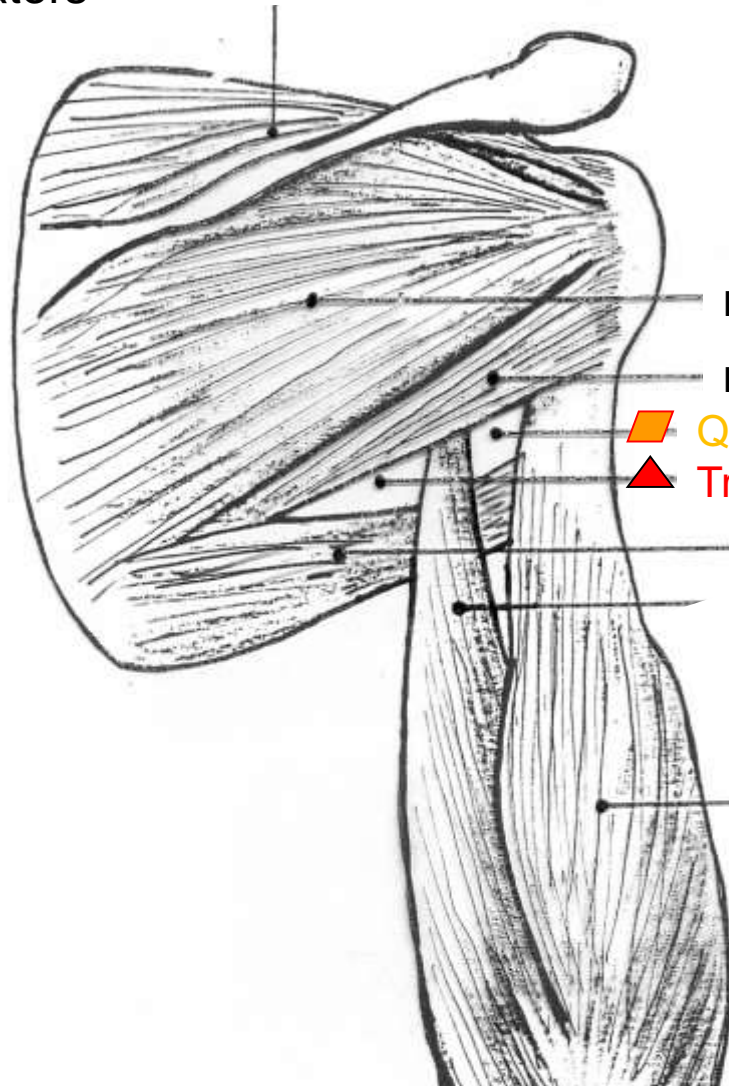
o: ribs
i: medial bodred of scapula

Helds scapula on thorax
Abducts over horizontale
Supplementary inspiration muscle
Medial walll of the axilla

Scapular and shoulder

External rotators

m. supraspinatus



m. infraspinatus

m. teres minor

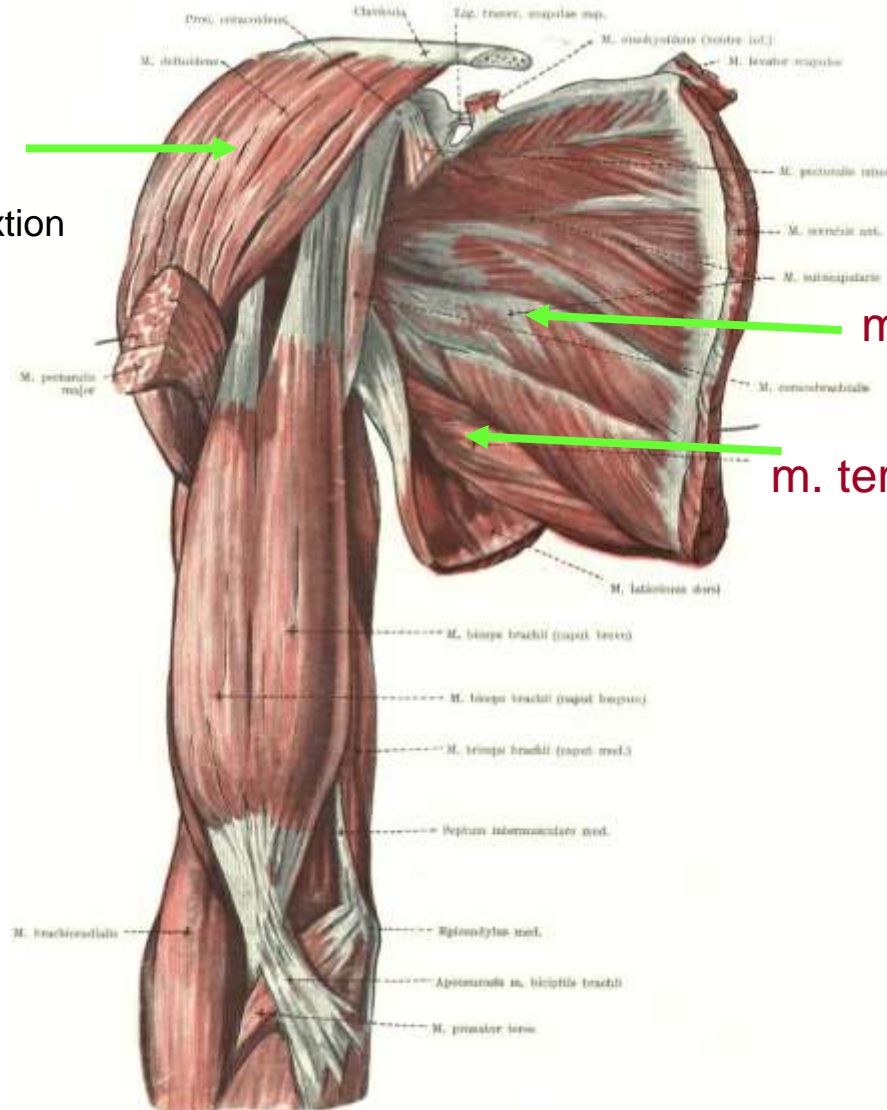
▣ Quadrangular space

▴ Triangular space

m. teres major – internal rotator

Scapular and shoulder

m. deltoideus
Abduction to 90
Ventral and dorsal flexion

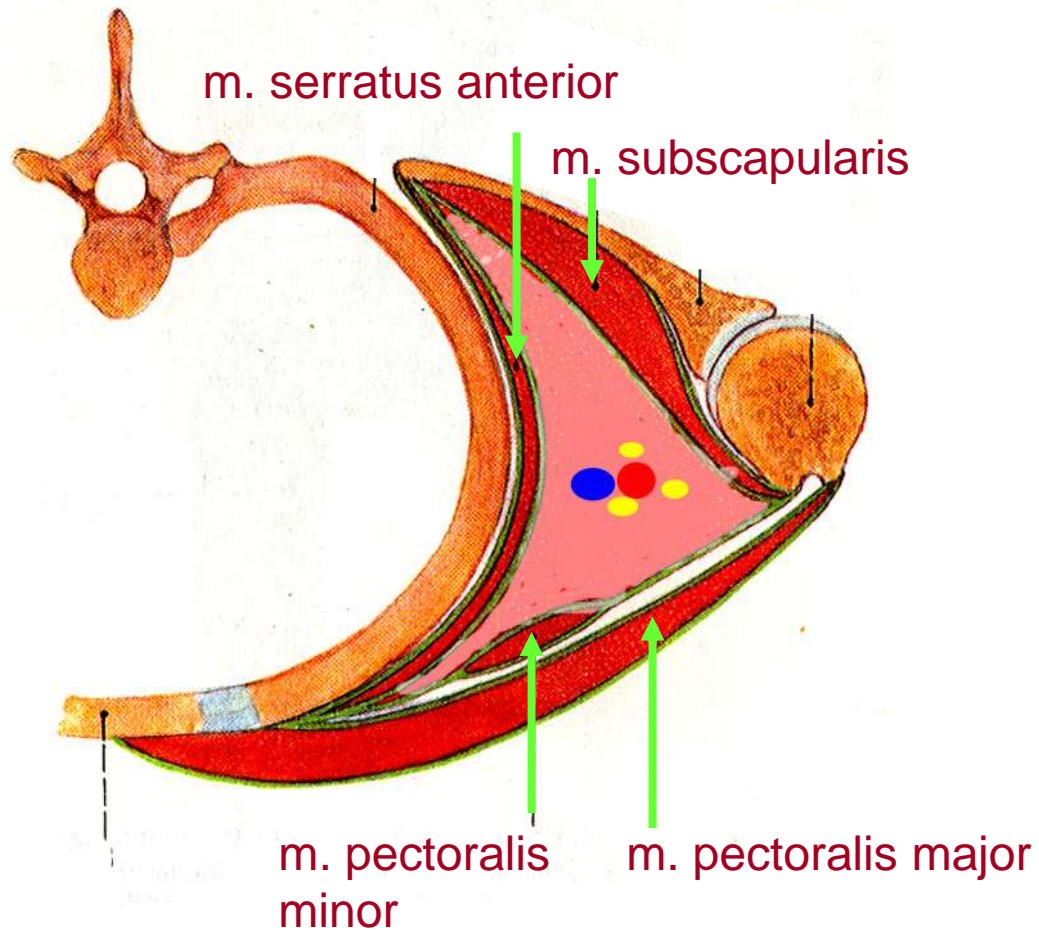


m. subscapularis

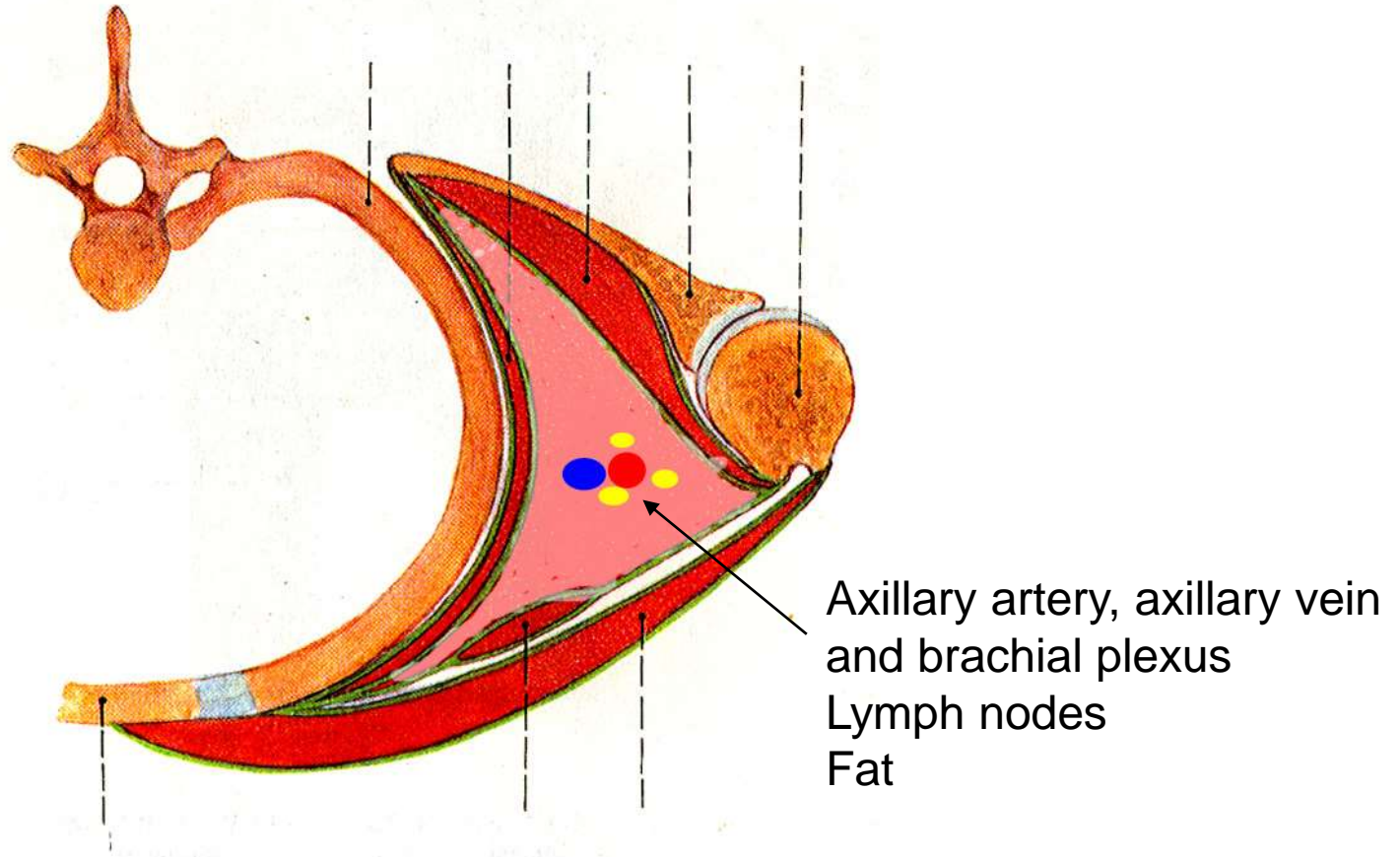
Internal rotators

m. teres major

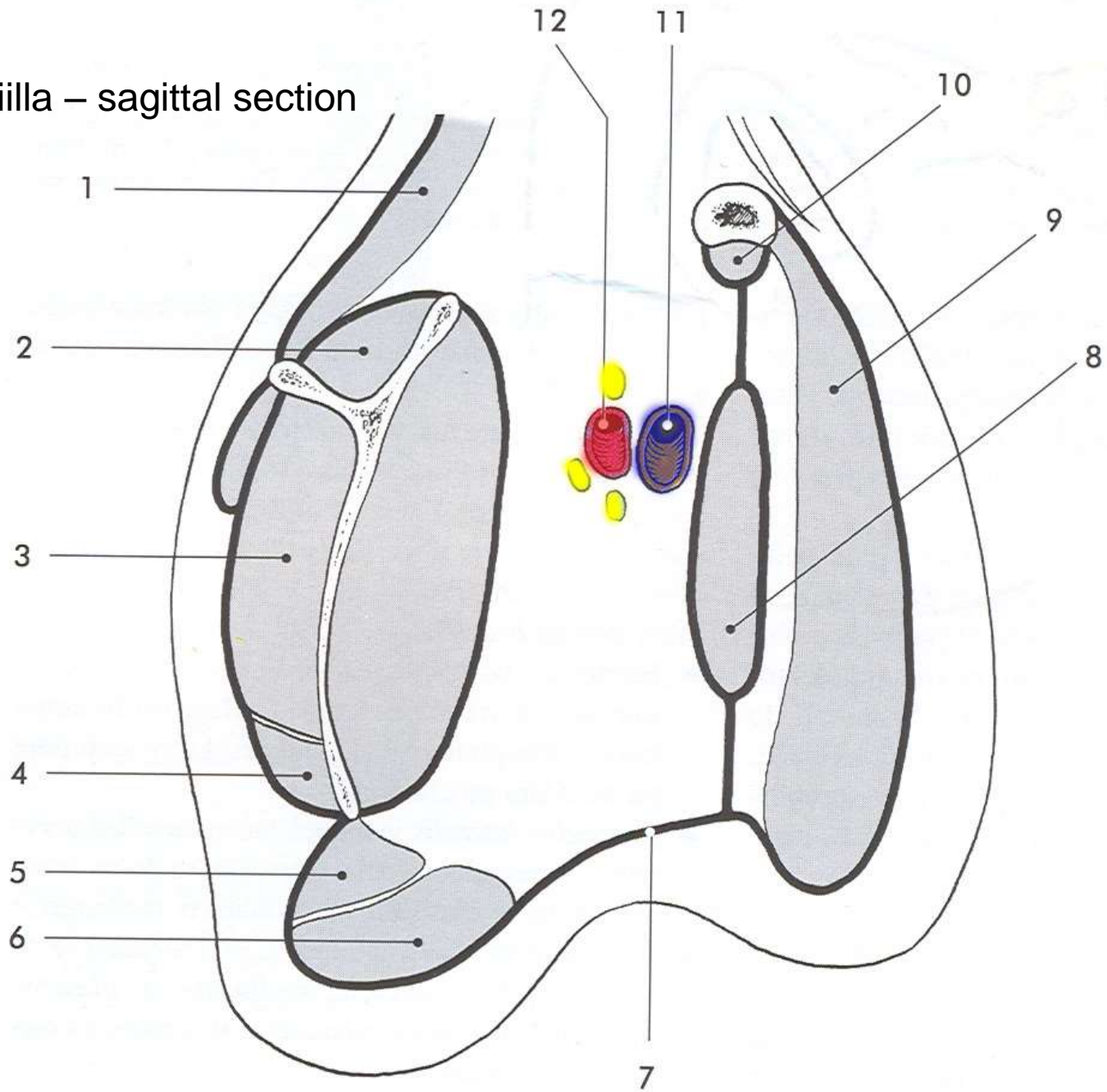
Axilla transverse section



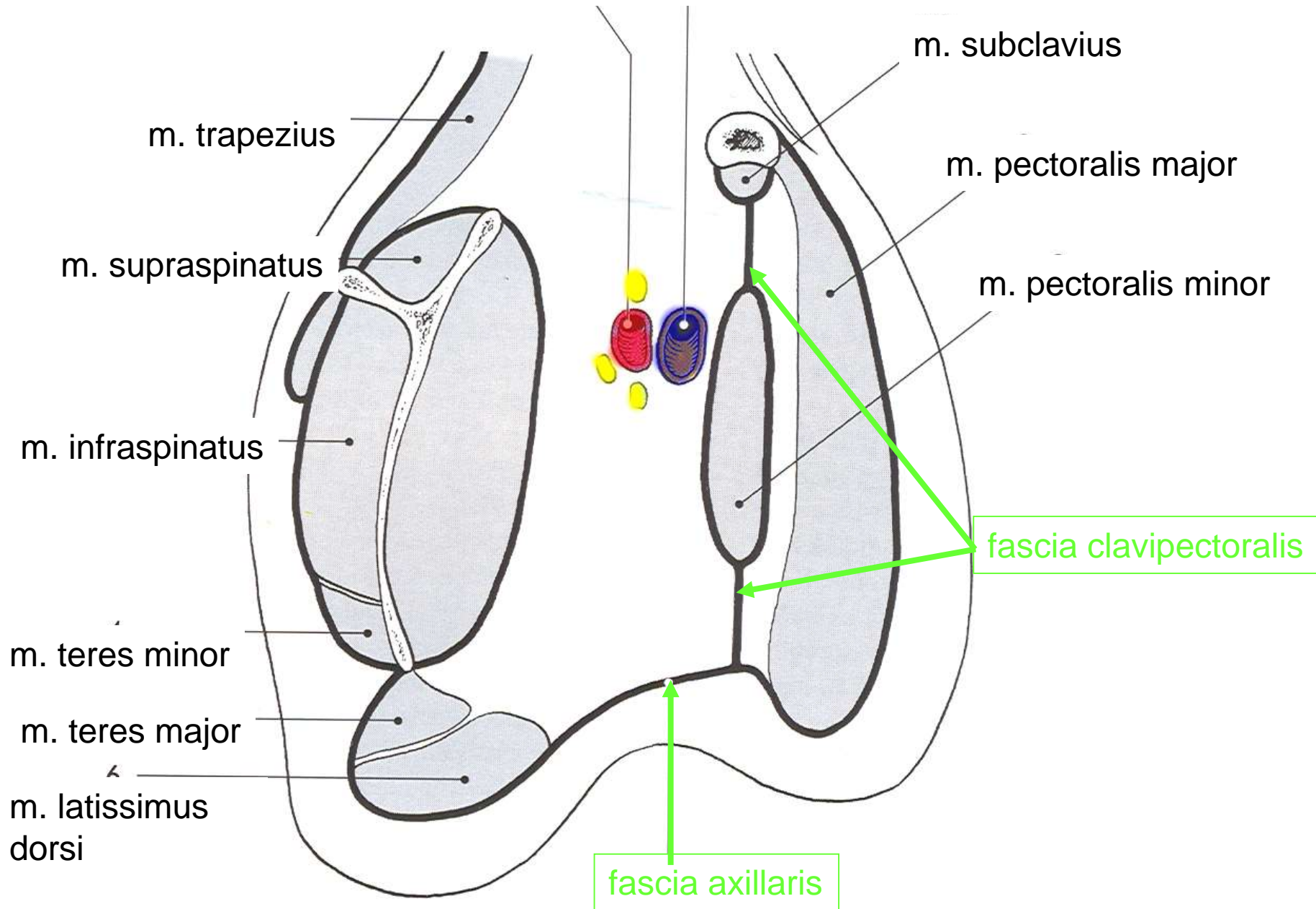
Axilla transverse section

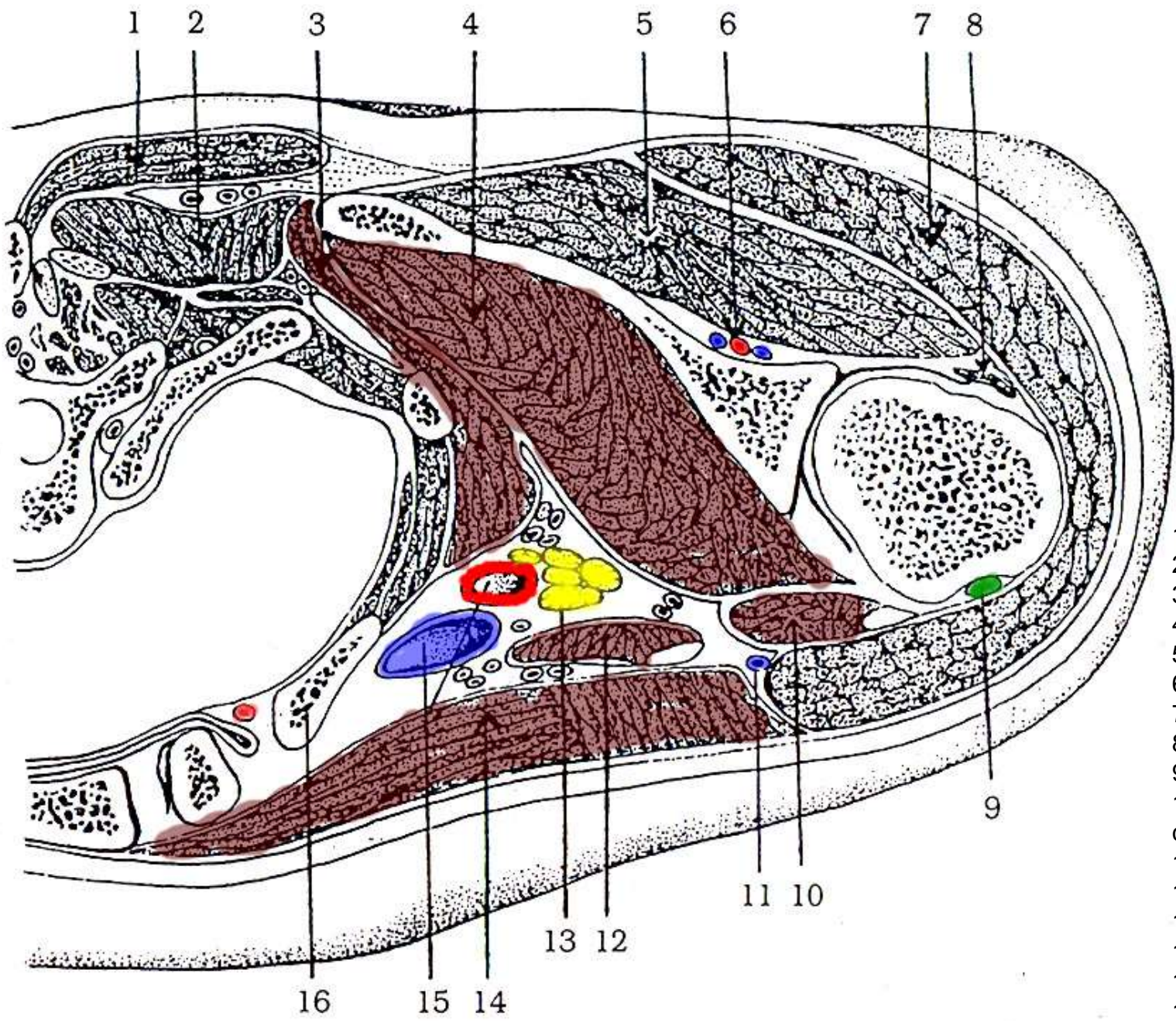


Axiilla – sagittal section

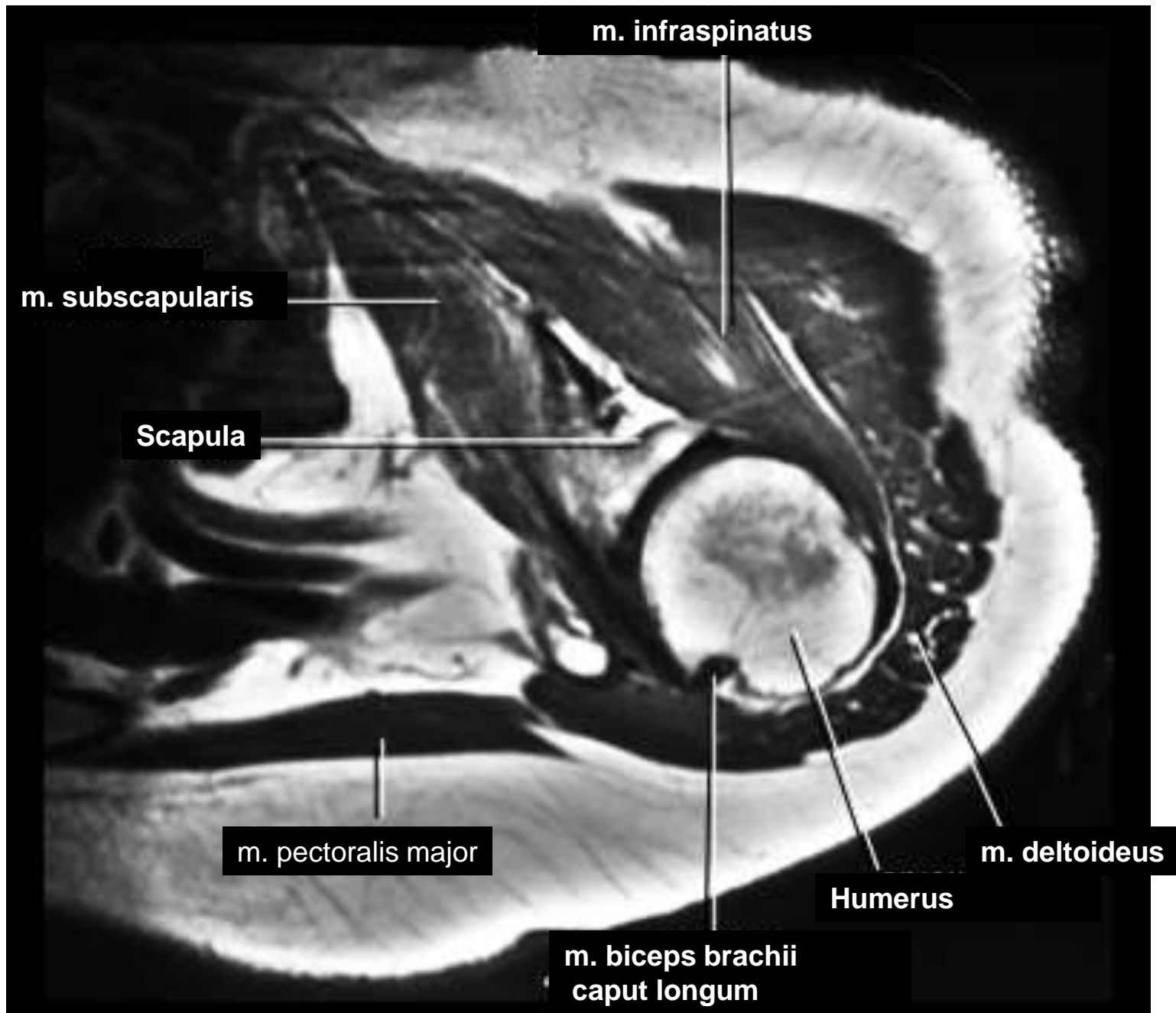


a. axillaris v. axillaris

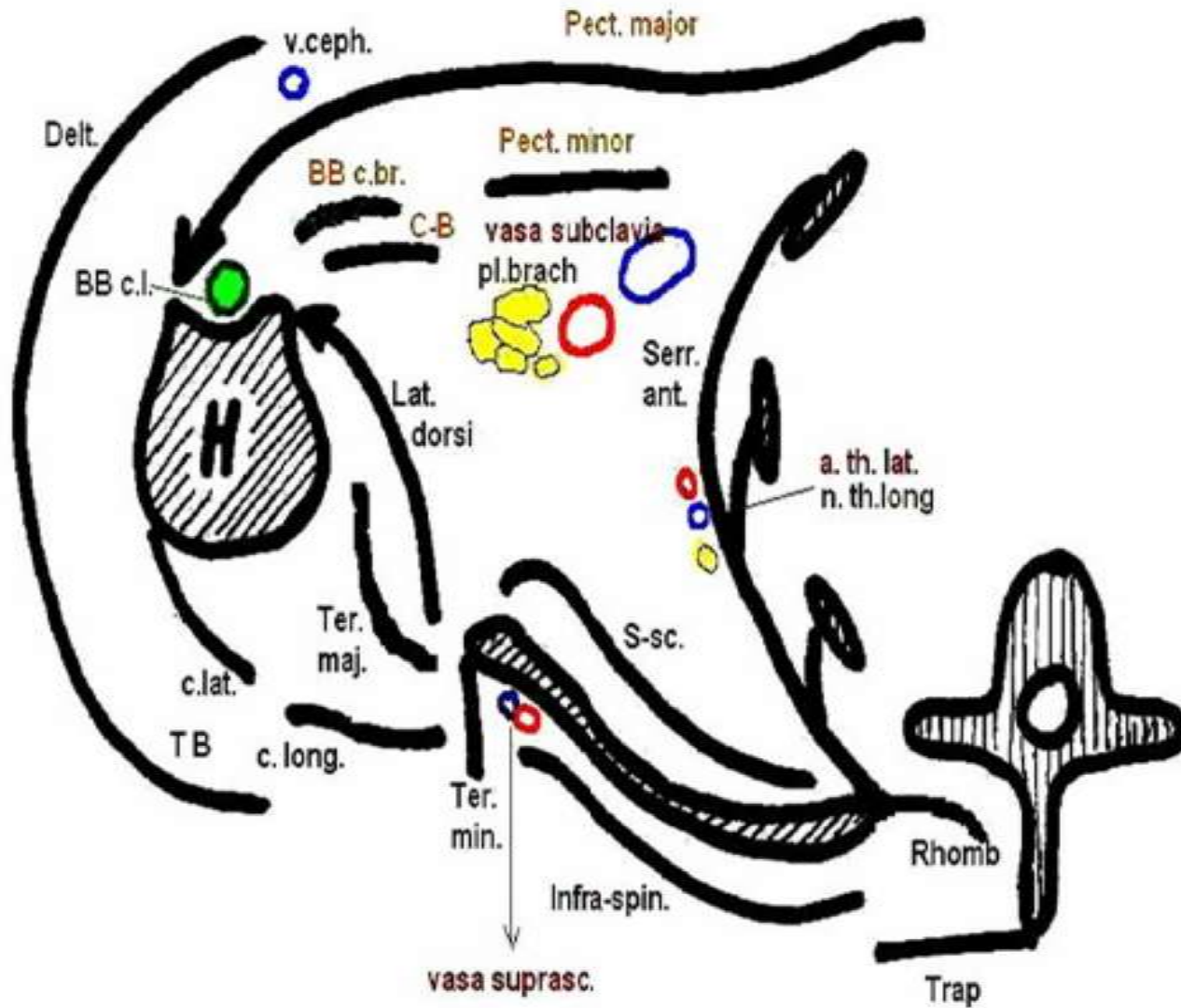




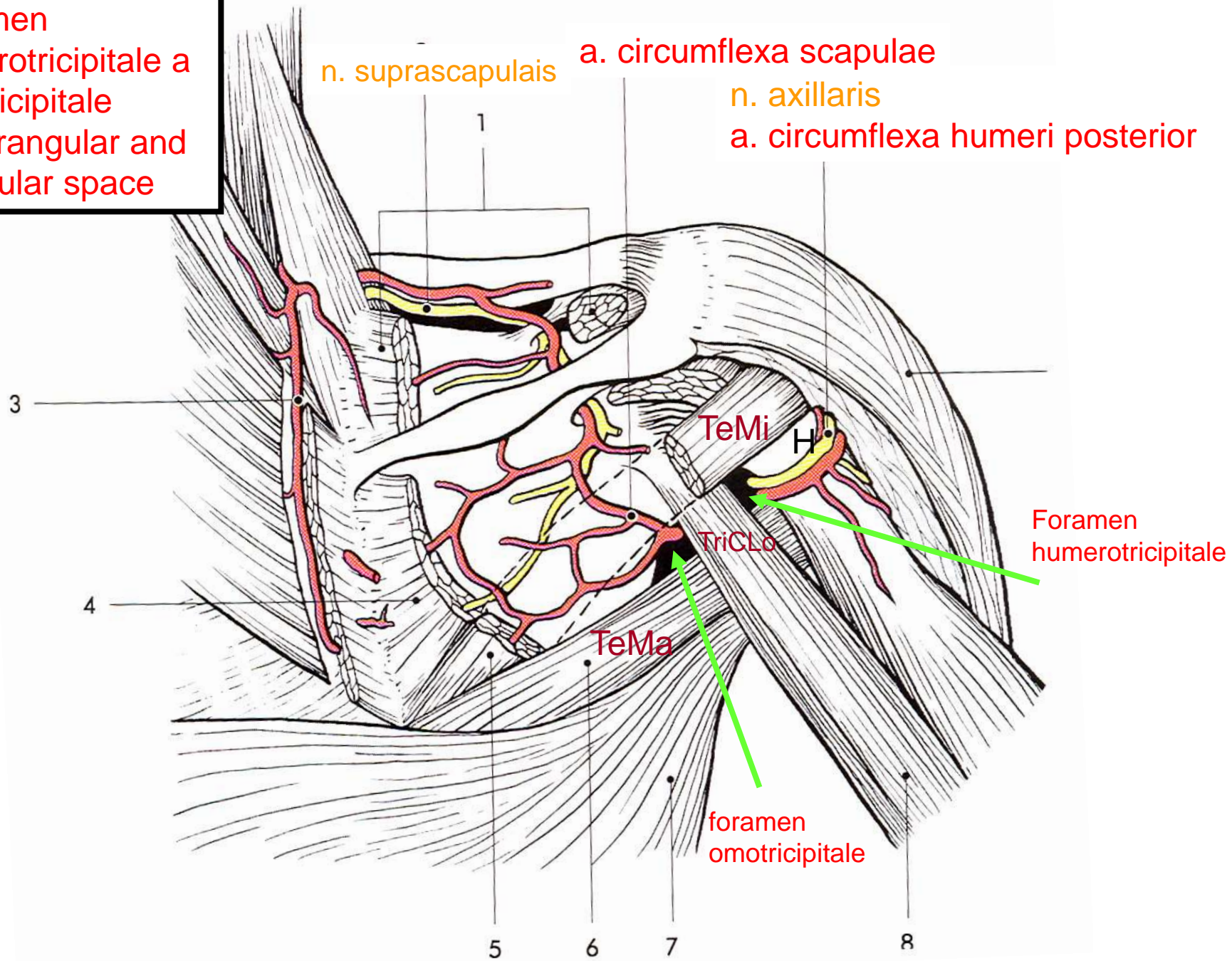
- 1-m.trapezius
- 2-m.rhomboides
- 3-m. serratus ant
- 4-m. subscapularis
- 5-m.infraspinatus
- 6-vasa suprascapularia
- 7-m.deltoideus
- 8-m.teres minor
- 9-caput longum BiBr
- 10-m. coracobrachialis+
caput breve BiBr
- 11-v.ephatica
- 12-m.pectoralis minor
- 13-plexus brachialis
- 14-m.pectoralis major
- 15-vasa subclavia
- 16-clavicula



Schema of axilla section– prof. Petrovický

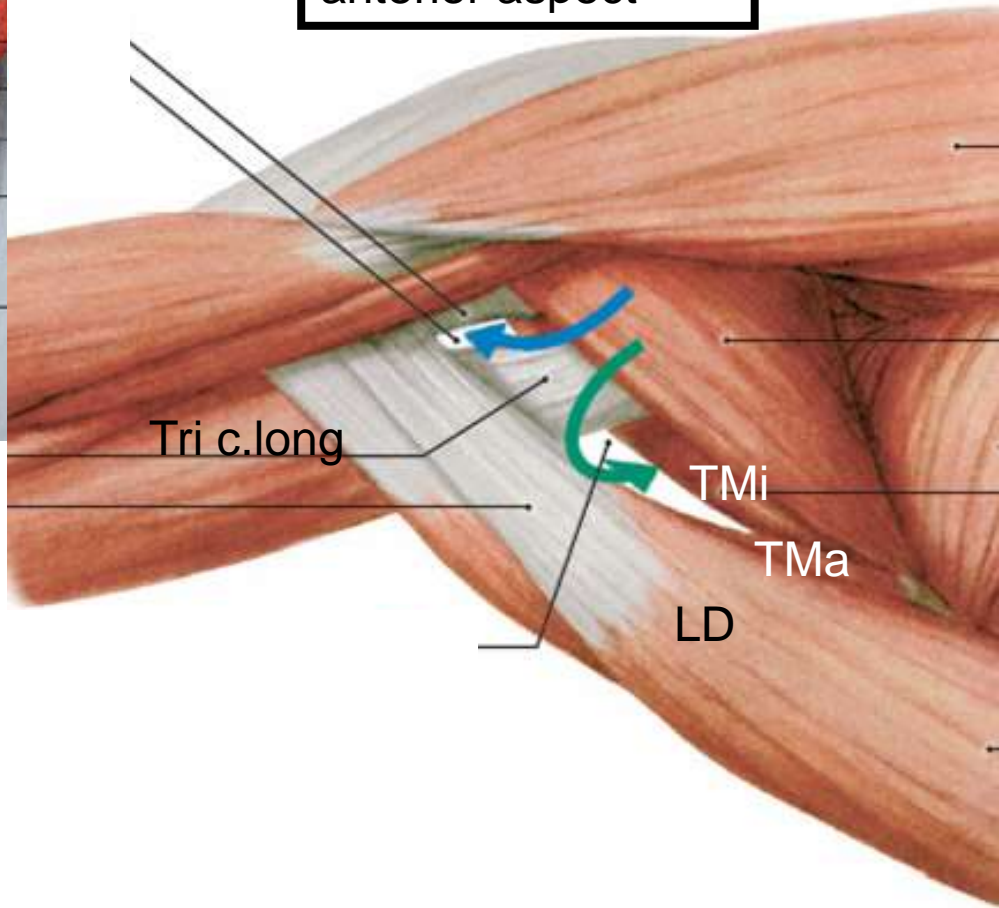
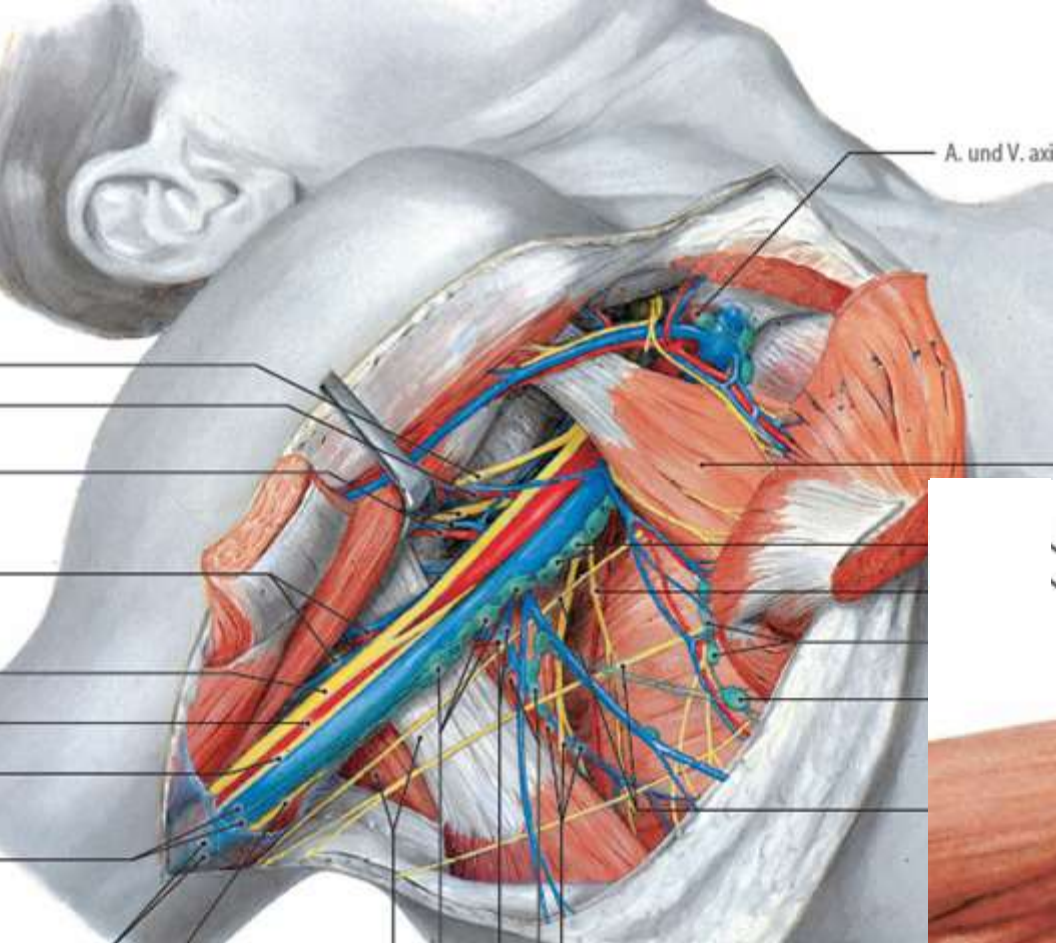


Foramen
 humerotricipitale a
 omotricipitale
 Quadrangular and
 triangular space

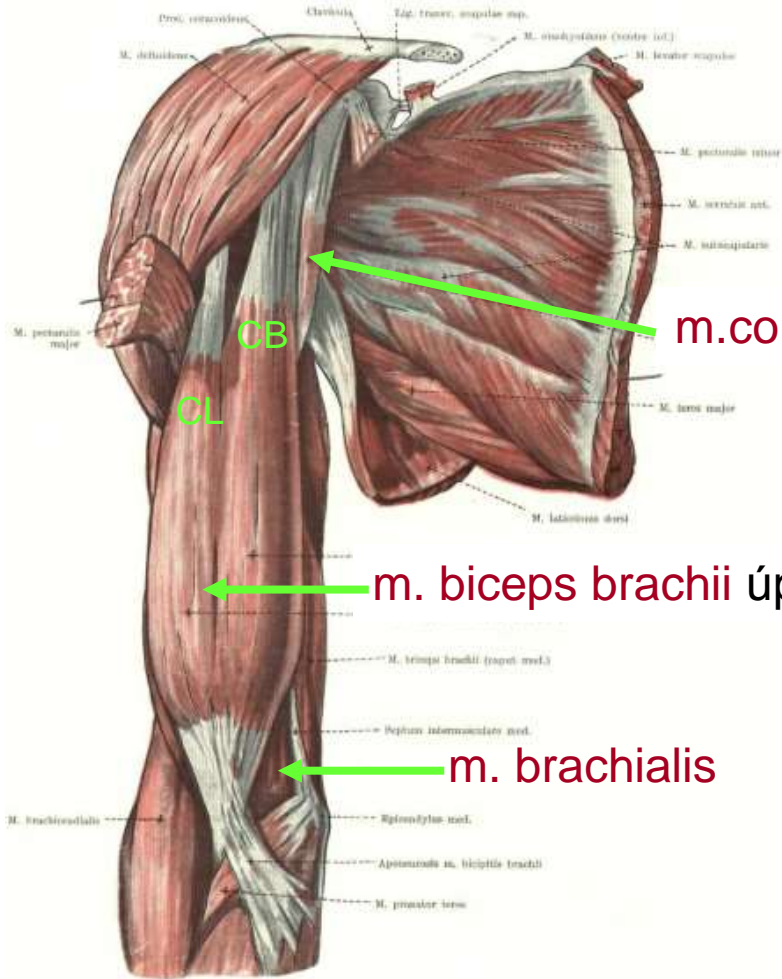


Repetition

Foramen
humerotricipitale
and omotricipitale
anterior aspect



Brachium – ventral (flexors) group



m.coracobrachialis

inervation n. musculocutaneus

m. biceps brachii úpon: tuberositas radii + aponeurosis

m. brachialis

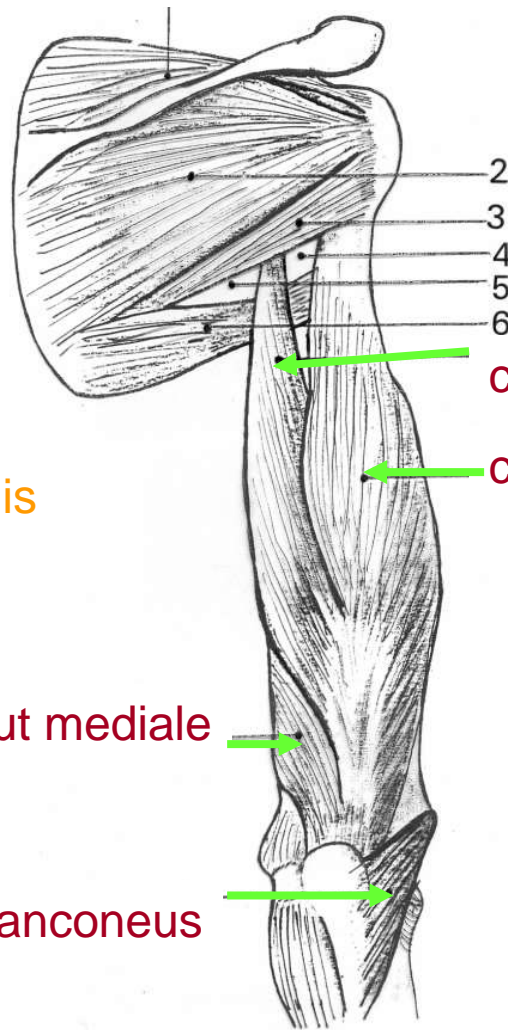
Brachium- dorsal (extensors) group

M. triceps brachii

inervation n. radialis

caput mediale

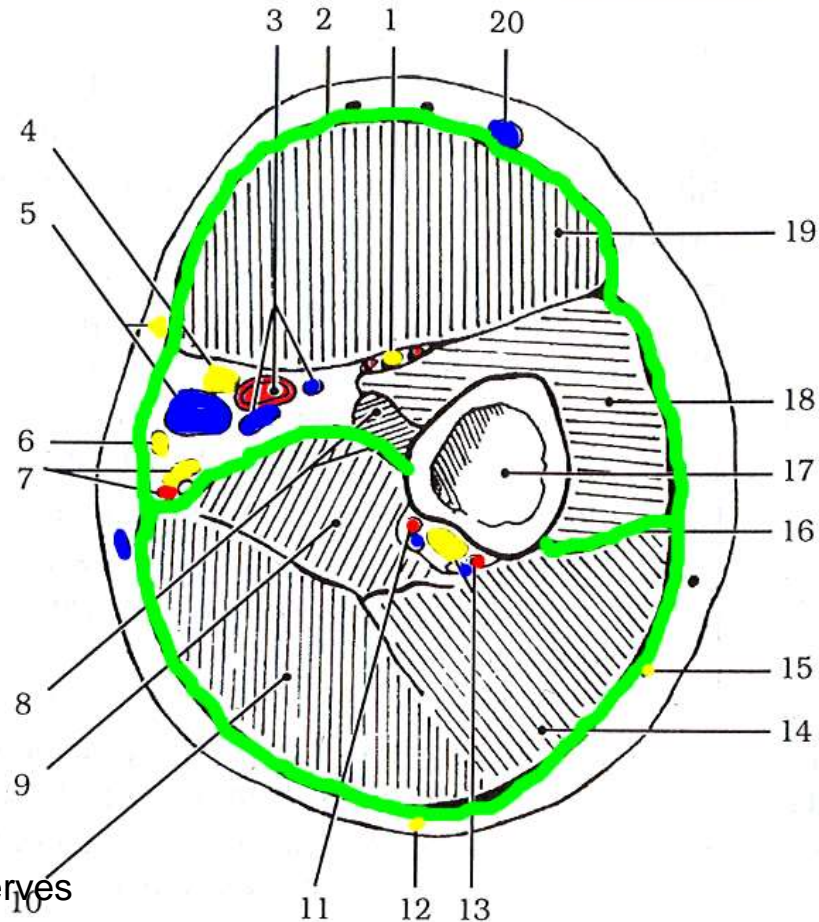
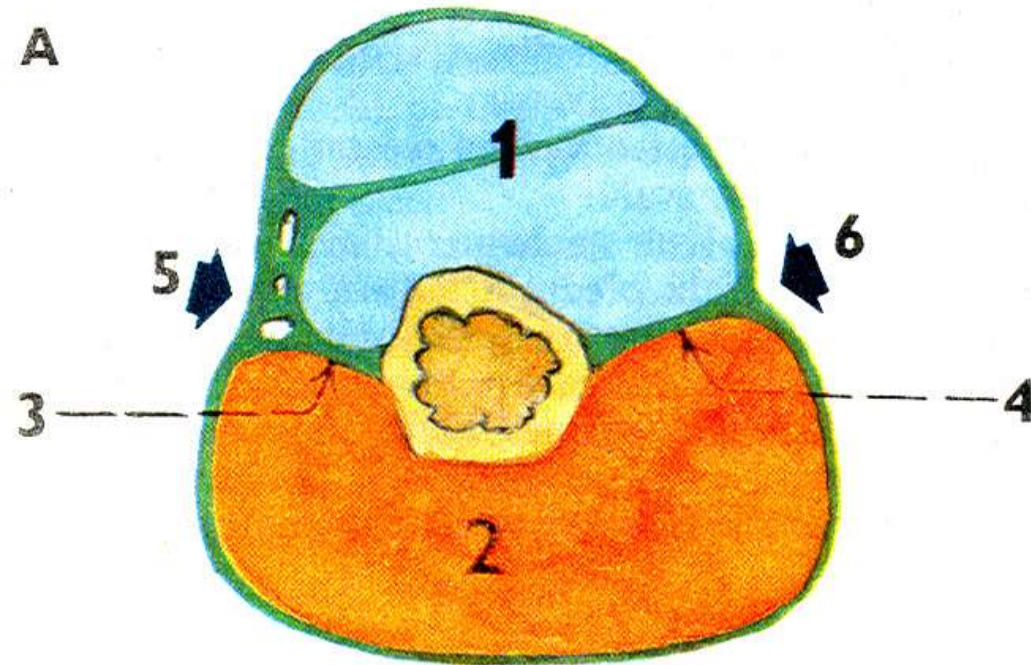
m. anconeus



caput longum

caput laterale

Brachium - osteofascial spaces - compartments



1-flexors space

2-extensors space

3-septum intermusculare brachii mediale- vessels and nerves

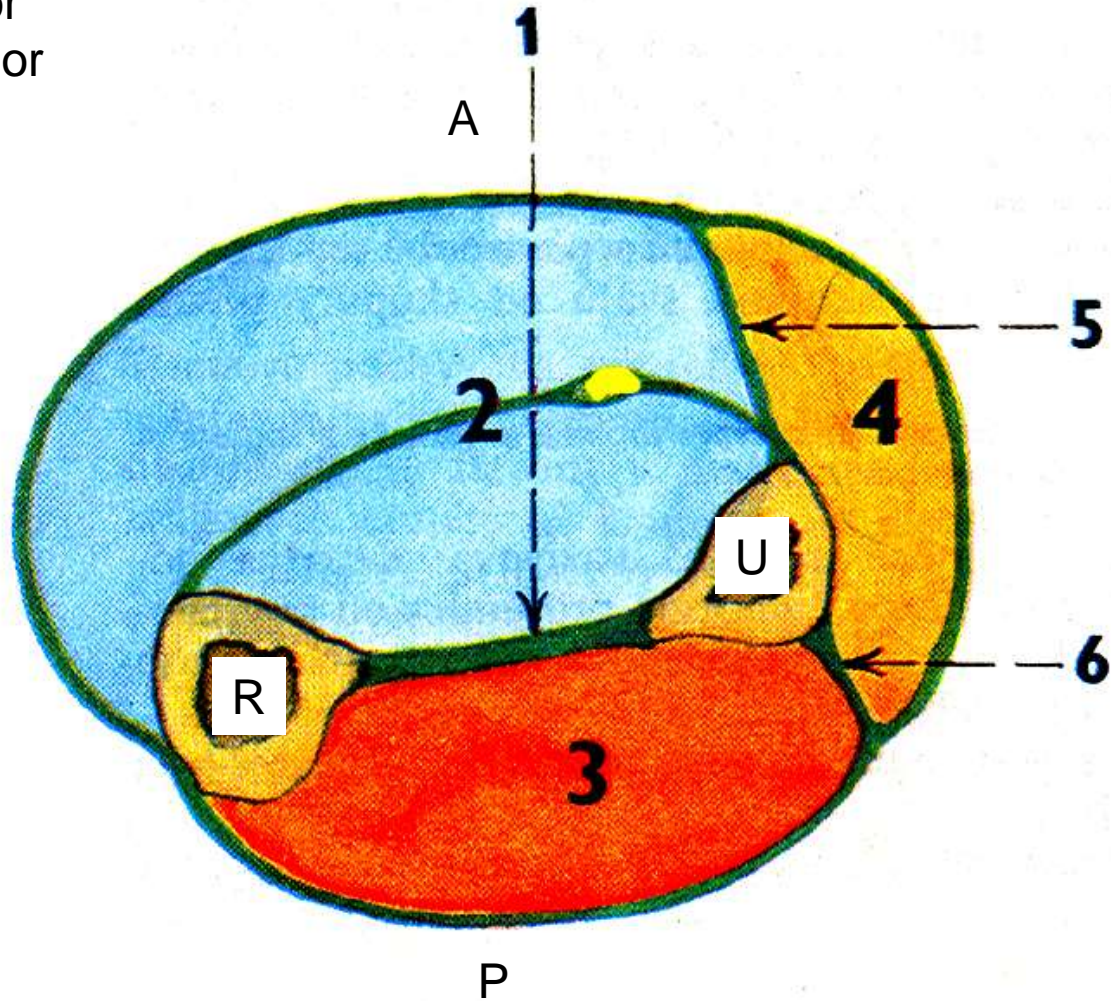
4- septum intermusculare brachii laterale

5 -sulcus bicipitalis brachii medialis

6- sulcus bicipitalis brachii lateralis

Antebrachium - Forearm – osteofascial spaces

- 2 – anterior
- 3 – posterior
- 4 – lateral



Antebrachium - ventral (flexors) group

4 layers

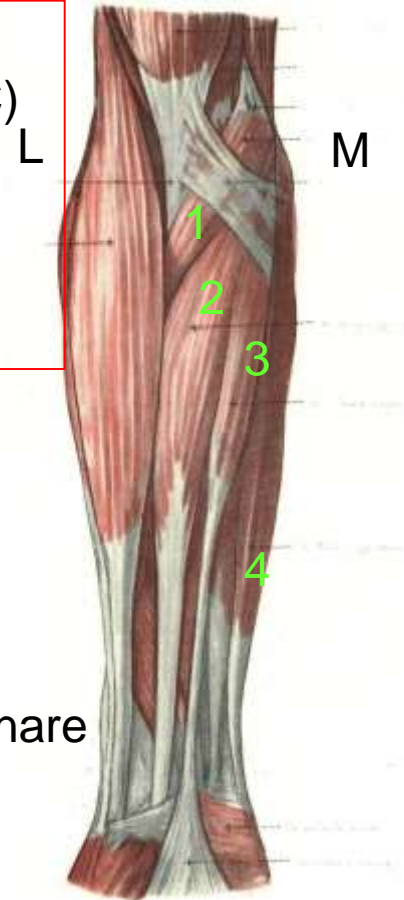
function: flexion and duction of the wrist (inserted to MC)

flexion of digits (2 muscles) and thumb

pronation– 2 muscles

inervation: n. medianus

n. ulnaris (FCU, FDP-½)



1. layer origin on medial epikondyle- caput communaе ulnare

m. pronator teres

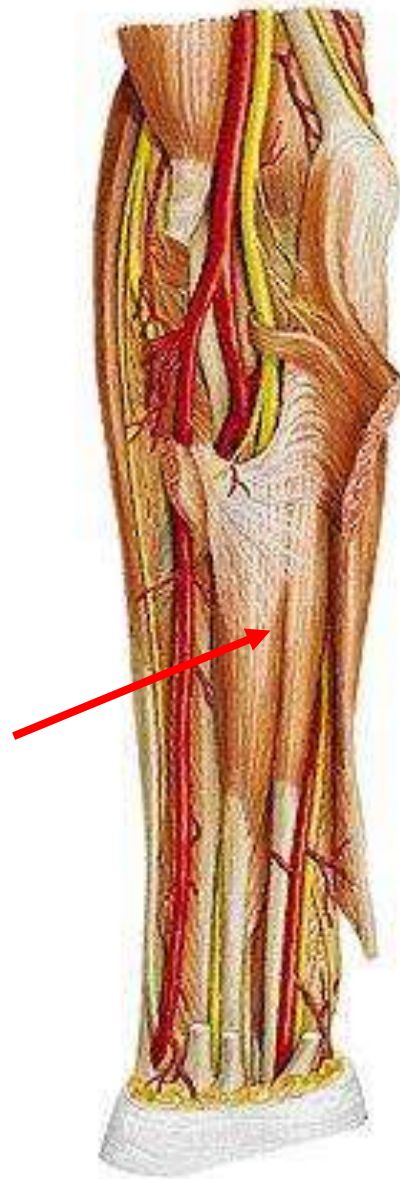
m. flexor carpi radialis

m. palmaris longus

m. flexor carpi ulnaris

Antebrachium - ventral (flexors) group

2. layer – m. flexor digitorum superficialis



Antebrachium - ventral (flexors) group

3. layer – m. flexor pollicis longus →
m. flexor digitorum profundus →



Antebrachium - ventral (flexors) group

4. layer – m. pronator quadratus



Antebrachium - lateral group

Function

Helps to flexion of the elbow(BR)
Extension and duction of the wrist
supination

Inervation

n. radialis

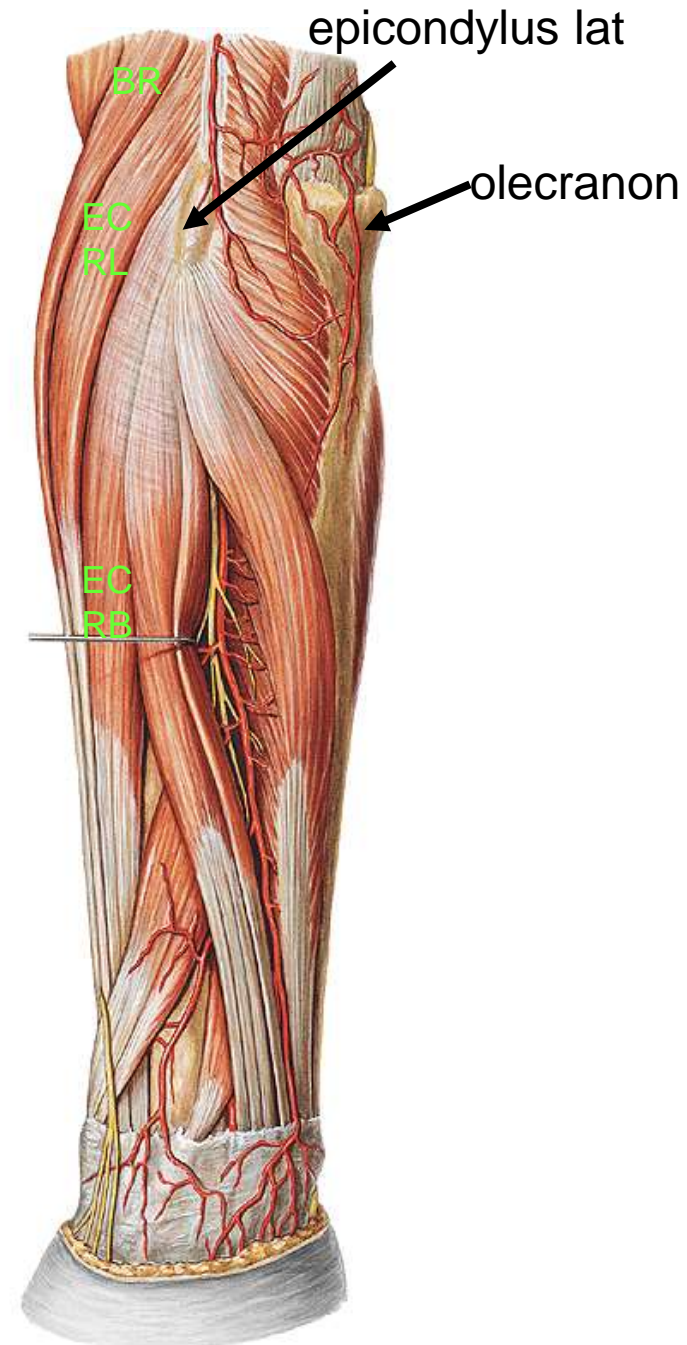
2 layers:

Superficial layer origin on the lateral
epicondyle - caput communae radiale:

m. brachioradialis

m. extensor carpi radialis longus

m. extensor carpi radialis brevis



Antebrachium – lateral group

Deep layer
m. supinator

inervation:
n. radialis - r. profundus



Antebrachium – dorsal (extensors) group

2 layers

function: extension and flexion of the wrist (insertion on the base of MC)

Extension of digits

Extension of little finger

Extension of the index

Extension of the thumb (2 muscles)

Abduction of the thumb

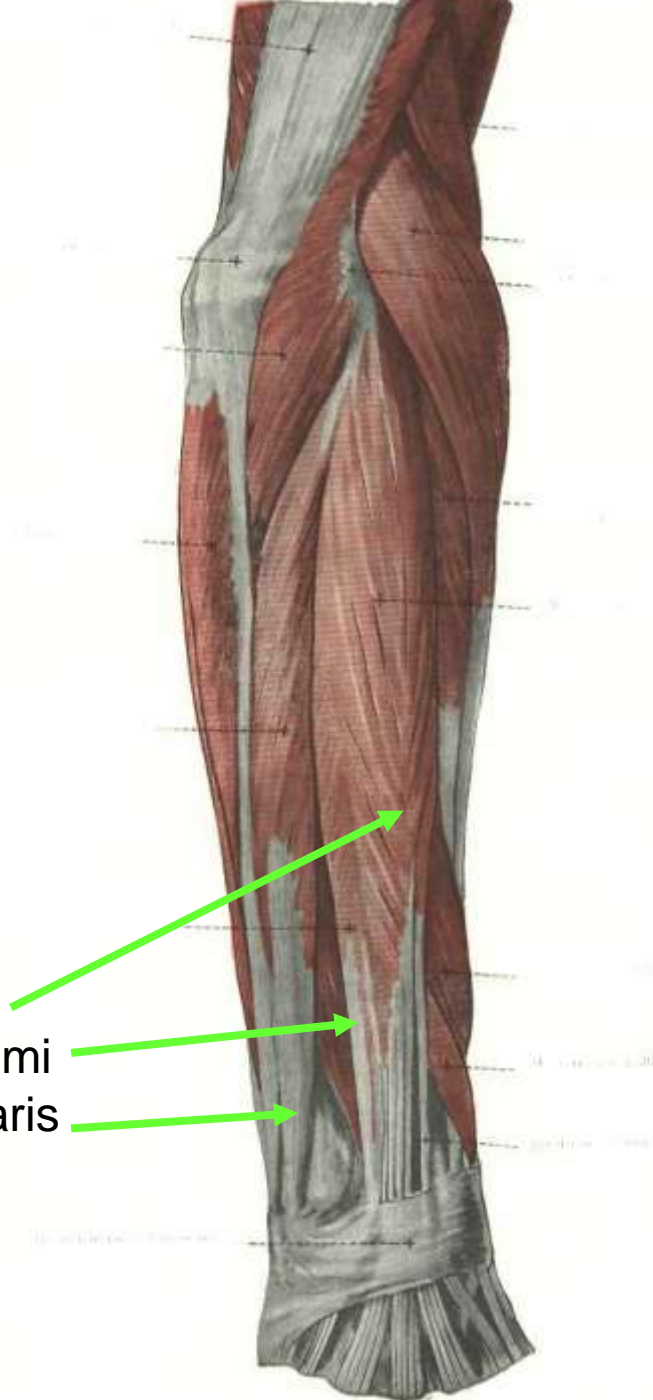
innervation: n. radialis – ramus profundus

1. Superficial layer:

m. extensor digitorum

m. extensor digiti minimi

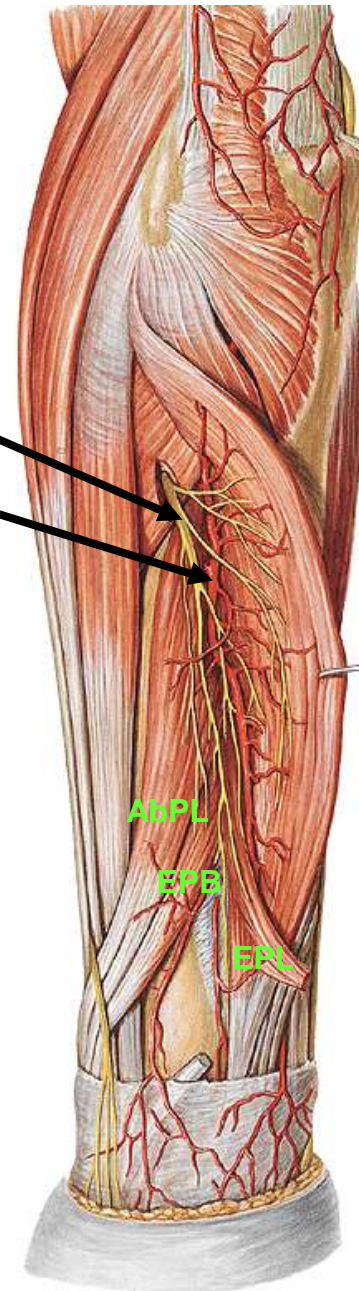
m. extensor carpi ulnaris



Antebrachium dorsal (extensors) group deep layer

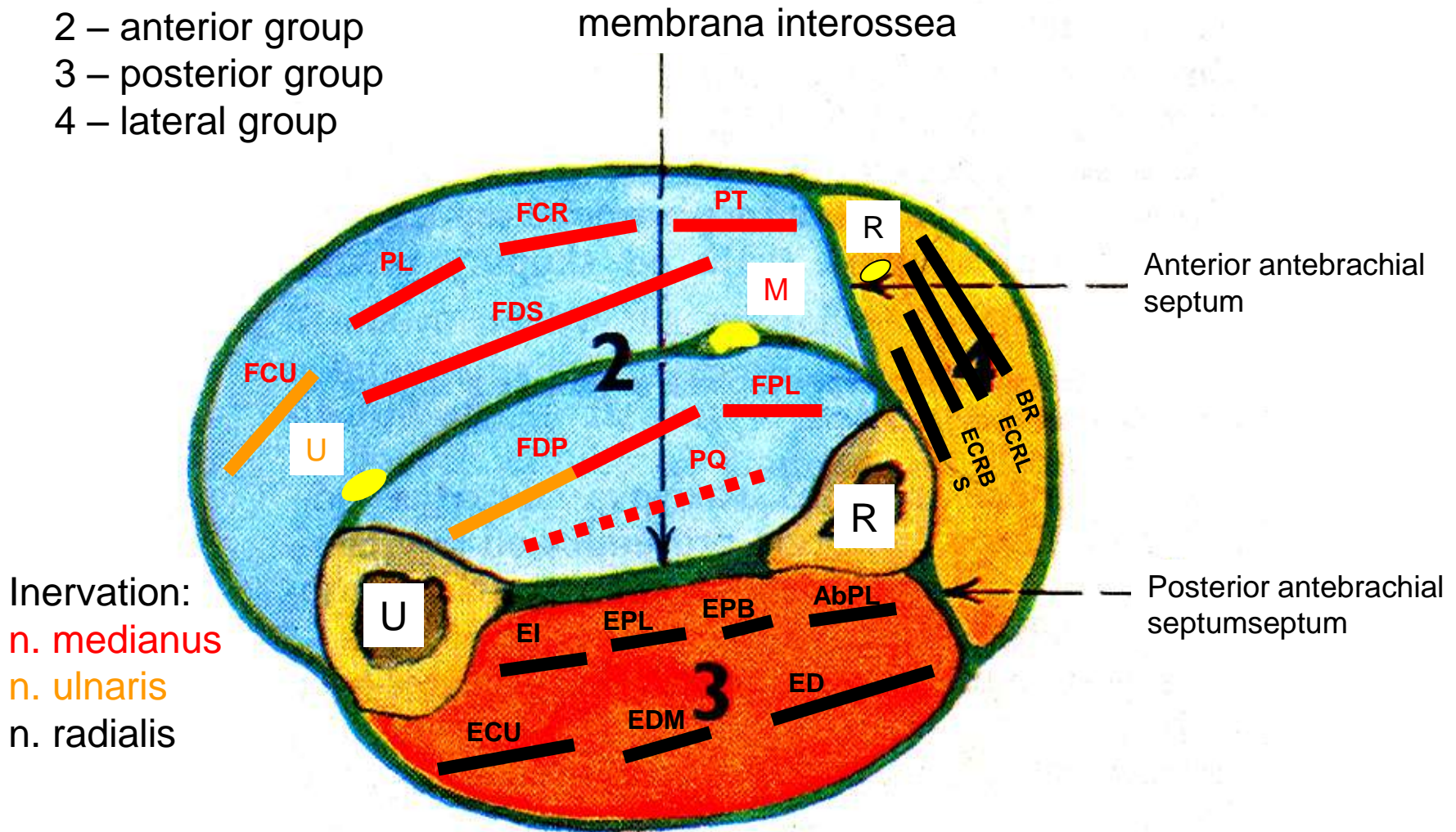
n. radialis ramus profundus
a. interossea post

m. abductor pollicis longus
m. extensor pollicis brevis
m. extensor pollicis longus
m. extensor indicis

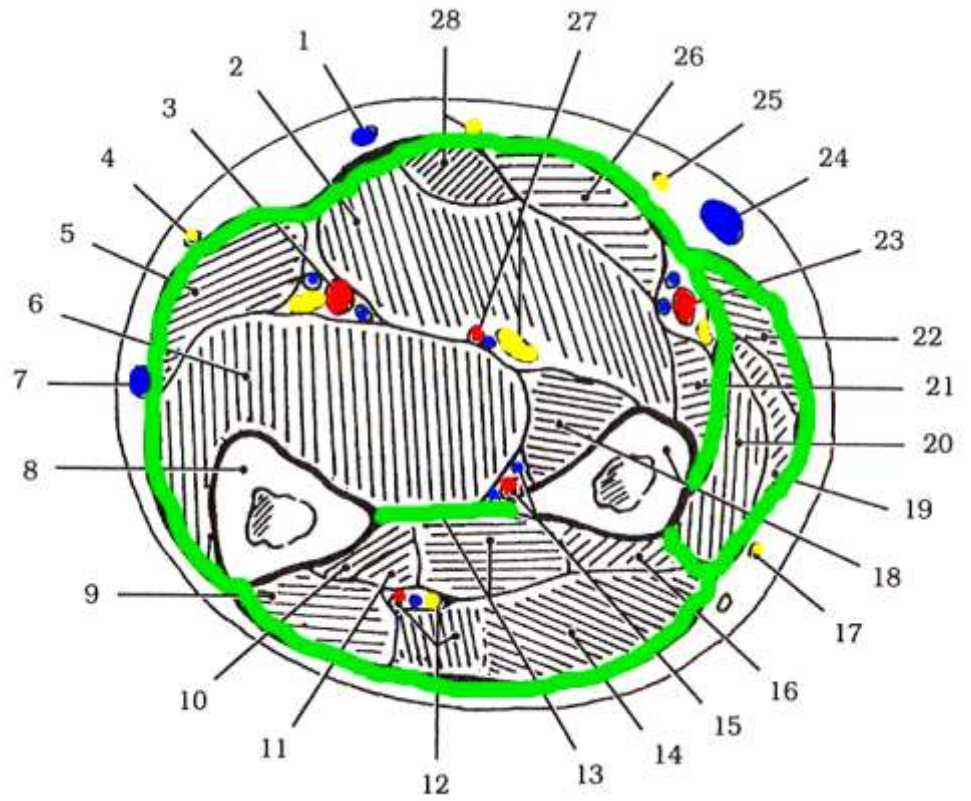
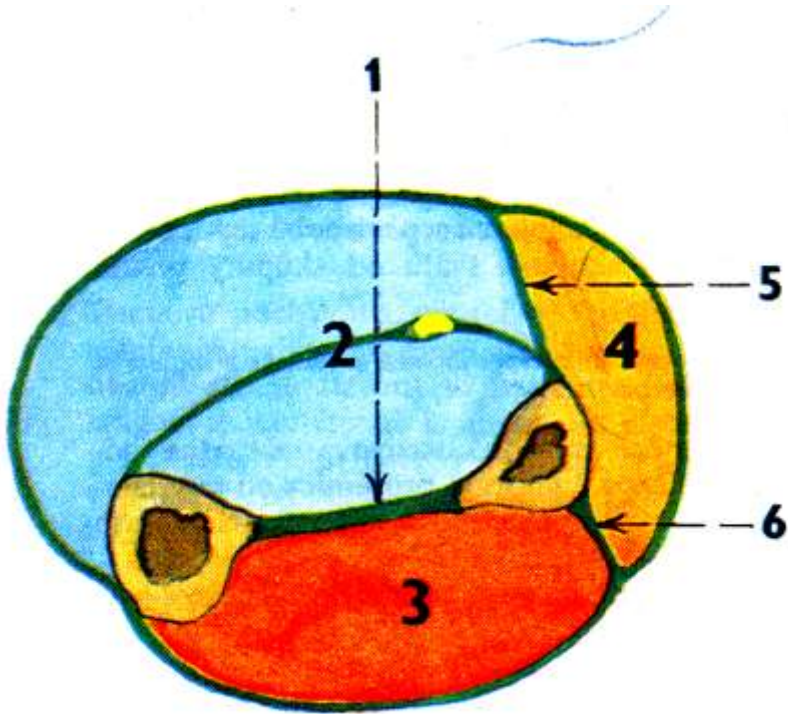


Antebrachium schematic crosssection with innervation

- 2 – anterior group
- 3 – posterior group
- 4 – lateral group



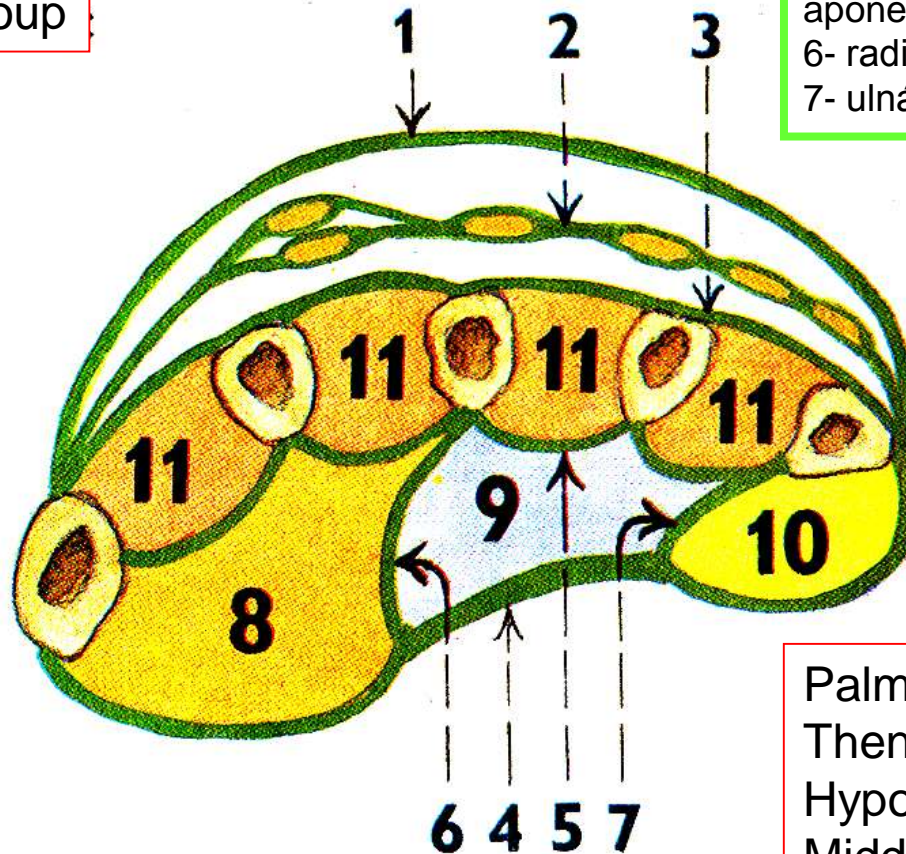
Antebrachium crosssection



Hand muscles

Thenar
Hypothenar
Middle group

- 1- fascia dorsalis manus superficialis
- 2 – fascia dorsalis manus intertendinea
- 3- fascia dorsalis manus interossea
- 5- fascia palmaris interossea
- 4 – fascia palmaris supeficialis +
aponeurosis palmaris
- 6- radiální osteofasciální septum
- 7- ulnární osteofasciální septum



11 – interosseal space

Palma manus:
Thenar - 8
Hypothenar- 10
Middle - 9

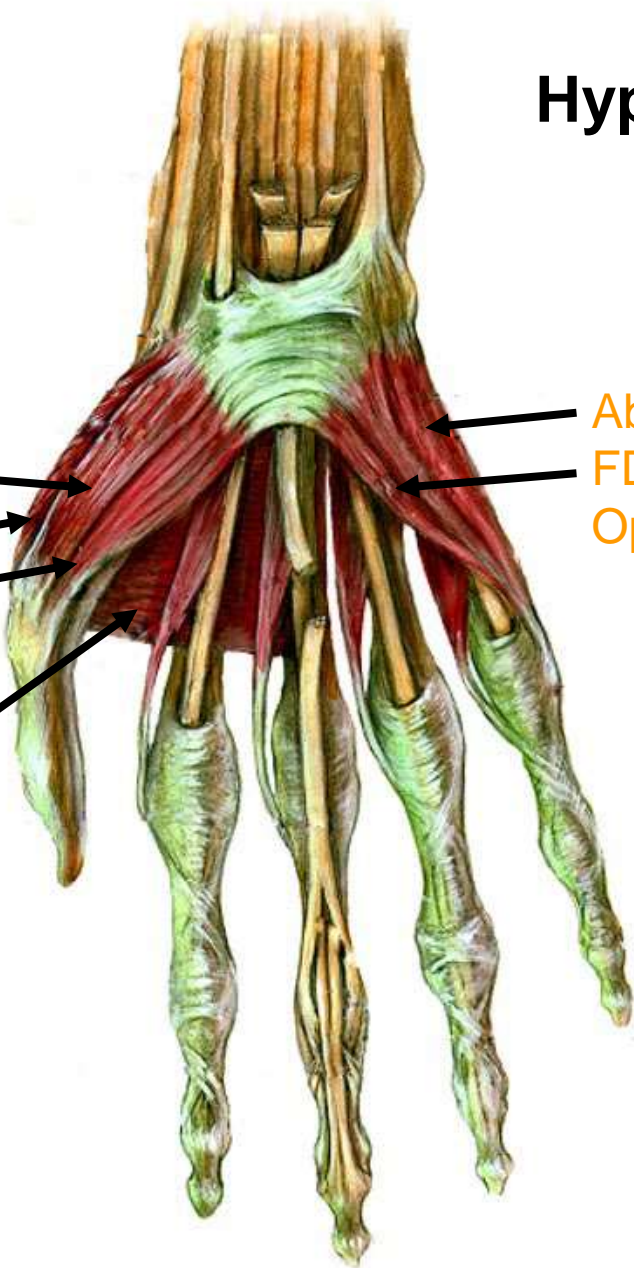
Thenar

Hypothenaru

- AbPB
- OP
- FPB
- c.s.
- c.p.
- ADP
- c.o.
- c.t.

- AbDM
- FDM
- OpDM

Inervation
n. medianus
n. ulnaris



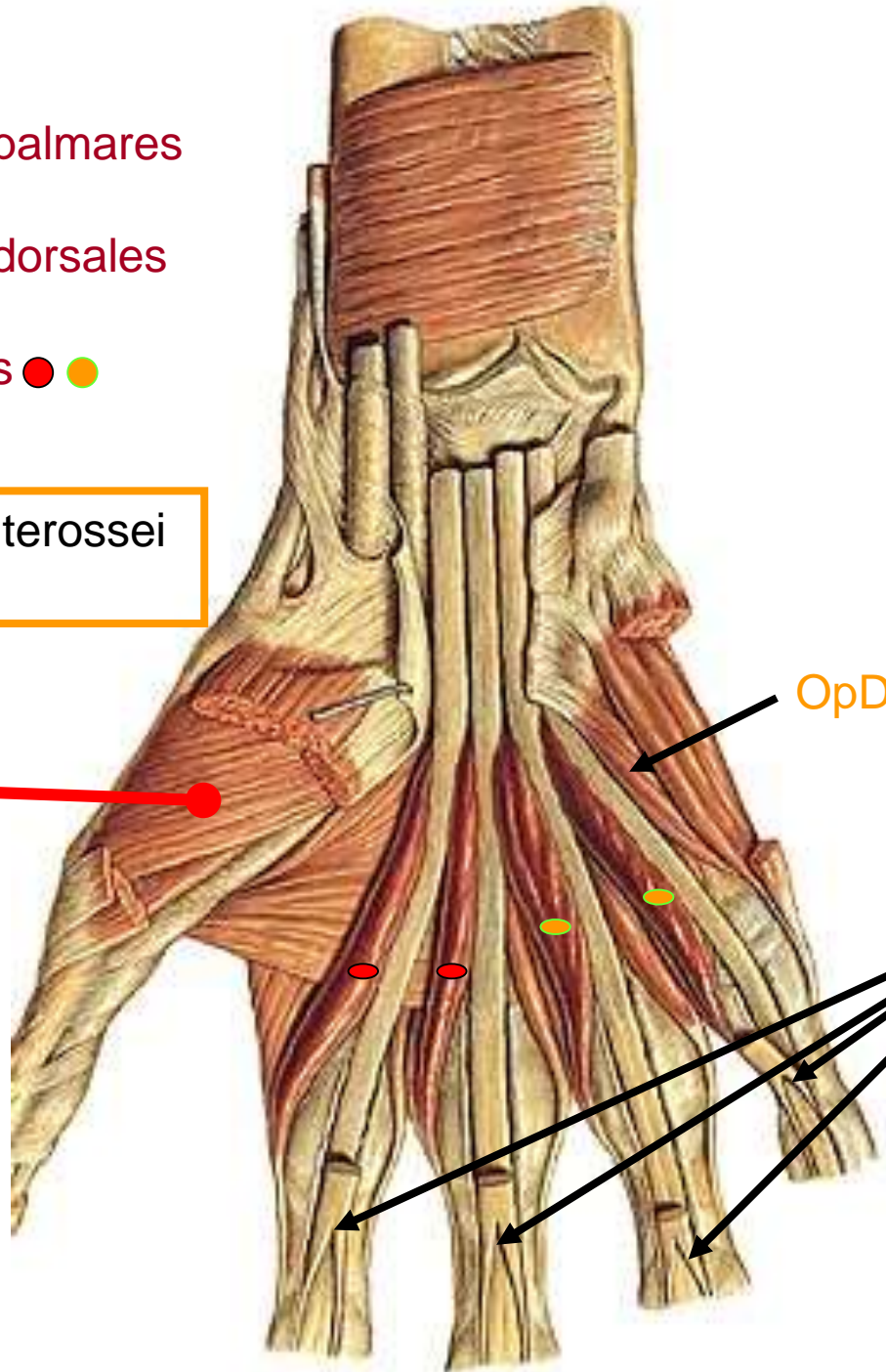
Middle space
mm. interossei palmares
„close the fan“
mm. interossei dorsales
„open the fan“
mm. lumbricales ● ●
“make a roof“

Inervation mm. interossei
n. ulnaris

OP ●

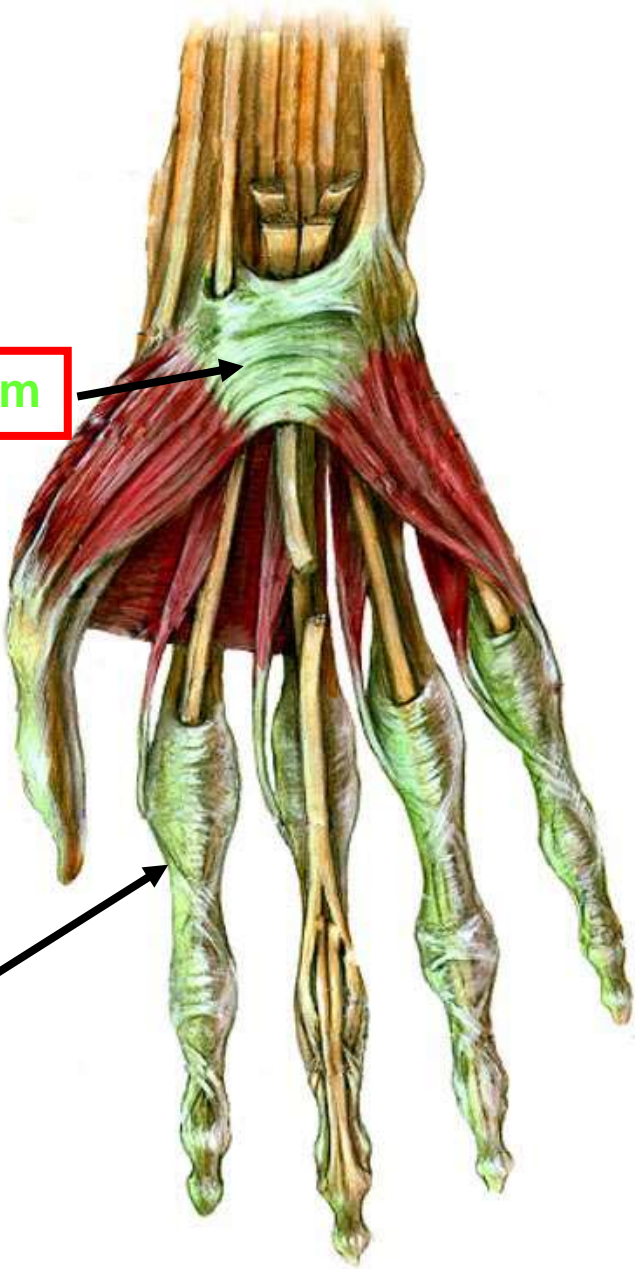
OpDM

chiasma tendinum

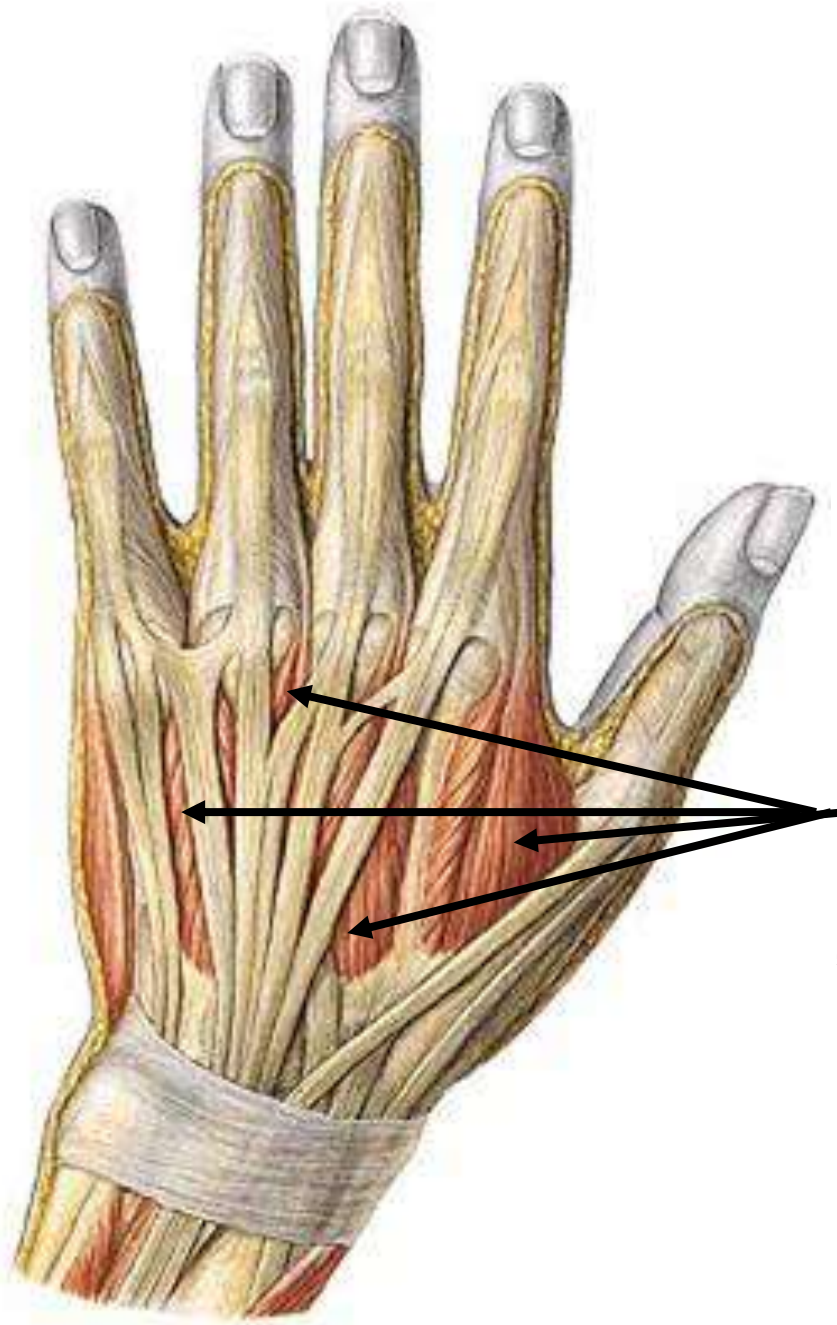


Hand muscles

retinaculum flexorum



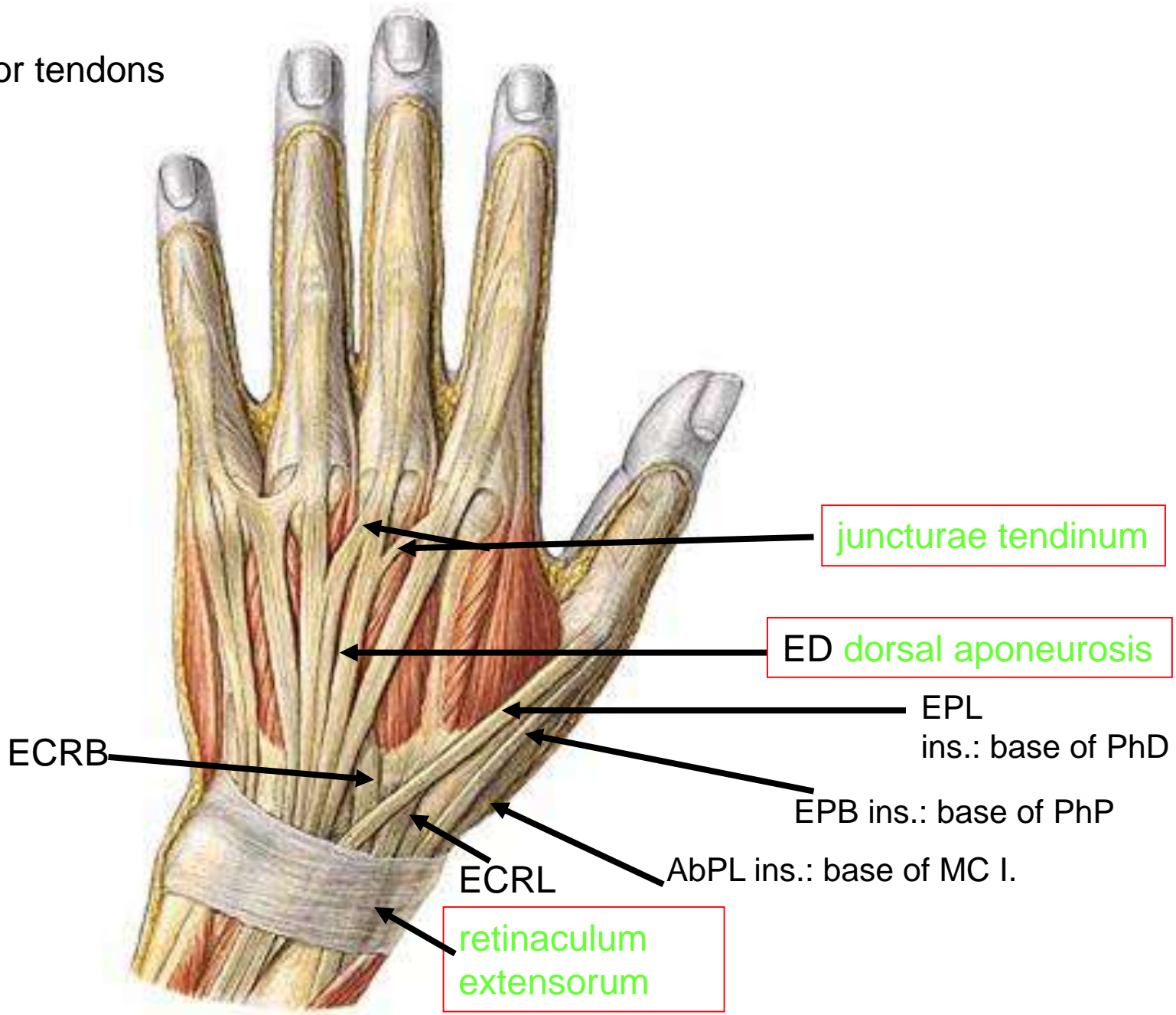
vaginae fibrosae digitorum manus



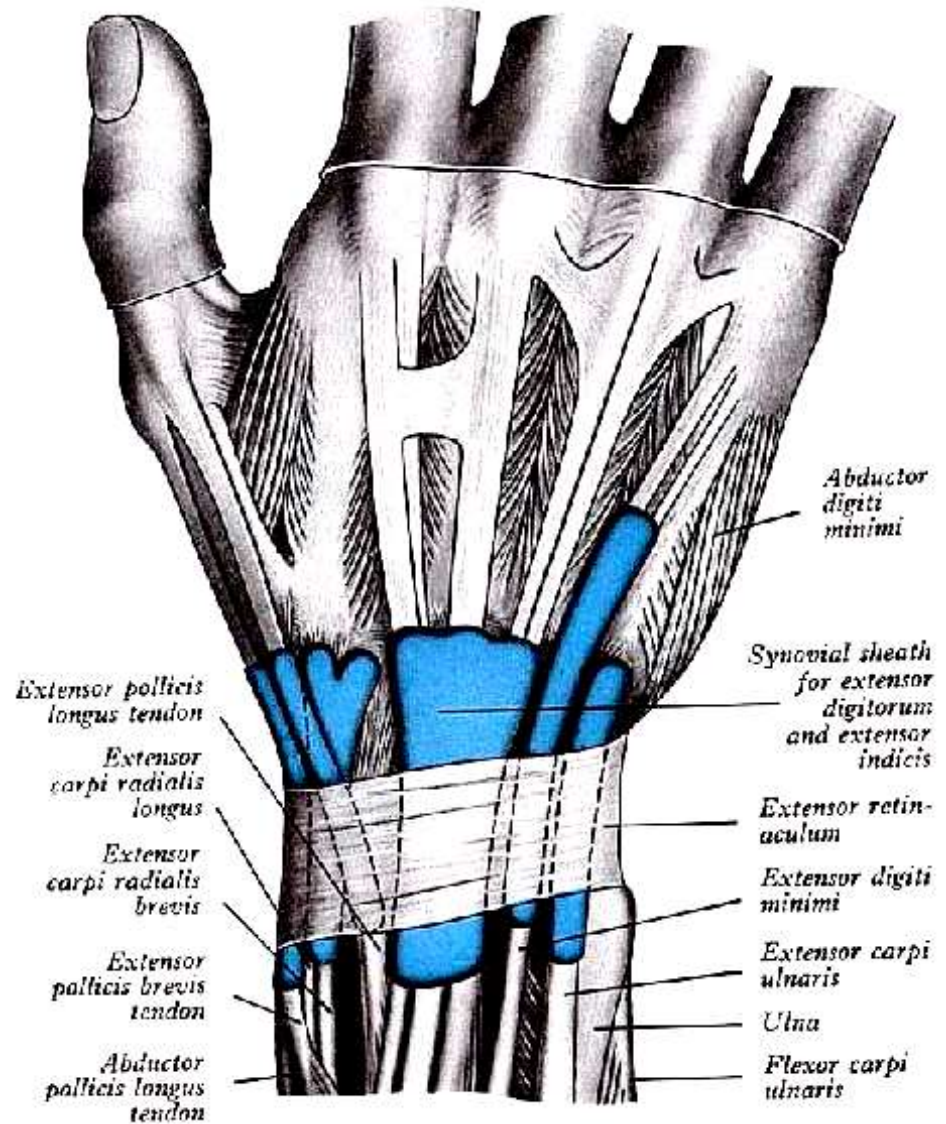
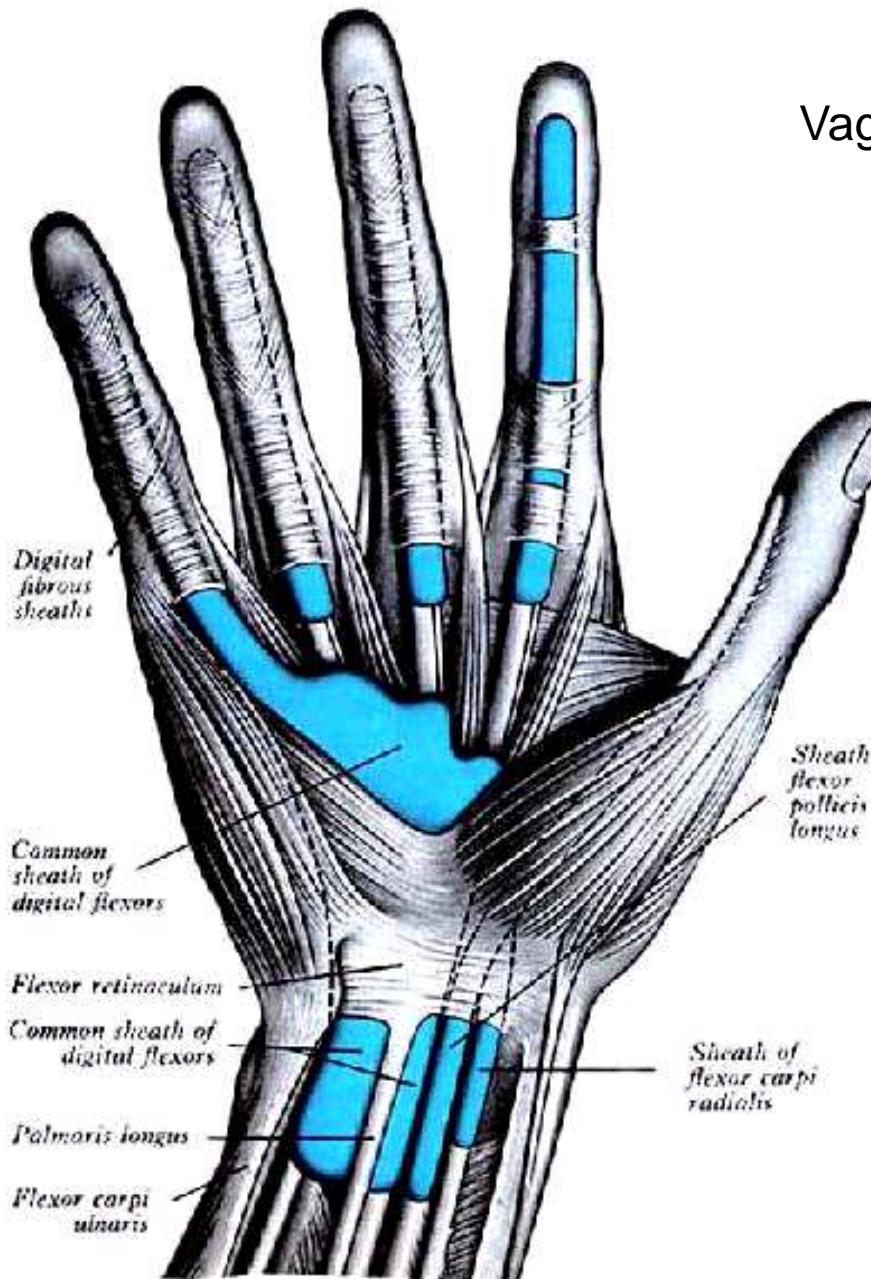
**m. interossei
dorsales**

„open a fan“

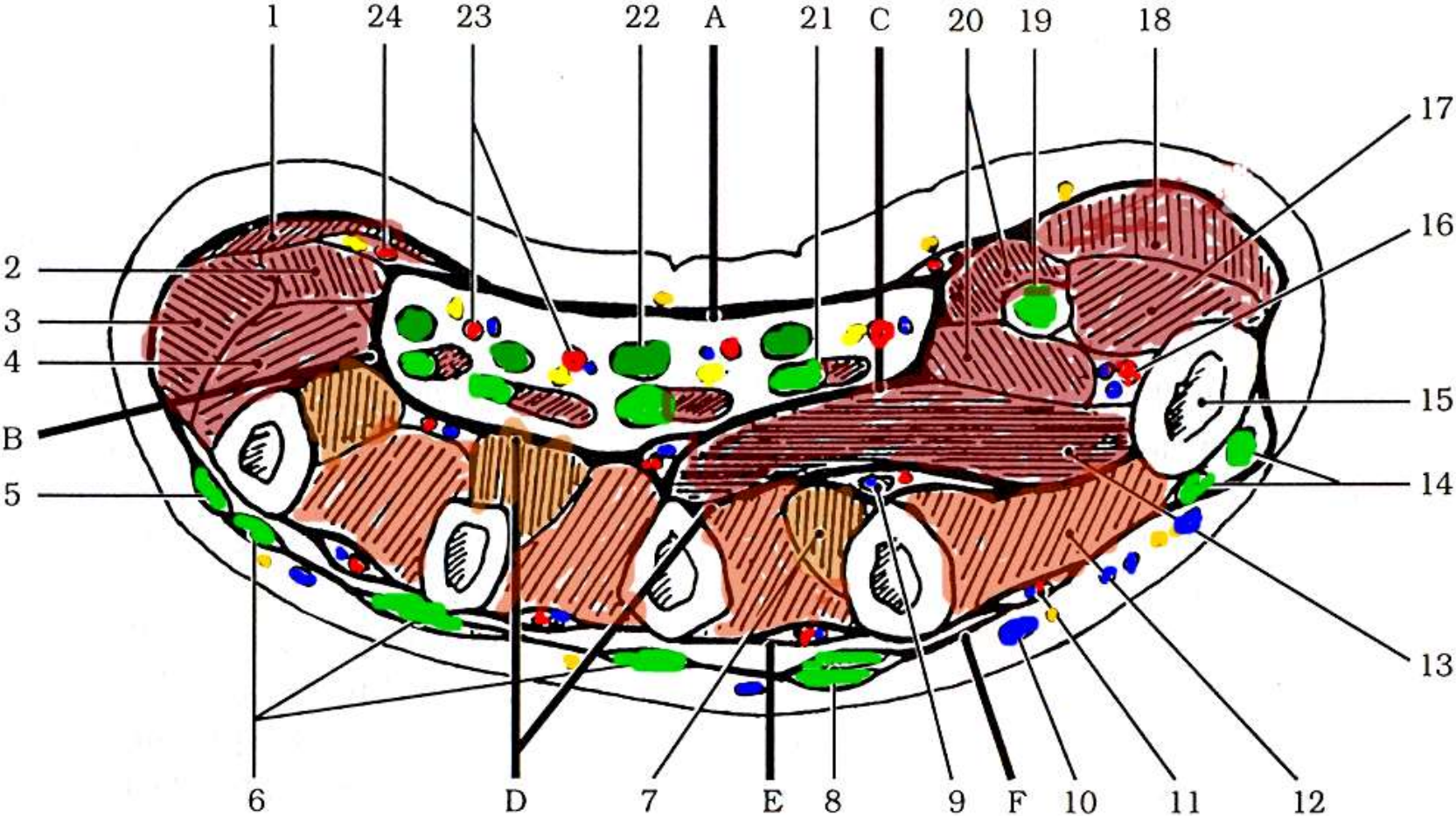
Extensor tendons



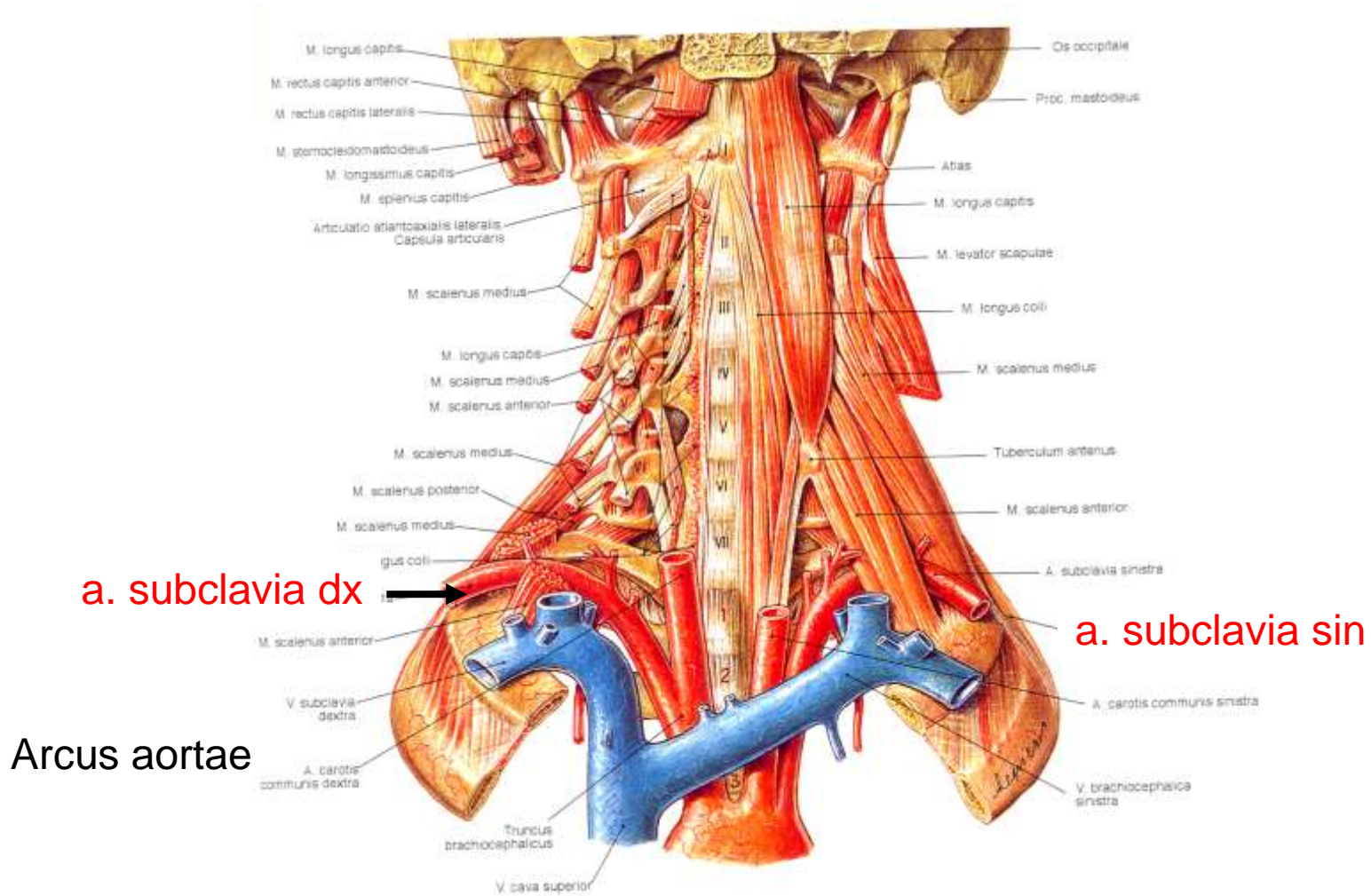
Vaginae synoviales manus



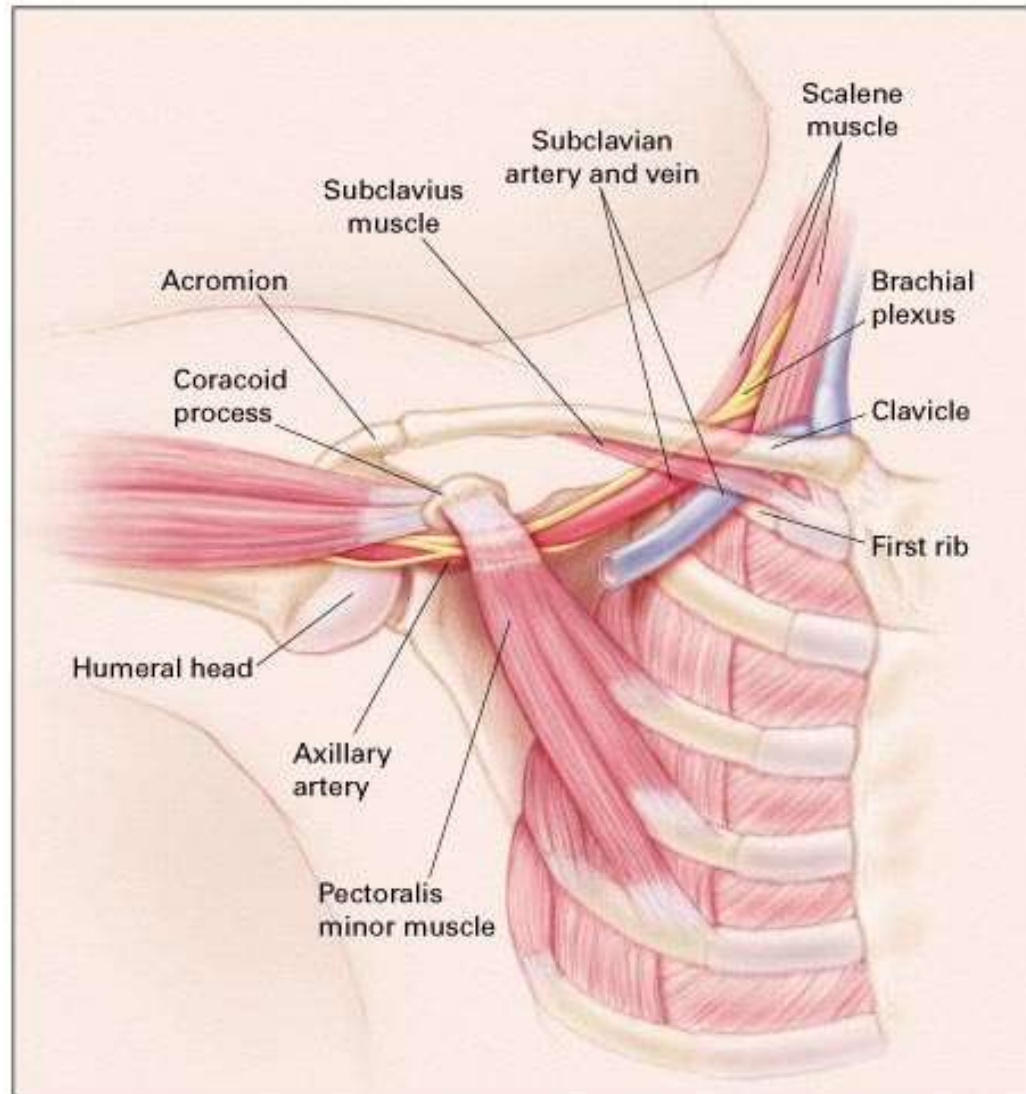
Hand crossection



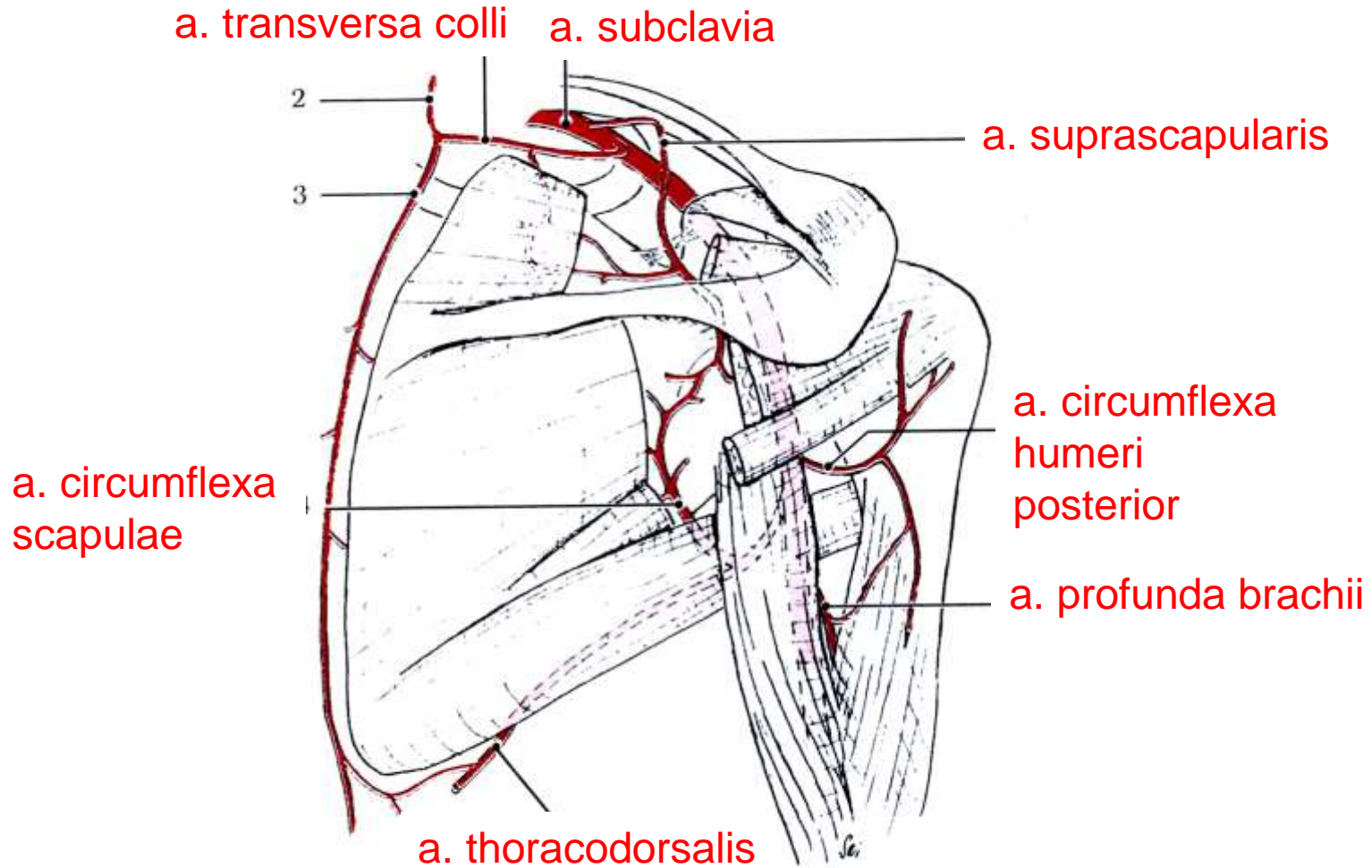
Blood supplying of UL



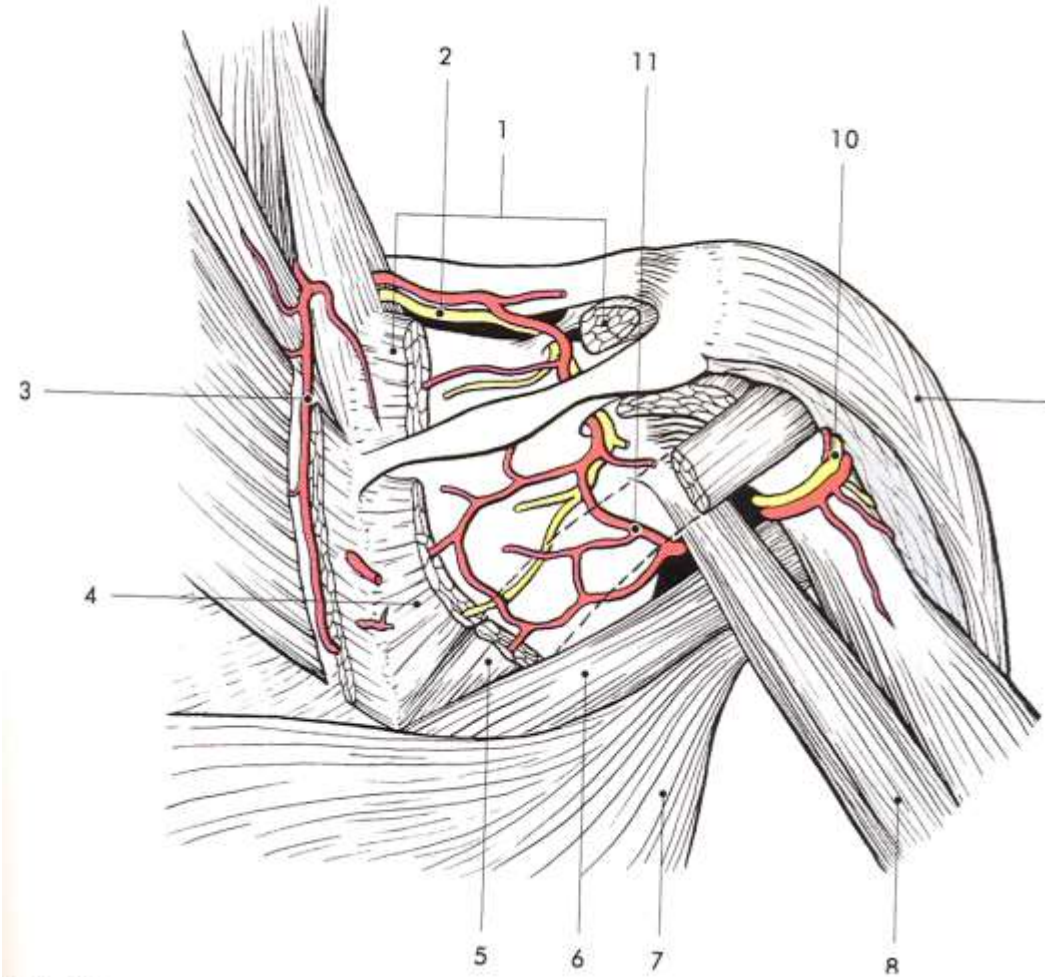
A. axillaris – 1. rib - collum chirurgicum



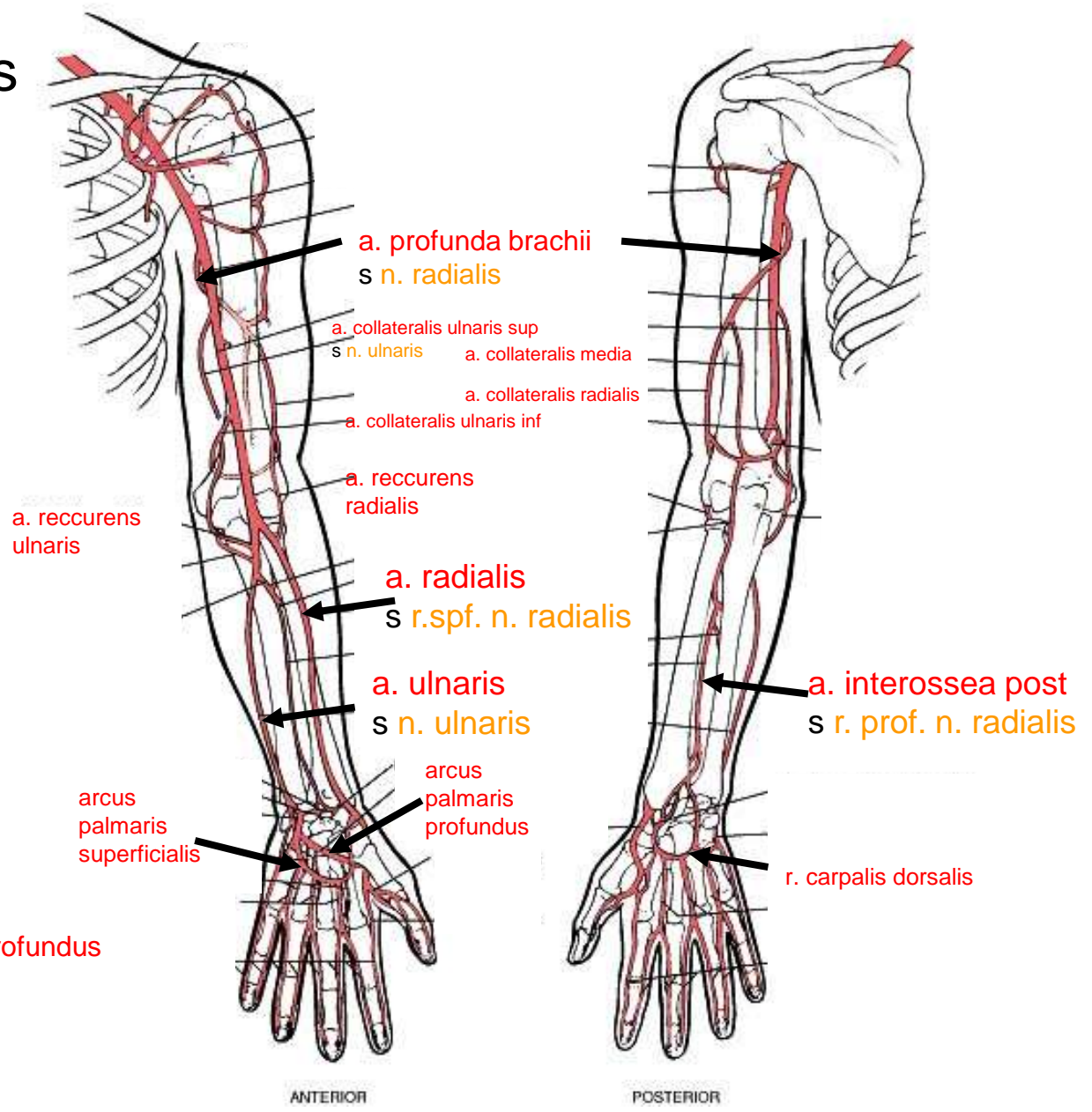
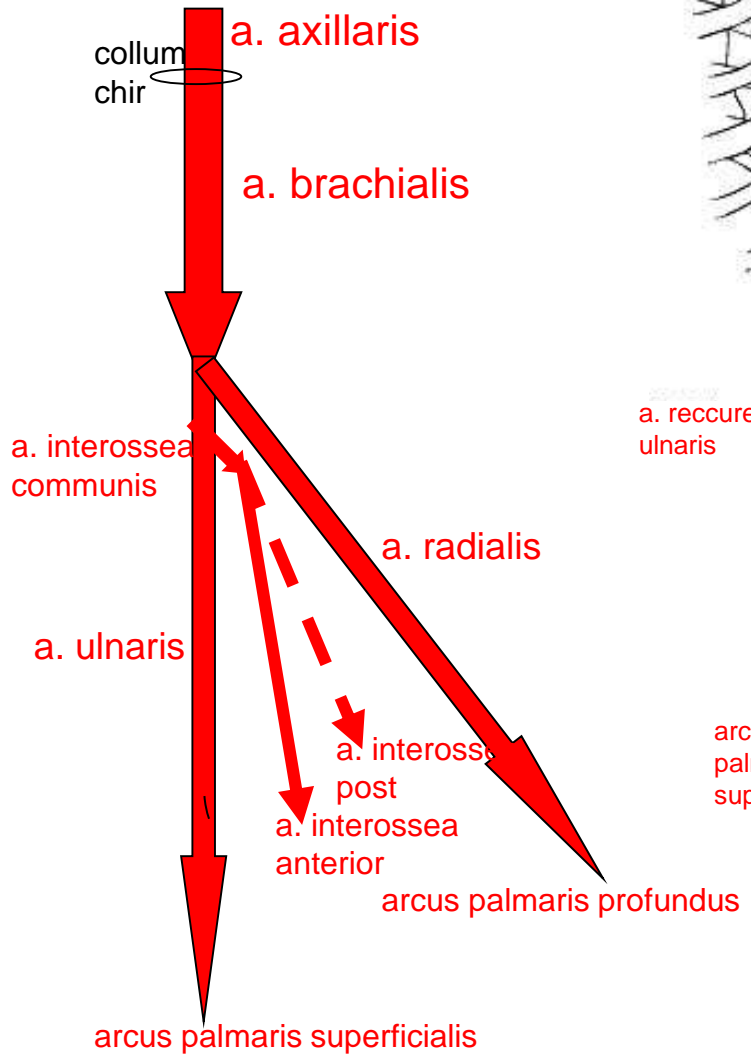
Anastomoses around the scapule



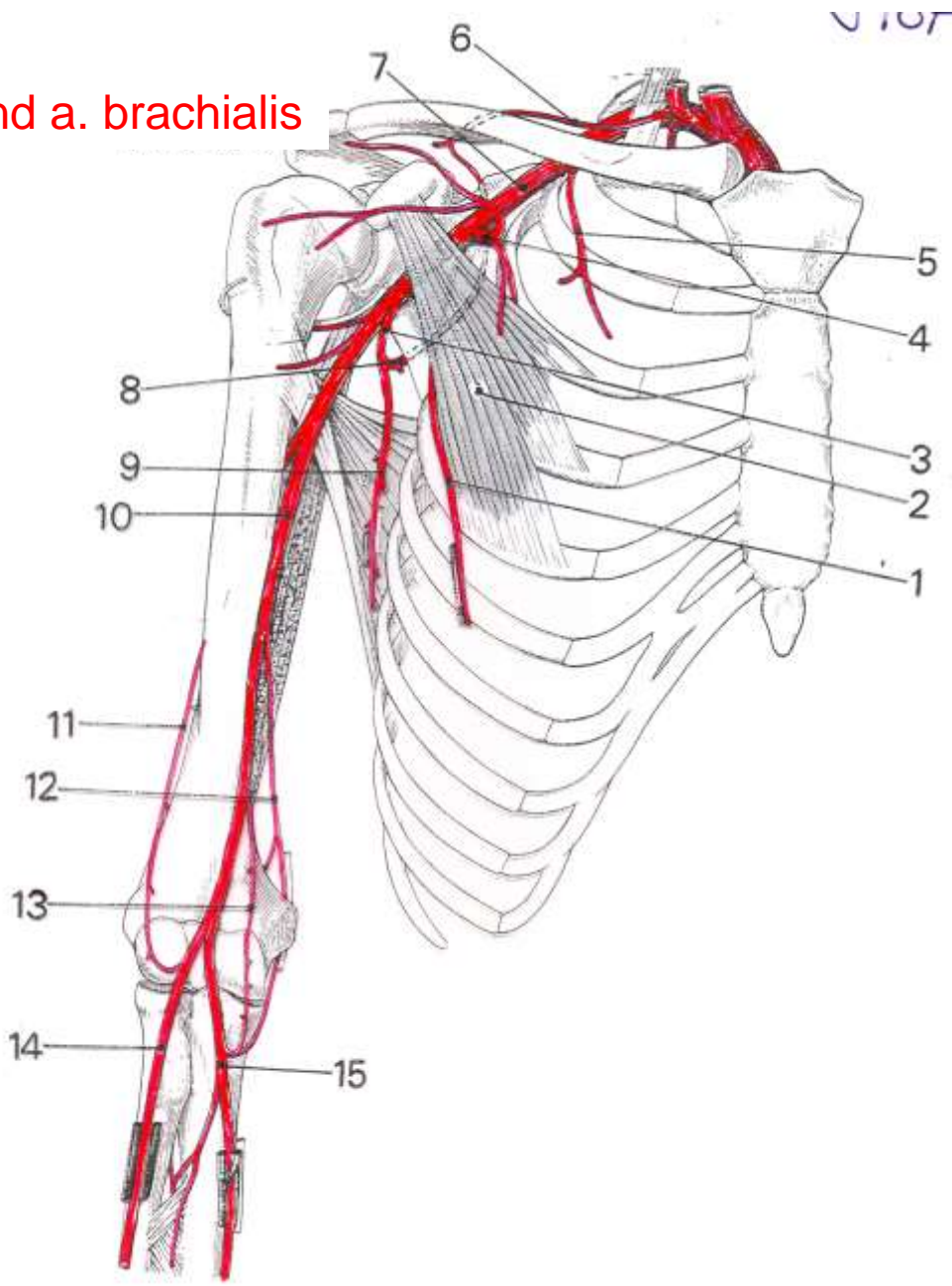
Anastomoses around the scapule



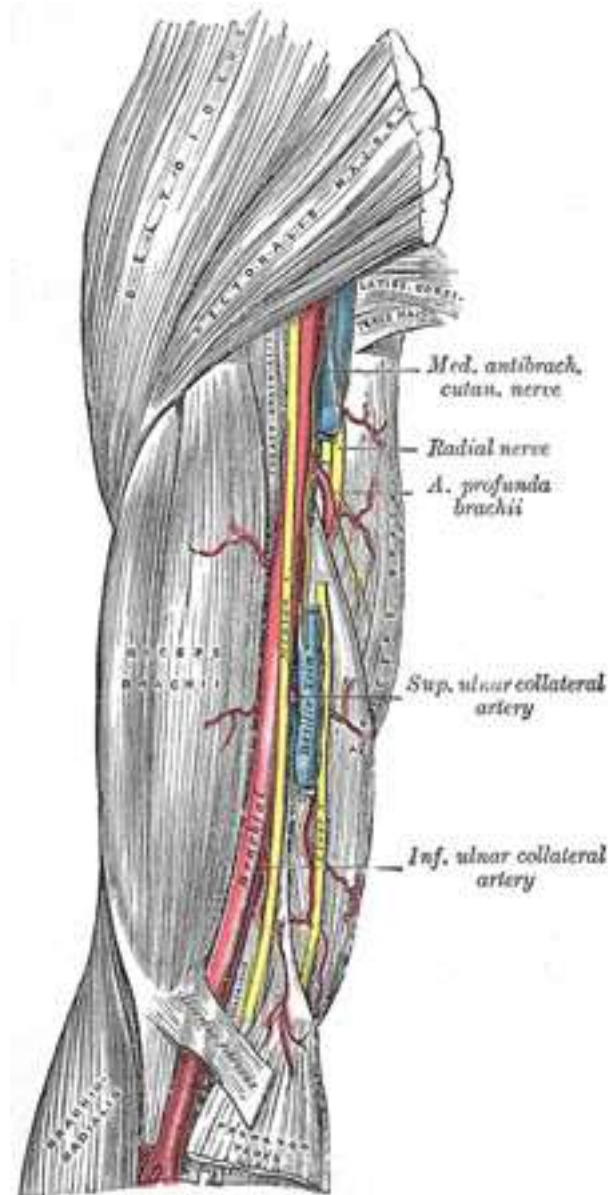
Scheme of UL arteries



A. axillaris and a. brachialis



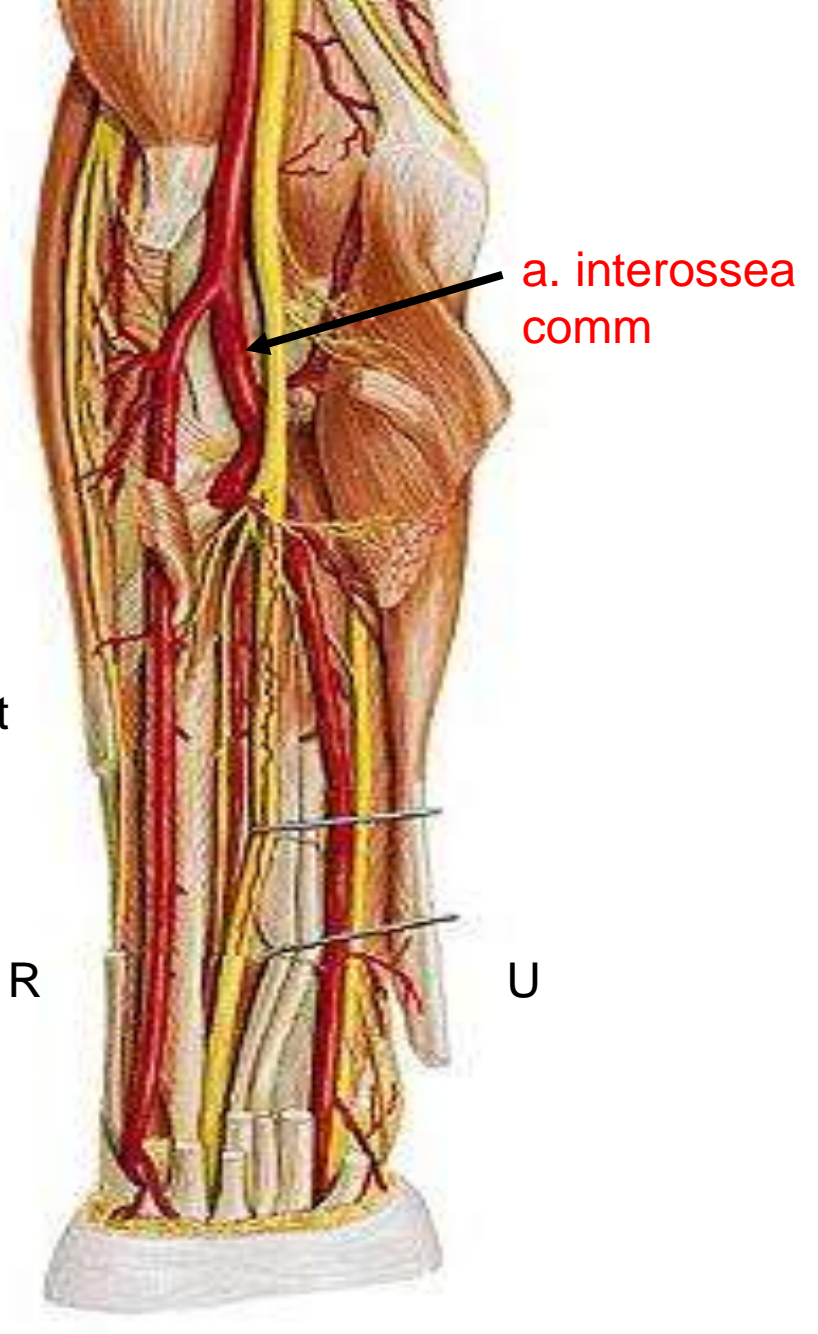
Septum intermusculare brachii mediale



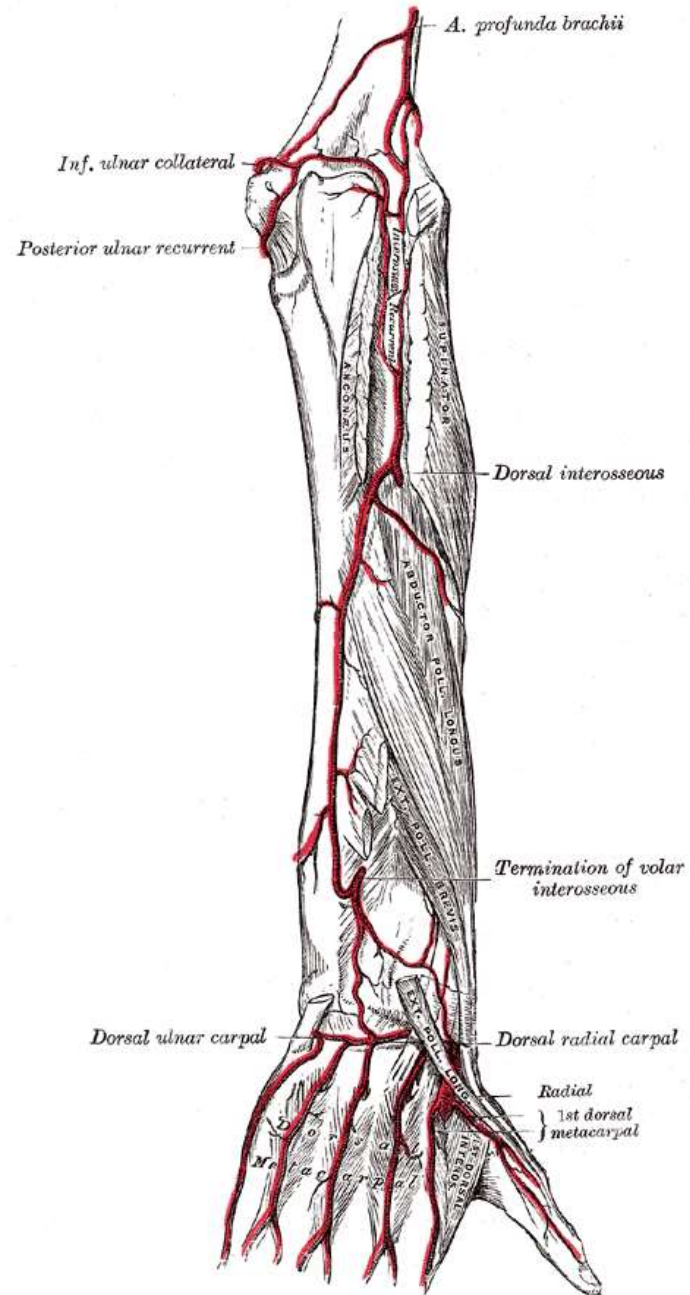
- a. brachialis
- v. brachialis ← v. basilica
- n. medianus
- n. ulnaris → behind epic med
- n. cutaneus antebrachii med



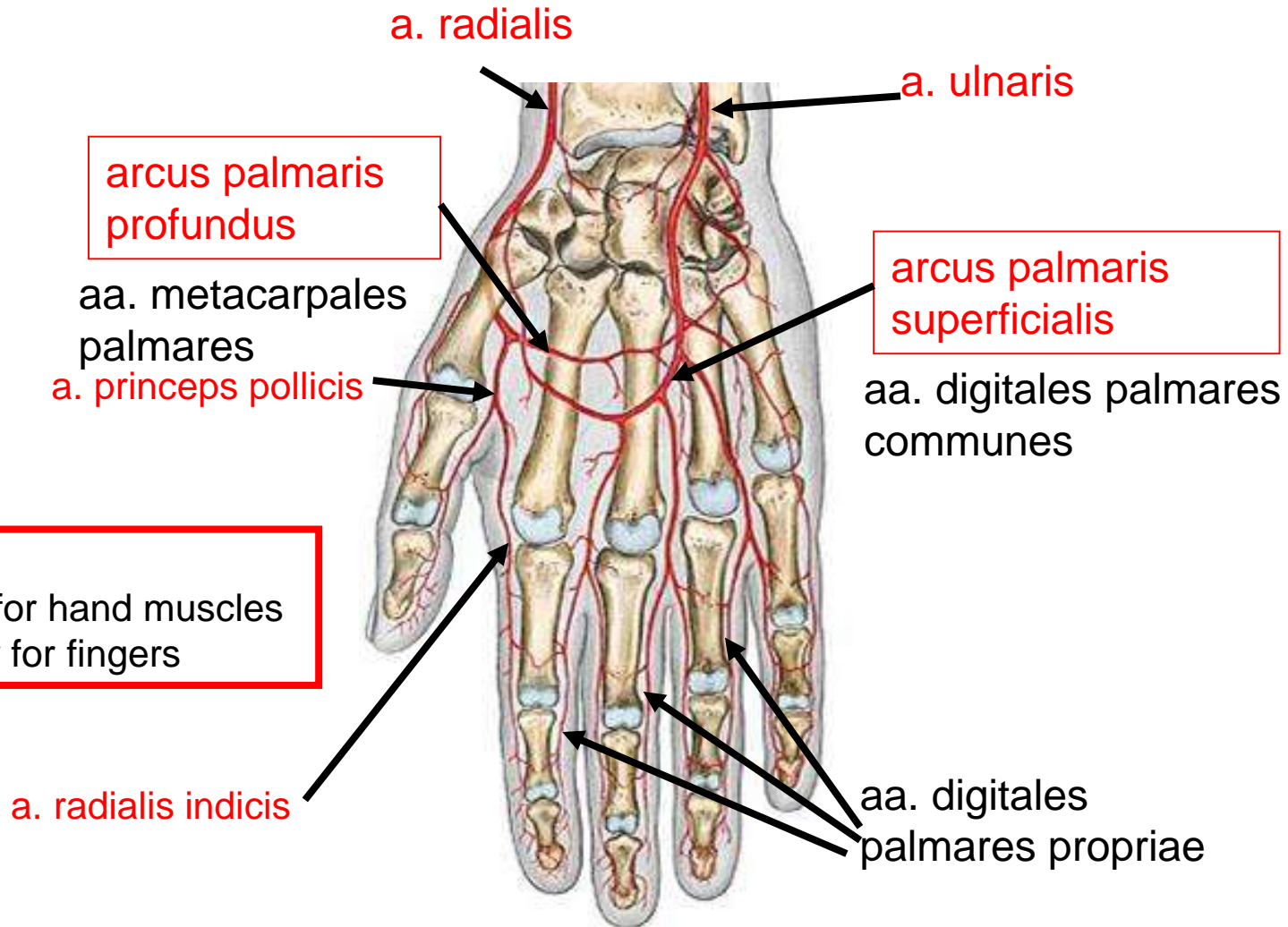
Antebrachium
Anterior aspect



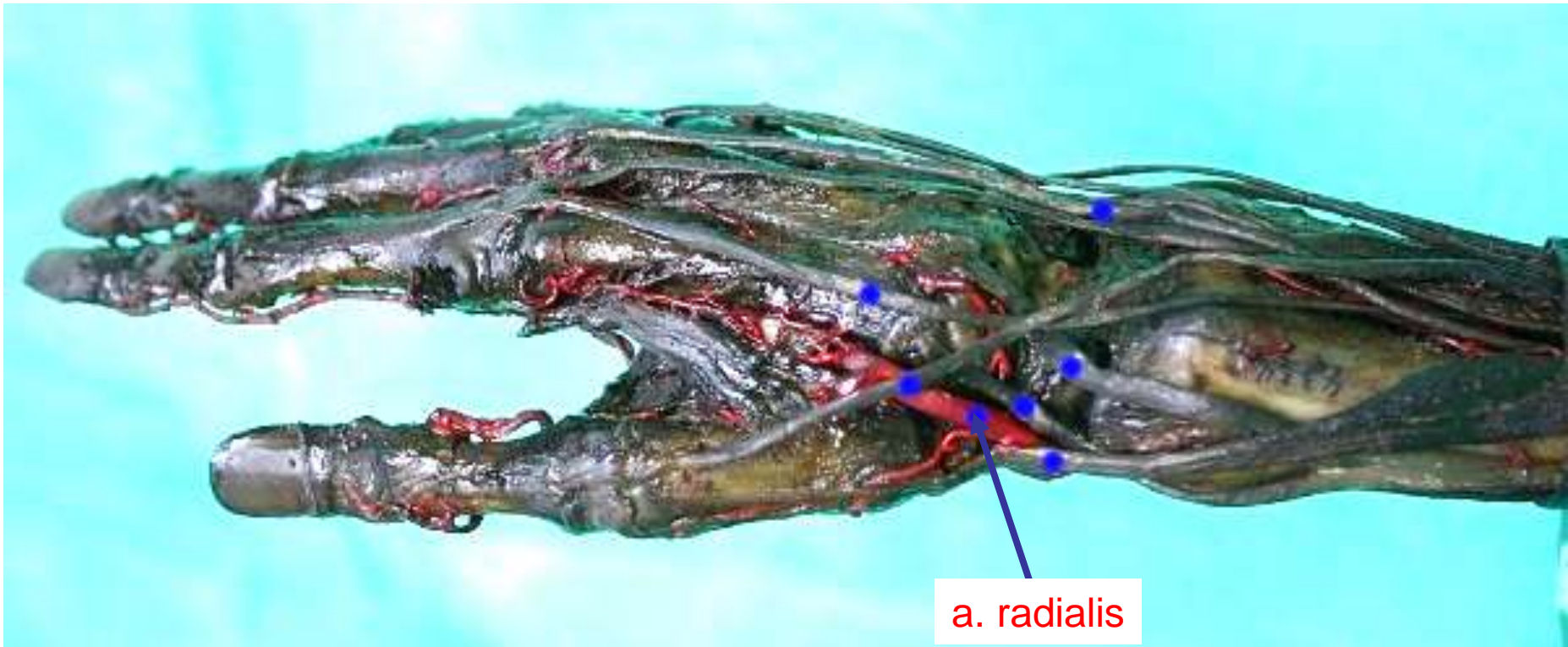
Arteries of the forearm posterior aspect



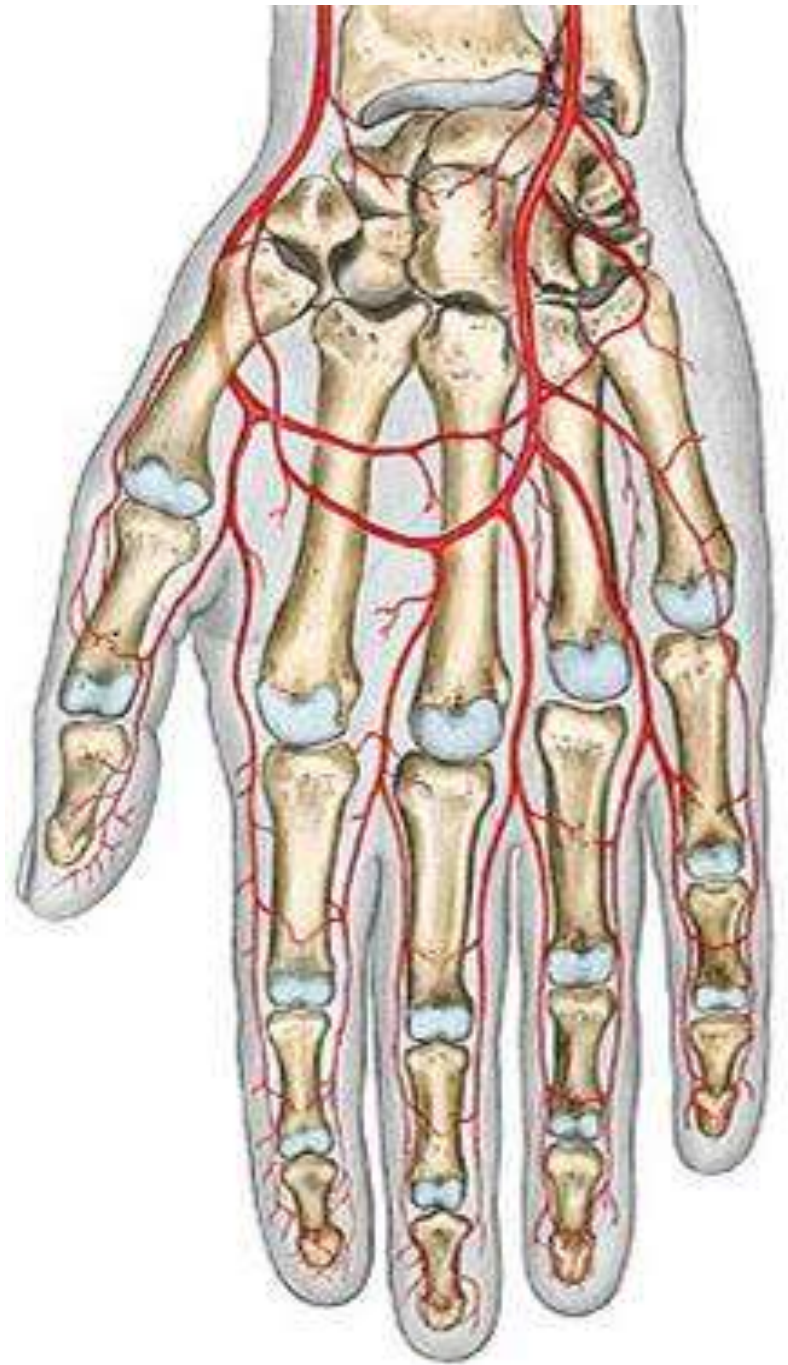
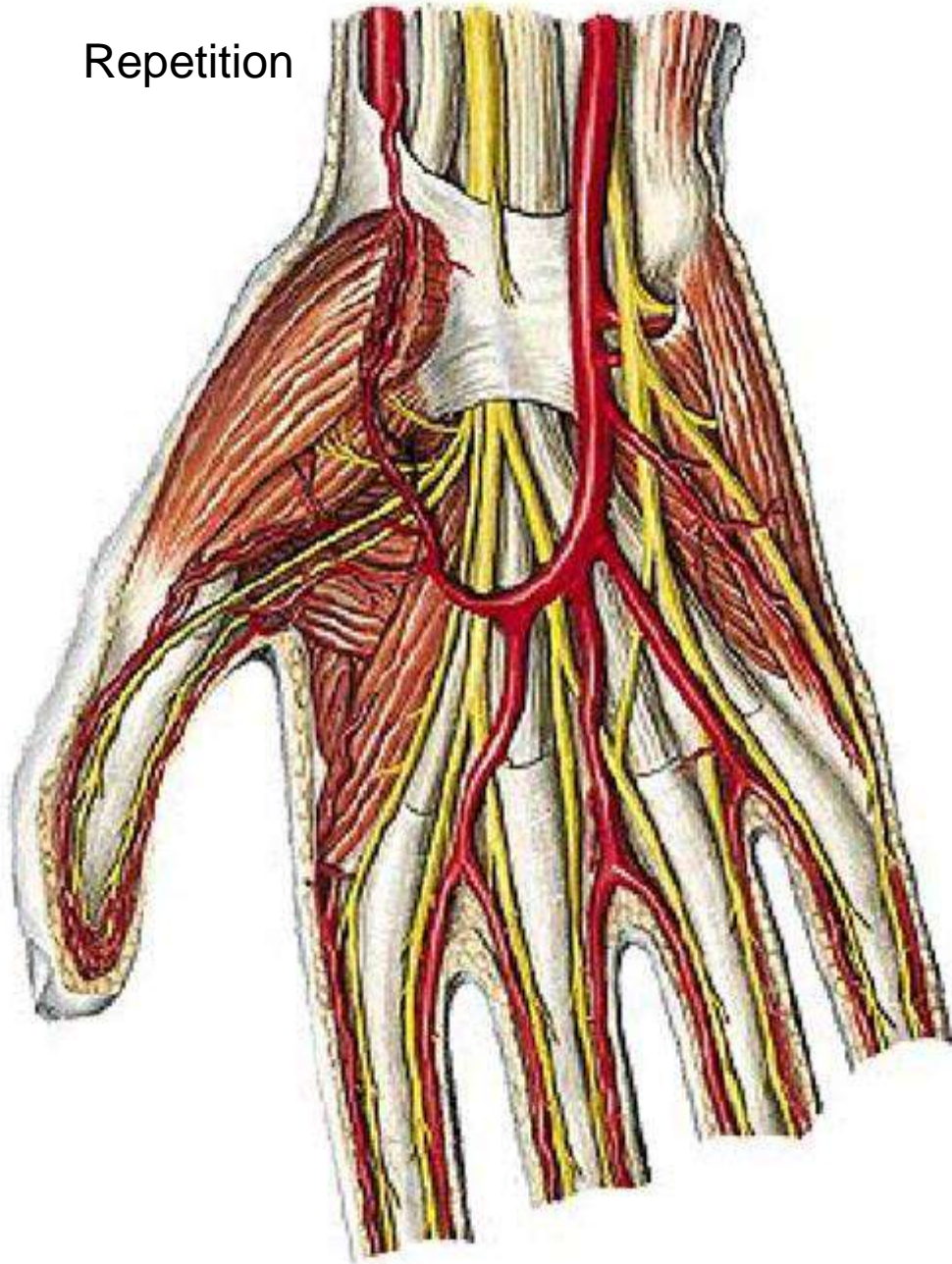
Hand arteries



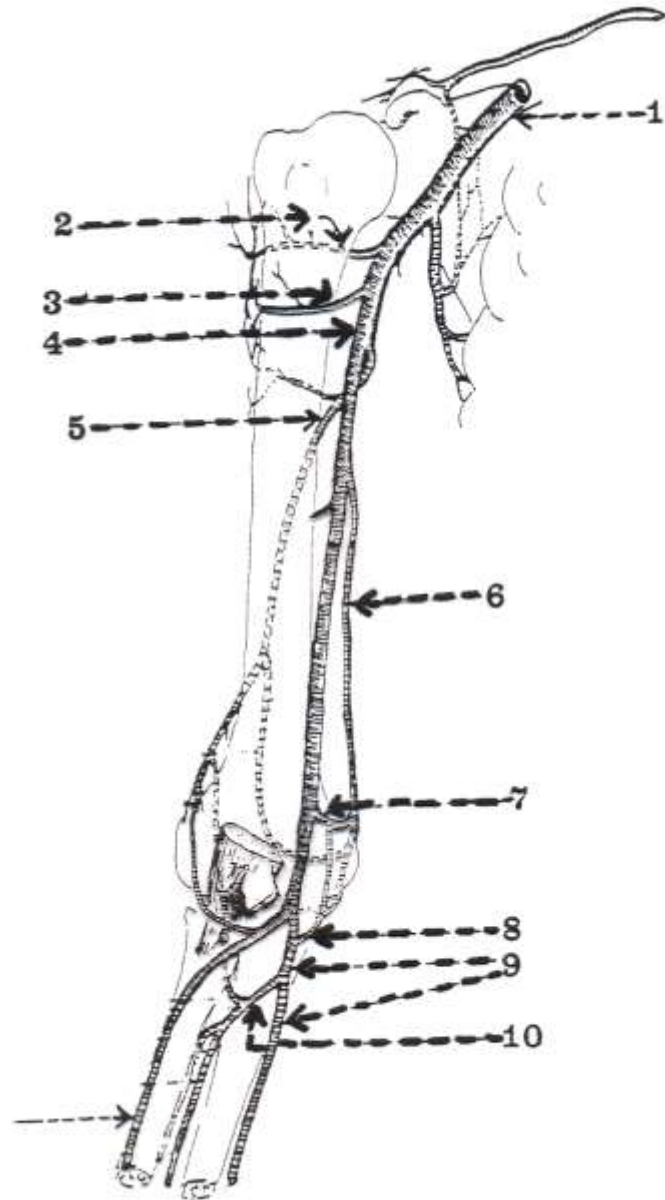
Foveola radialis



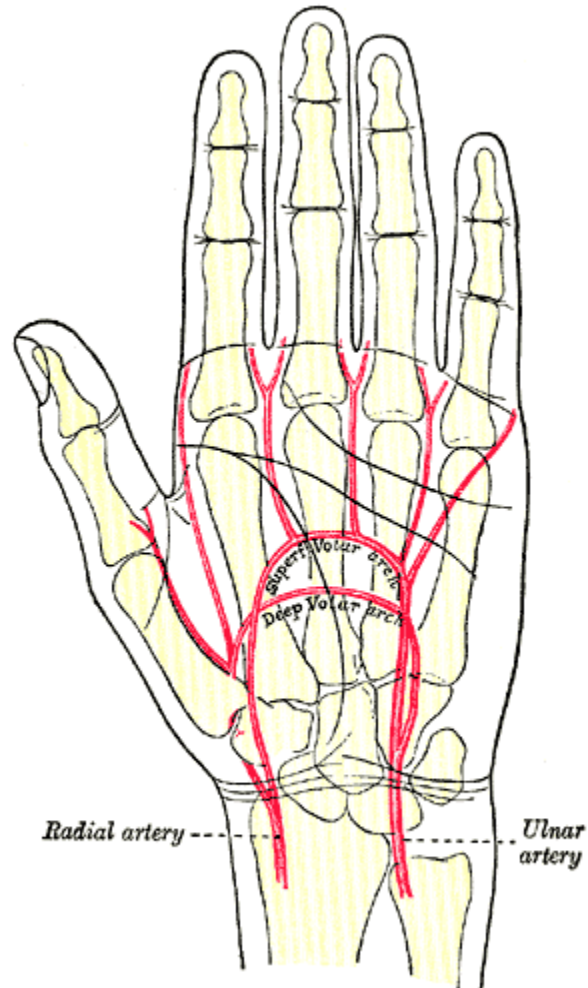
Repetition



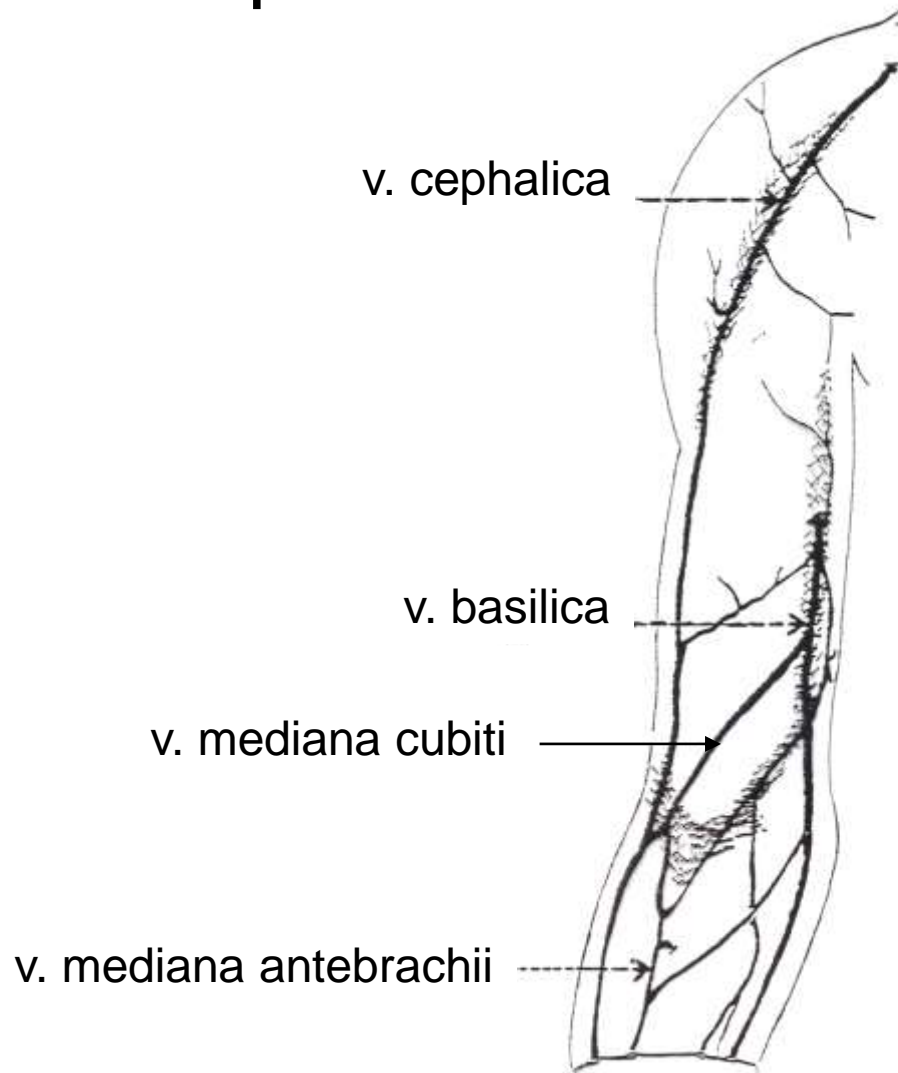
repetition



arcus palmaris superficialis and profundus projection

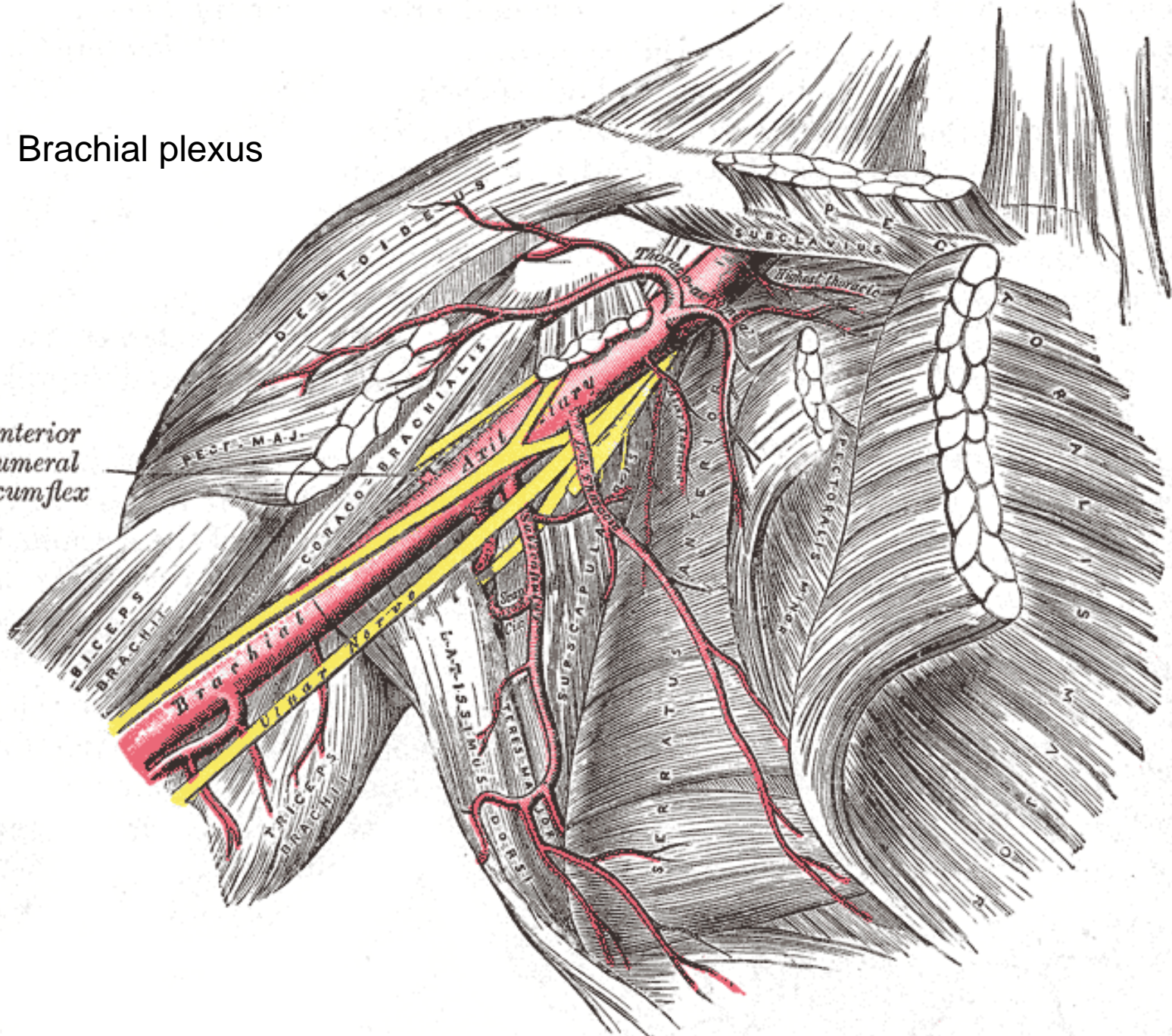


Superficial veins UL - scheme



Brachial plexus

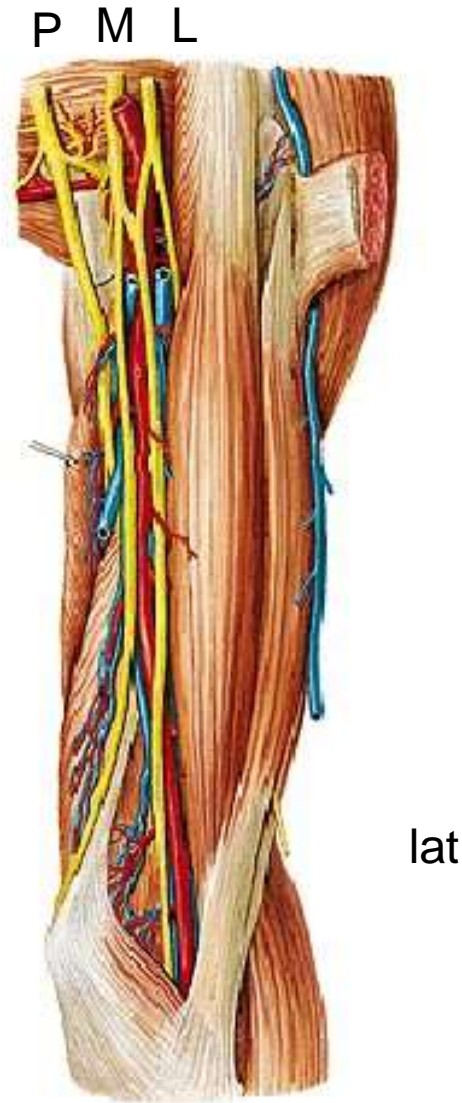
Anterior humeral circumflex



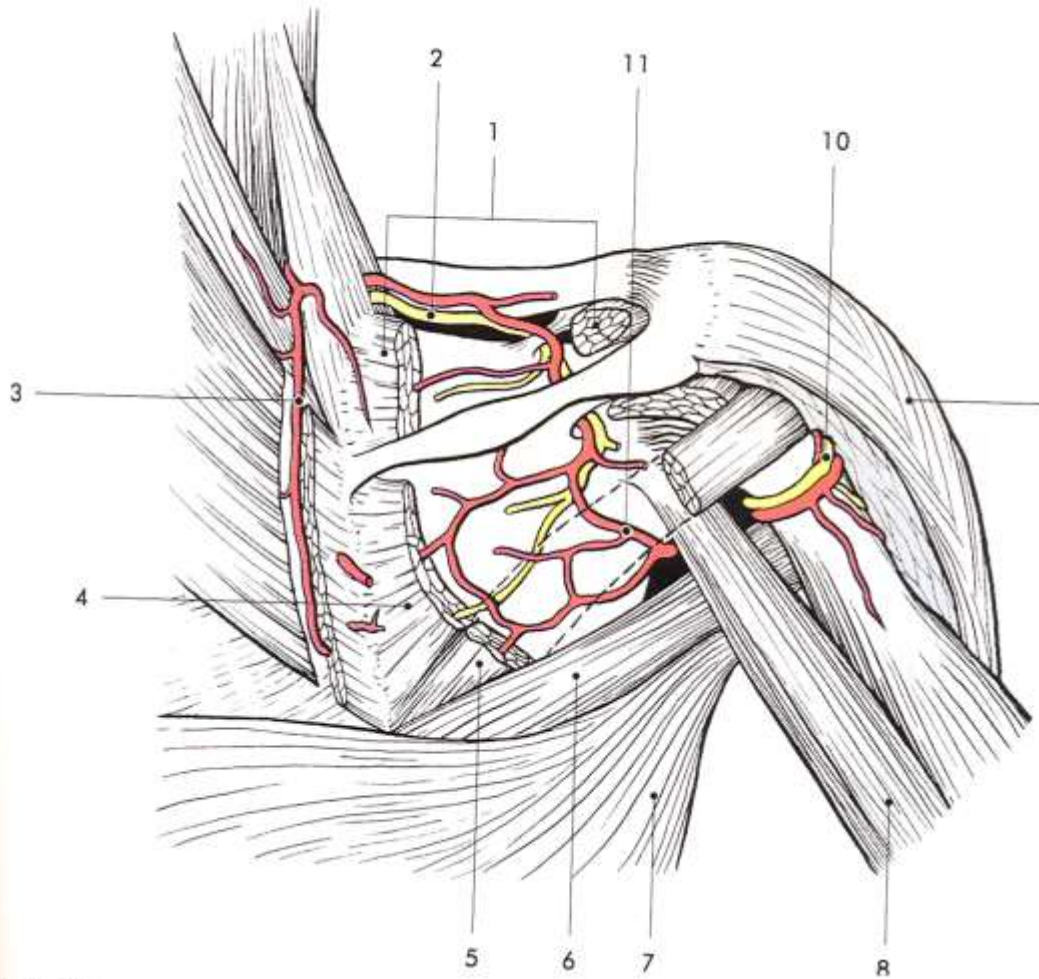
Plexus brachialis

How to find the nerves?

- 1) find **a. axillaris**
- 2) **n. medianus** – „a fork“ in front of the artery – it goes in the middle of fossa cubiti
- 3) from **fasciculus lateralis n. musculocutaneus**
-through the m. coracobrachialis, between m. biceps and brachialis
- 4) from **fasciculus medialis n. ulnaris** behind medial epicondyle
- 5) from **fasciculus medialis n. cutaneus antebrachii medialis** – long
- 6) from **fasciculus medialis n. cutaneus brachii medialis** – short
- 7) from **fasciculus posterior n. radialis** – long, between triceps heads
- 8) from **fasciculus posterior n. axillaris** – short into foramen humerotricipitale (quadrangular space)



Axillary nerve



Plexus brachialis
repetition



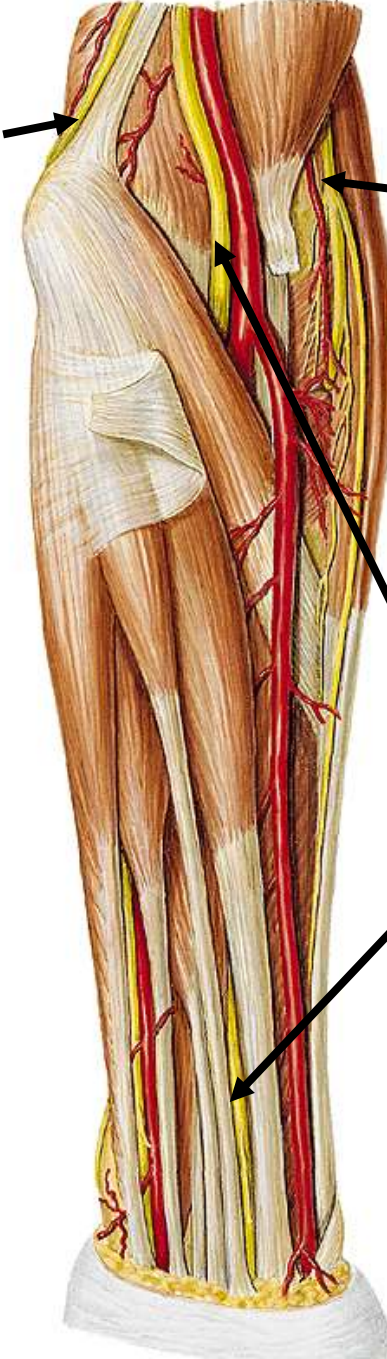
Nerves in the
fossa cubiti



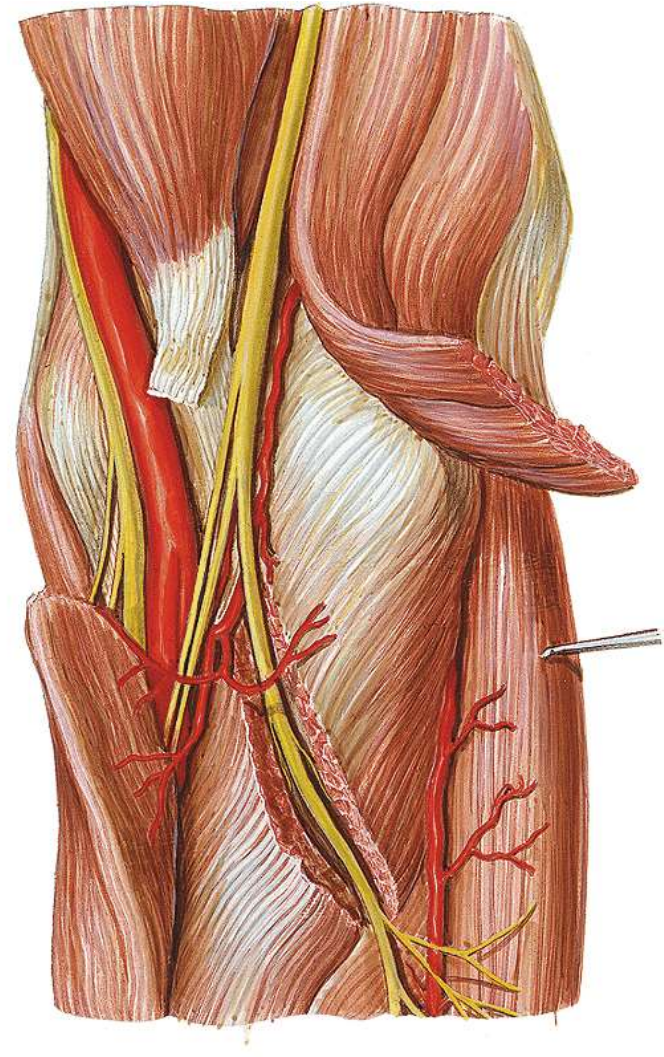
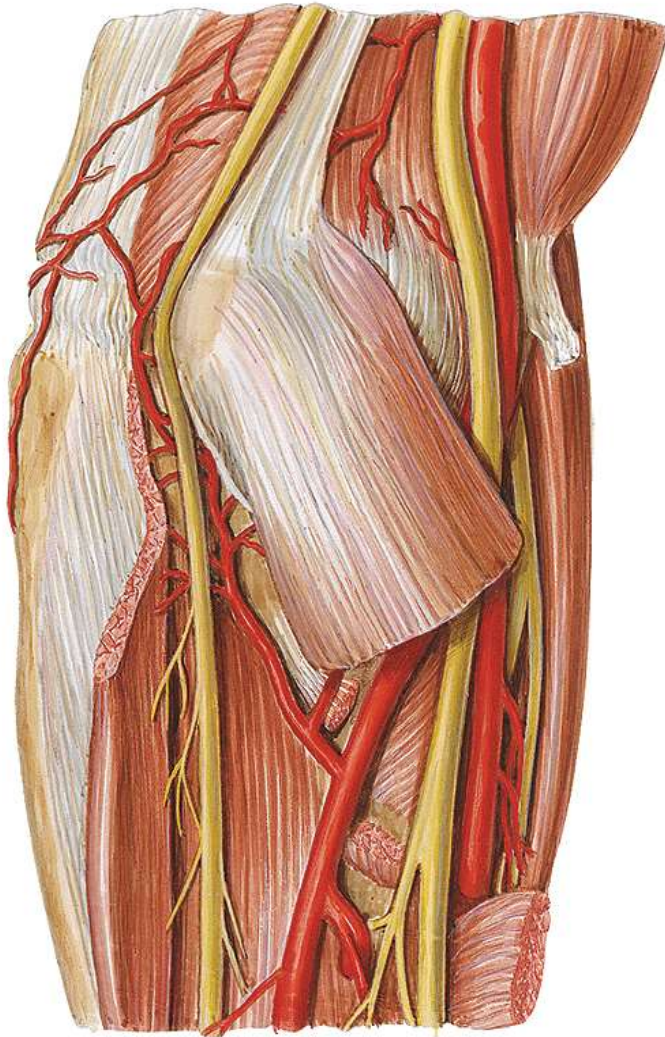
n ulnaris

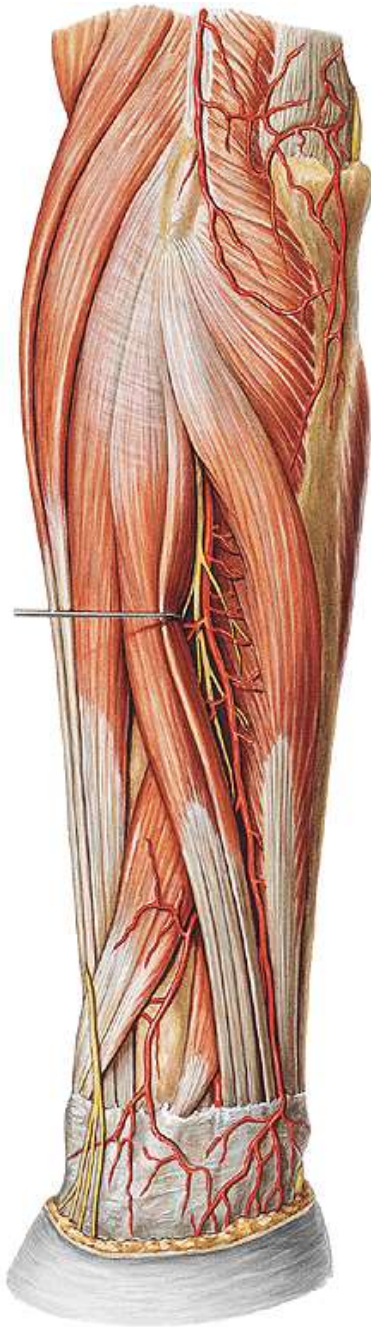
n. radialis

n. medianus

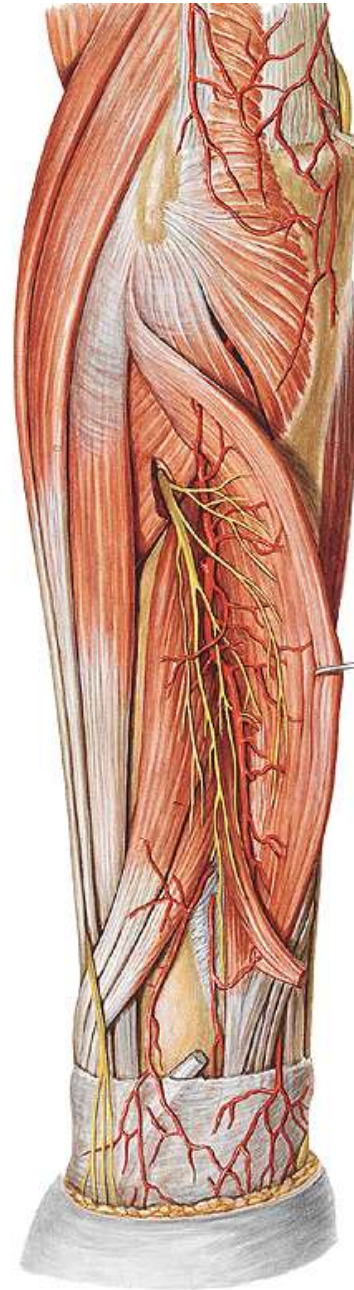


Nerves in the fossa cubiti





N radialis
deep and
superficial
branch



Inervation of the hand palmary

n. medianus – below the retinaculum flexorum

Motor: thenar without AdPB and c.pFPB, 2 mm. lumbricals

Sensory : nn. digitales palmares communes et proprii – 3+1/2 fingers radially

n. ulnaris – above the retinaculum flexorum

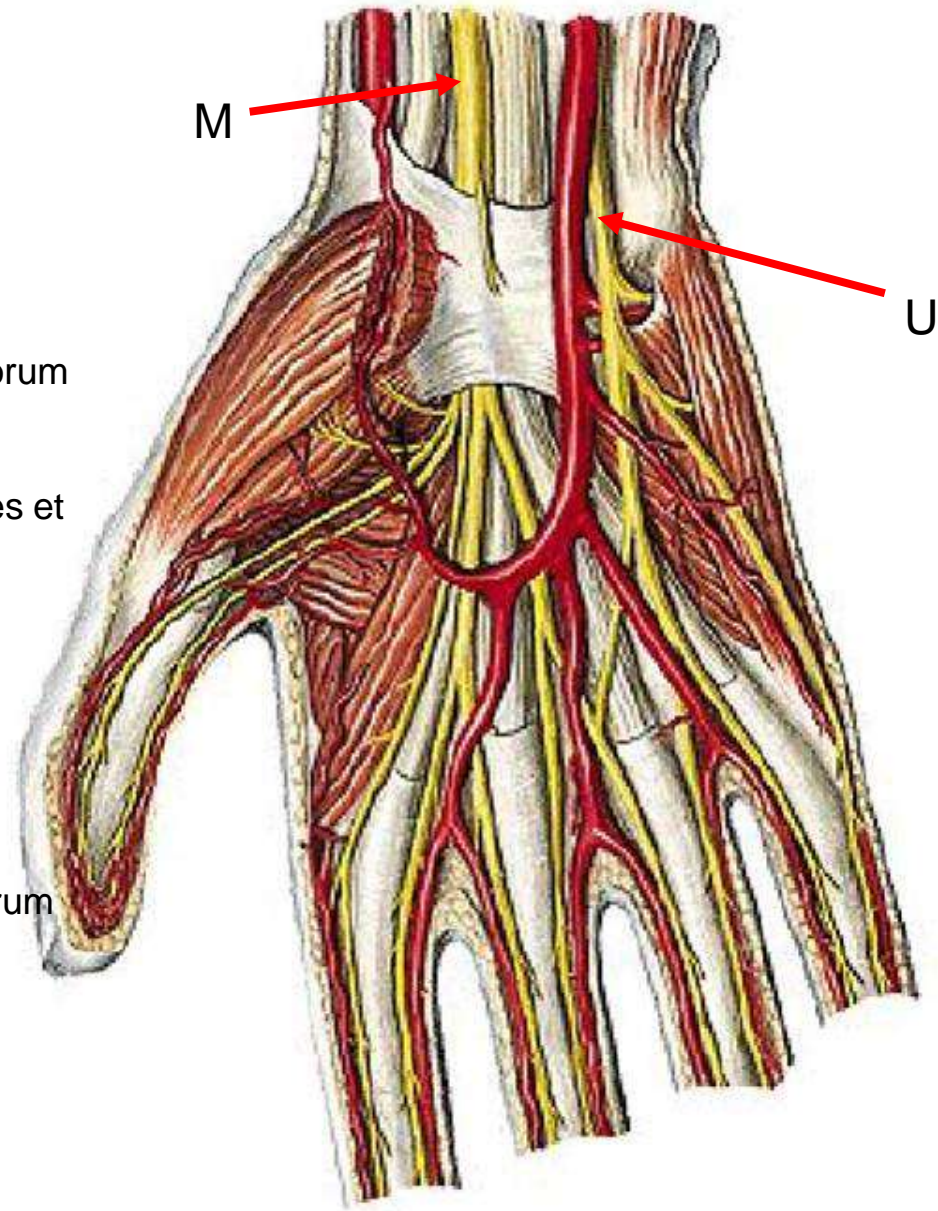
Motor: hypothenar + AddPB + c.s.FPB

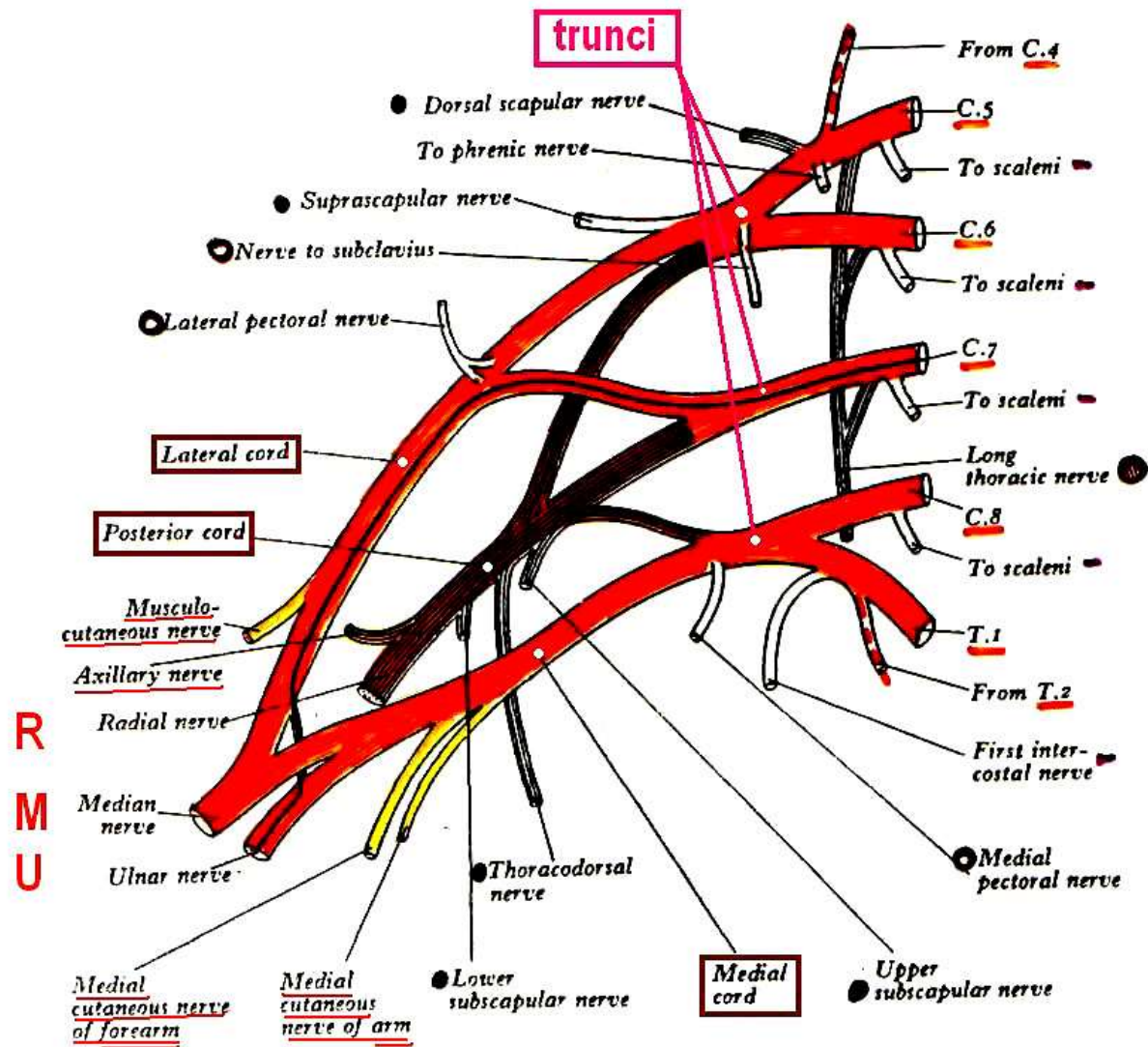
2 mm. lumbricals

mm. interossei

sensory: 1+1/2 fingers ulnary

r. dorsalis 2+1/2 fingers ulnary - dorsum





7.243 A plan of the brachial plexus. The posterior division of the trunks and their derivatives are shaded and the fibres from C.7 which enter the ulnar nerve are shown as a heavy black line. Letters and numbers C.4-C.8 and T.1-T.2 indicate the *ventral rami* of these cervical and thoracic spinal nerves.

Tourniquet is applied
and area is disinfected



Needle is introduced
into vein, blood is drawn
into vial and analyzed



Tourniquet is applied and area is disinfected



v. cephalica



v. basilica

v. mediana cubiti

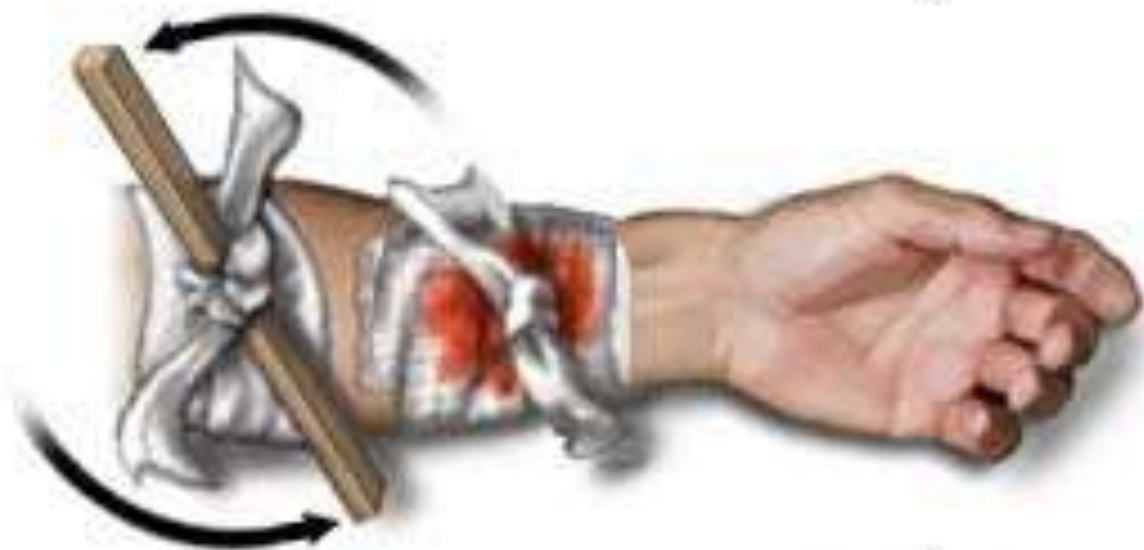
Needle is introduced into vein, blood is drawn into vial and analyzed



If bleeding has not stopped after 15 minutes of direct pressure, apply strong pressure at one of these points between the wound and the heart



Use a tourniquet **ONLY AS A LAST RESORT**, if bleeding cannot be stopped and the situation is life-threatening



Sources

- Petrovický: Anatomie I
- Grim Základy anatomie
- Čihák Anatomie I
- Sobotta, Atlas
- Petrovický, Schematické průřezy
- webové zdroje

Overview of the lower limb

prof. MUDr. Pavel Petrovický, Dr.Sc.

MUDr. Veronika Němcová, CSc.

Inervation

- **Plexus lumbalis** – rami ventrales Th12 –L4
 - arise around **m. psoas**
 - anterior and medial group
 - of femur
- **Plexus sacralis** – rami ventrales L5 – S4
 - arise around **m. psoas**
 - posterior group of femur
 - lower thigh
 - foot

Plexus lumbalis

Th12-L4

n. iliohypogastricus

n. ilioinguinalis

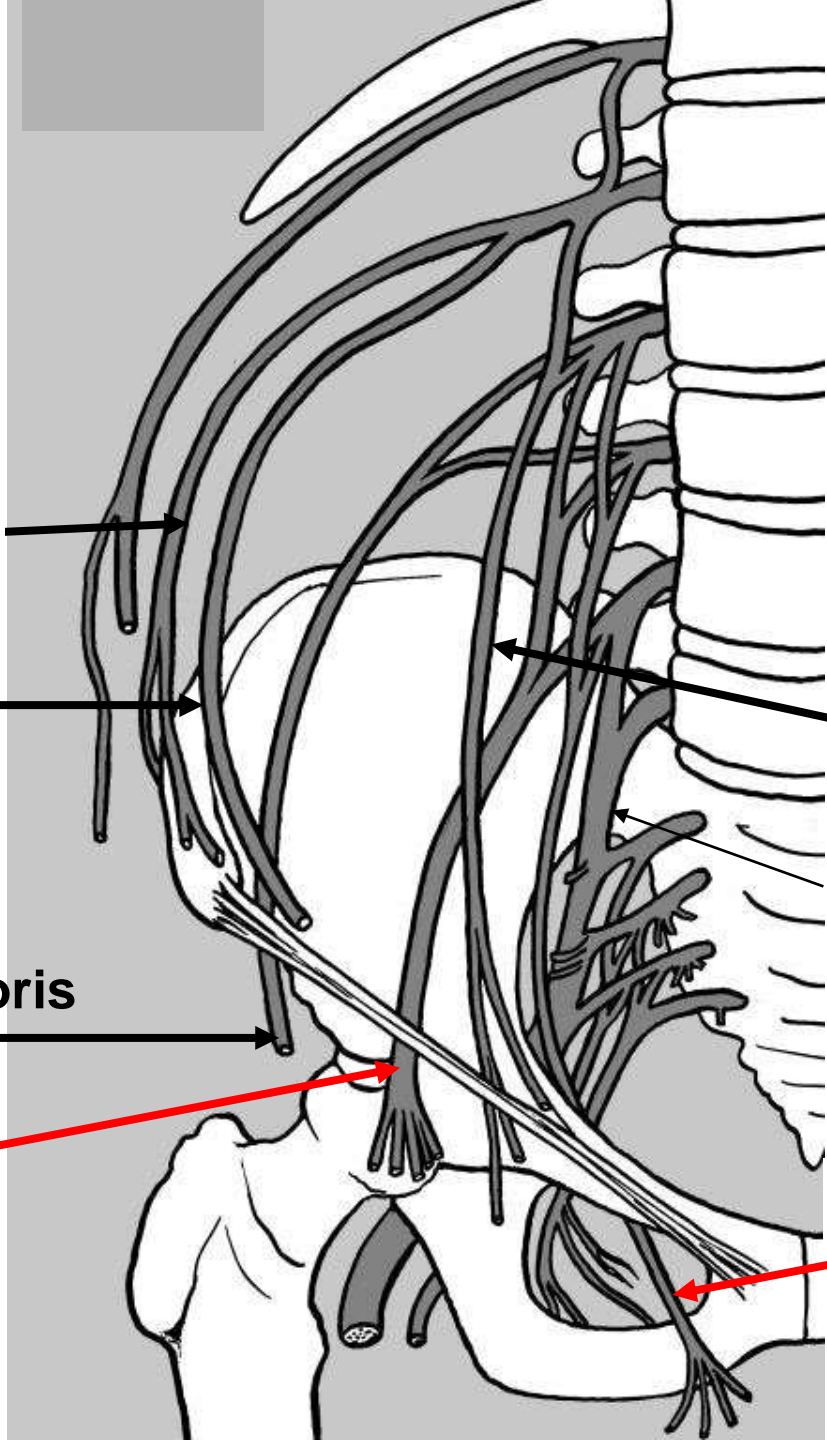
n. cutaneus femoris
lateralis

n. femoralis

n. genitofemoralis

n. lumbosacralis
- connection of
plexuses

n. obturatorius



- A., V. j
- N. glu
- A., V. j
- N. glu
- A., V. j
- N. puc
- 4 N. cut

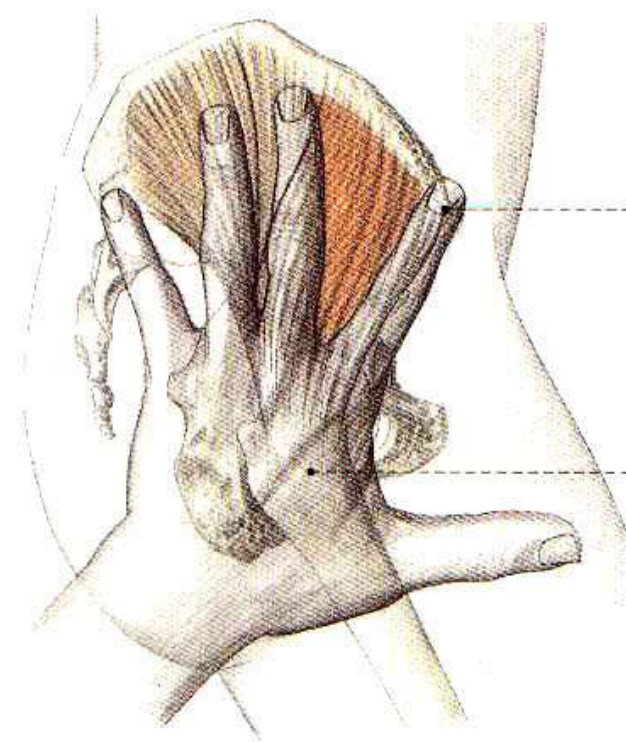
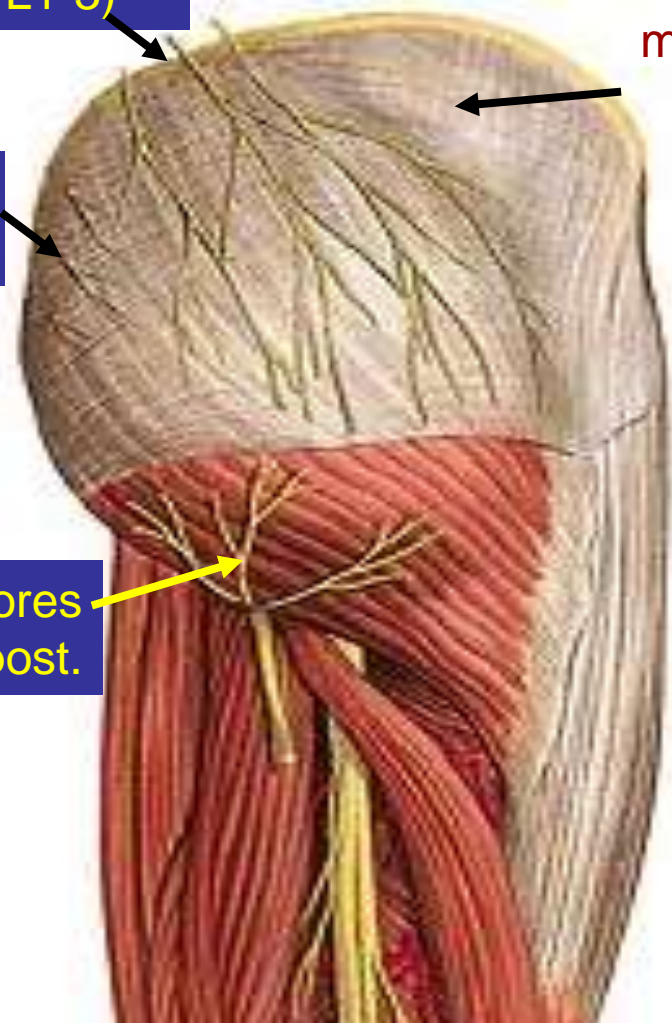
Intramuskulární injection – upper lateral quadrant !

nn. clunium superiores
(rami dorsales L1-3)

nn. clunium medii
(r.d. S1-3)

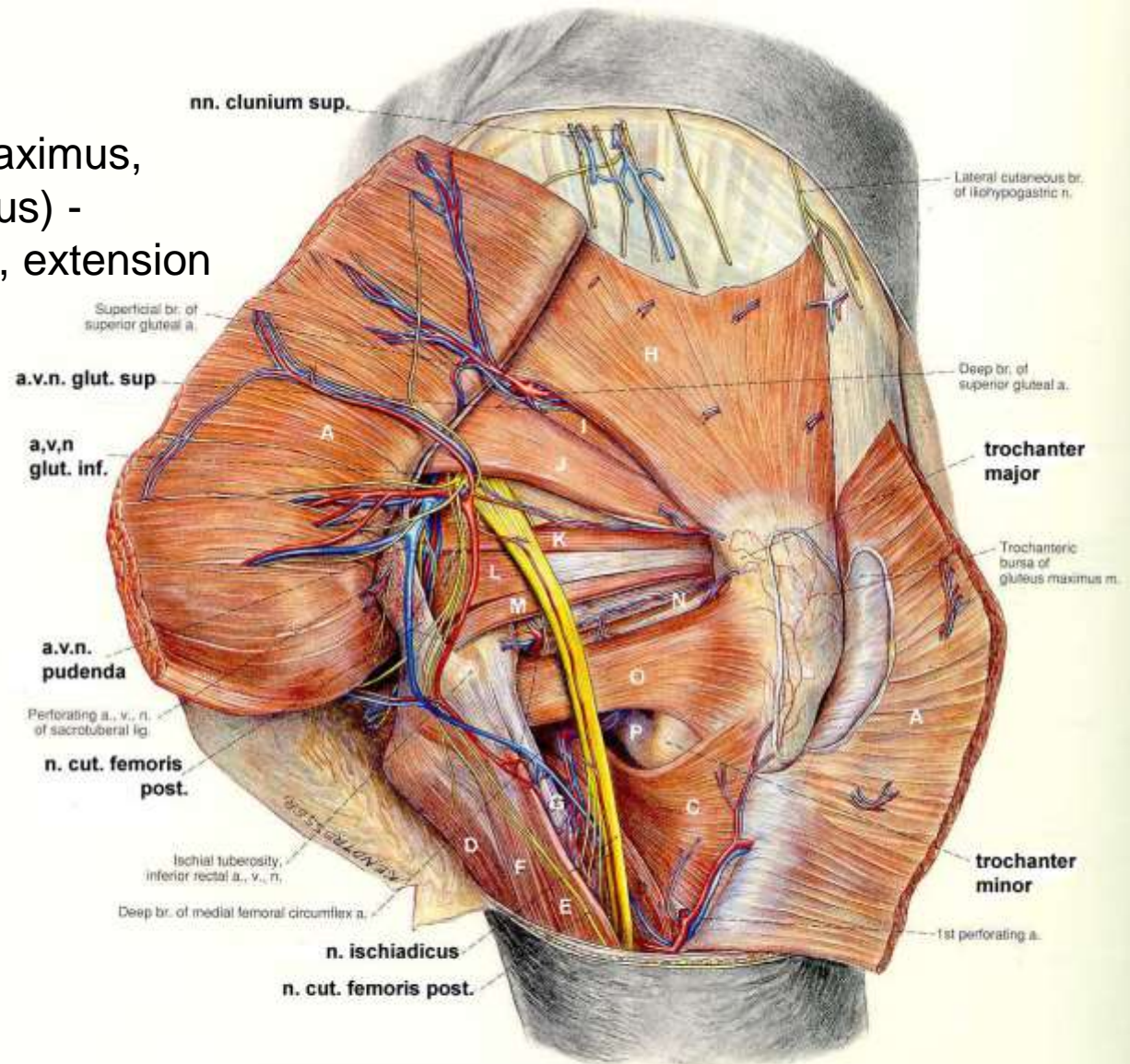
nn. clunium inferiores
z n. cut. femoris post.

m. gluteus medius



257 Femur

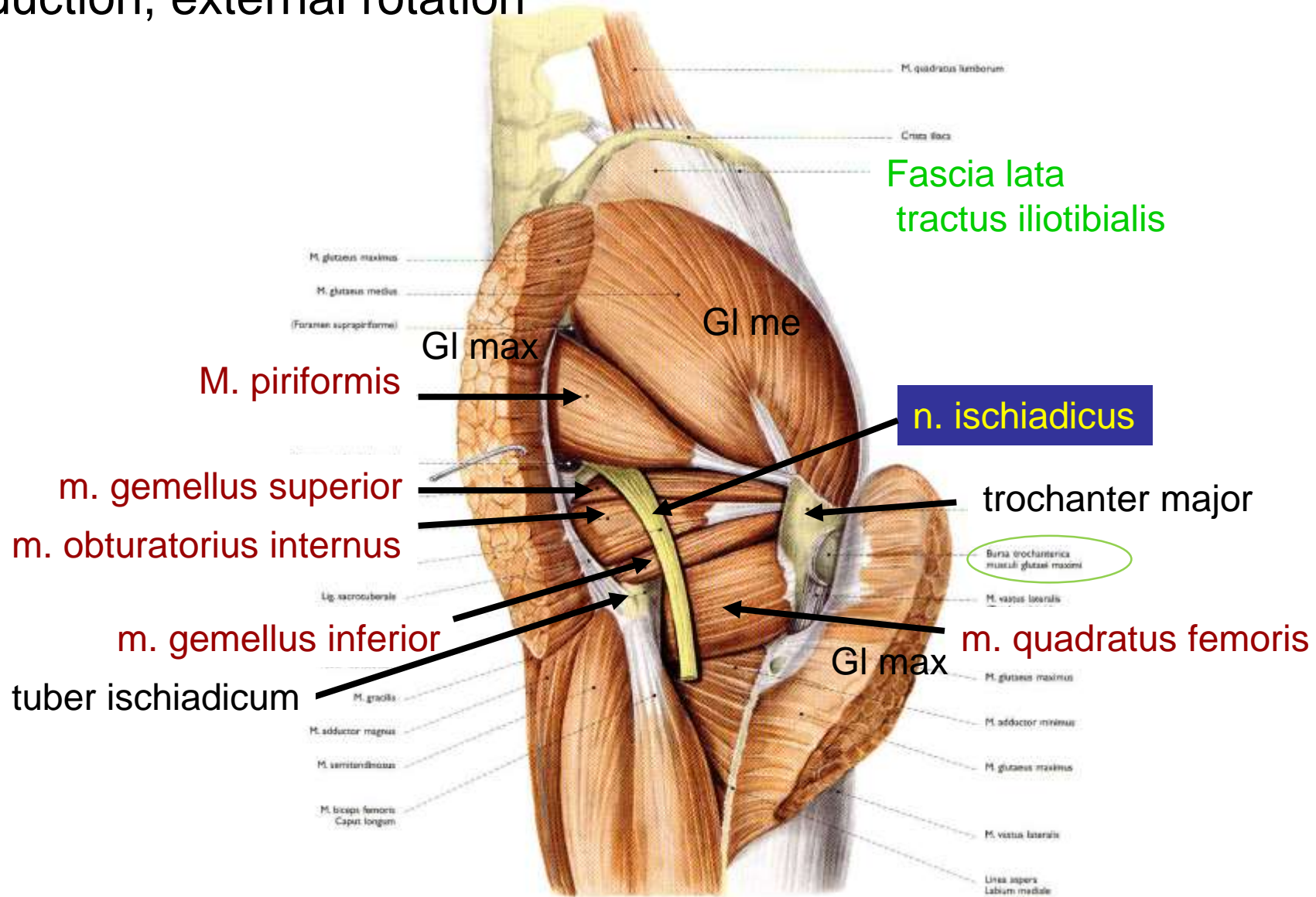
Musculi glutei (maximus, medius and minimus) - abduction, rotation, extension



A – gluteus max.
 C – adductor minimus
 D – adductor magnus
 E – cap. longum bicipitis
 F – semitendinosus
 G – semimembranosus
 H – gluteus medius
 I – gluteus minimus

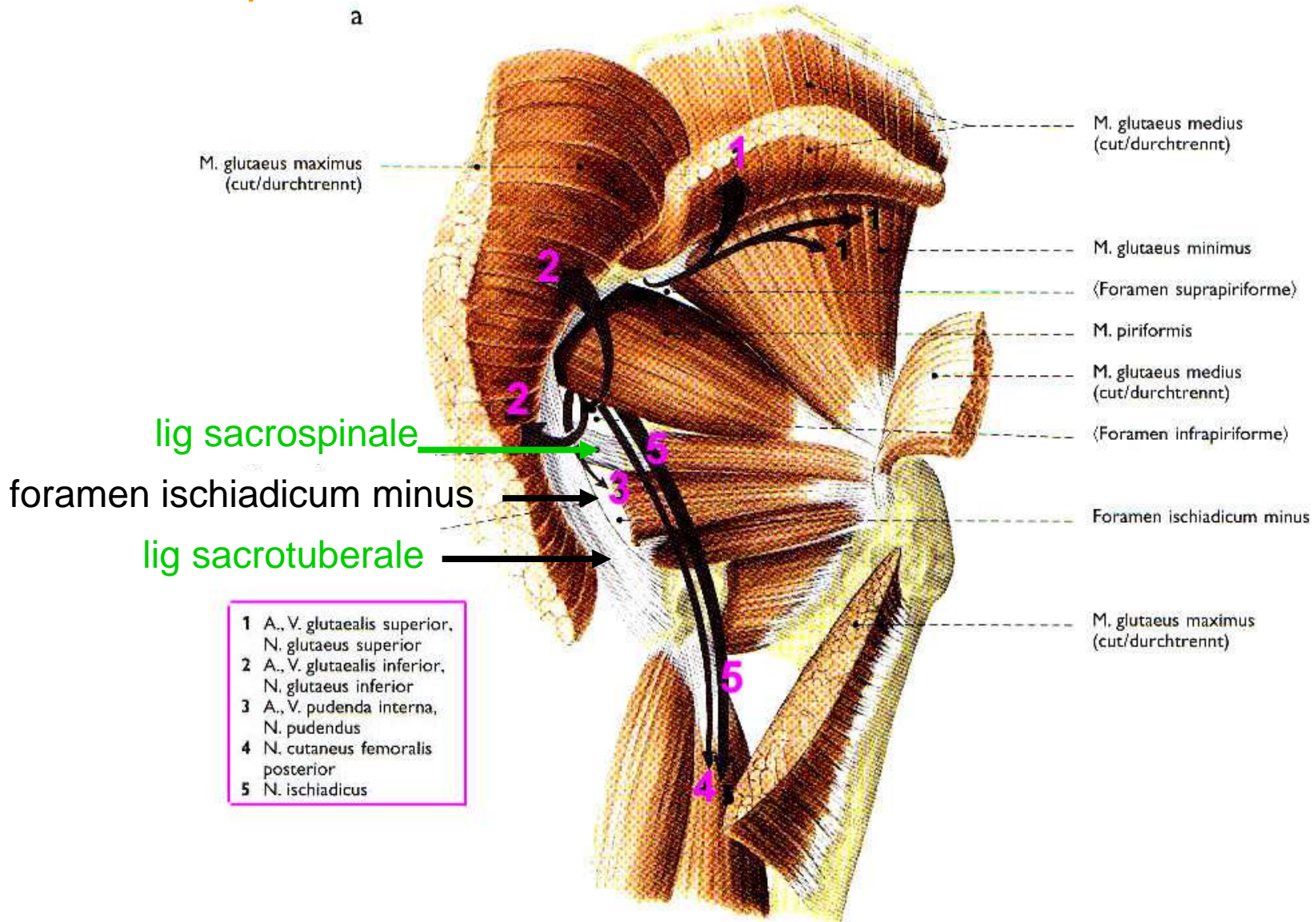
J – piriformis
 K – gemellus sup
 L – obturatorius int.
 M – gemellus inf.
 N – obturatorius ext.
 O – quadratus fem.
 P – iliopsoas

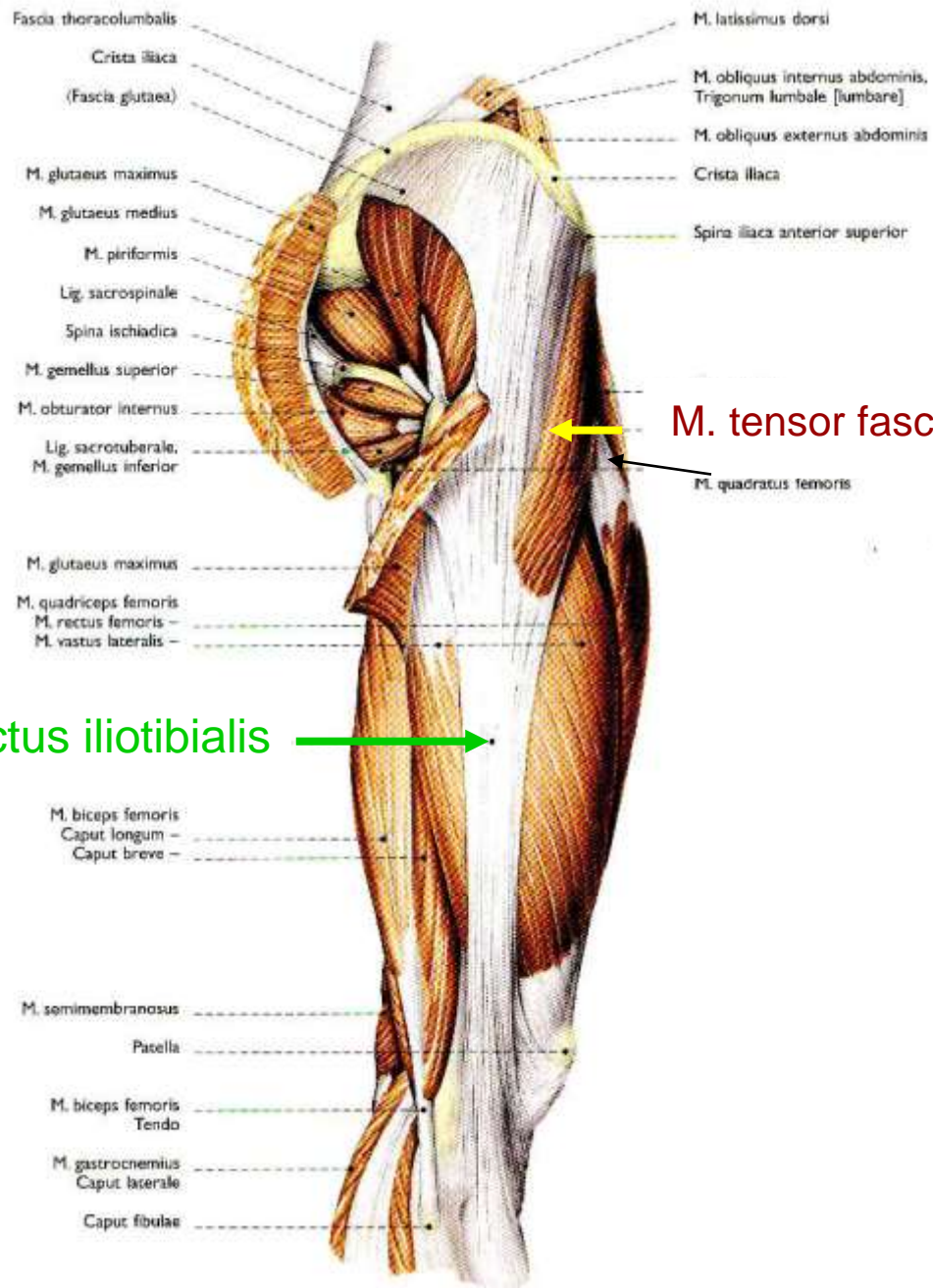
Pelvitrochanteric muscles abduction, external rotation



Foramen supra- and infrapiriforme nerves of plexus sacralis and a. iliaca interna branches

a

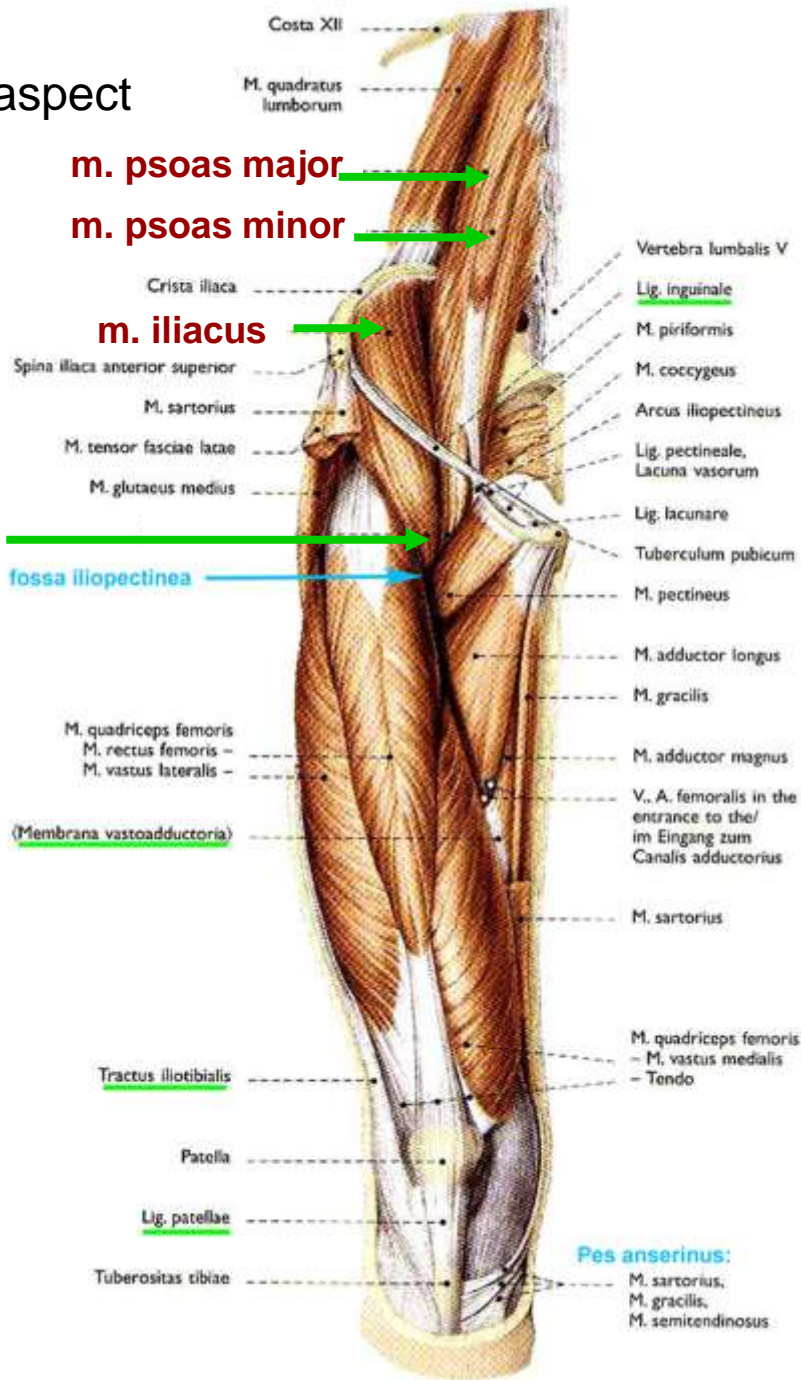




M. tensor fasciae latae (m. gluteus ventralis)

tractus iliotibialis

Hip muscles – anterior aspect



m. psoas major →

m. psoas minor →

m. iliacus →

M. iliopsoas →

Flexion of the hip
pl. lumbalis

fossa iliopectinea →

Anterior group
Extensors of the knee
n. femoralis

Medial group
adductors
n. obturatorius

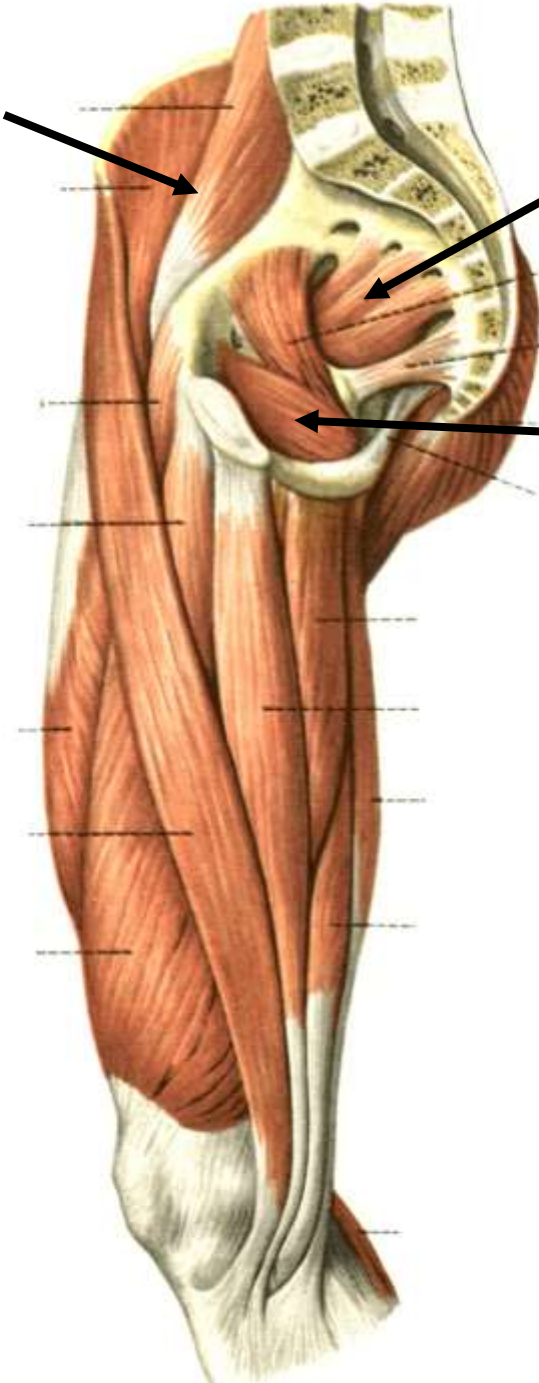
Pes anserinus:
M. sartorius,
M. gracilis,
M. semitendinosus

m. iliopsoas

m. piriformis

Medial aspect of hip muscles

m. obturatorius internus

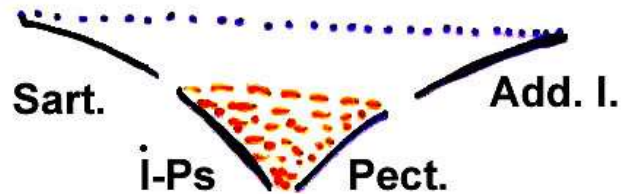


Fossa ilipectinea and trigonum femorale

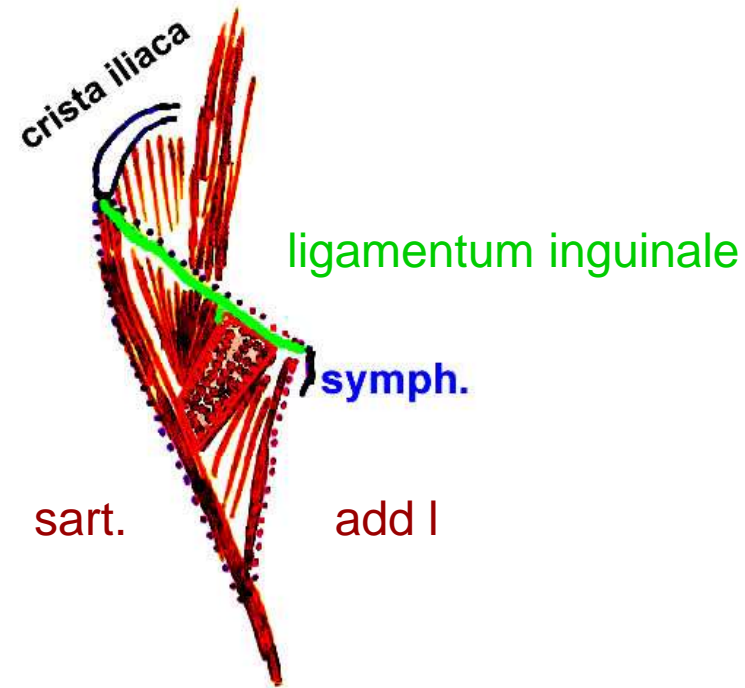
str. 381

fossa Scarpae major •

minor •



Fossa ilipectinea



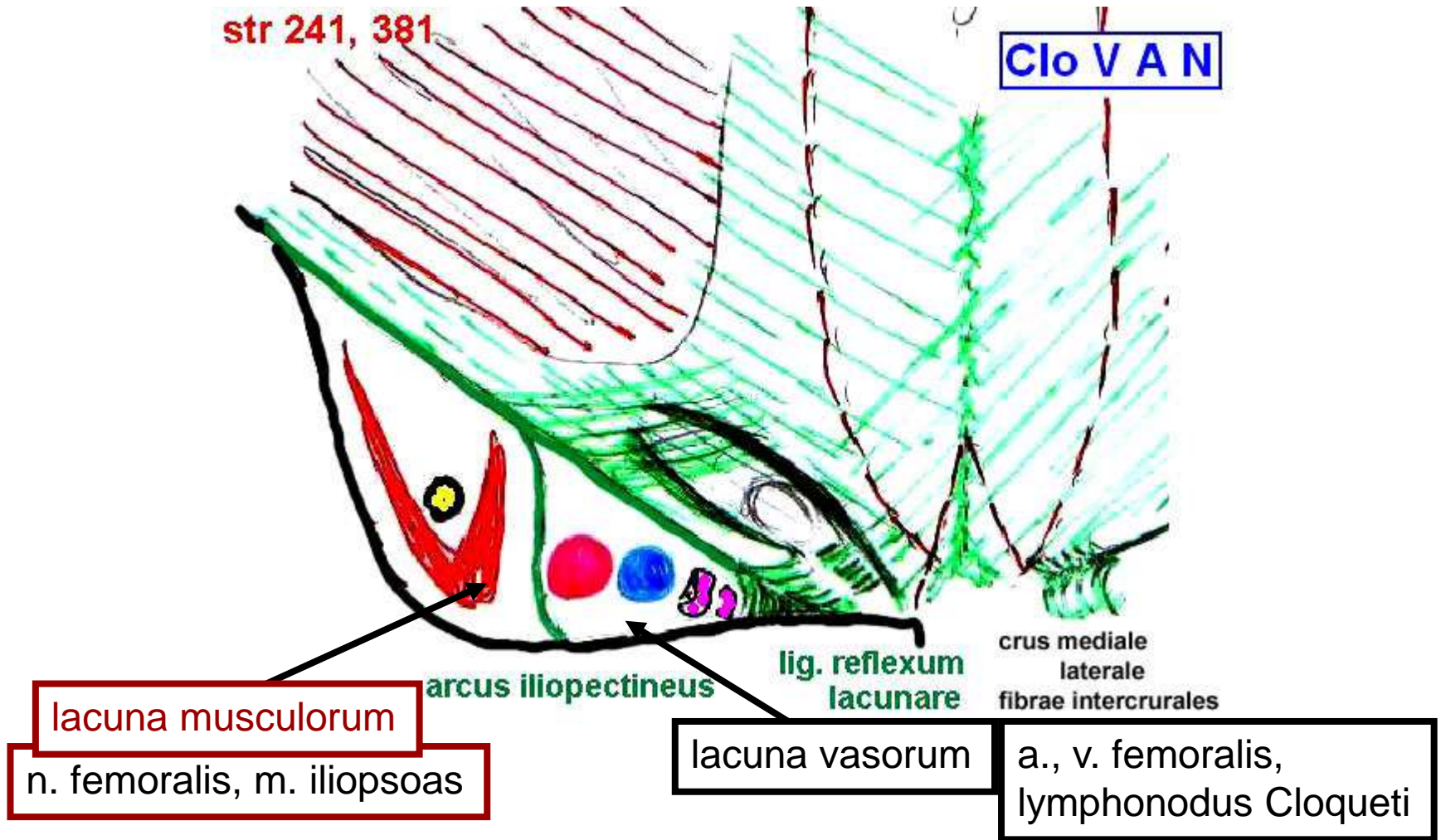
Trigonum femorale

"CloVA N"

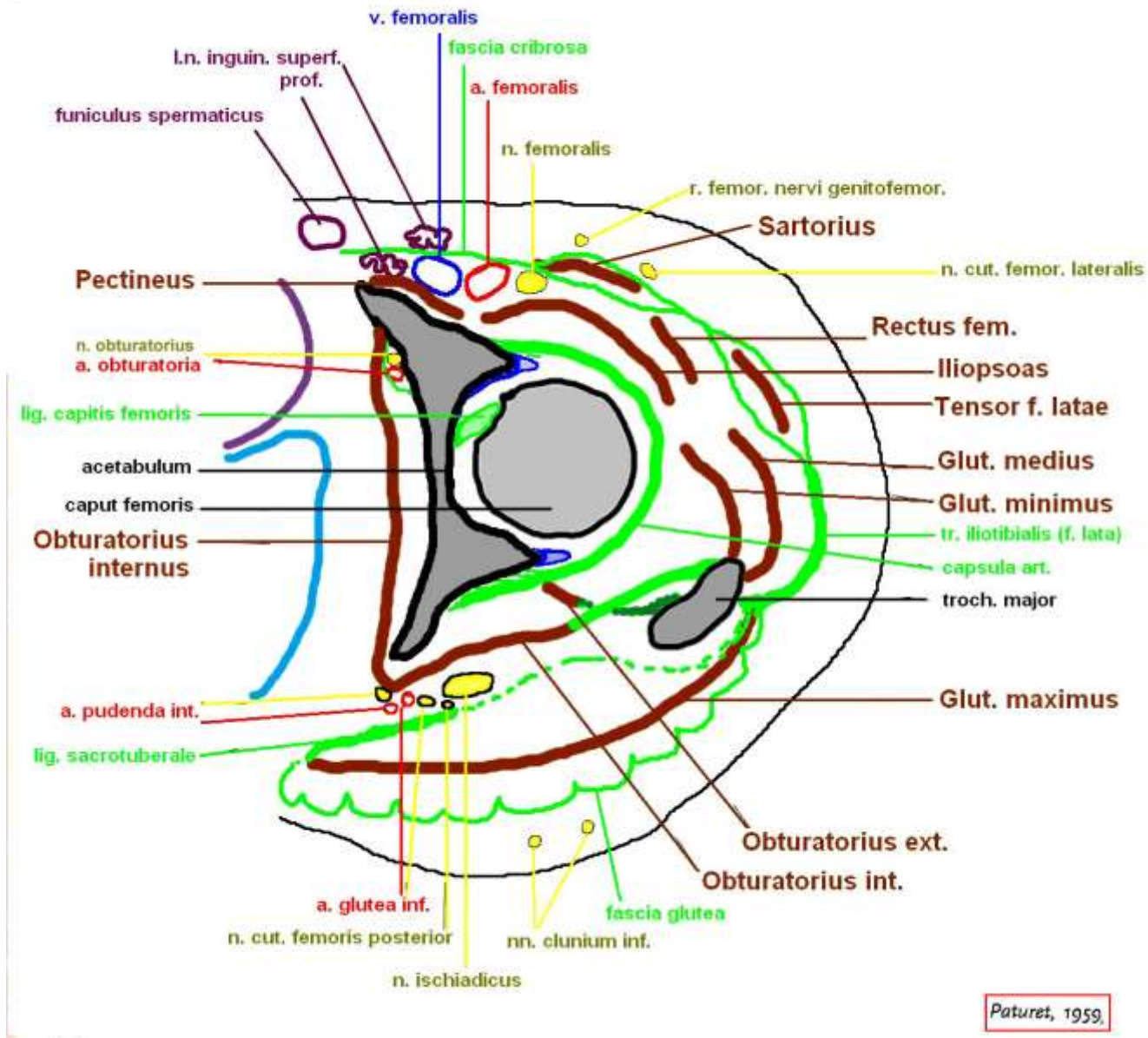
med

lat

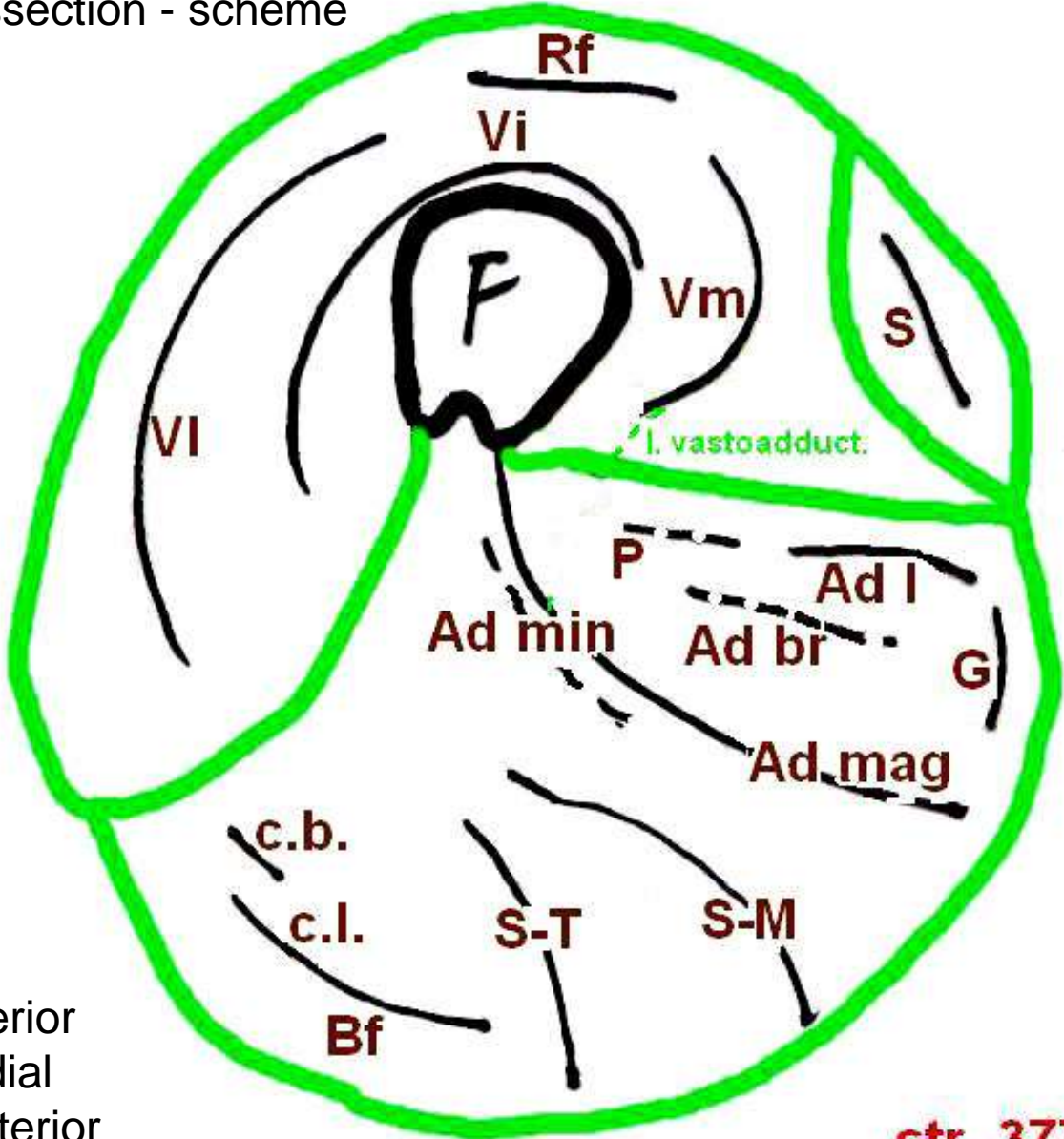
Anterior abdominal wall inferior to inguinal ligament – 2 spaces



Crosssection of the hip joint



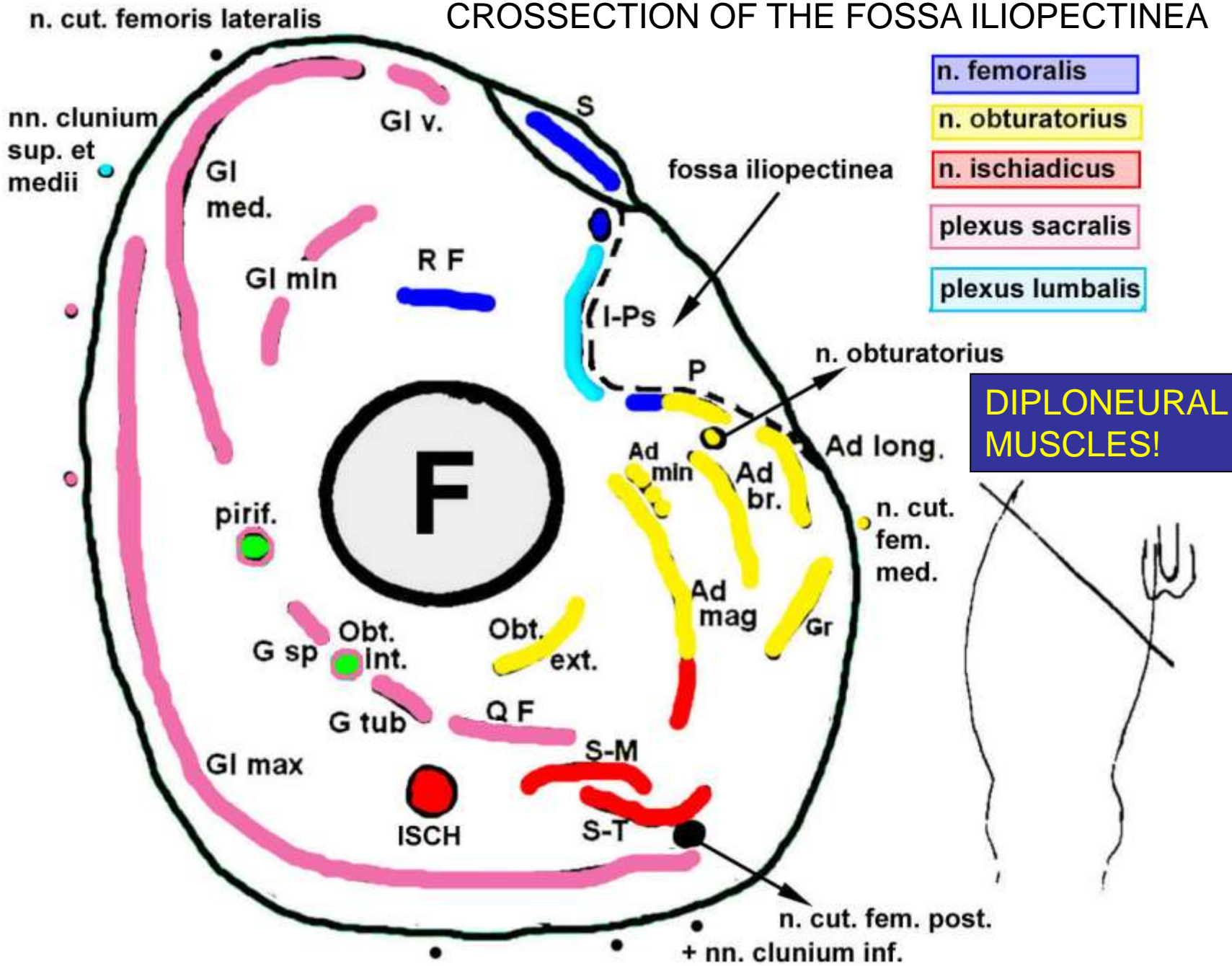
Femur crossection - scheme

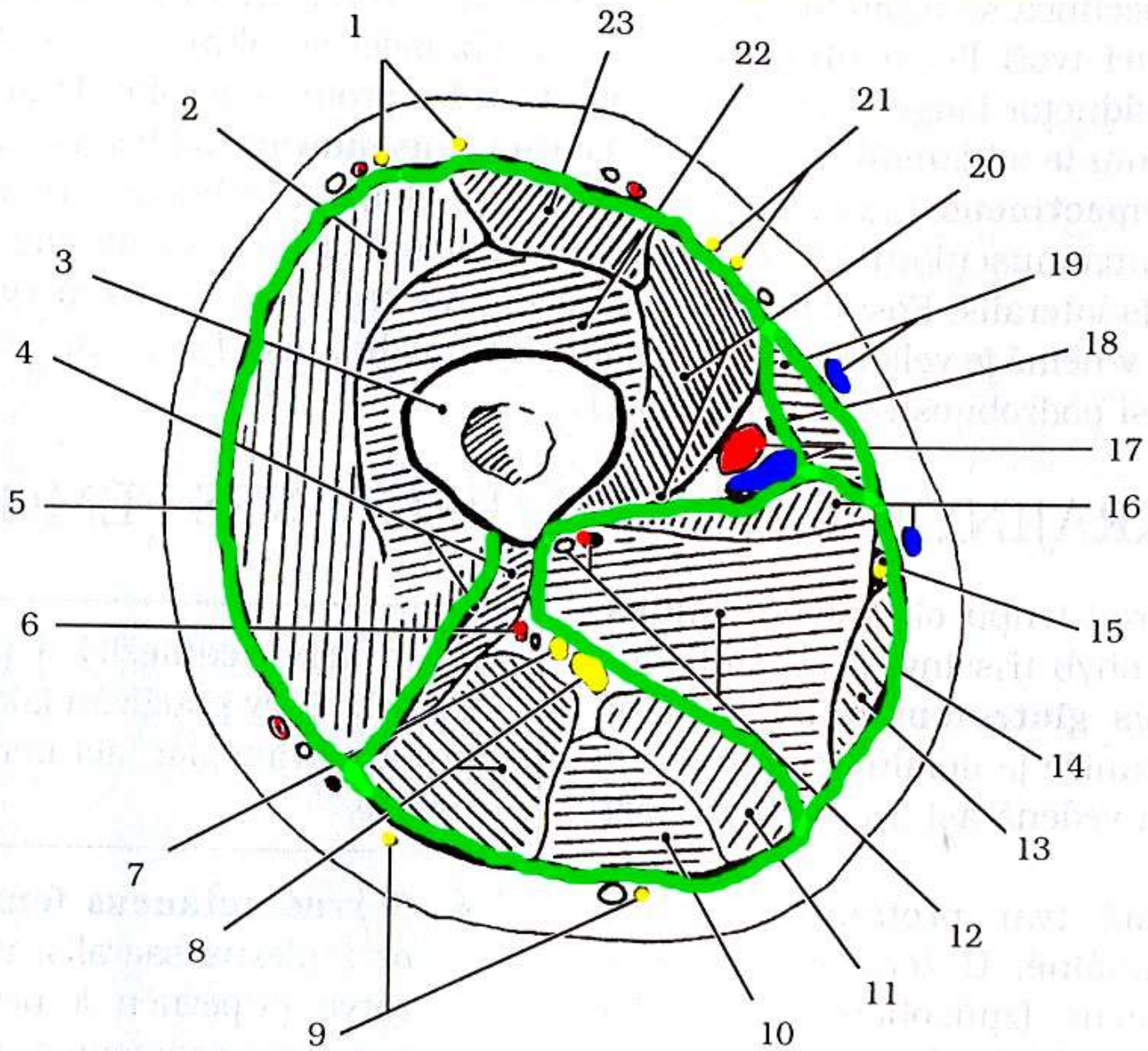


3 groups Anterior
Medial
Posterior

str. 377

CROSSECTION OF THE FOSSA ILIOPECTINEA



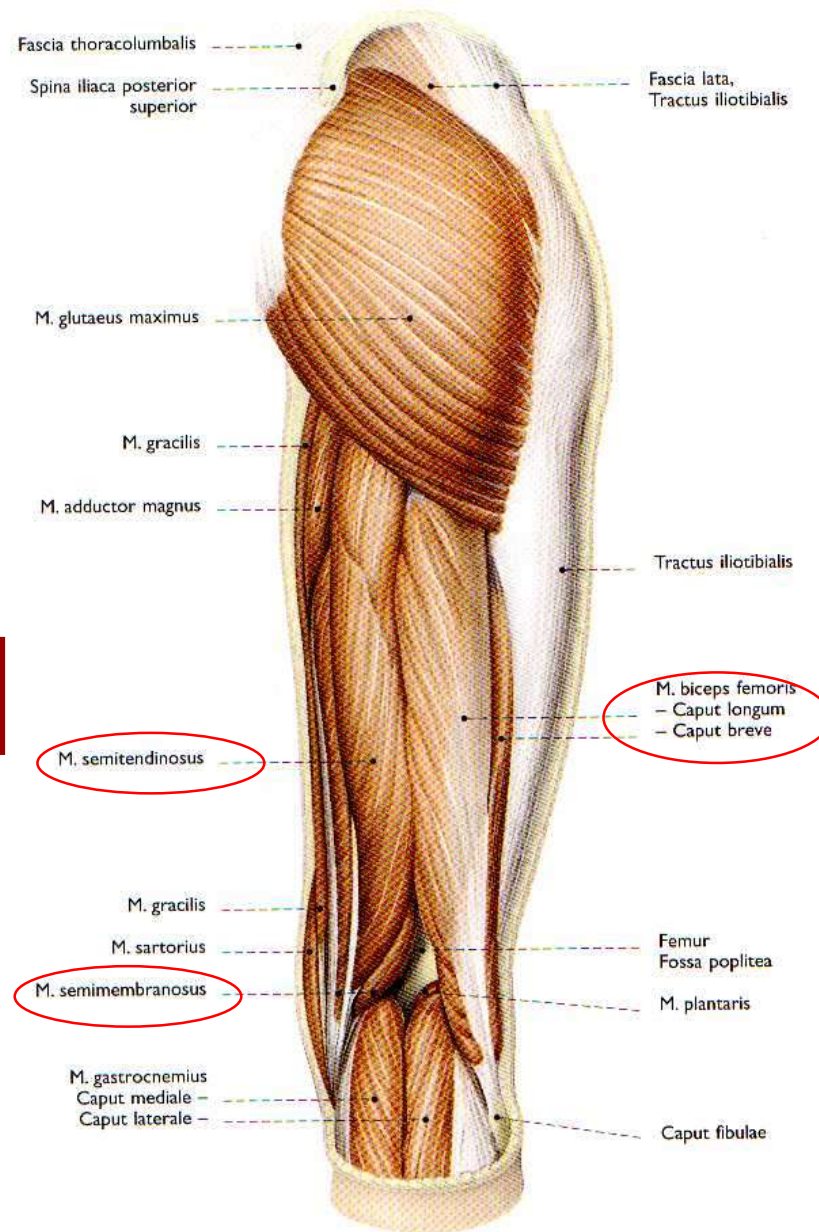


Posterior group of femur

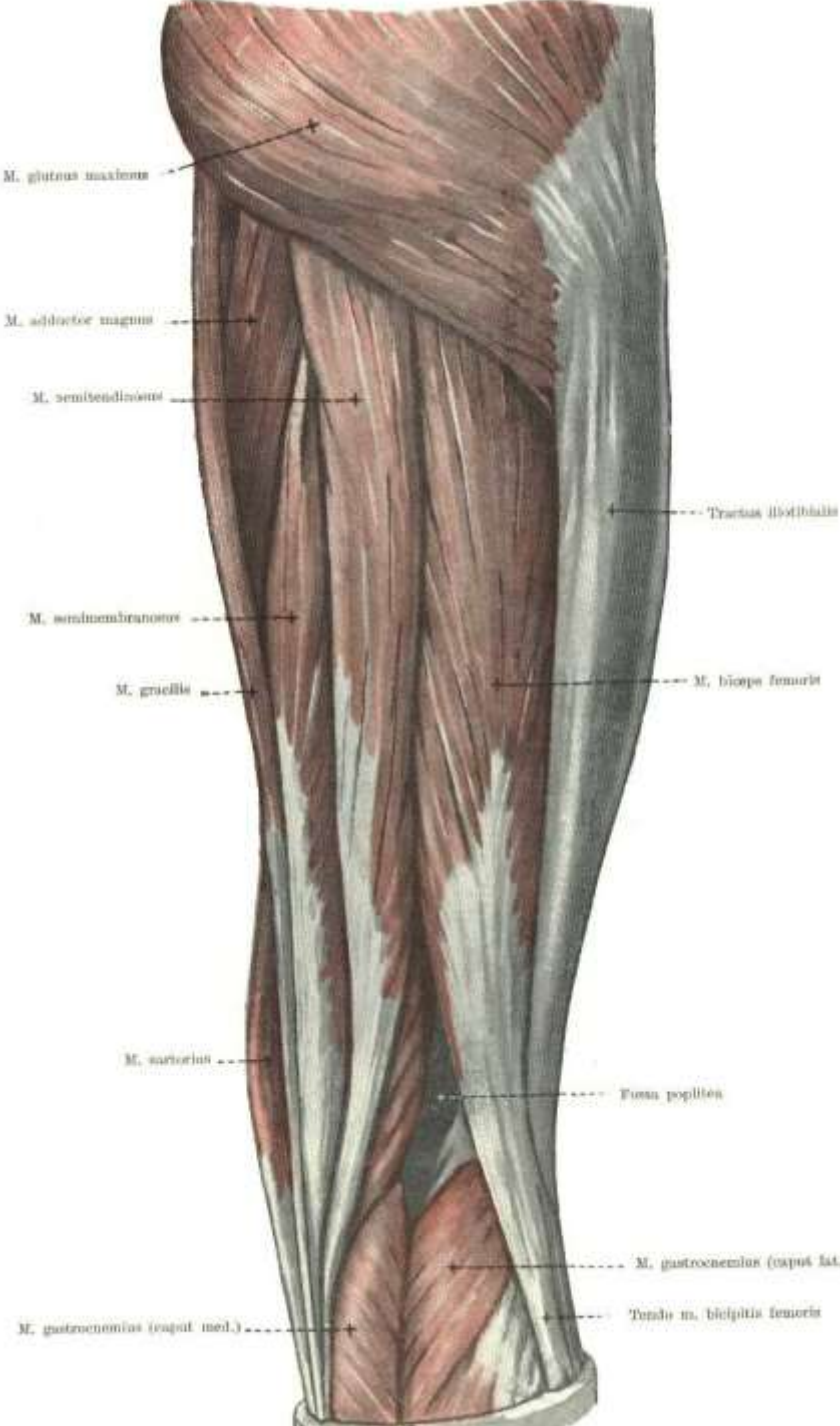
„Hamstrings“

Origin: tuber ischiadicum
Innervation – n. ischiadicus

**Posterior group:
Extensors of hip and flexors of knee**



Repetition



Medial group – adductors

and external rotators

only m. gracilis internal rotator and adductor

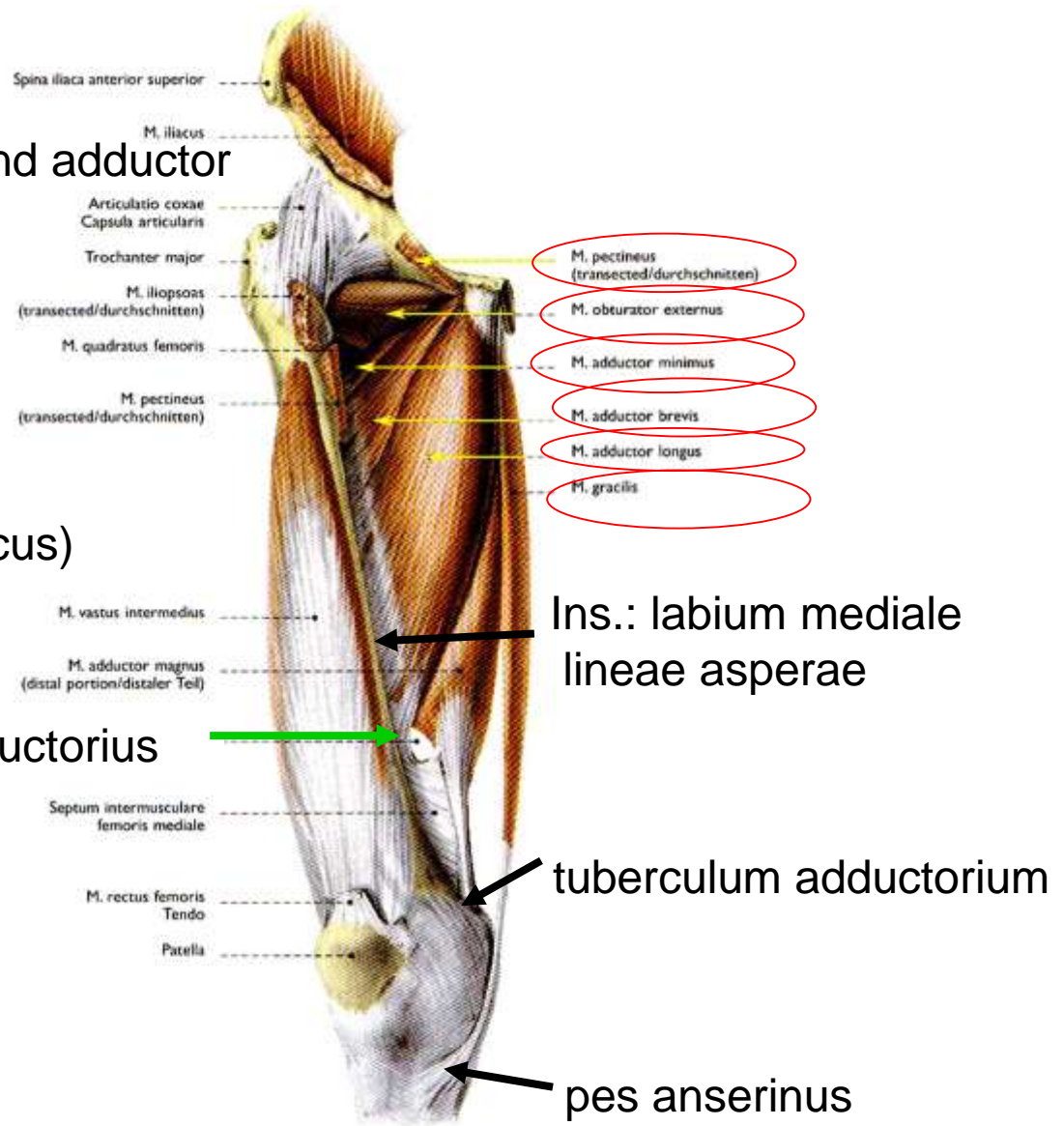
Innervation n. obturatorius

2 diploneural muscles

m. adductor magnus (n. ischiadicus)

m. pectineus (n. femoralis)

Hiatus adductorius



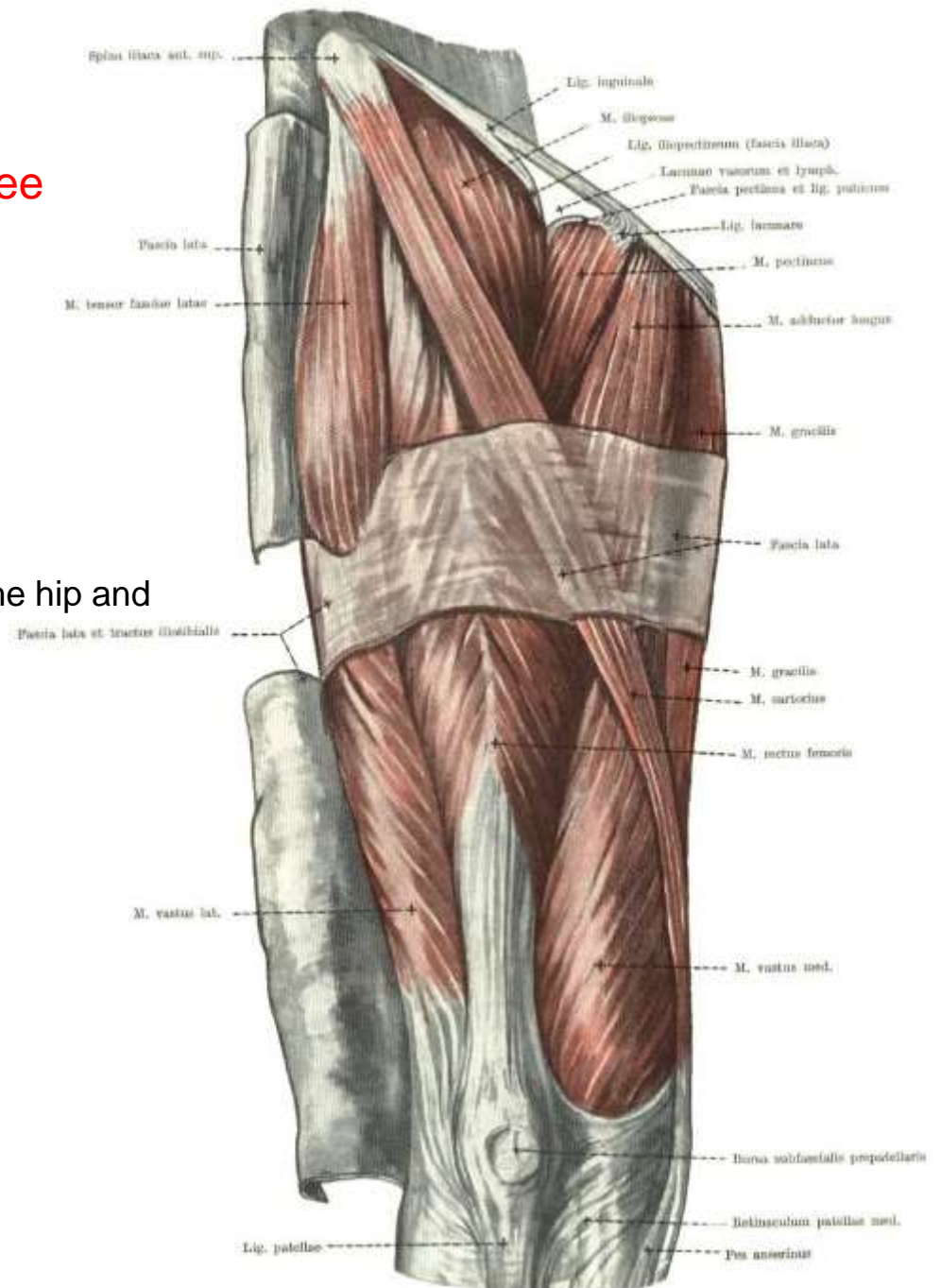
Anterior group - extensors of the knee

M. quadriceps femoris:

vastus lateralis
vastus medialis,
vastus intermedius
rectus femoris – flexion of the hip

M sartorius – flexion and external rotation of the hip and flexion of the knee .

Innervation – n. femoralis



Anterior group - extensors of the knee

M. quadriceps femoris:

vastus lateralis

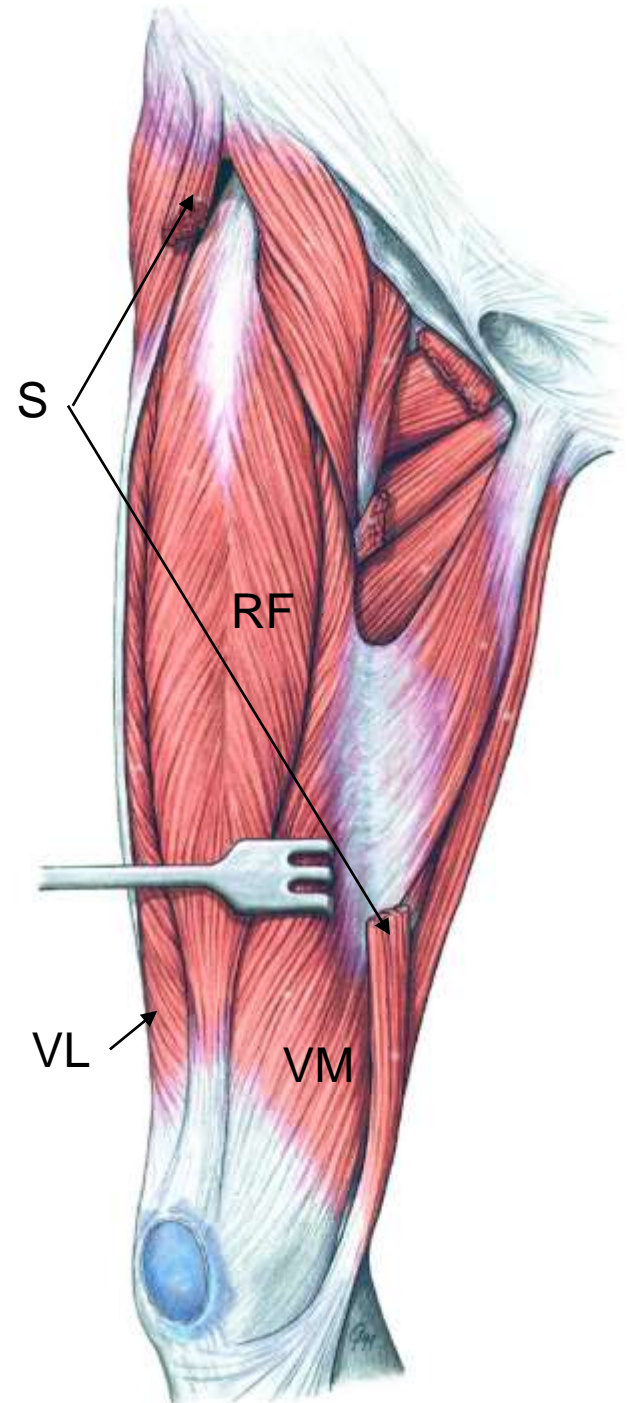
vastus medialis,

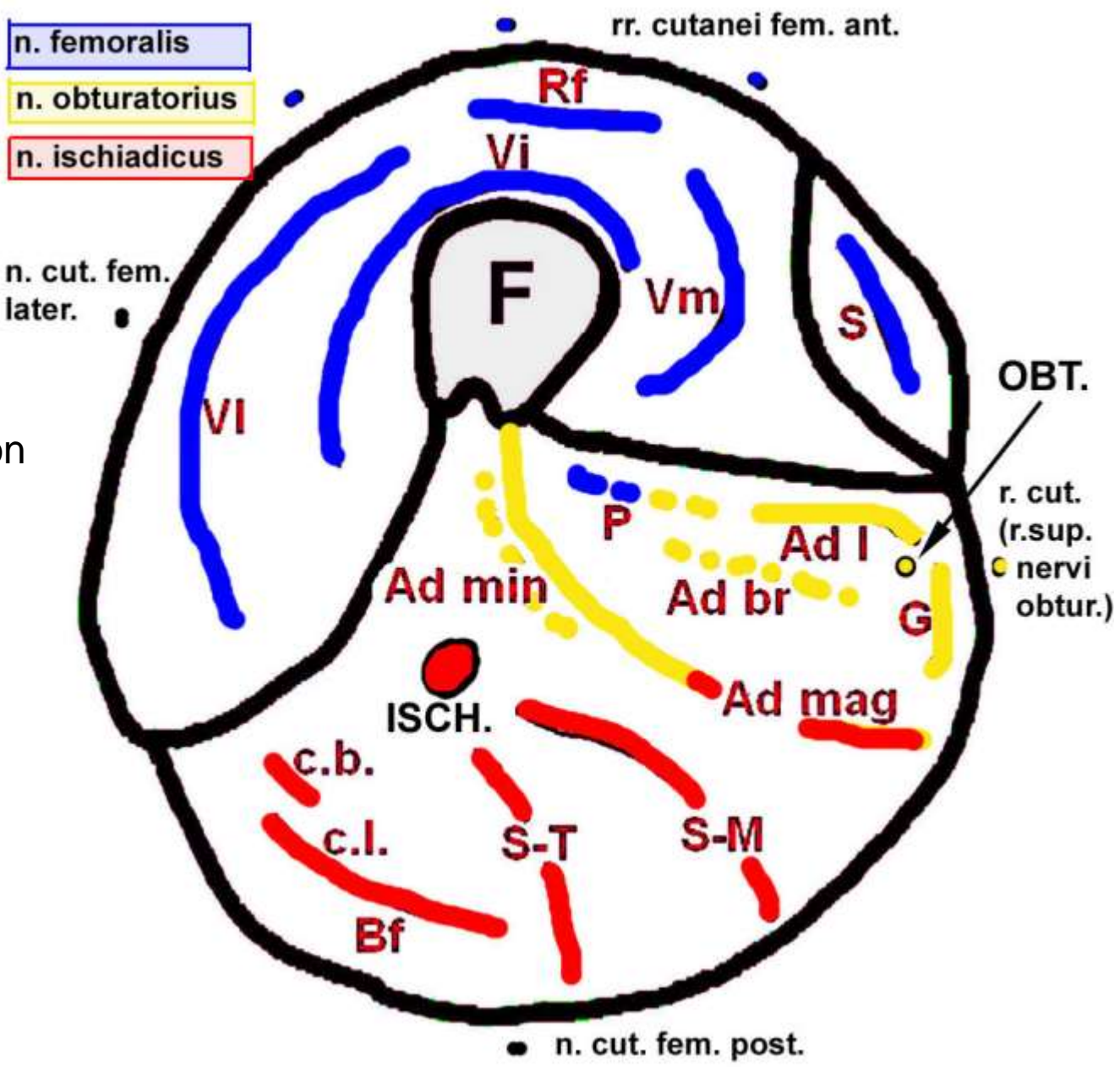
vastus intermedius

rectus femoris – flexion of the hip

M. sartorius – flexion and external rotation of the hip and flexion of the knee .

Innervation – n. femoralis

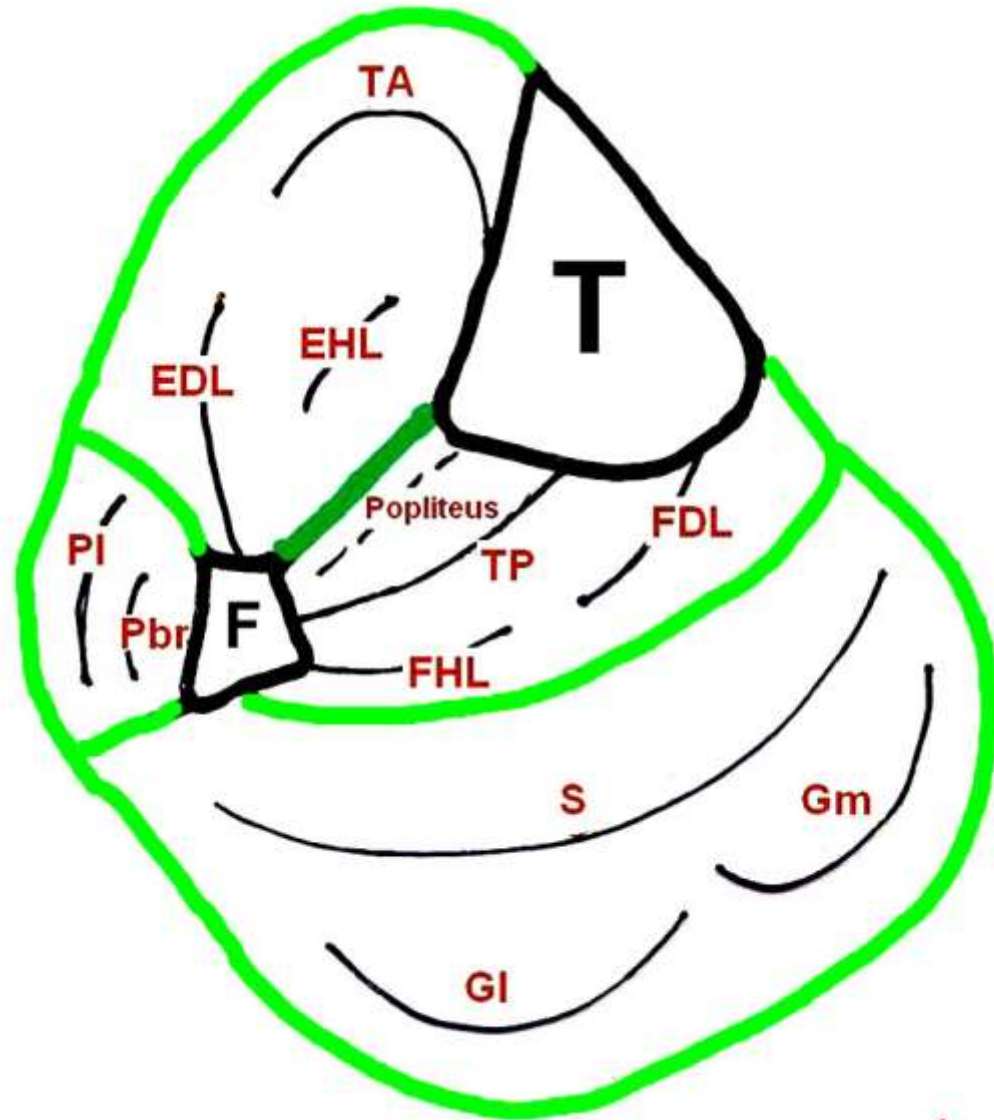




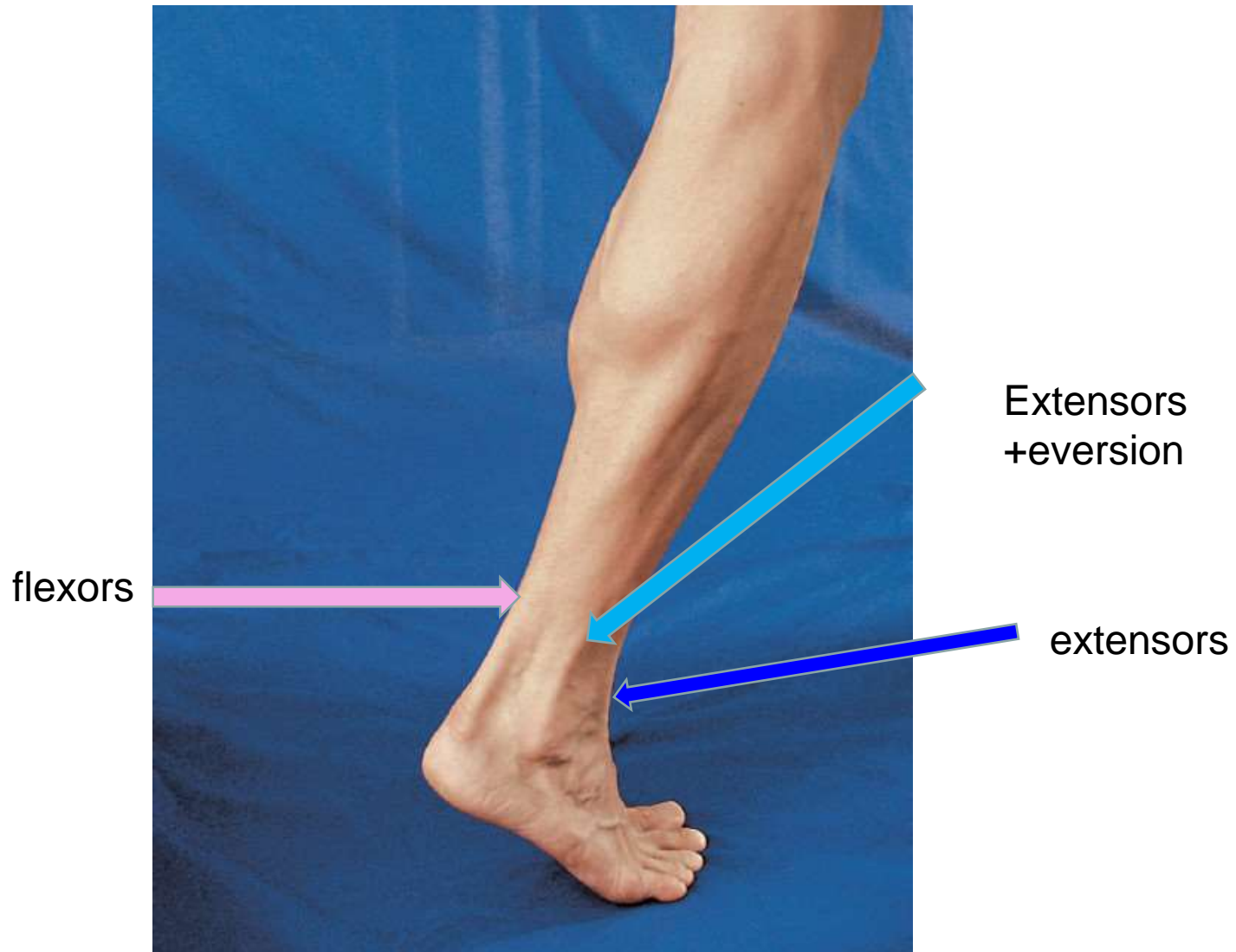
Femur crosssection
 – scheme of
 innervation

Lower tight muscles

3 groups
POSTERIOR
LATERAL
ANTERIOR



Lower tight muscles— posterior, anterior and lateral group



Lower tight muscles

Posterior group— flexion of the knee, flexion of the foot and toes

Innervation: n. tibialis

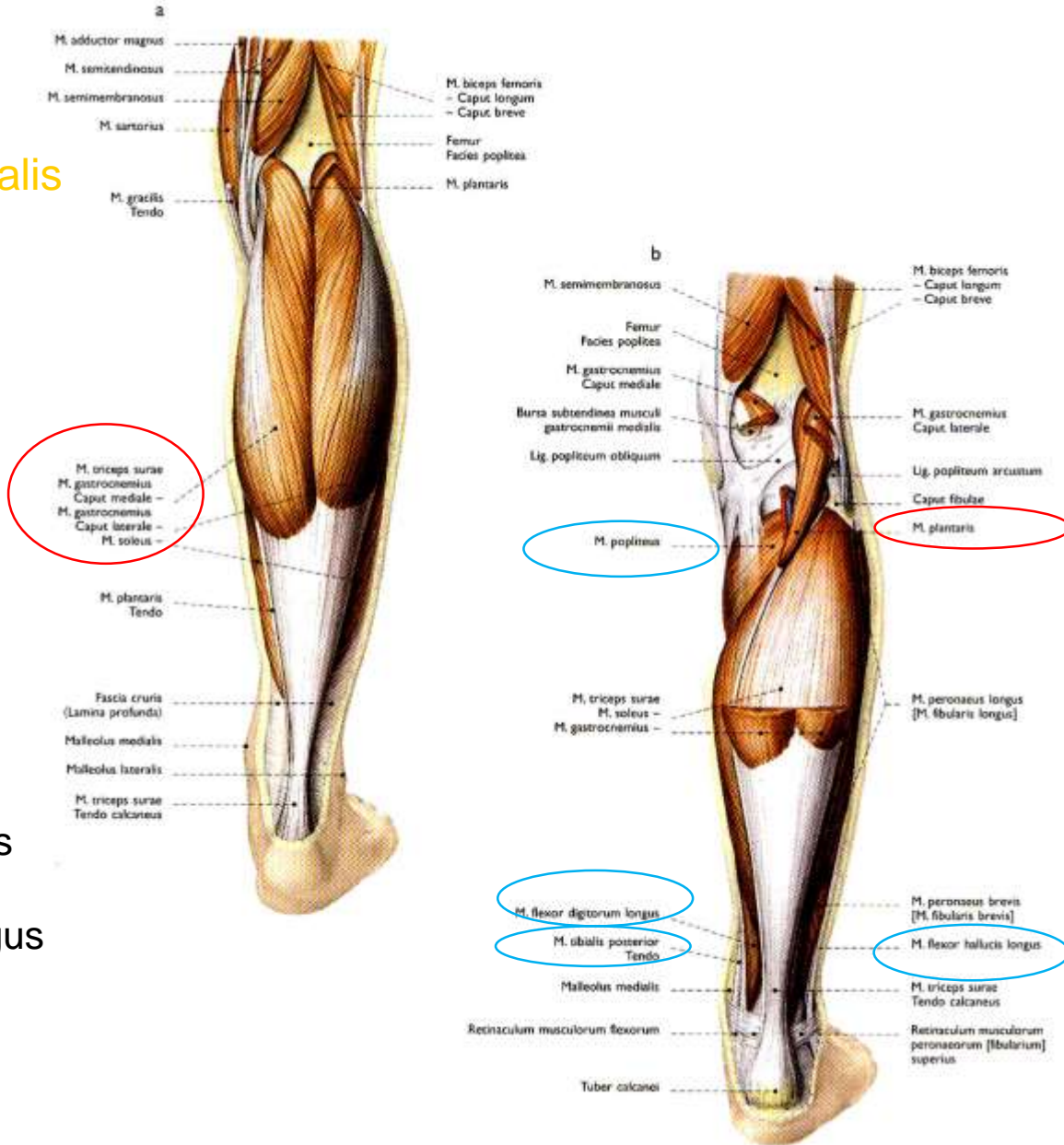
2 layers

Superficial:

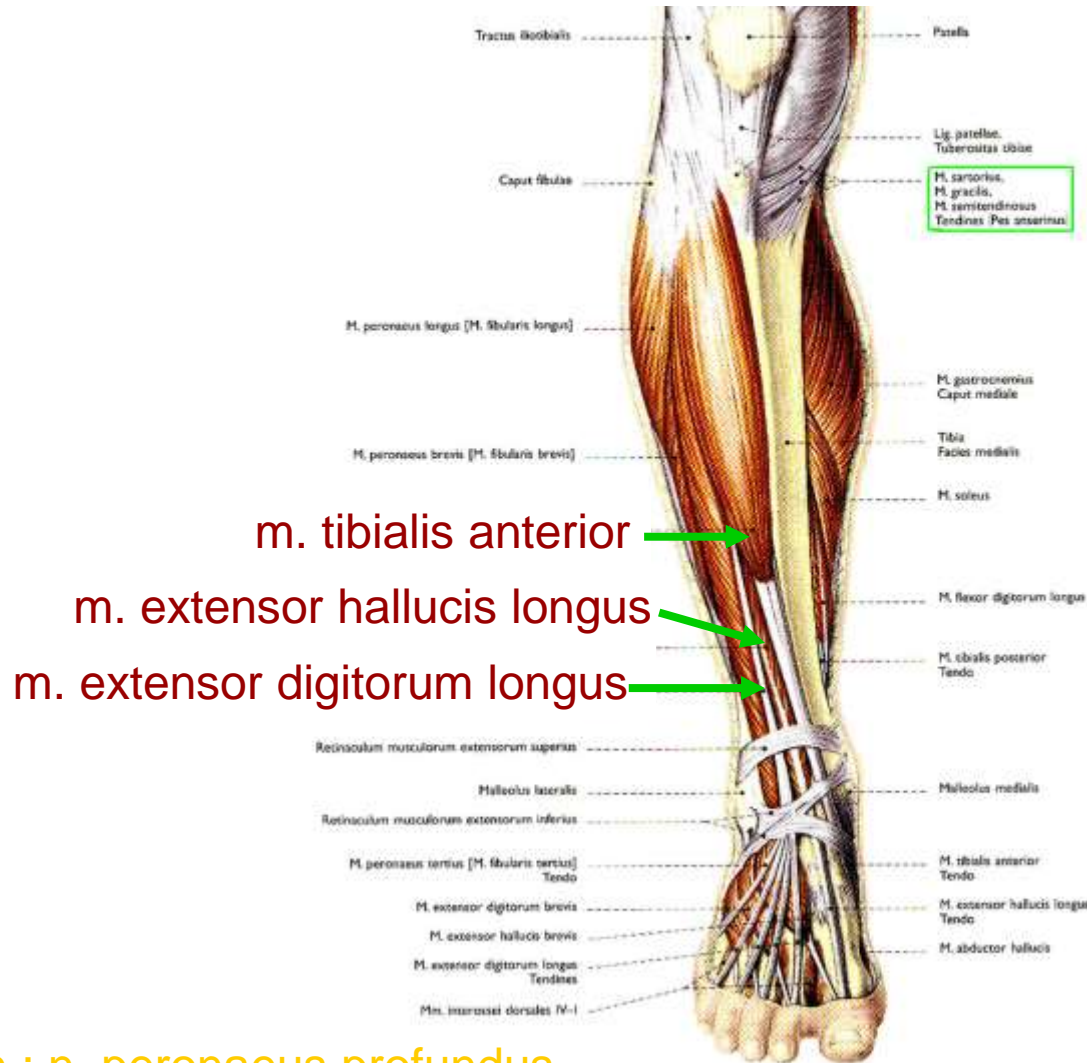
m. Triceps surae:
(+m. plantaris)

Deep:

Flexor hallucis longus
Tibialis posterior
Flexor digitorum longus
M. popliteus



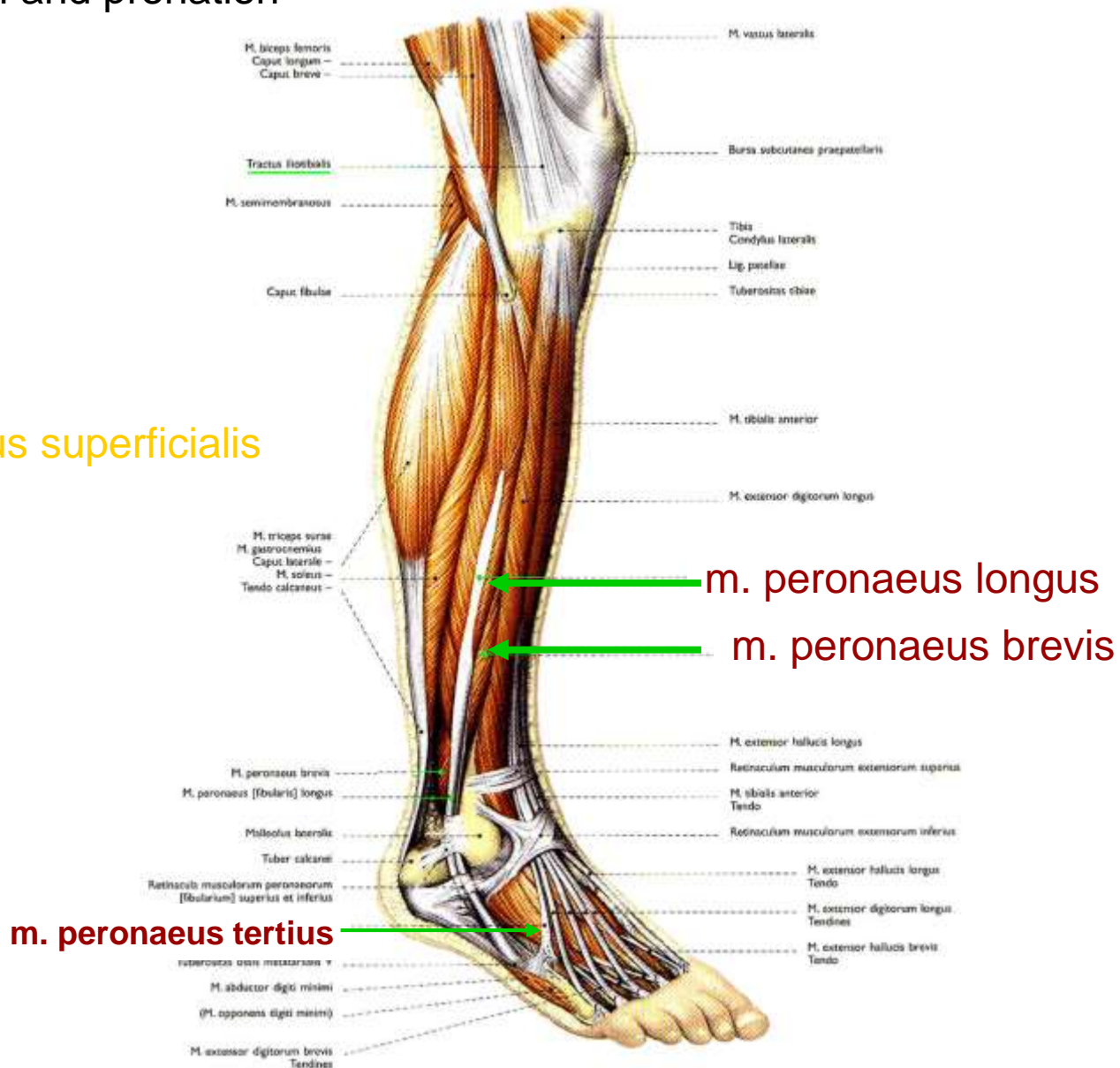
Anterior group— extension of foot and toes, supination of foot

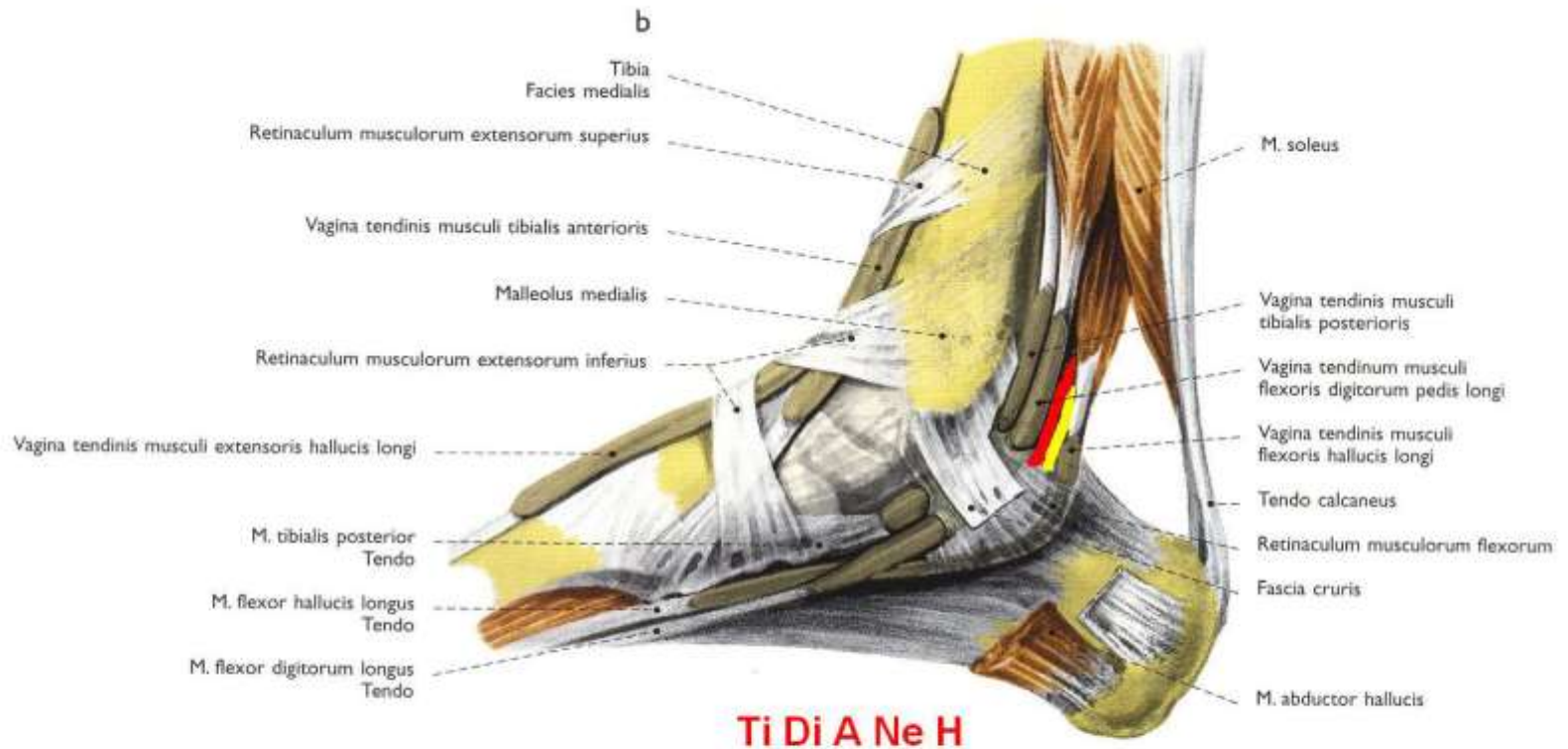


Innervation : n. peroneus profundus

Lateral group Extension and pronation

Innervation
n. peronaeus superficialis





241 (Vaginae synoviales tendinum musculorum cruris)

241 Synovial sheaths of the tendons at the ankle of the right foot (50%)

a Lateral aspect
b Medial aspect

241 Sehnnenscheiden im Knöchelbereich des rechten Fusses (50%)

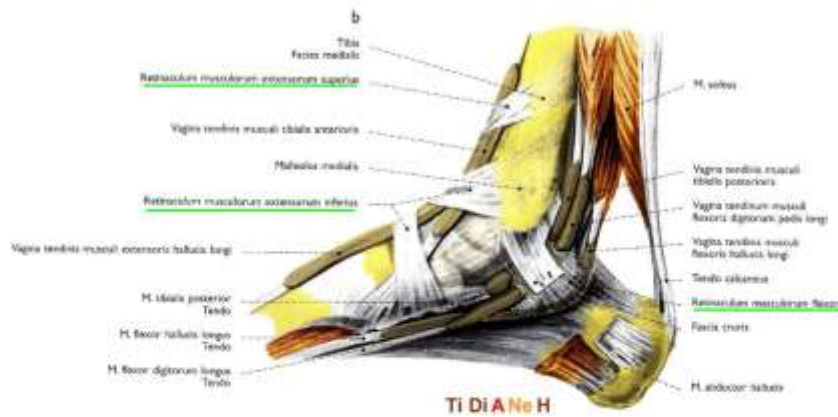
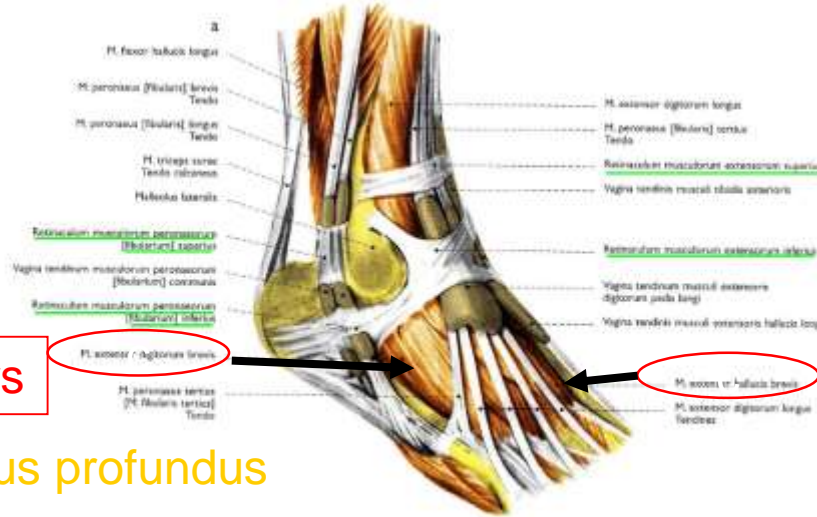
a Seitenansicht
b Medialansicht

Regio retromalleolaris medialis et lateralis

retinacula
vaginae synoviales

Short extensors

Innervation n. peroneus profundus



241 (Vaginae synoviales tendinum musculorum cruris)

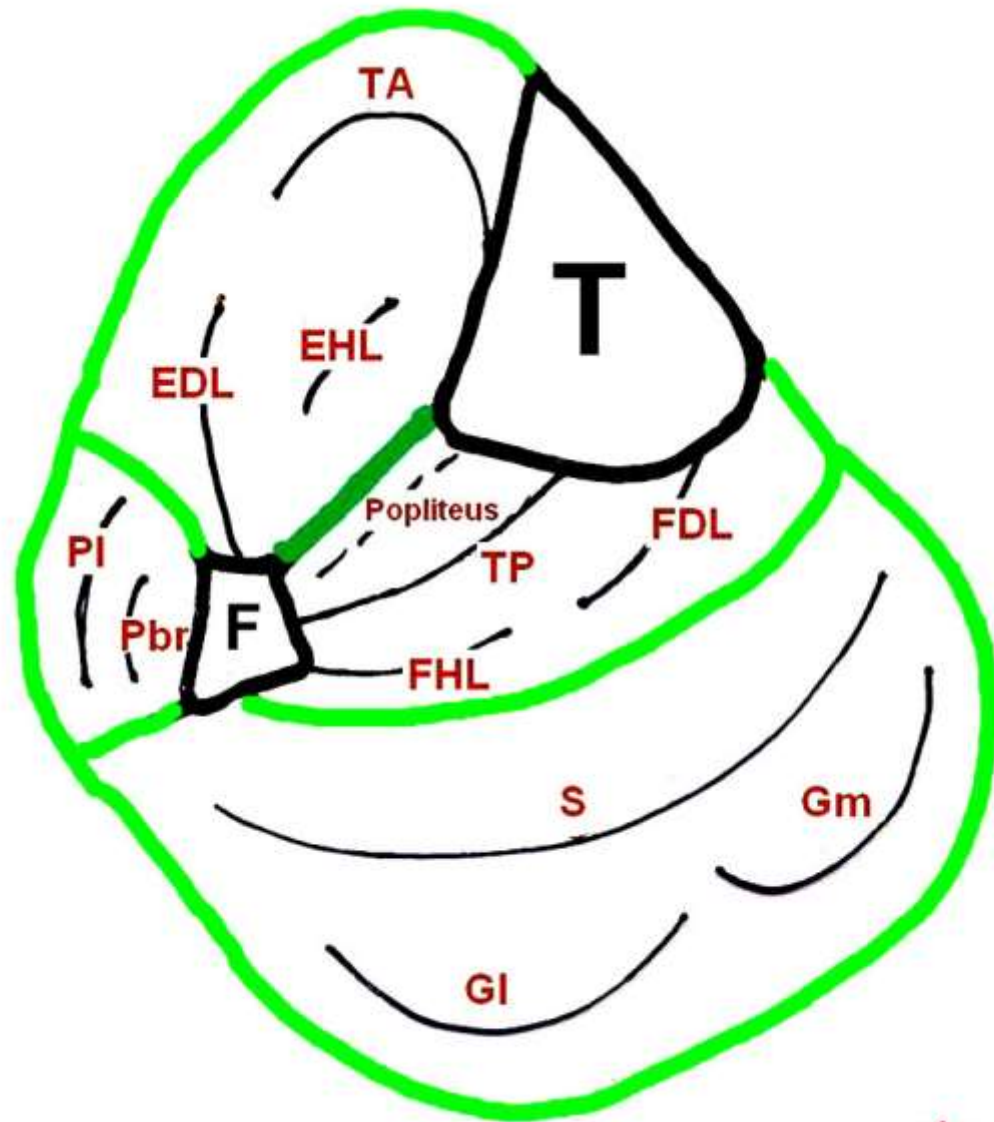
241 Synovial sheaths of the tendons at the ankle of the right foot (201)

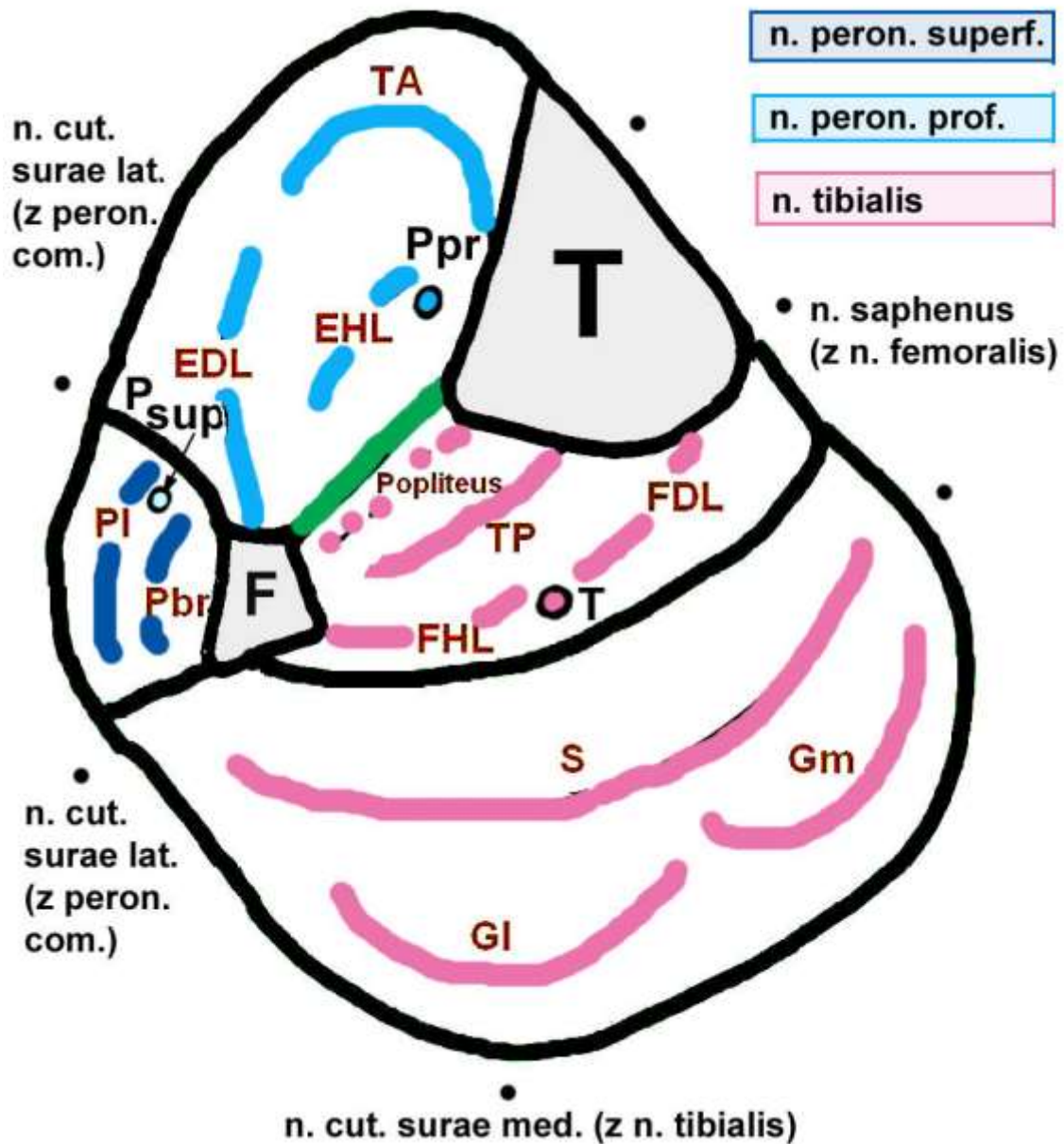
a Lateral aspect
b Medial aspect

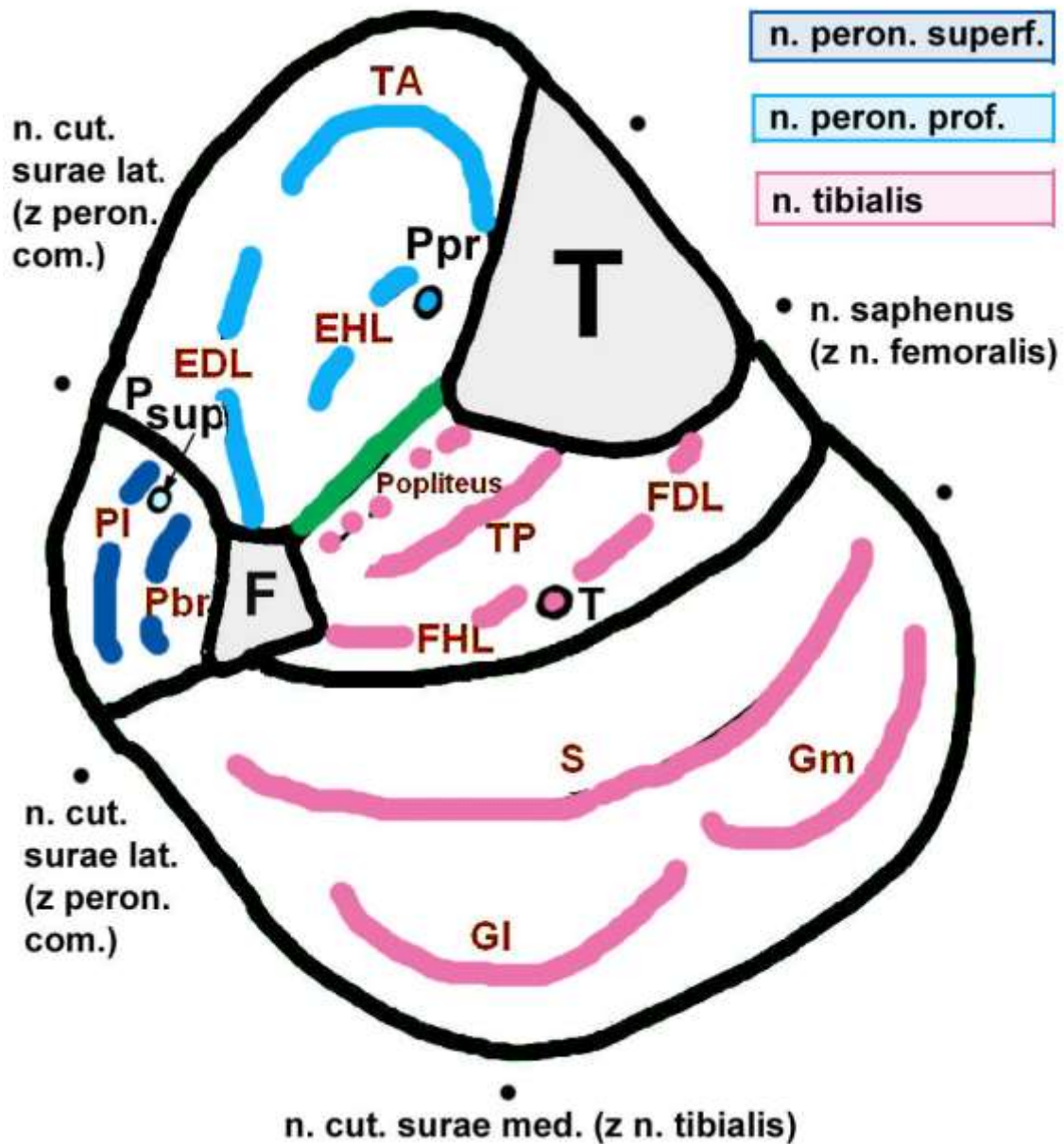
241 Sehnscheiden im Knöchelbereich des rechten Fußes (201)

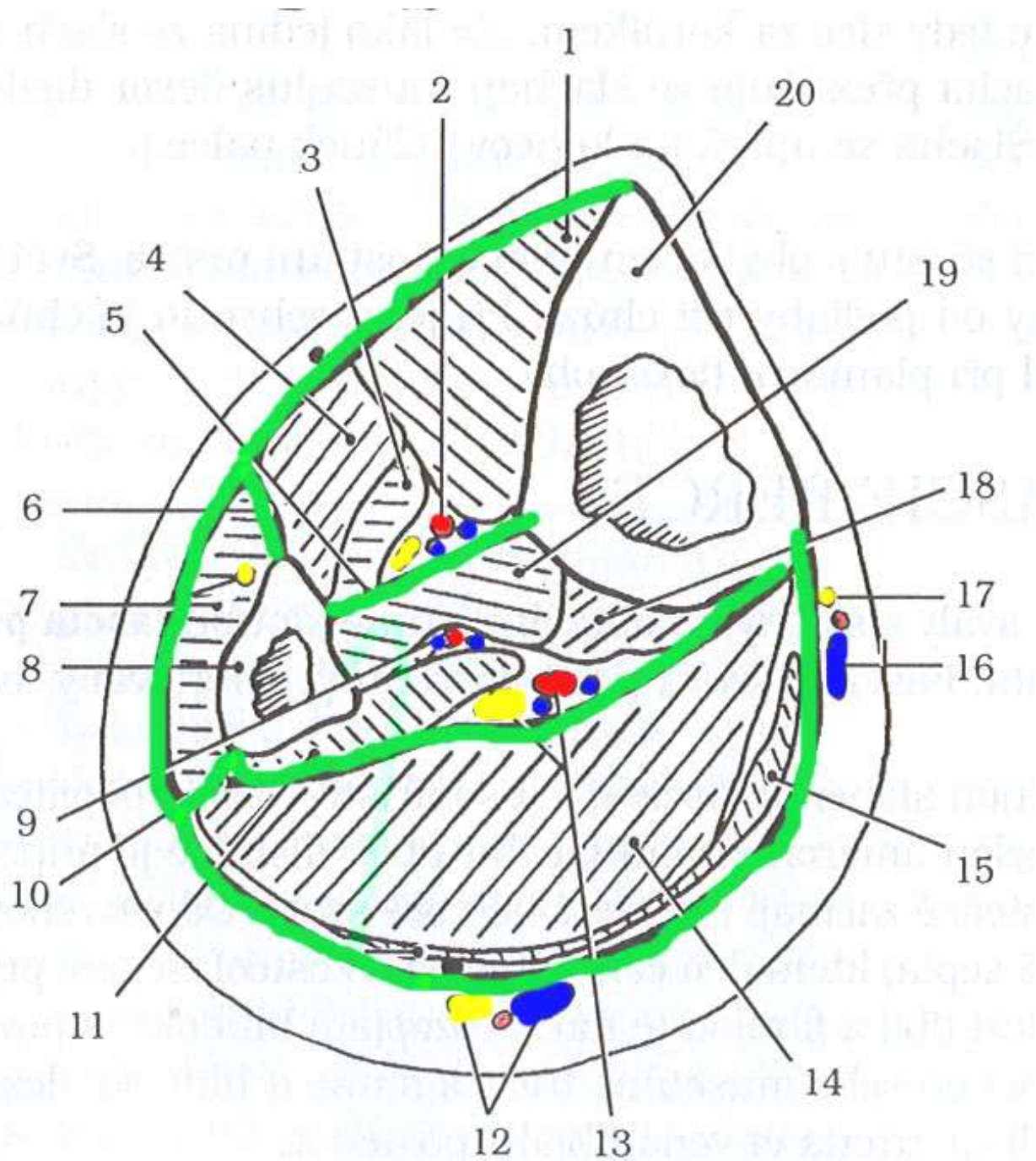
a Seitenansicht
b Mediansicht

Lower tight muscles



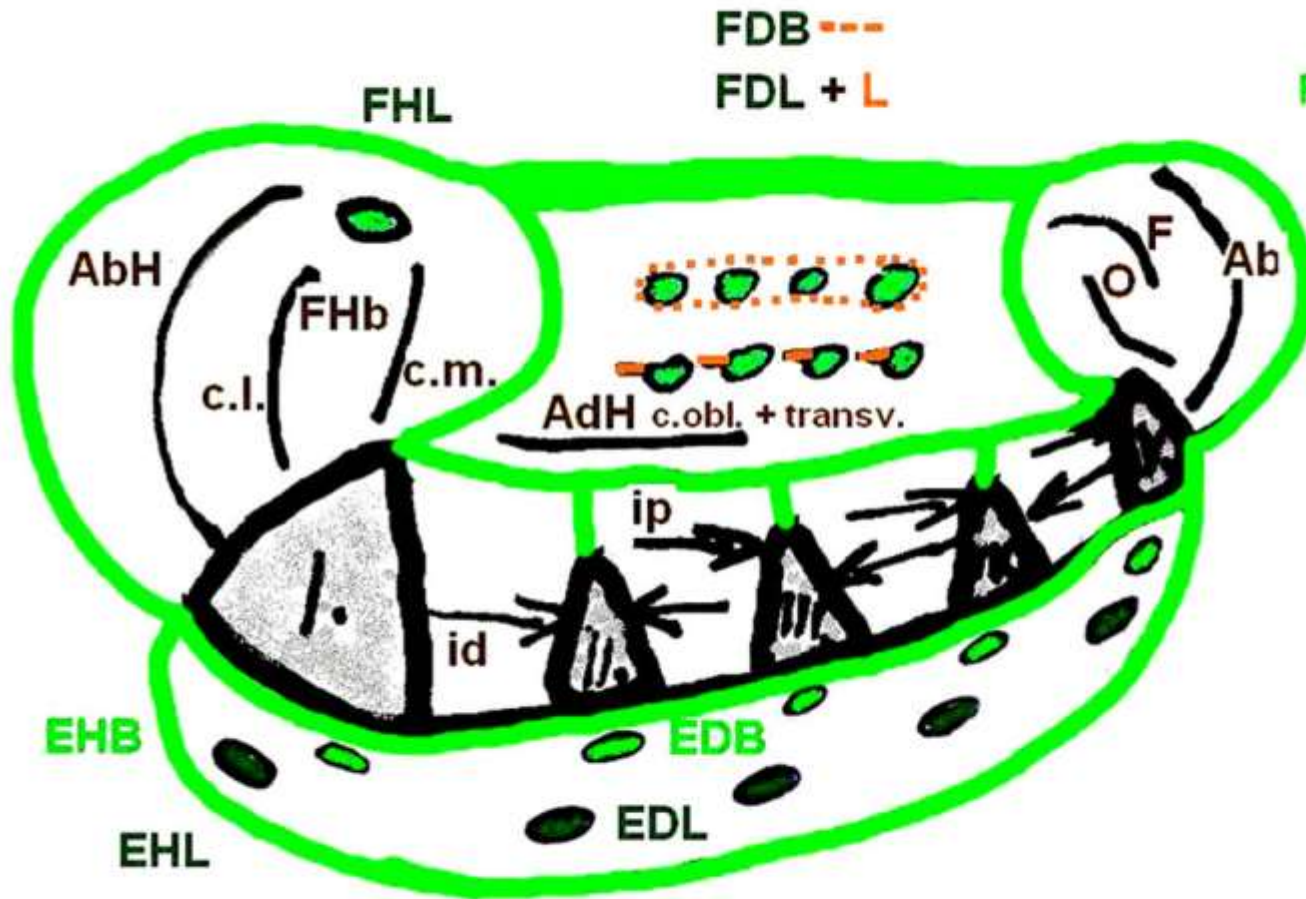




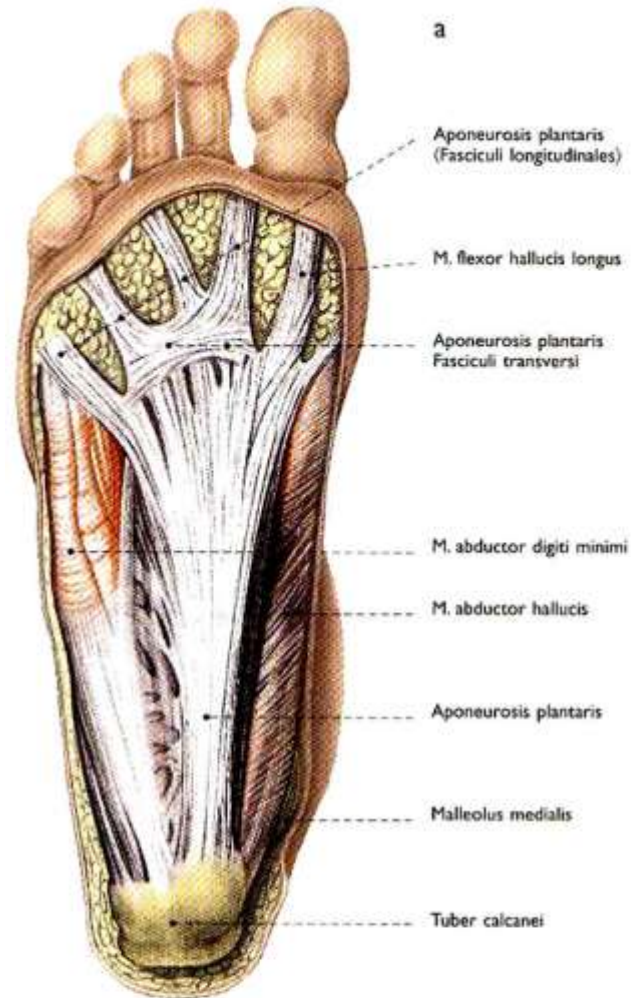


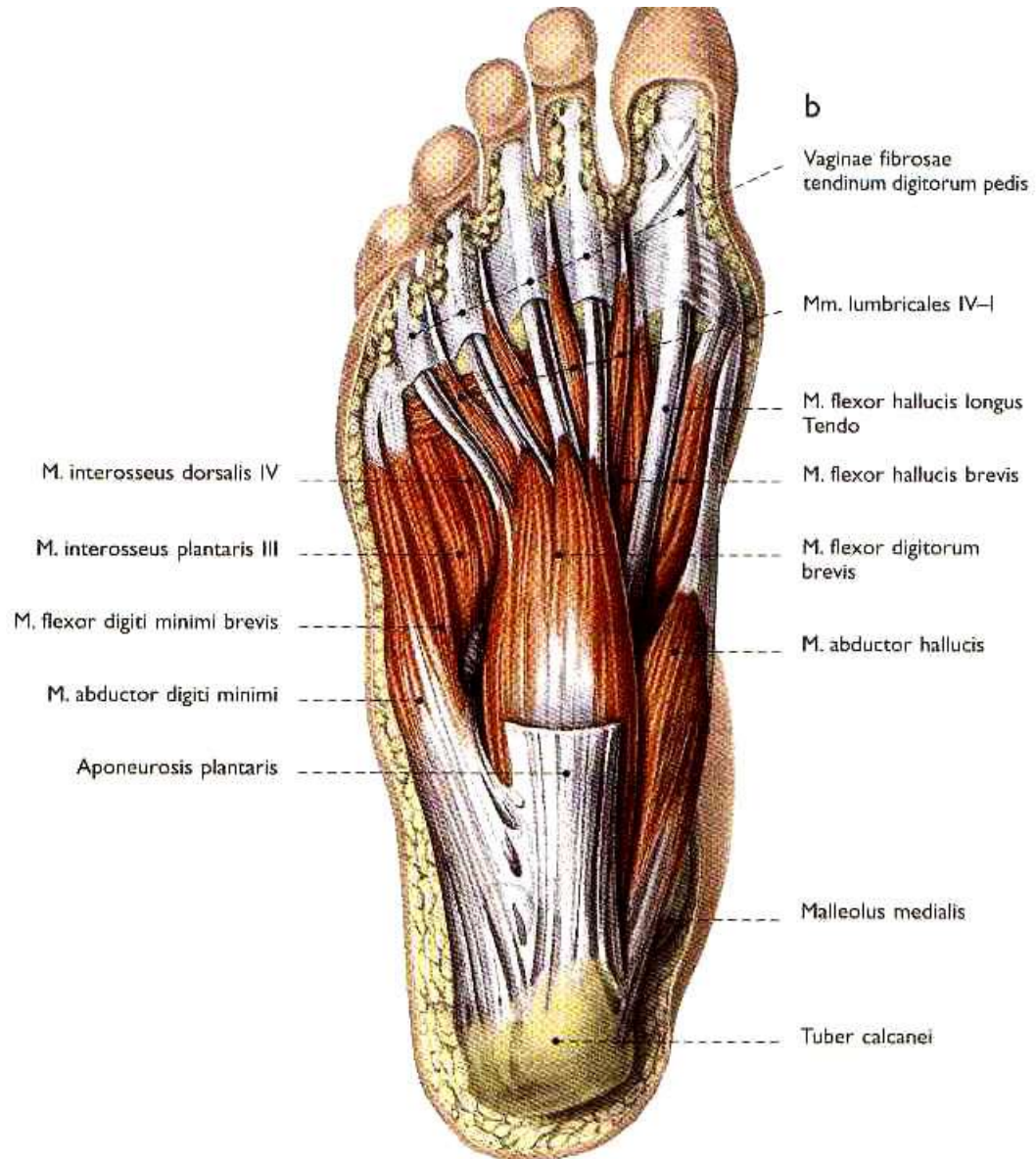
FOOT N- SCHEME

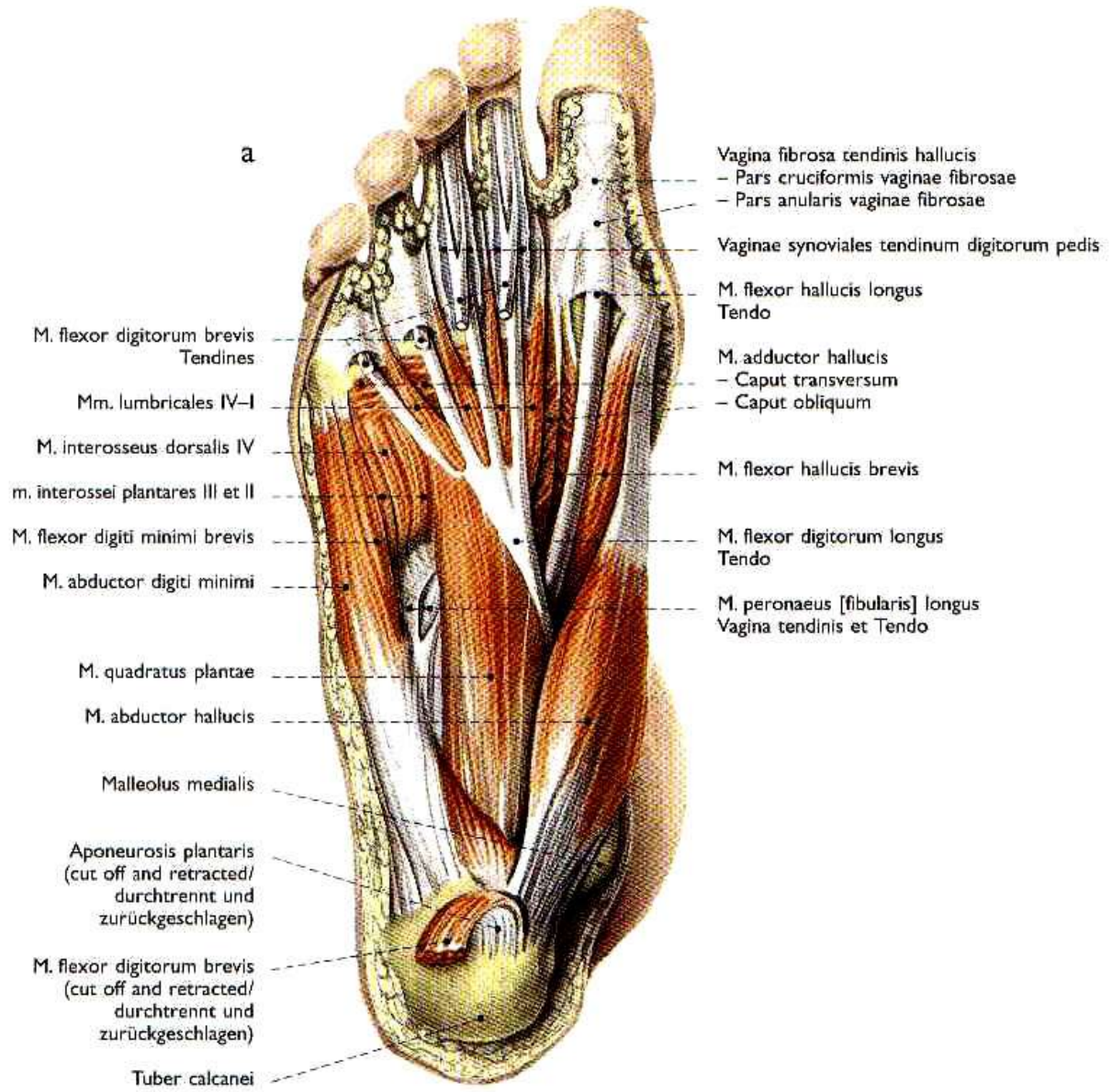
FASCIAE:



Planta - layers







a

M. flexor digitorum brevis
Tendines

Mm. lumbricales IV-I

M. interosseus dorsalis IV

m. interossei plantares III et II

M. flexor digiti minimi brevis

M. abductor digiti minimi

M. quadratus plantae

M. abductor hallucis

Malleolus medialis

Aponeurosis plantaris
(cut off and retracted/
durchtrennt und
zurückgeschlagen)

M. flexor digitorum brevis
(cut off and retracted/
durchtrennt und
zurückgeschlagen)

Tuber calcanei

Vagina fibrosa tendinis hallucis
- Pars cruciformis vaginae fibrosae
- Pars anularis vaginae fibrosae

Vaginae synoviales tendinum digitorum pedis

M. flexor hallucis longus
Tendo

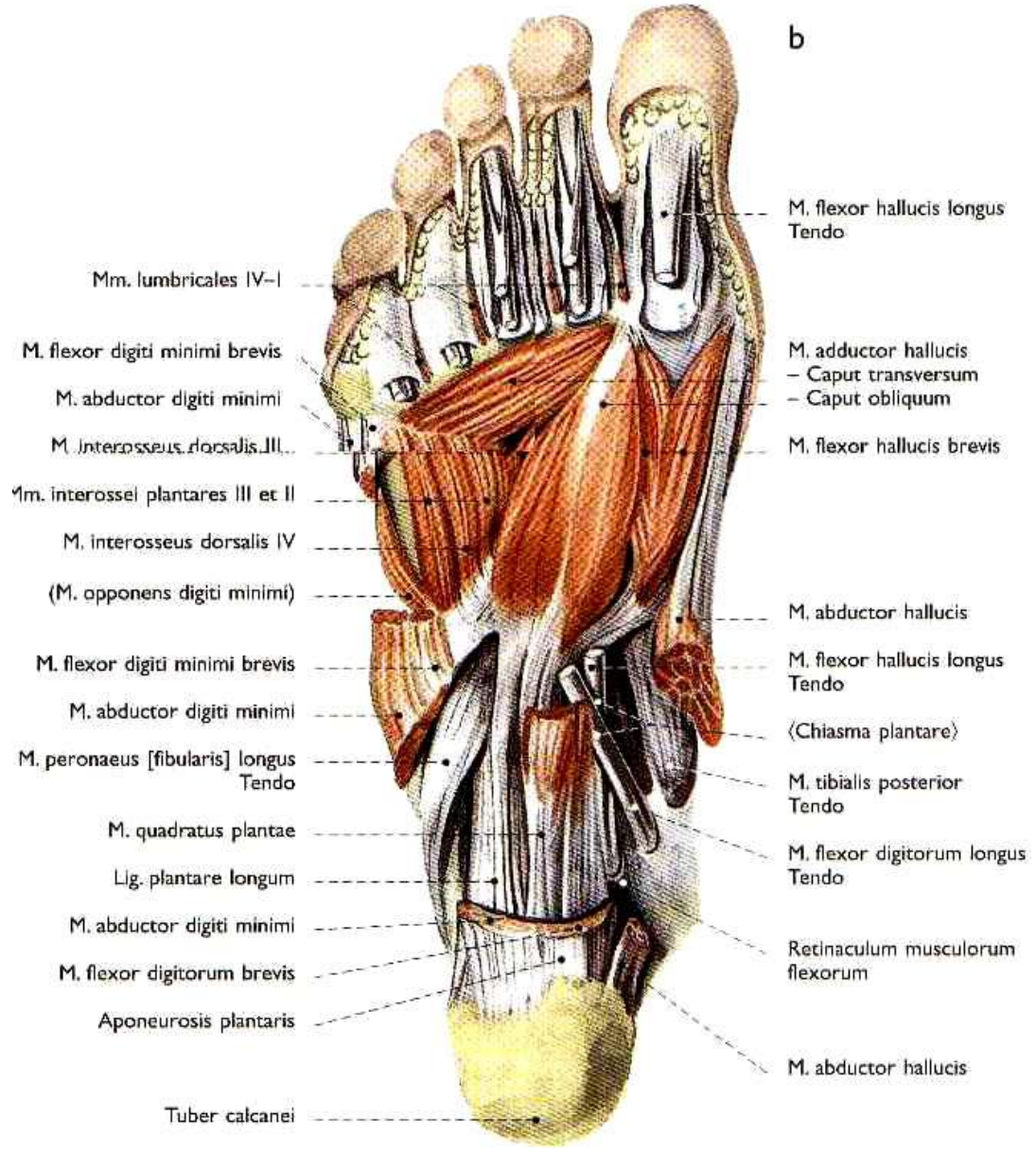
M. adductor hallucis
- Caput transversum
- Caput obliquum

M. flexor hallucis brevis

M. flexor digitorum longus
Tendo

M. peronaeus [fibularis] longus
Vagina tendinis et Tendo

b



Mm. lumbricales IV-I

M. flexor digiti minimi brevis

M. abductor digiti minimi

M. interosseus dorsalis III

Mm. interossei plantares III et II

M. interosseus dorsalis IV

(M. opponens digiti minimi)

M. flexor digiti minimi brevis

M. abductor digiti minimi

M. peroneus [fibularis] longus Tendo

M. quadratus plantae

Lig. plantare longum

M. abductor digiti minimi

M. flexor digitorum brevis

Aponeurosis plantaris

Tuber calcanei

M. flexor hallucis longus Tendo

M. adductor hallucis - Caput transversum - Caput obliquum

M. flexor hallucis brevis

M. abductor hallucis

M. flexor hallucis longus Tendo

(Chiasma plantare)

M. tibialis posterior Tendo

M. flexor digitorum longus Tendo

Retinaculum musculorum flexorum

M. abductor hallucis

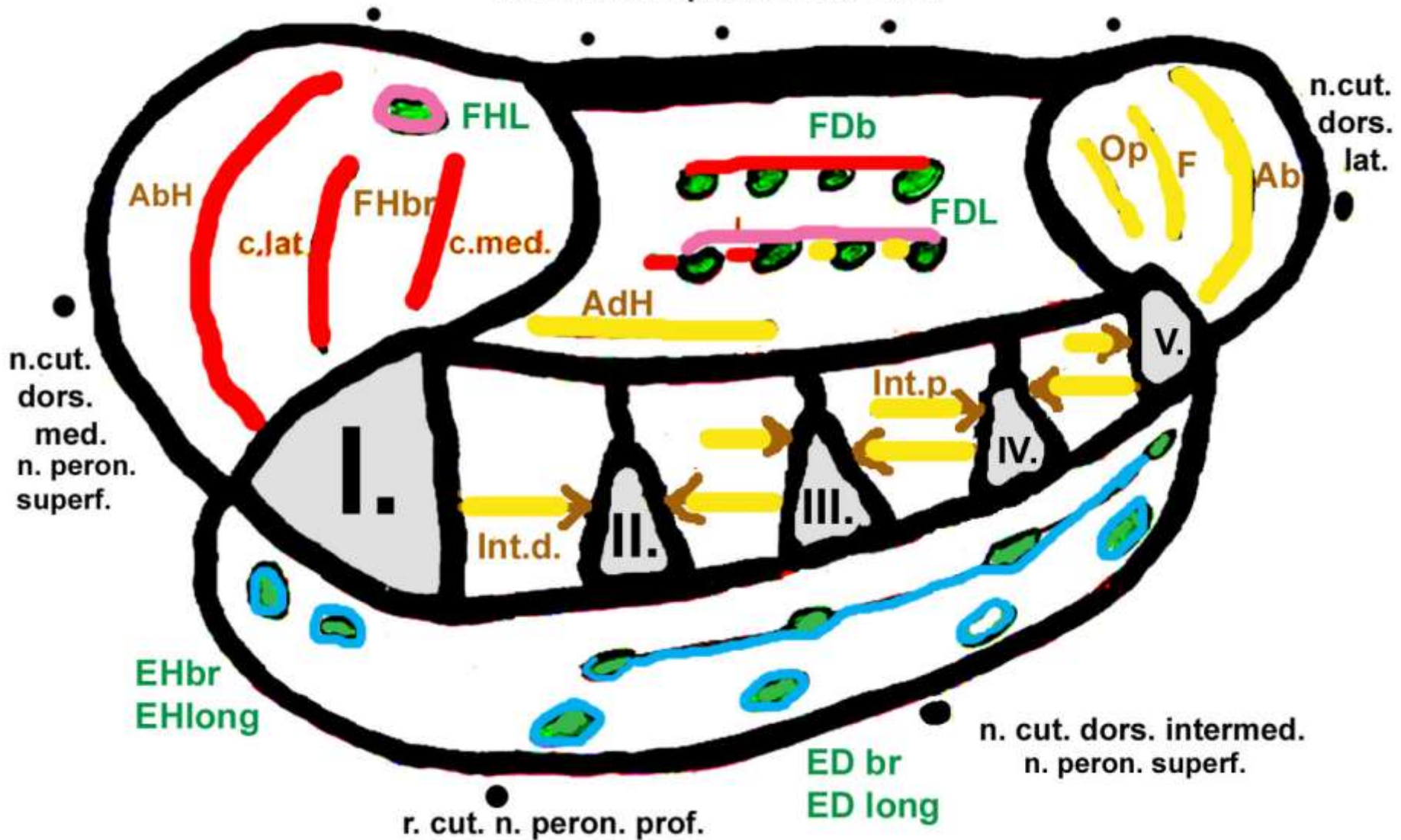
n. plantaris medialis

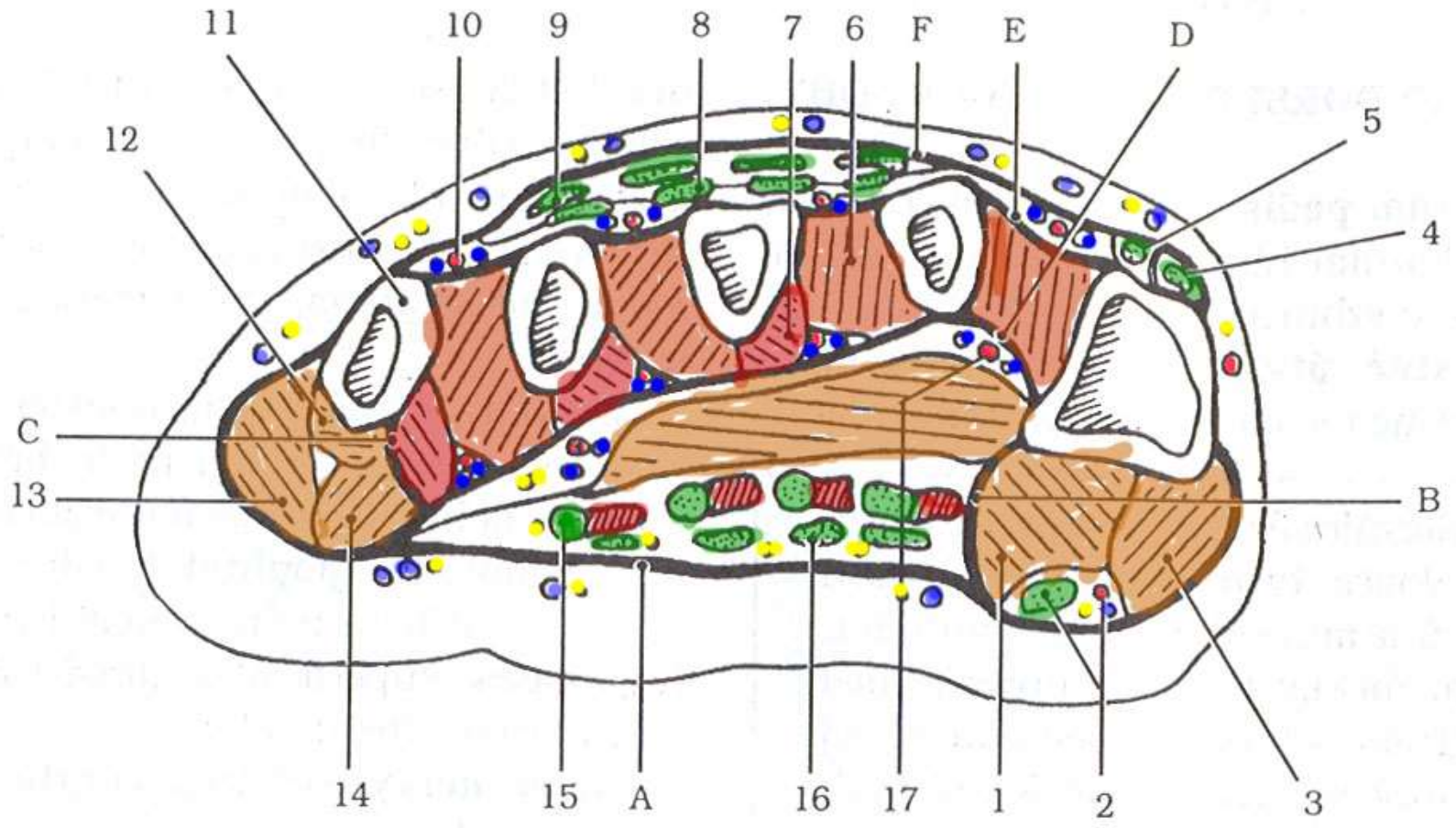
n. plantaris lateralis

n. tibialis

n. peroneus profundus

rr. cutanei n. plant. med. et lat.





Arteries of lower limb

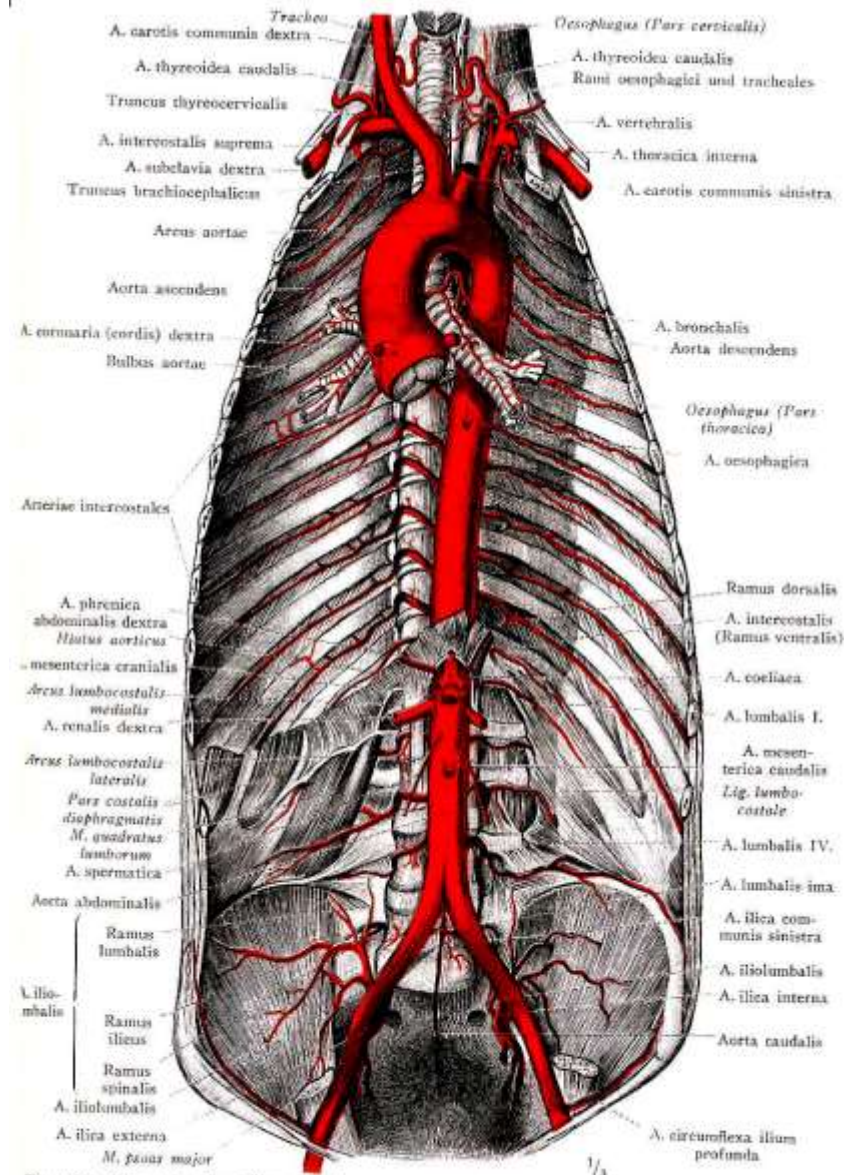
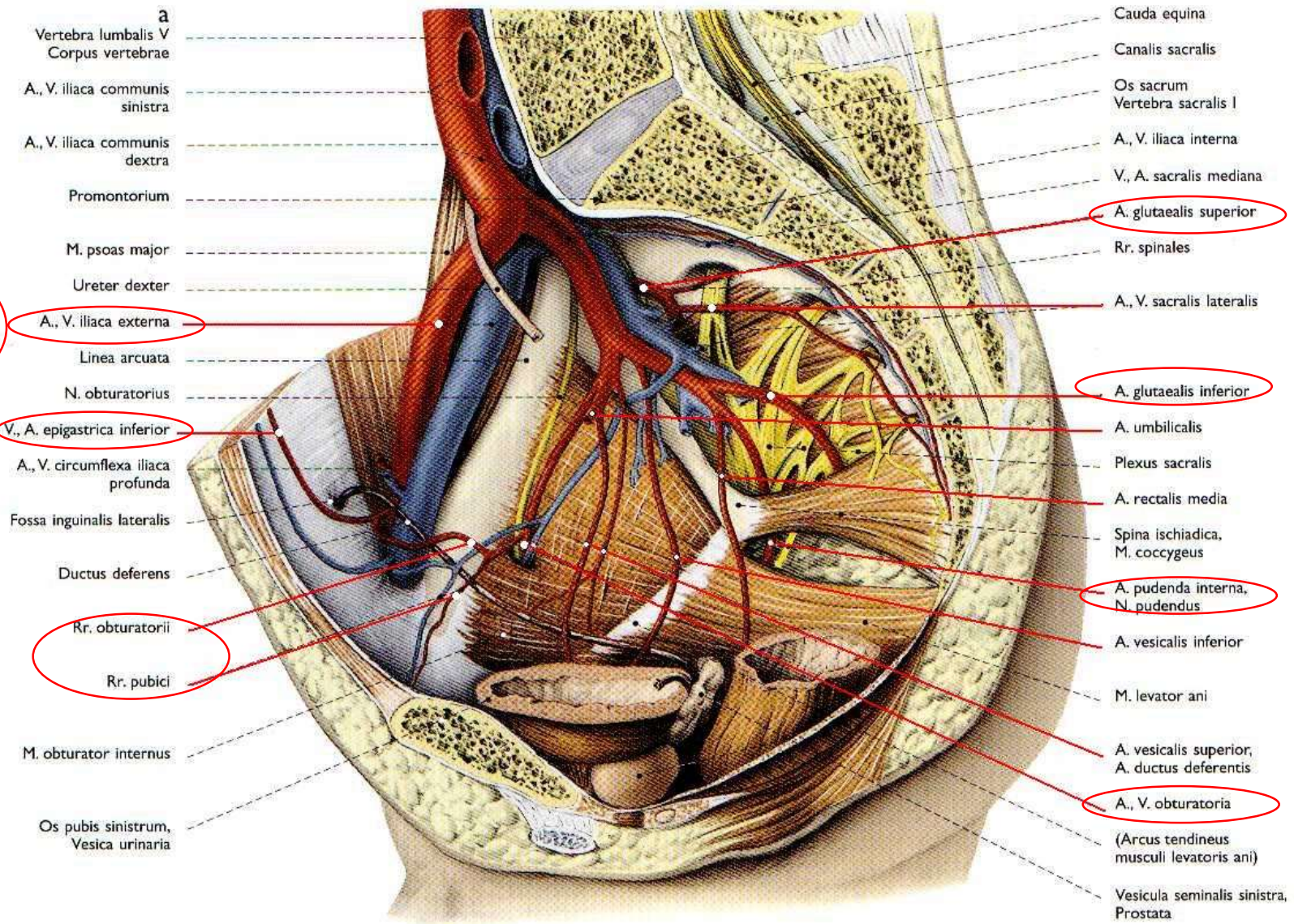


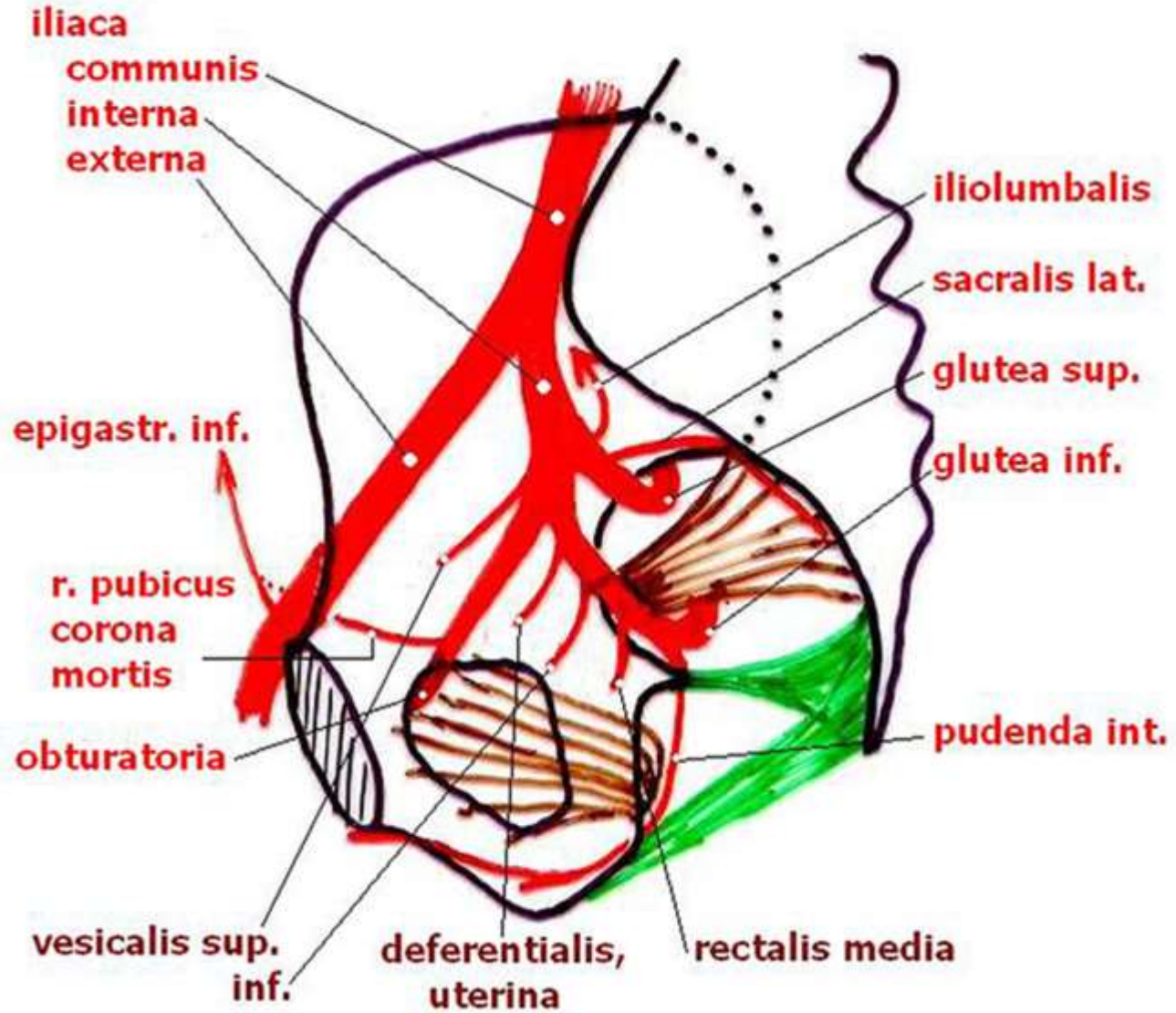
Fig. 382. Die parietalen Äste der Brust- und Bauchaorta: Die Zwischenrippenarterien, die Lendenarterien und die Aorta caudalis. Die viszeralen Äste der Aorta, mit Ausnahme der A. bronchialis, wurden an ihren Ursprungsstellen kurz abgeschnitten.



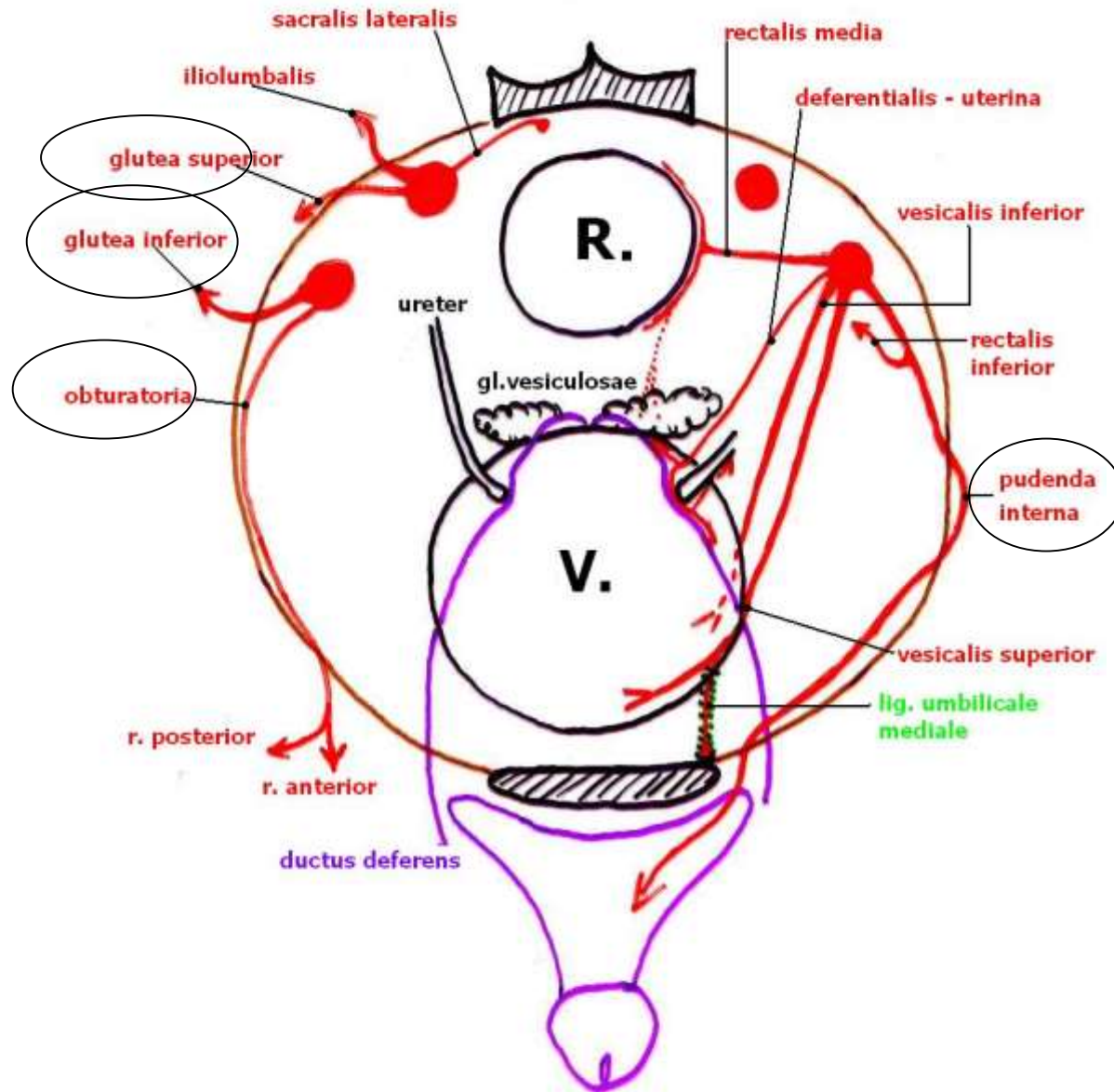
a
 Vertebra lumbalis V
 Corpus vertebrae
 A., V. iliaca communis sinistra
 A., V. iliaca communis dextra
 Promontorium
 M. psoas major
 Ureter dexter
 A., V. iliaca externa
 Linea arcuata
 N. obturatorius
 V., A. epigastrica inferior
 A., V. circumflexa iliaca profunda
 Fossa inguinalis lateralis
 Ductus deferens
 Rr. obturatorii
 Rr. pubici
 M. obturator internus
 Os pubis sinistrum,
 Vesica urinaria

Cauda equina
 Canalis sacralis
 Os sacrum
 Vertebra sacralis I
 A., V. iliaca interna
 V., A. sacralis mediana
 A. glutaealis superior
 Rr. spinales
 A., V. sacralis lateralis
 A. glutaealis inferior
 A. umbilicalis
 Plexus sacralis
 A. rectalis media
 Spina ischiadica,
 M. coccygeus
 A. pudenda interna,
 N. pudendus
 A. vesicalis inferior
 M. levator ani
 A. vesicalis superior,
 A. ductus deferentis
 A., V. obturatoria
 (Arcus tendineus
 musculi levatoris ani)
 Vesicula seminalis sinistra,
 Prostata

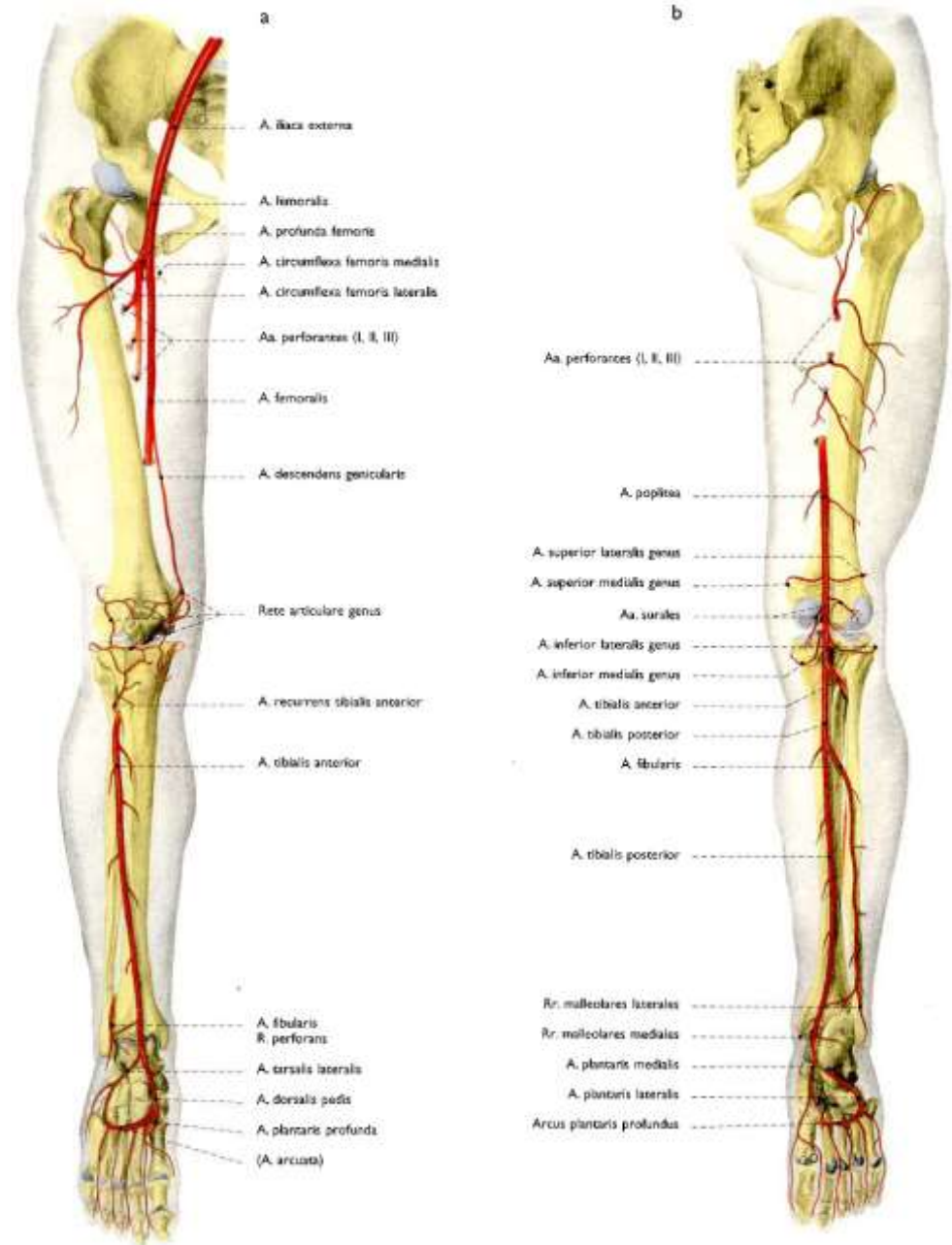
For LL



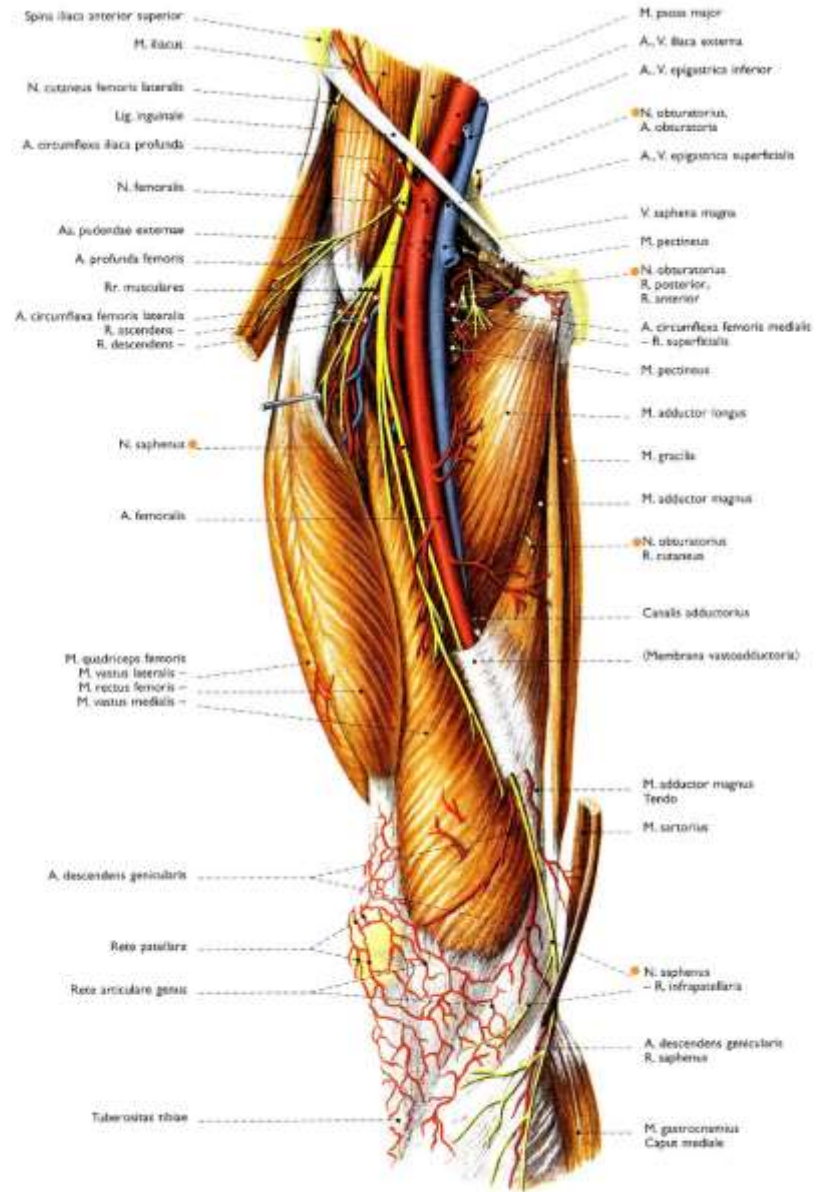
Dorsal and ventral trunk of the **a. iliaca interna**



A. femoralis



Femoral artery



! Femur et Genu

252 Blood vessels and nerves of the right thigh and knee (30%)
The sartorius and pectineus muscles were partially removed. Ventral aspect.

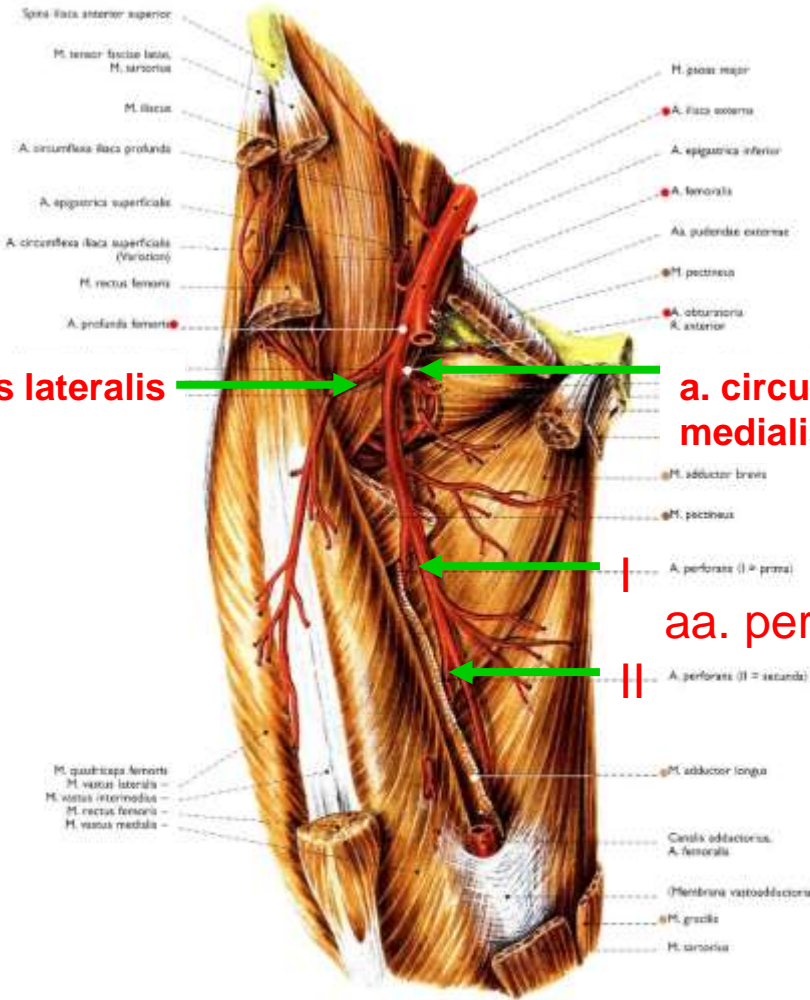
252 Blutgefäße und Nerven des rechten Oberschenkels und Knies (30%)
Die Musculi sartorius et pectineus sind zum Teil entfernt. Ventralansicht.

A. profunda femoris

a. circumflexa femoris lateralis

a. circumflexa femoris medialis

aa. perforantes

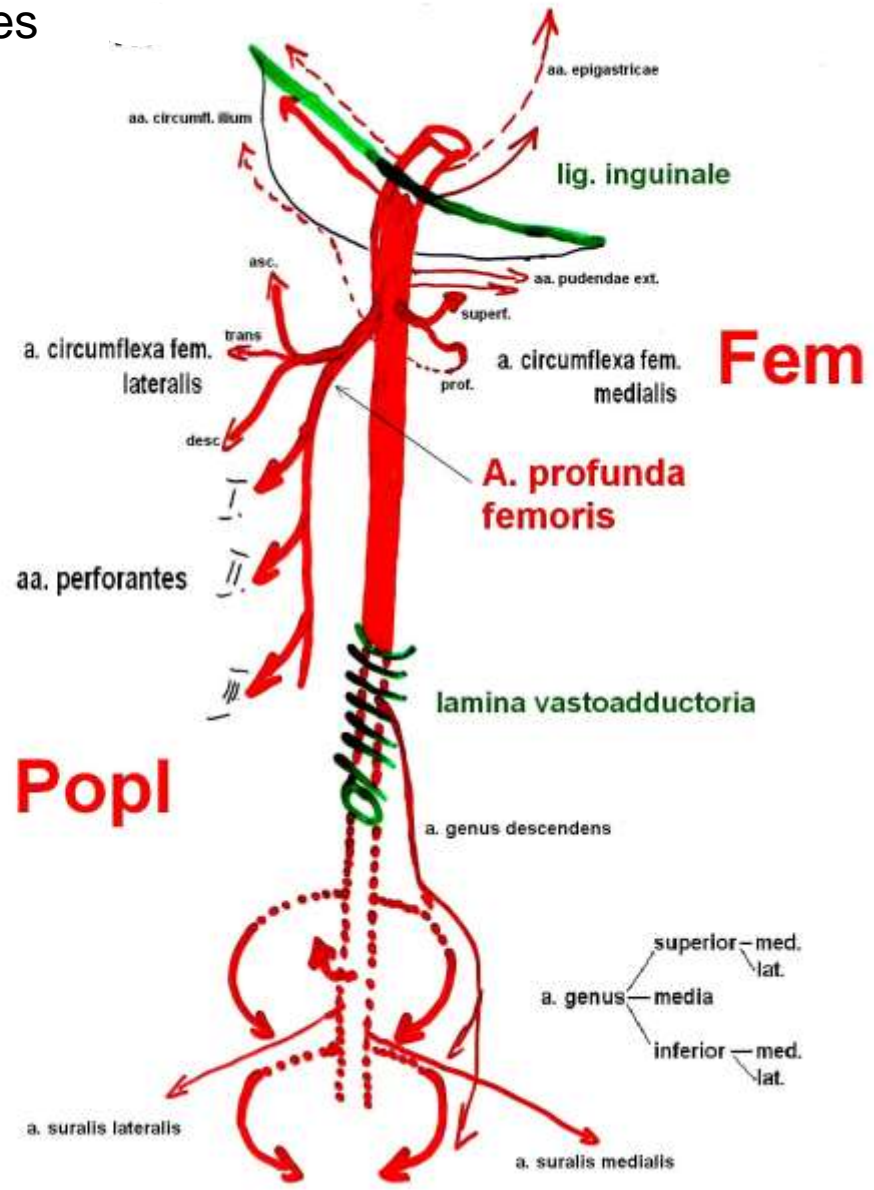


Femur

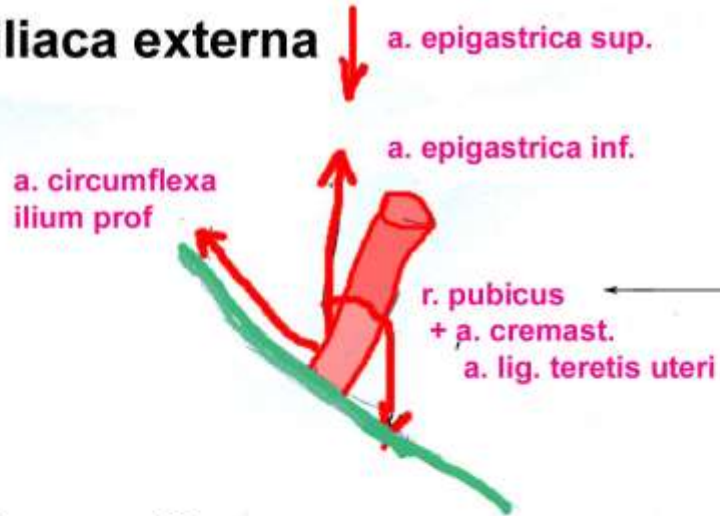
253 Profunda femoris artery at the right thigh and its branches (40%)
The superficial muscles were partially removed.
Ventral aspect

253 Arteria profunda femoris und Äste am rechten Oberschenkel (40%)
Die oberflächlichen Muskeln sind grossenteils entfernt. Ventralansicht

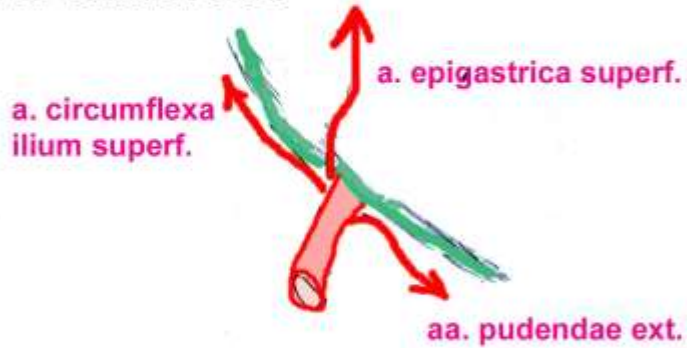
Scheme of branches of femoral and popliteal artery



A. iliaca externa



A. femoralis



corona mortis
Hesselbachi

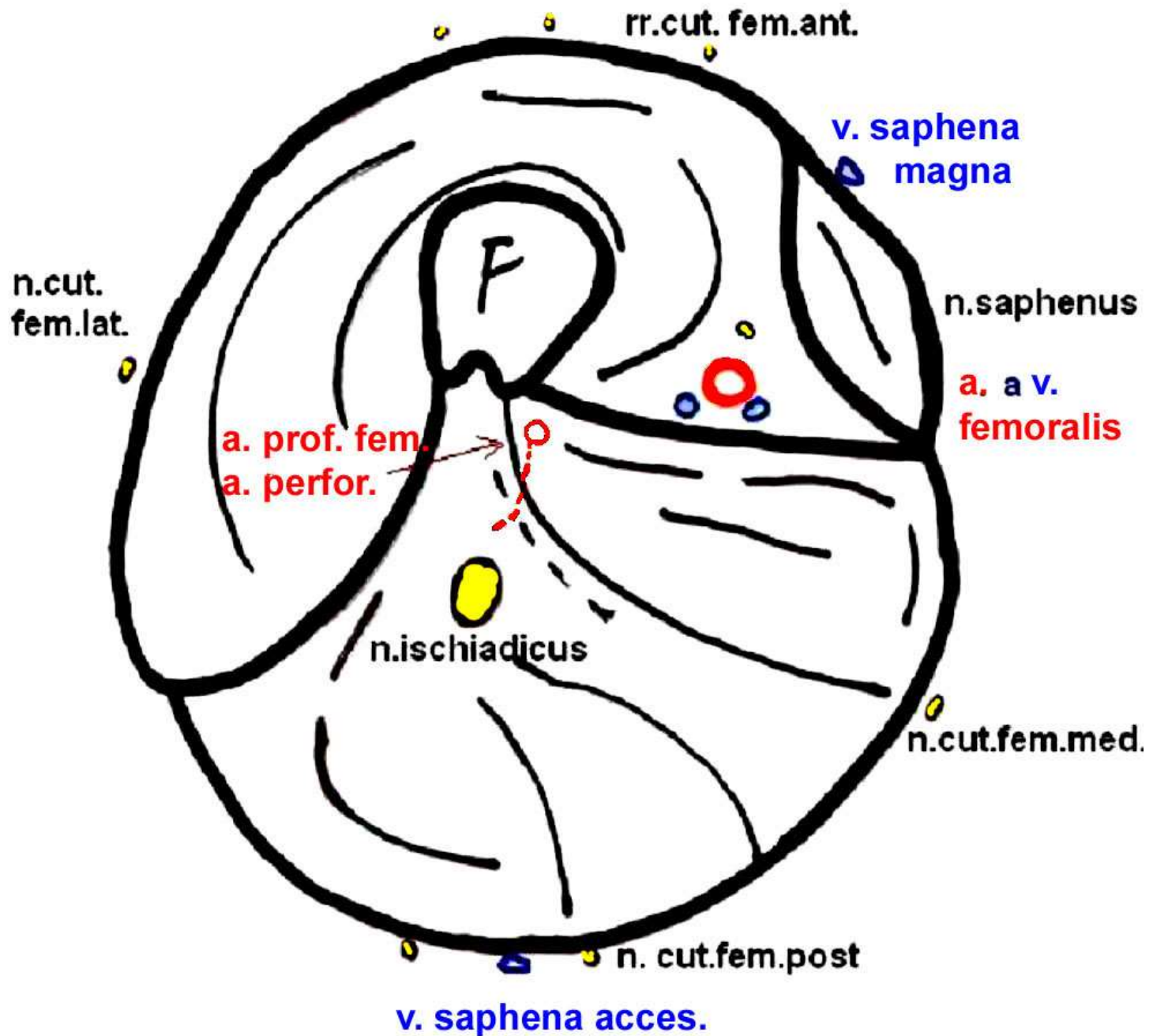
A. iliaca interna

Branches: Dorsal

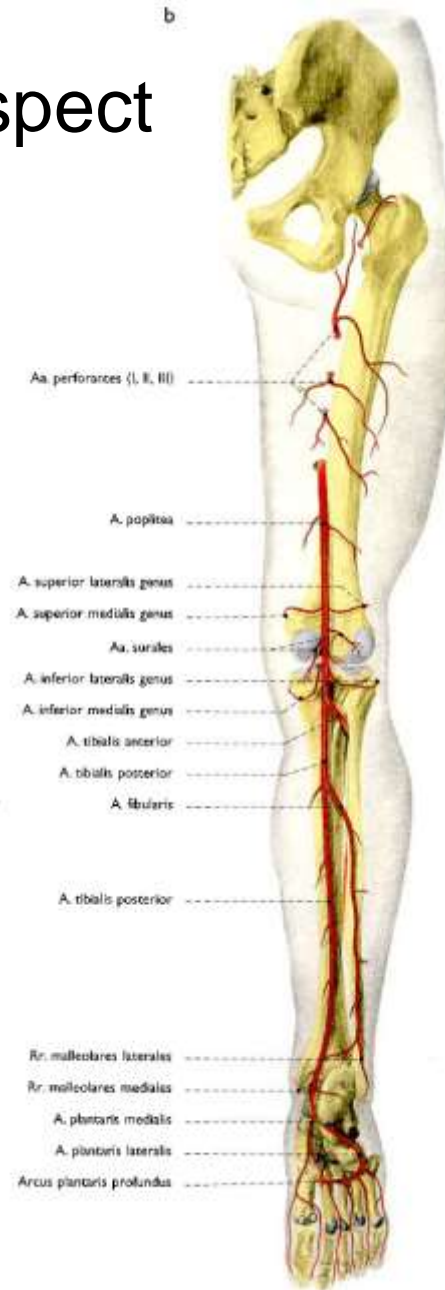
iliolumbalis
sacralis lateralis
glutea superior

Ventral

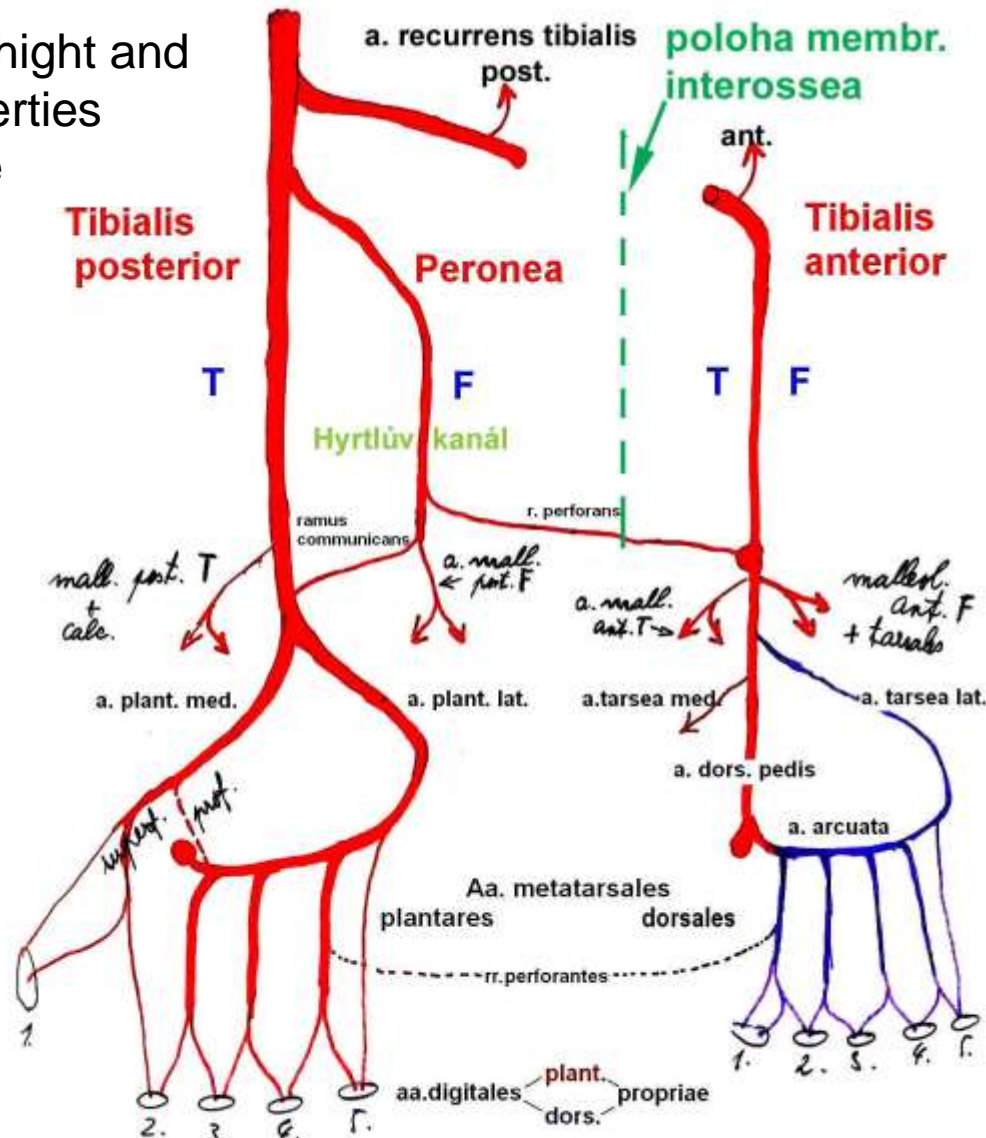
glutea inferior
obturatoria --- r. pubicus



LL arteries posterior aspect

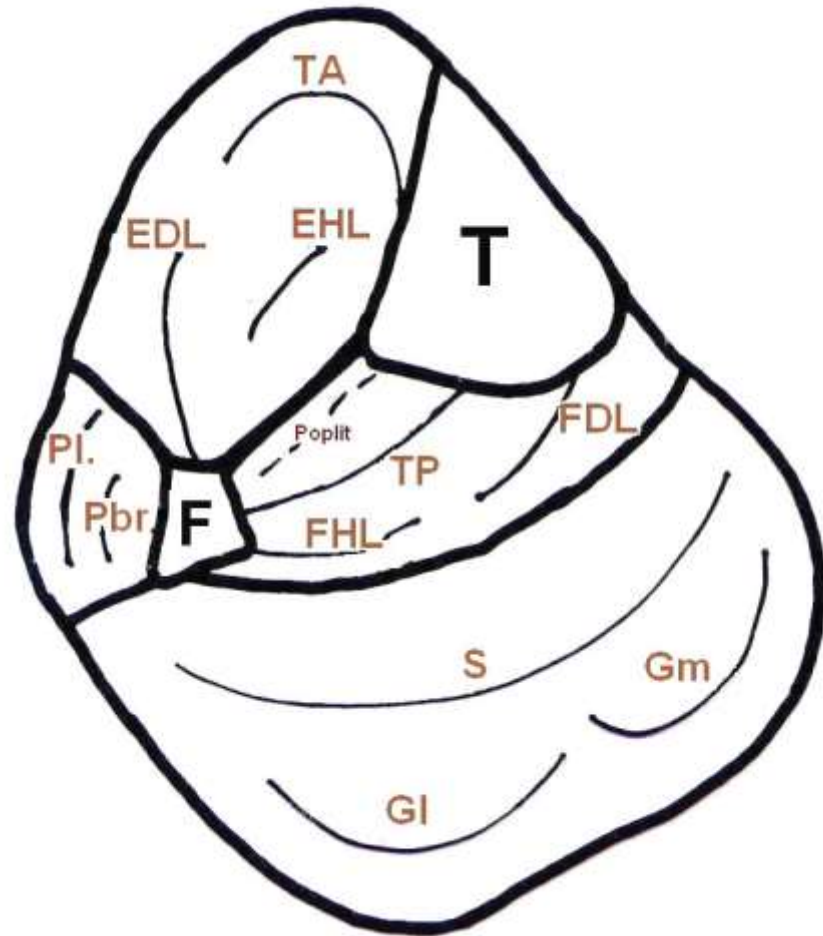


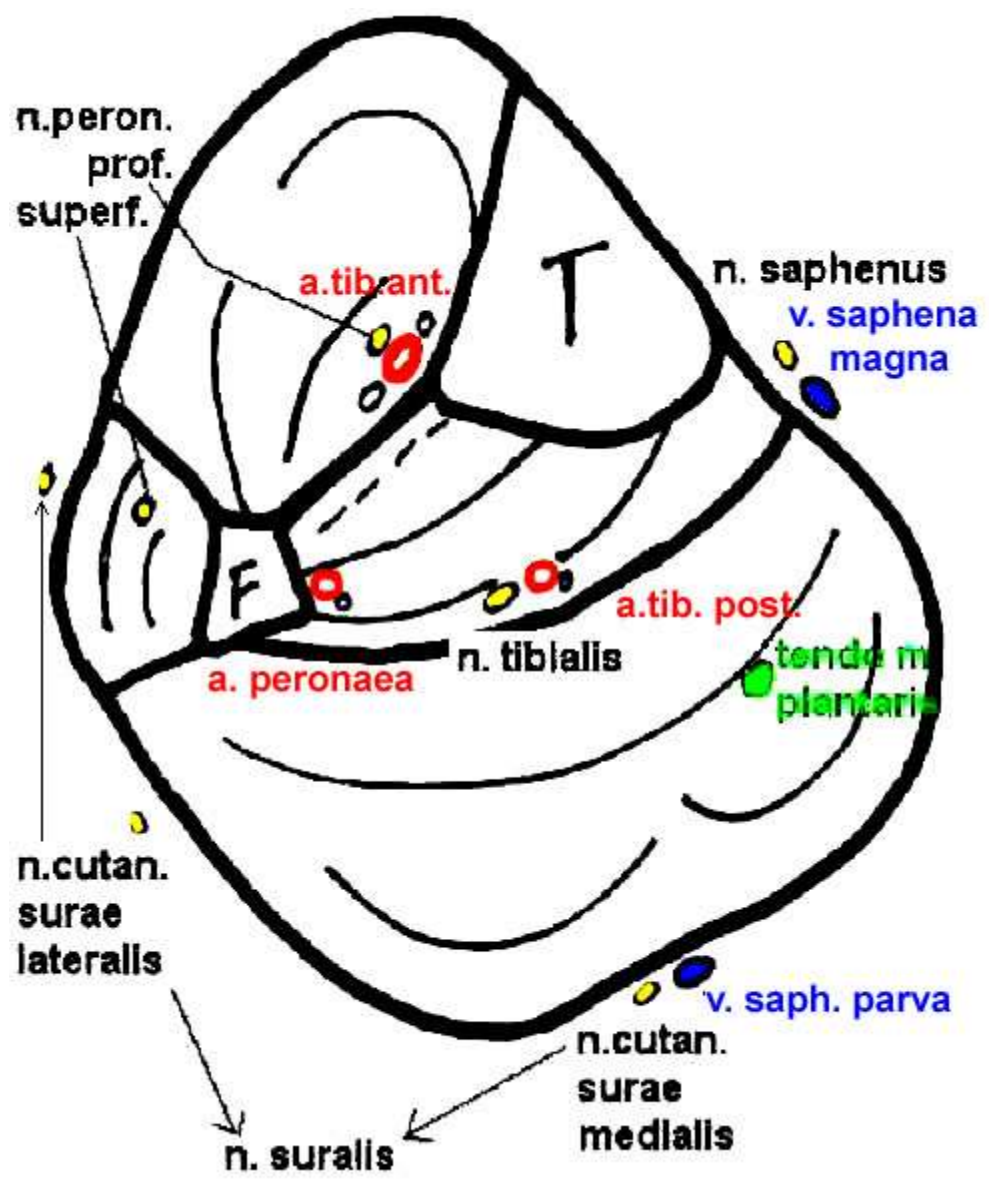
Lower thigh and foot arteries scheme



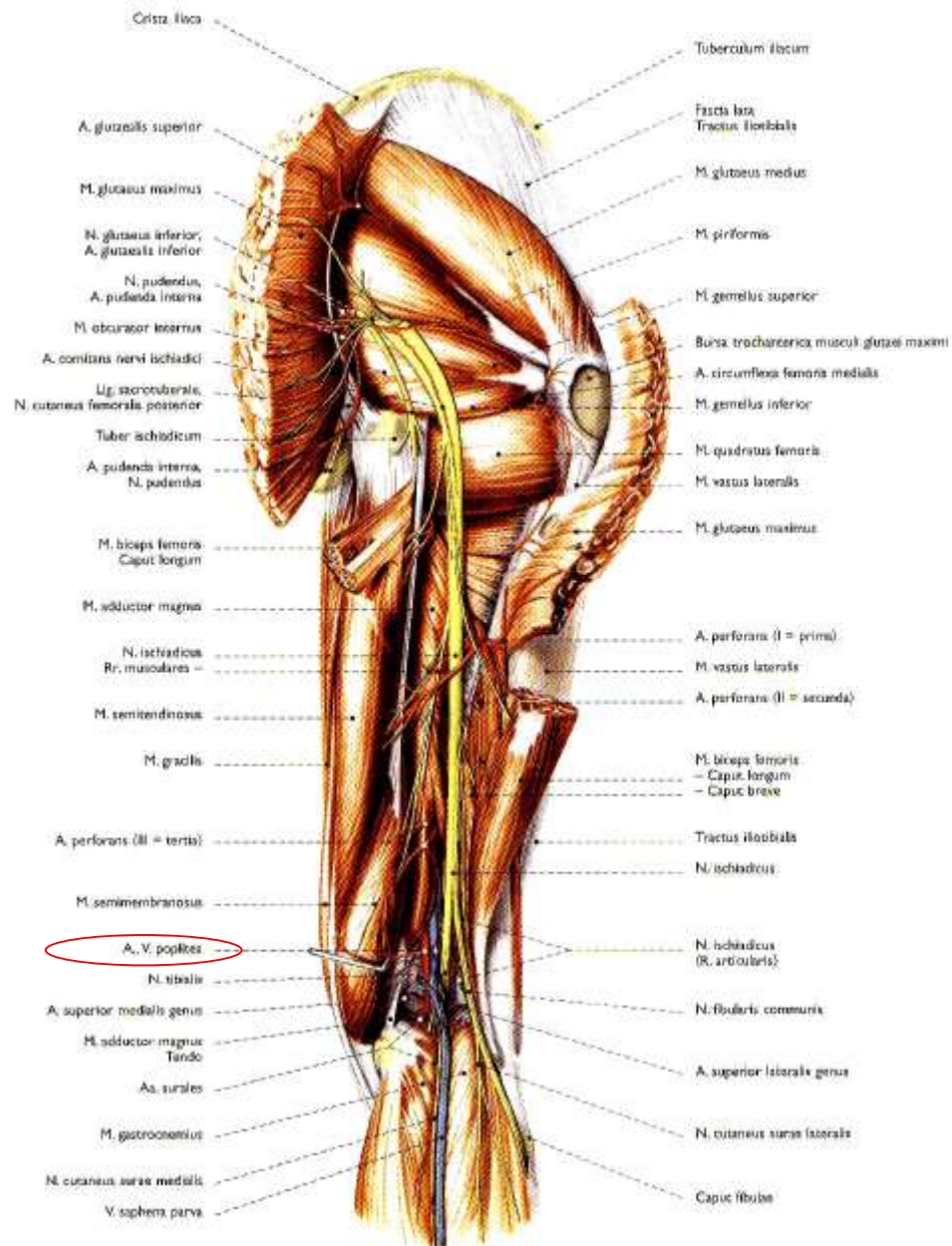
Posterior aspect of planta – right foot

„through the planta“ aspect of right foot

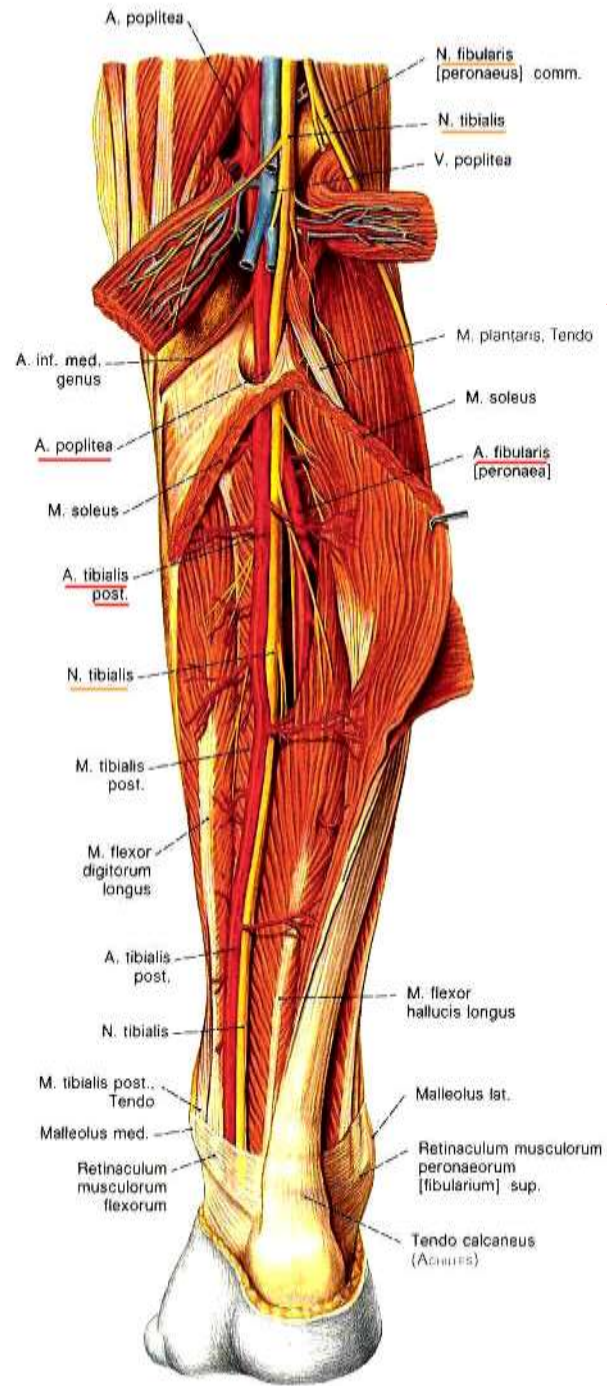
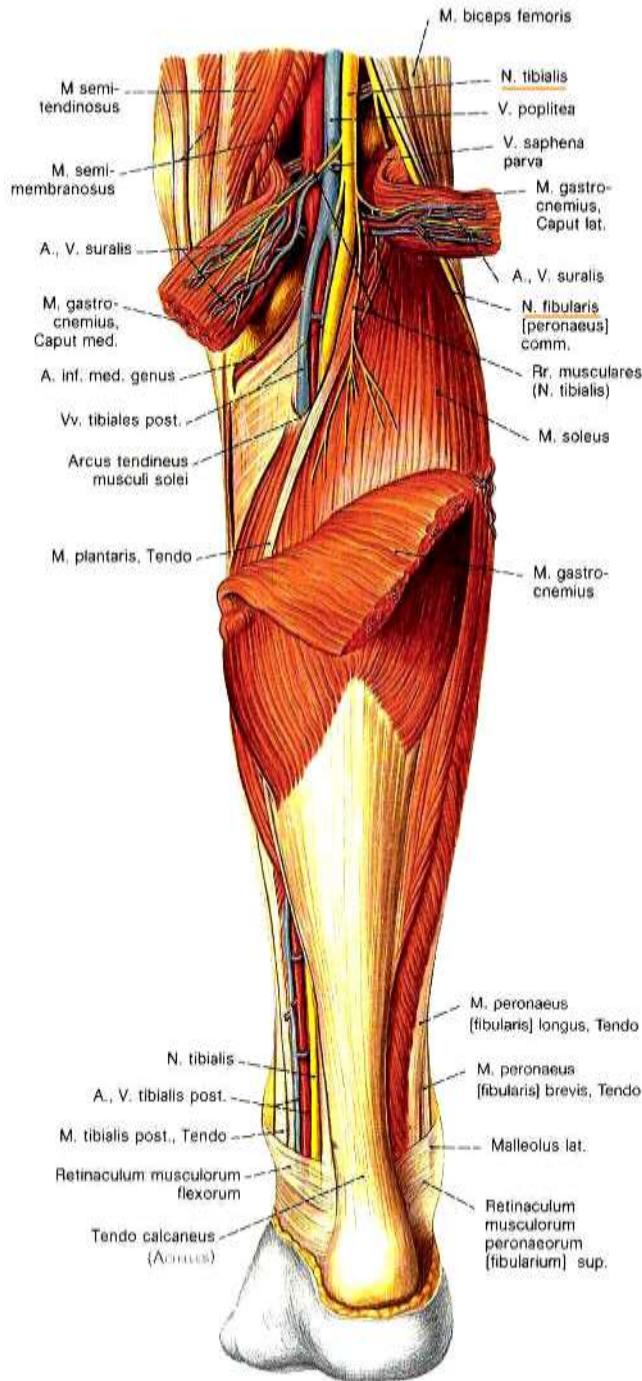


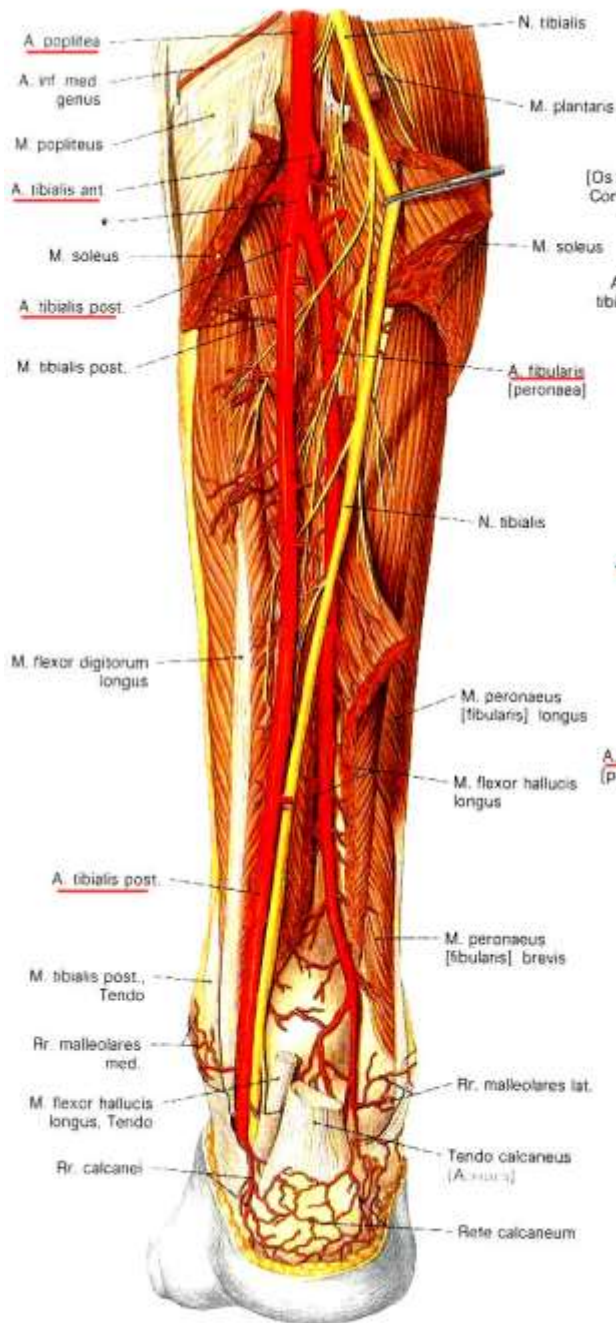


A. poplitea



A. poplitea





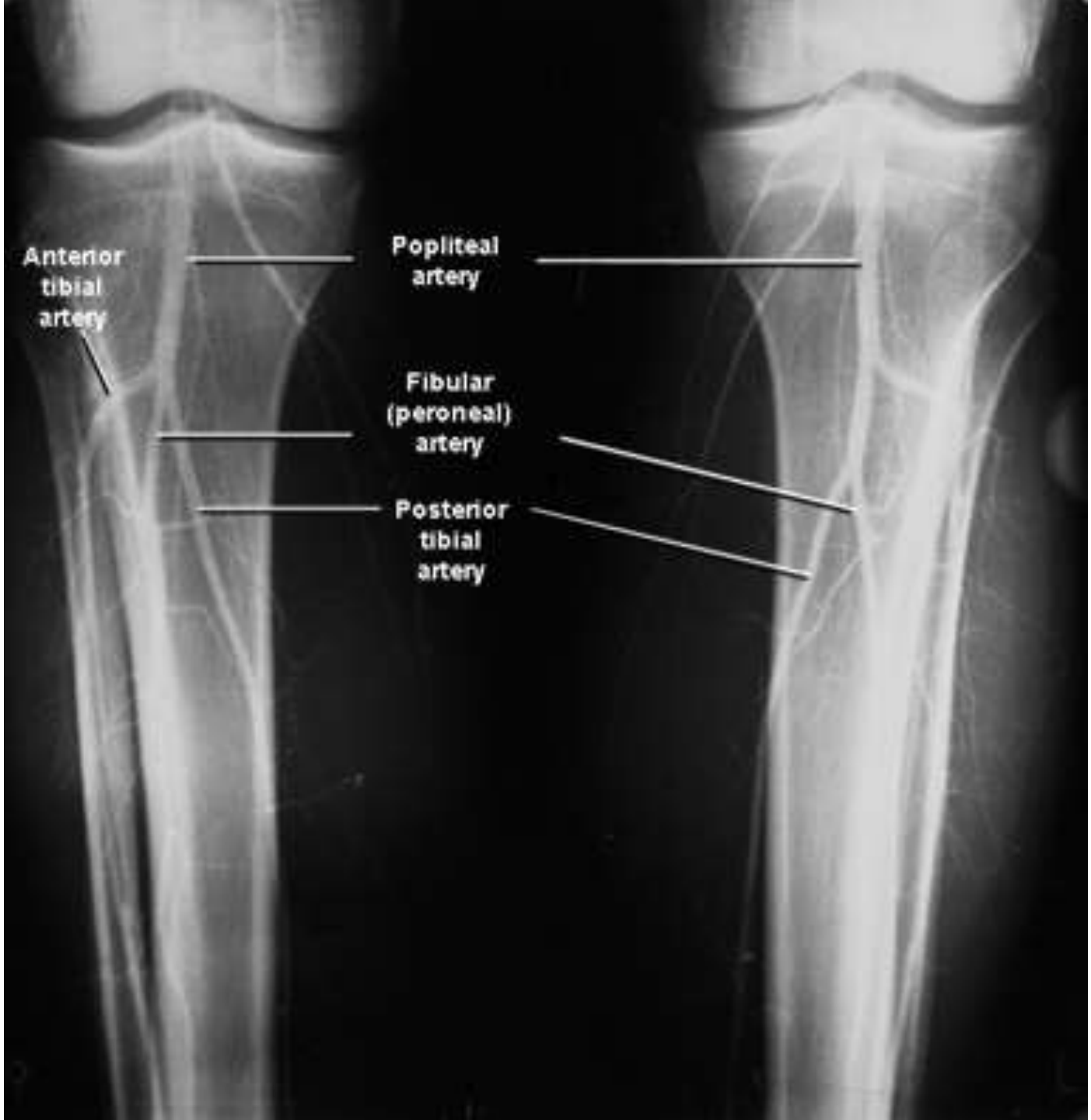
Angiography

Anterior
tibial
artery

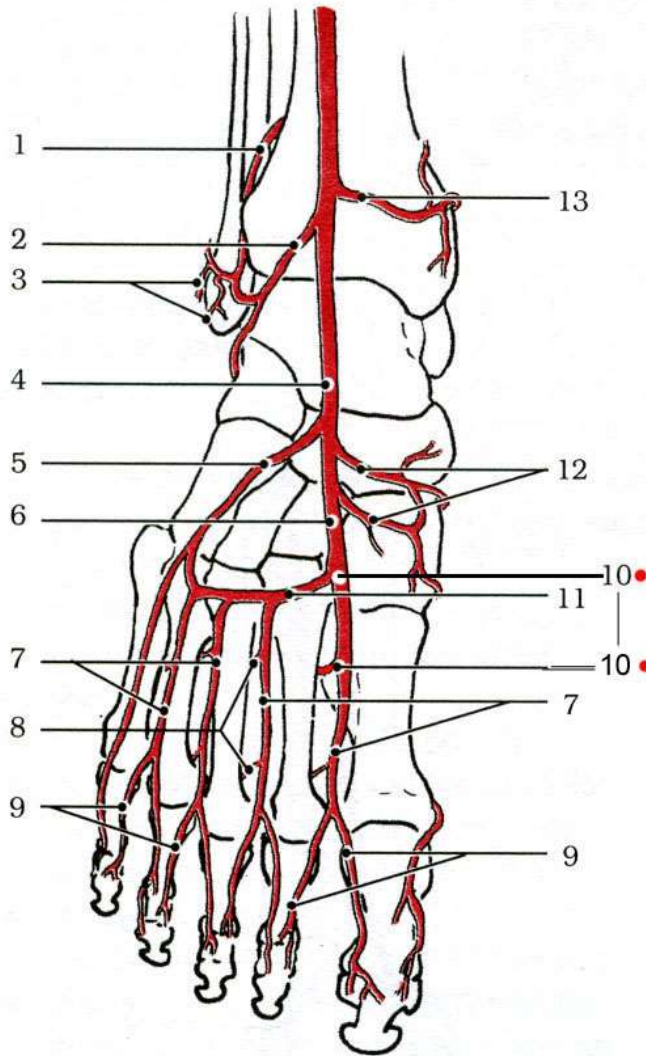
Popliteal
artery

Fibular
(peroneal)
artery

Posterior
tibial
artery



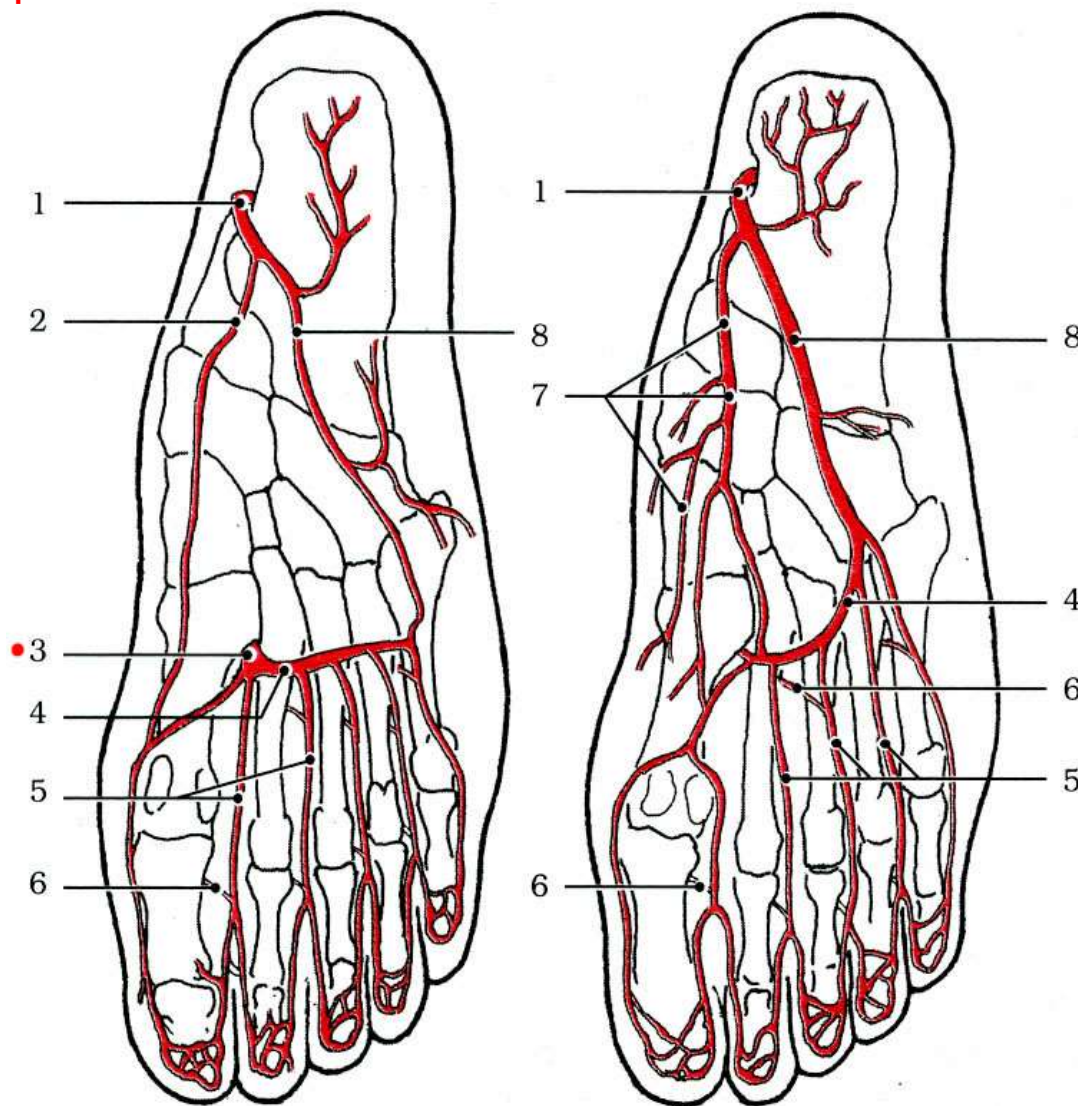
Dorsum pedis arteries



Obr. 58/VII. Tepny nohy – dorzální strana.
(podle Anatomie, Borovanský a kol.)

- 1 – r. perforans a. fibularis
- 2 – a. malleolaris anterior lateralis
- 3 – rete malleolare laterale
- 4 – a. dorsalis pedis
- 5 – a. tarsea lateralis
- 6 – a. dorsalis pedis
- 7 – aa. metatarsae dorsales
- 8 – rr. perforantes
- 9 – aa. digitales dorsales
- 10 – r. perforans (r. plantaris profundus)
- 11 – a. arcuata
- 12 – aa. tarsae mediales
- 13 – a. malleolaris anterior medialis

Planta pedis arteries



Obr. 59/VII. Tepny nohy
- plantární strana - dvě
varianty (podle Anatomie,
Borovanský a kol.).

- 1 - a. tibialis **posterior**
- 2 - a. plantaris medialis
- 3 - r. plantaris profundus
(r. perforans z a.
metatarsae dorsalis I.,
prima)
- 4 - arcus plantaris
- 5 - aa. metatarsae planta-
res
- 6 - rr. perforantes
- 7 - a. plantaris medialis
(var.)
- 8 - a. plantaris lateralis

Angiography

a

Dorsum pedis

A. tibialis anterior

A. tarsalis lateralis

A. dorsalis pedis

(A. arcuata)

(Aa. metatarsales dorsales)

Aa. digitales dorsales

Planta pedis

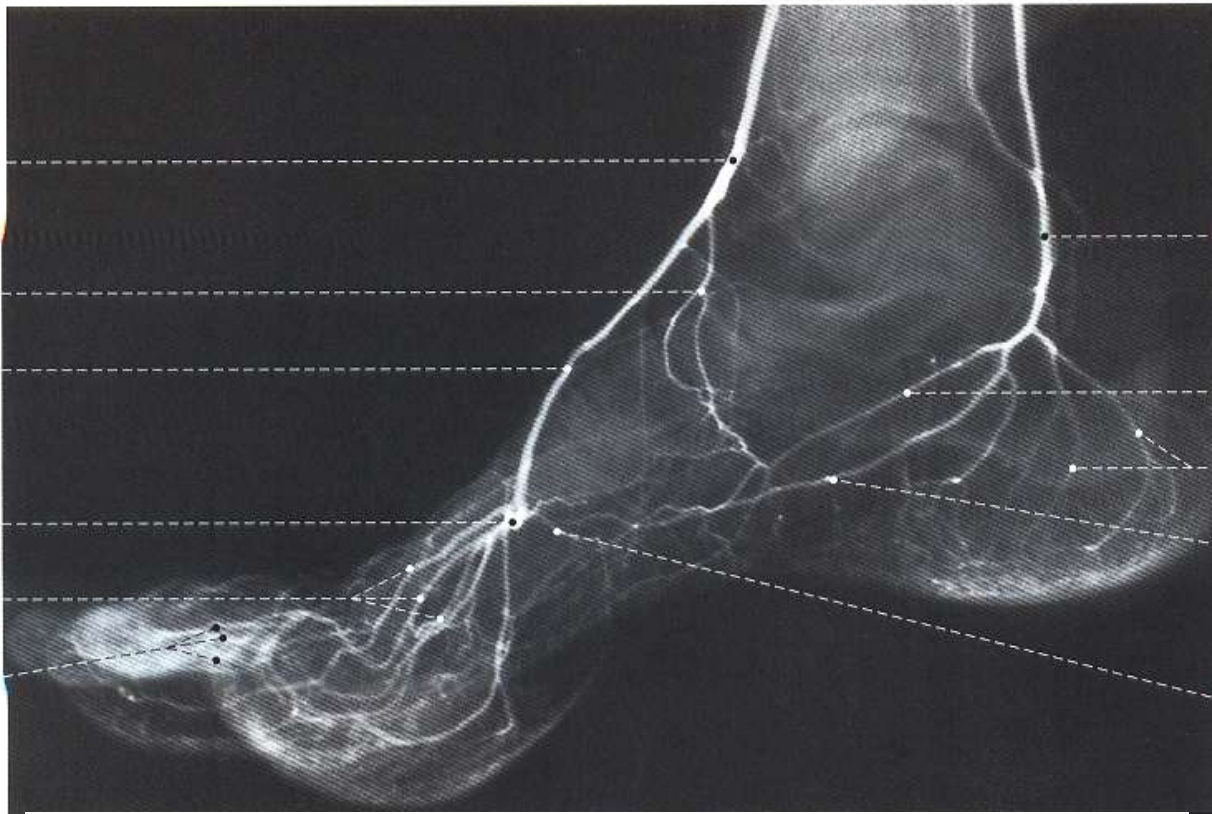
A. tibialis posterior

A. plantaris medialis

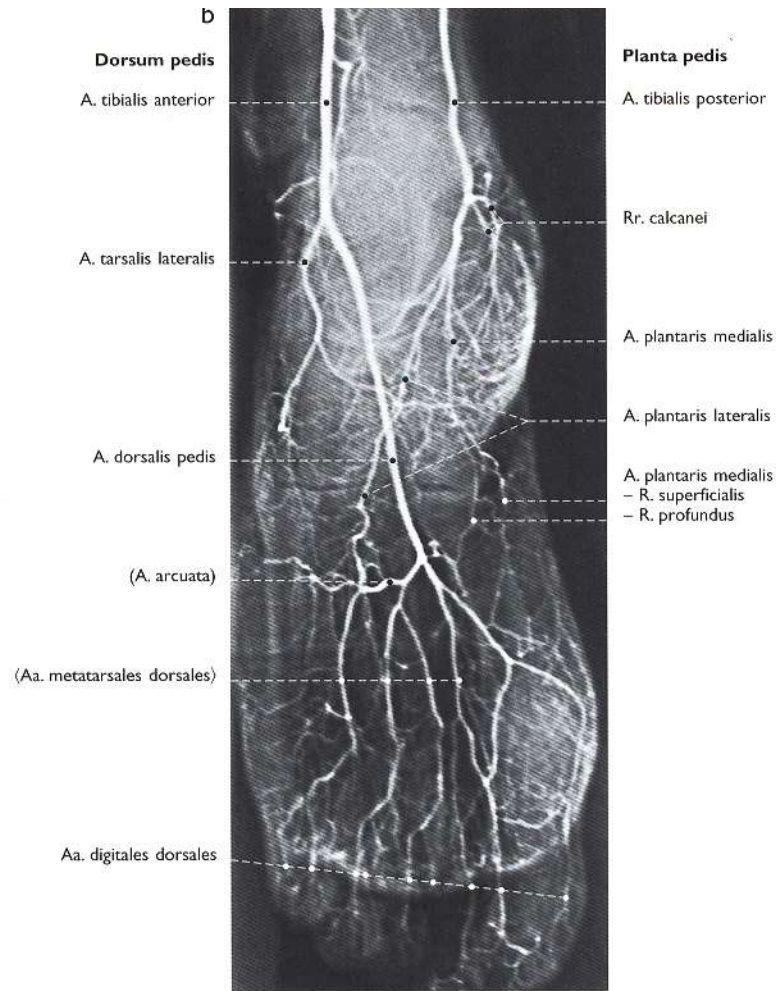
Rr. calcanei

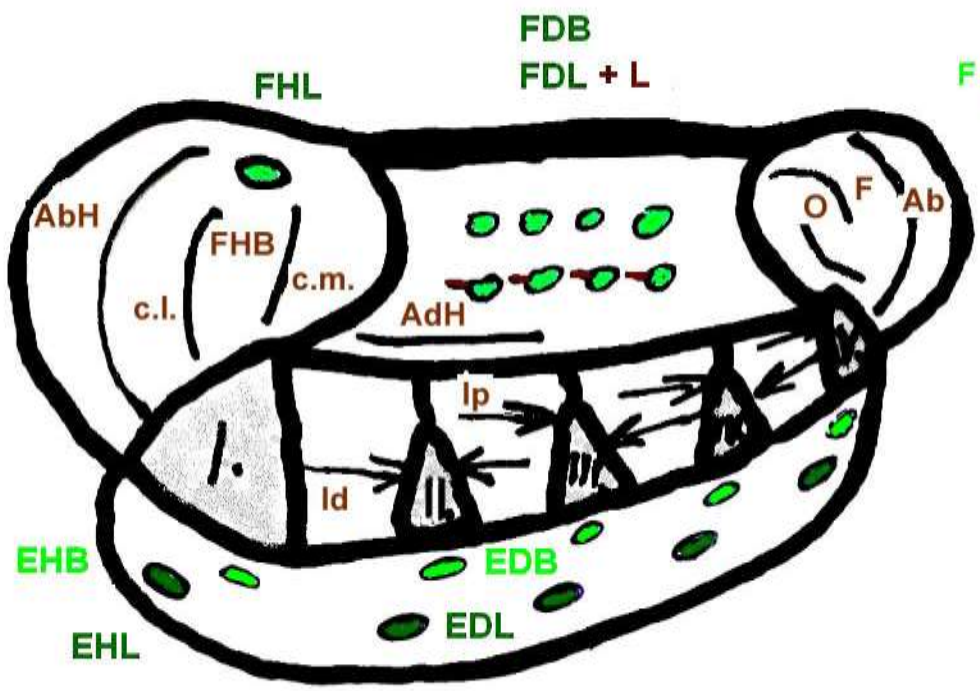
A. plantaris lateralis

Arcus plantaris profundus



Angiografie - AP





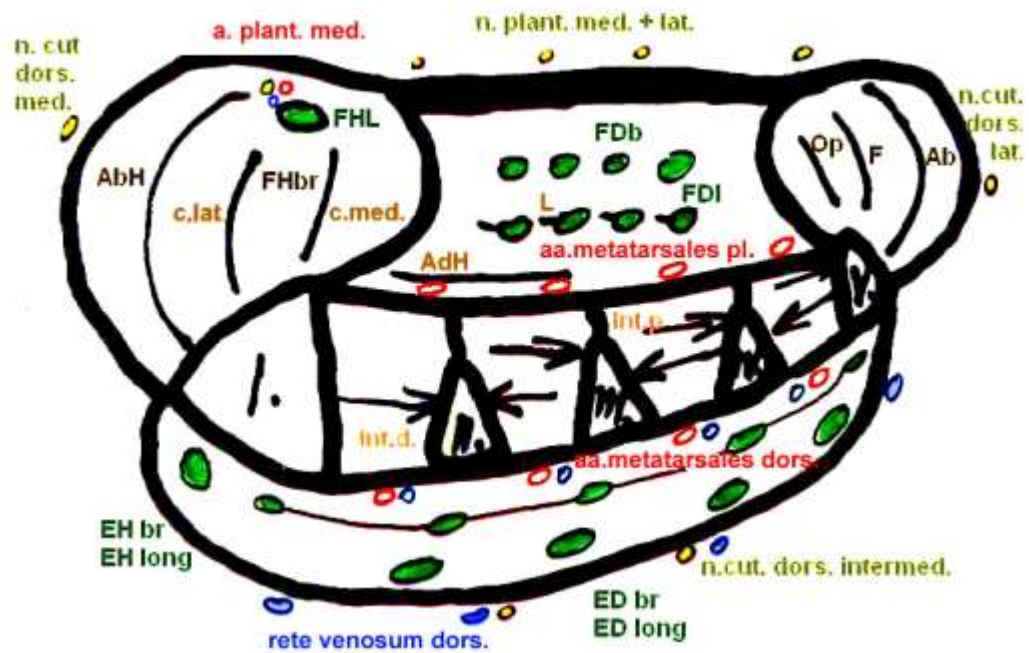
FASCIAE:

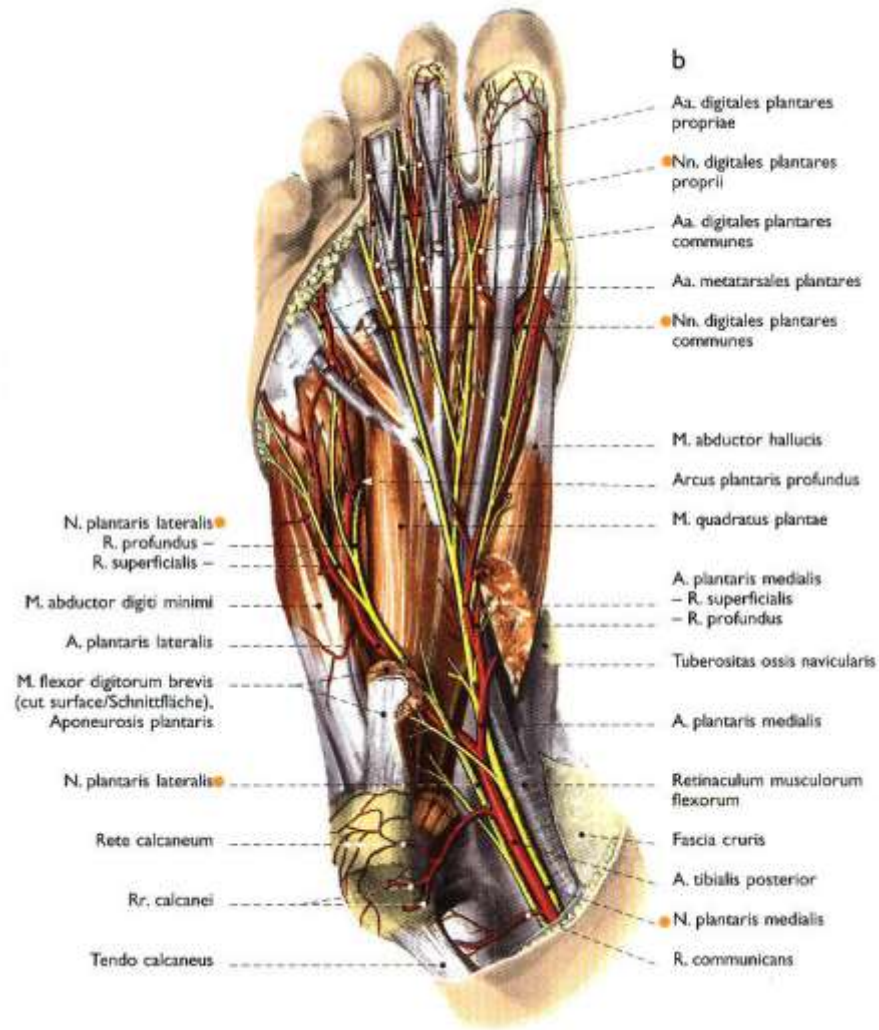
F pl ped + Ap pl

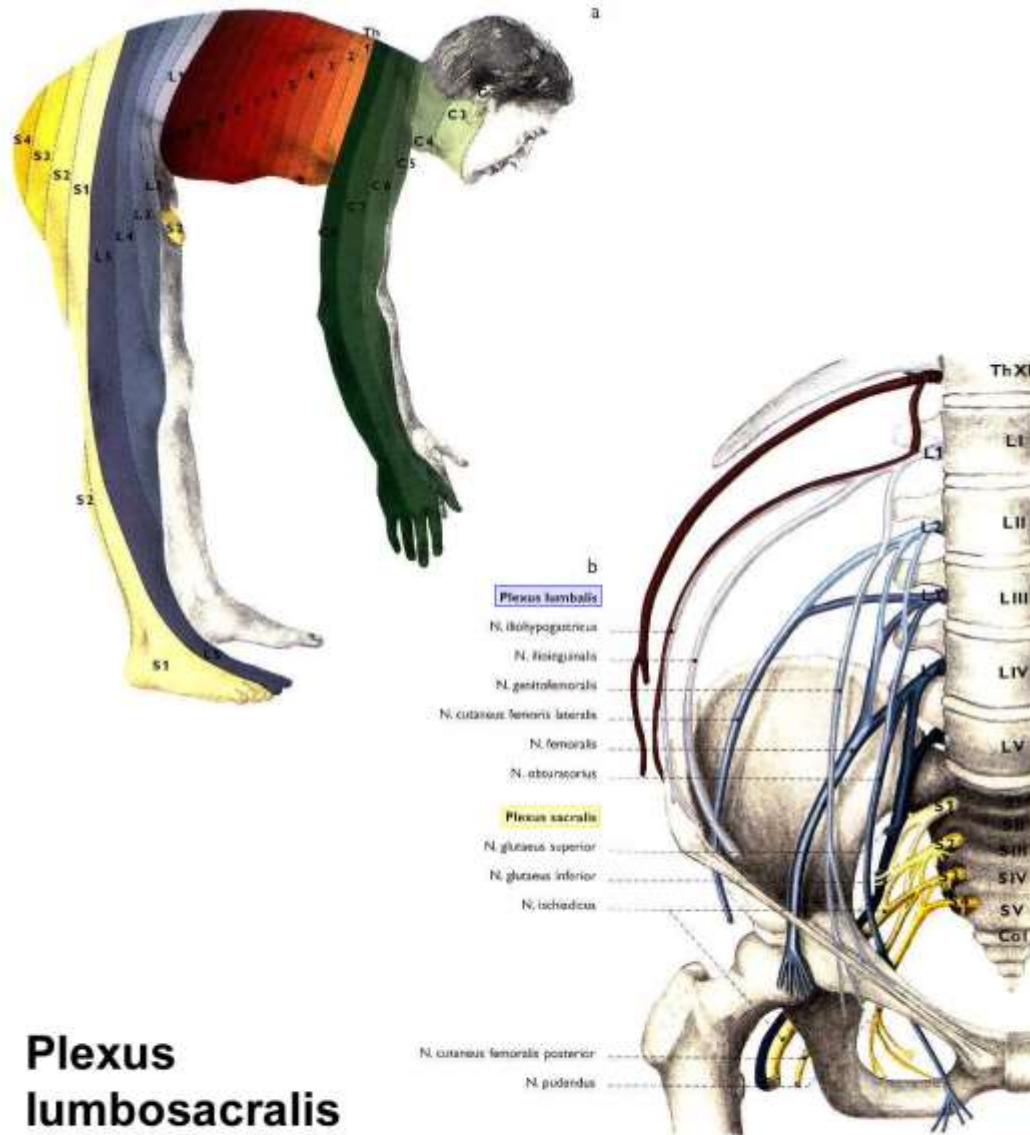
F l pl

F l d

F d pedis







Plexus lumbosacralis

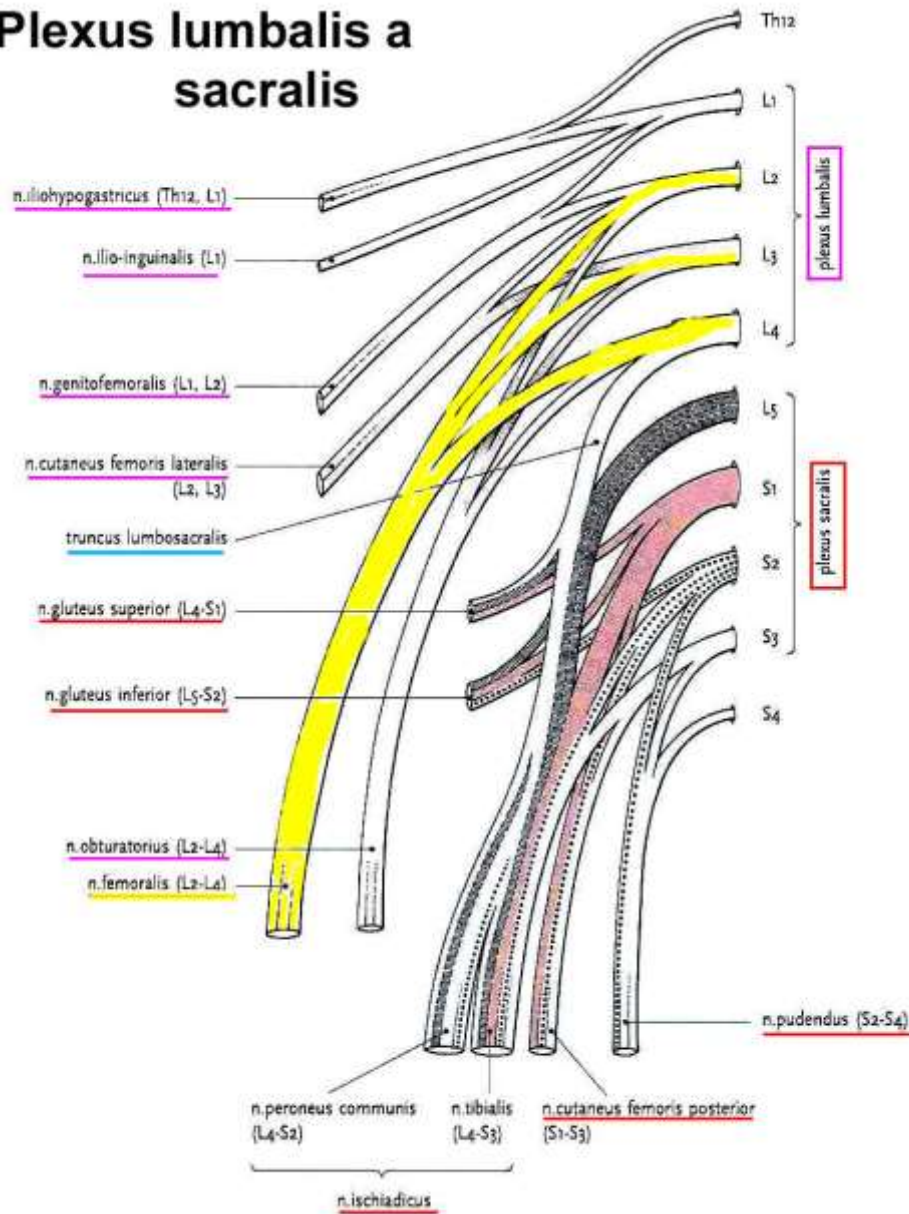
244 Segmental innervation and lumbosacral plexus

- a Segmental innervation (dermatomes) of the upper limb, the thorax and the lower limb (according to von Lanz and Wachsmuth, 1972)
- b Plan of the lumbosacral plexus

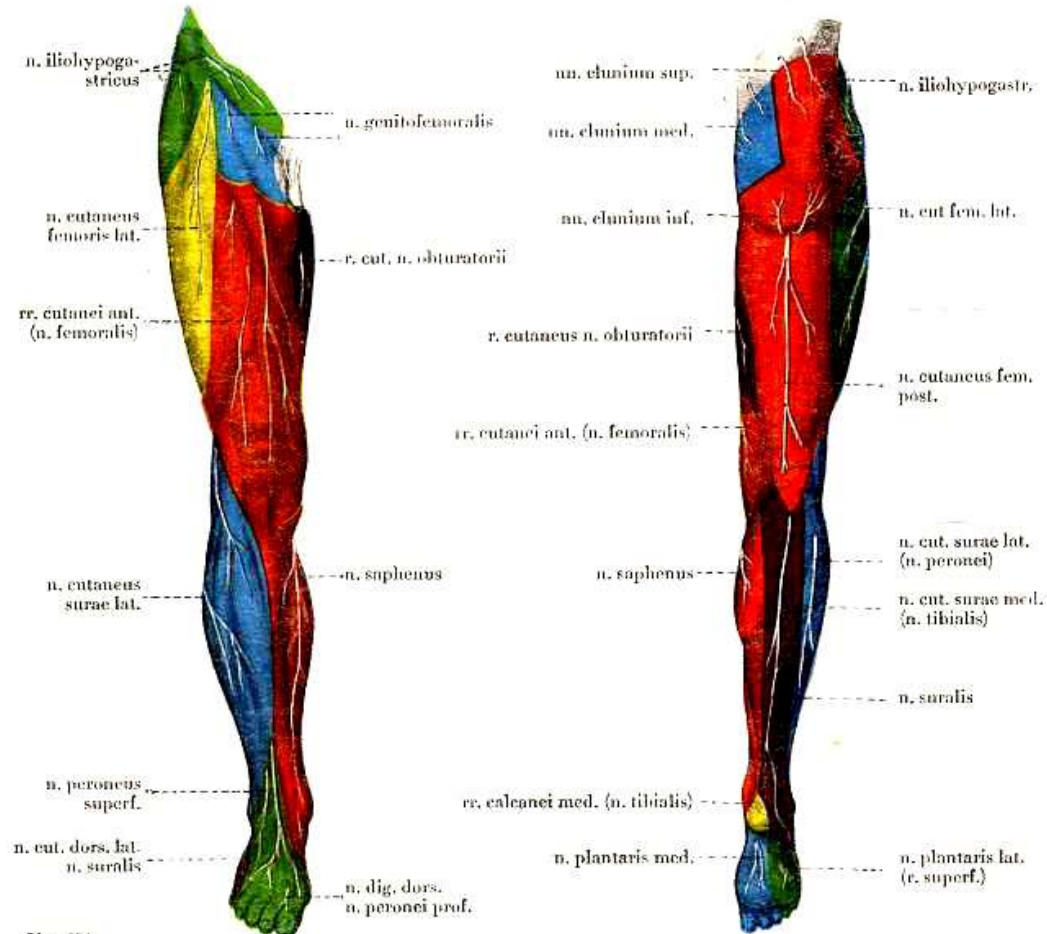
244 Segmentale Innervation und Plexus lumbosacralis

- a Segmentale Innervation (Dermatome) des Arms, des Thorax und des Beins (nach von Lanz und Wachsmuth, 1972)
- b Aufteilungsschem des Plexus lumbosacralis

Plexus lumbalis a sacralis

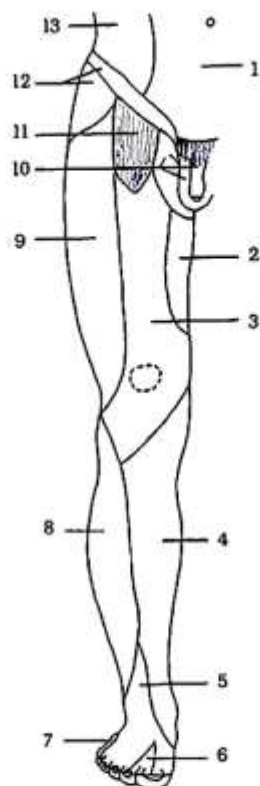


Areae nervinae



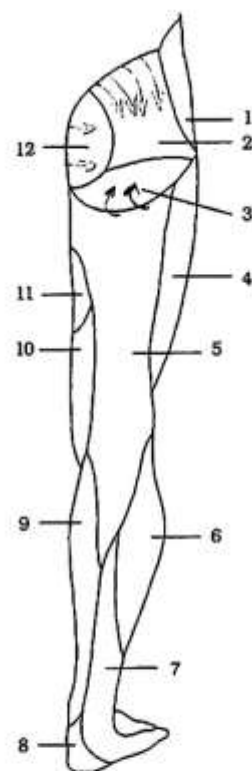
Obr. 618.

Kožní inervace (areae nervinae) dolní končetiny.



Obr. 24/II. Kožní inervace - areae nervinae - na ventrální straně dolní končetiny.

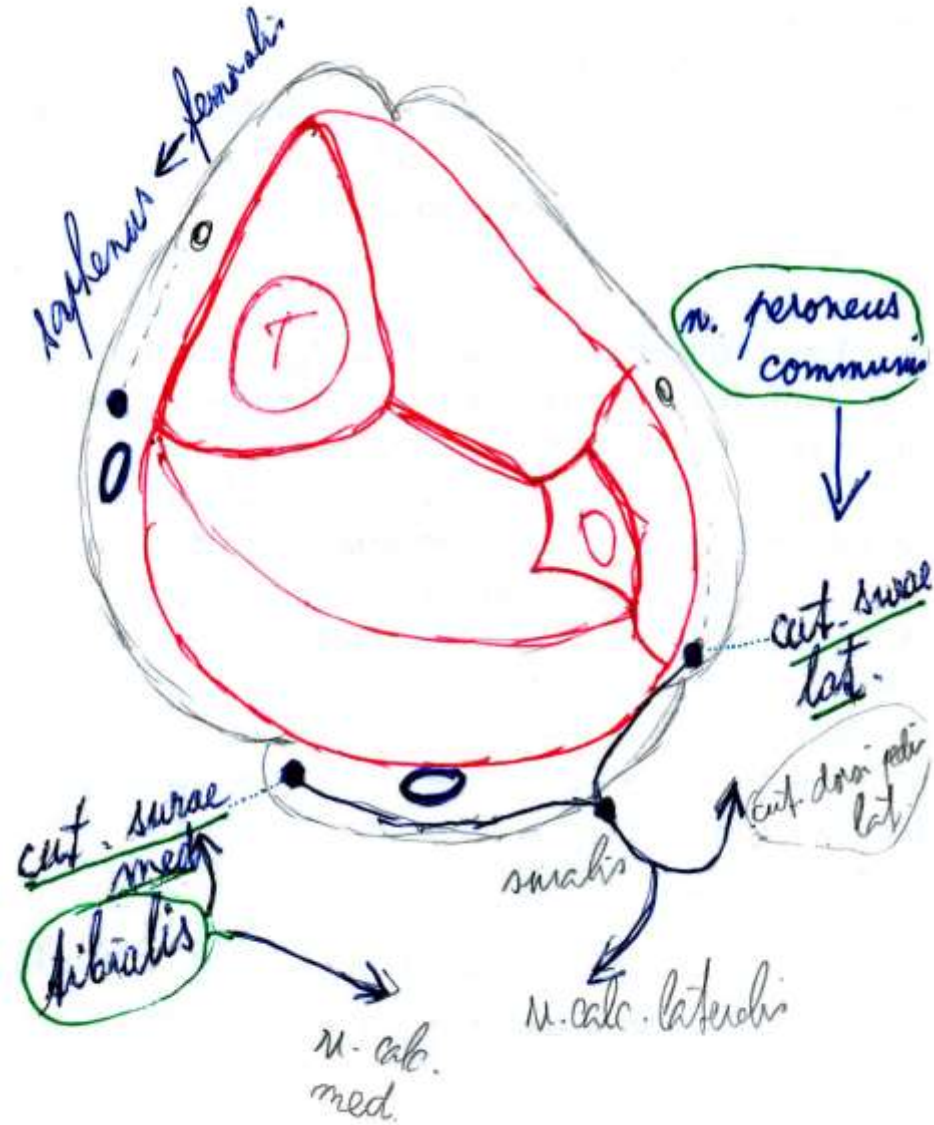
- 1 - rr. cutanei anteriores (z n. intercostales)
- 2 - r. cutaneus n. obturatorii
- 3 - rr. cutanei anteriores
- 4 - n. saphenus (z n. femoralis)
- 5 - n. peroneus superficialis
- 6 - n. peroneus profundus
- 7 - n. cutaneus dorsalis lateralis
- 8 - n. cutaneus surae lateralis
- 9 - n. cutaneus femoris lateralis
- 10 - n. ilioinguinalis a n. genitofemoralis
- 11 - n. genitofemoralis (r. femoralis)
- 12 - n. iliohypogastricus (r. femoralis)
- 13 - rr. cutanei laterales (z n. intercostales)



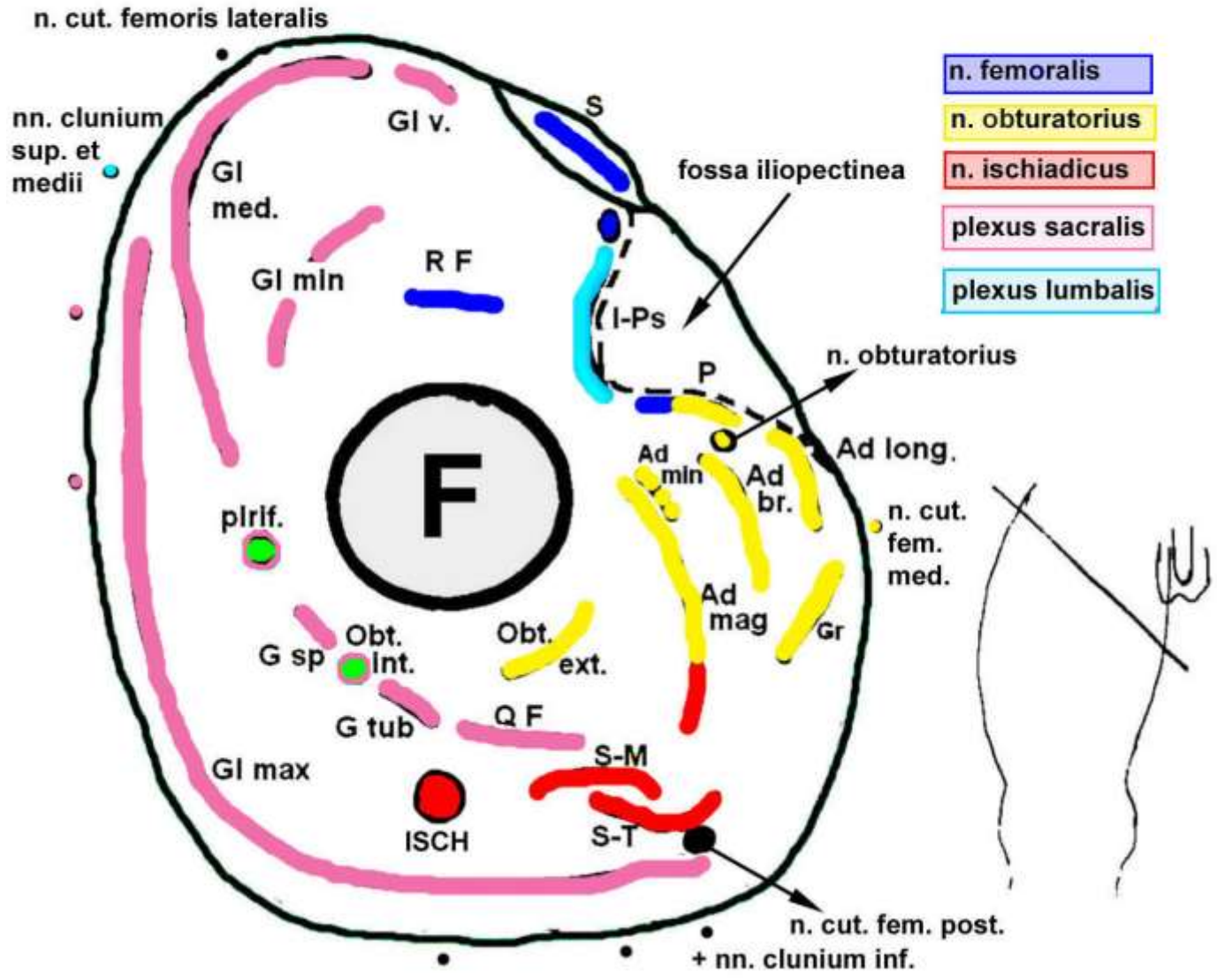
Obr. 25/II. Kožní inervace - areae nervinae - na dorsální straně dolní končetiny.

- 1 - n. iliohypogastricus
- 2 - nn. clunium superiores
- 3 - n. clunium inferiores
- 4 - n. cutaneus femoris lateralis
- 5 - n. cutaneus femoris posterior
- 6 - n. cutaneus surae lateralis (z n. peroneus)
- 7 - n. cutaneus surae medialis (z n. tibialis)
- 8 - rr. calcaneares mediales
- 9 - n. saphenus (z n. femoralis)
- 10 - rr. cutanei anteriores (z n. femoralis)
- 11 - r. cutaneus n. obturatorii
- 12 - nn. clunium medii

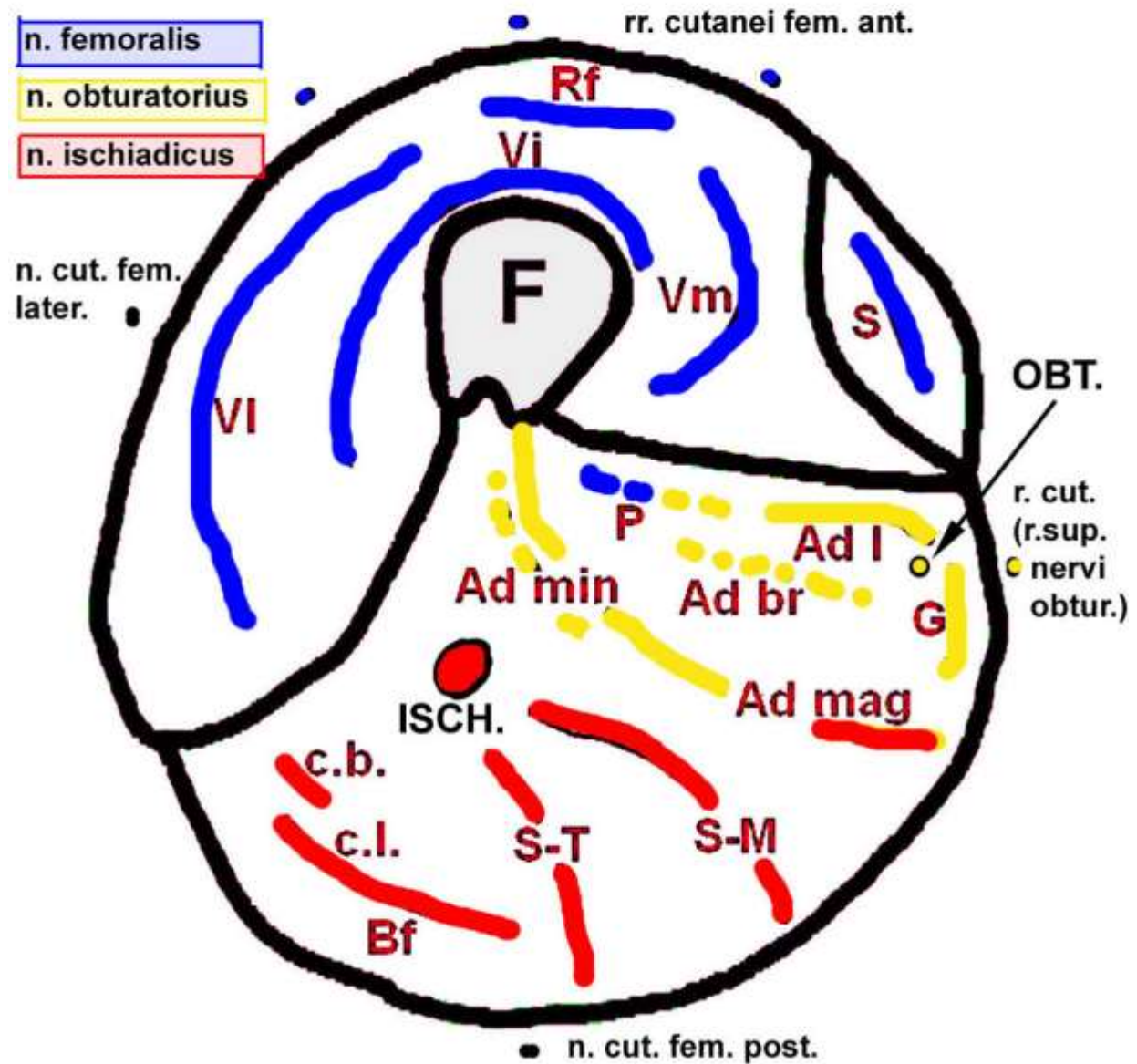
Skin innervation of lower thigh



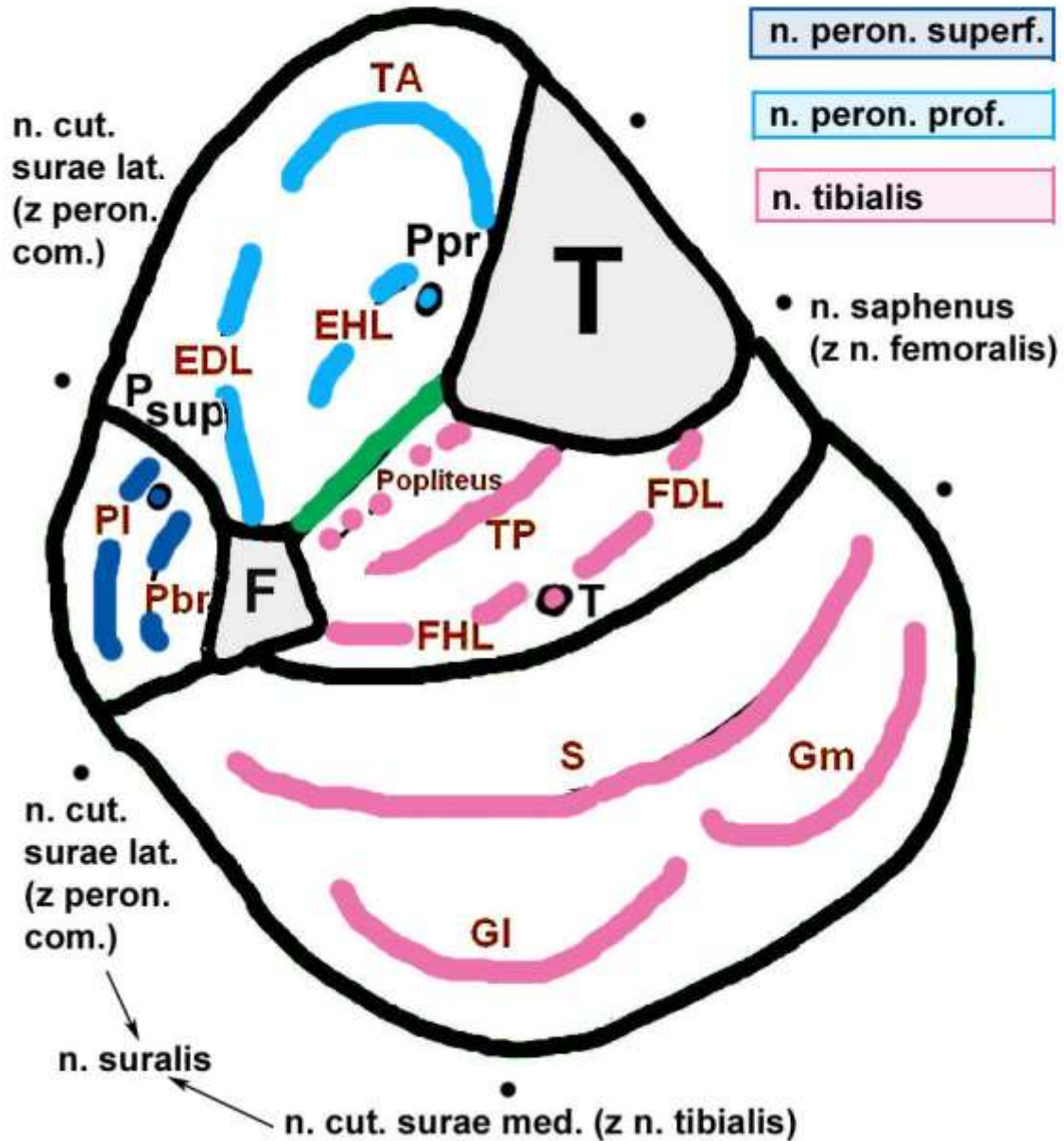
Motor innervation below the inguinal region



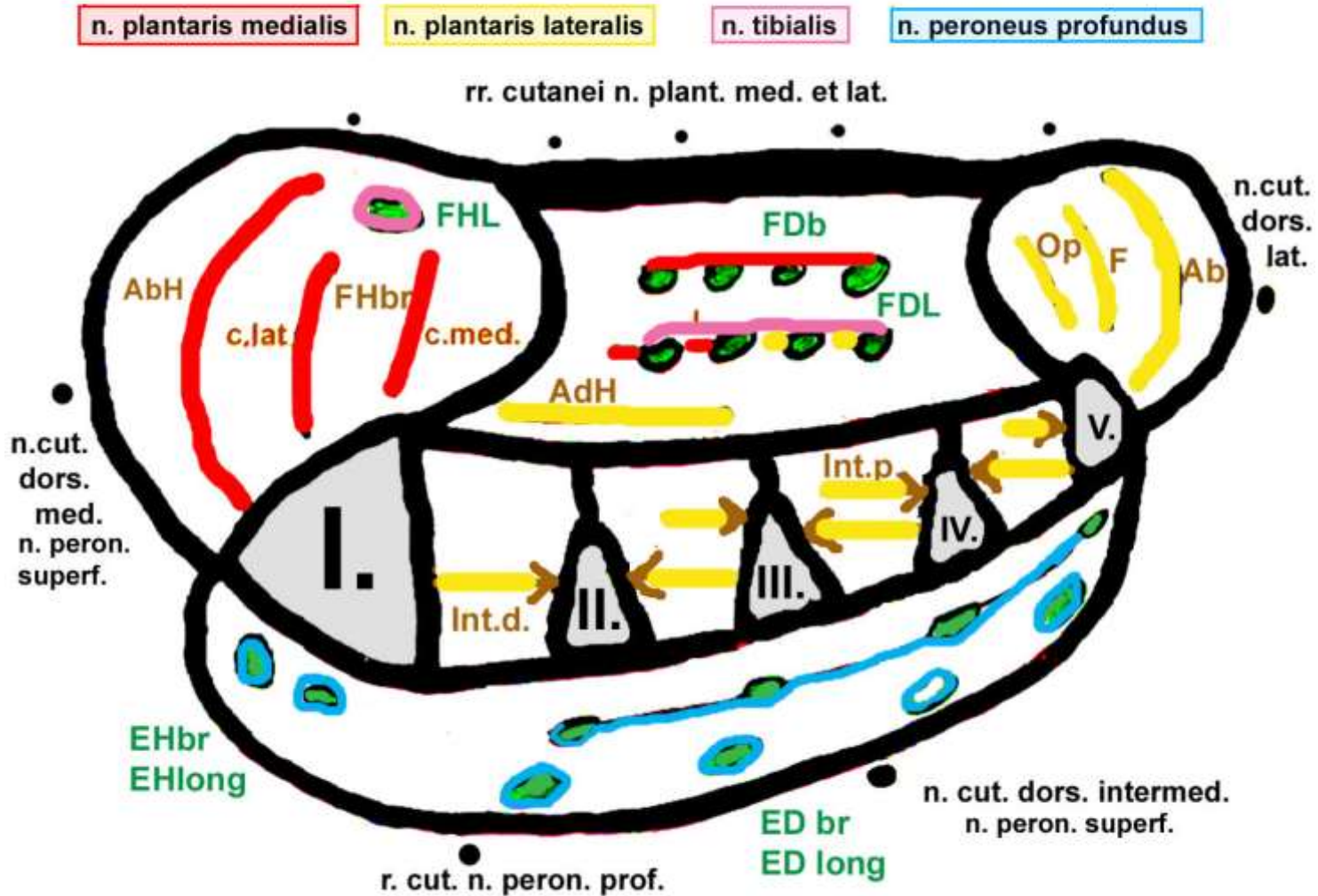
Motor innervation of the femoral region



Motor innervation of the lower thigh

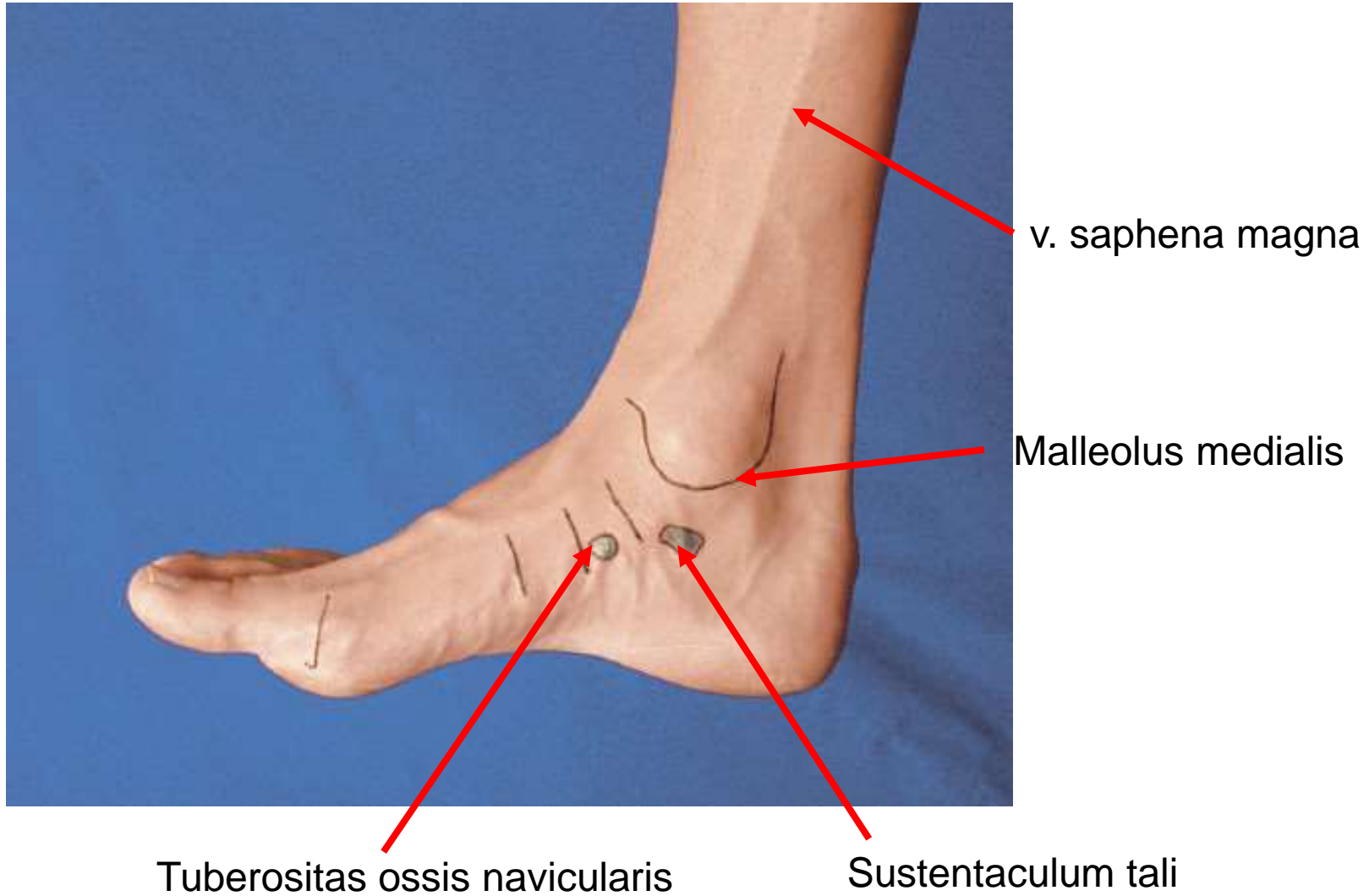


Motor innervation of the foot

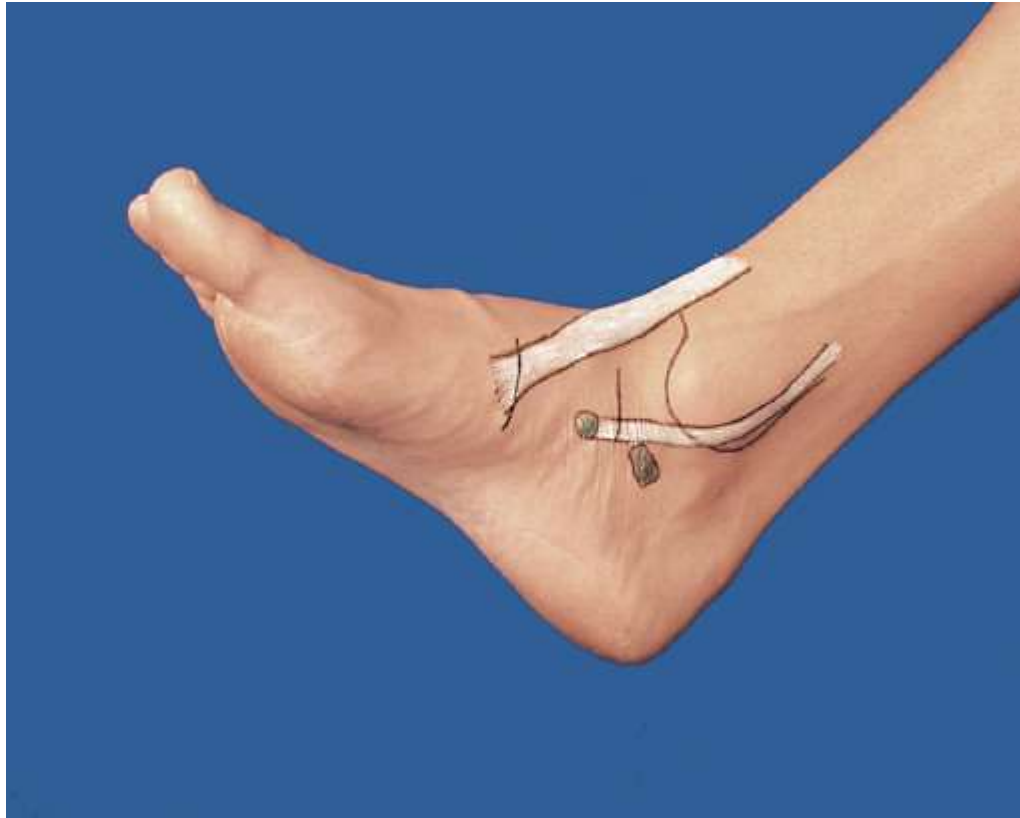


Orientation points of foot– medial aspect

Source: [7 Foot](#). In: [Reichert B](#), ed. [Palpation Techniques: Surface Anatomy for Physical Therapists](#). 2nd Edition. Thieme; 2015. doi:10.1055/b-005-148917



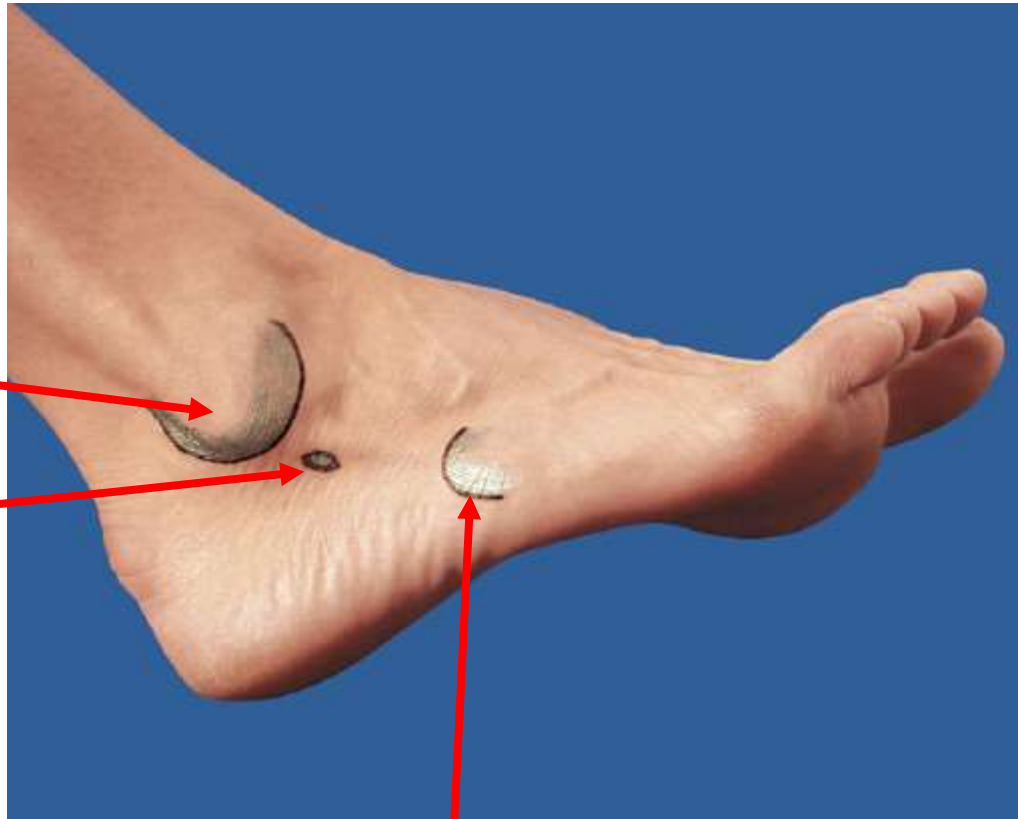
Insertions of m. tibialis anterior and posterior



Orientation points of foot– lateral aspect

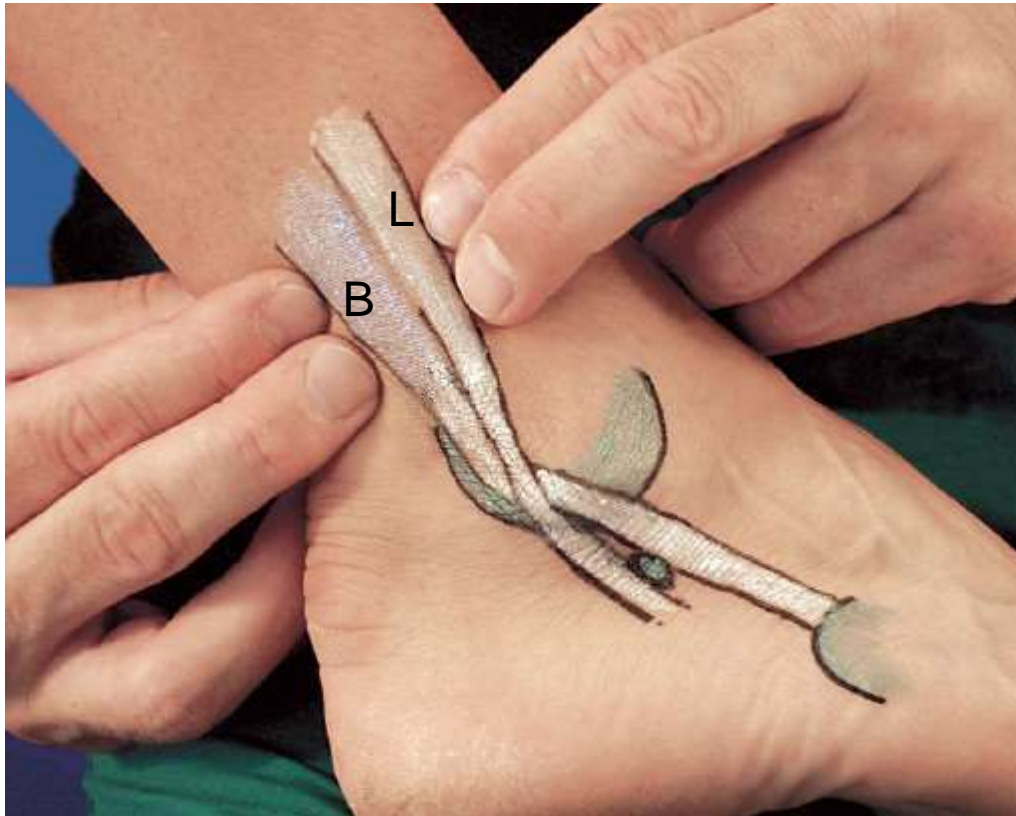
Malleolus lateralis

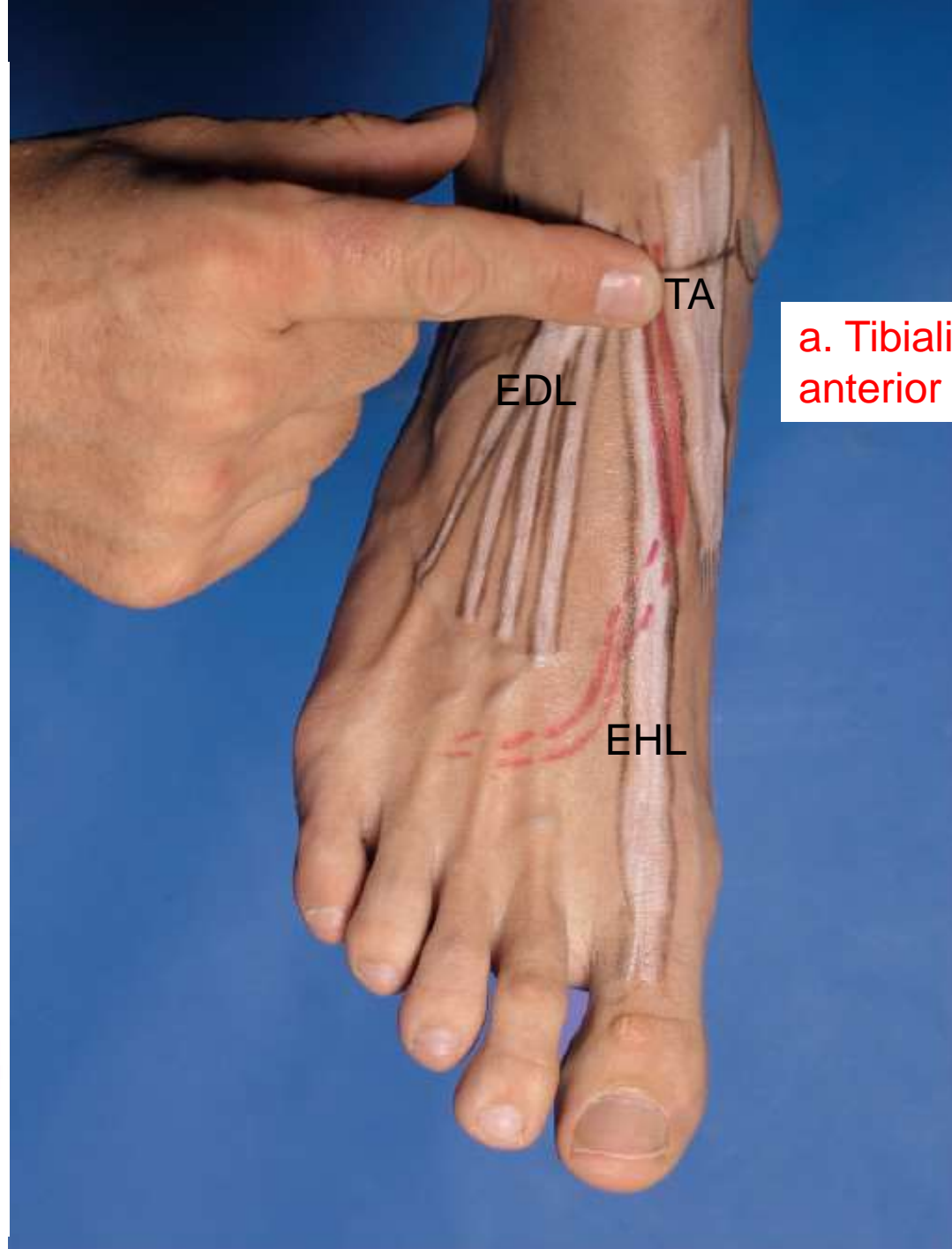
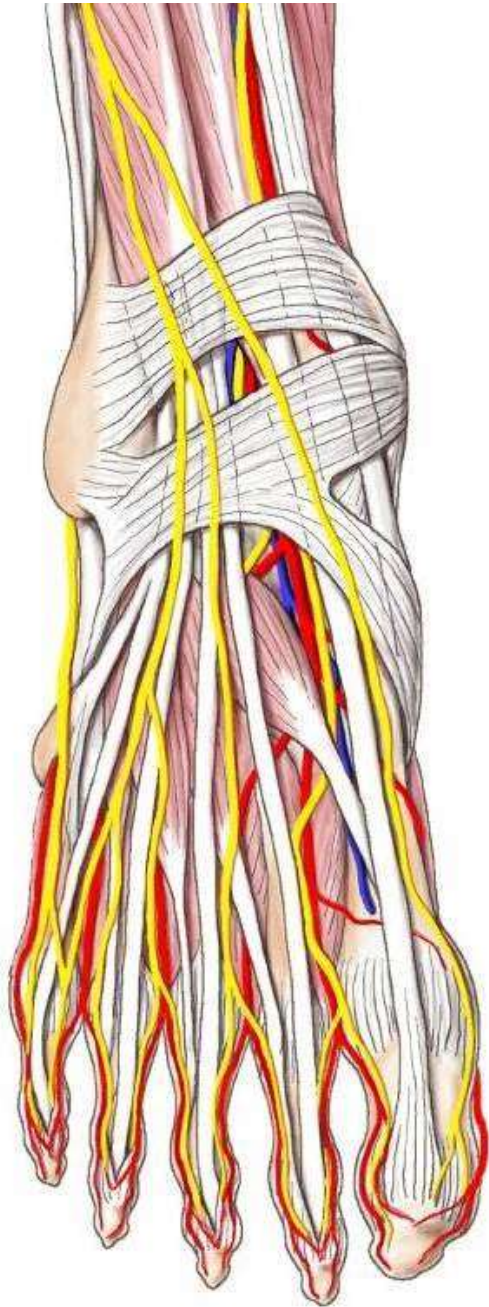
Trochlea
peronealis



Tuberositas metatarsi V.

M. peroneus longus (L) and brevis (B) behind the lateral malleolus





a. Tibialis anterior

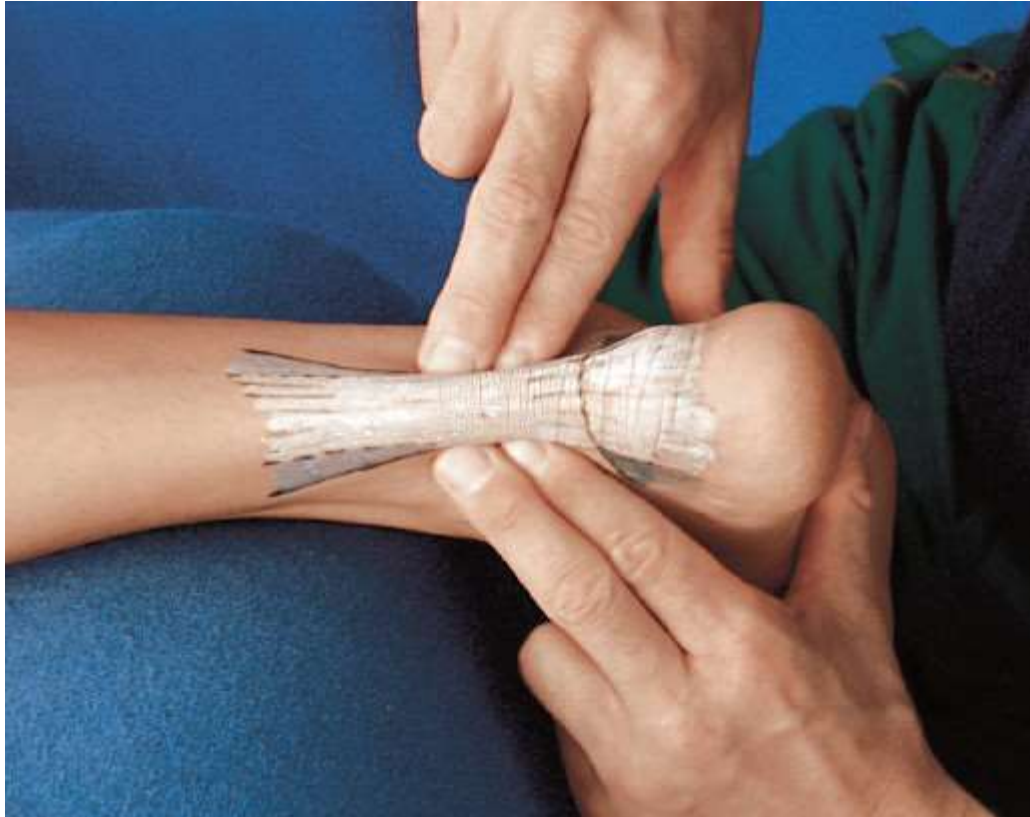


a. dorsalis pedis

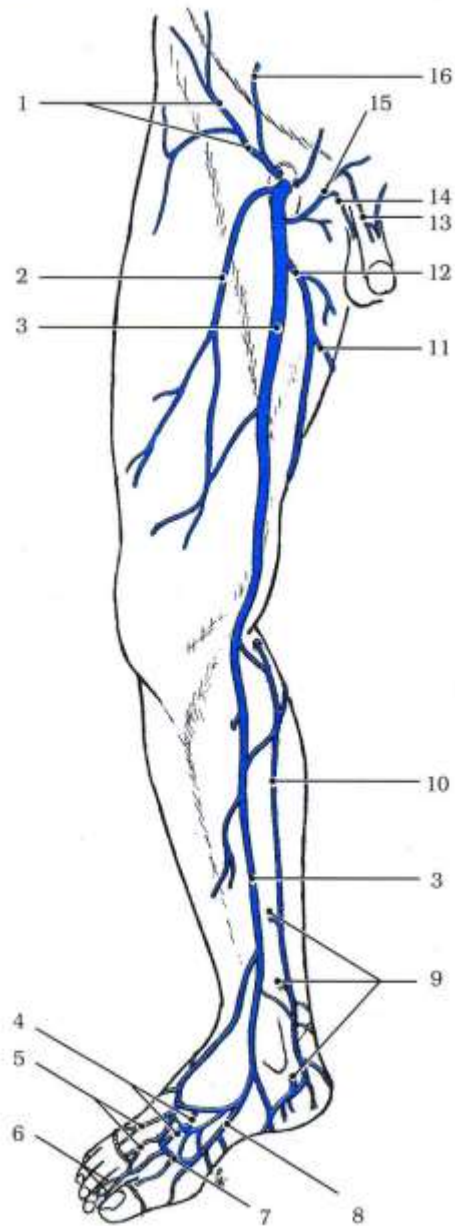


Palpation of n. peroneus spf. branches

Palpation of Achilles tendon borders

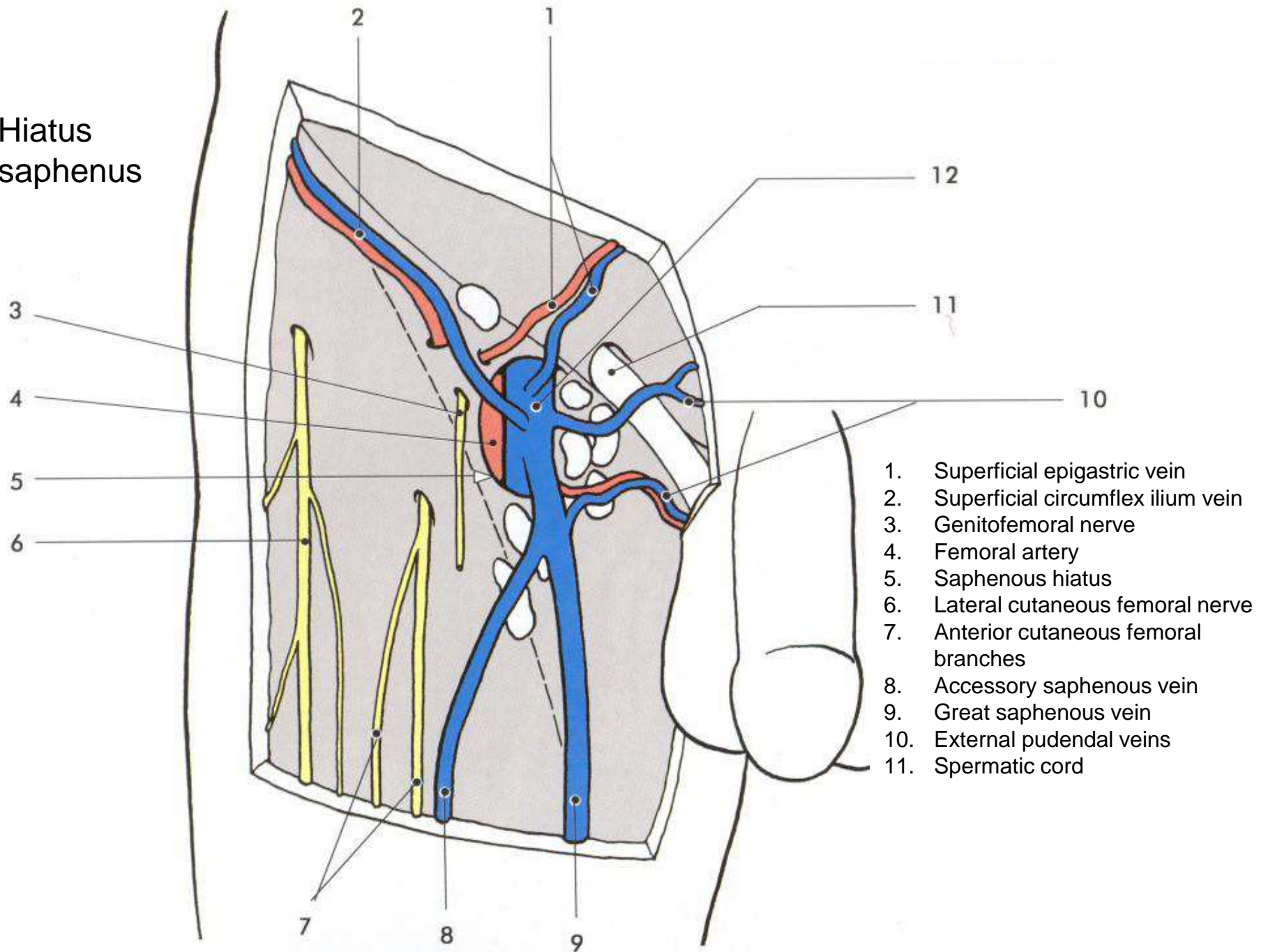


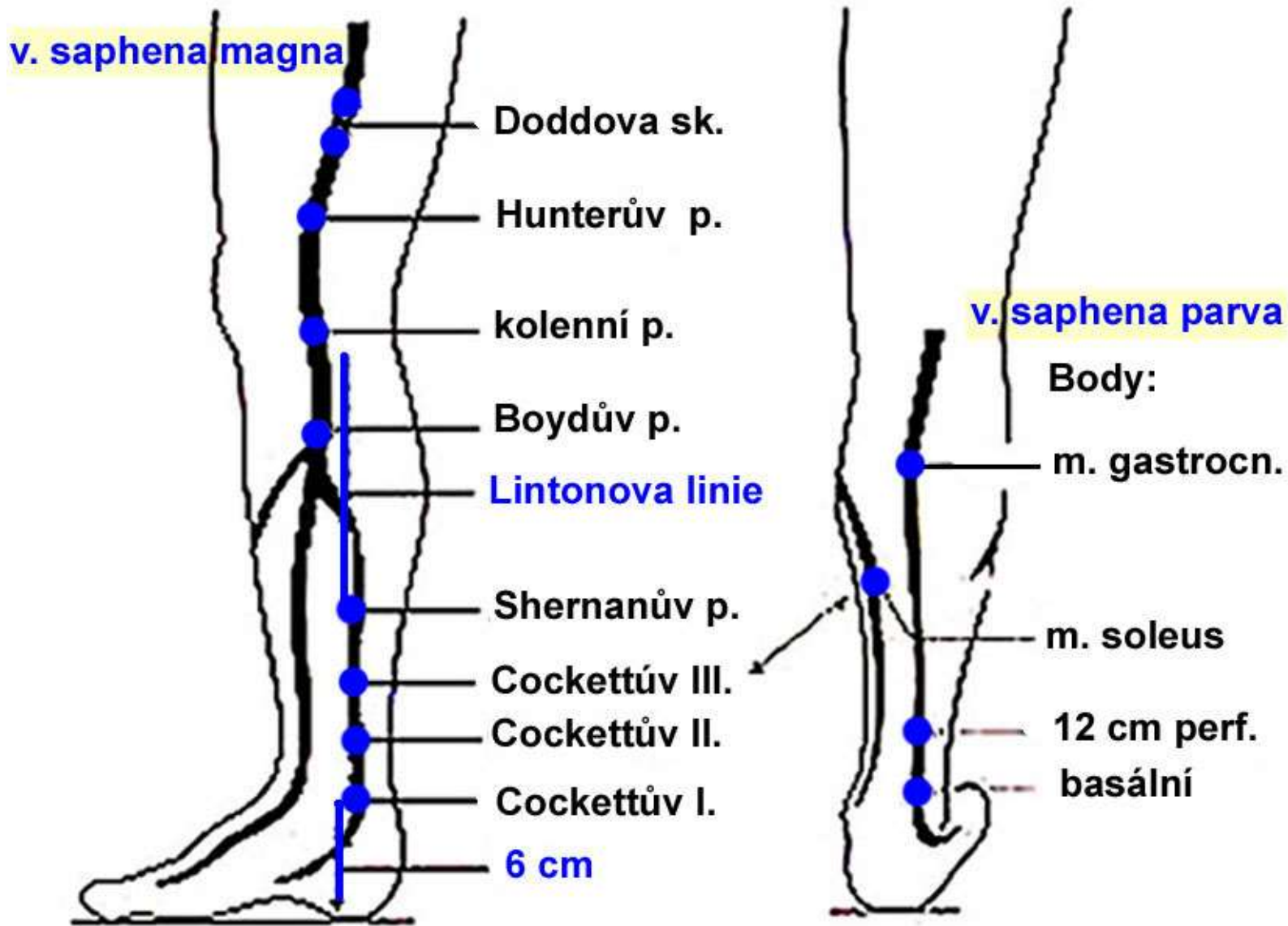
Superficial veins of LL



- 1 - v. circumflexa ilium superficialis
- 2 - v. anterolateralis (var.)
- 3 - v. saphena magna
- 4 - rete venosum dorsale pedis
- 5 - vv. metatarsae dorsales
- 6 - vv. digitales dorsales pedis
- 7 - arcus venosus dorsalis pedis
- 8 - v. marginalis medialis
- 9 - vv. perforantes (horní, střední a dolní Cockettovy perforátory)
- 10 - v. arcuata posterior
- 11 - spojka s v. femoropoplitea
- 12 - v. saphena accessoria
- 13 - v. dorsalis penis superficialis
- 14 - v. scrotalis anterior
- 15 - v. pudenda externa
- 16 - v. epigastrica superficialis

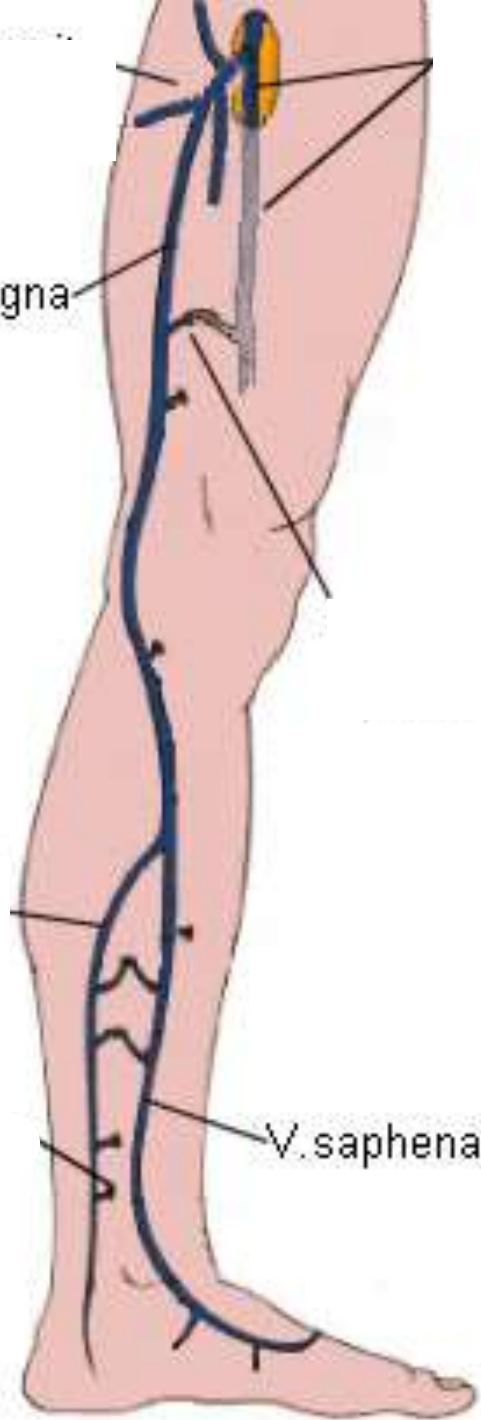
Hiatus saphenus





Main groups of perforators on vena saphena magna and vena saphena parva

V. saphena magna



V. saphena magna

V. saphena parva

