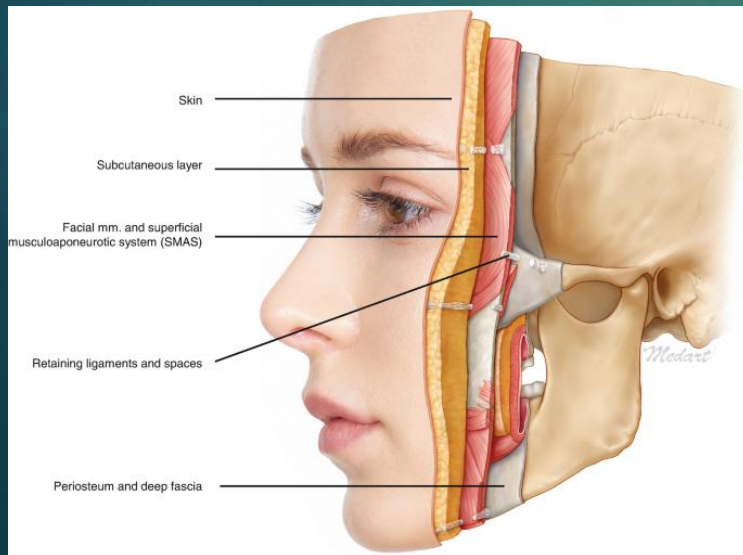


Kazan Federal (Volga Region) University  
Institute of Fundamental Medicine and Biology  
Department of Morphology and General Pathology

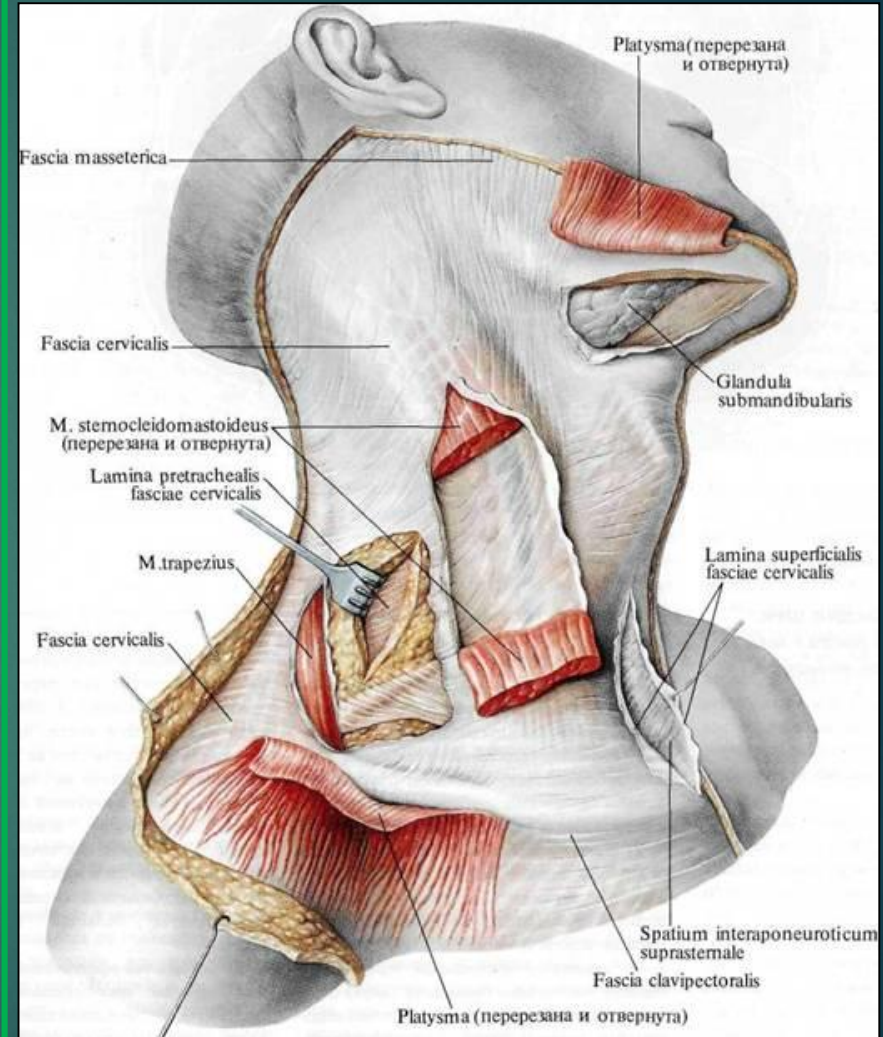
# Fasciae and topography



Zaikina Elvira Ildarovna,  
*MD, PhD, Senior lecturer*

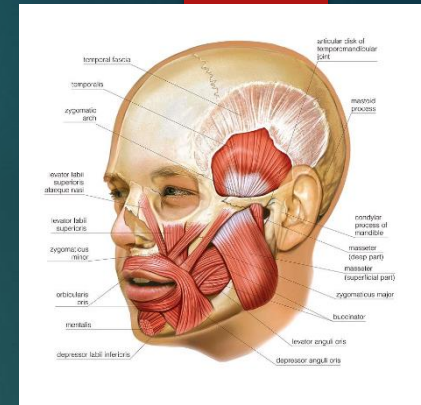
# Fasciae (Latin – “bandage”)

- Flat bands of the connective tissue;
- Form sheaths for the separate muscles;
- Names of the fascia corresponds to the names of the muscles;
- Form capsules of the glands (salivary glands);
- Form sheaths for the vessels and nerves;
- Between fascia there are spaces, filled with fatty tissue.



# Topography of Head

# Muscles of the head



Criteria	Masticatory muscles	Mimic muscles
<b>origin</b>	bones of the cranium	
<b>insertion</b>	bones of the cranium	skin
<b>provide movements</b>	in the temporomandibular joint	skin – facial mimics
<b>relation to the fascia</b>	totally covered by the fascia	not covered by fascia
<b>innervation</b>	trigeminal nerve (CN V)	facial nerve (CN VII)
<b>development</b>	branchial arch I	branchial arch II

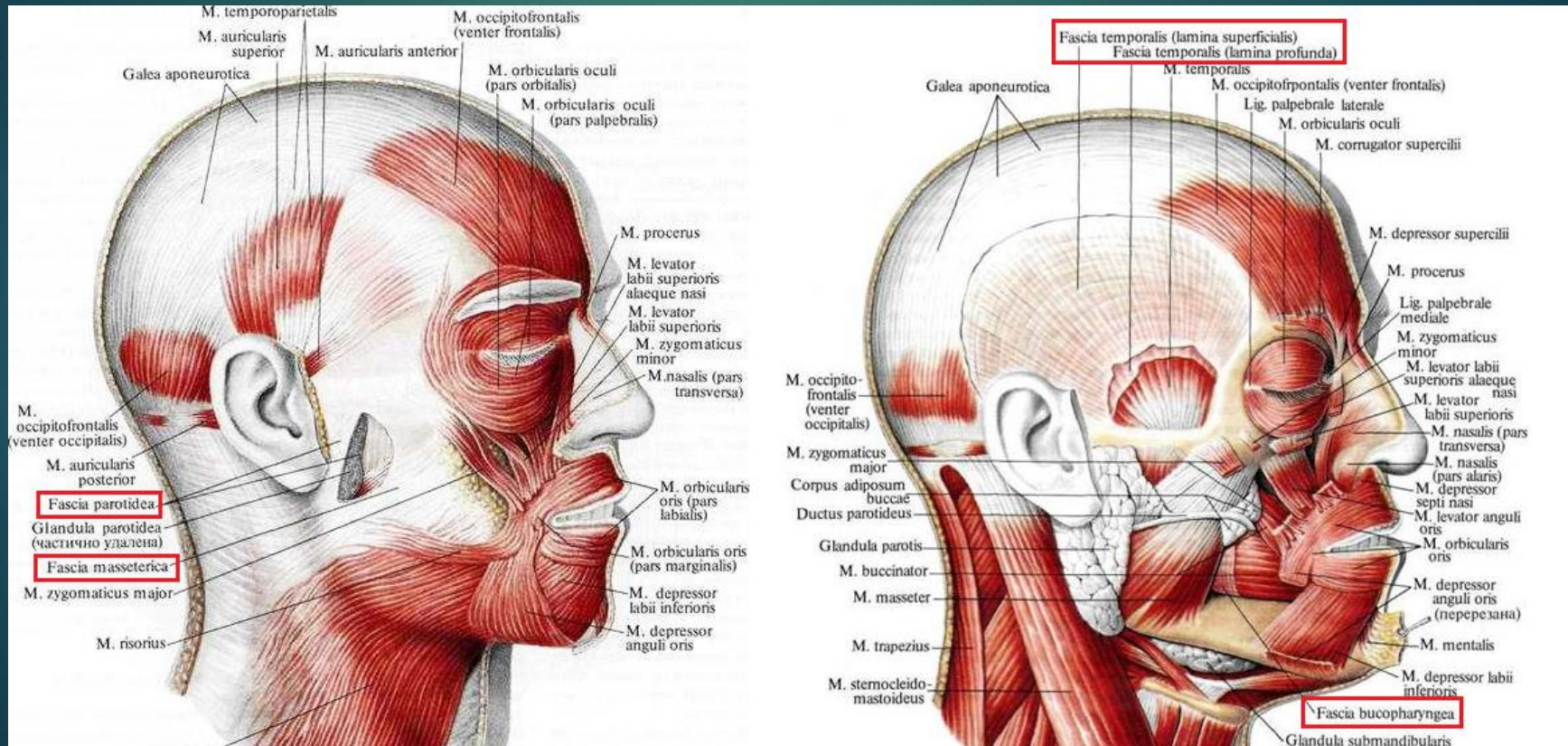


1. Superficial fascia

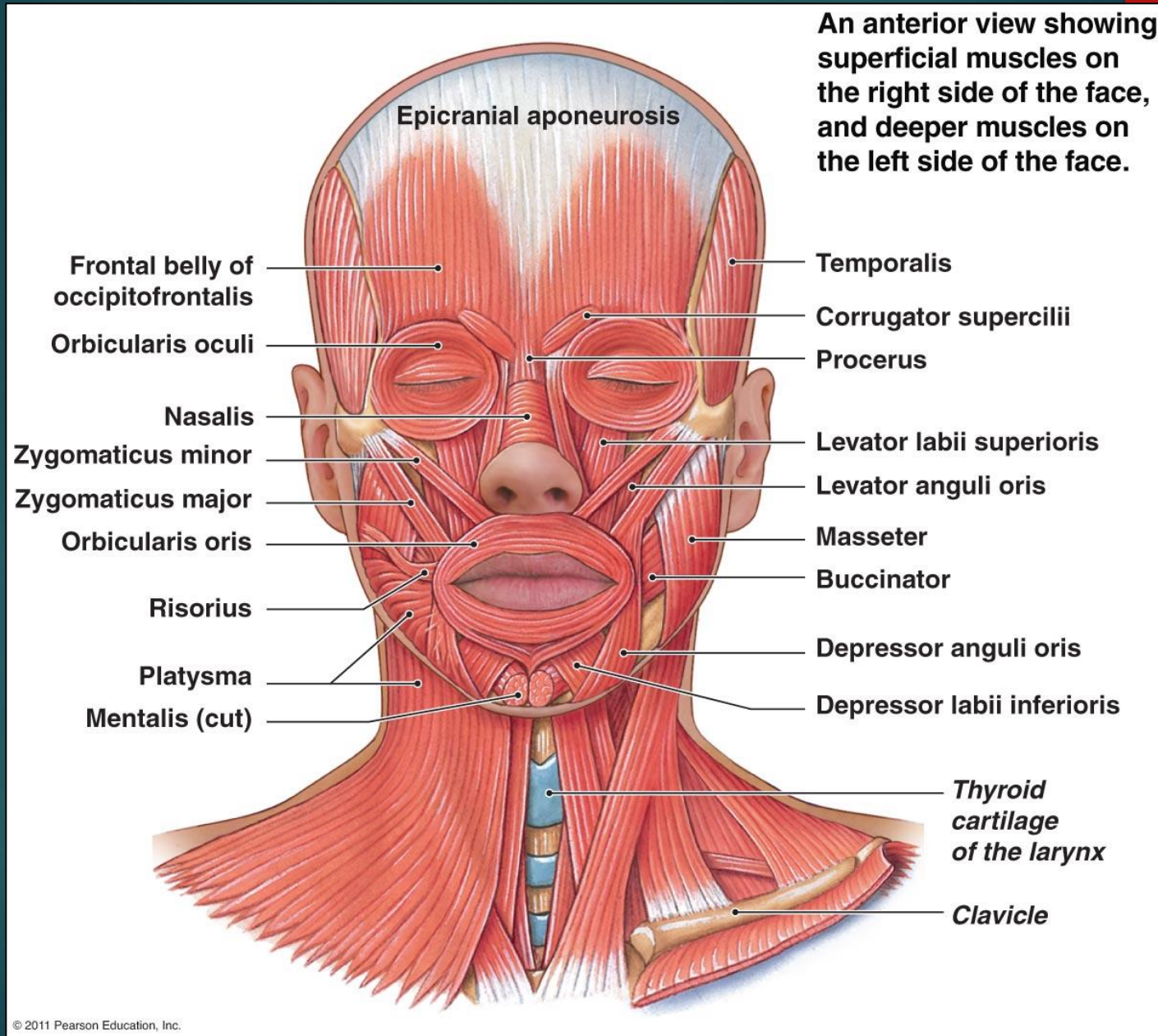
2. Proper fascia

- Temporal fascia
- Masseteric fascia
- Parotid fascia
- Buccopharyngeal fascia

# Fasciae of head



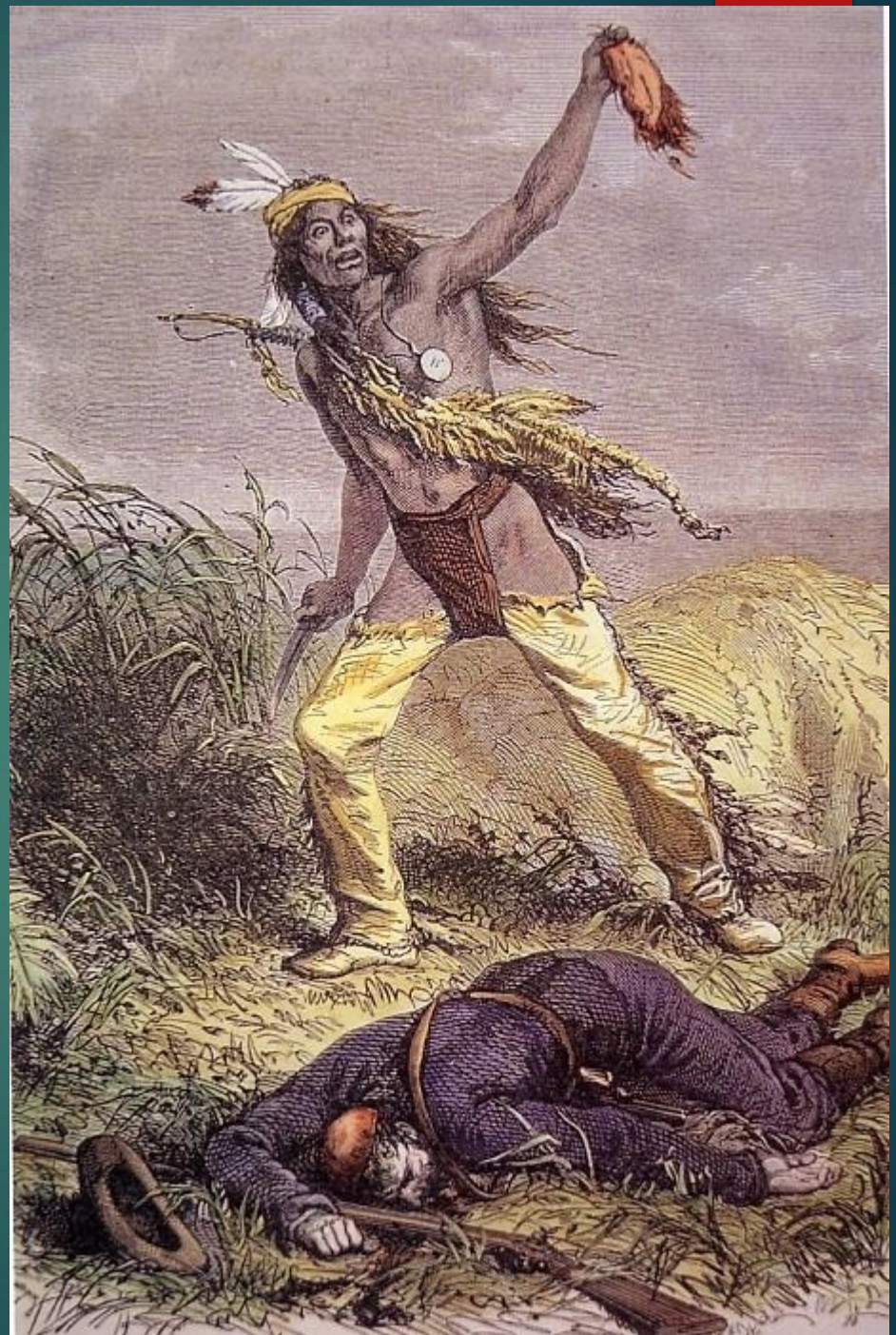
# Superficial musculo-aponeurotic system





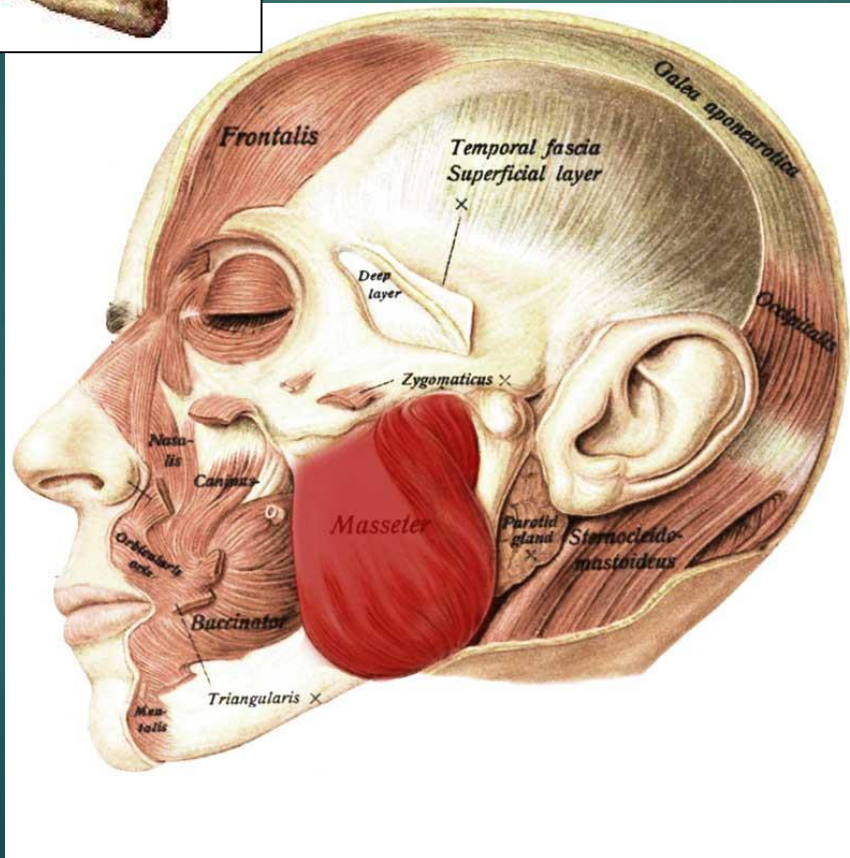
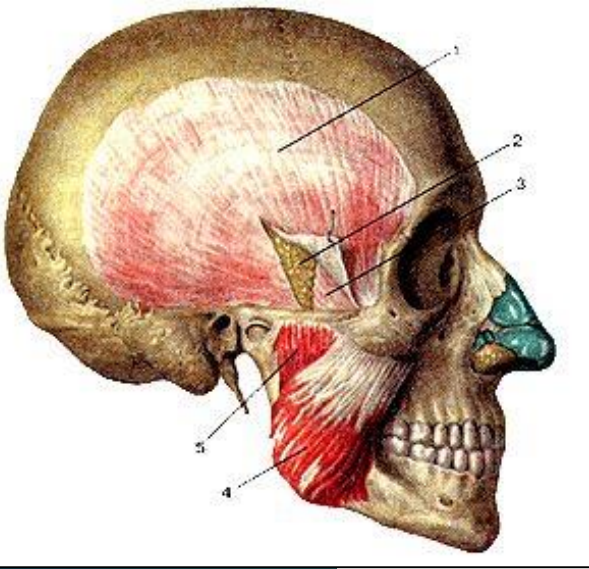
# Scalp:

- +Skin and hairs of the head
  - +subcutaneous fat
  - +epicranial aponeurosis
  
  - + subaponeurotic fatty tissue
  - +periosteum of calvaria
- 

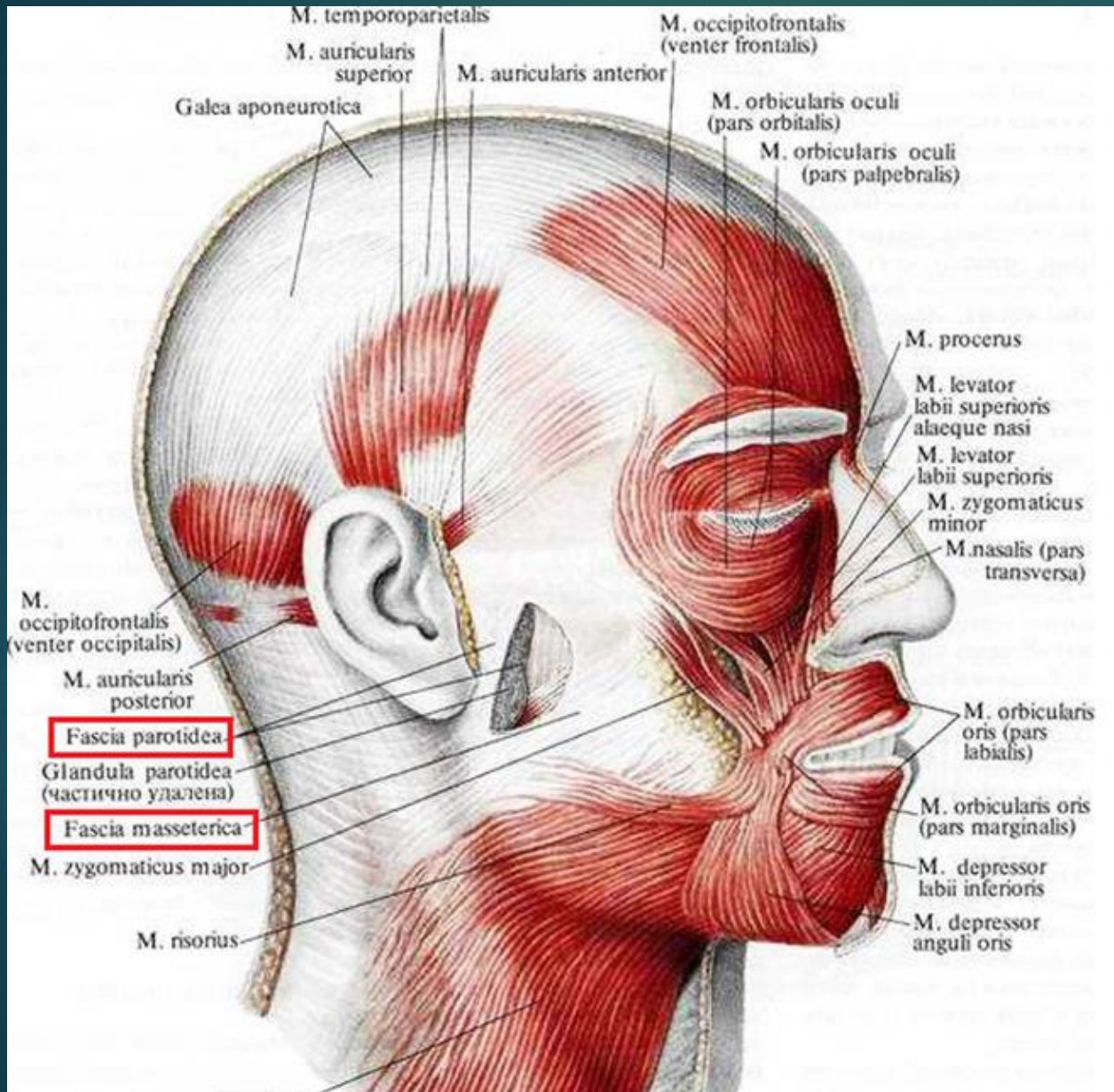




# Temporal fascia



- Superficial layer (lamina superficialis)
- Deep layer (lamina profunda)
- A small space between these two layers is filled with fat

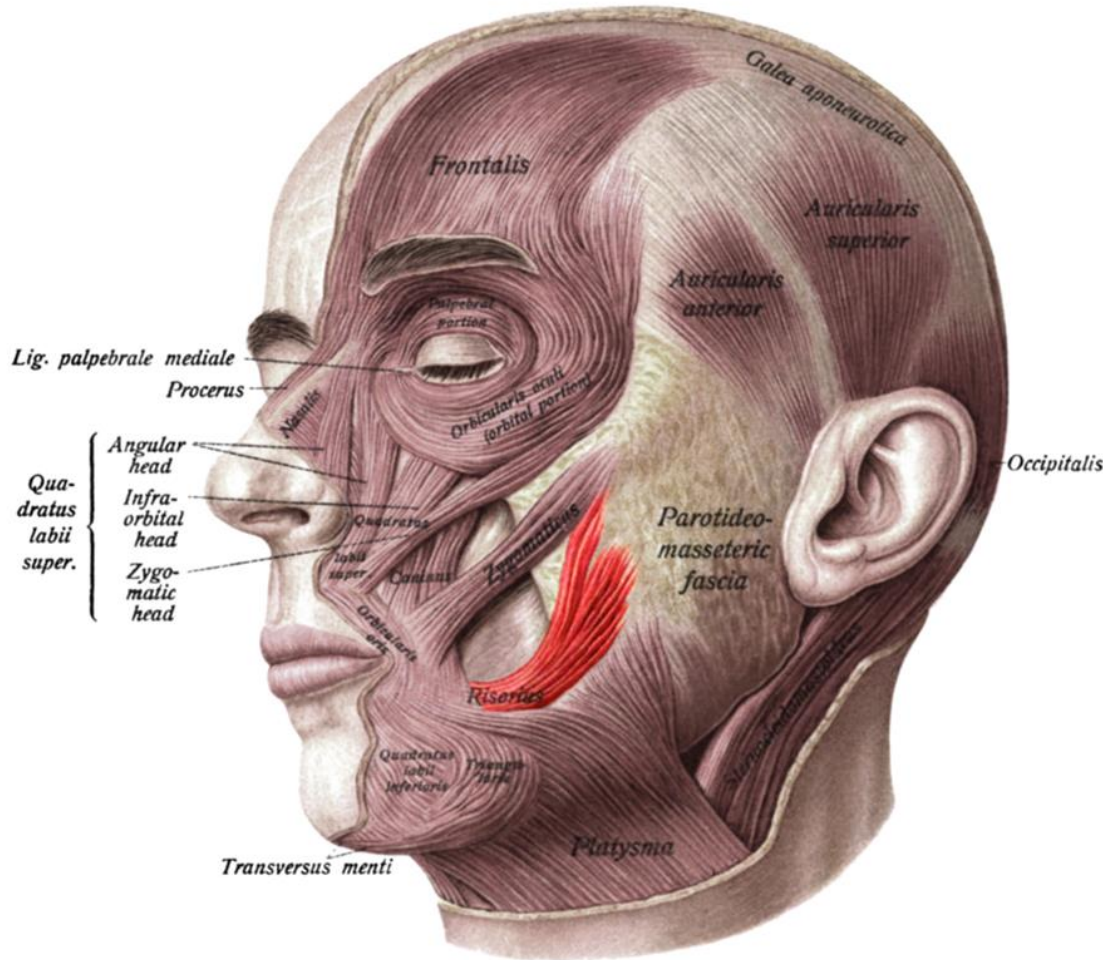


**Masseteric fascia covers m.masseter**

**Parotid fascia forms the capsule for the parotid gland**

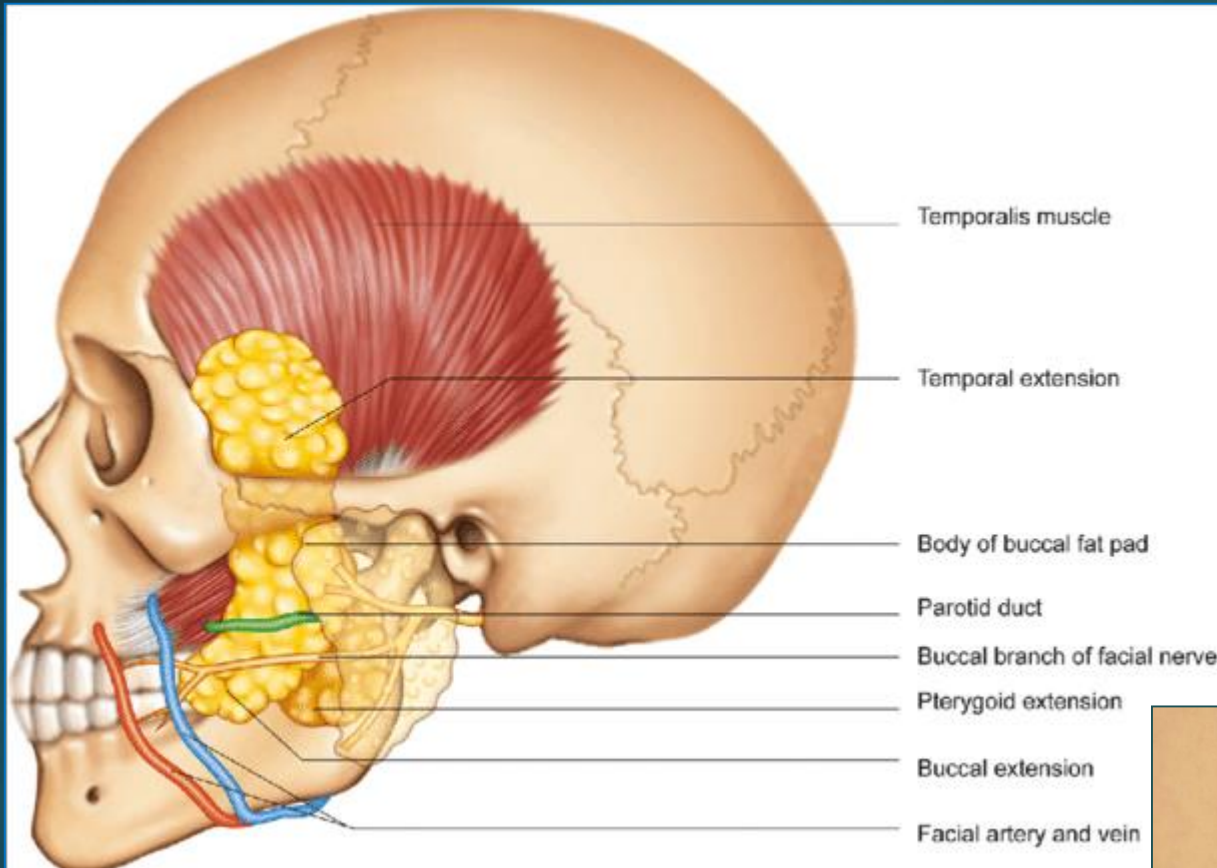


# Parotid-masseteric fascia



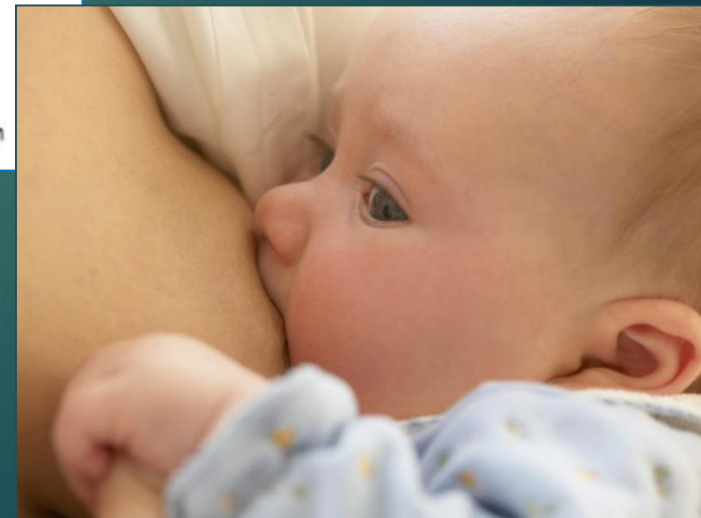
Forms a capsule for parotid salivary gland and covers m. masseter

# Buccal fat pad (Bichat's fat pad)



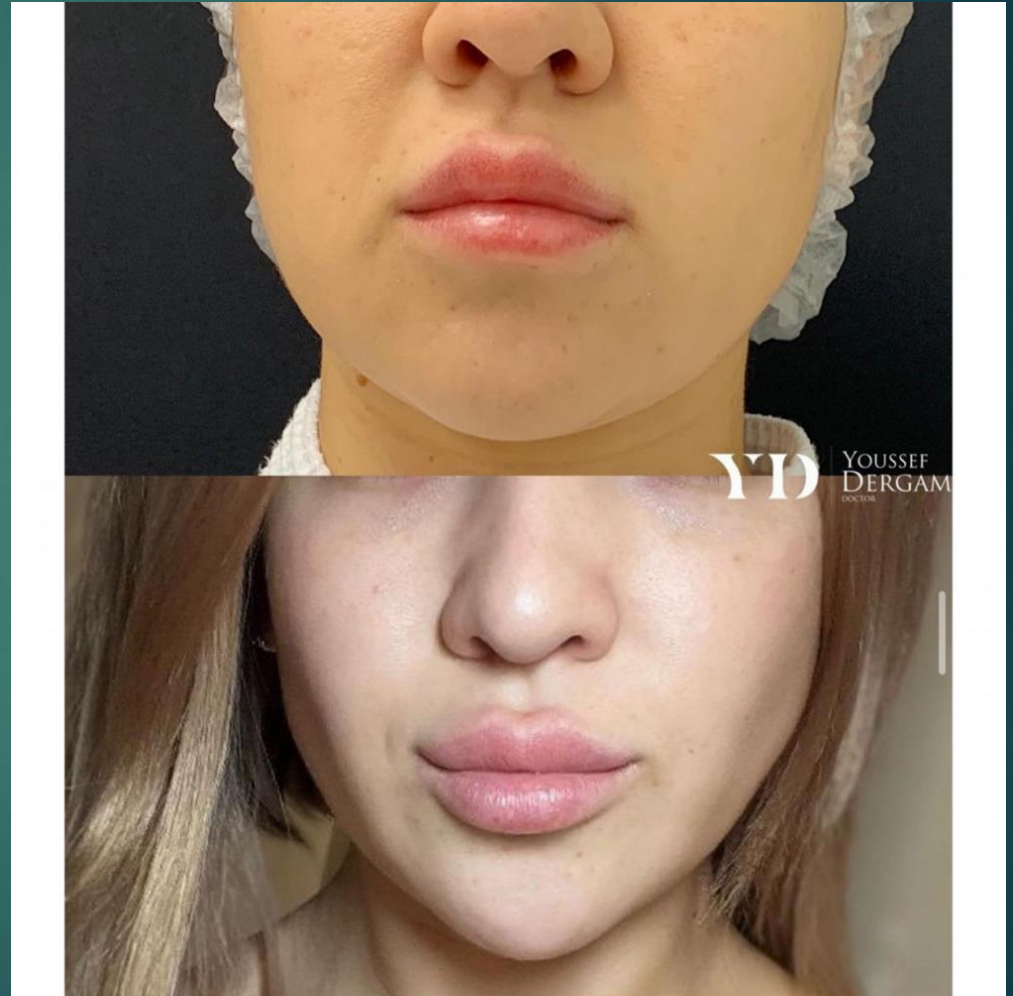
## Extensions:

- Temporal
- Buccal
- Pterygoid



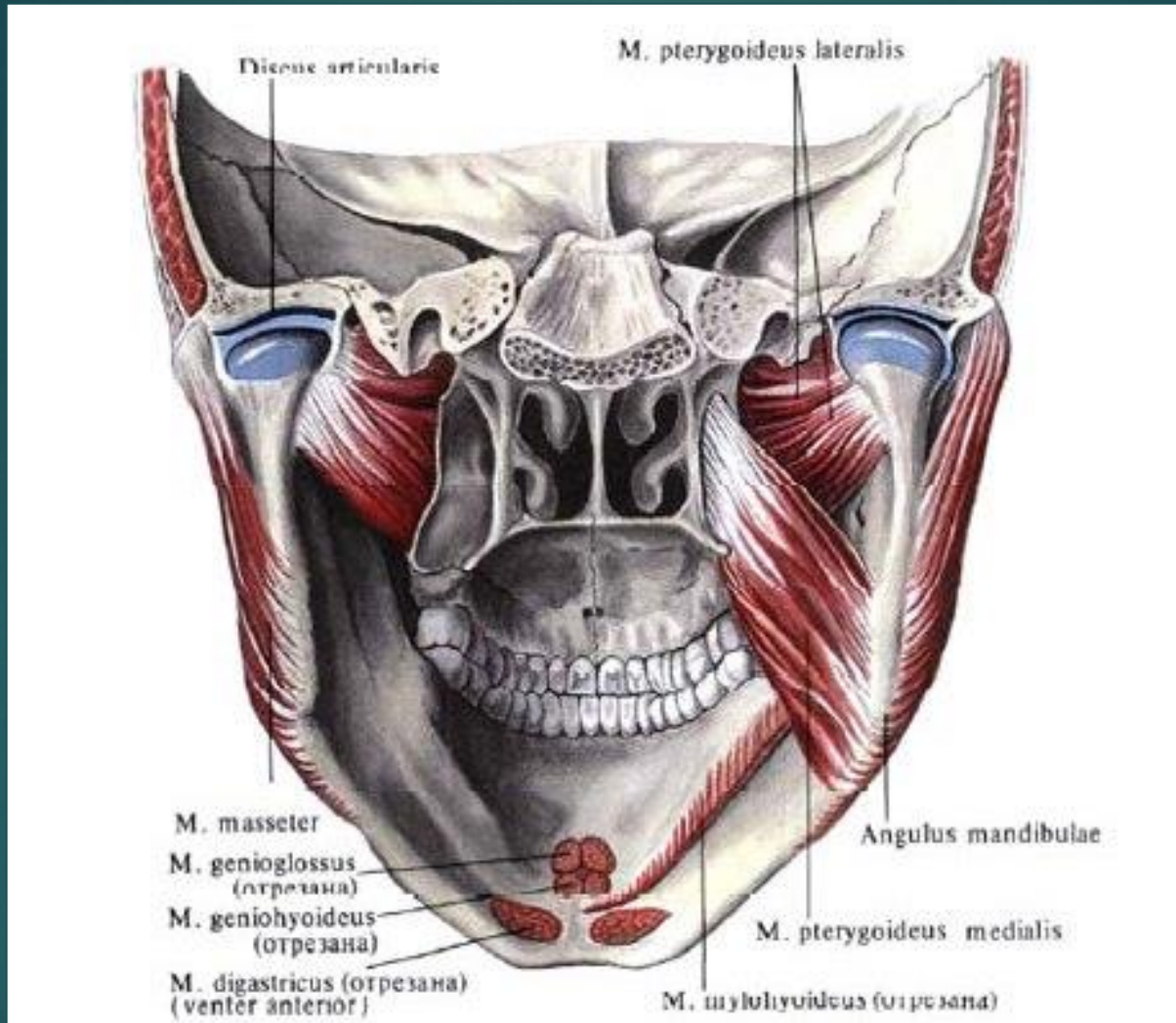
The size of the buccal fat pads affects (влияет) your face shape.

So, some Hollywood actors and artists remove it to make the shape of the face thin and slim.





# Pterygoid fascia and interpterygoid space

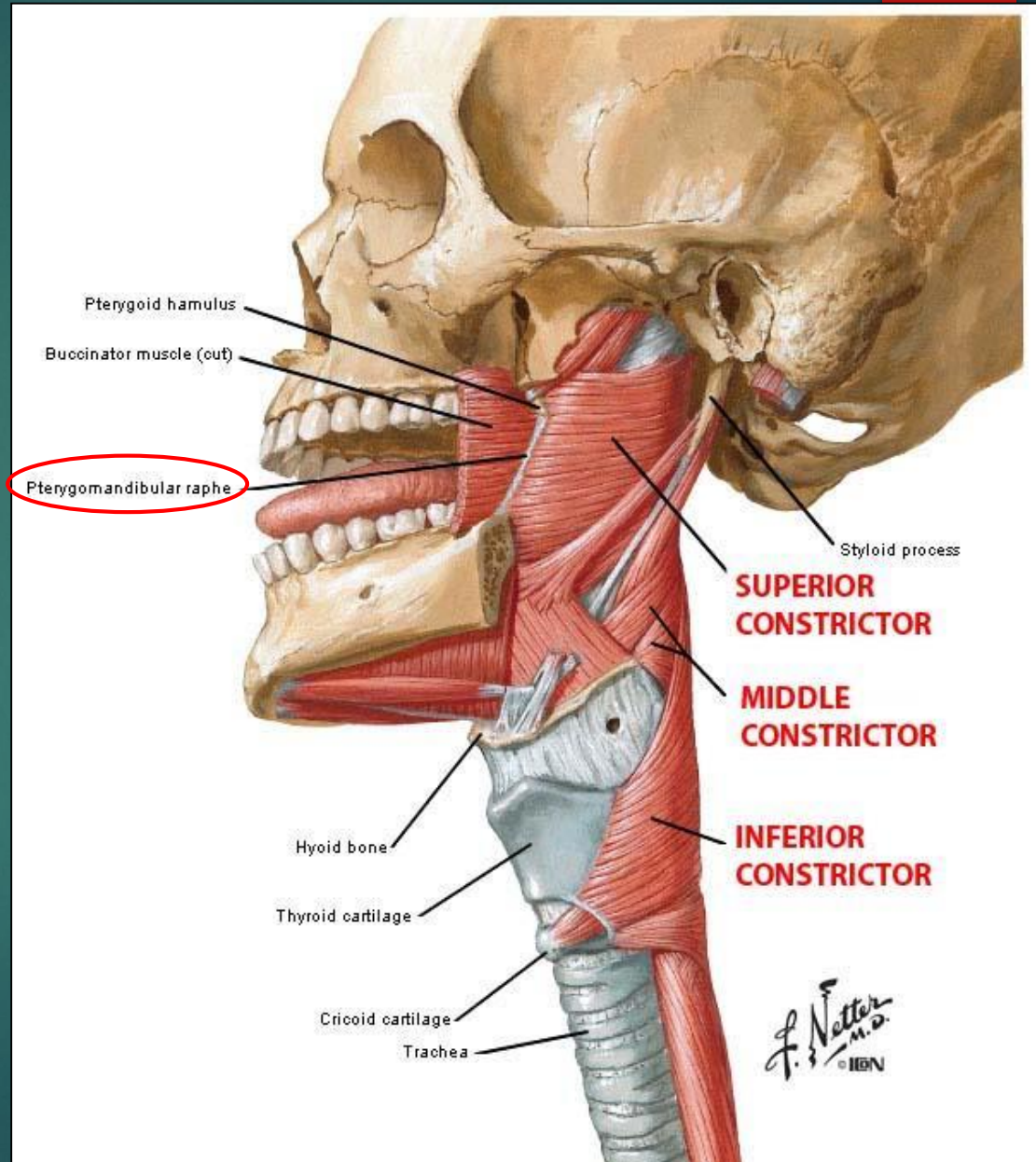


The fascia, covering the pterygoid muscles, is poorly developed.

# Buccopharyngeal fascia

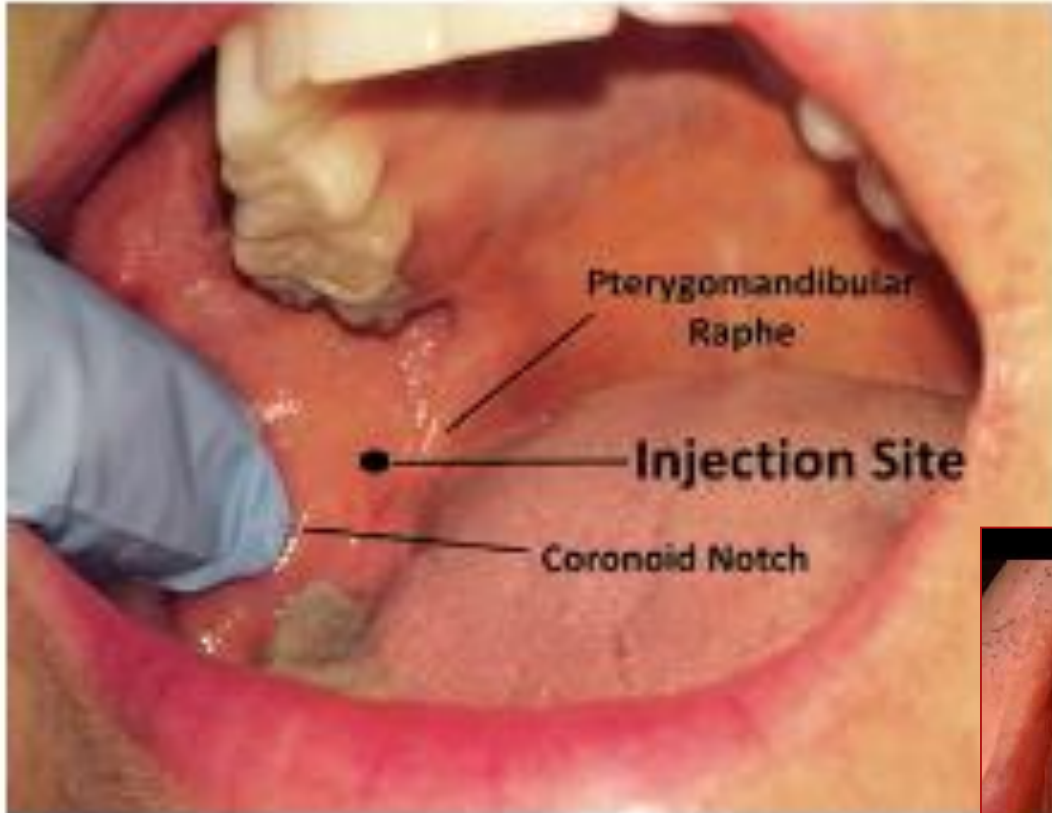
- covers the posterior section of m.buccinator and superior constrictor of the pharynx

- Place, where buccopharyngeal fascia inserts into pterygoid process of sphenoid bone, is called **pterygomandibular raphe**





# Pterygomandibular raphe

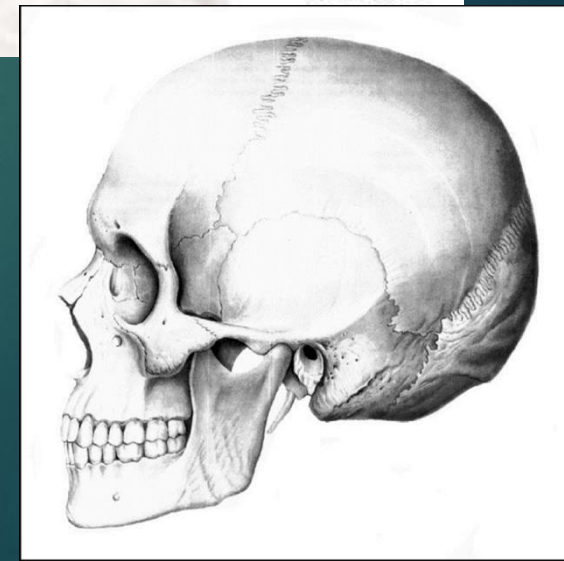
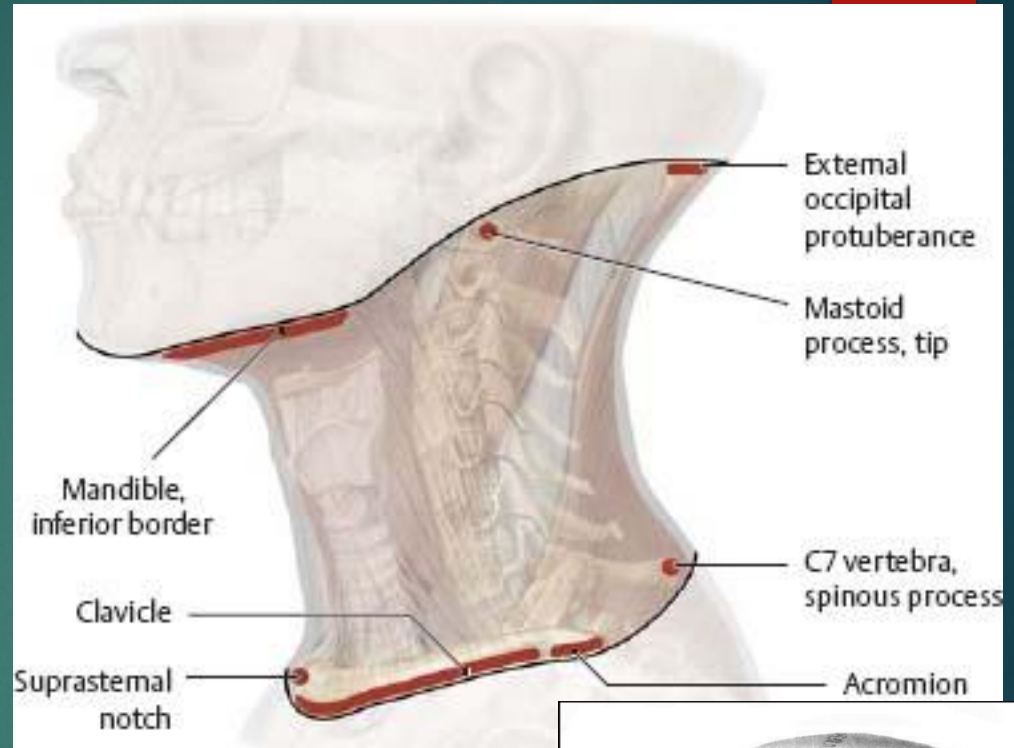


# Topography of Neck

# Anatomic borders of the neck

## Upper border:

- Protuberantia occipitalis externa
- Linea nuchae superior
- Top of the mastoid process of the temporal bone
- Ramus and base of the mandible

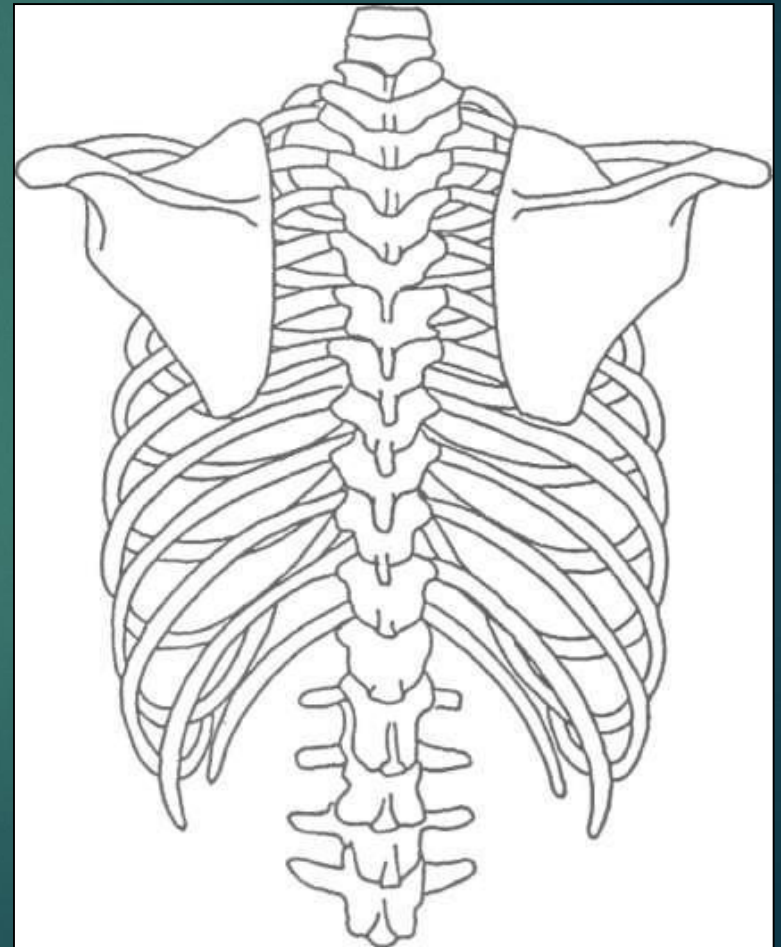
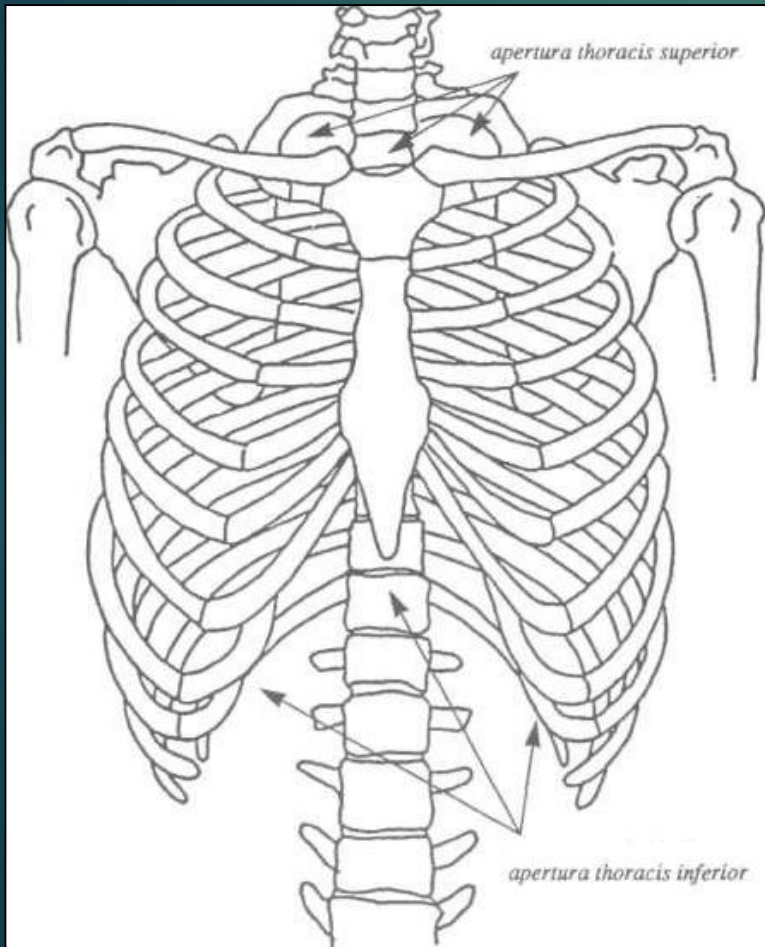


# Anatomic borders of the neck

## Inferior border:

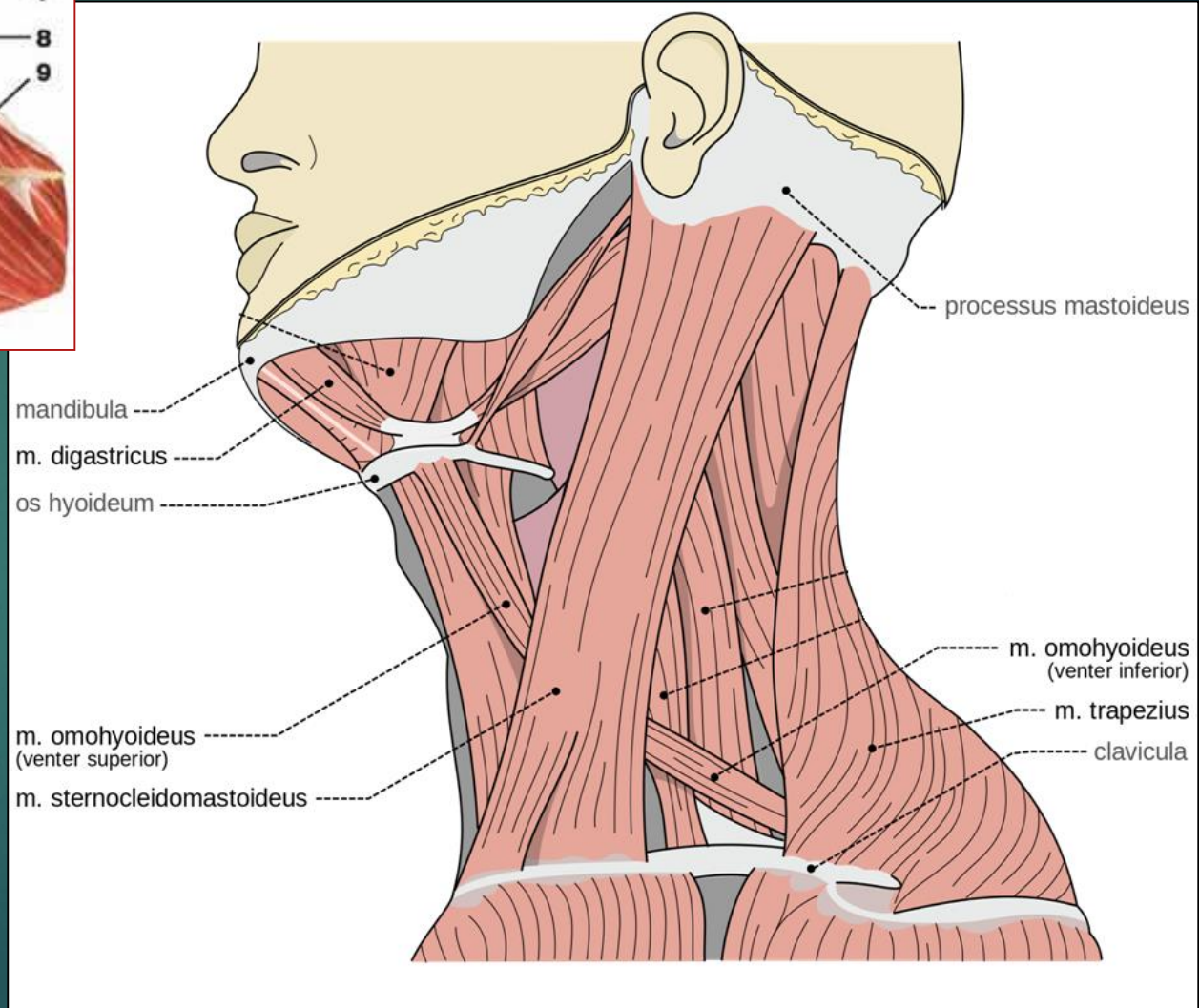
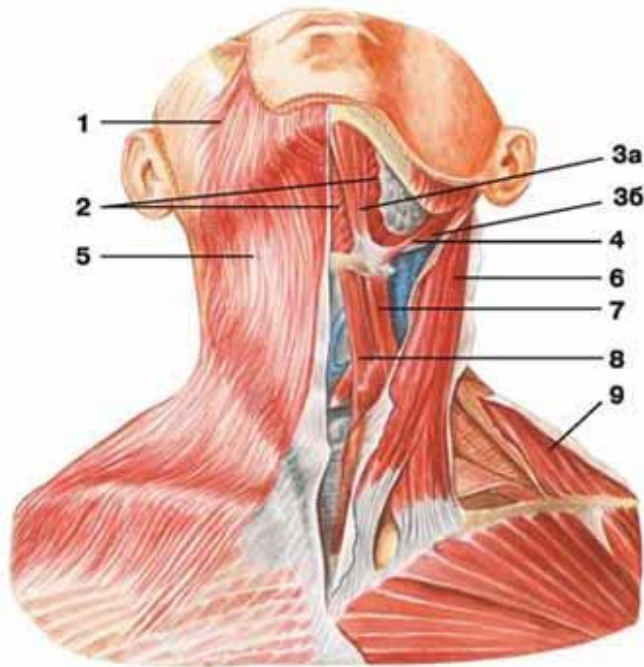
- Line passing along clavicles and jugular notch of the sternum

- Line connecting acromial ends of clavicles and spinous process of the VII cervical vertebrae





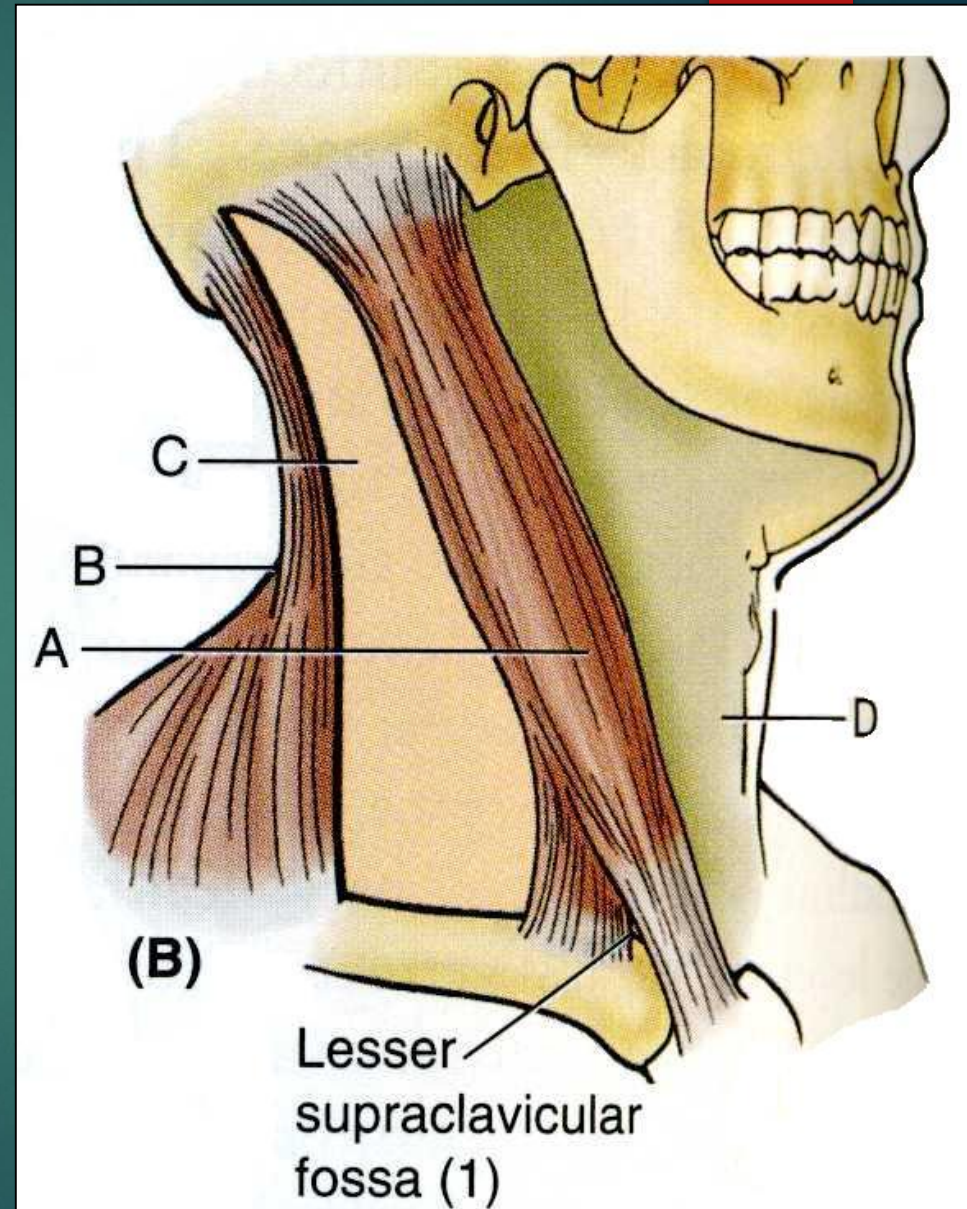
# Anatomic reference points of the neck



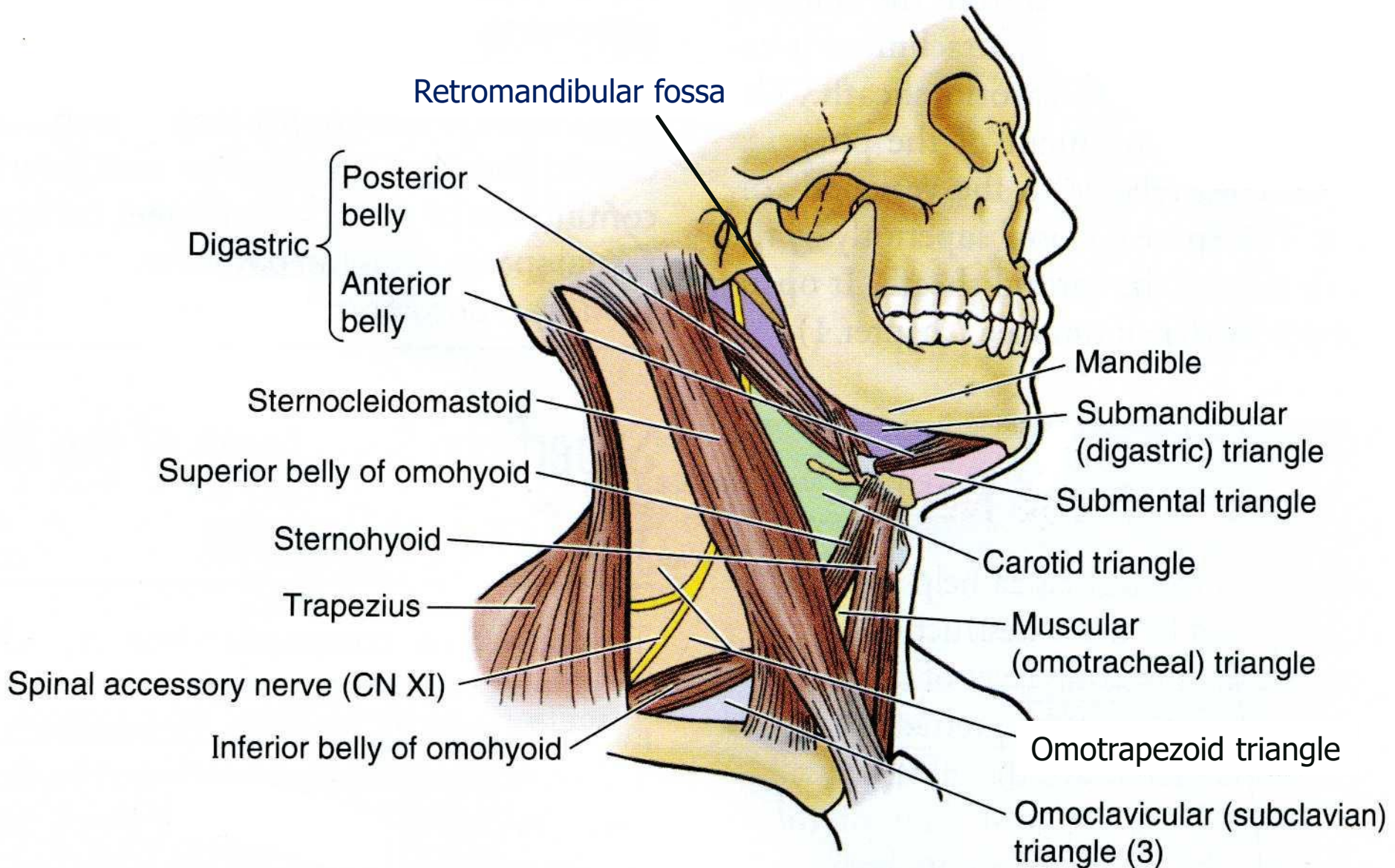


# Regions of the neck

- A - Regio sternocleidomastoidea
- B - Regio cervicalis posterior
- C - Regio cervicalis lateralis
- D - Regio cervicalis anterior



# Triangles of neck





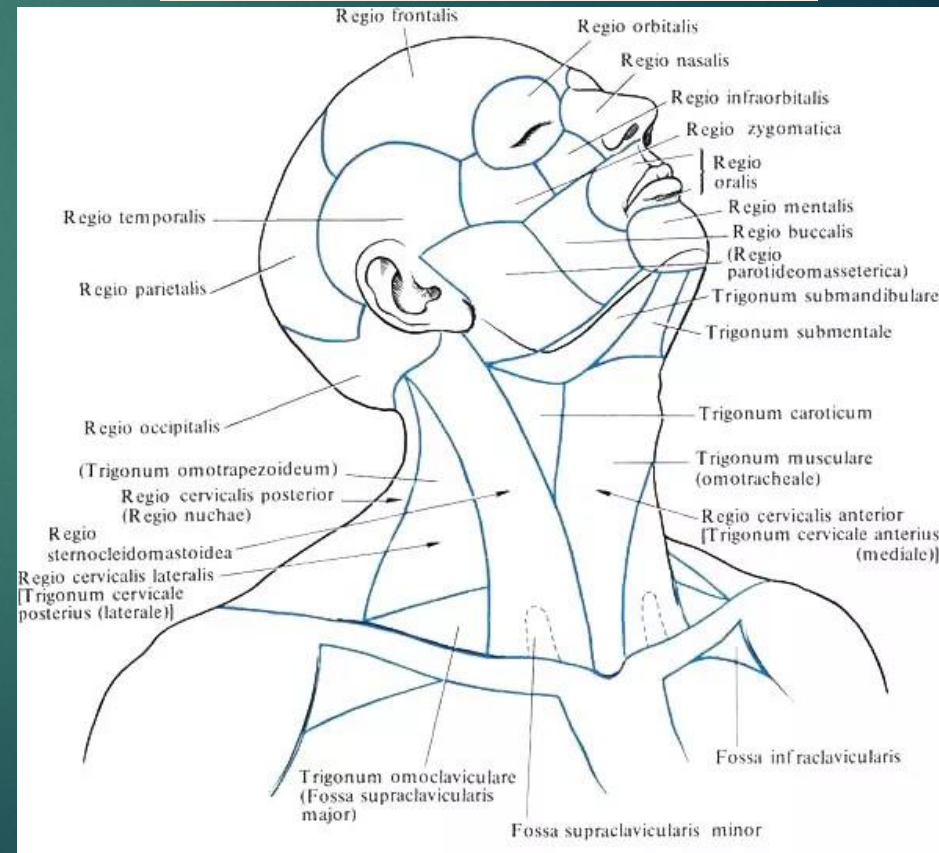
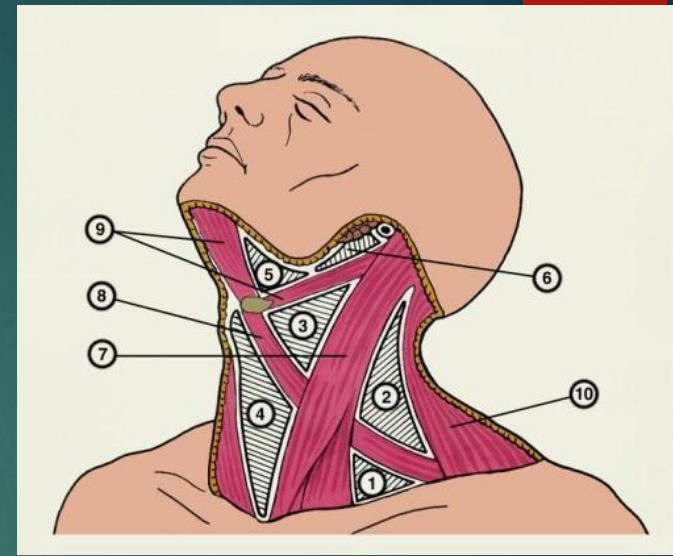
# Triangles of neck

## Lateral cervical triangle

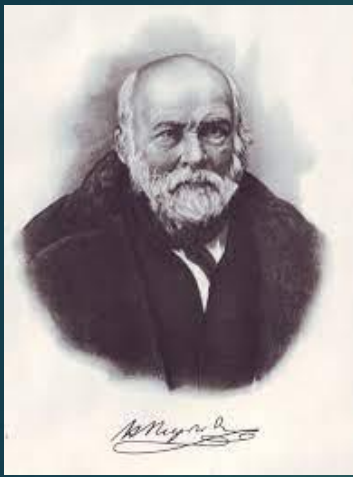
- omoclavicular ▲
- omotrapezoideum ▲

## Medial cervical triangle

- omohyoid (=carotid) ▲
- omotracheal ▲
- submandibular ▲
- lingual (=Pirogov's) ▲



# Lingual triangle (Pirogov's triangle)



## Borders:

- the posterior border of the mylohyoid
- intermediate tendon and posterior belly of the digastric
- the hypoglossal nerve

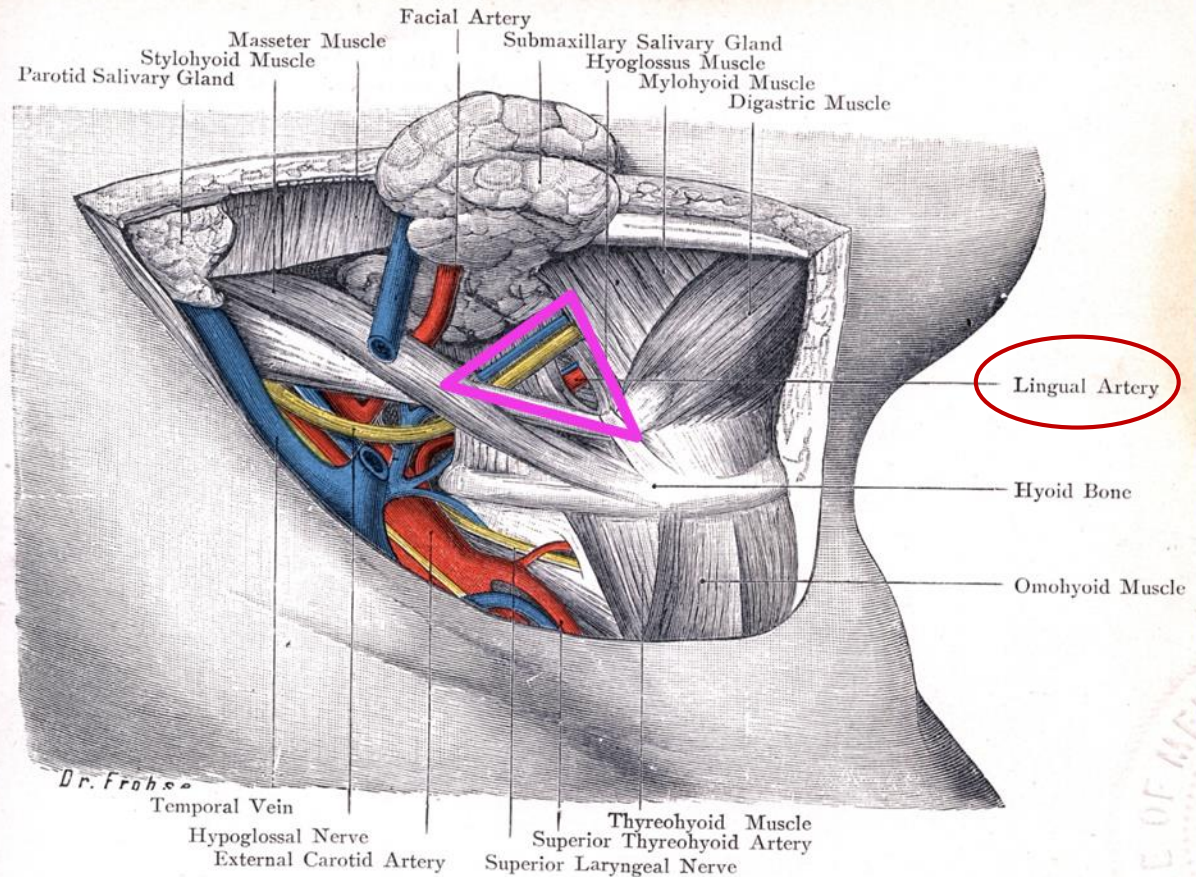
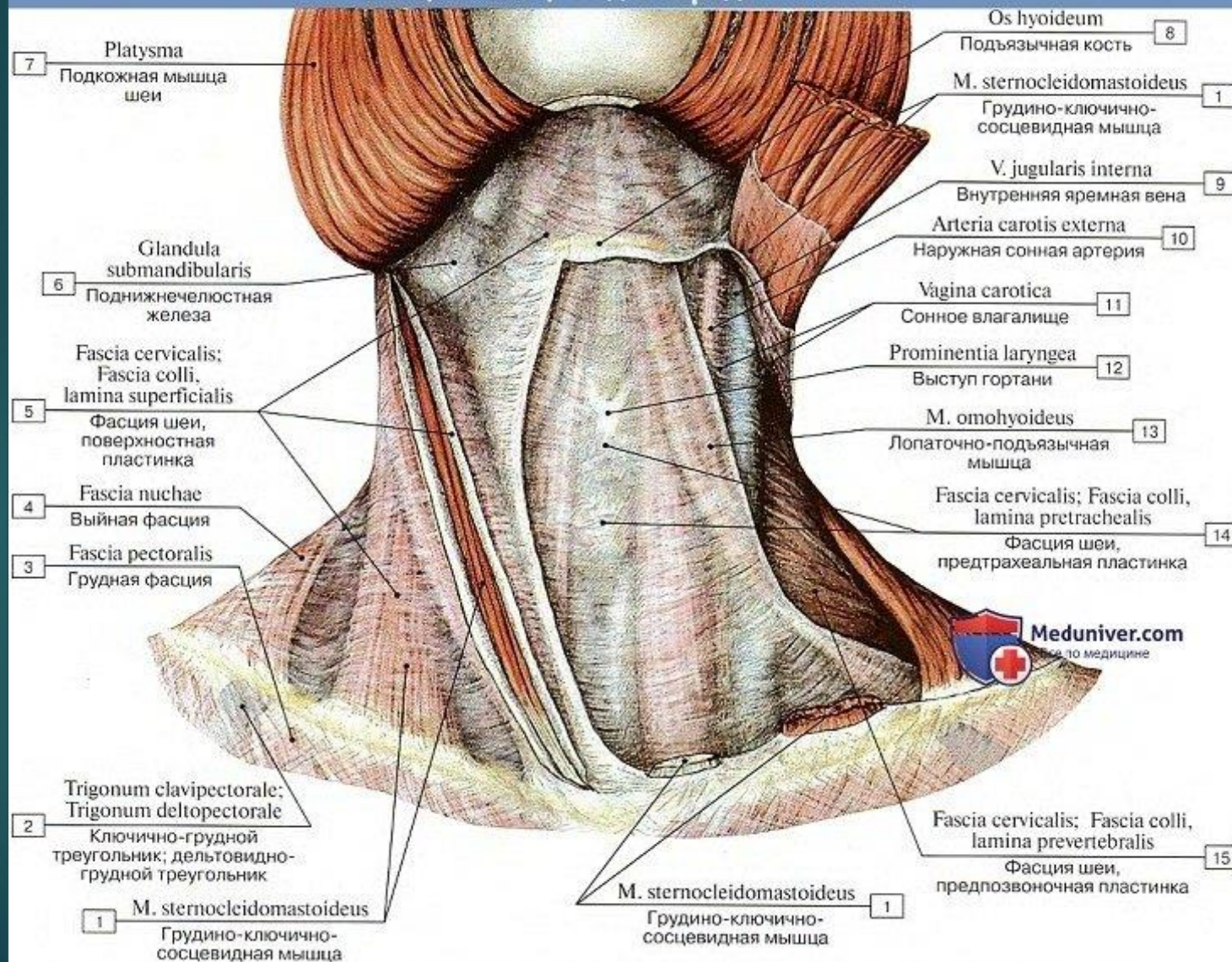


Fig. 64. - Situation for Ligature of Lingual Artery. Nat. Size.



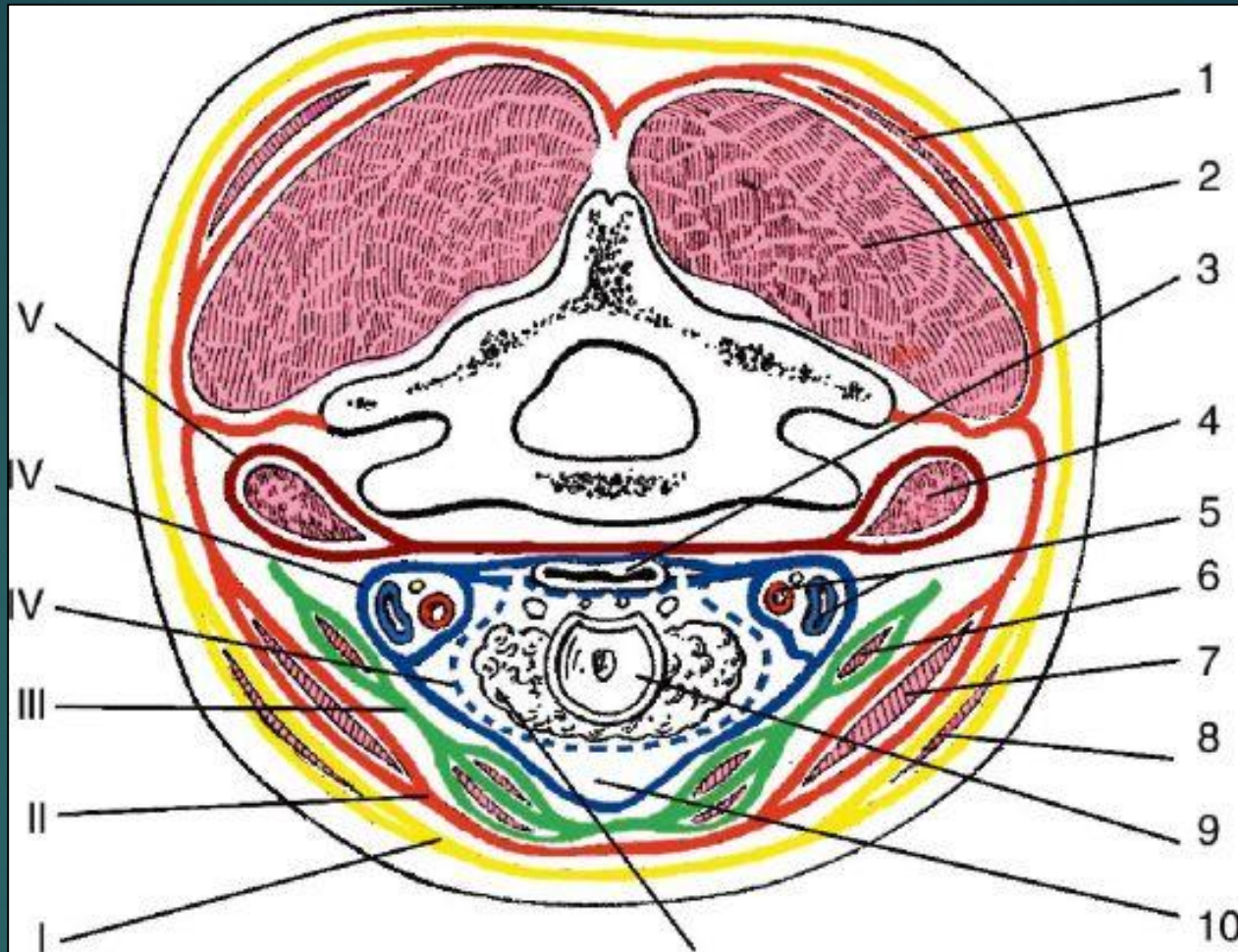
# Fasciae of neck

## Фасции шеи, вид спереди



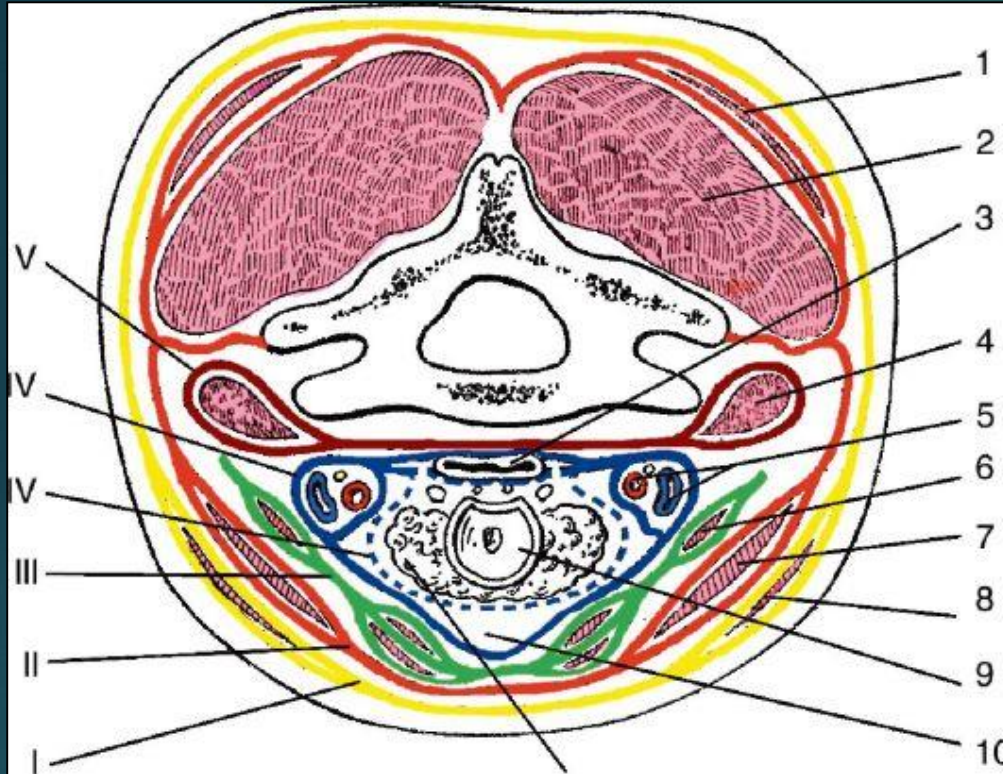


# Fasciae of neck



- 1 - m. trapezius; 2 - deep muscles of the neck; 3 - oesophagus; 4 - mm. scaleni; 5 - a. carotis communis, v. jugularis interna et n. vagus; 6 - m. omohyoideus; 7 - m. sternocleidomastoideus; 8 - platysma; 9 - trachea; 10 - spatium previscerale; 11 - gl. thyroidea

# Fasciae of neck



**I – superficial**

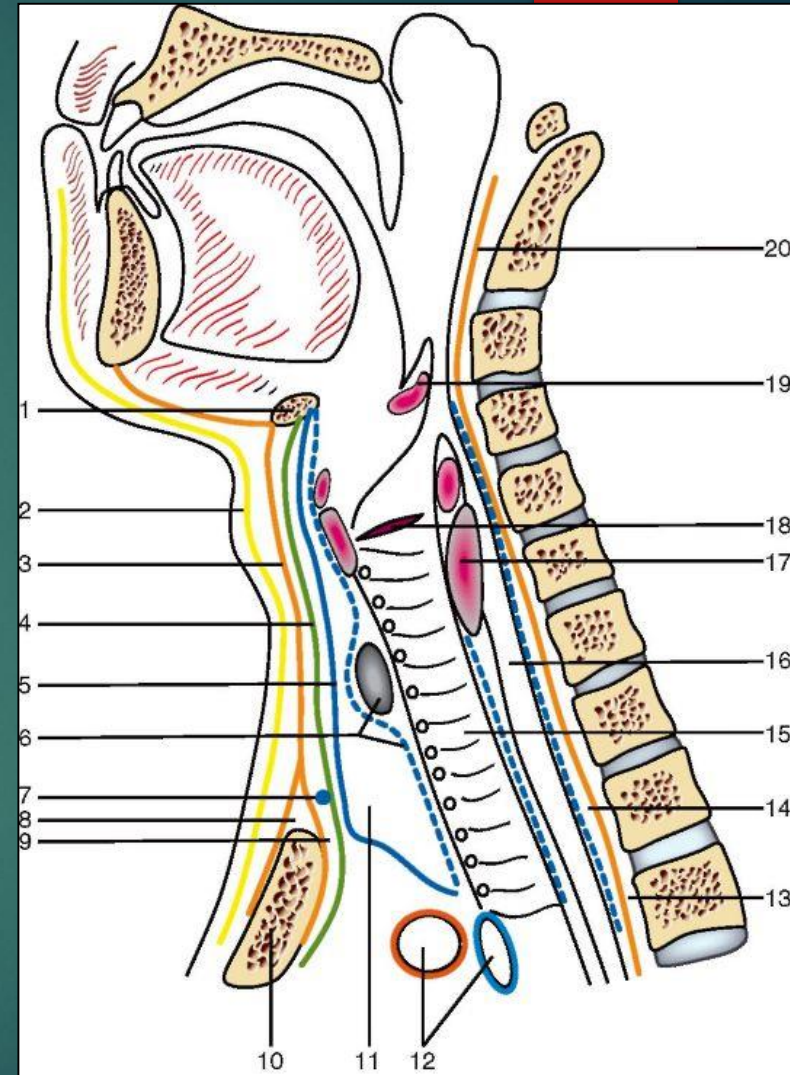
***F. propria* (II, III)**

**- II - superficial layer**

**- III - deep layer**

**IV - endocervical**

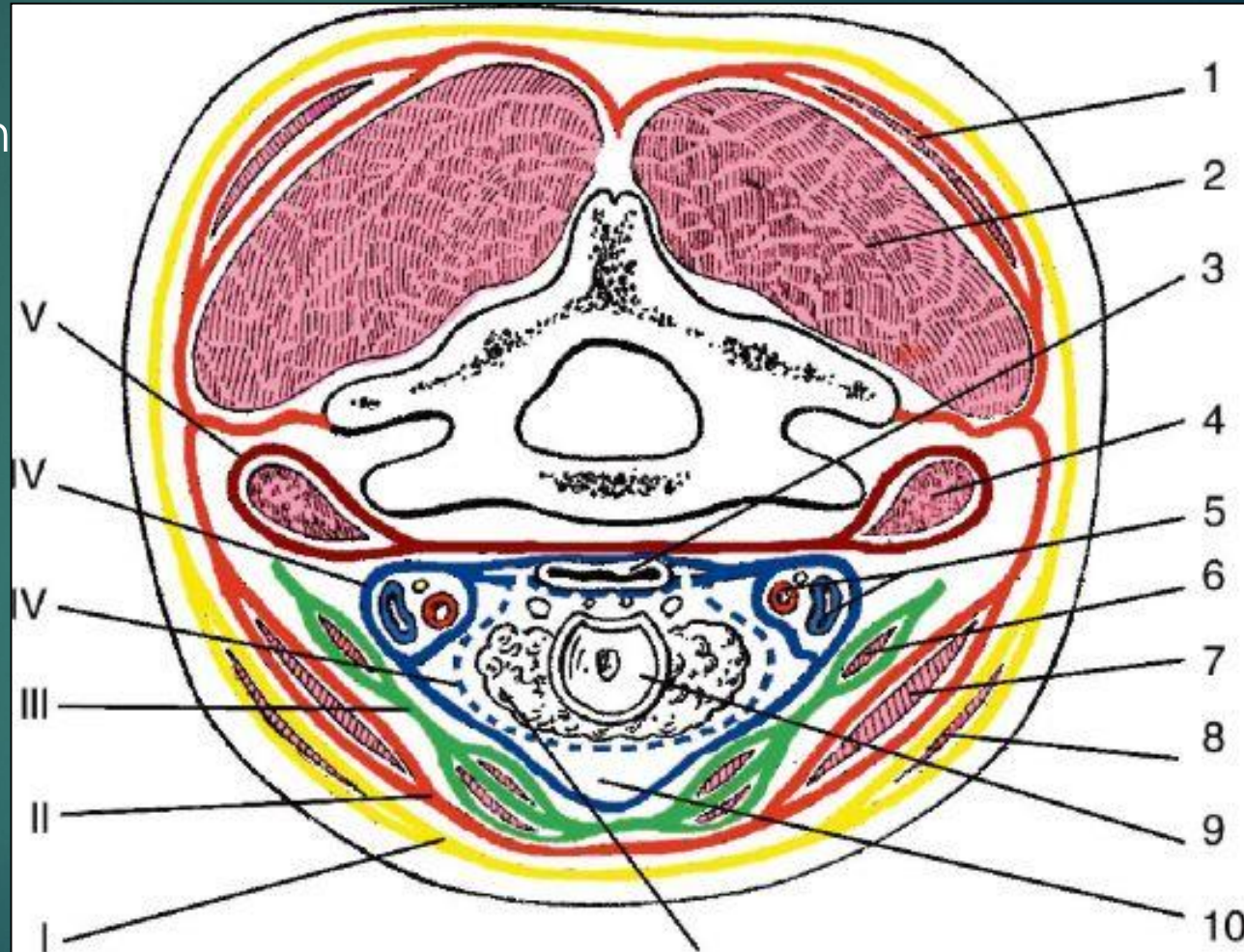
**V - prevertebral**





# I. Fascia superficialis

- ▶ Part of the common superficial fascia of the body
- ▶ Contains platysma (#8)

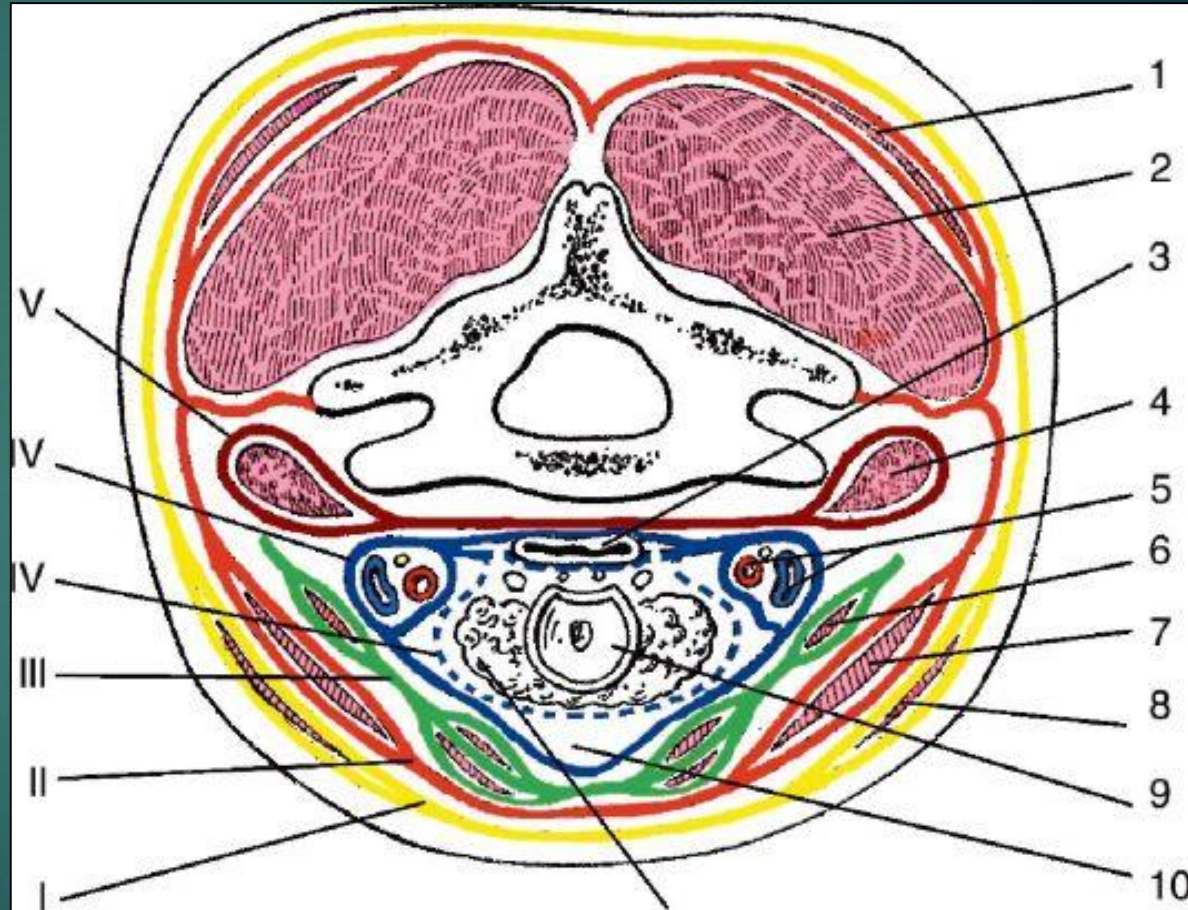




# Fascia propria

## II. superficial layer

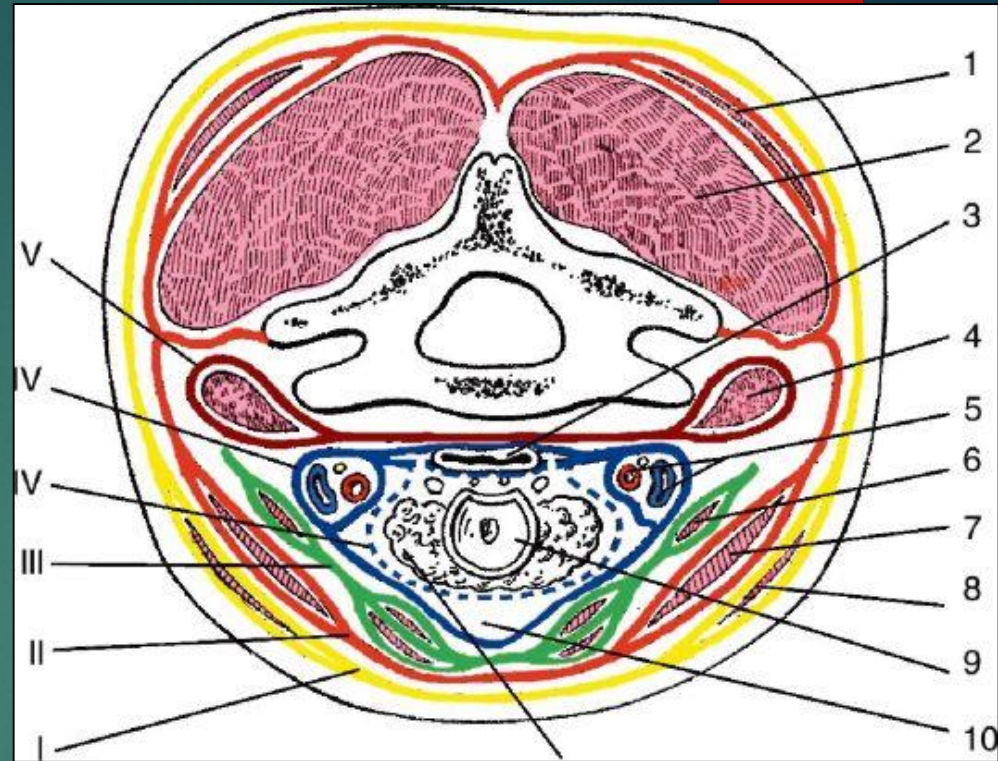
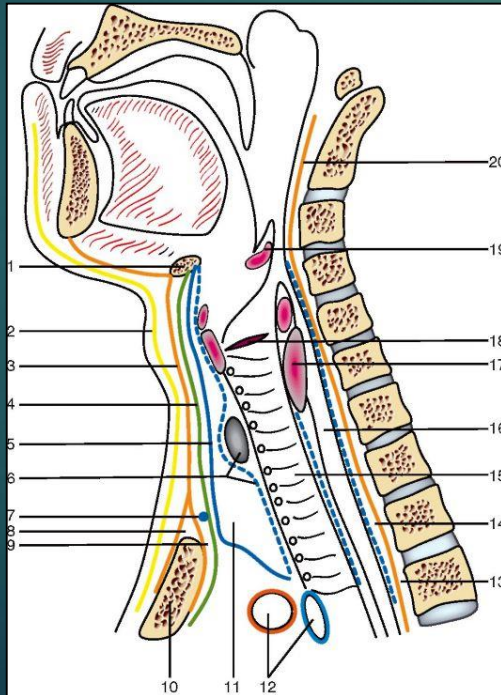
- ▶ From base of mandible till anterior surface of clavicle and sternum
- ▶ Forms fibrous sheaths for m.trapezius (#1) and m.sternocleidomastoideus (#7)



# Fascia propria

## III. deep layer

- From hyoid bone till posterior surface of clavicle and sternum
- Is present only in middle part of neck



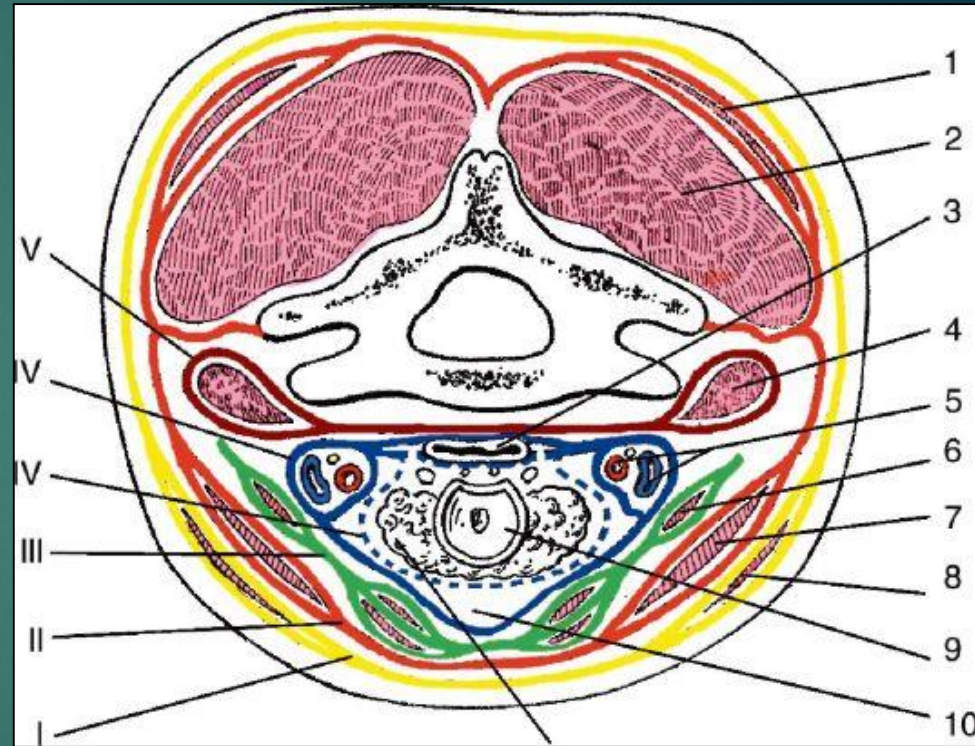
- Forms fibrous sheaths for infrahyoid muscles (#6)
- Joins with the superficial layer along the m. omohyoideus and linea alba of neck.



# IV. Endocervical fascia



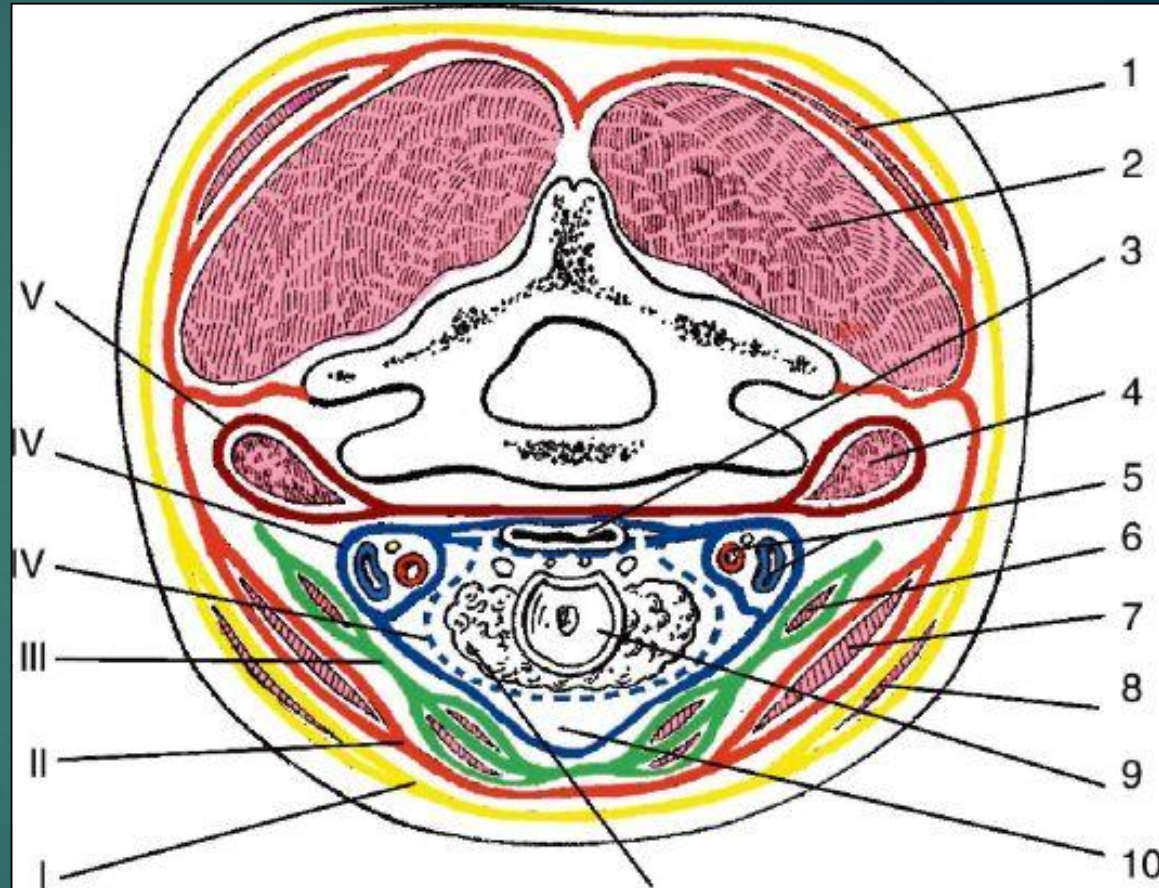
- ▶ Covers intercervical space
- ▶ It has 2 layers
  - ▶ Parietal (cover all organs together). Forms fibrous canal for nerves and vessels of neck.
  - ▶ Visceral (covers each organ separately) – dotted line.
  - ▶ Pretracheal (previsceral) space - in front of layers.





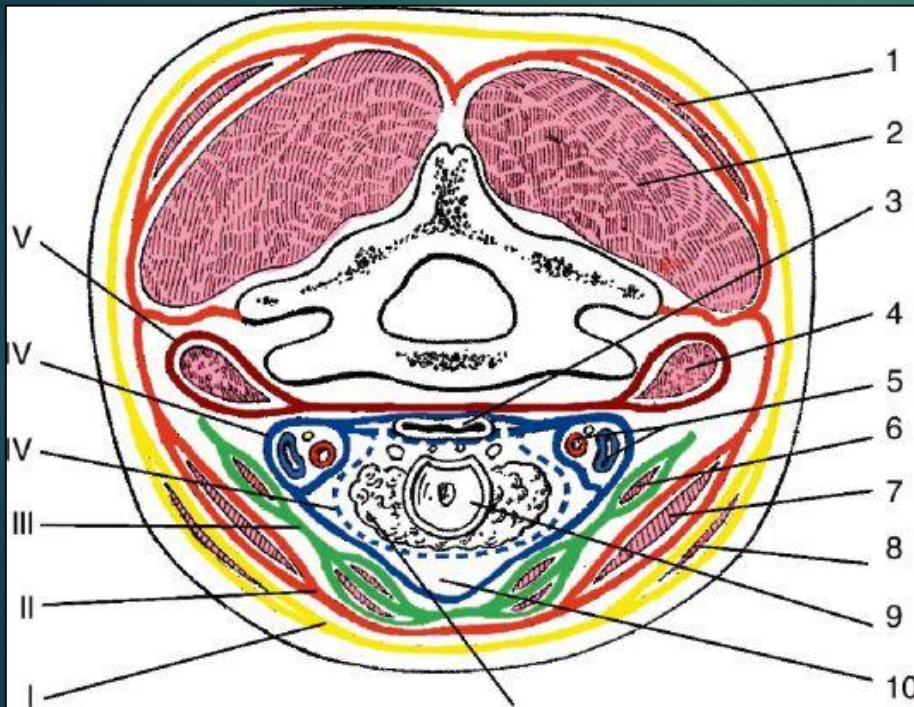
# V. Prevertebral fascia

- ▶ Covers deep muscles of neck (#4) anteriorly
- ▶ Retrovisceral space – between prevertebral and endocervical fasciae

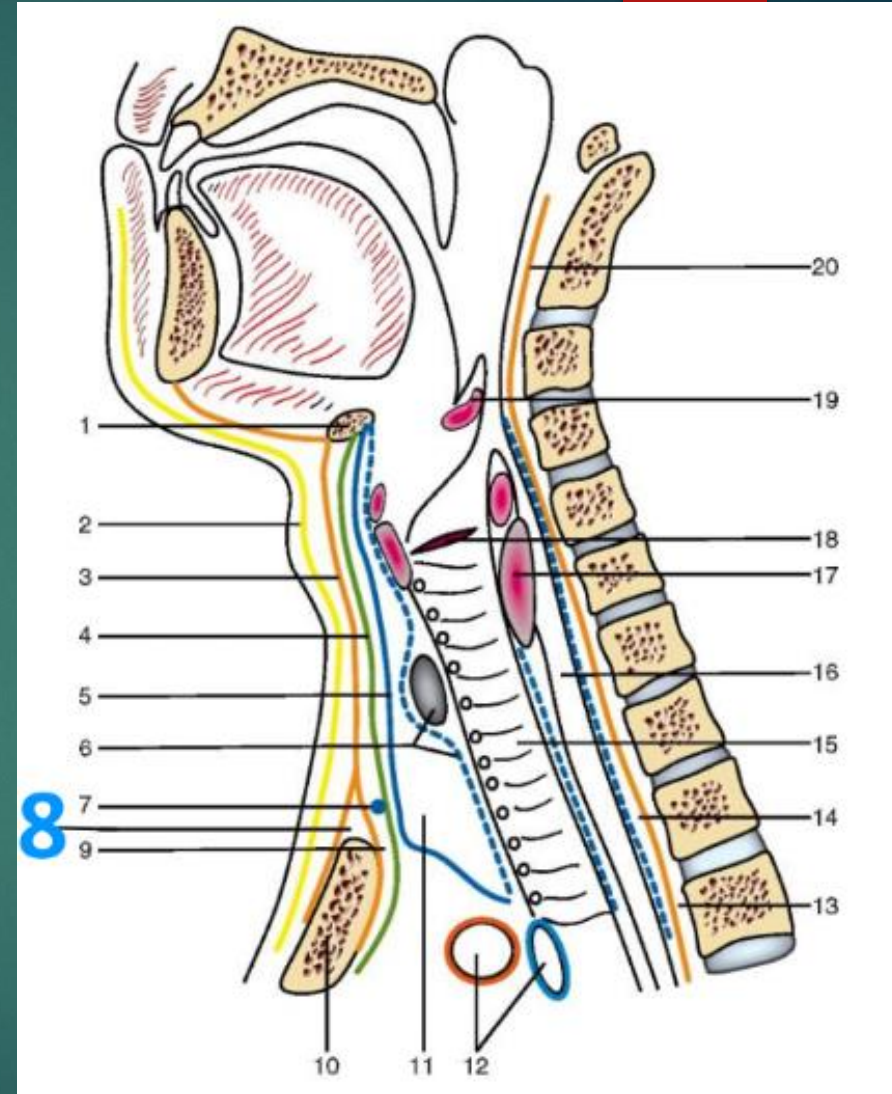


## Interaponeurotocal suprasternal space

- between the layers of f.propria – II and III
- Cellulose tissue with lymphatic nodules and arcus venosus juguli

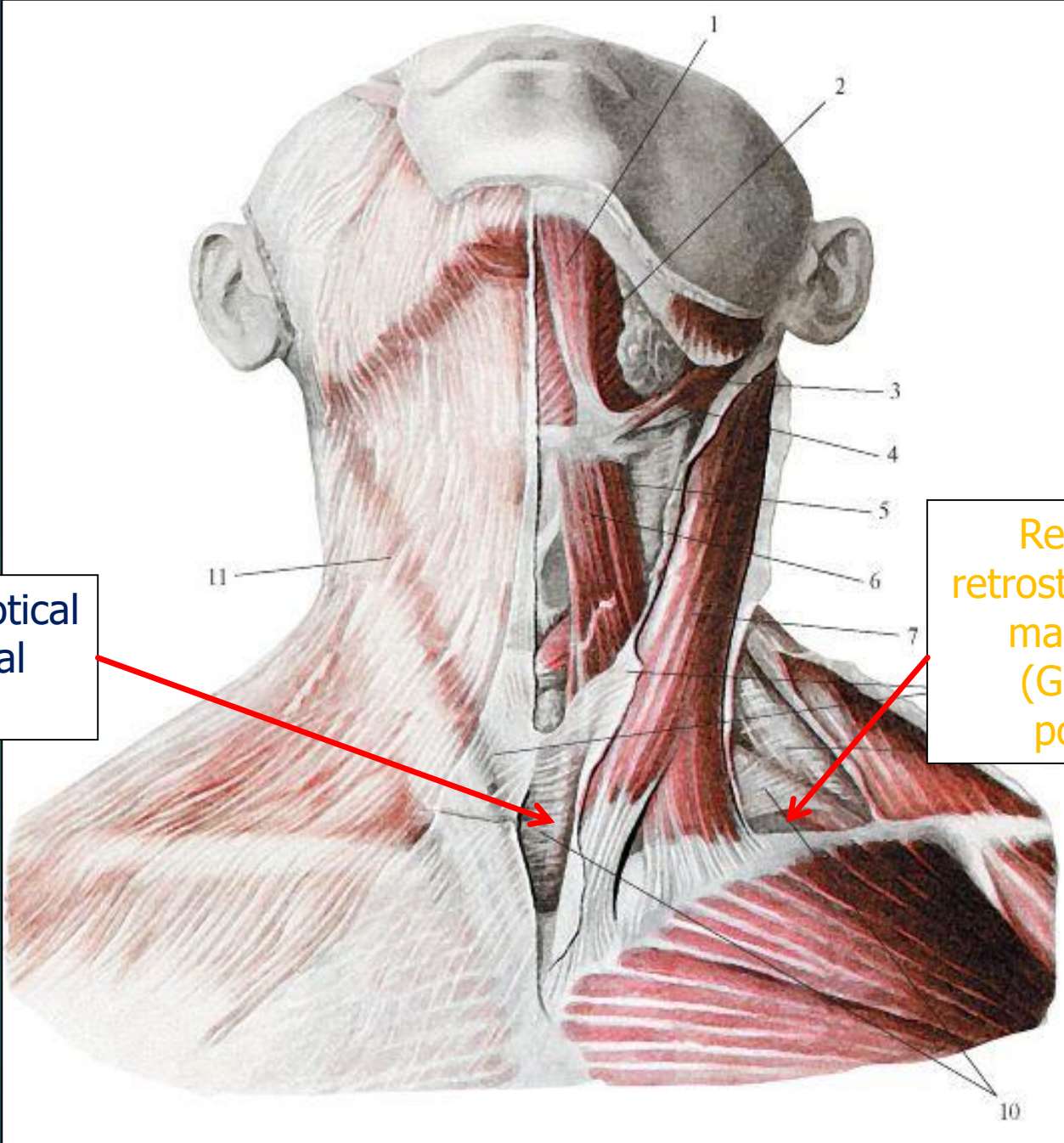


## Spaces of neck



- Recessus retrosternocleidomastoideus (Gruber`s pockets)





Interaponeurotic  
suprasternal  
space

Recessus  
retrosternocleido-  
mastoideus  
(Gruber`s  
pockets)





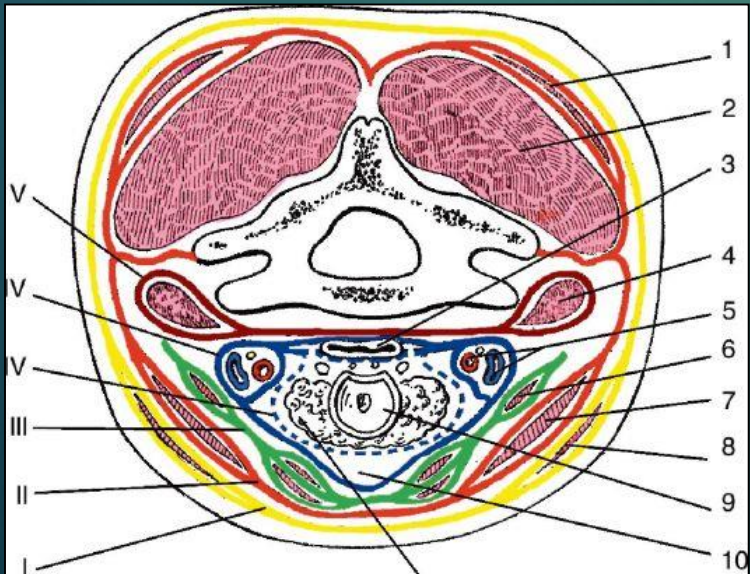
# Spatium previscerale (pretracheale)

➤ between the layers of endocervical fascia

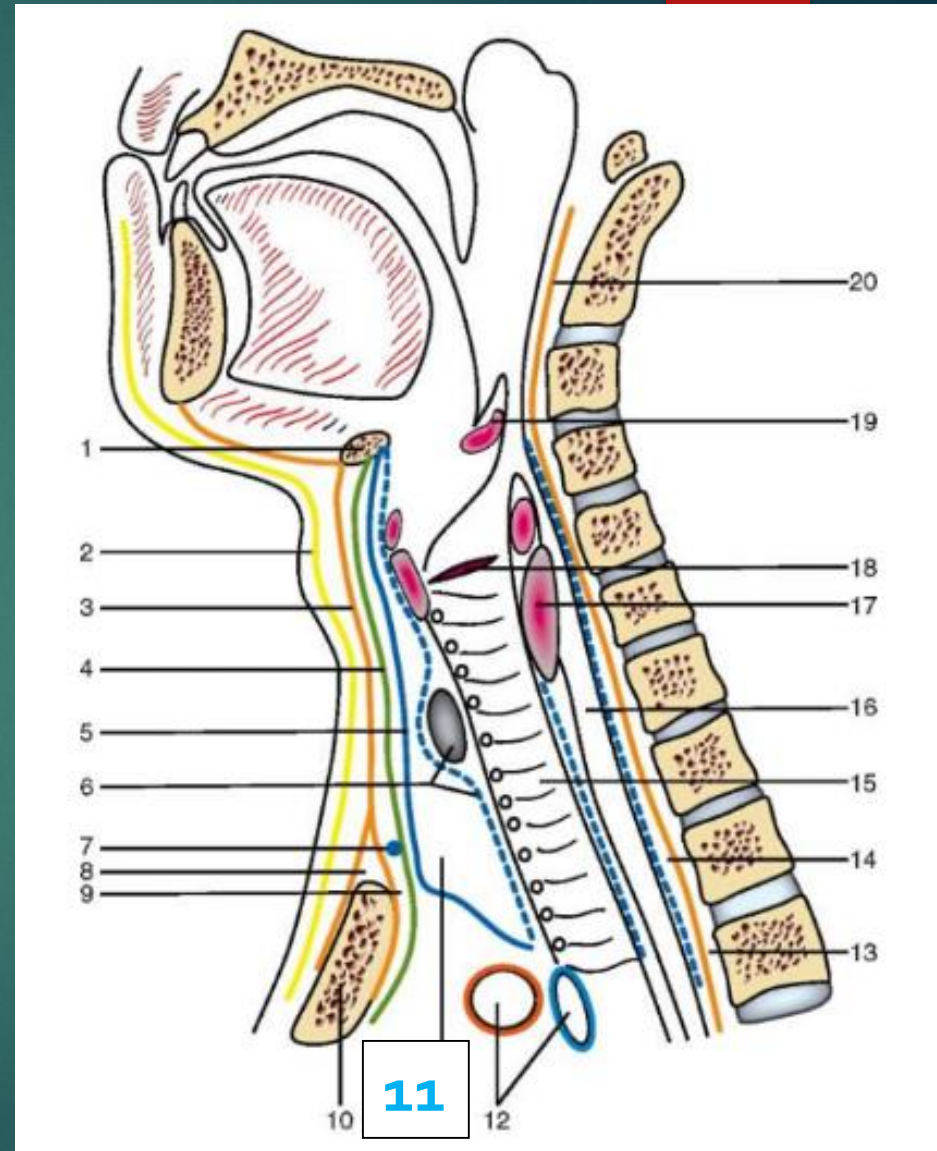
Lymphatic vessels and nodules,  
a.thyroidea and plexus thyroideus

➤ Borders:

*anterior* – mm. sternohyoideus,  
sternothyroideus; *posterior* – larynx  
and trachea; *lateral* – neurovascular  
bundle; *inferior* – **no wall, freely extends  
into anterior mediastinum (!)**

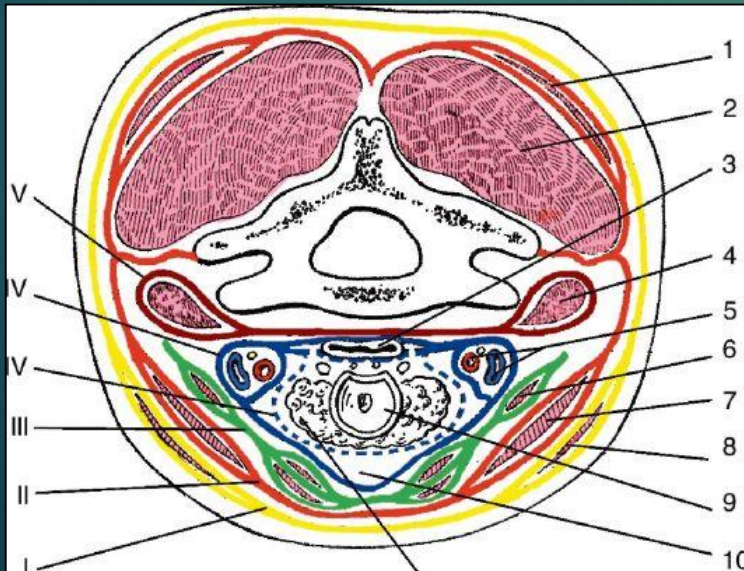


# Spaces of neck

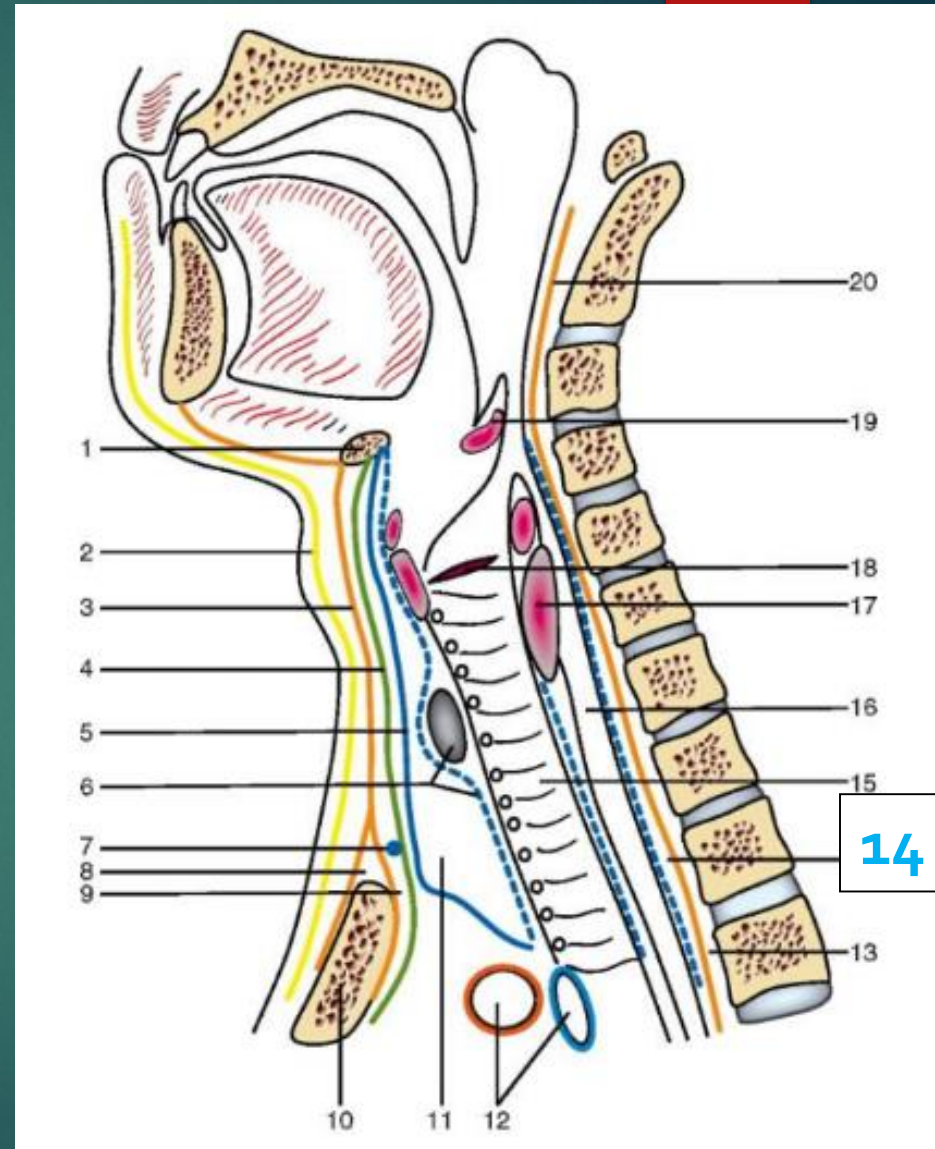


# Spatium retroviscerale (retropharingeale)

- between endocervical (IV) and prevertebral (V) fascia
- It continuous with the posterior mediastinum (!)

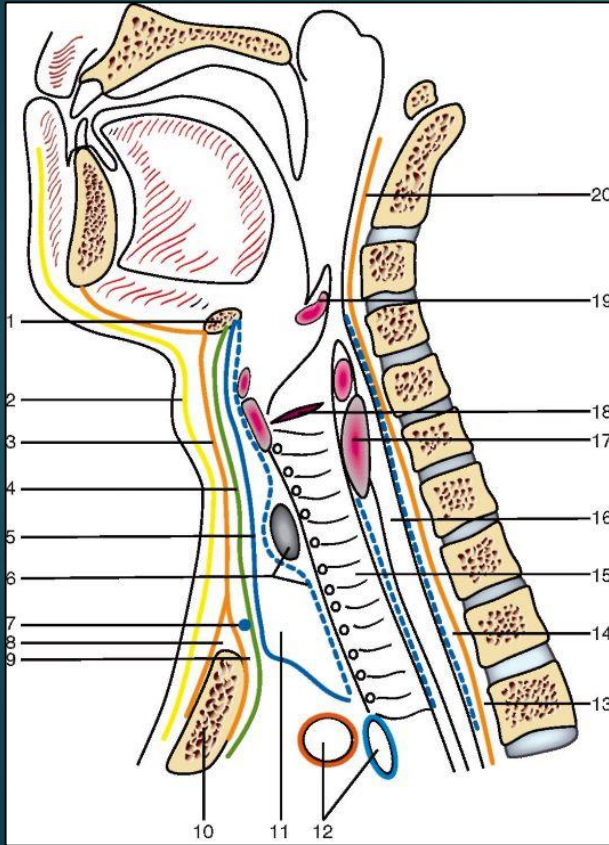


# Spaces of neck

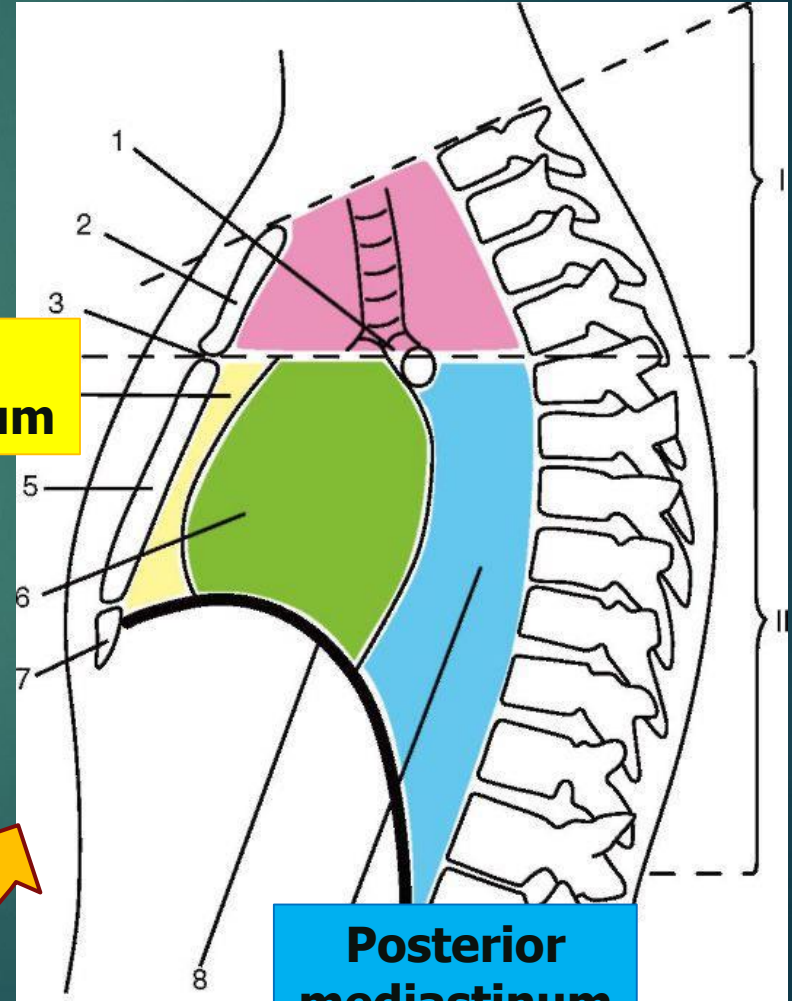




**Mediastinum** is a complex of the organs situated between the right and left pleural cavities.



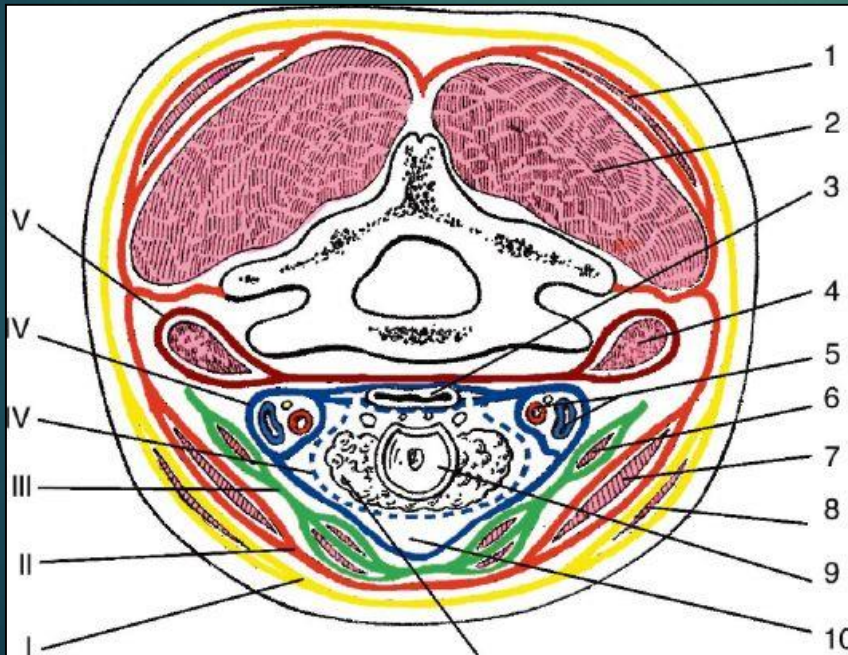
**Anterior  
mediastinum**



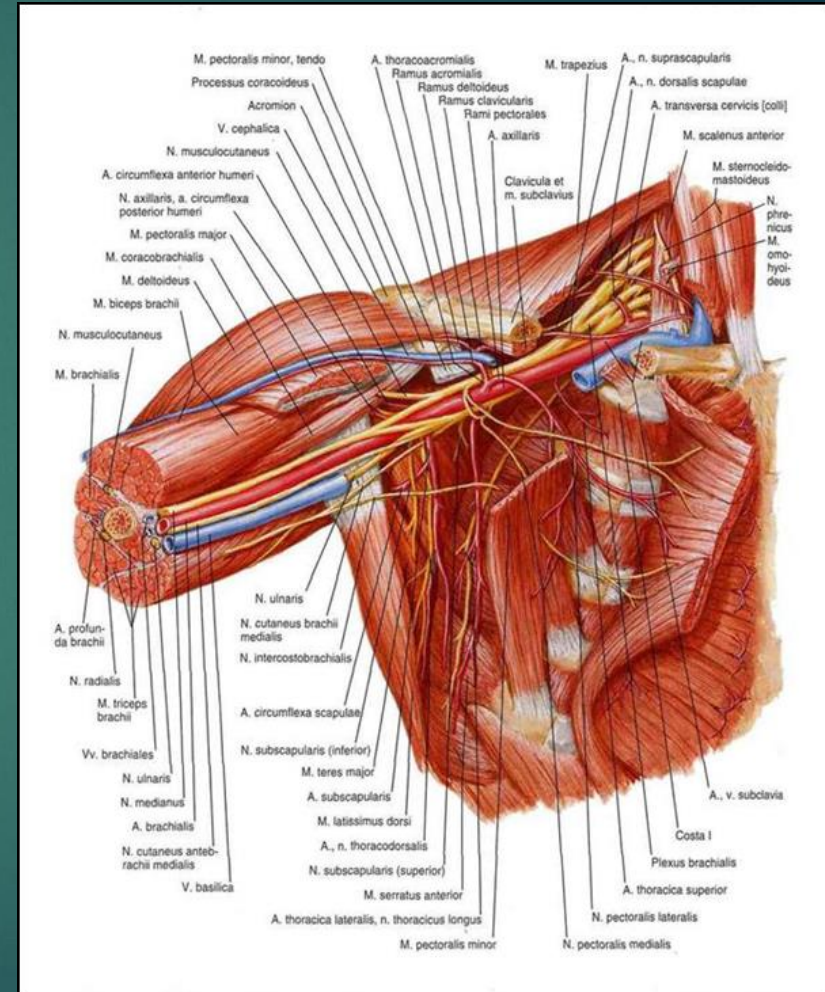
**Posterior  
mediastinum**

# Spatium interaponeuroticum laterale

- between lamina superficialis fasciae colli propriae (II) and fascia prevertebralis (V)
- Connected with axillary fossa



# Spaces of neck





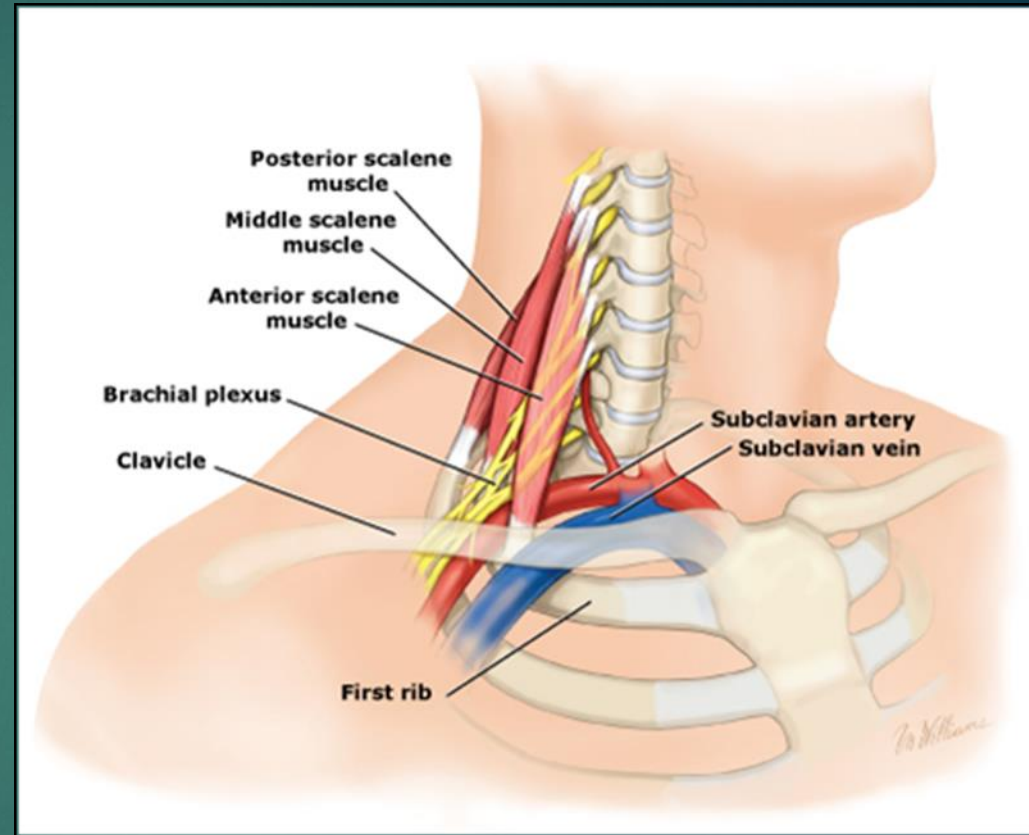
# Spaces of neck

## Spatium interscalenum

- between the anterior, middle scalene muscles and the first rib.
- It transmits the subclavian artery and the brachial plexus.

## Spatium antescalenum

- in front of the anterior scalene muscle.
- It transmits the subclavian vein.

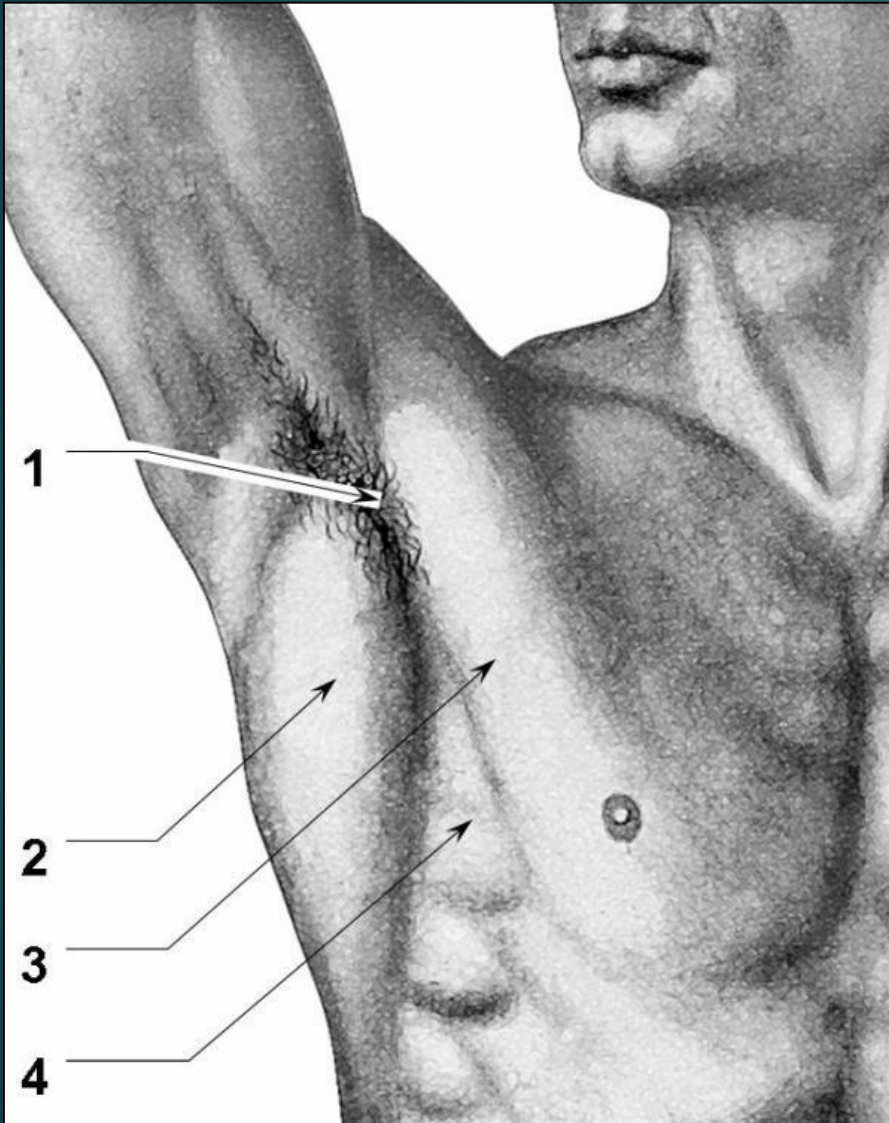




# Topography of Upper Limb



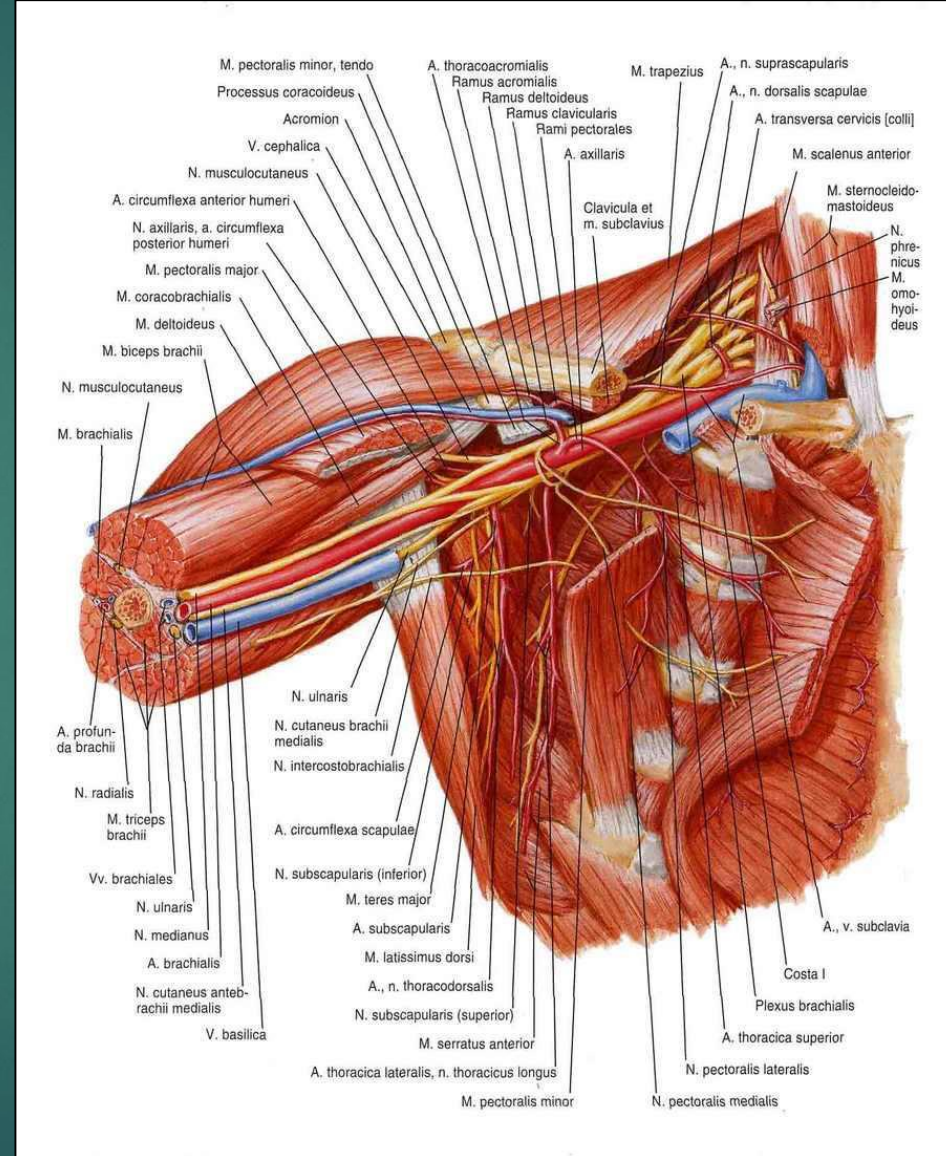
# Axillary fossa



- 1 – **axillary fossa**
- 2 – border of  
m. latissimus dorsi
- 3 – border of  
m. pectoralis major
- 4 – m. serratus anterior

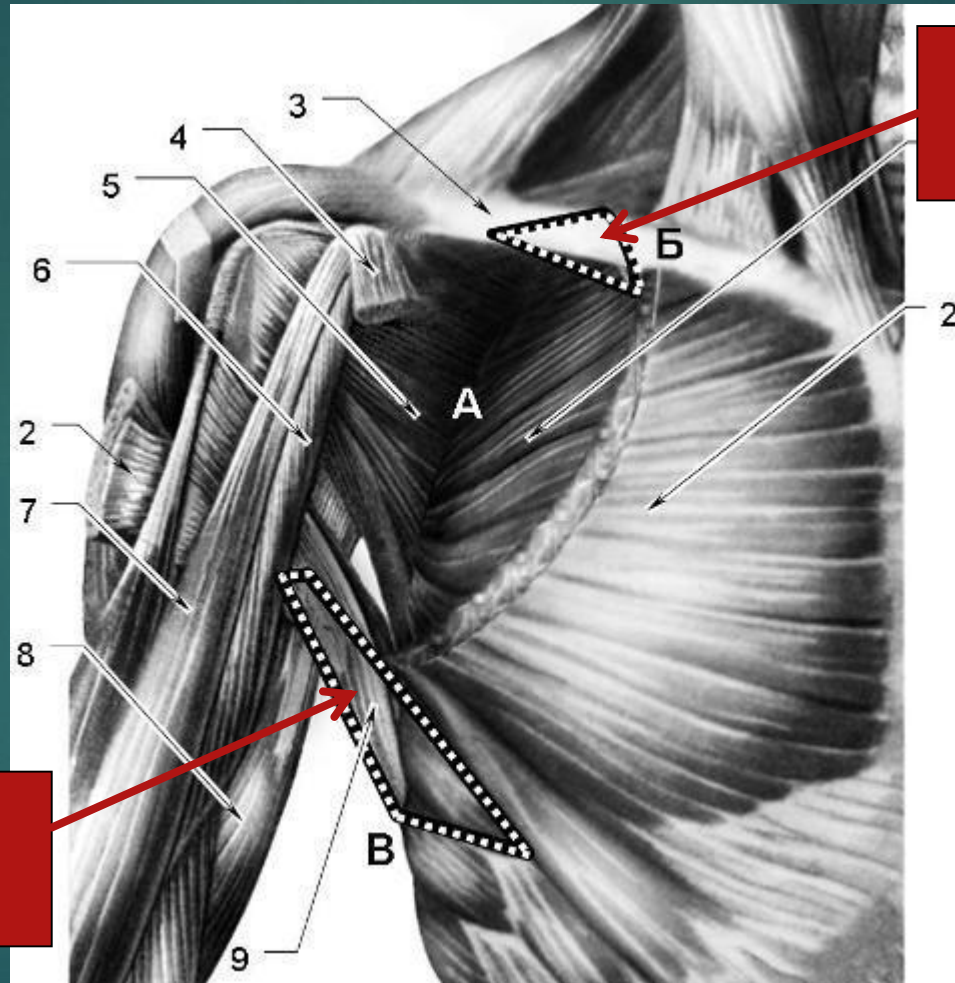
# Axillary cavity is bordered by:

- ▶ **anteriorly** – mm. pectorales major et minor
- ▶ **posteriorly** – m. latissimus dorsi, m. teres major and m. subscapularis
- ▶ **medially** – m. serratus anterior
- ▶ **laterally** – humerus and mm. of anterior side of the arm



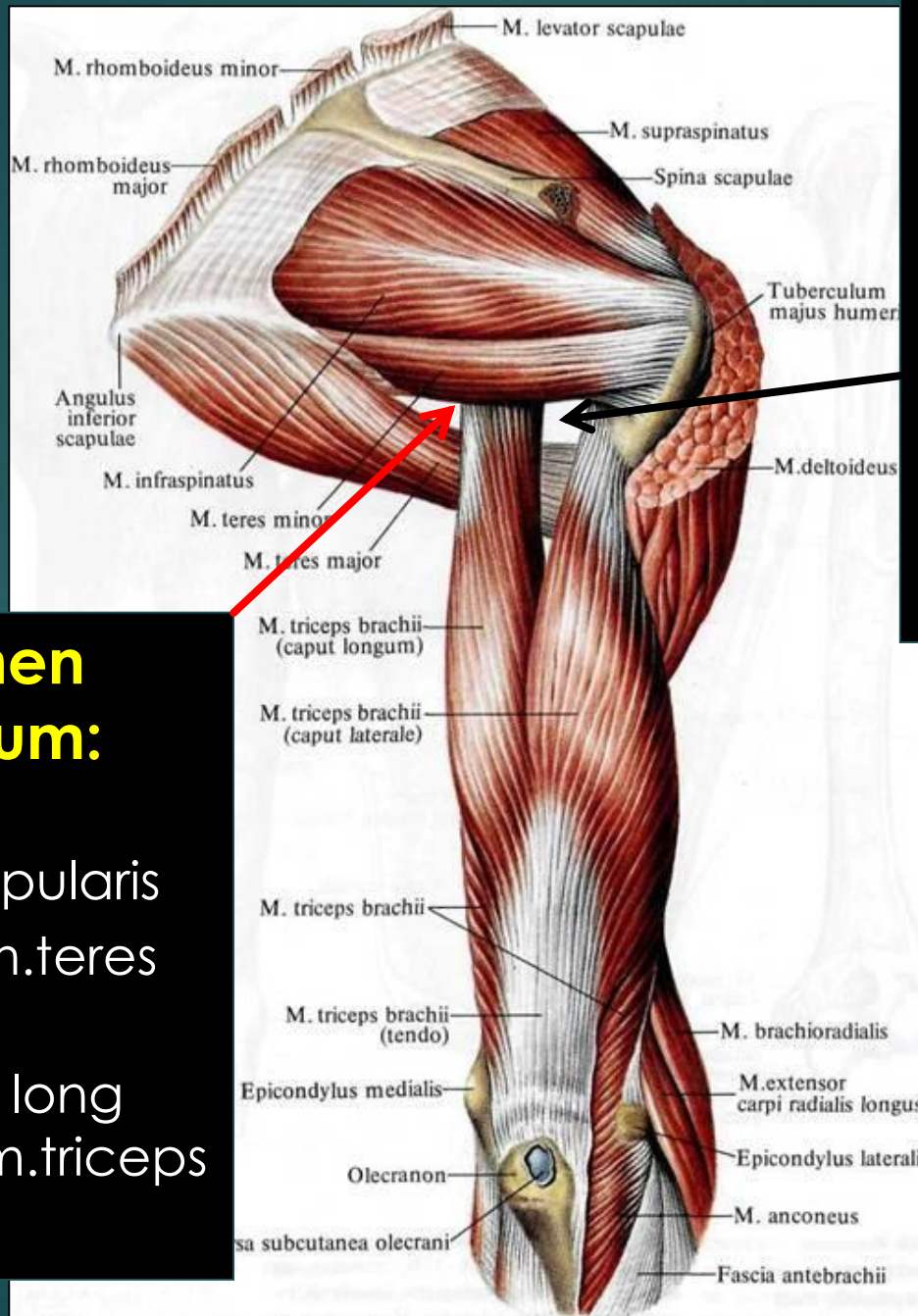


# Axillary cavity



Apertura superior

Apertura inferior



## Foramen quadrilaterum:

- above – m.subscapularis
- below – m.teres major
- medially – long head of m.triceps brachii
- laterally – humerus

## Foramen trilaterum:

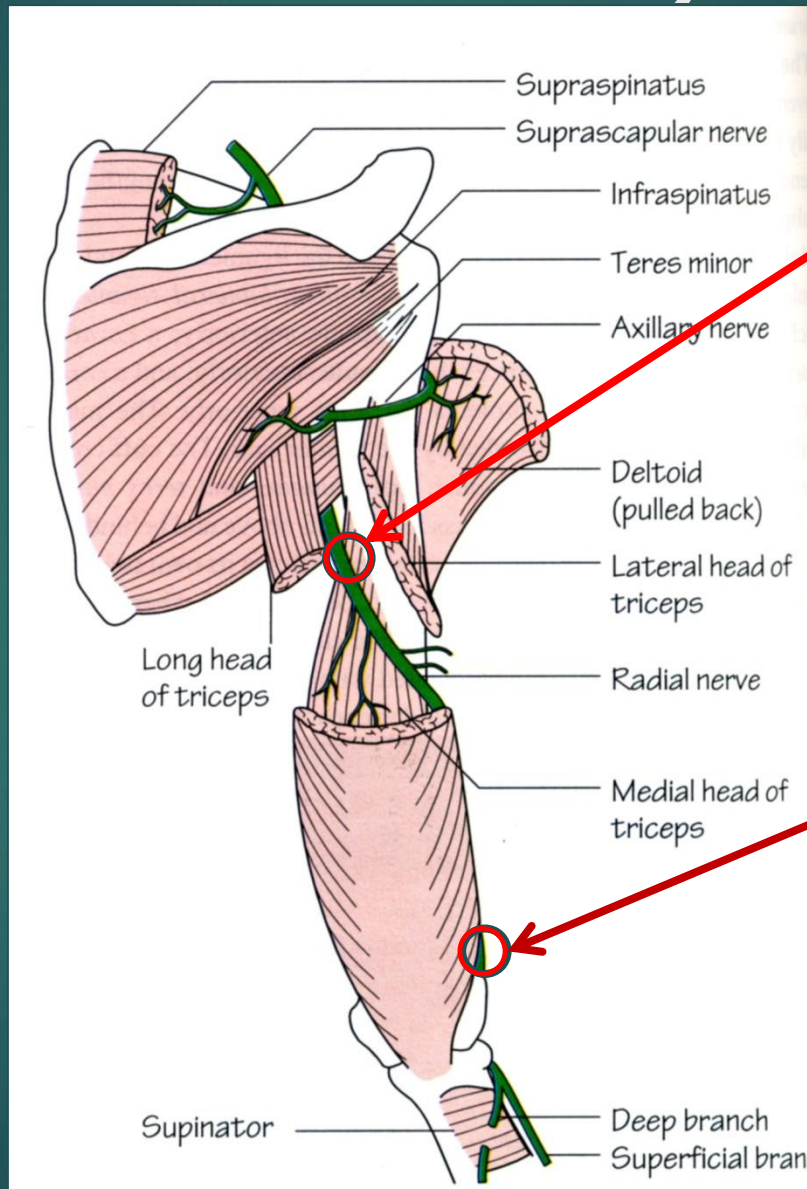
- above – m.subscapularis
- below – m.teres major
- laterally – long head of m.triceps brachii



# Canalis nervi radialis (canalis humeromuscularis)

- anteriorly – humerus

- posteriorly – m. triceps brachii



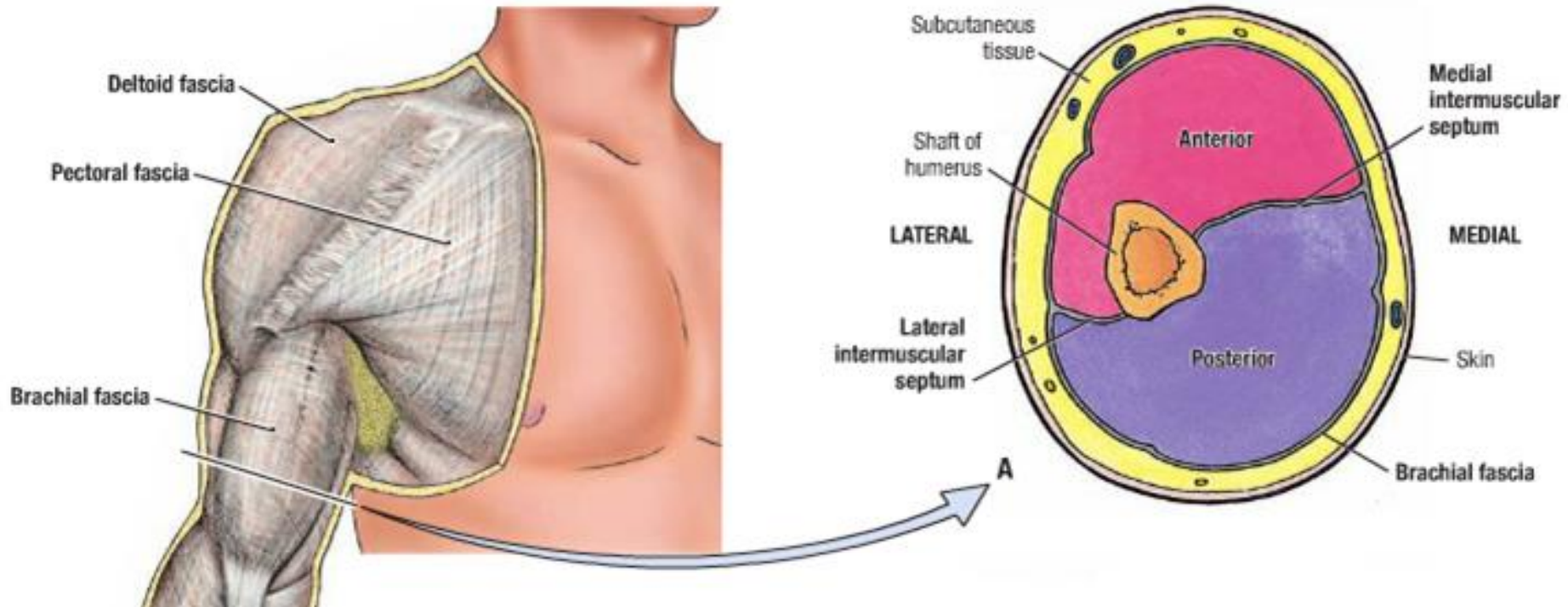
## Inlet:

- between the upper and middle thirds of the arm on medial side
- humerus and the medial and lateral heads of the triceps muscle

## Outlet:

- between the middle and lower thirds of the arm on lateral side
- It is bounded by the brachialis and brachioradialis muscles

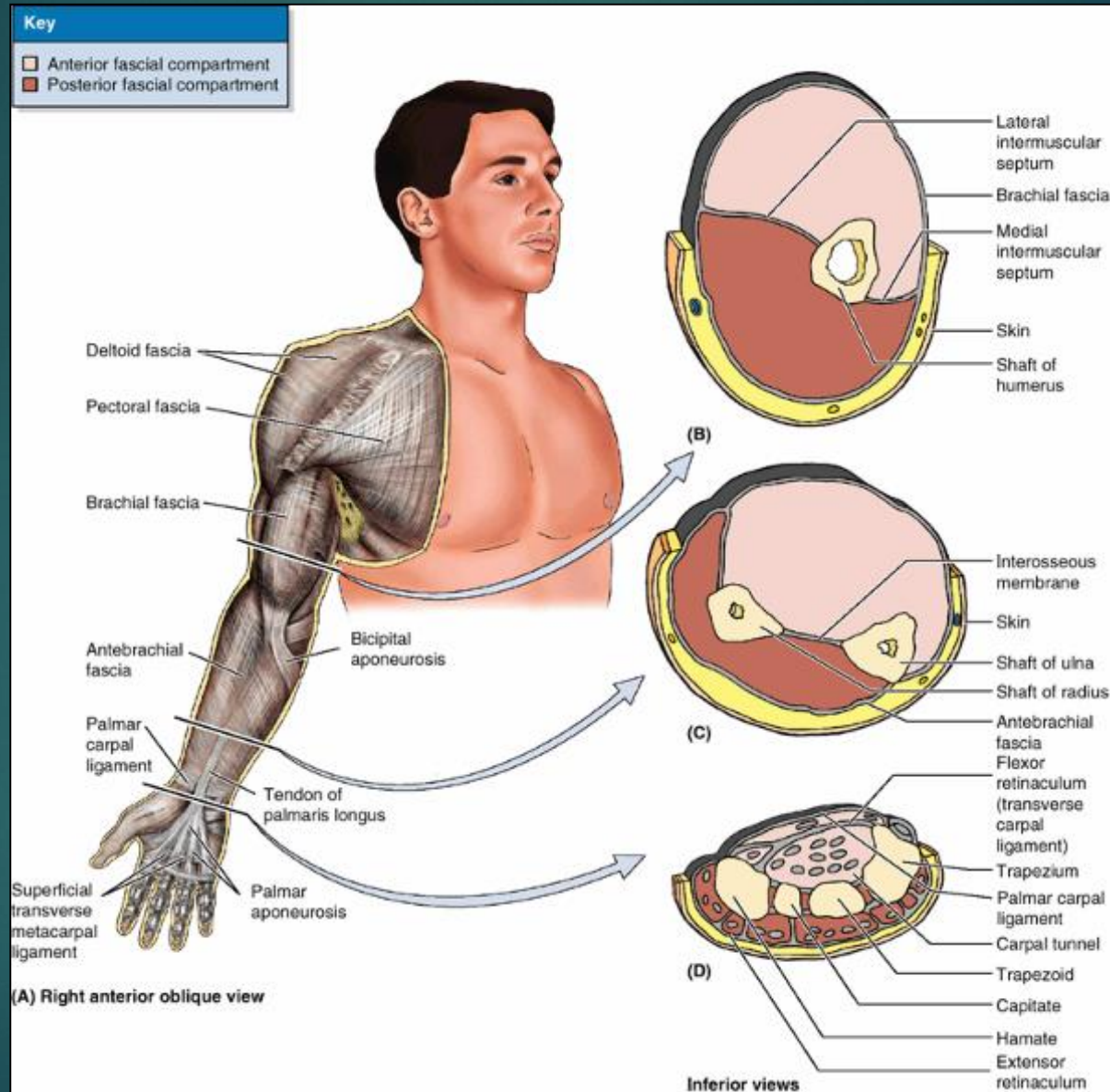
# Fasciae of the arm



- The axillary fascia
- The deltoid fascia
- The brachial fascia (*medial and lateral intermuscular septum*)

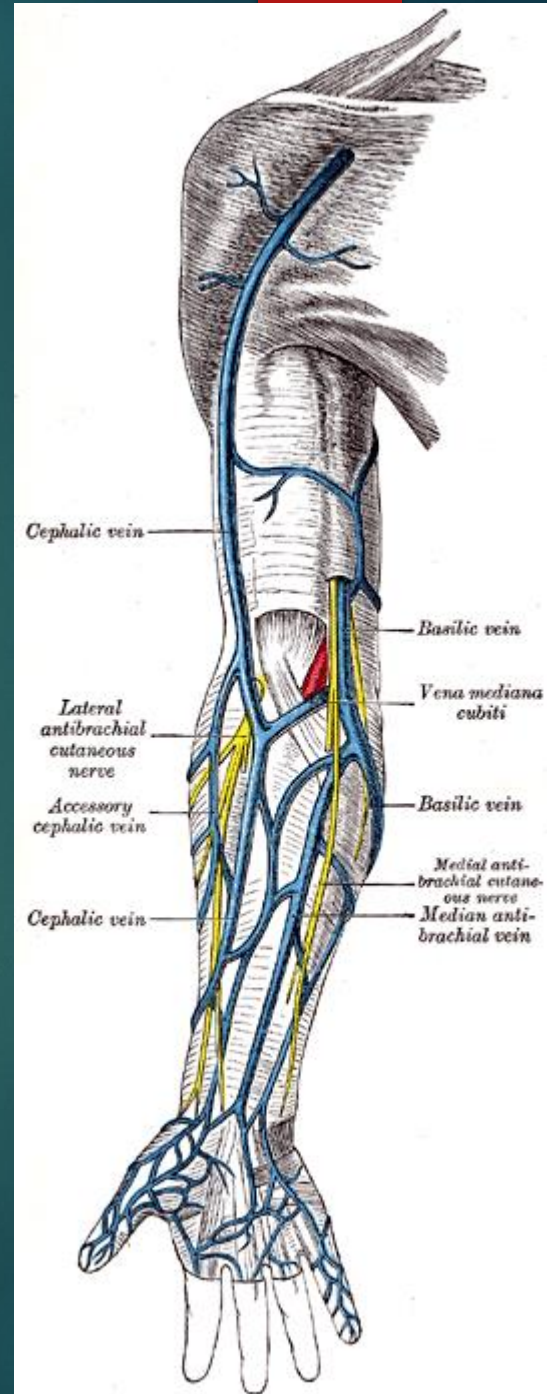
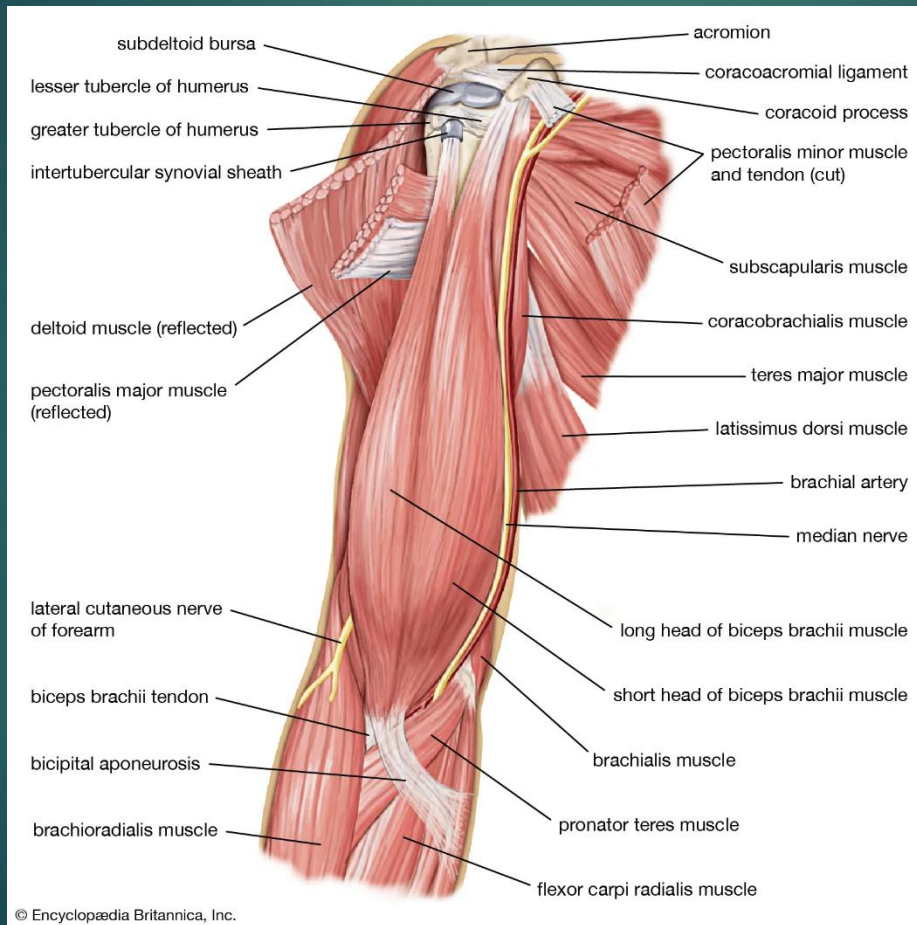


# Fasciae of the arm



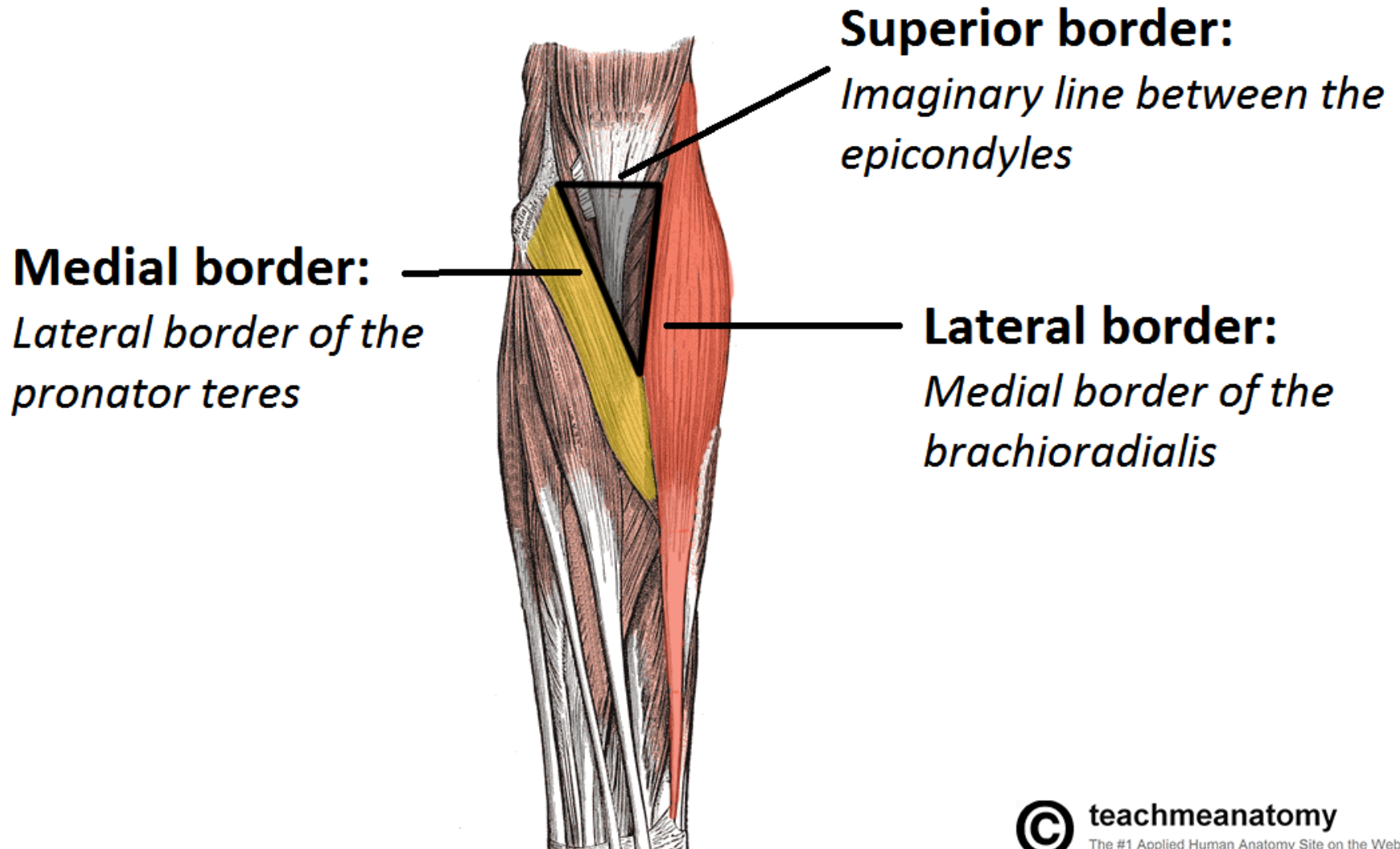
# The lateral and medial bicipital grooves

*(sulcus bicipitalis lateralis et medialis)*





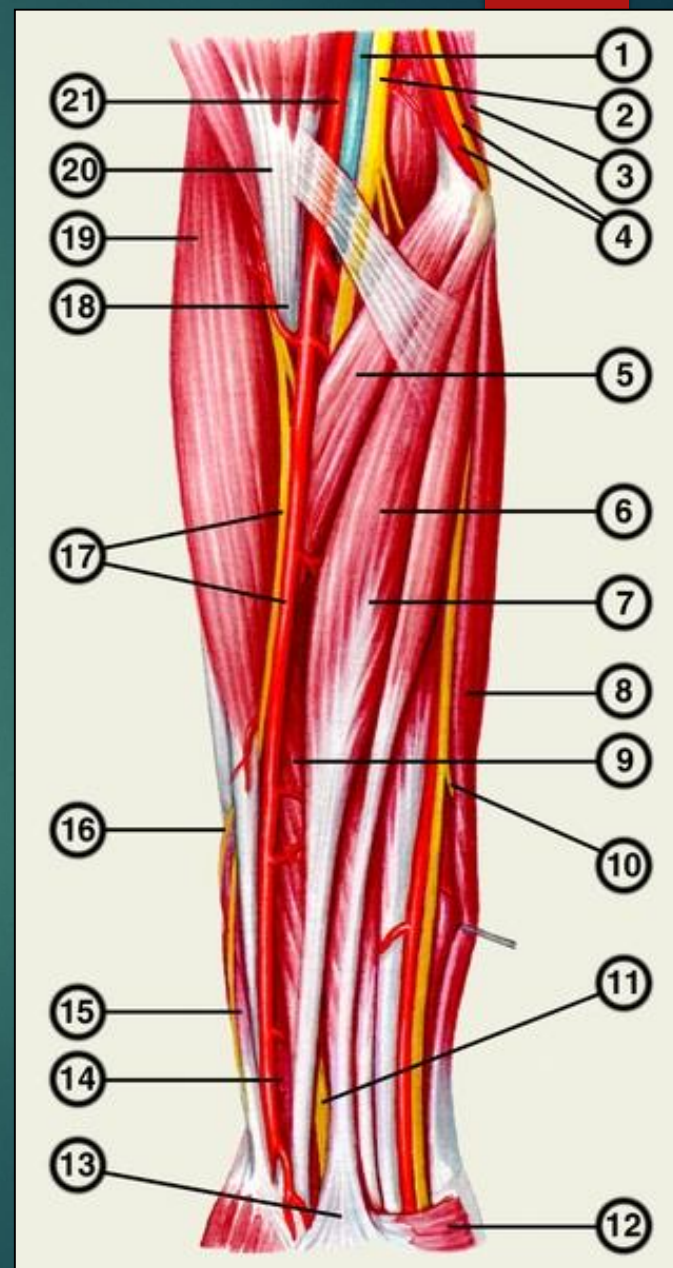
# Cubital fossa



# Grooves between forearm muscles

## The medial **ulnar groove (10)**

- lies between flexor carpi ulnaris and the flexor digitorum superficialis (laterally).
- It transmits the ulnar nerve, artery and veins.

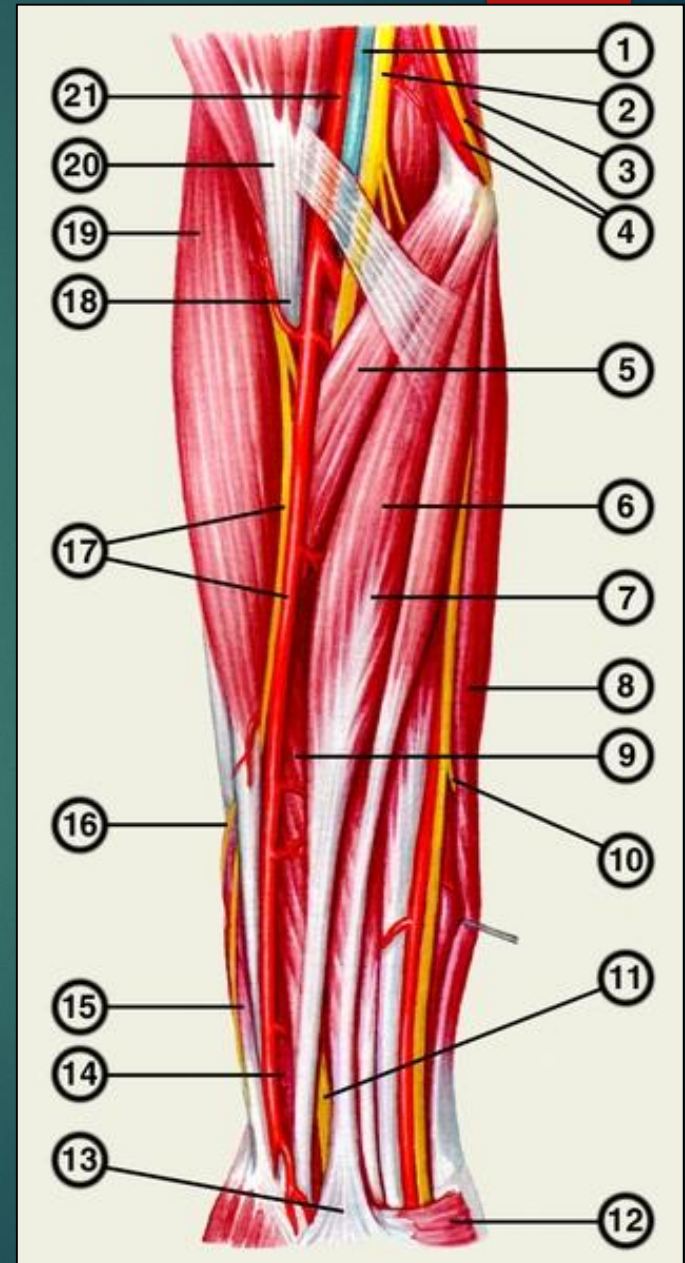




# Grooves between forearm muscles

## The lateral **radial groove (17)**

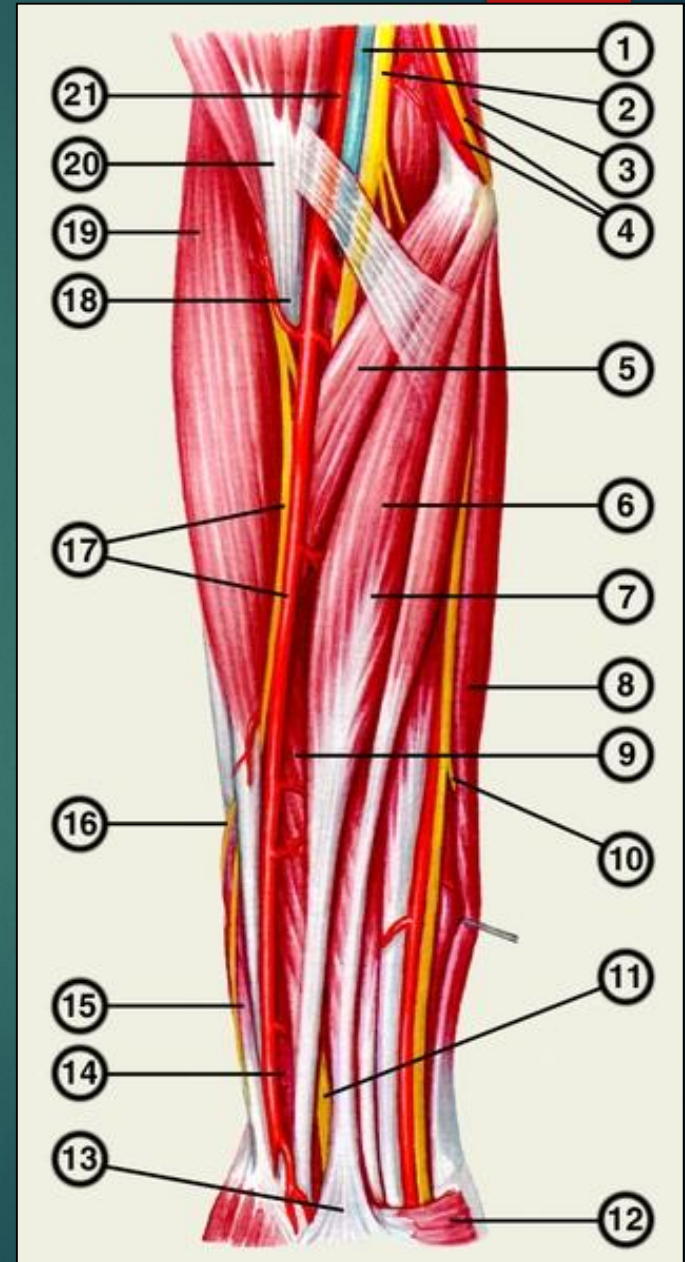
- lies between brachioradialis (laterally) and the flexor carpi radialis (medially).
- It transmits the radial nerve, artery and veins.



# Grooves between forearm muscles

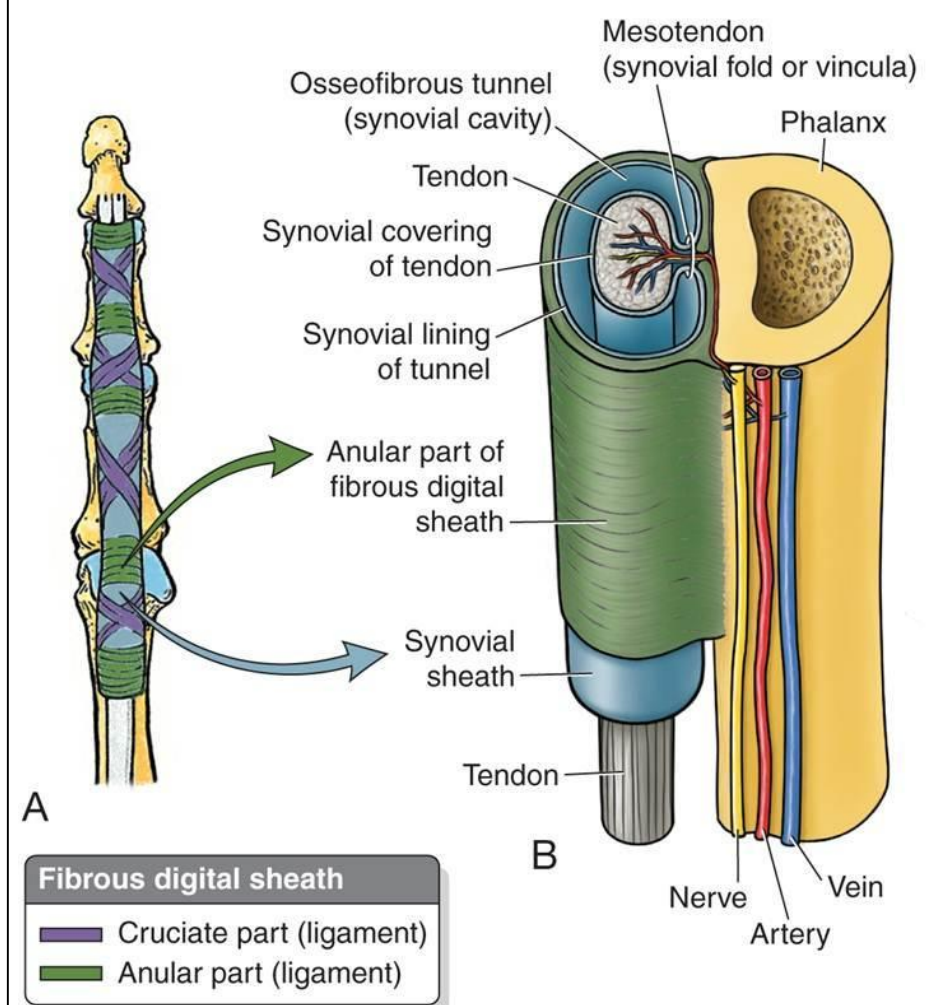
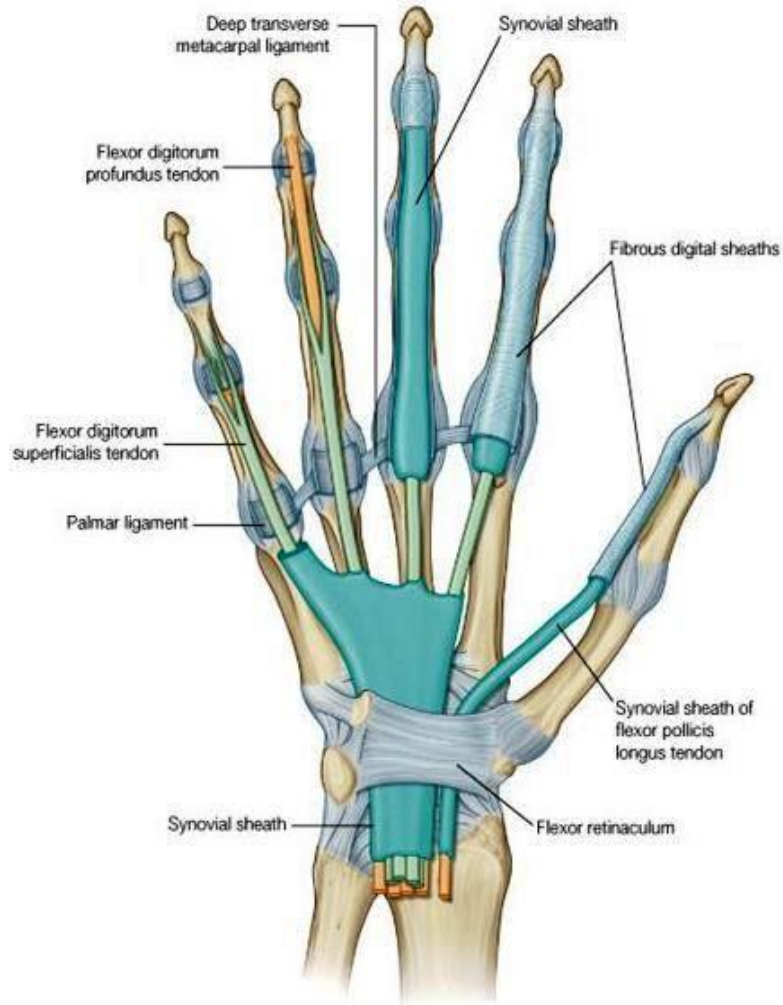
## The **median groove (11)**

- lies between the flexor carpi radialis (laterally) and the flexor digitorum superficialis (medially).
- It transmits the median nerve.

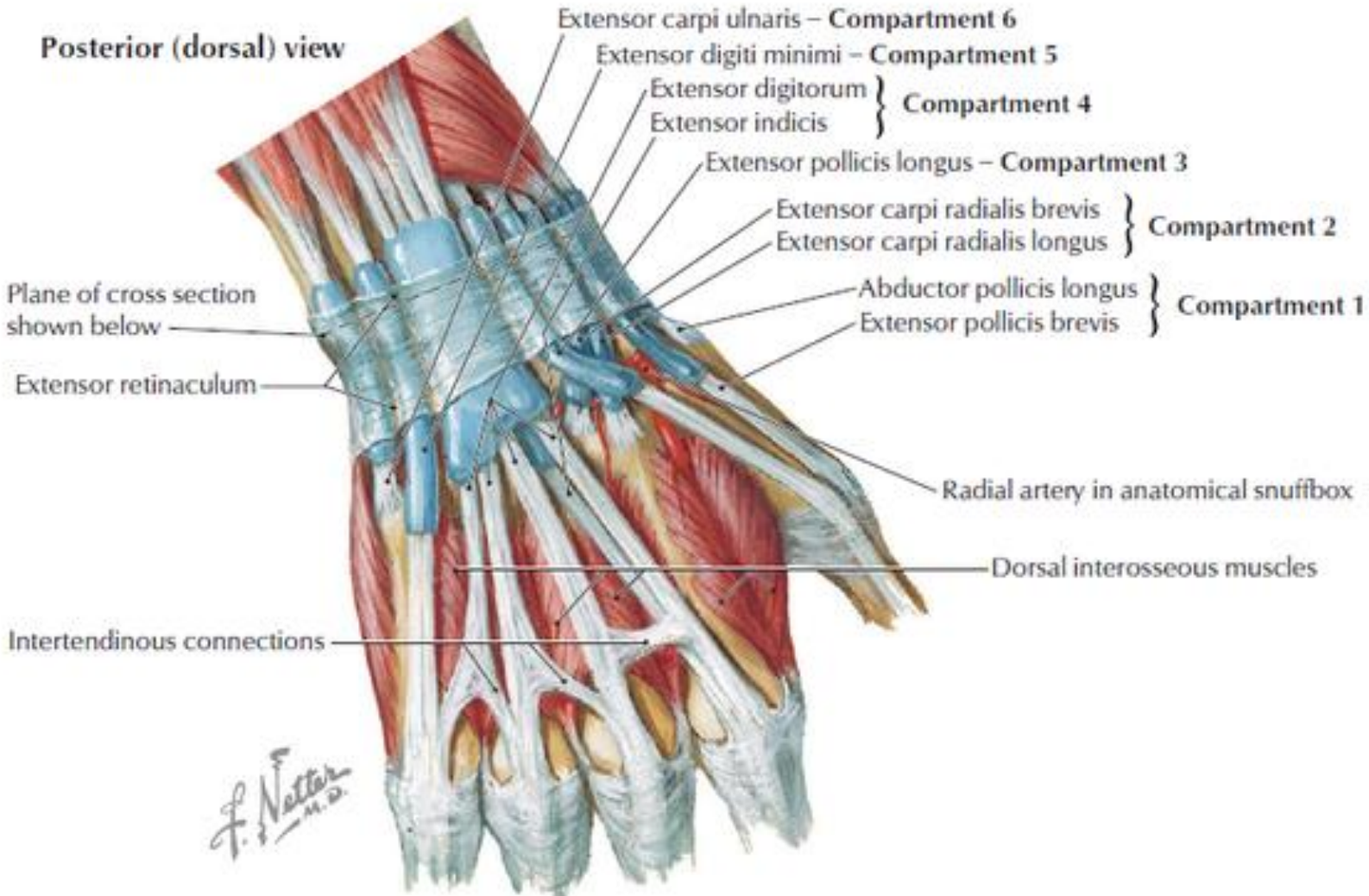




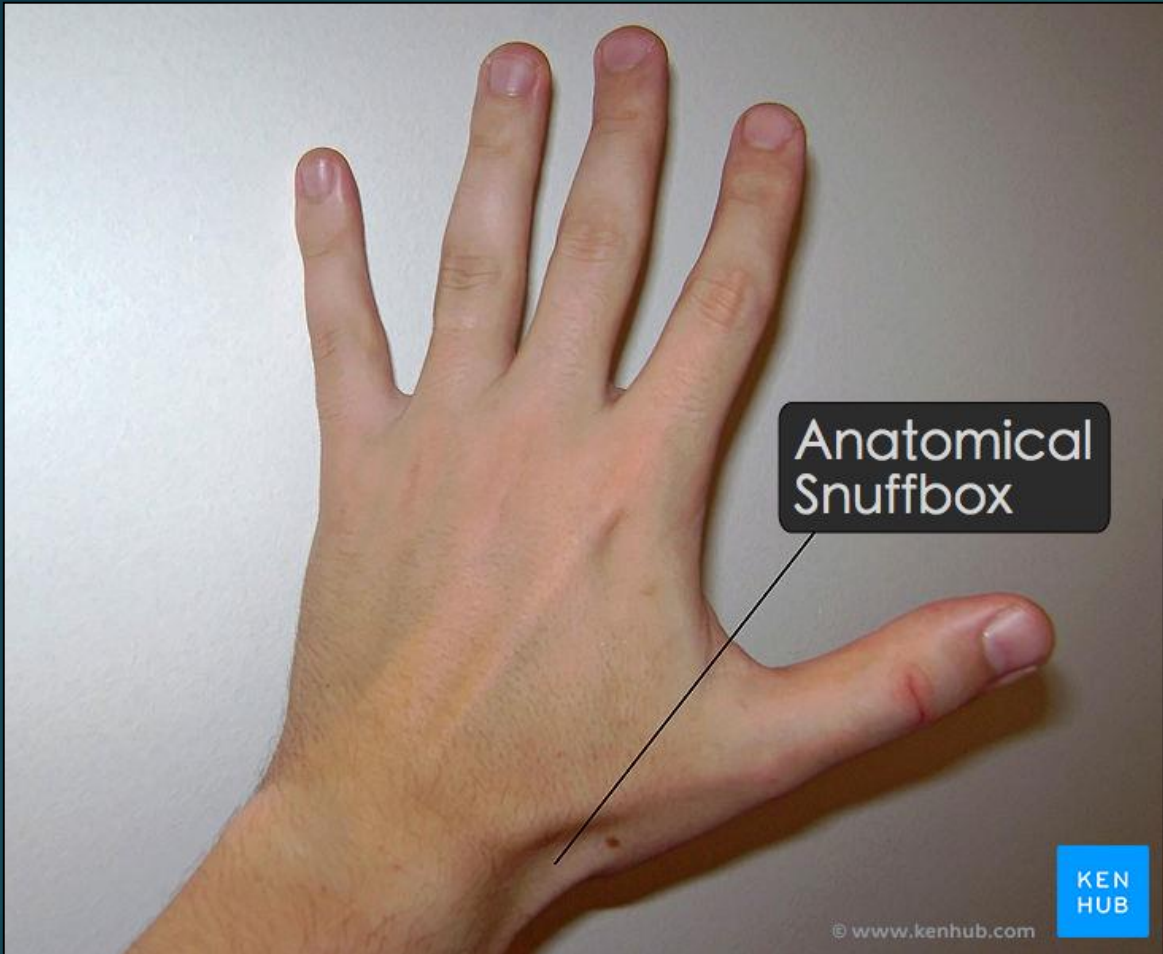
**Retinacula** are strong fascial bands in the regions of joints that prevent tendons from "bowstringing" away from the joint.



# Fasciae of the arm (dorsal surface)

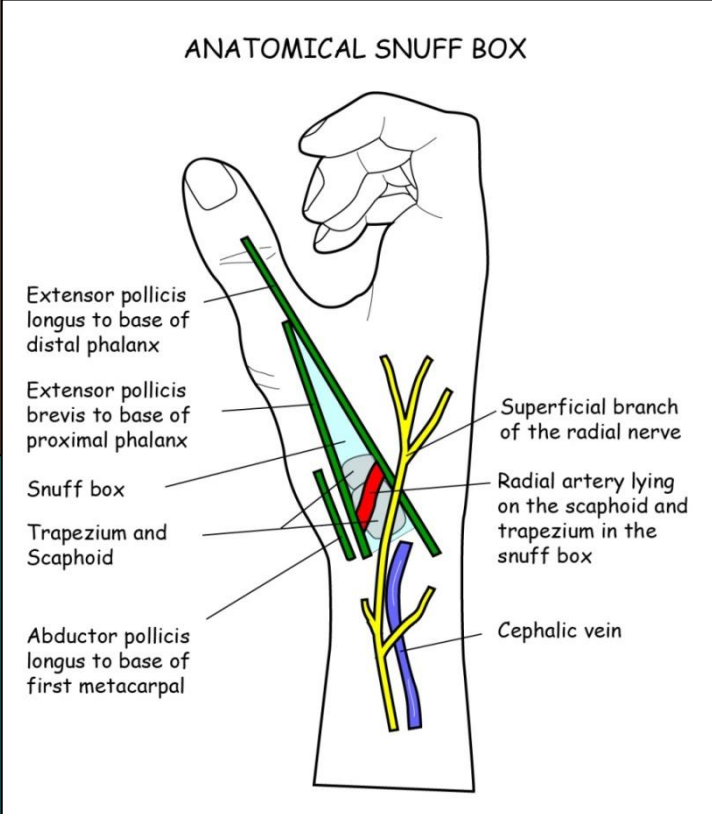






Anatomical Snuffbox

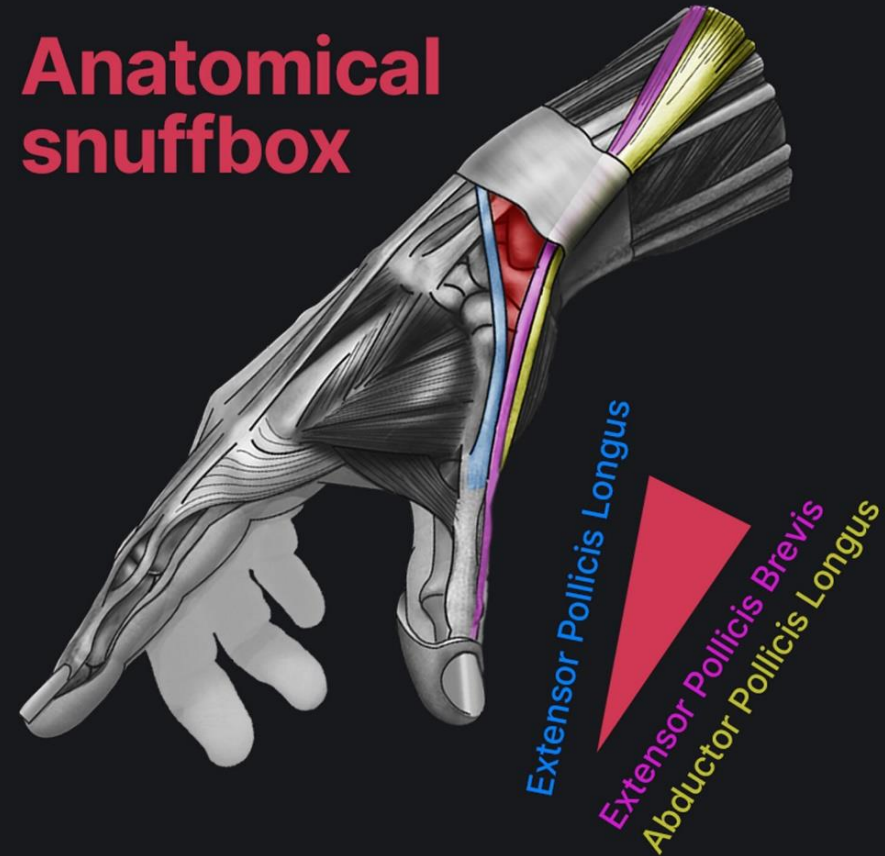
© www.kenhub.com



# Anatomical snuffbox

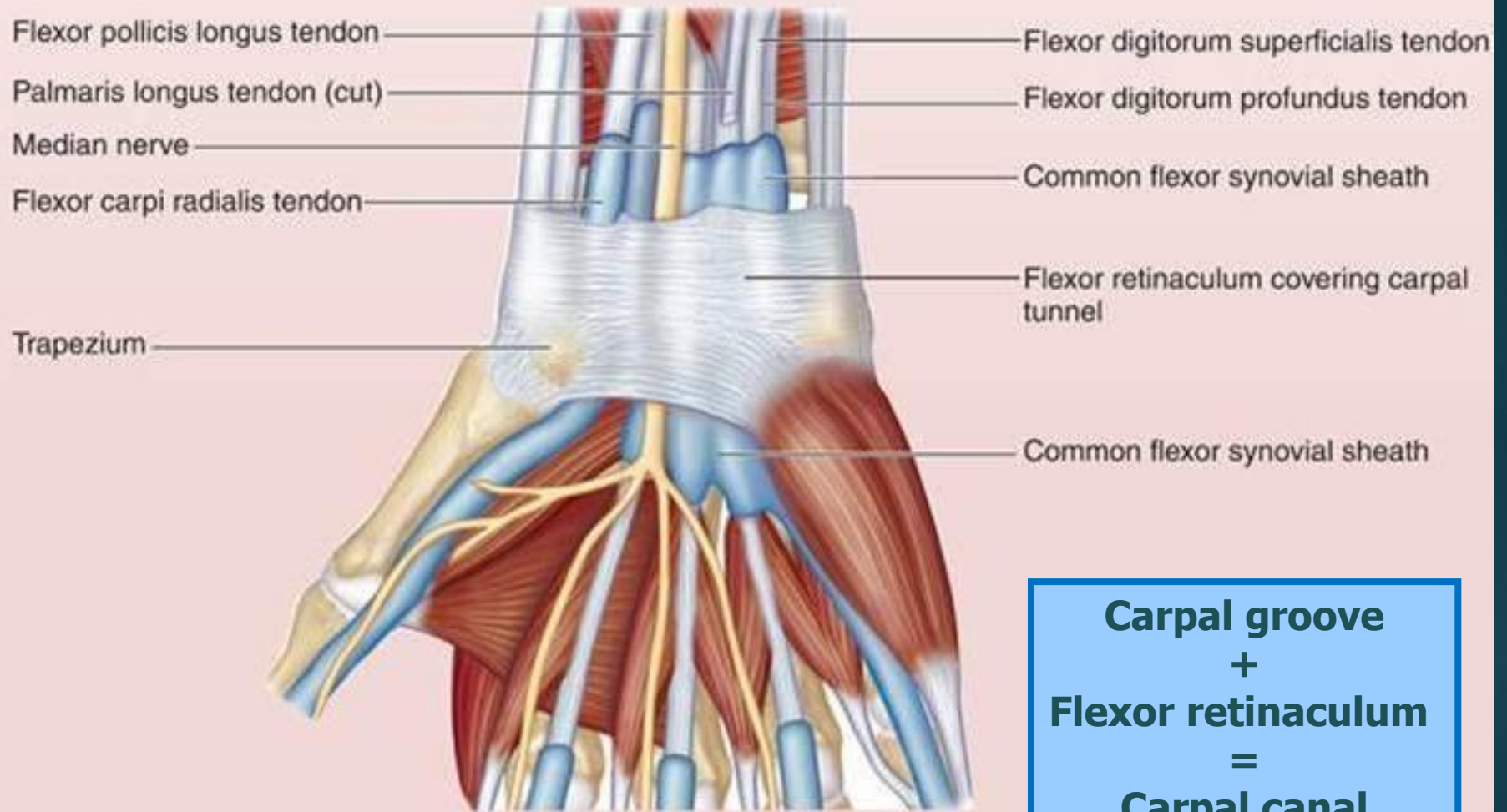


# Anatomical snuffbox

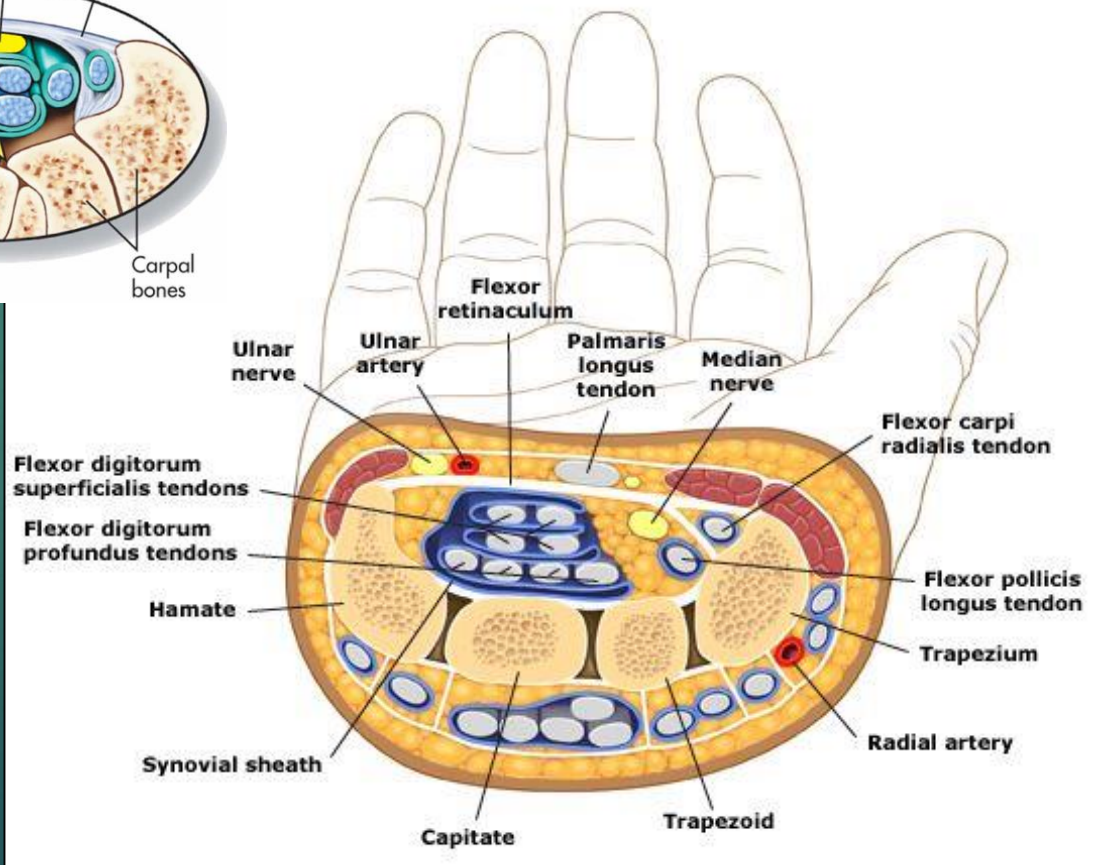
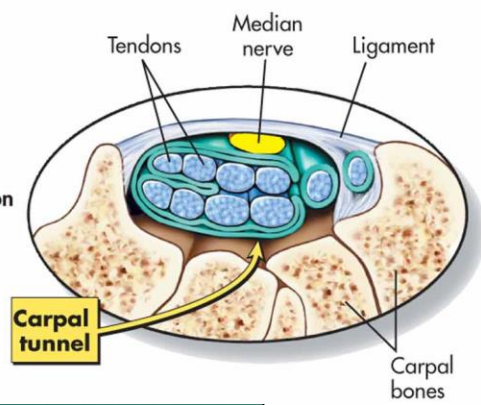
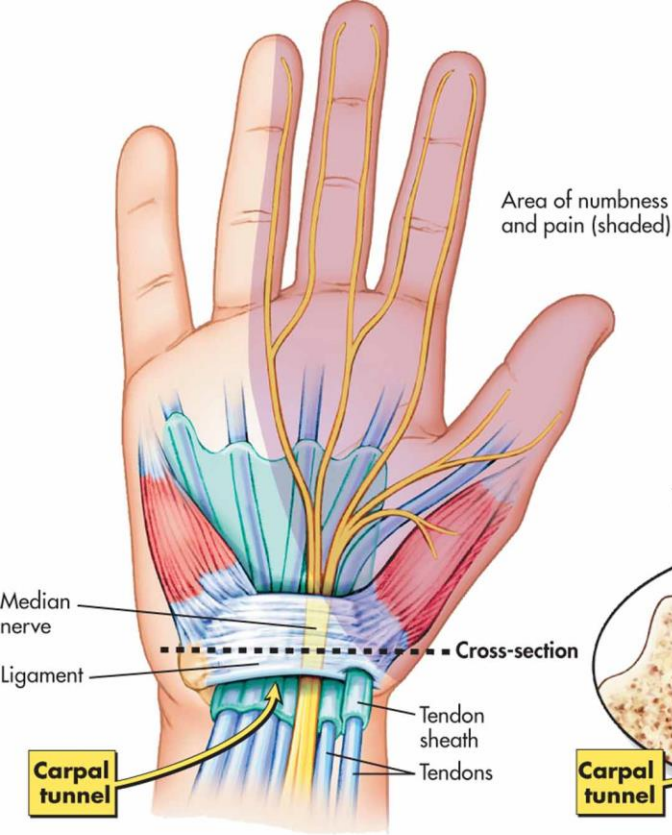




# Fasciae of the arm (palmar surface)

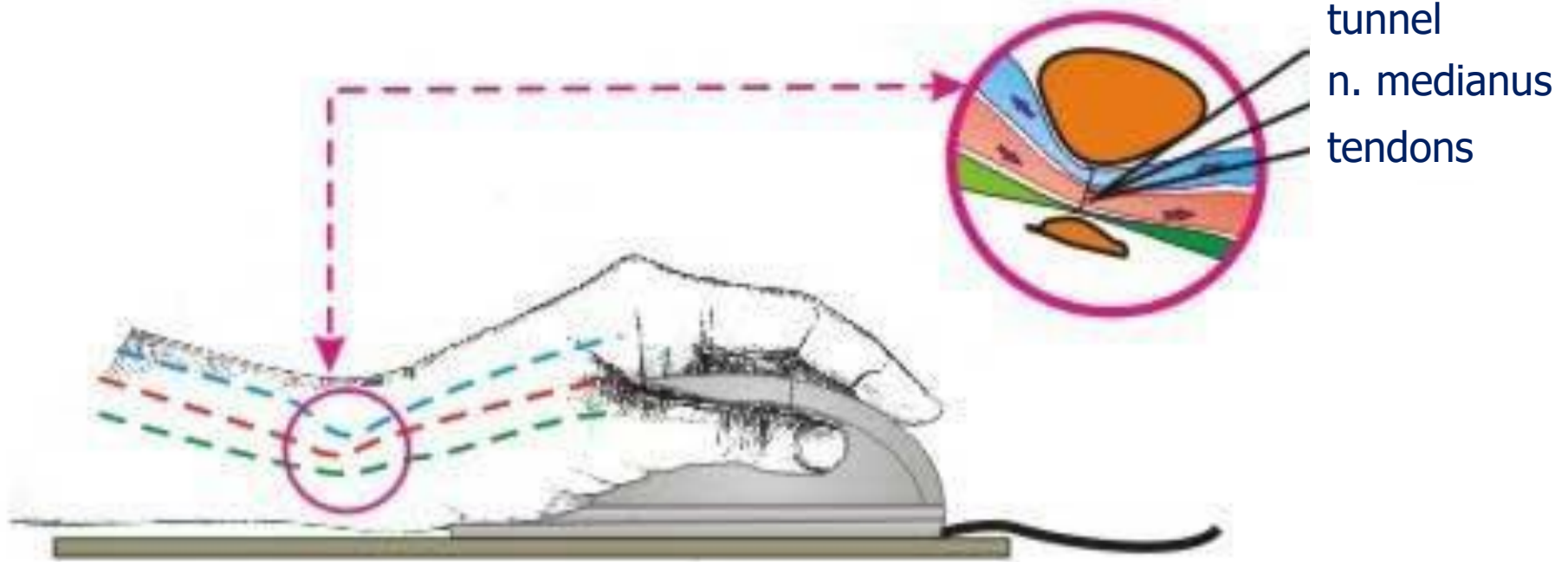


(a) Carpal tunnel, anterior view

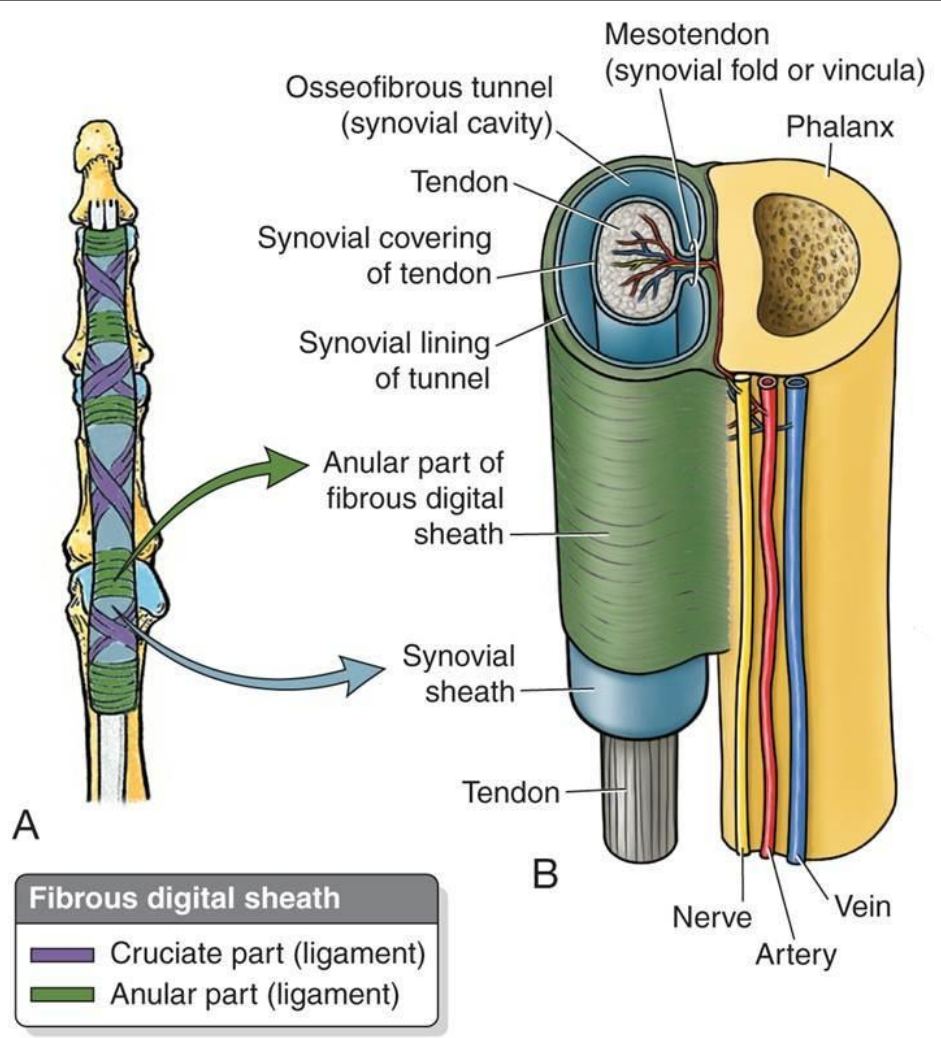
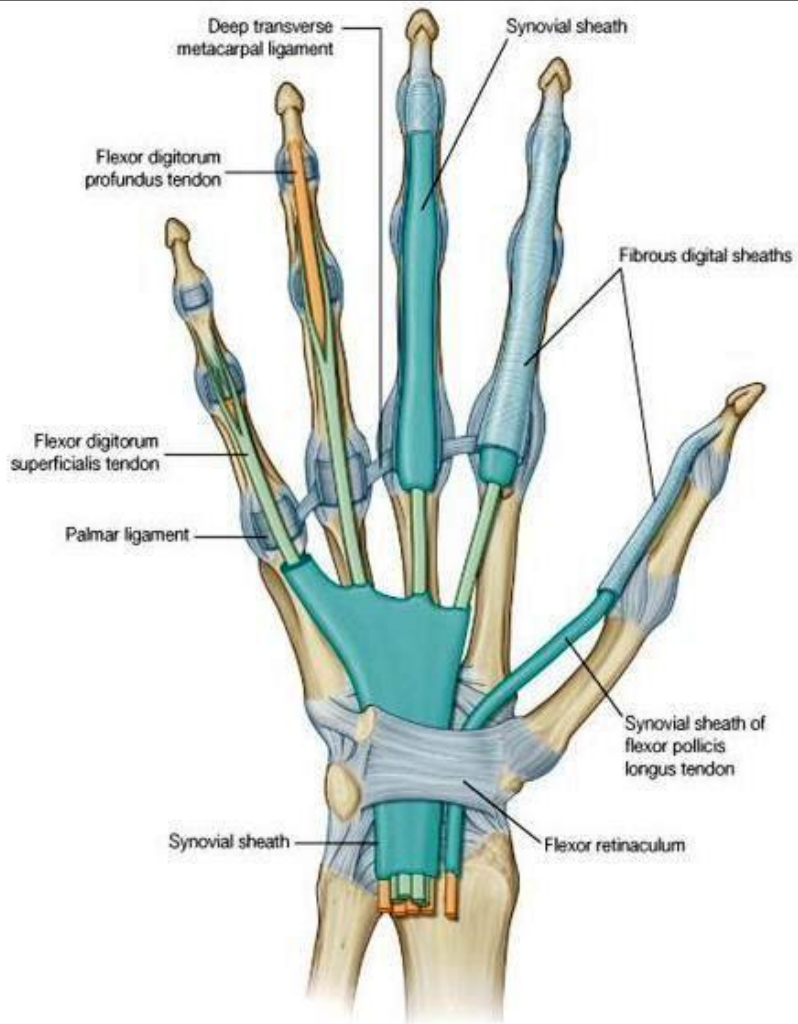




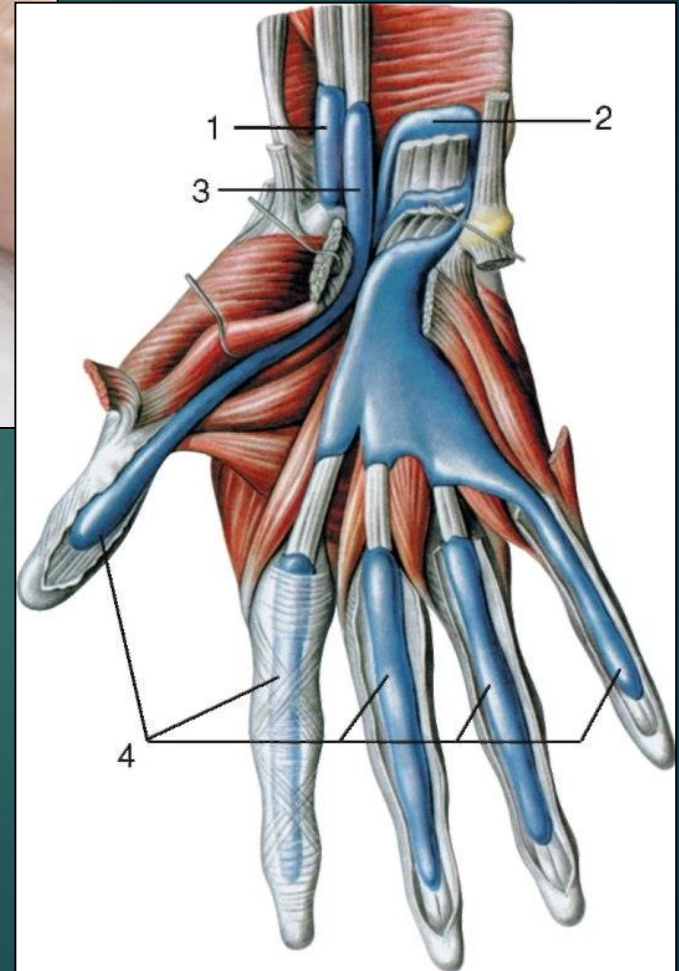
# Carpal tunnel syndrome



# Synovial sheaths (covering) of tendons



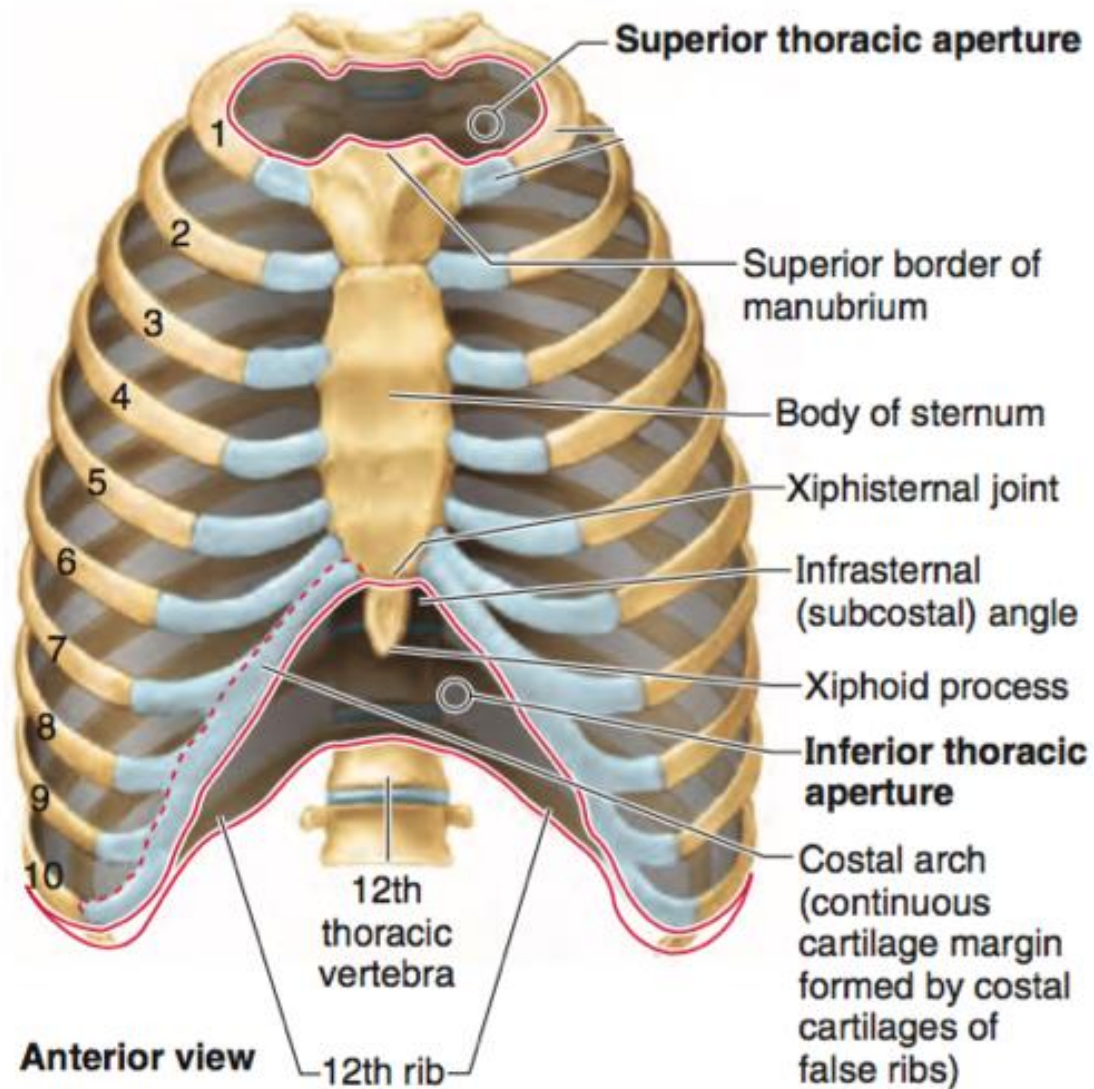




# Topography of Chest

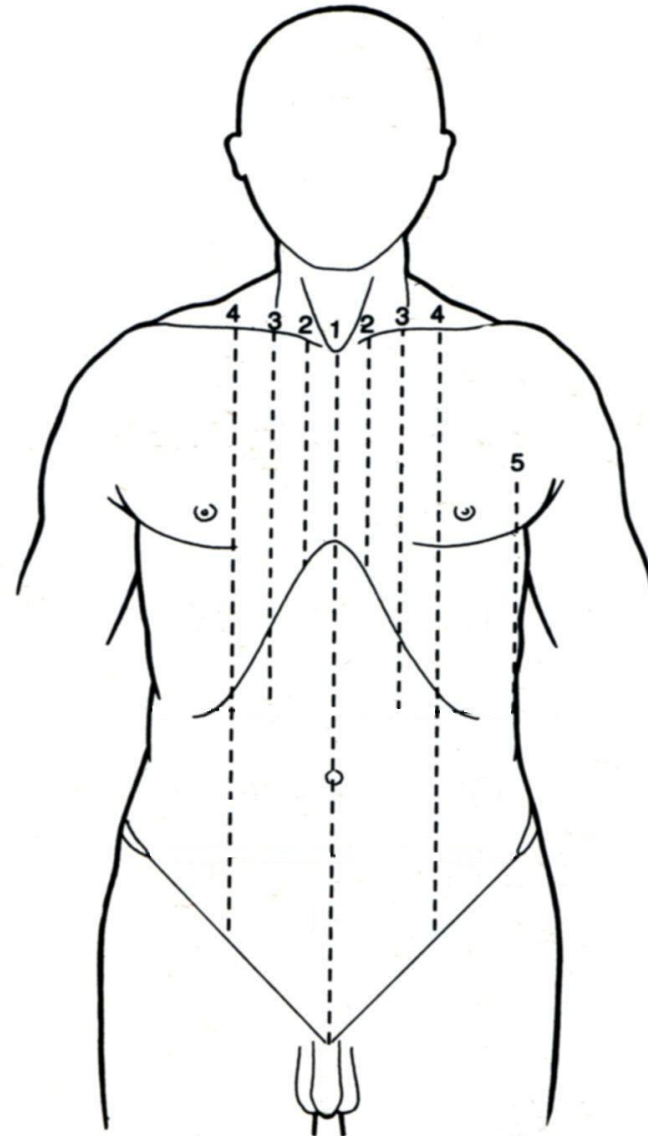


# Thorax. Borders.



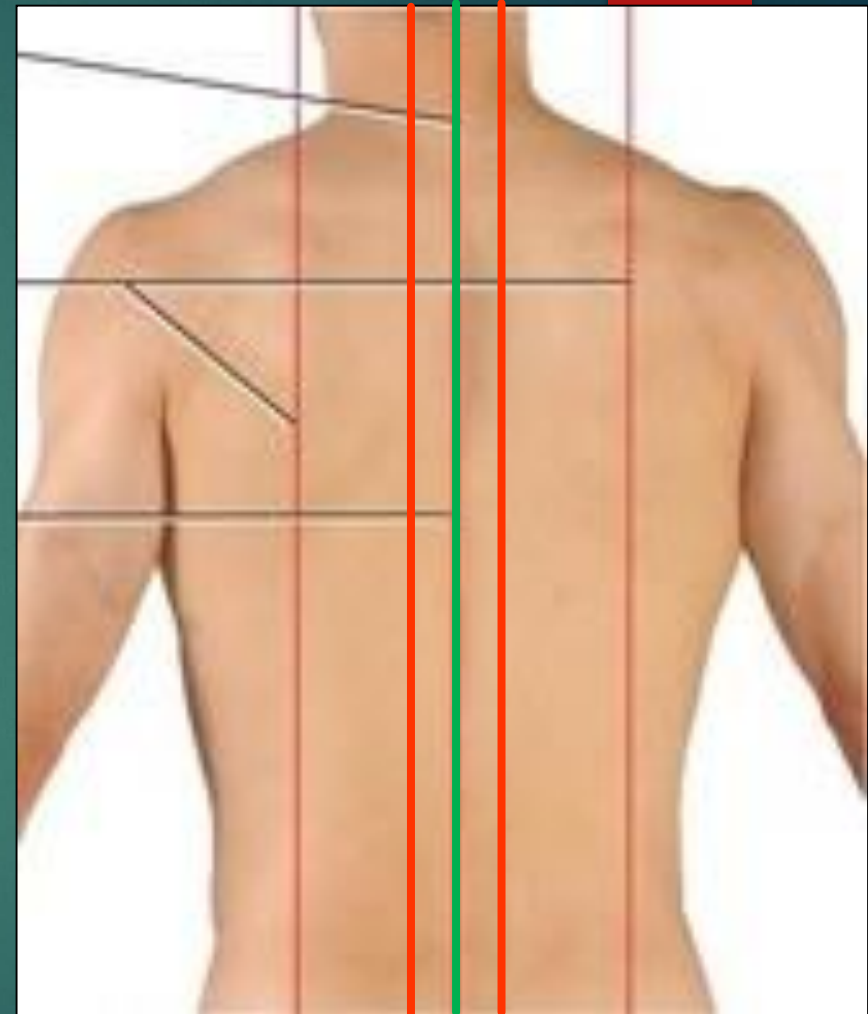
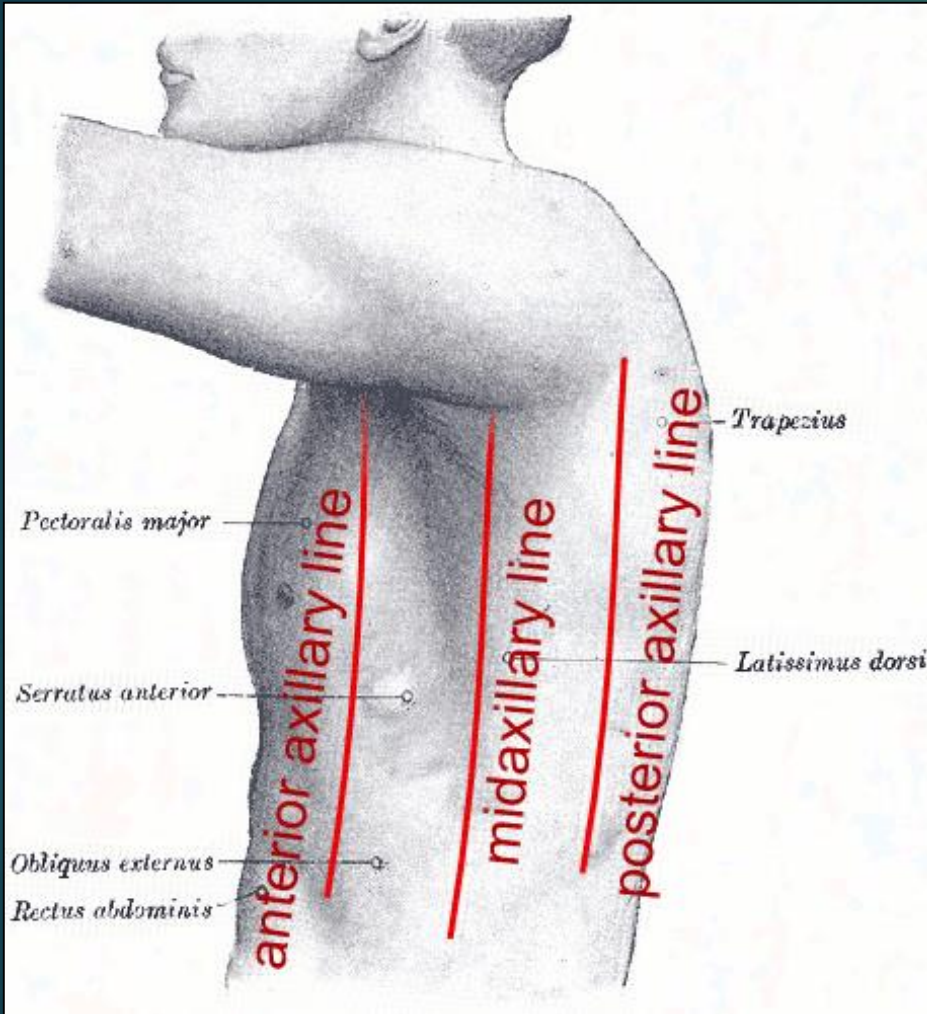
# Lines of thorax

- ▶ anterior median (1)
- ▶ sternalis (2)
- ▶ parasternalis (3)
- ▶ medioclavicularias (4)
- ▶ anterior, median, posterior axial
- ▶ scapularis
- ▶ paravertebralis
- ▶ posterior median





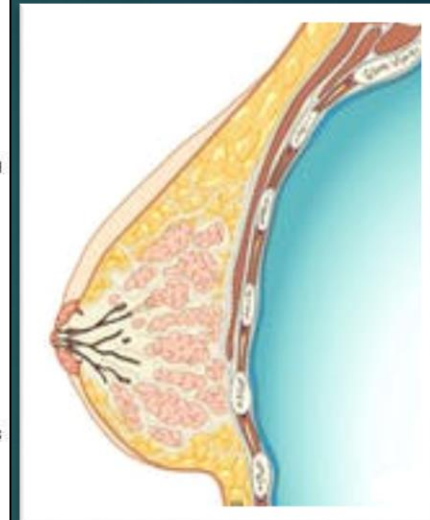
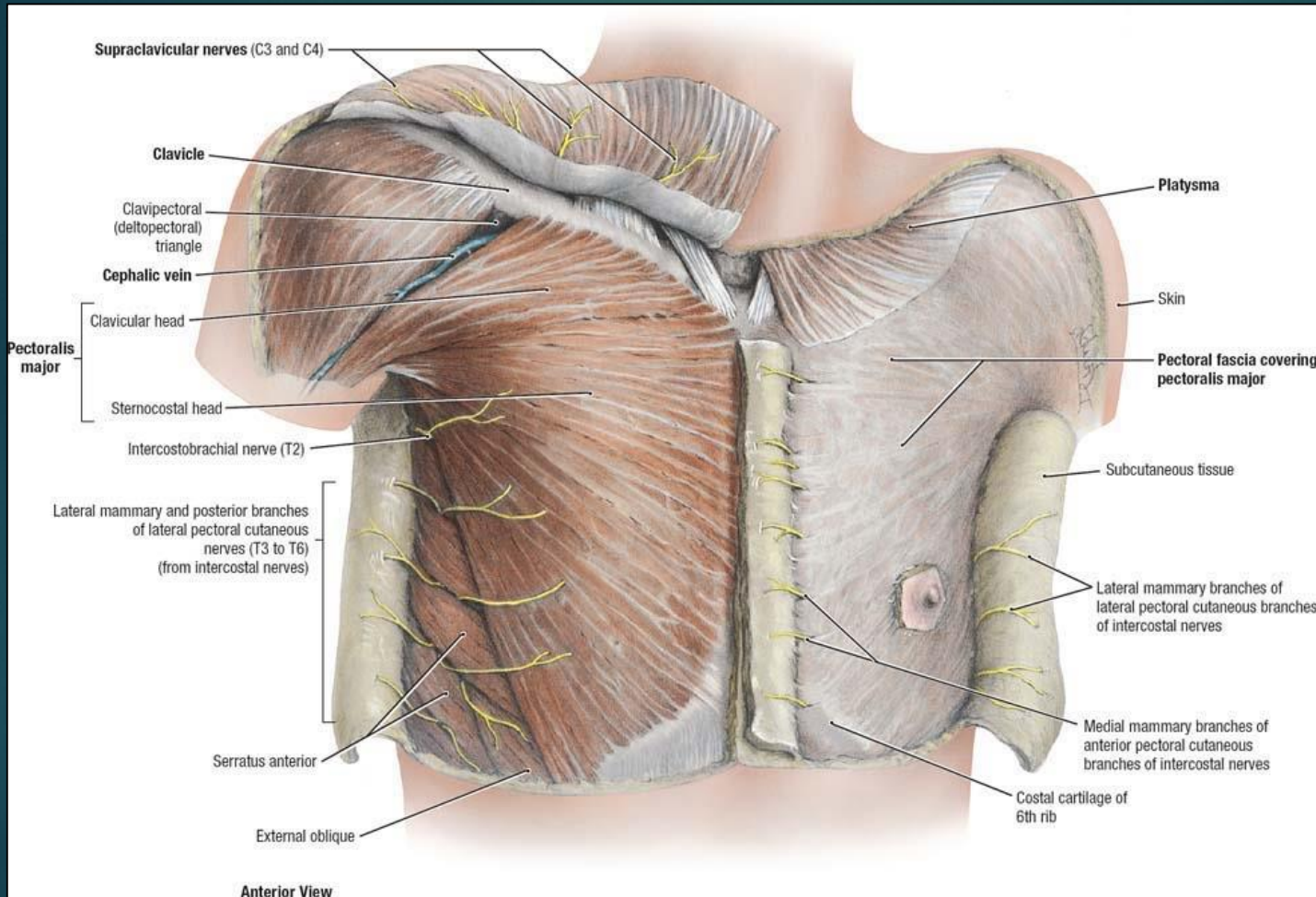
# Lines of thorax



paravertebralis

posterior median

# Fasciae of thorax



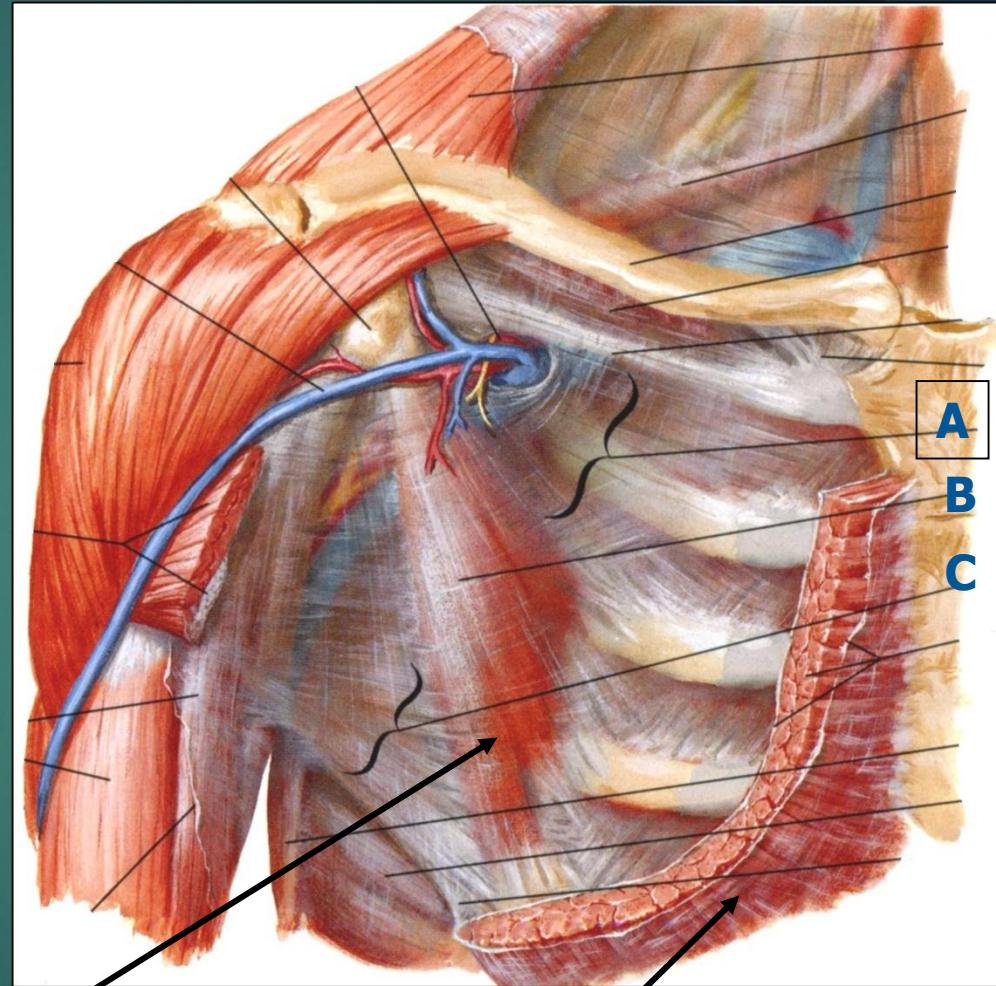
- The superficial fascia
- The pectoral fascia

- The thoracic fascia
- The endothoracic fascia



# Topography of thorax

- ▶ A - Clavipectoral ▲
- ▶ B - Pectoral ▲
- ▶ C - Subpectoral ▲



m. pectoralis minor

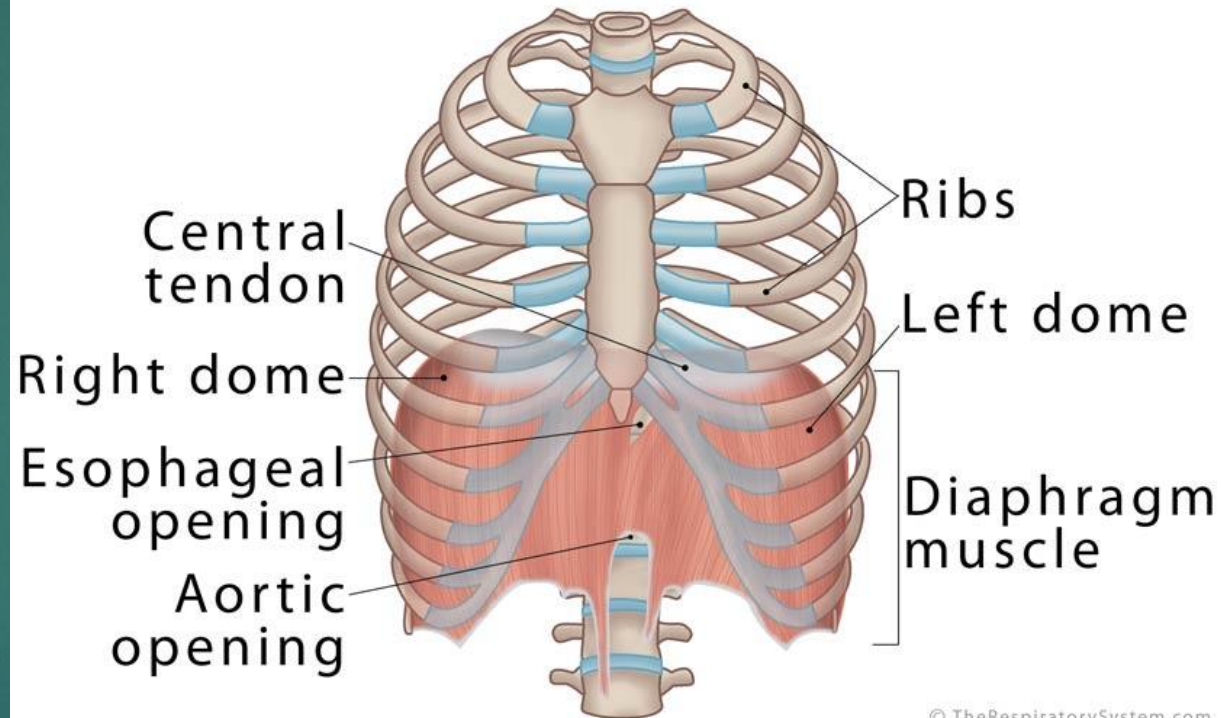
m. pectoralis major



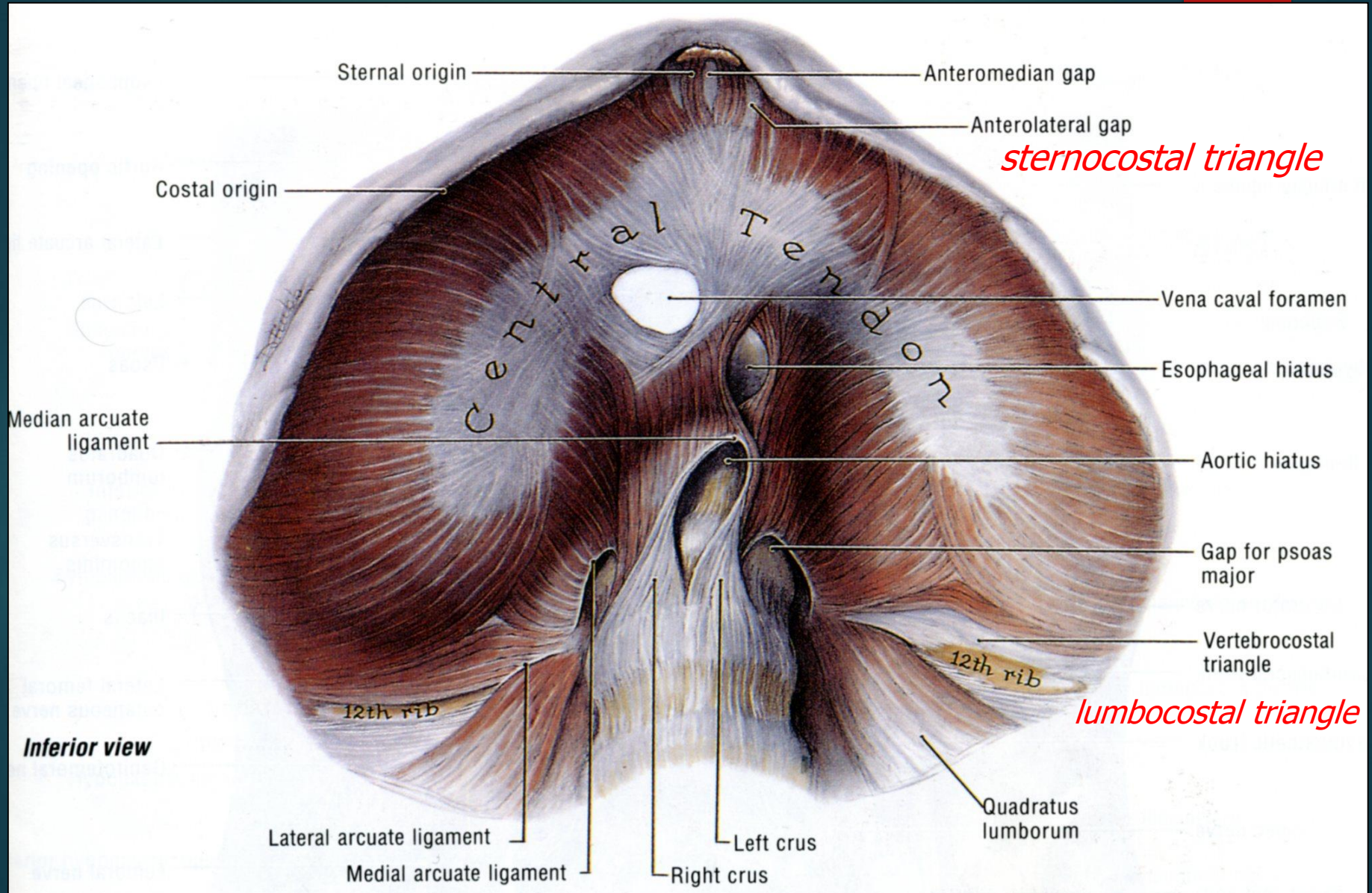
# Diaphragm

- ▶ Is unpaired thin dome-shaped muscle which is convex upward.
- ▶ It is the essential respiratory muscle
- ▶ It separates the thoracic cavity from the abdominal cavity, forming the bottom of the thoracic cavity and the roof of the abdominal cavity.

## Diaphragm Location

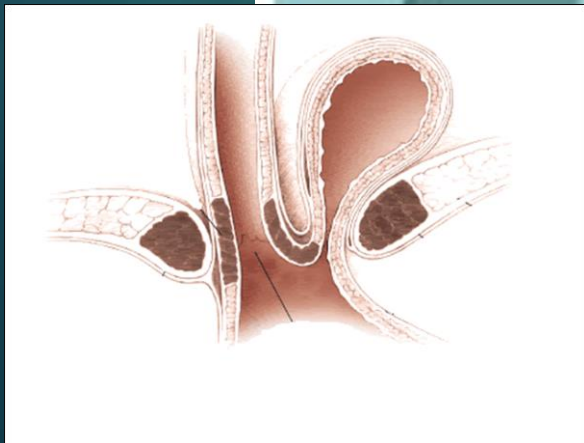
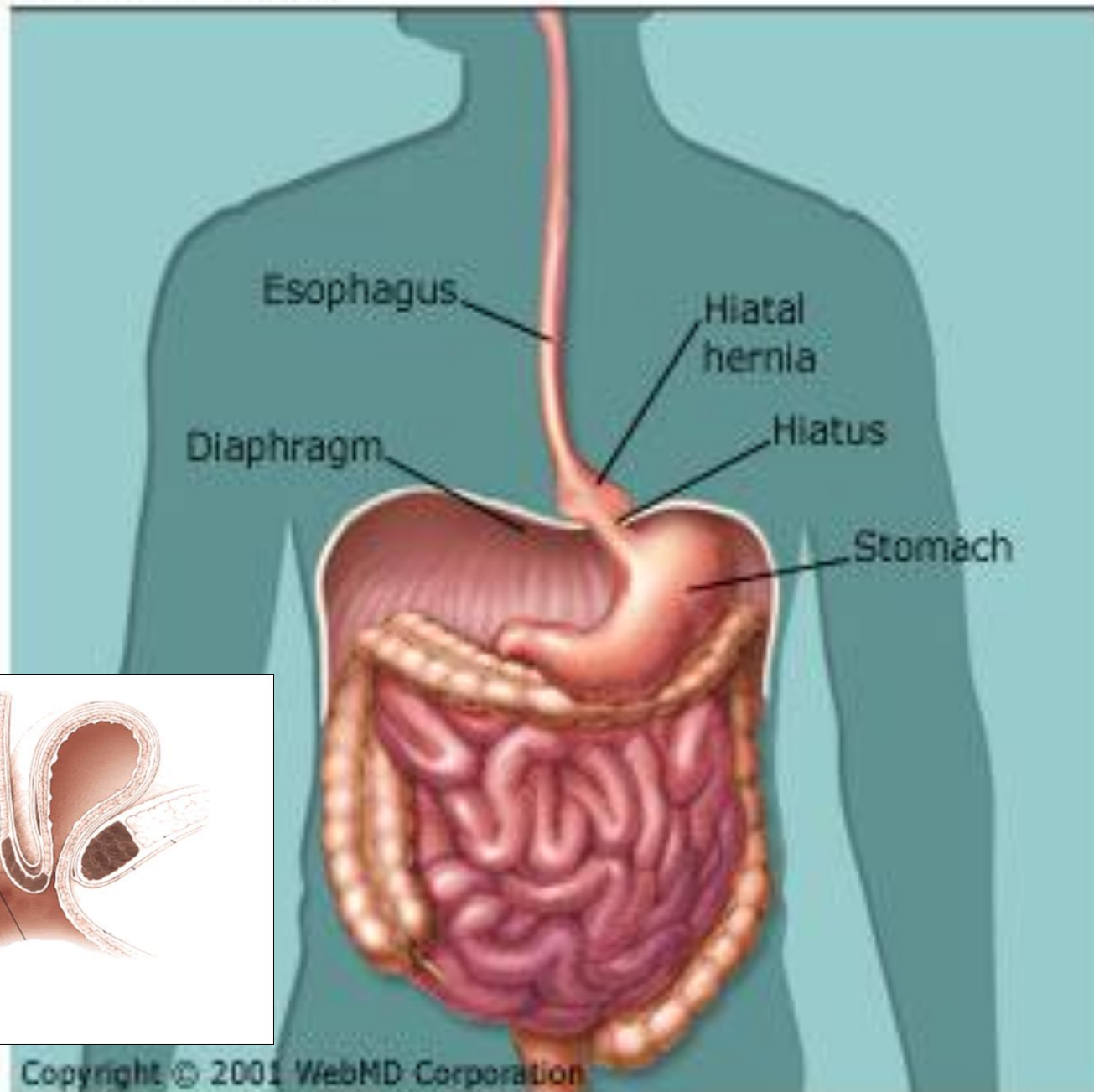


# Diaphragm





# Hiatal Hernia



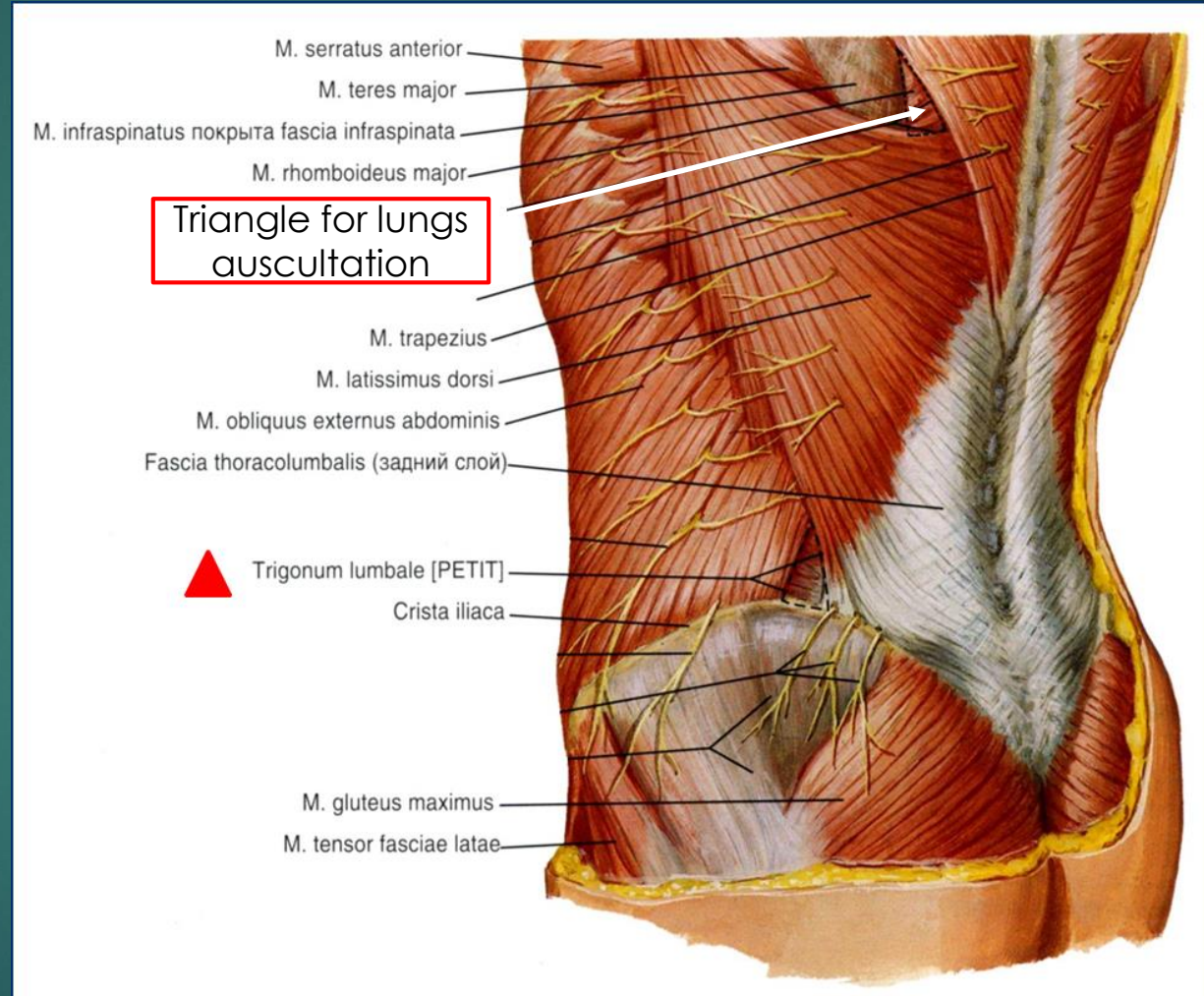


# Topography of Back

# Triangles of back

## Triangle for lungs auscultation

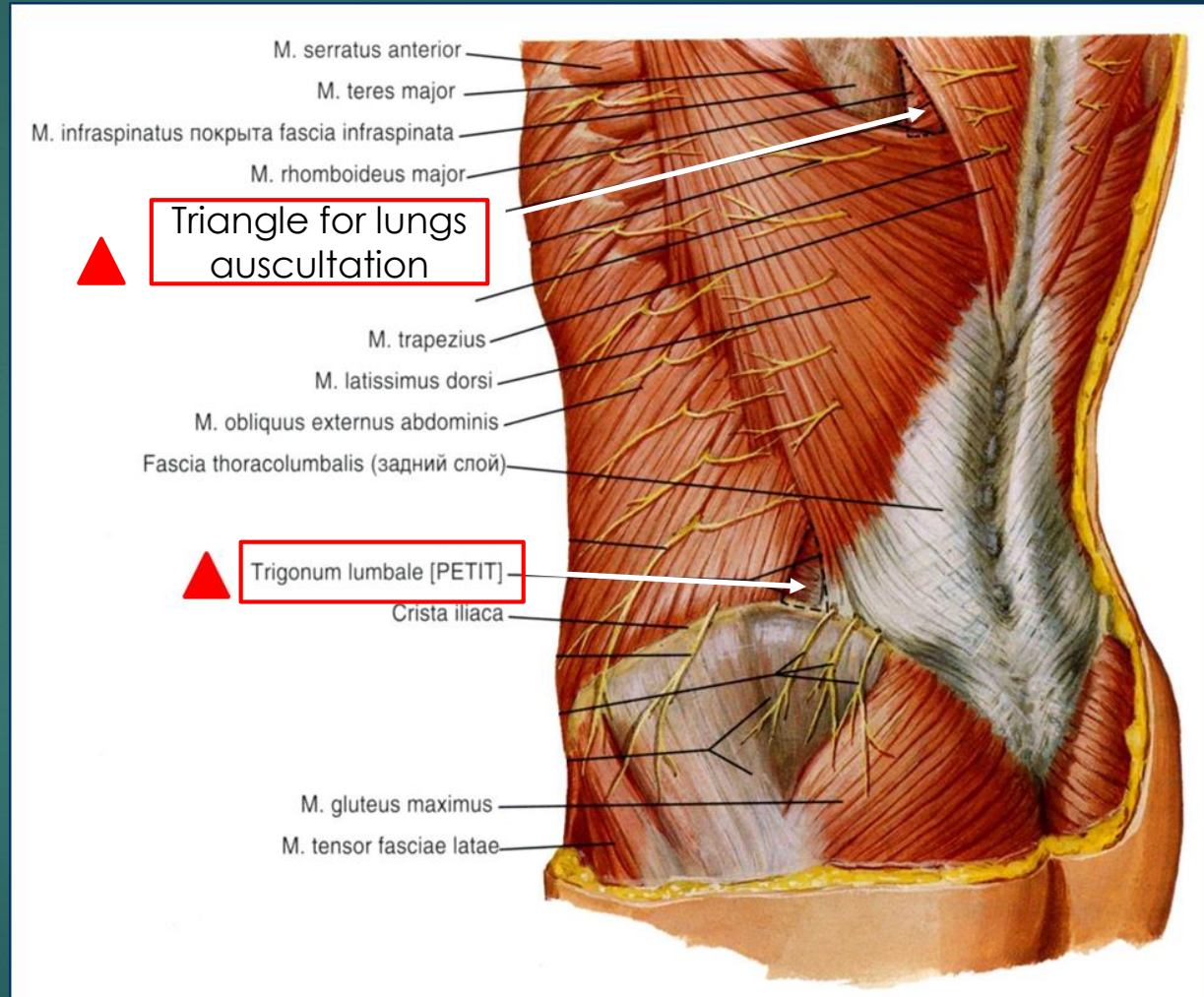
- **Inferior** – superior border of m.latissimus dorsi
- **Medial** – inferior border of m.trapezius
- **Lateral** – posterior border of m.infraspinatus



# Triangles of back

## Trigonum lumbale (Petit trigonum)

- **Inferior** – crista iliaca
- **Medial** – anterior border of m. latissimus dorsi
- **Lateral** – posterior border of m. obliquus externus abdominis







# Topography of Abdomen

# Abdomen. Borders.

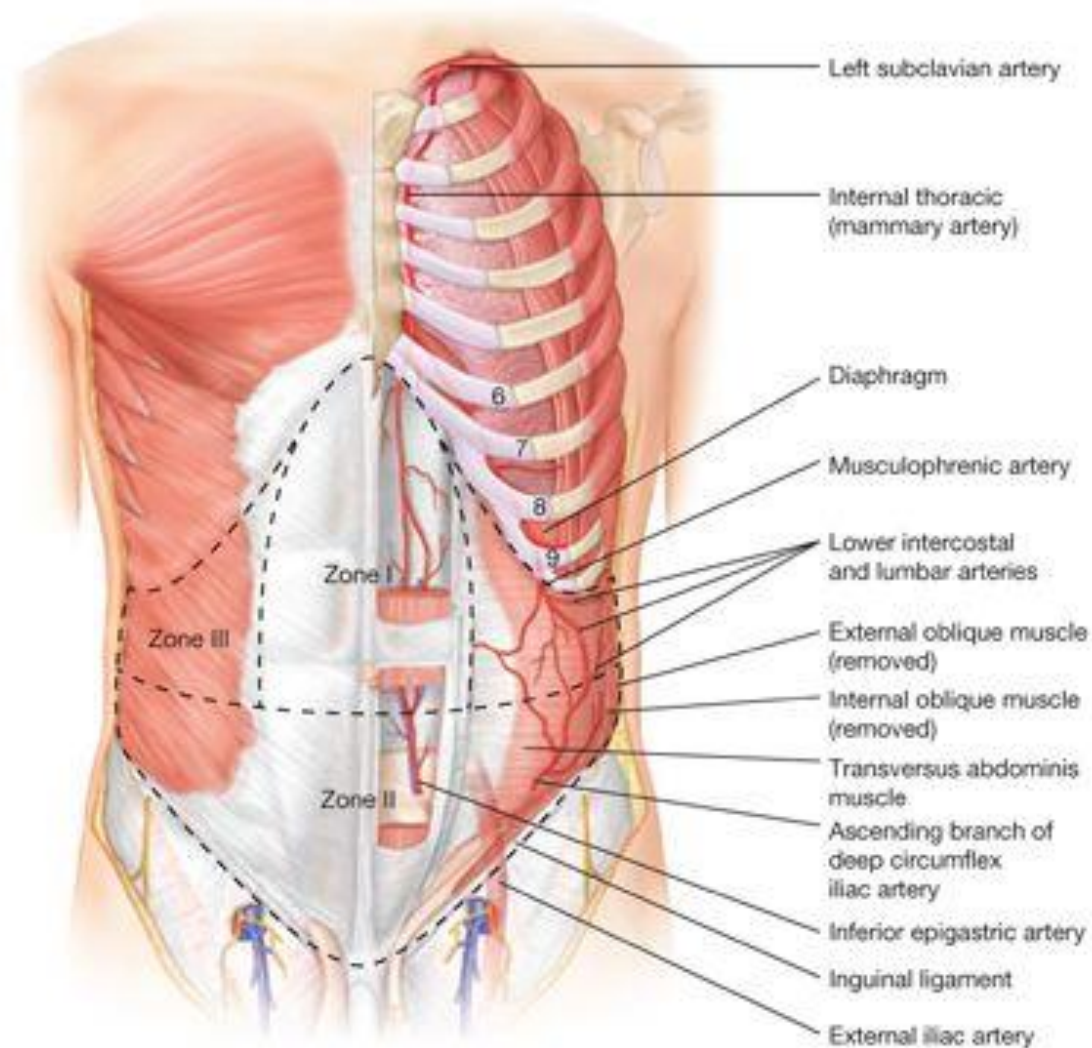
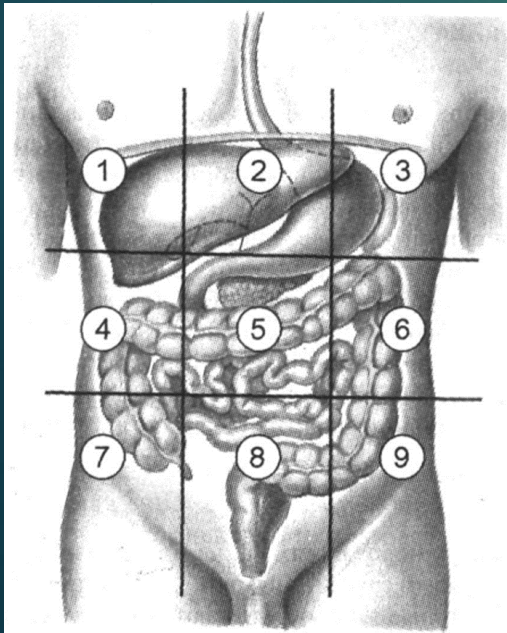


FIG 2 • Blood supply to the anterior abdominal wall. Note location of the medial row of perforators off the inferior epigastric providing blood supply to the medial aspect of the skin.

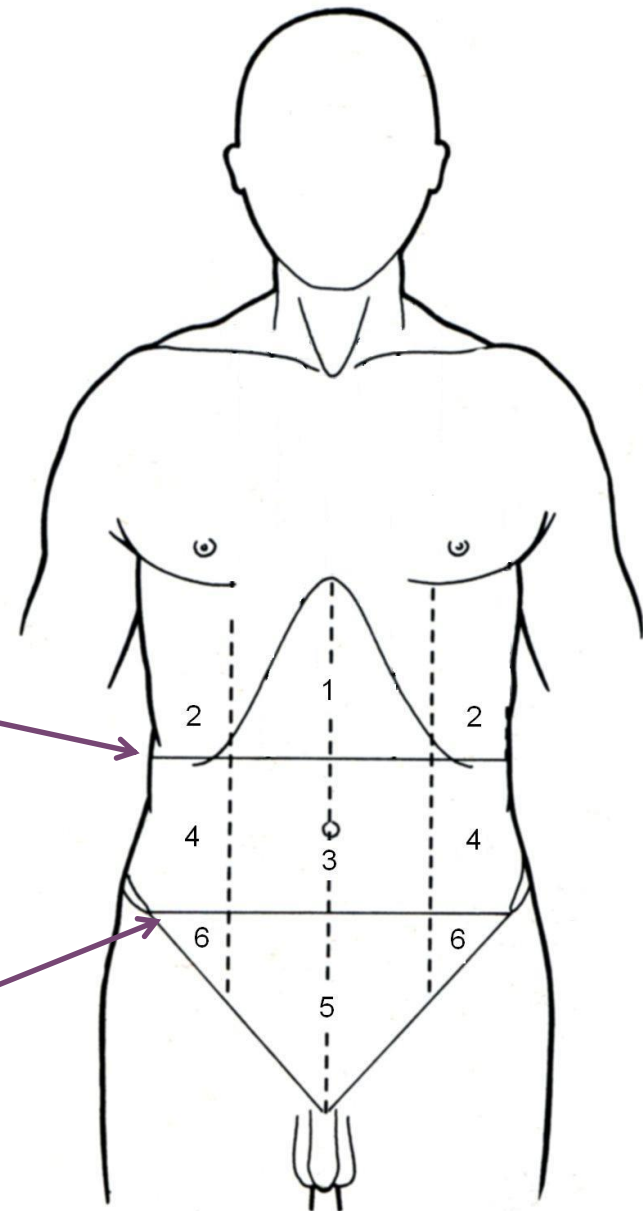
# Regions of the anterior abdominal wall

- ▶ epigastrium
- ▶ mesogastrium
- ▶ hypogastrium



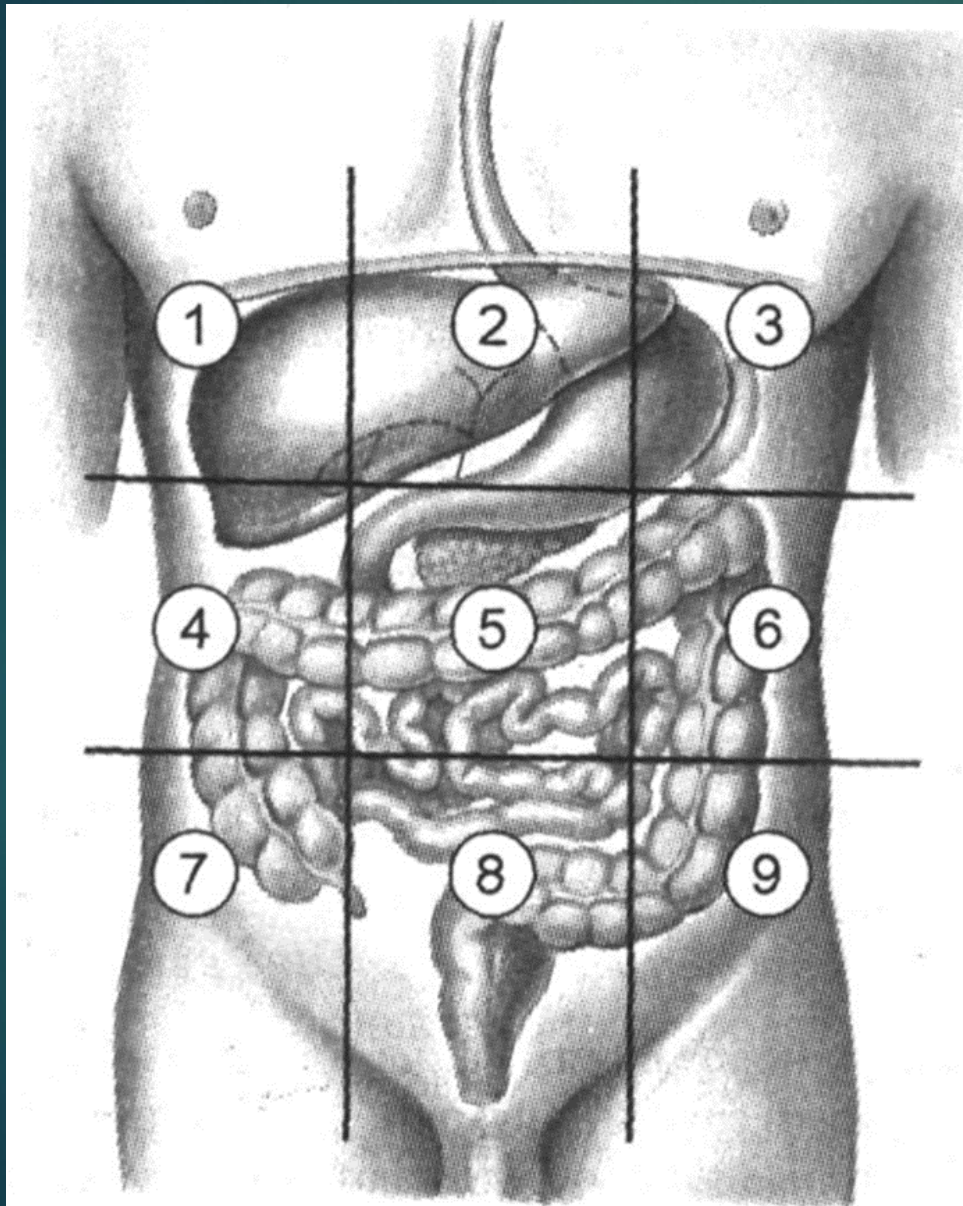
Linea bicostarum  
(X costae)

Linea bispinarum  
(spina iliaca  
anterior superior)





# Regions of the anterior abdominal wall



▶ epigastrium

▶ mesogastrium

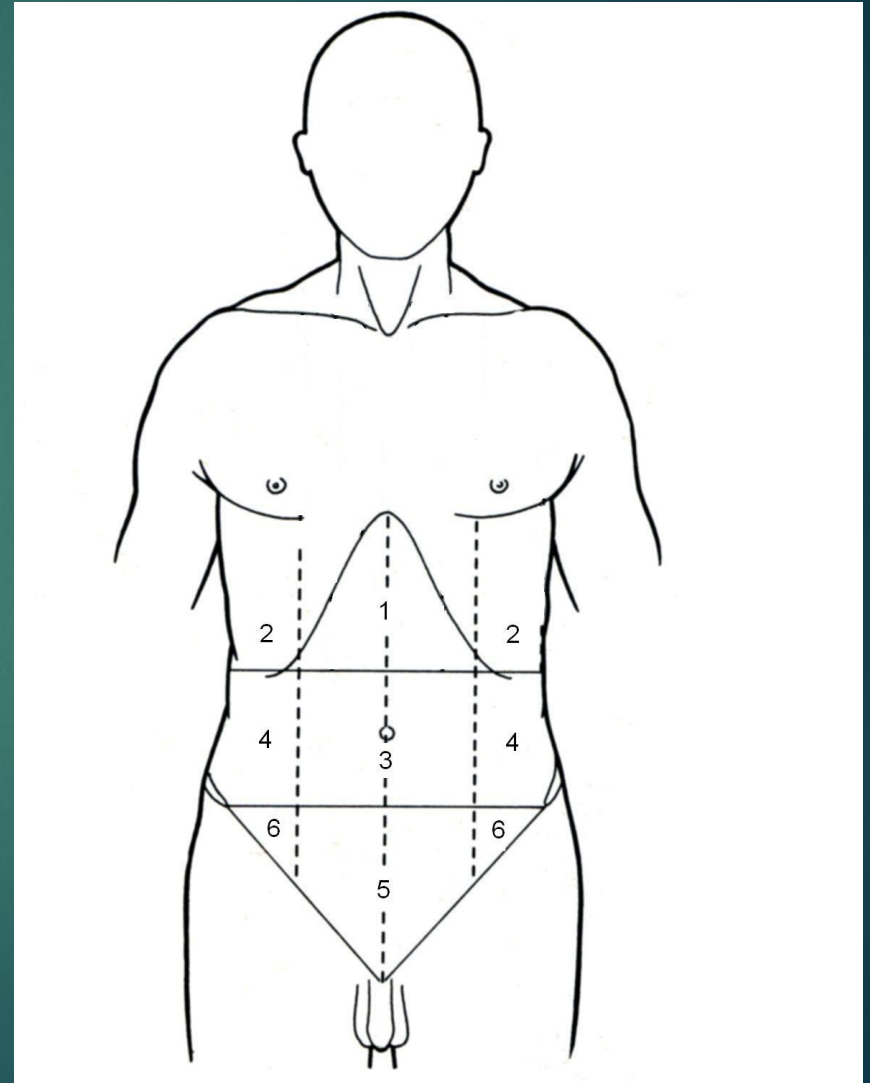
▶ hypogastrium

# Epigastrium

- ▶ right hypochondric
- ▶ left hypochondric
- ▶ epigastric

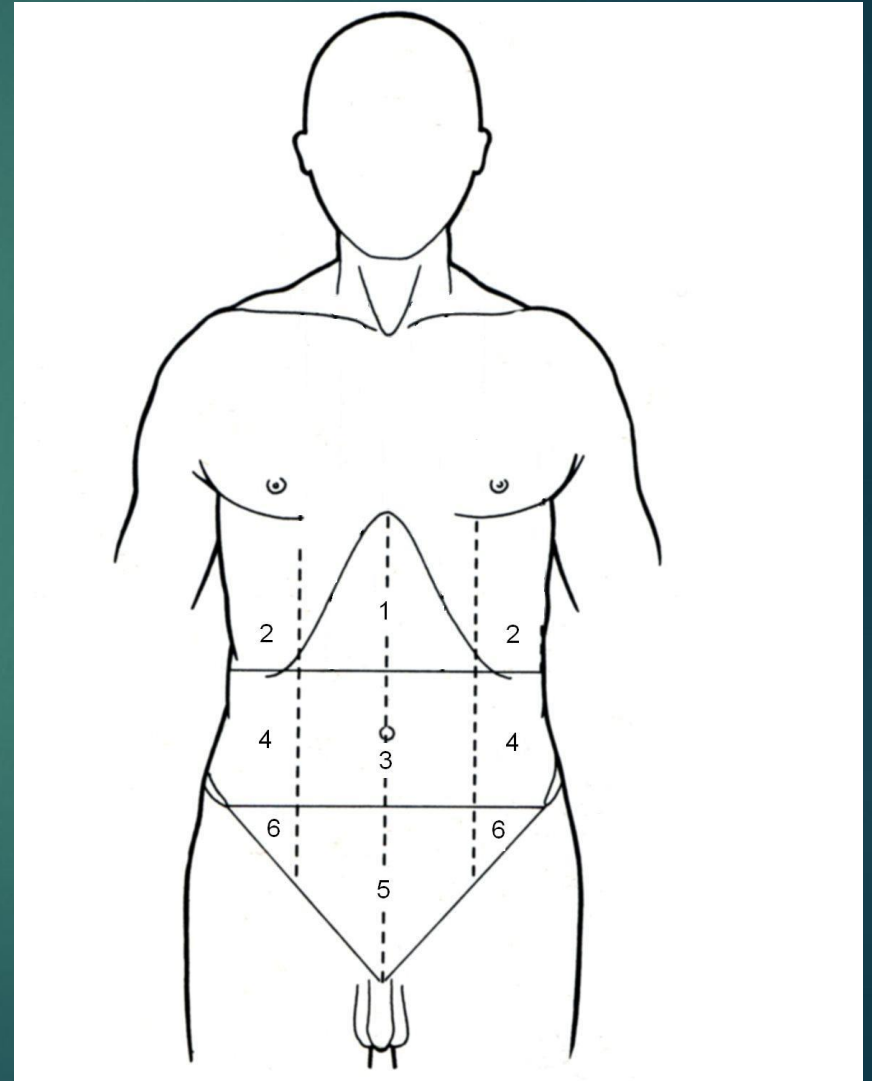
## Vertical lines:

- midclavicular line (mammary line)
- correspond to the lateral borders of m.rectus abdominis



# Mesogastrium

- ▶ umbilical
- ▶ right lateral
- ▶ left lateral





# Hypogastrium

- ▶ pubic
- ▶ right inguinal
- ▶ left inguinal

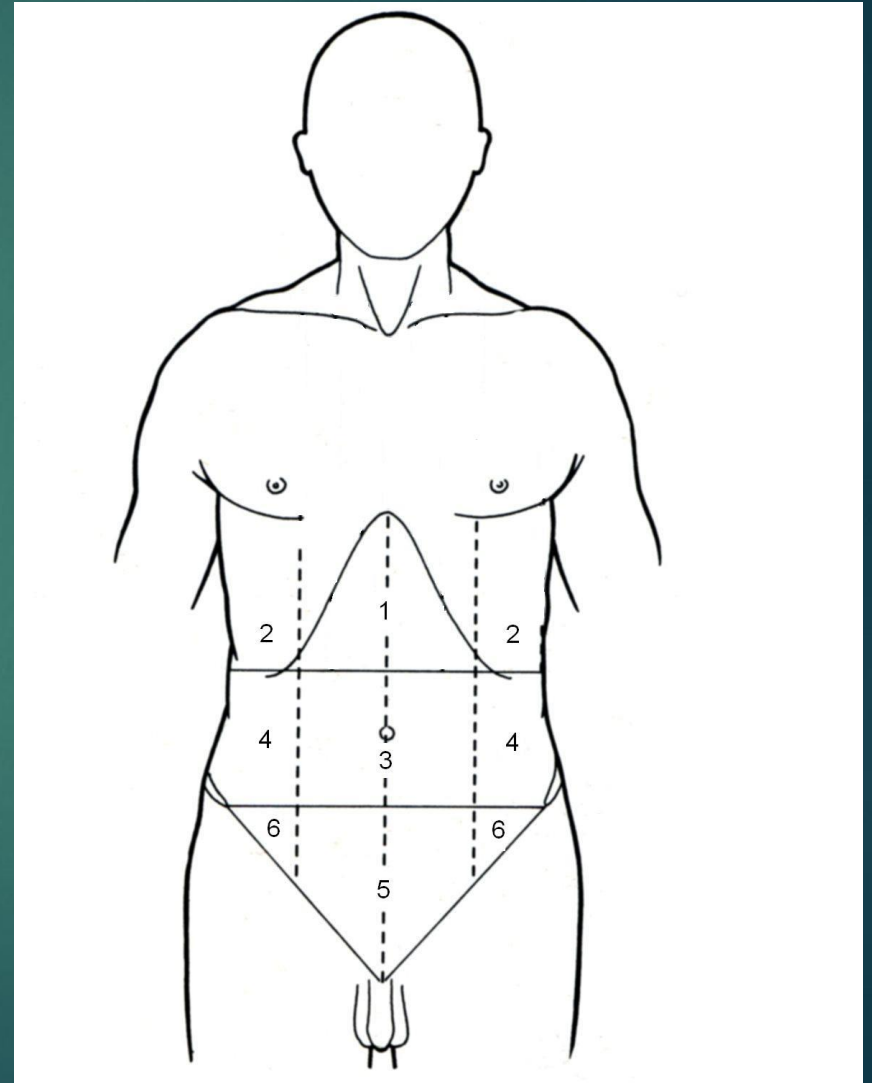
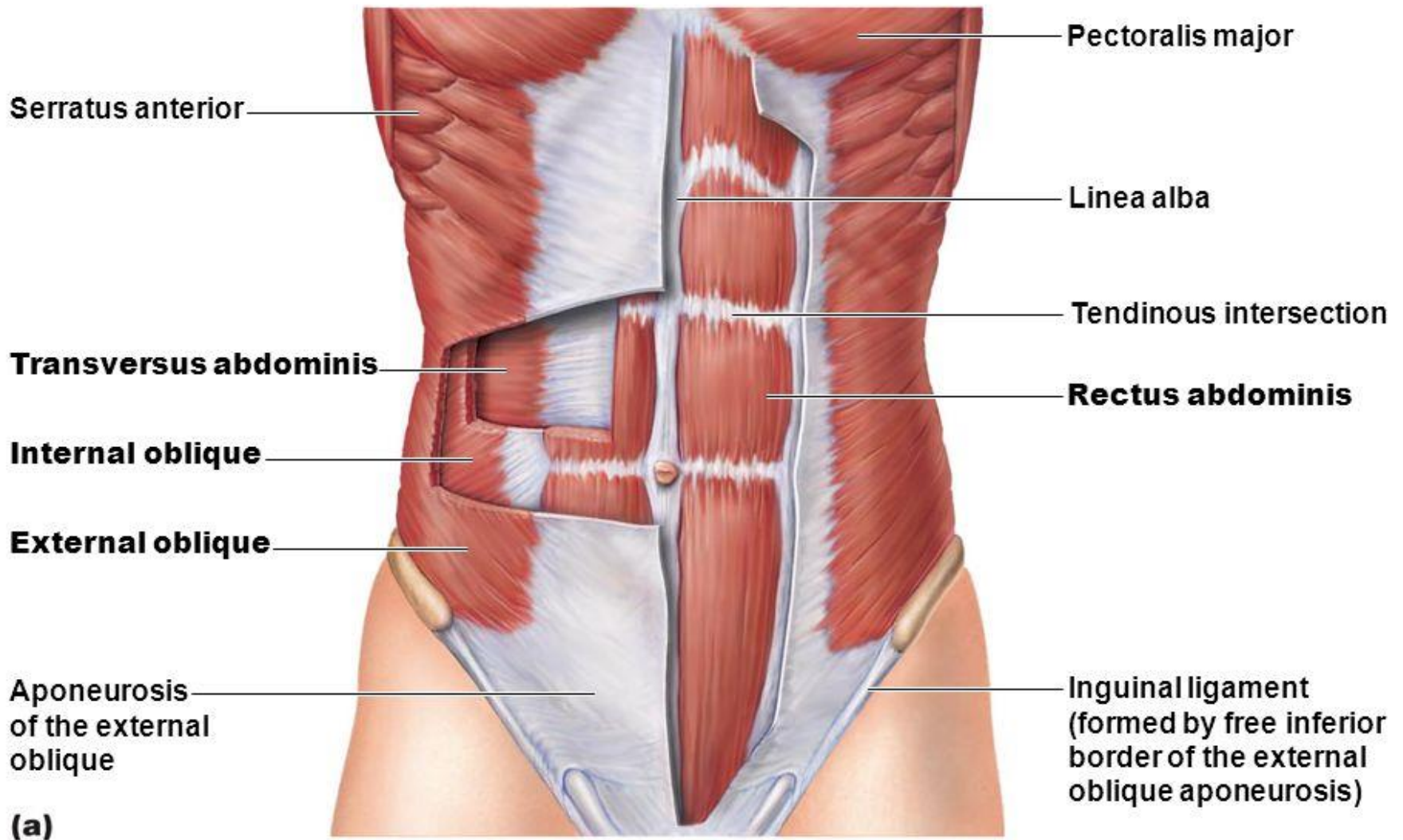


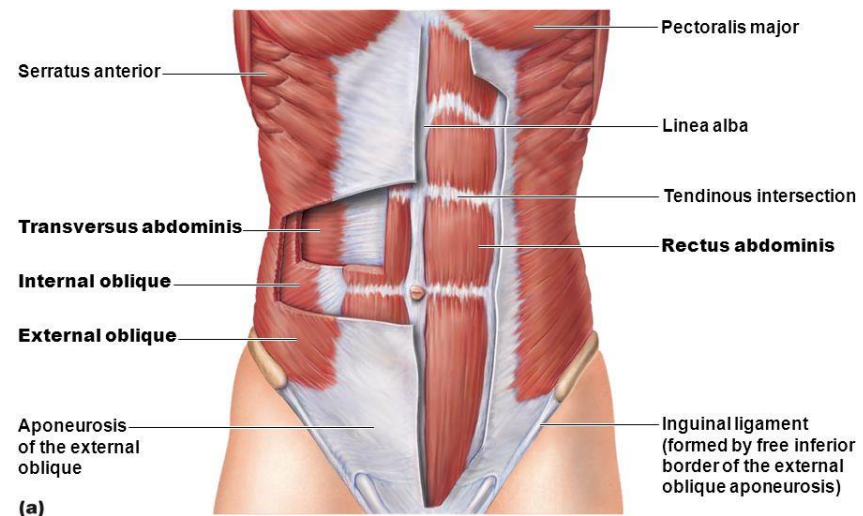
Figure 10.12a Muscles of the abdominal wall.



# Linea alba abdominis

- ▶ tendinous raphe extending from xiphoid process to the symphysis pubis and pubic crest
- ▶ formed by interlacing of wide muscles of the abdomen
- ▶ it is used for laparotomy in surgery
- ▶ umbilical ring is usually bypassed at the left side during the surgery

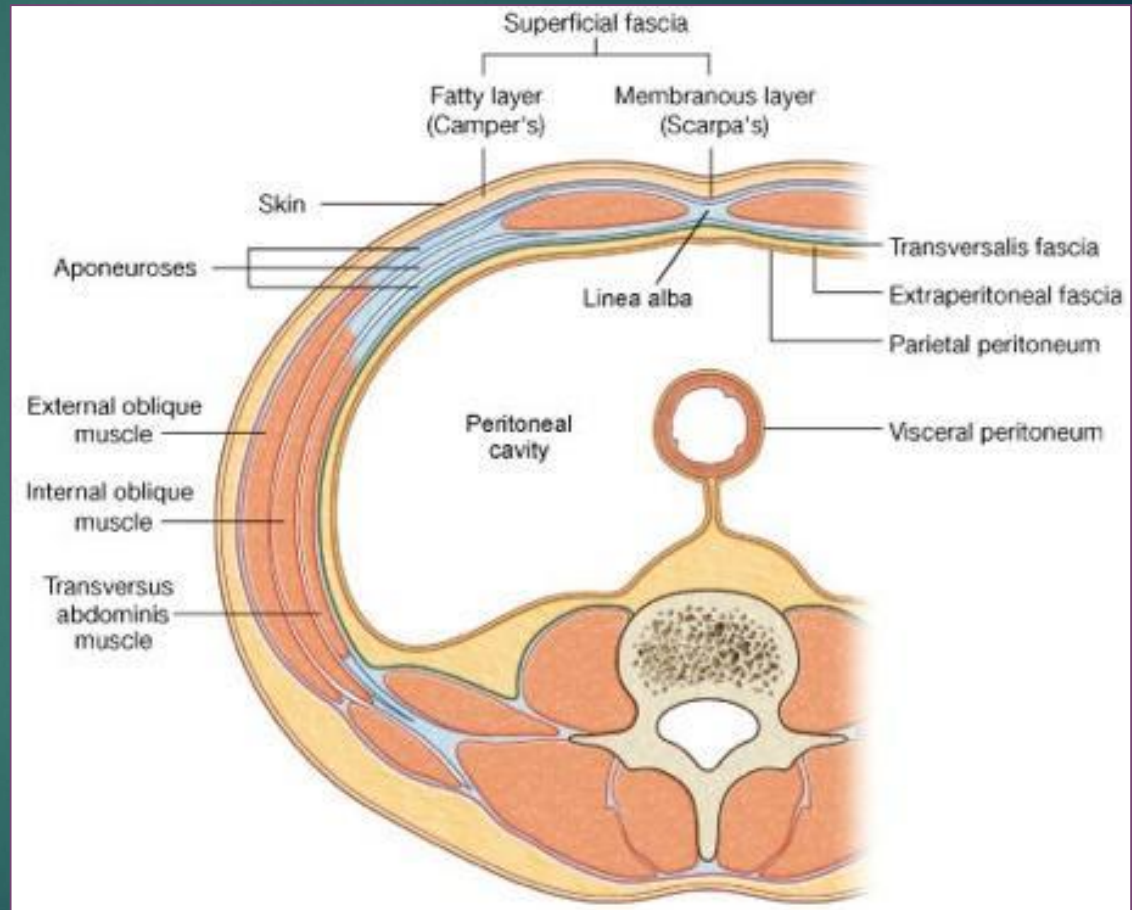
Figure 10.12a Muscles of the abdominal wall.





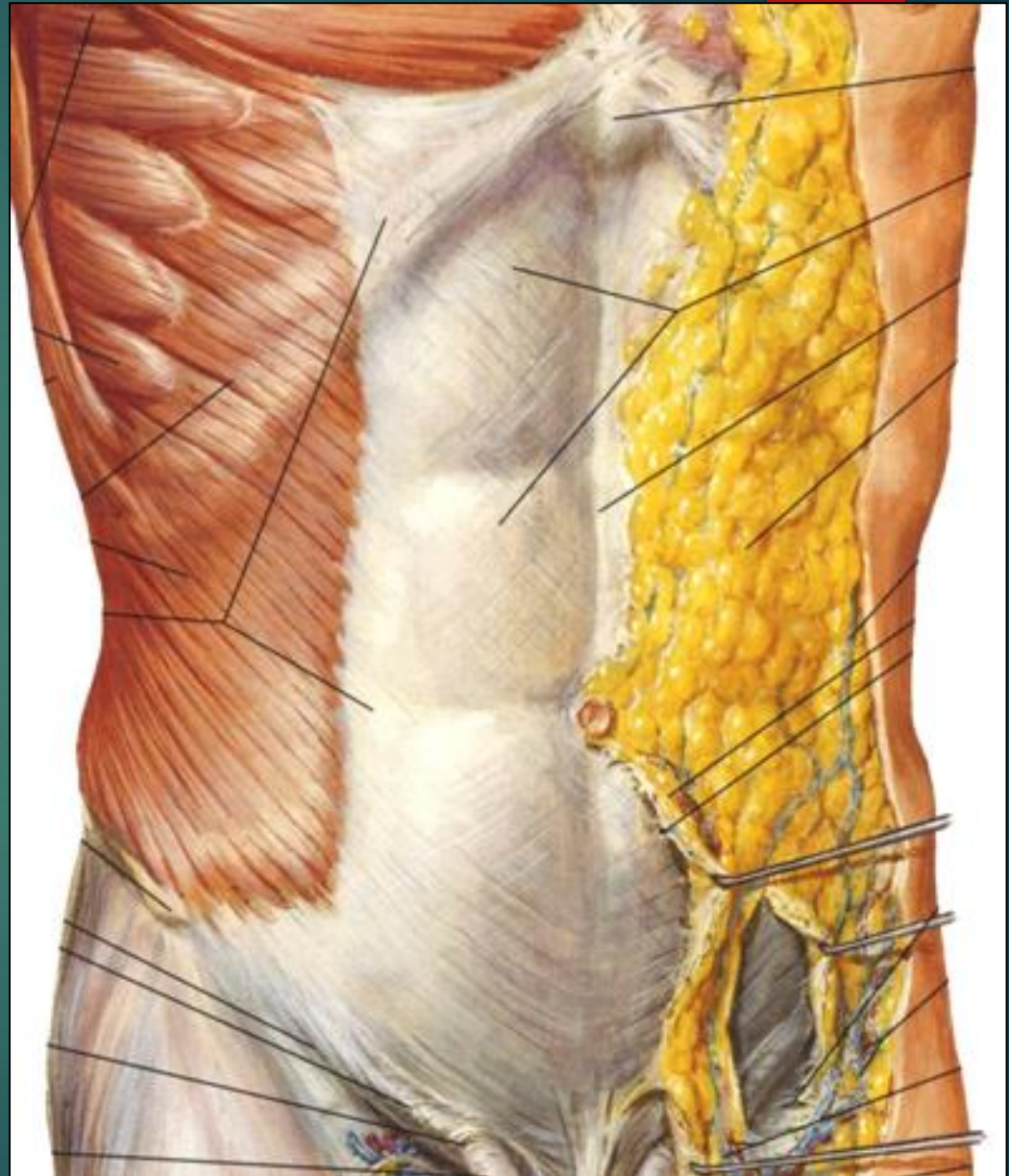
# Fasciae of abdomen

- Fascia superficialis
- Fascia propria (covers muscular part of m. obliquus externus abdominis and fuses with aponeurosis of this muscle)
- Fascia transversalis



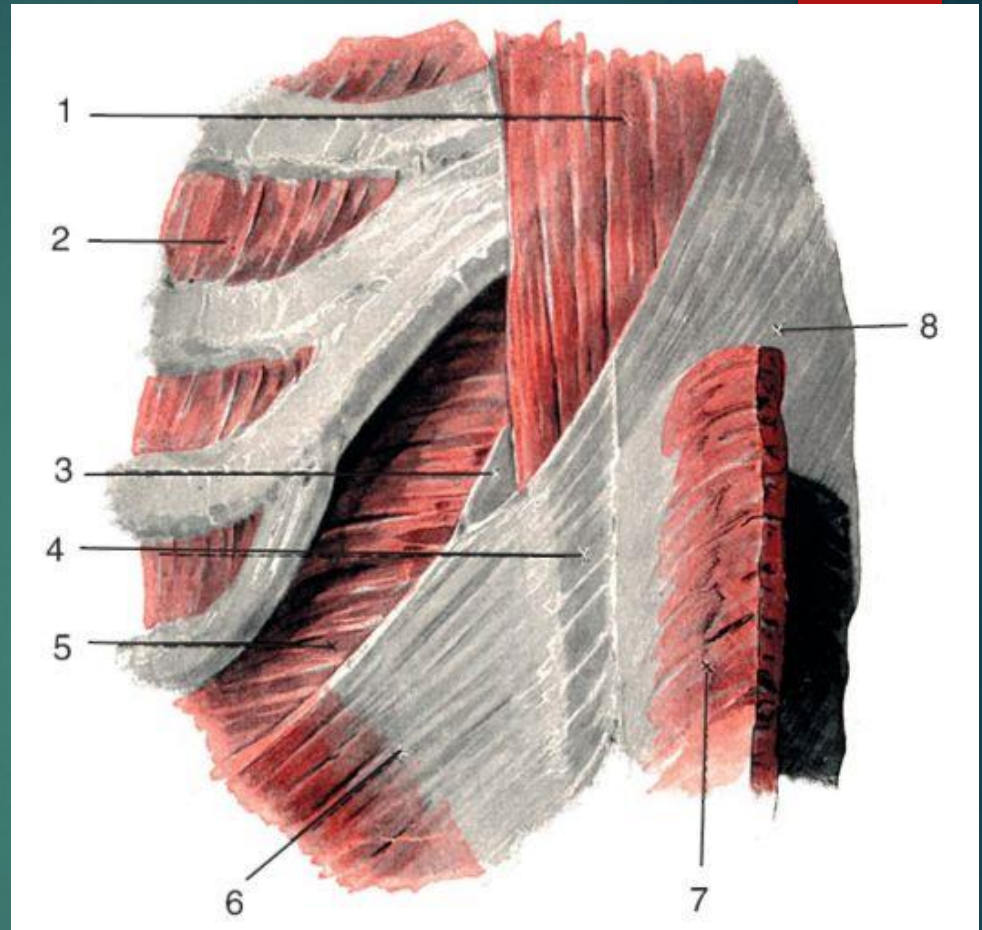
# Rectal sheath

- ▶ It is formed by aponeuroses of wide muscles of abdomen and transverse fascia
- ▶ Its structure is different in upper and lower parts of the abdomen





**Split of the aponeurosis of m.obliquus internus abdominis to 2 layers (anterior and posterior) with further formation of the sheath of m.rectus abdominis**

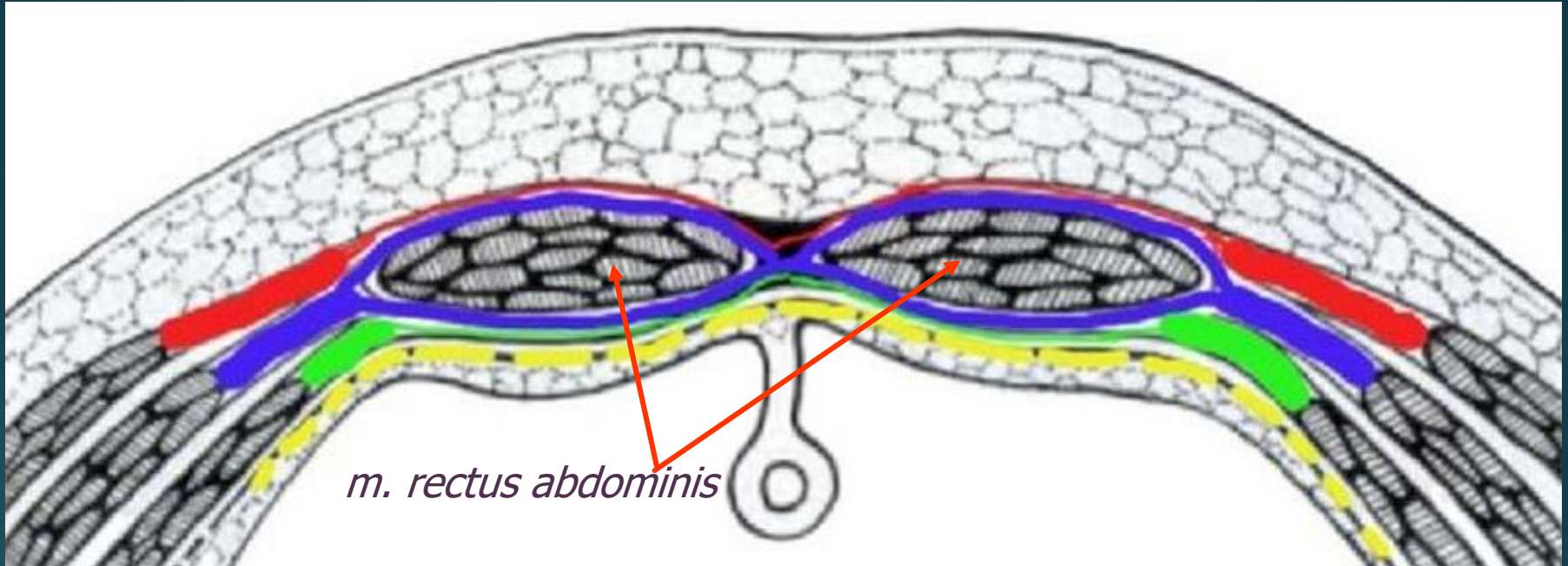


1 - m. rectus abdominis; 2 - mm. intercostales; 3 – posterior layer of aponeurosis of m. obliquus internus abdominis; 4 – anterior layer of aponeurosis of m. obliquus internus abdominis; 5 - m. transversus abdominis; 6 - m. obliquus internus abdominis; 7 - m. obliquus externus abdominis; 8 – anterior plate of m.rectus abdominis sheath



# Rectal sheath.

## Transverse section above arcuate line.



### Anterior wall

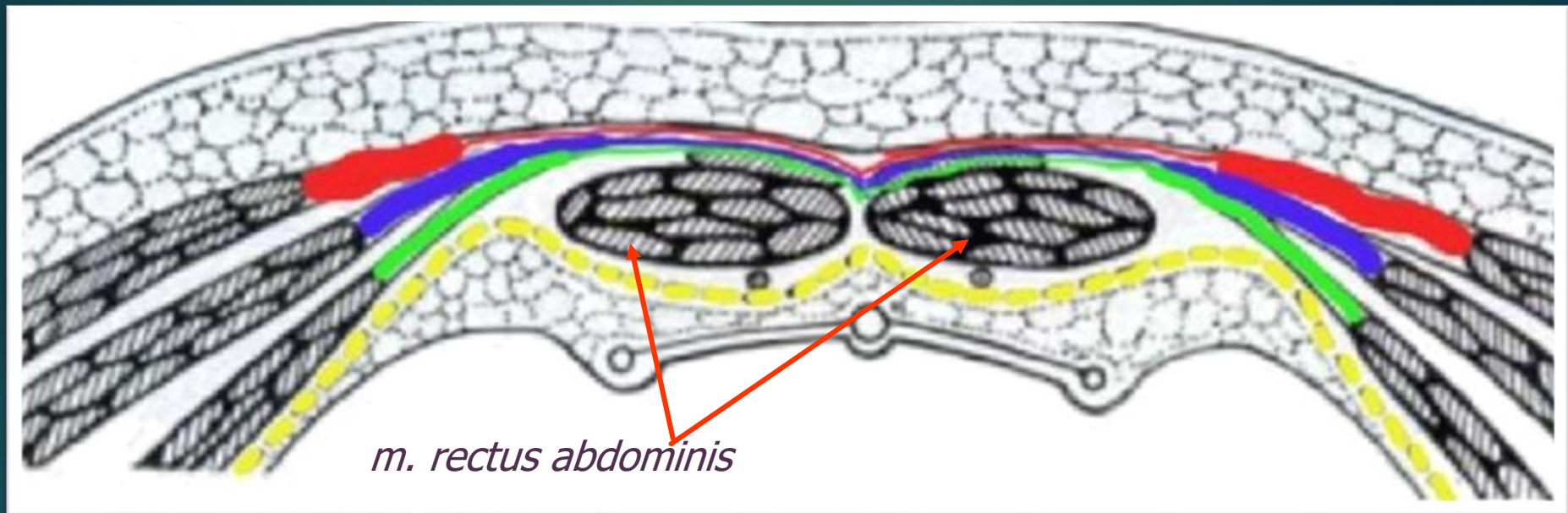
- Aponeurosis of m.obliquus abdominis externus
- ½ of aponeurosis of m.obliquus abdominis internus

### Posterior wall

- ½ of aponeurosis of m.obliquus abdominis internus
- Aponeurosis of m.transversus abdominis
- Fascia transversalis

# Rectal sheath.

## Transverse section below arcuate line.



### Anterior wall

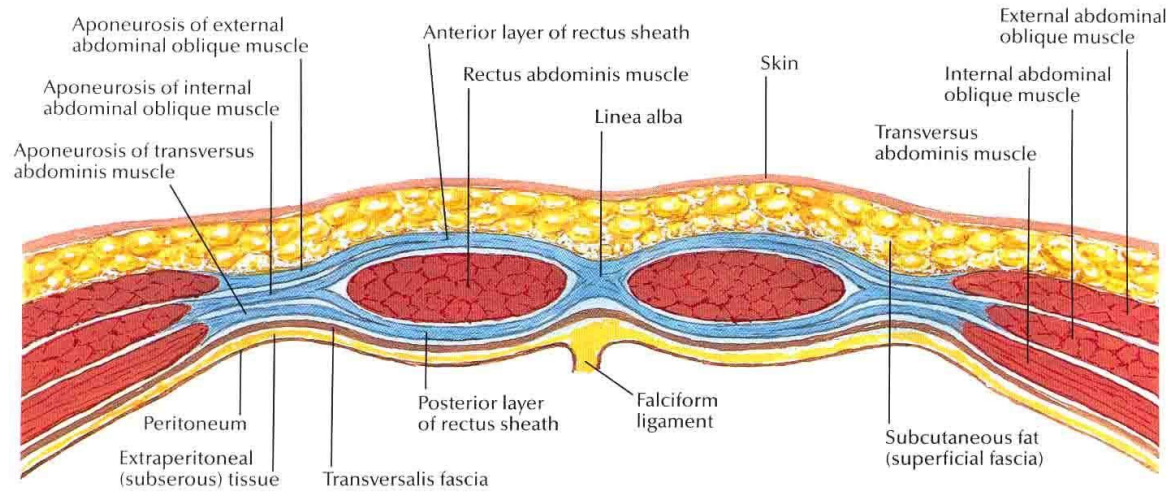
- Aponeuroses of all 3 muscles:
  - 1) Aponeurosis of m.obliquus abdominis externus
  - 2) Aponeurosis of m.obliquus abdominis internus
  - 3) Aponeurosis of m.transversus abdominis

### Posterior wall

- Fascia transversalis

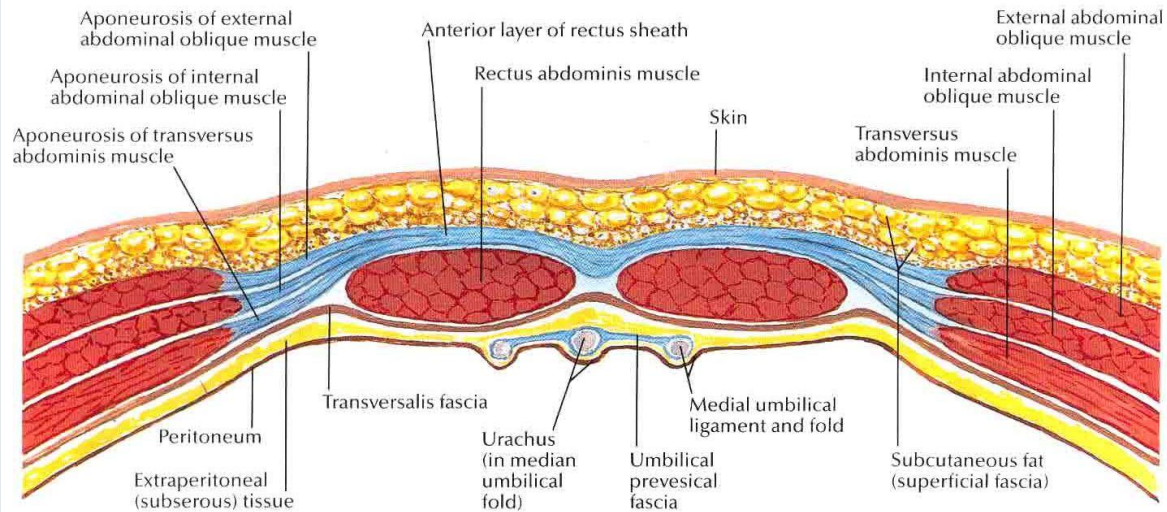


### Section above arcuate line



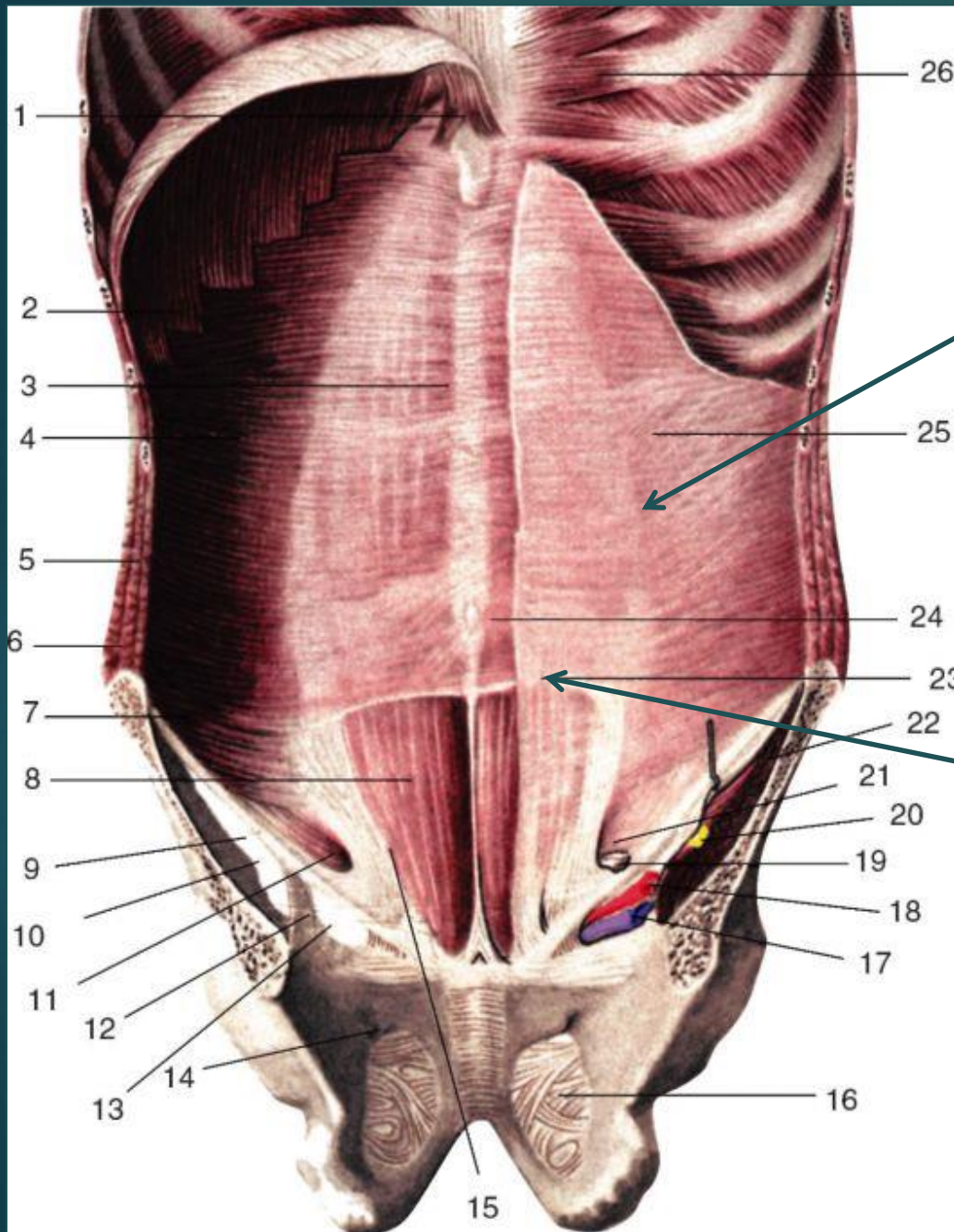
Aponeurosis of internal abdominal oblique muscle splits to form anterior and posterior layers of rectus sheath. Aponeurosis of external abdominal oblique muscle joins anterior layer of sheath; aponeurosis of transversus abdominis muscle joins posterior layer. Anterior and posterior layers of rectus sheath unite medially to form linea alba

### Section below arcuate line



Aponeurosis of internal abdominal oblique muscle does not split at this level but passes completely anterior to rectus abdominis muscle and is fused there with both aponeurosis of external abdominal oblique muscle and that of transversus abdominis muscle. Thus posterior wall of rectus sheath is absent below arcuate line and rectus abdominis muscle lies on transversalis fascia





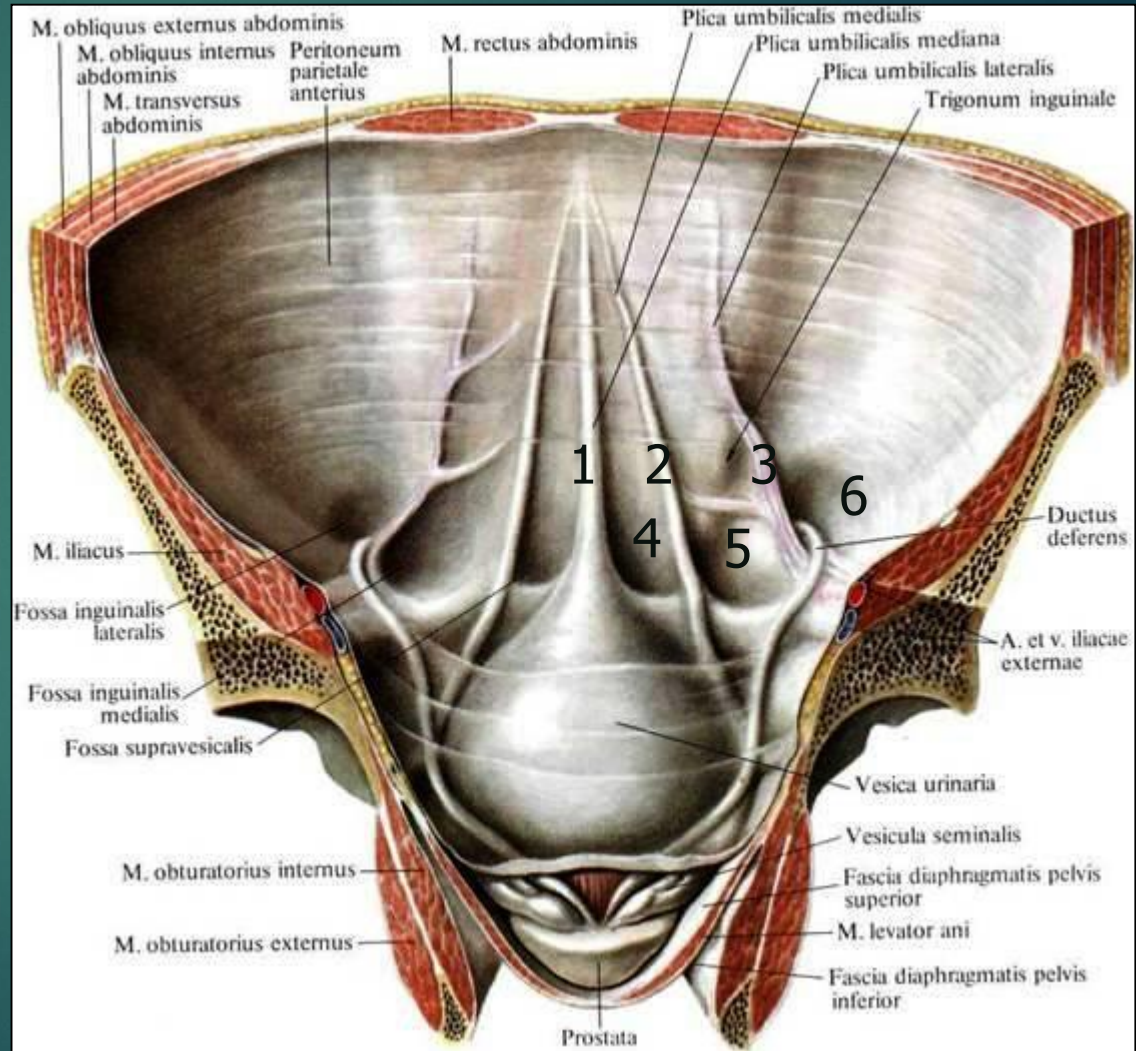
Linea semilunaris  
(Spiegel line)  
- border between  
muscle fibers and  
aponeurosis of  
m.transversus  
abdominis

Linea arcuata  
(Douglas line)

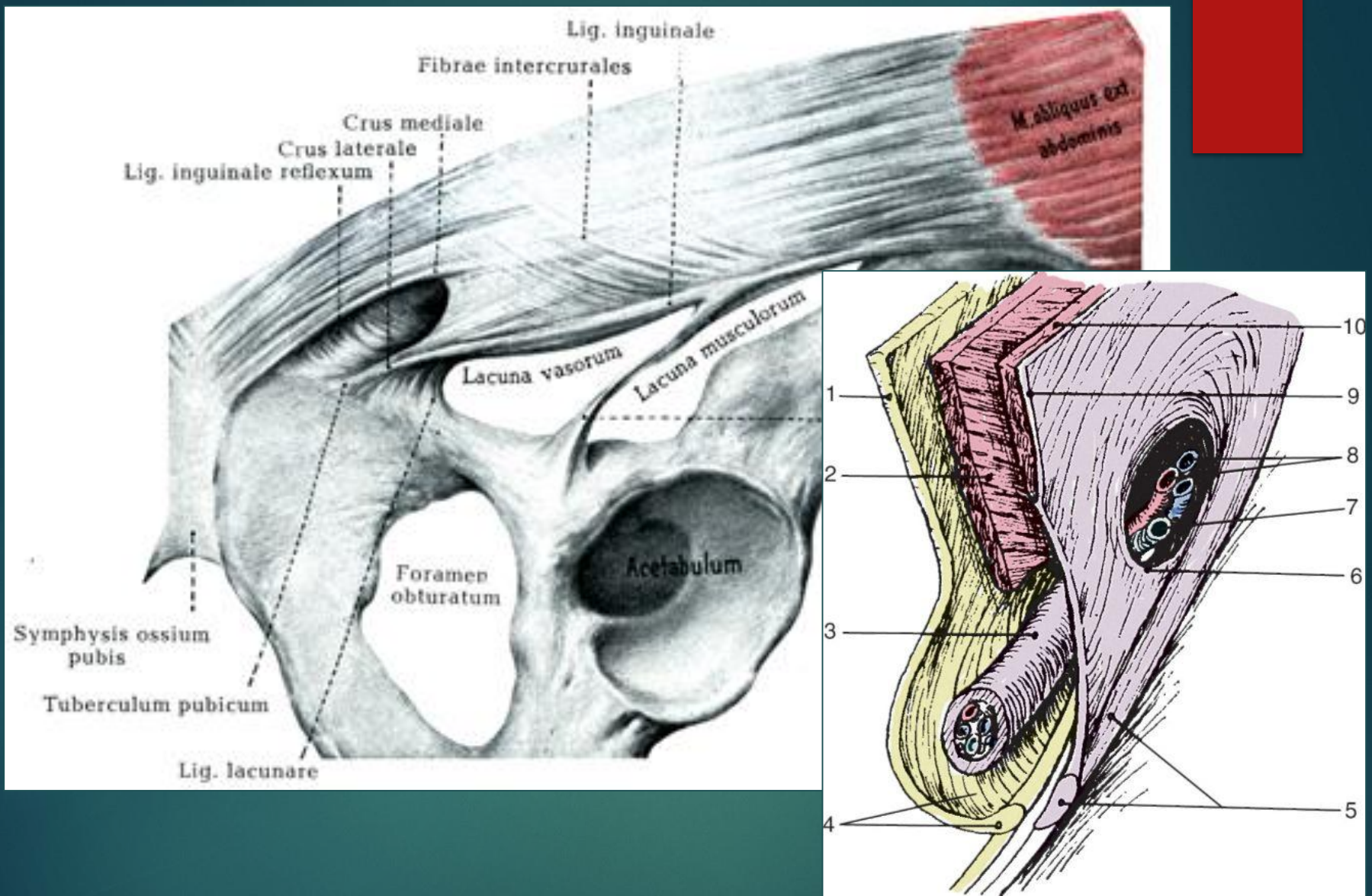
Internal view on  
anterior abdominal wall

# Internal surface, the lower part of the anterior abdominal wall

- 1 – plica umbilicalis mediana (obliterated urachus)
- 2 – plica umbilicalis medialis
- 3 – plica umbilicalis lateralis
- 4 – fossa supravescicalis
- 5 – fossa inguinalis medialis
- 6 – fossa inguinalis lateralis



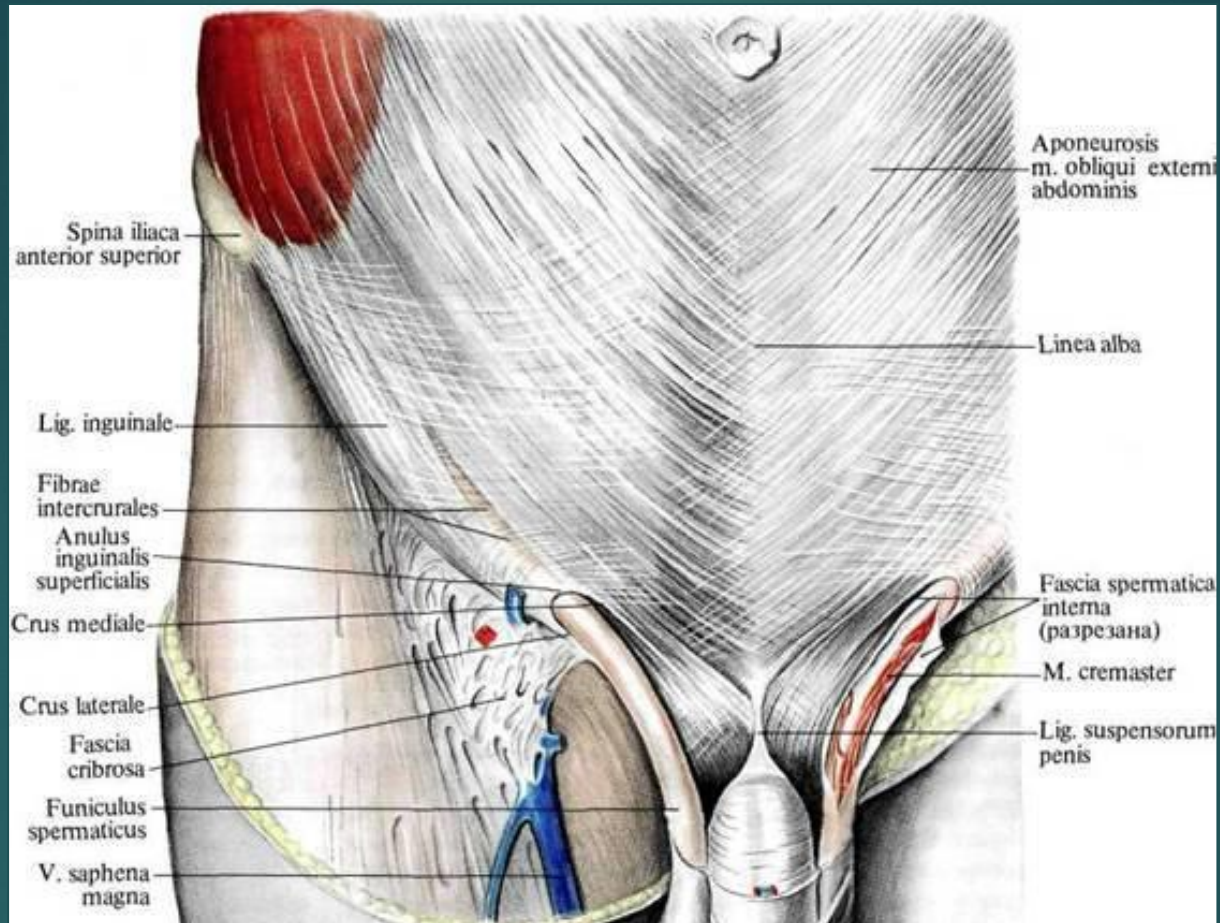




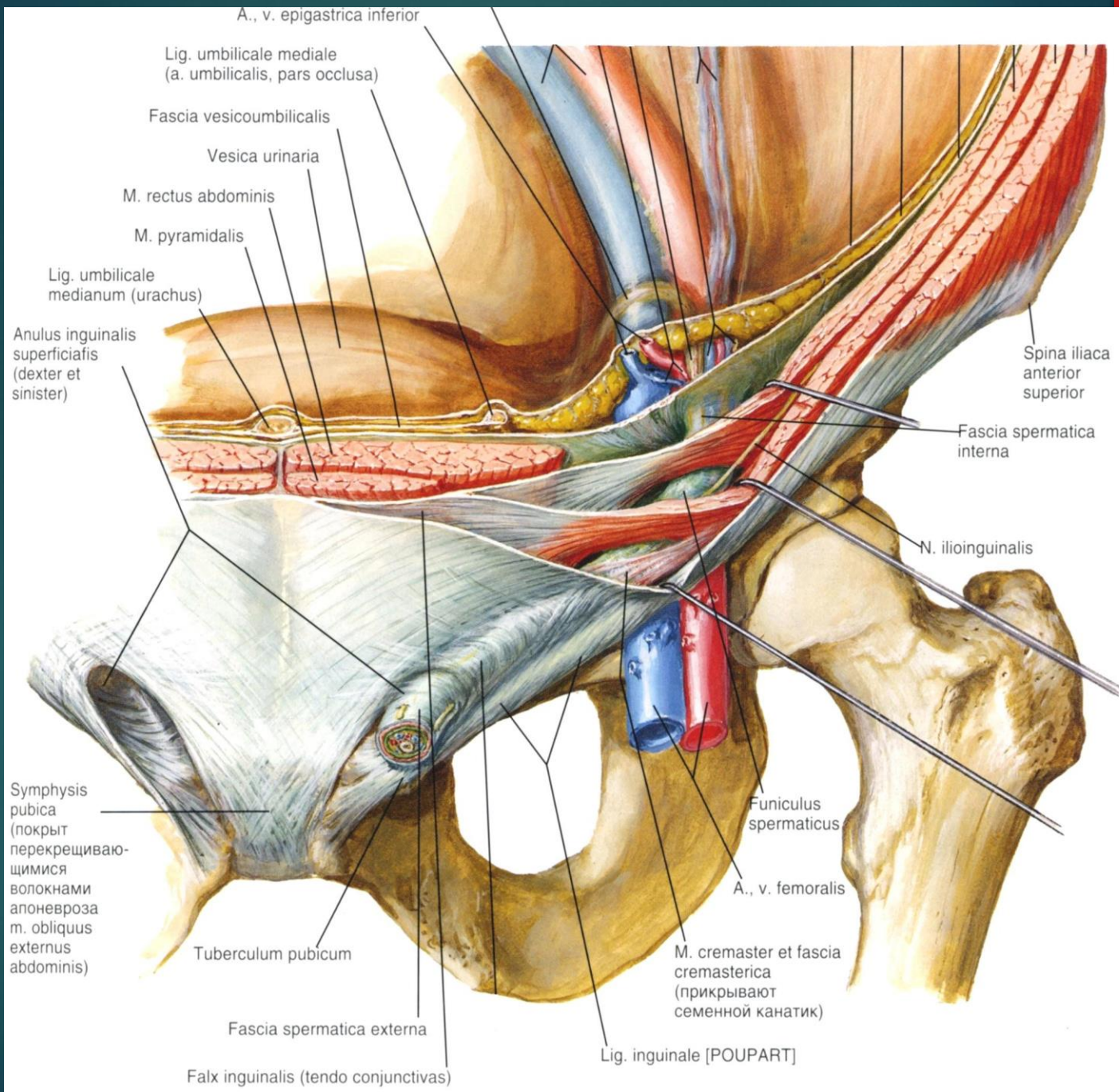
The inguinal ligament (Poupart ligament) is formed by the margin of the aponeurosis of m.obliquus externus abdominis between the superior iliac spine and the pubic tubercle.



# Inguinal canal



- ▶ It is located above medial half of inguinal ligament
- ▶ It has 4 walls and 2 openings (apertures)



A., v. epigastrica inferior

Lig. umbilicale mediale  
(a. umbilicalis, pars occlusa)

Fascia vesicoumbilicalis

Vesica urinaria

M. rectus abdominis

M. pyramidalis

Lig. umbilicale  
medianum (urachus)

Anulus inguinalis  
superficialis  
(dexter et  
sinister)

Spina iliaca  
anterior  
superior

Fascia spermatica  
interna

N. ilioinguinalis

Symphysis  
pubica  
(покрыт  
перекрещиваю-  
щимися  
волокнами  
апоневроза  
m. obliquus  
externus  
abdominis)

Tuberculum pubicum

Fascia spermatica externa

Falx inguinalis (tendo conjunctivas)

Funiculus  
spermaticus

A., v. femoralis

M. cremaster et fascia  
cremasterica  
(прикрывают  
семенной канатик)

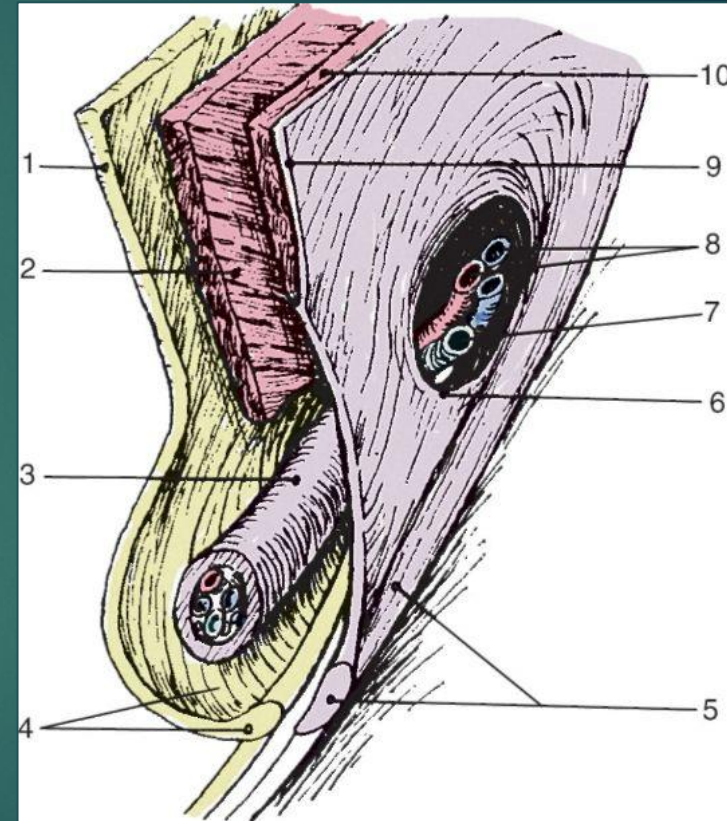
Lig. inguinale [POUPART]



# Walls of inguinal canal



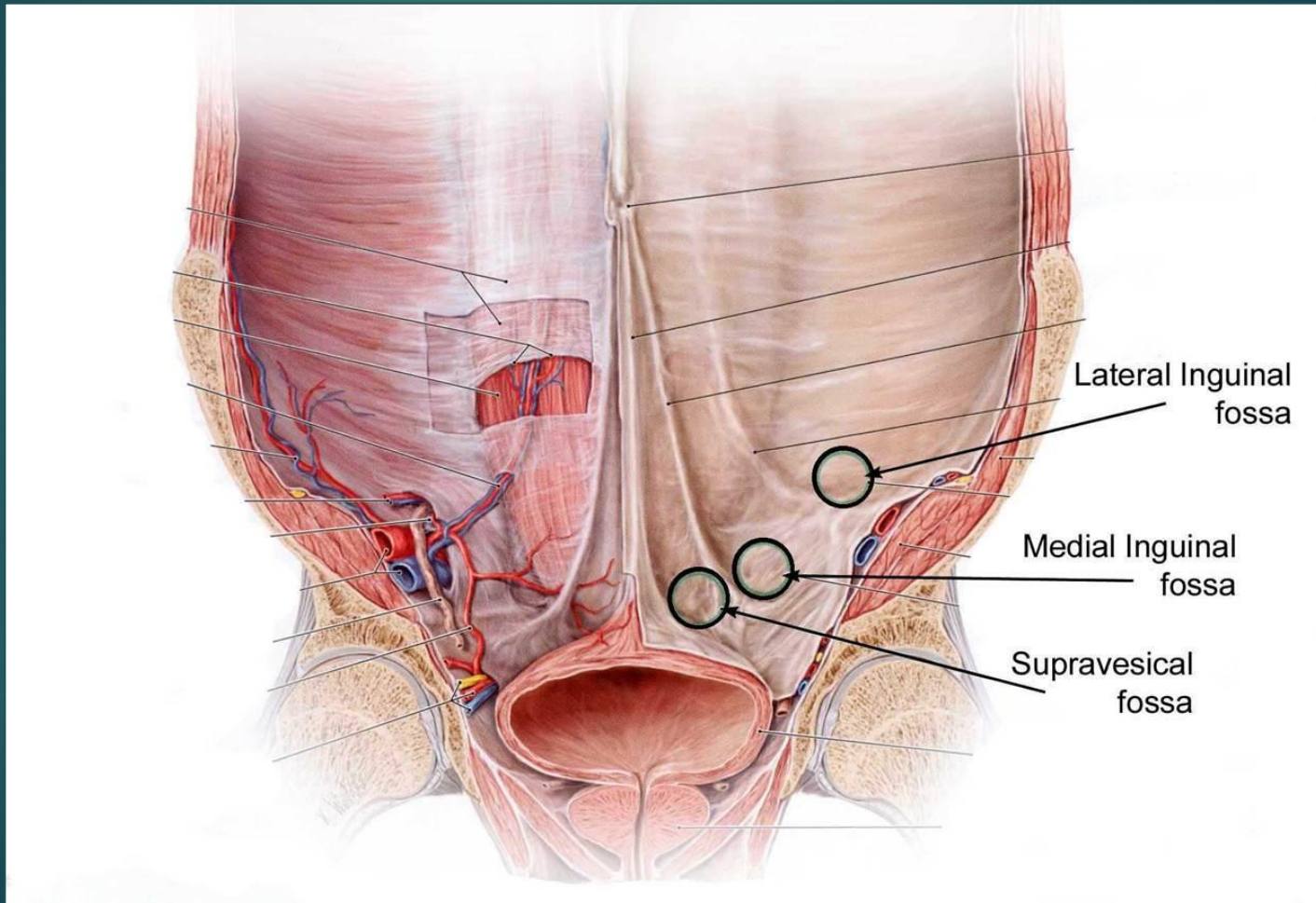
- ▶ **Anterior** – aponeurosis of m.obliquus abdominis externus (1)
- ▶ **Inferior** – lig.inguinale (4)
- ▶ **Superior** – borders of m.obliquus abdominis internus (10) and m.transversus abdominis (2)
- ▶ **Posterior** – fascia transversalis (9)



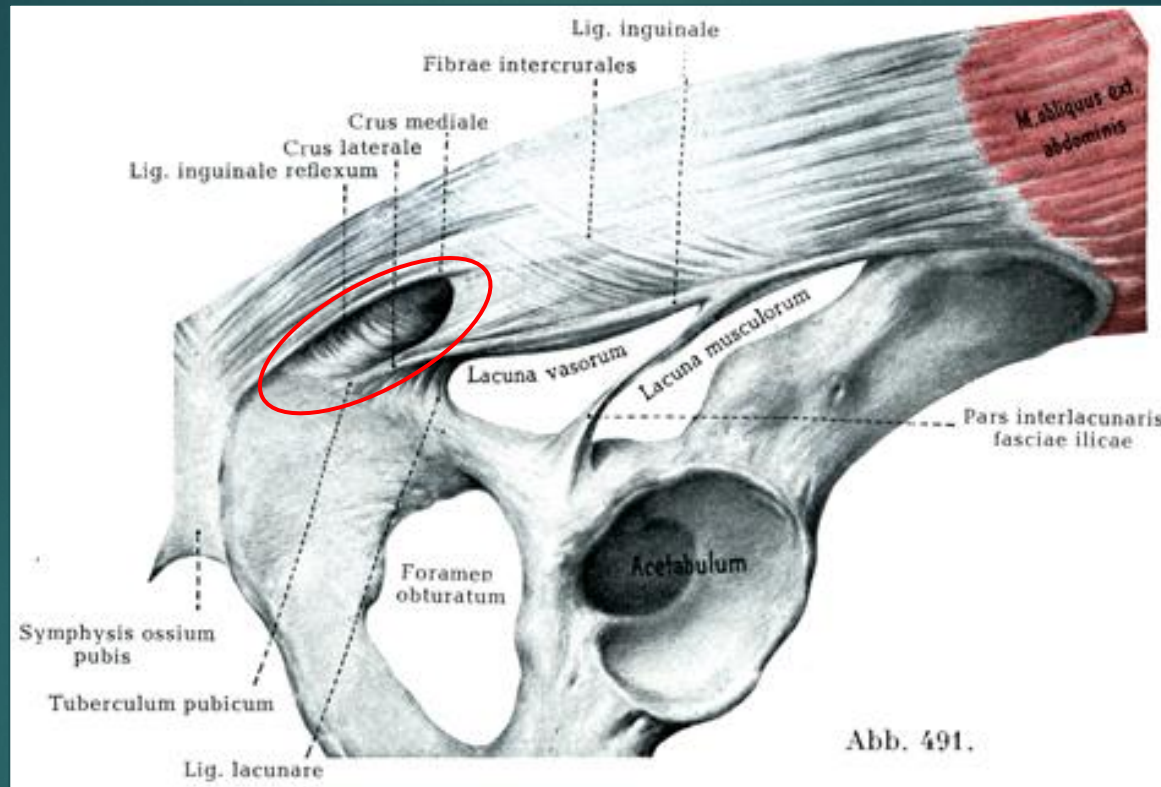


# Deep ring

- ▶ Depression of transverse fascia (corresponds to fossa inguinalis lateralis)

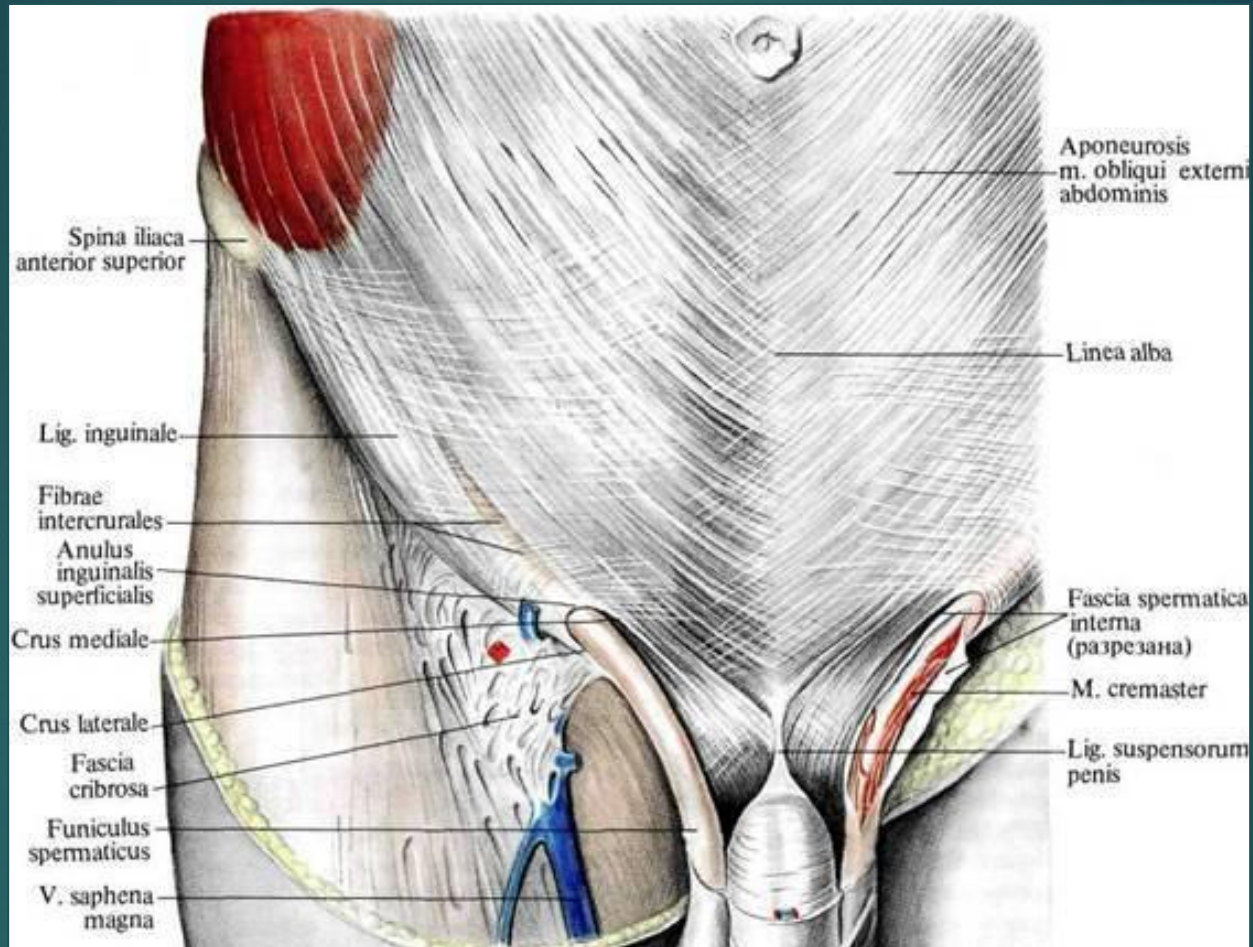


# Superficial ring (4 walls)



- ▶ **Superior** – crus mediale of lig.inguinale
- ▶ **Inferior** – crus laterale of lig.inguinale
- ▶ **Lateral** – fibrae intercrurales
- ▶ **Medial** – lig.reflexum

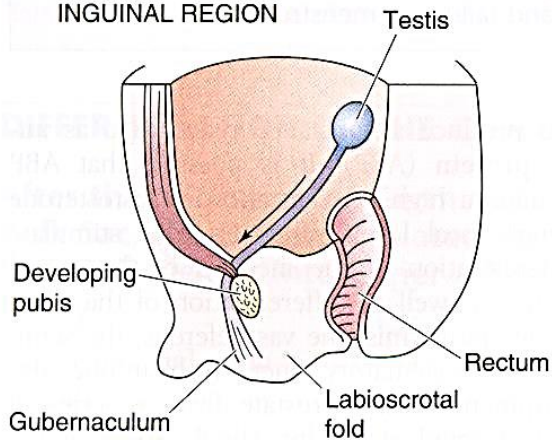
# Inguinal canal



- ▶ Contains in female round ligament of uterus (*ligamentum teres*) or spermatic cord (*funiculus spermaticus*) in male

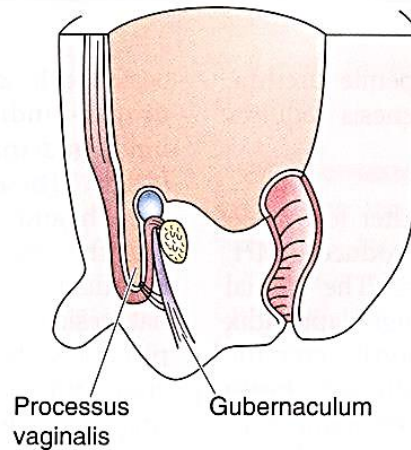


**A** MOVEMENT OF TESTES TO THE INGUINAL REGION



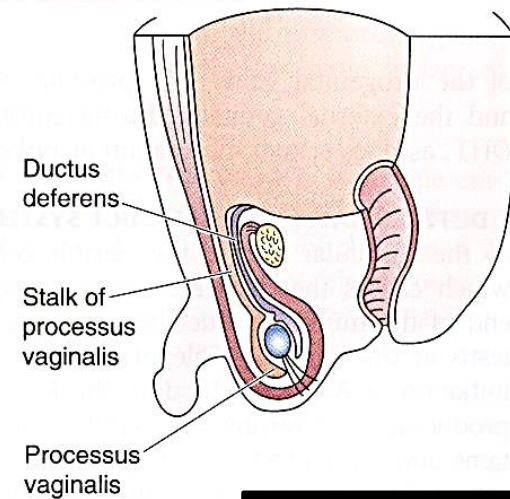
**3 months**

**B** HERNIATION OF THE ABDOMINAL WALL



**7-8 months**

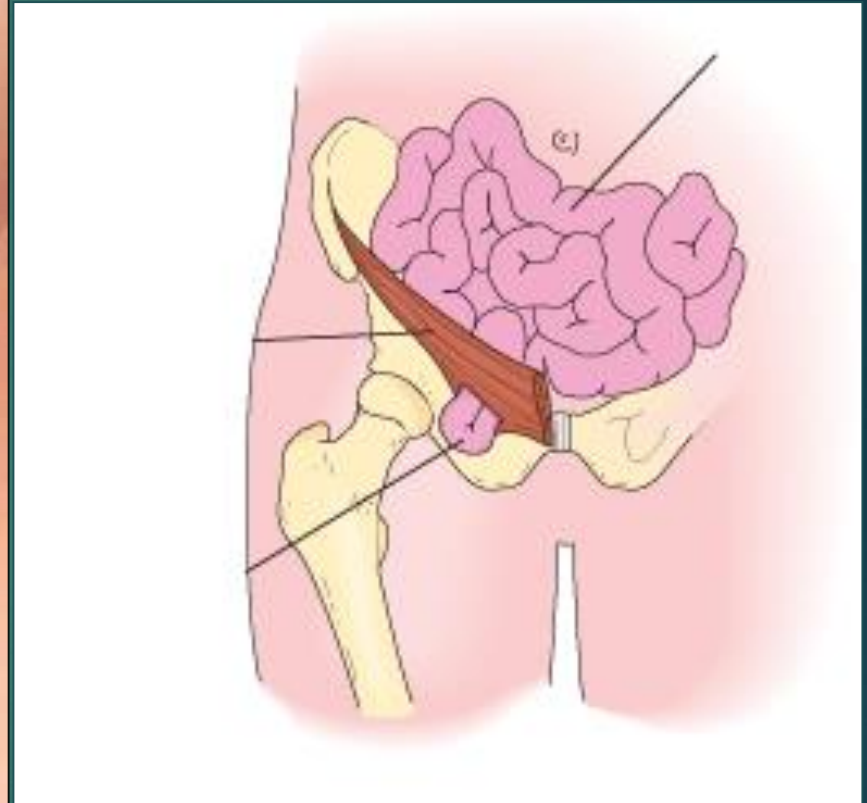
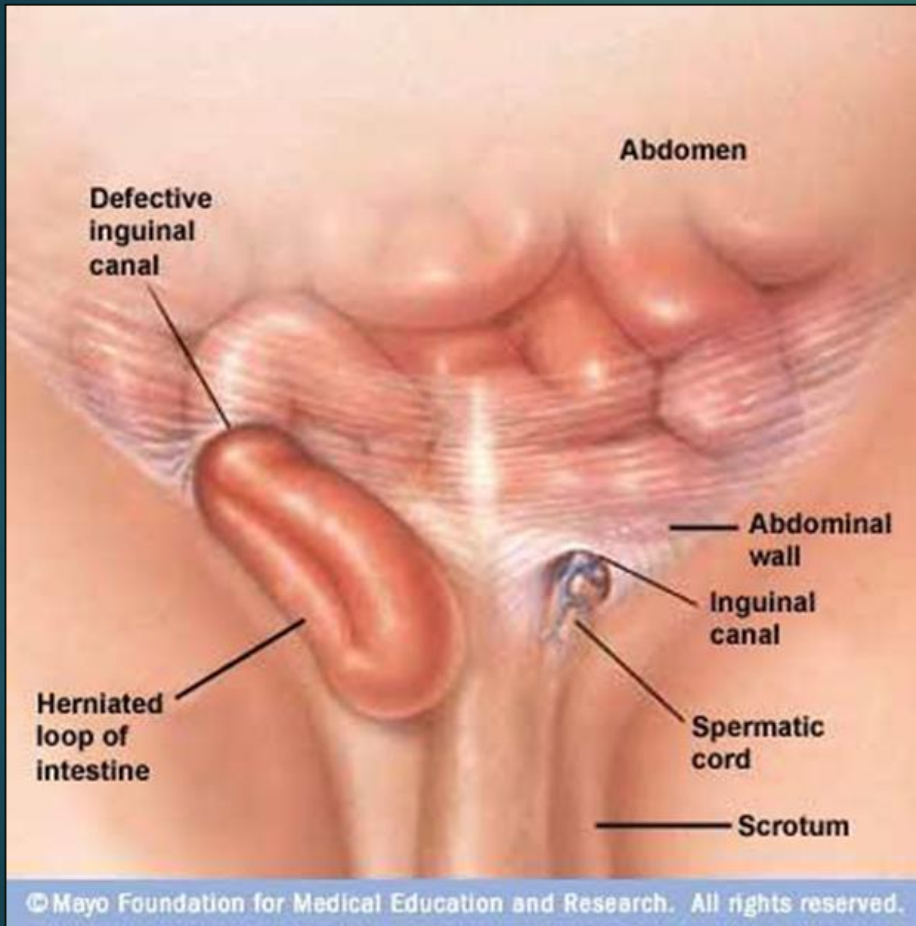
**C** DESCENT OF TESTES INTO THE SCROTUM



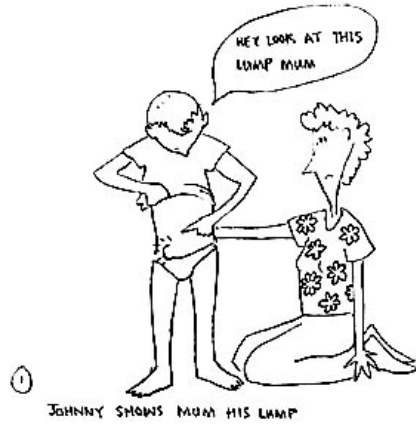
**9 months**

- The testis develops as part of the urogenital ridge on the posterior body wall inside the abdominal cavity.
- The testis is attached to the scrotum by a band of connective tissue – **gubernaculum testis**.
- 3<sup>rd</sup> month – start to descend with concomitant shortening of the gubernaculum.
- The scrotum is merely an outpocketing of the body wall.

# Inguinal hernia



"HEY LOOK, I'VE GOT A HERNIA." SAID JOHNNY



JOHNNY SHOWS MUM HIS LUMP



JOHNNY COMES TO HOSPITAL FOR HIS OPERATION.



JOHNNY IS PUT TO SLEEP FOR HIS OPERATION



JOHNNY SHOWS HIS MUM HIS SCAR



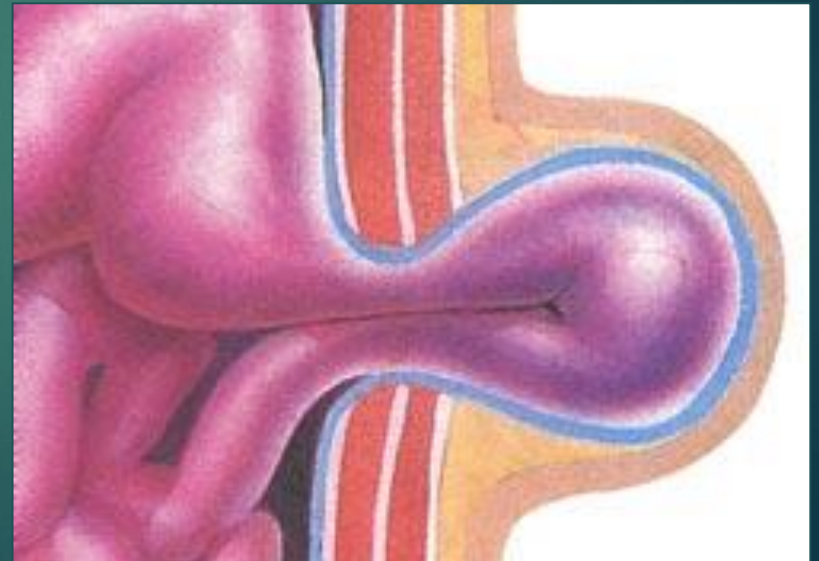
JOHNNY IS BACK ON HIS BIKE

**MR ANTHONY LAMBERT**  
**Consultant General and Vascular Surgeon**

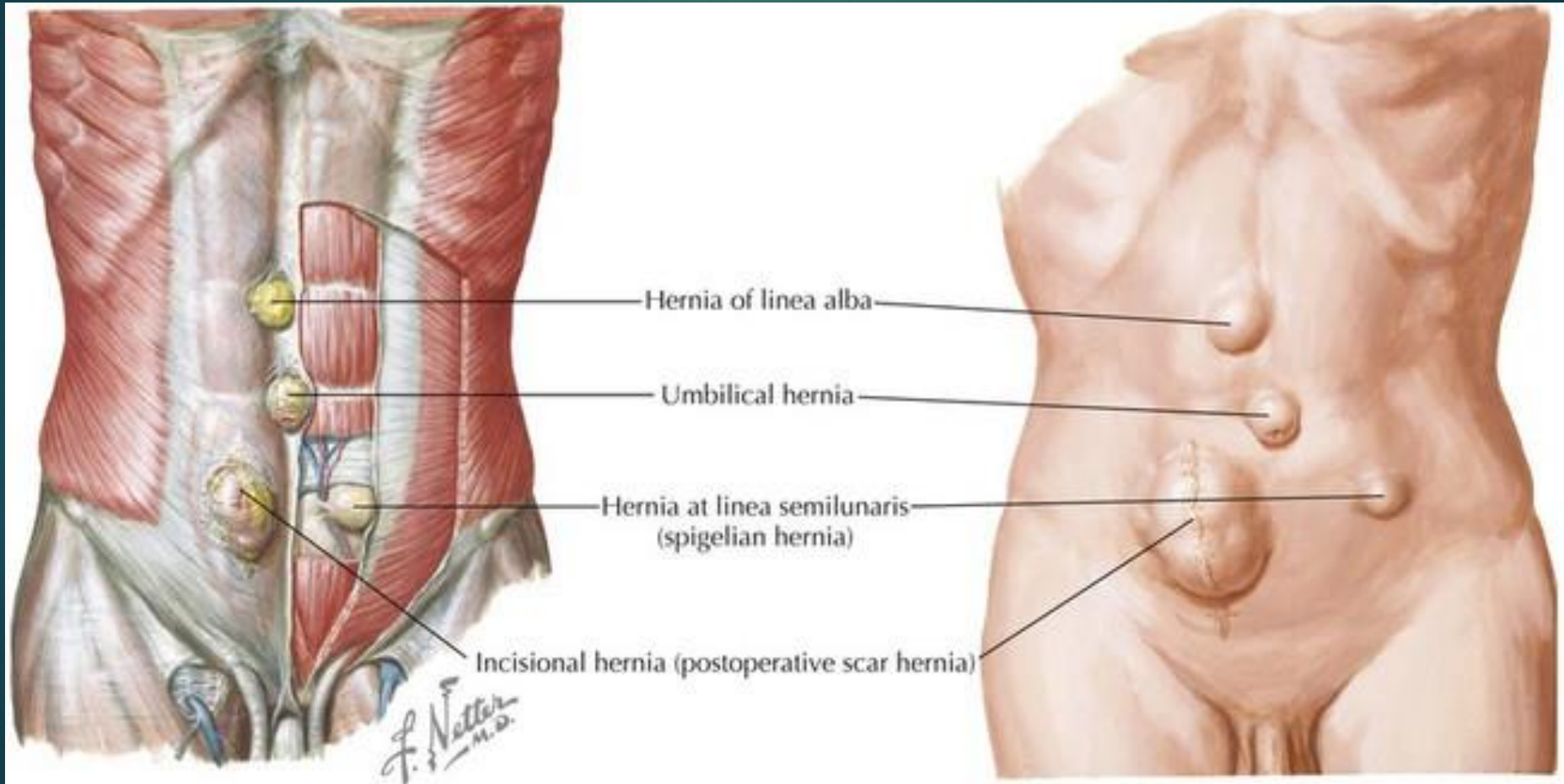


# Weak places of the abdominal wall

1. White line
2. Umbilical ring
3. Inguinal canal
4. Triangles (sternocostal and lumbocostal),  
hiatuses of diaphragm
5. Lumbar triangle



# Weak places of the abdominal wall

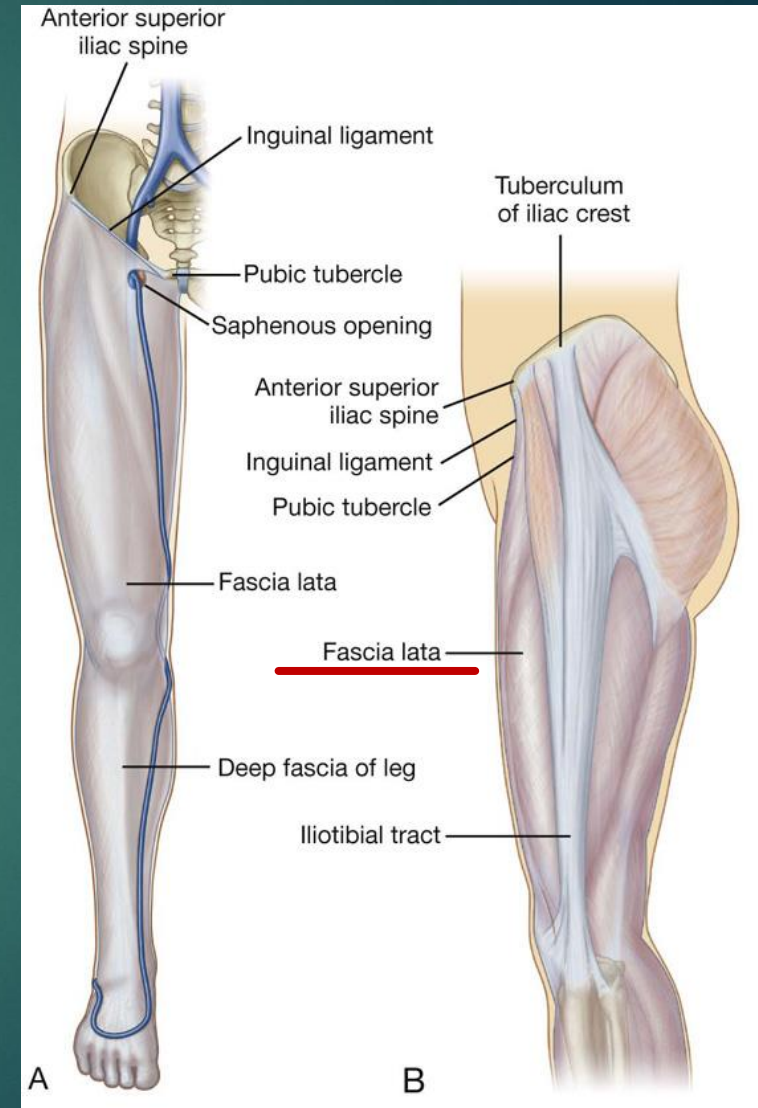
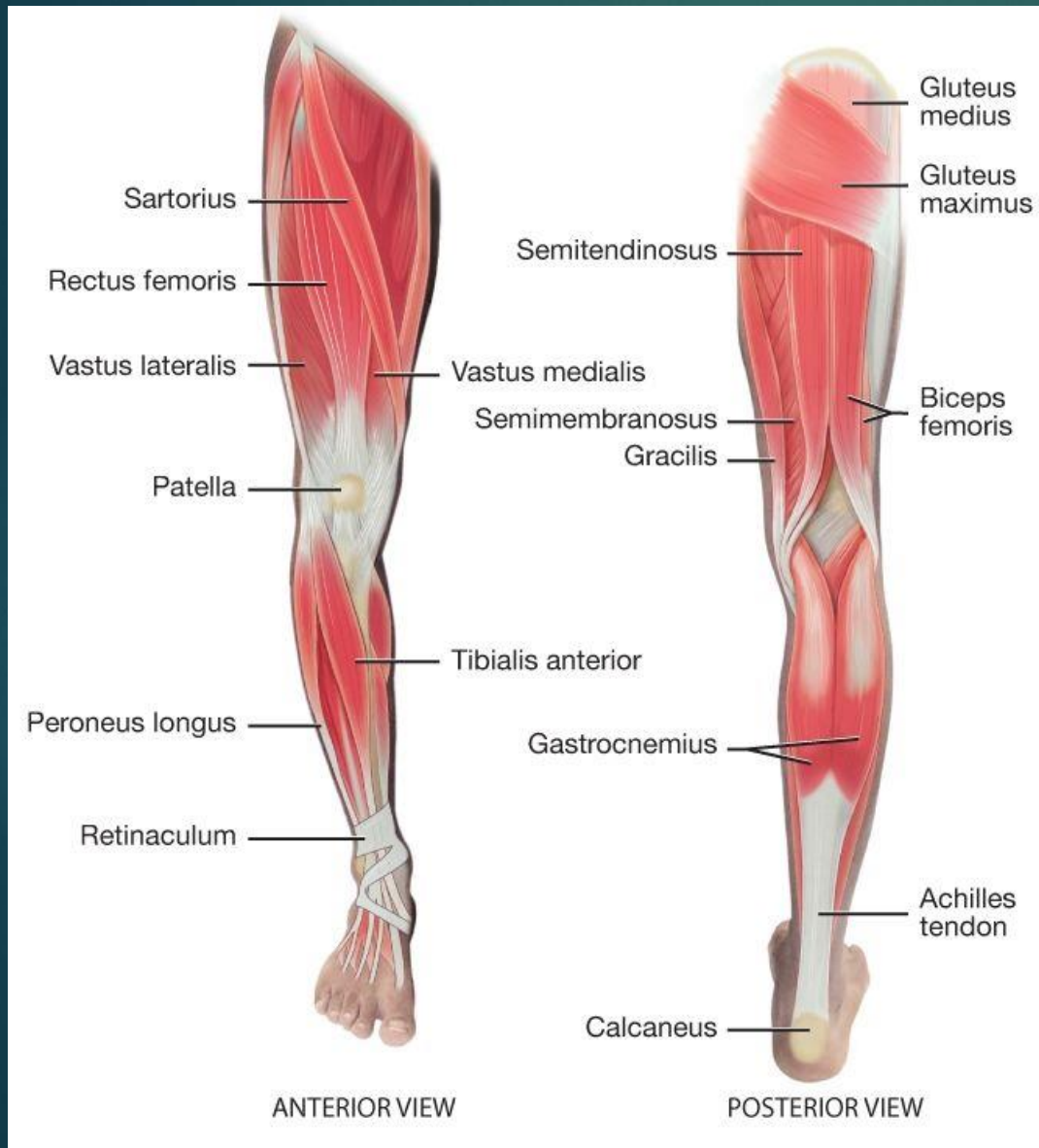




# Topography of Lower Limb



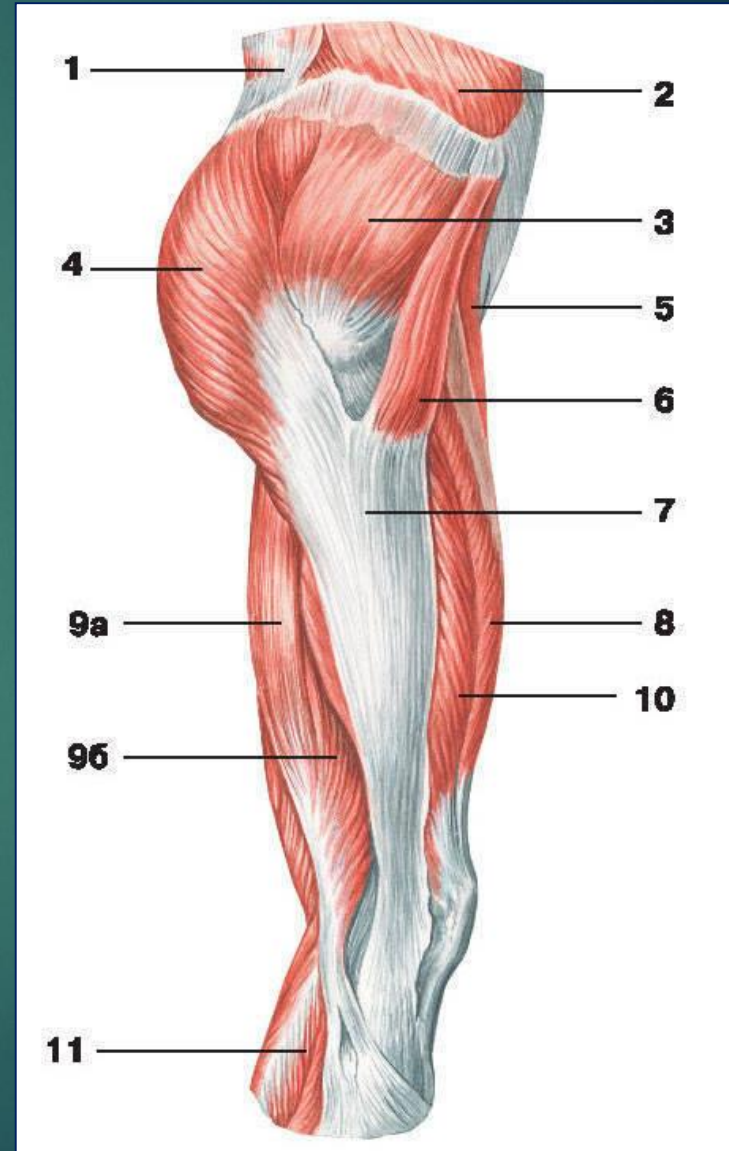
# Fascia and topography of the low limb



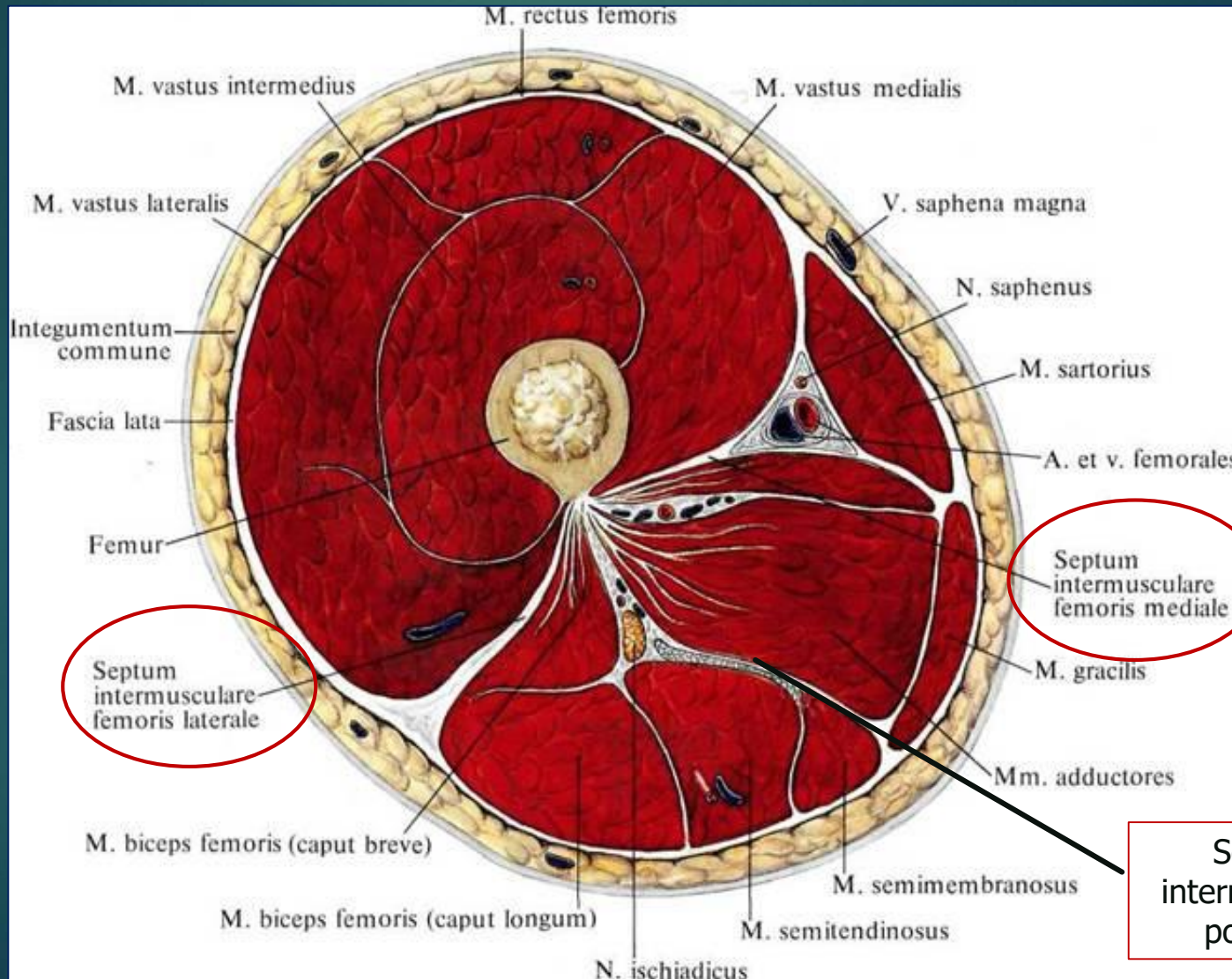
# Iliotibial tract (*tractus iliotibialis*) -

## #7

- It is a thickening of the *fascia lata* on the lateral side of the thigh
- Function – stabilize the knee joint on the lateral side



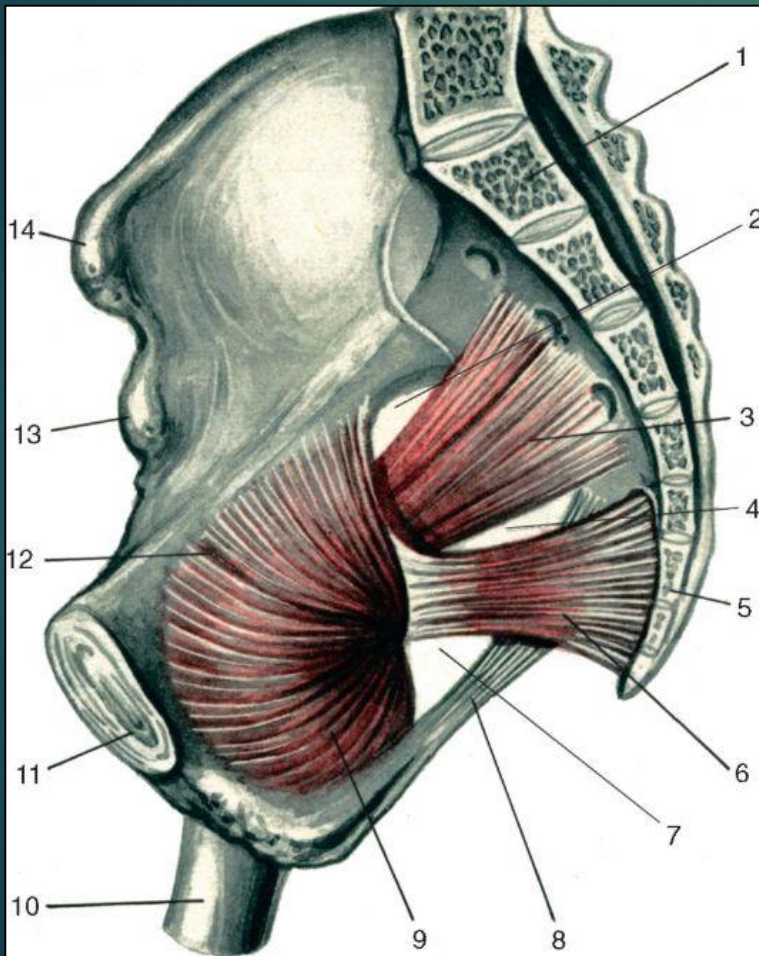
# Intermuscular septa of the thigh







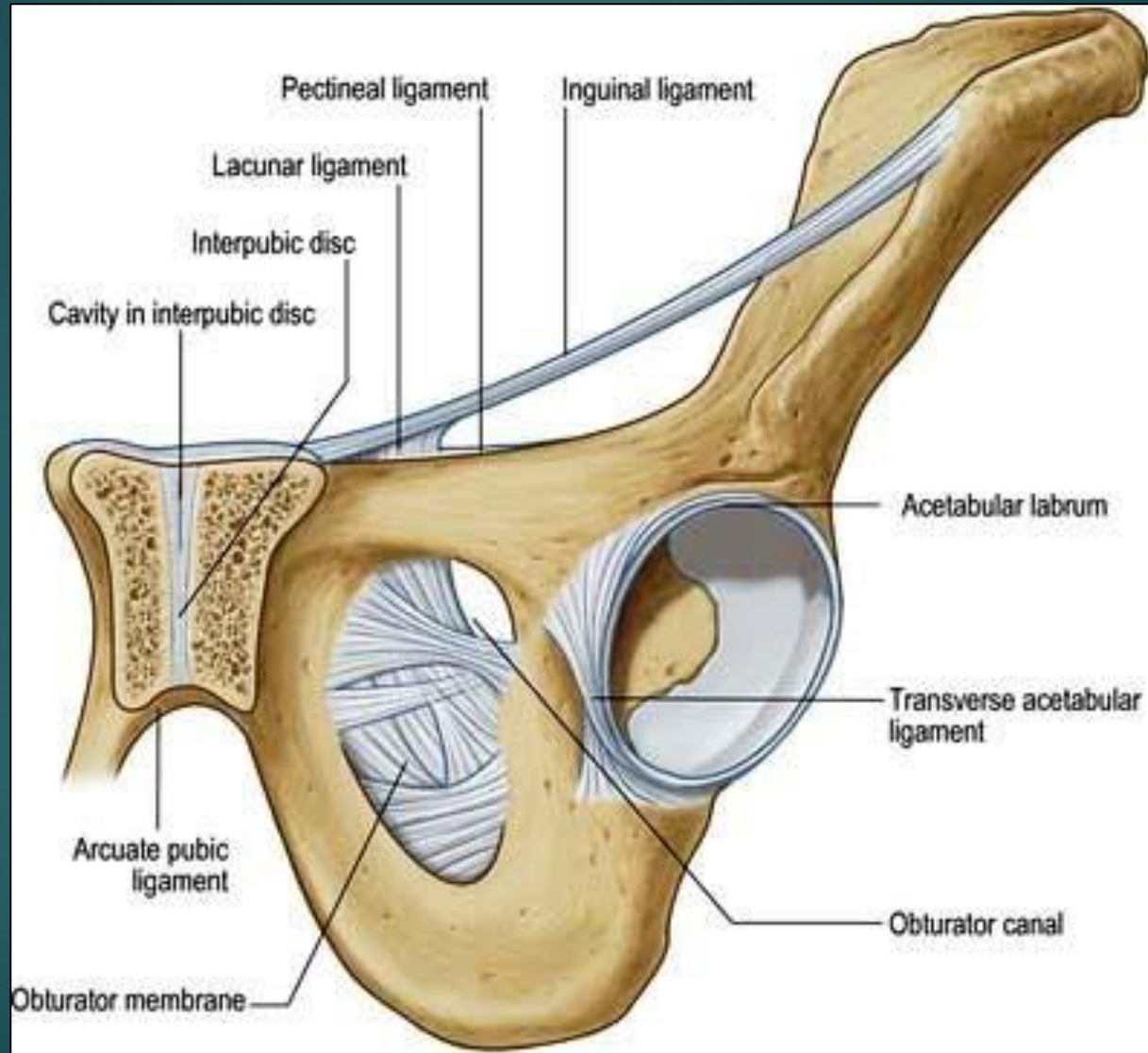
# Foramen suprapiriforme et foramen infrapiriforme



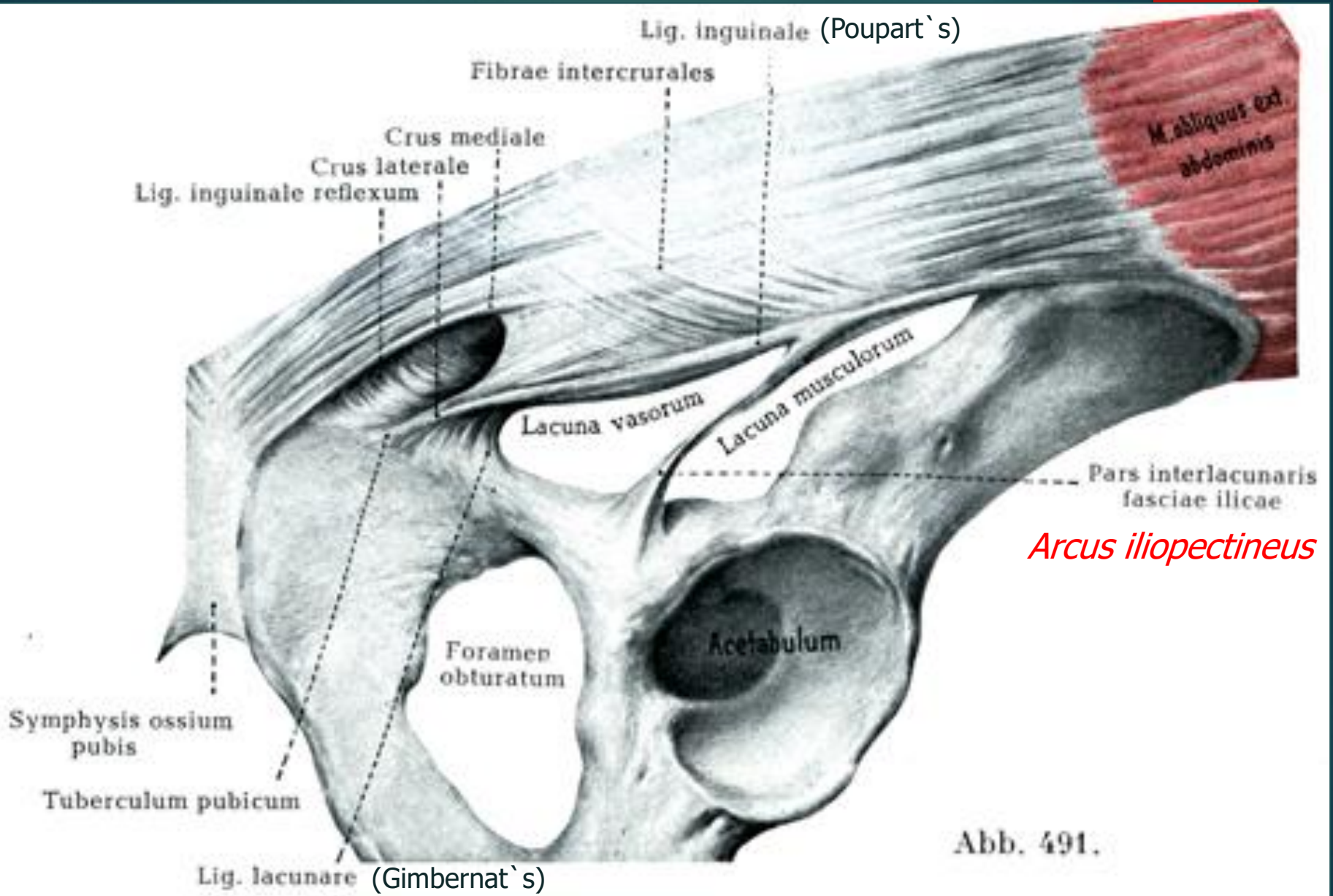
Greater sciatic foramen is divided by piriform muscle (3) into:

- foramen suprapiriforme (2)
- foramen infrapiriforme (4)

# Obturator canal



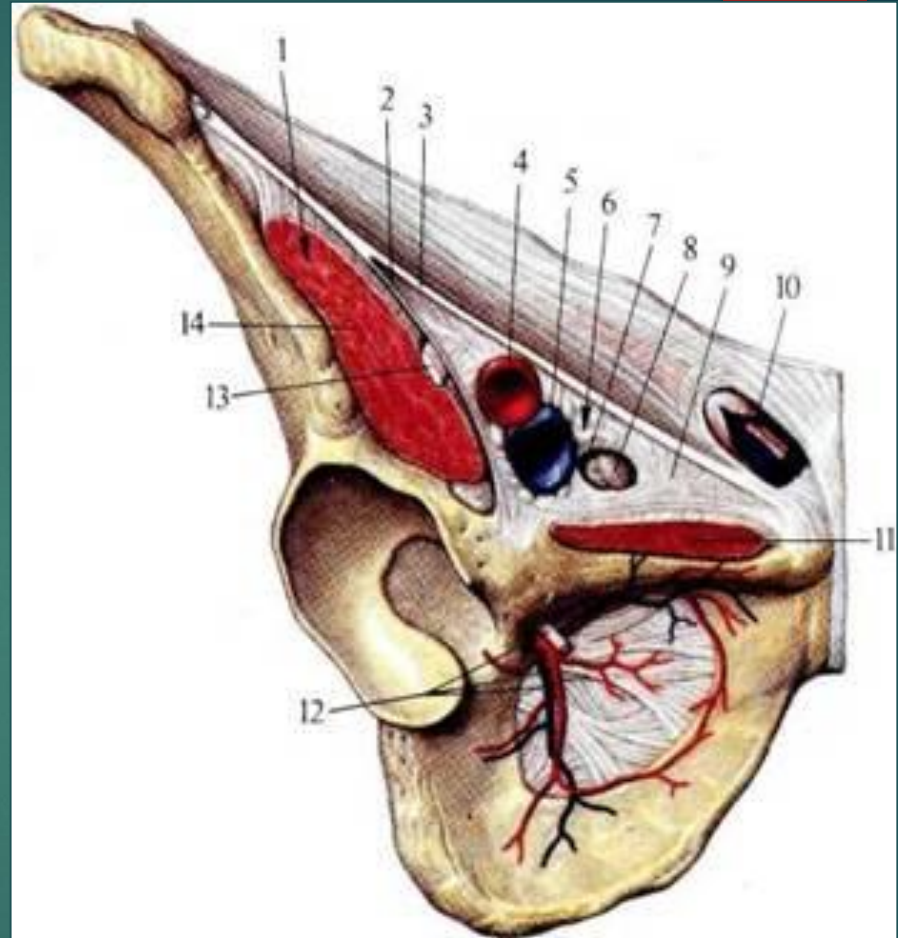




**Arcus ilipectineus (on pic. pars interlacunaris)** – derivative of the iliac fascia

# Lacuna musculorum

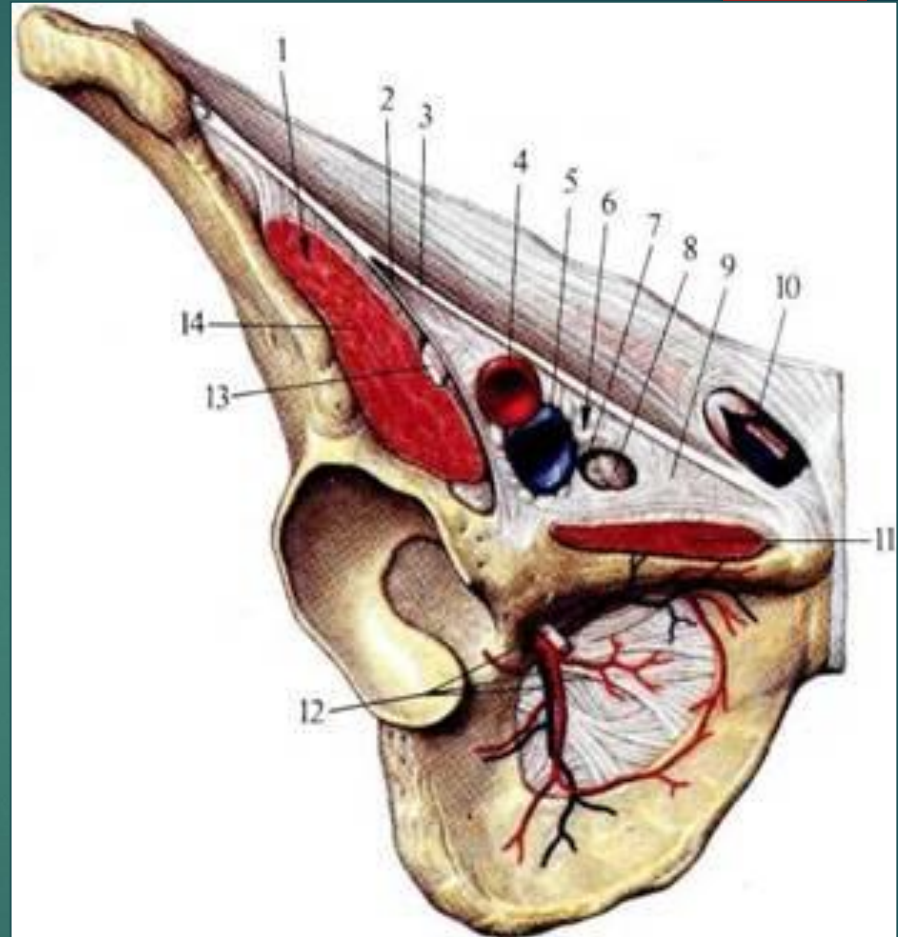
- ▶ located laterally
- ▶ m. iliopsoas and n. femoralis pass through it



1 – lacuna musculorum; 2 – arcus ilipectineus; 3 – lig. inguinale; 4 – a. femoralis; 5 – v. femoralis; 6 – lacuna vasorum; 7 – anulus femoralis; 8 – deep inguinal lymphatic nodule; 9 – lig. Lacunare; 10 – funiculus spermaticus; 11 – m. pectineus; 12 – n., a. et v. obturatoriae; 13 – n. femoralis; 14 – m. iliopsoas

# Lacuna vasorum

- ▶ located medially
- ▶ for passage of femoral artery (4) and vein (5)

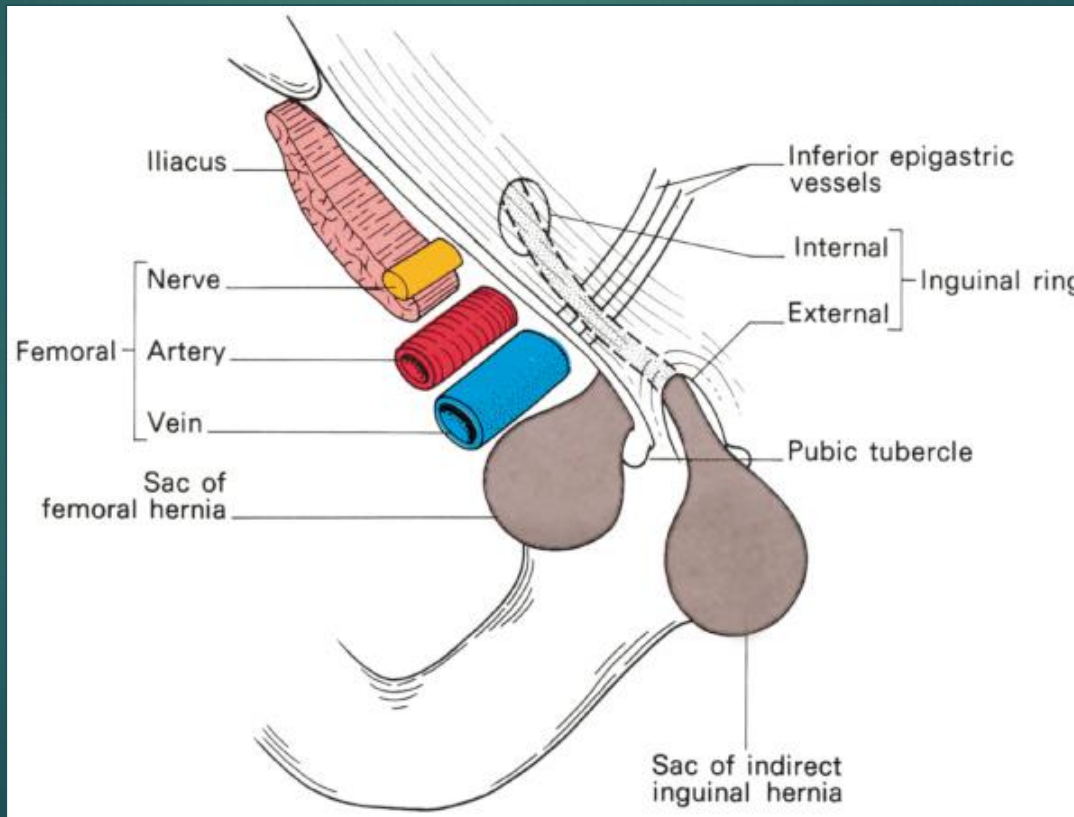


1 – lacuna musculorum; 2 – arcus ilipectineus; 3 – lig. inguinale; 4 – a. femoralis; 5 – v. femoralis; 6 – lacuna vasorum; 7 – anulus femoralis; 8 – deep inguinal lymphatic nodule; 9 – lig. lacunare; 10 – funiculus spermaticus; 11 – m. pectineus; 12 – n., a. et v. obturatoriae; 13 – n. femoralis; 14 – m. iliopsoas

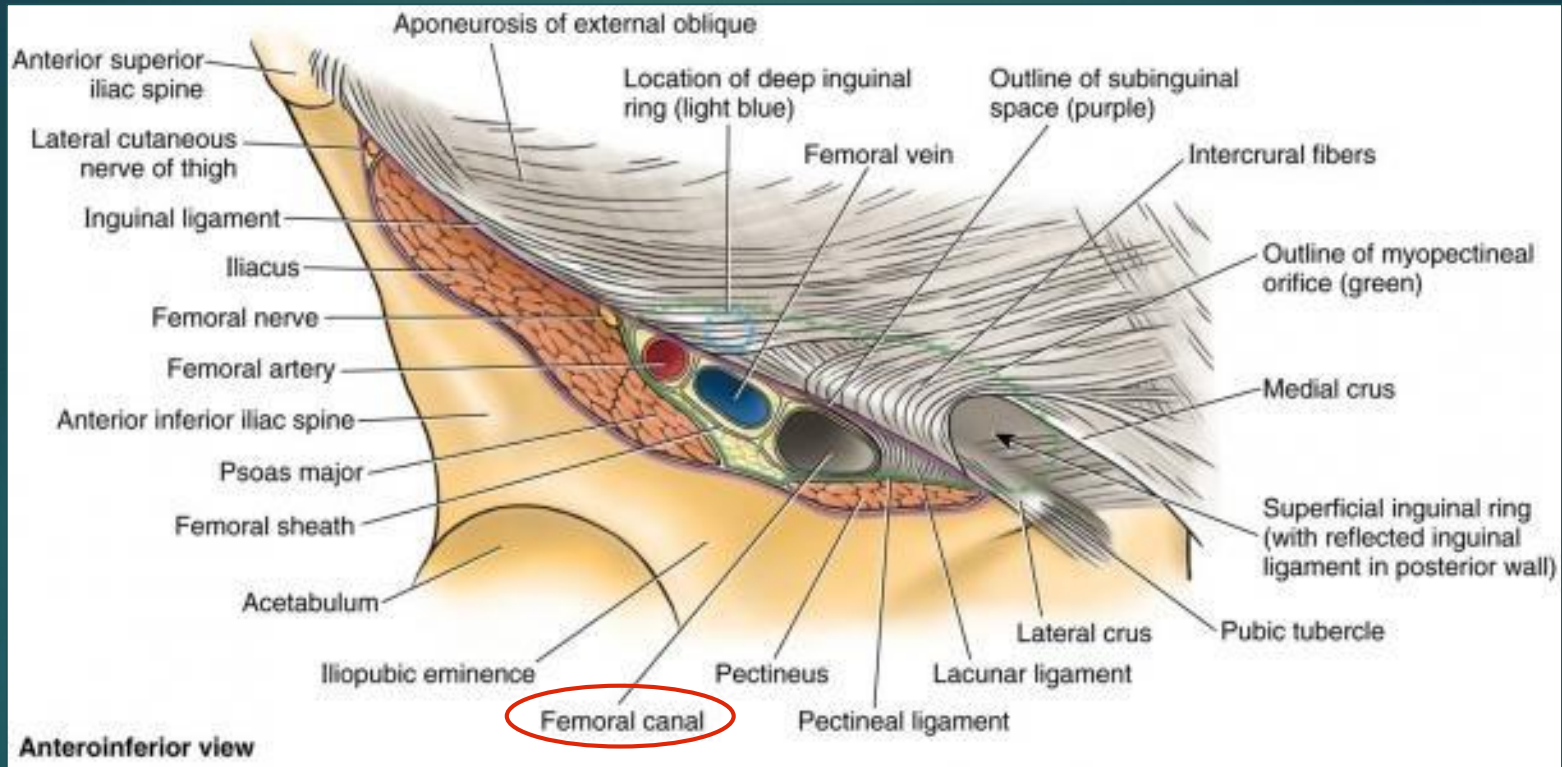


# Femoral canal

- ▶ **NBI** Appears only in case of femoral herniation
- ▶ It is located below the inguinal ligament
- ▶ It has 3 walls and 2 openings



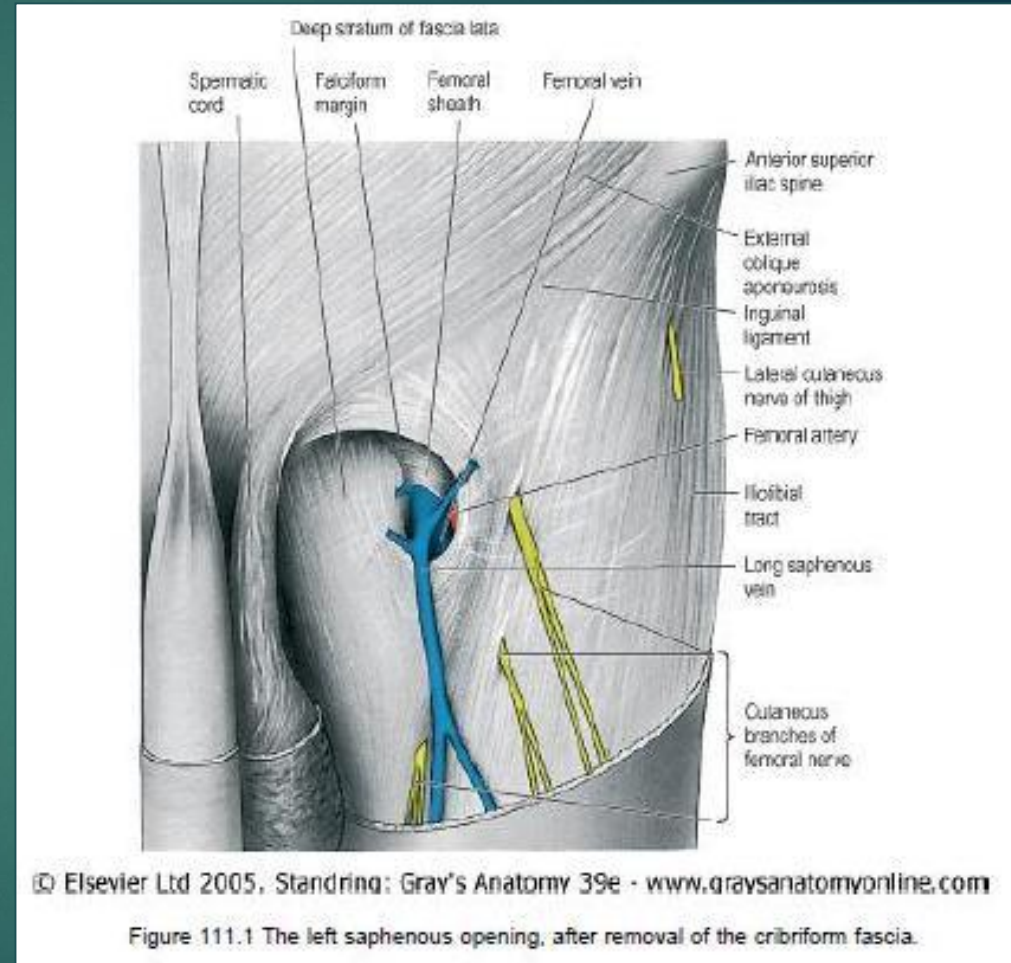
# Deep (femoral) ring is bordered by:



- ▶ anteriorly – lig.inguinale
- ▶ posteriorly – pectineal ligament
- ▶ laterally – vena femoralis
- ▶ medially – lig.lacunare

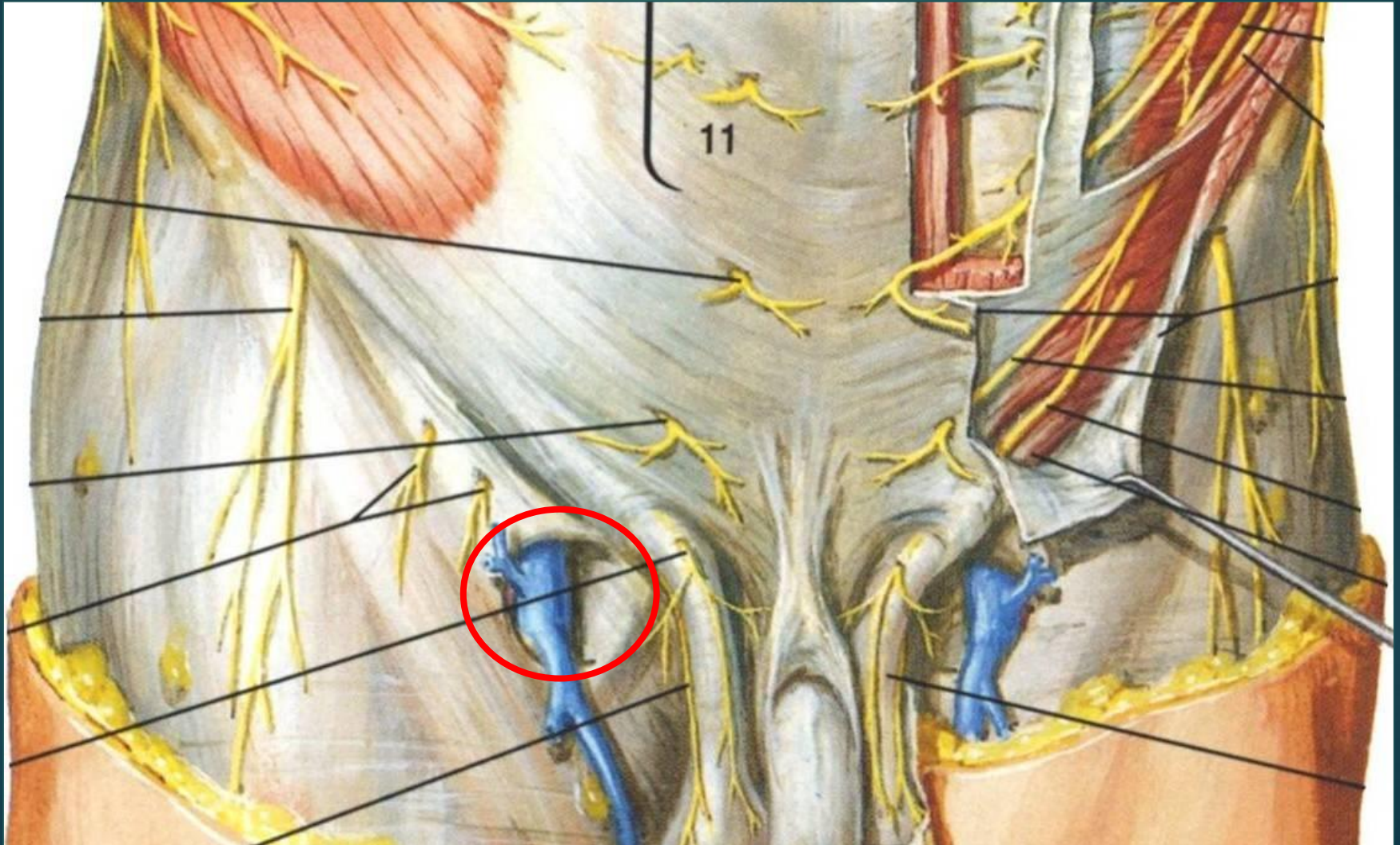
# Walls of femoral canal

- ▶ **in front** – fusion of lig.inguinale with cornu superius of hiatus saphenus
- ▶ **posteriorly** – fascia pectinea
- ▶ **laterally** – vena femoralis

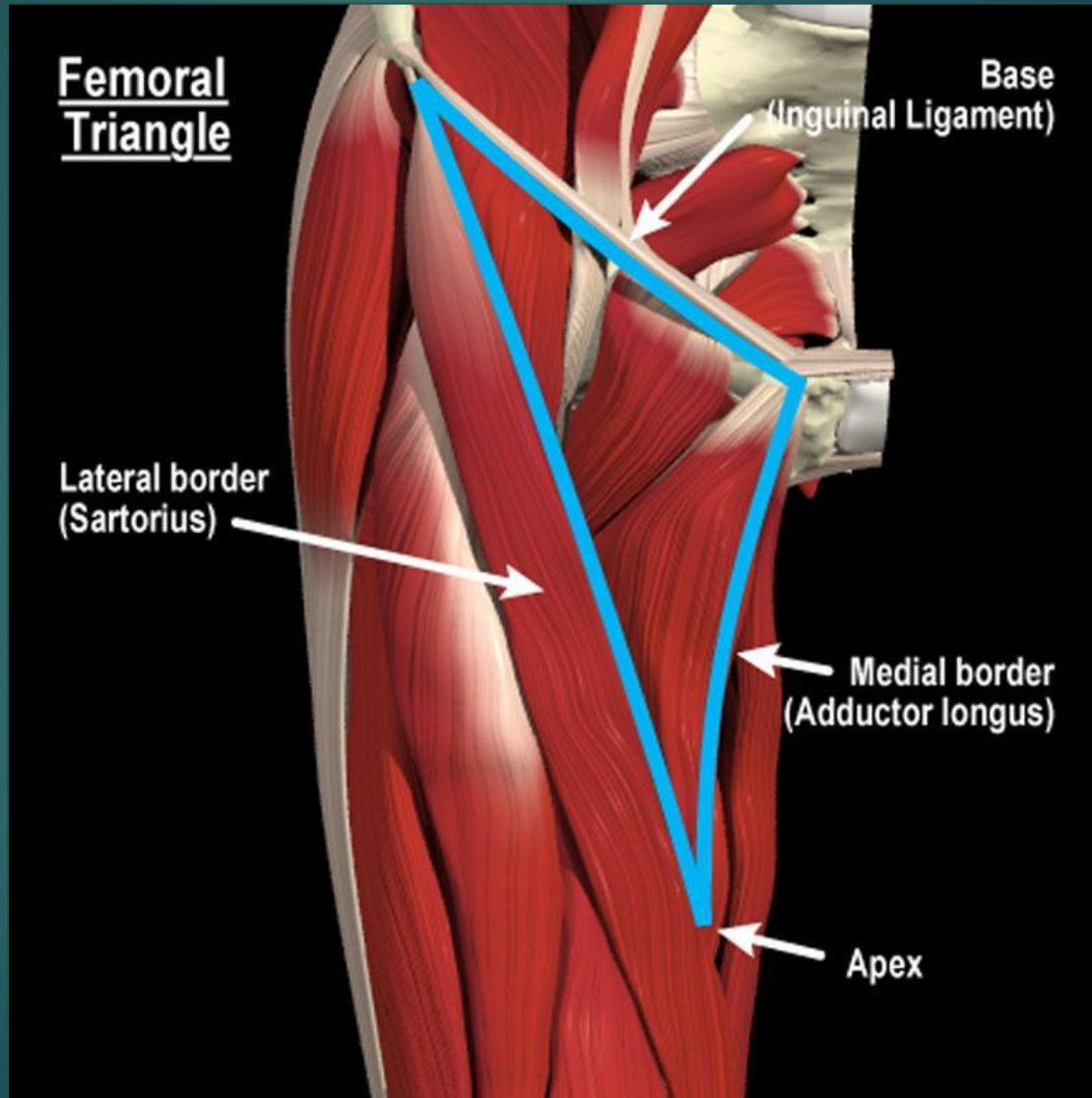




# Superficial ring - hiatus saphenus



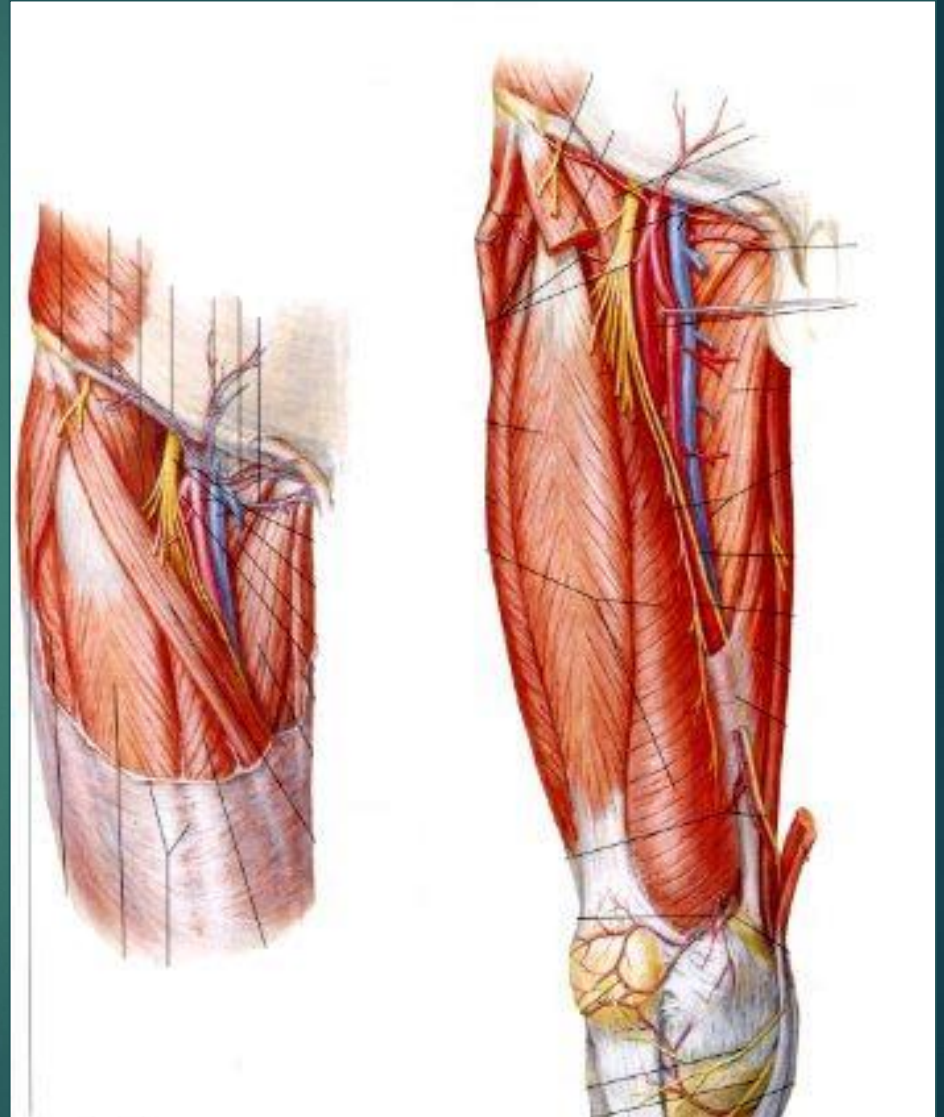
# Trigonum femorale (Scarpa's trigonum)





# Canalis adductorius

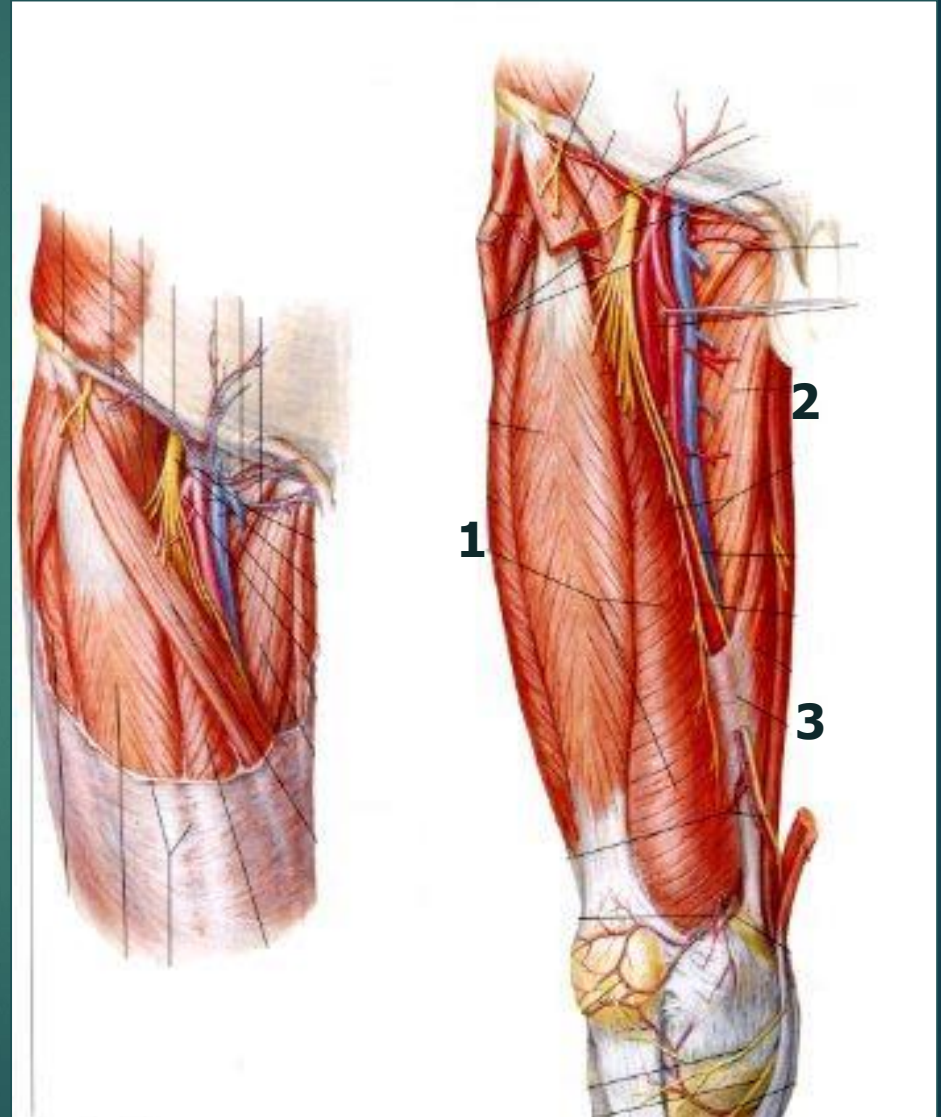
- located at the thigh
- has 3 walls and 3 openings
- vessels and nerves pass through it from anterior side of the thigh to popliteal fossa





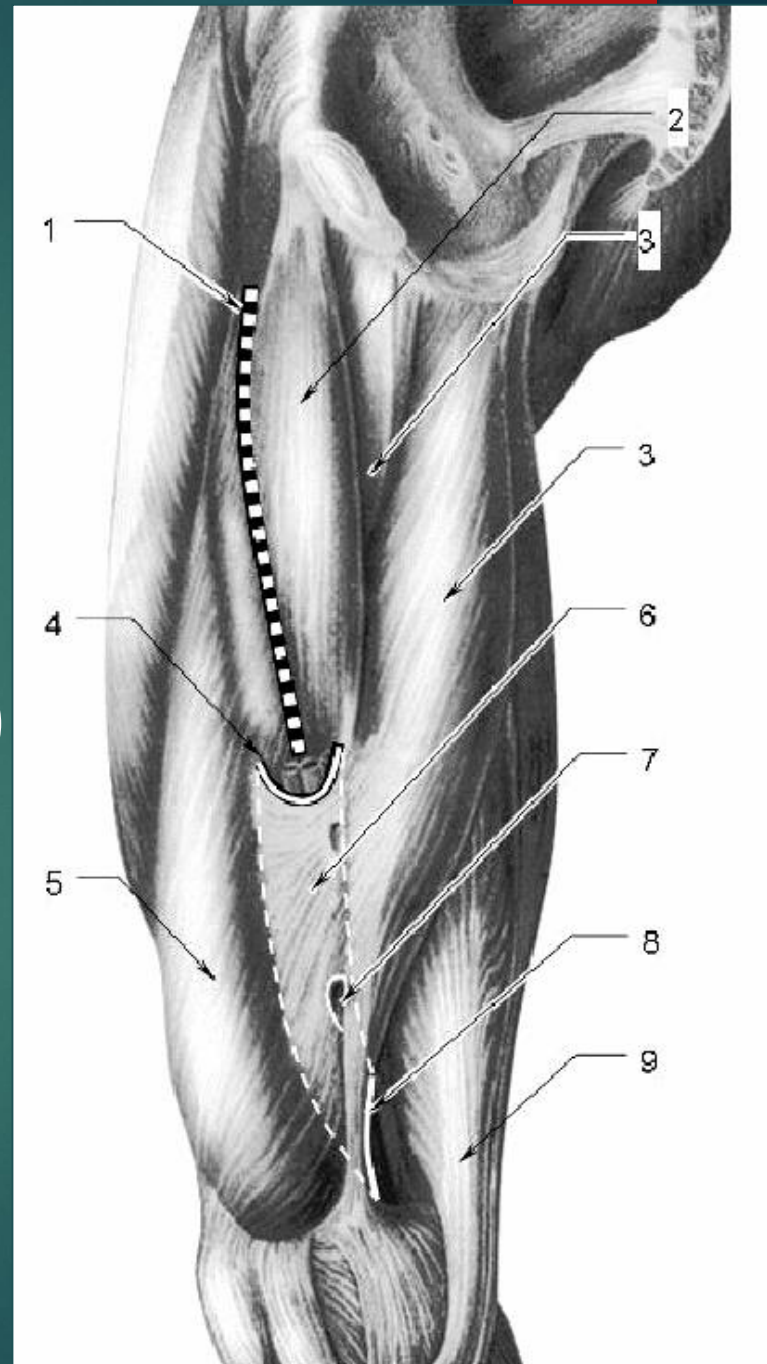
# Walls of canalis adductorius

- ▶ **lateral** – m.vastus medialis (1)
- ▶ **medial** – m.adductor magnus (2)
- ▶ **anterior** – septum between these muscles (3)



# Openings of canalis adductorius

- ▶ **proximal** (entrance) – continuation of femoral groove (4)
- ▶ **distal** (exit) – tendinous fissure of m. adductor magnus (8)
- ▶ **anterior** – in anterior wall (in septum, 7)



**Semitendinosus** \_\_\_\_\_

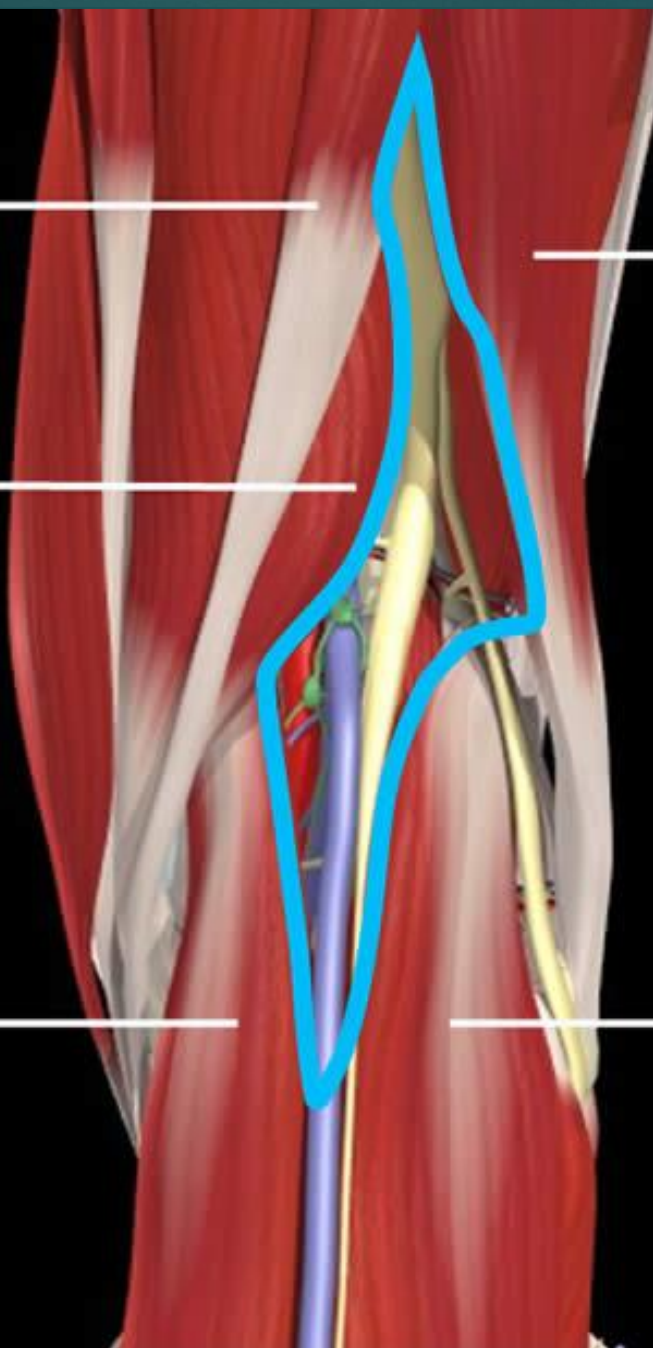
**Biceps femoris  
(long head)** \_\_\_\_\_

**Semimembranosus** \_\_\_\_\_

**Popliteal  
Fossa**

**Gastrocnemius  
(medial head)** \_\_\_\_\_

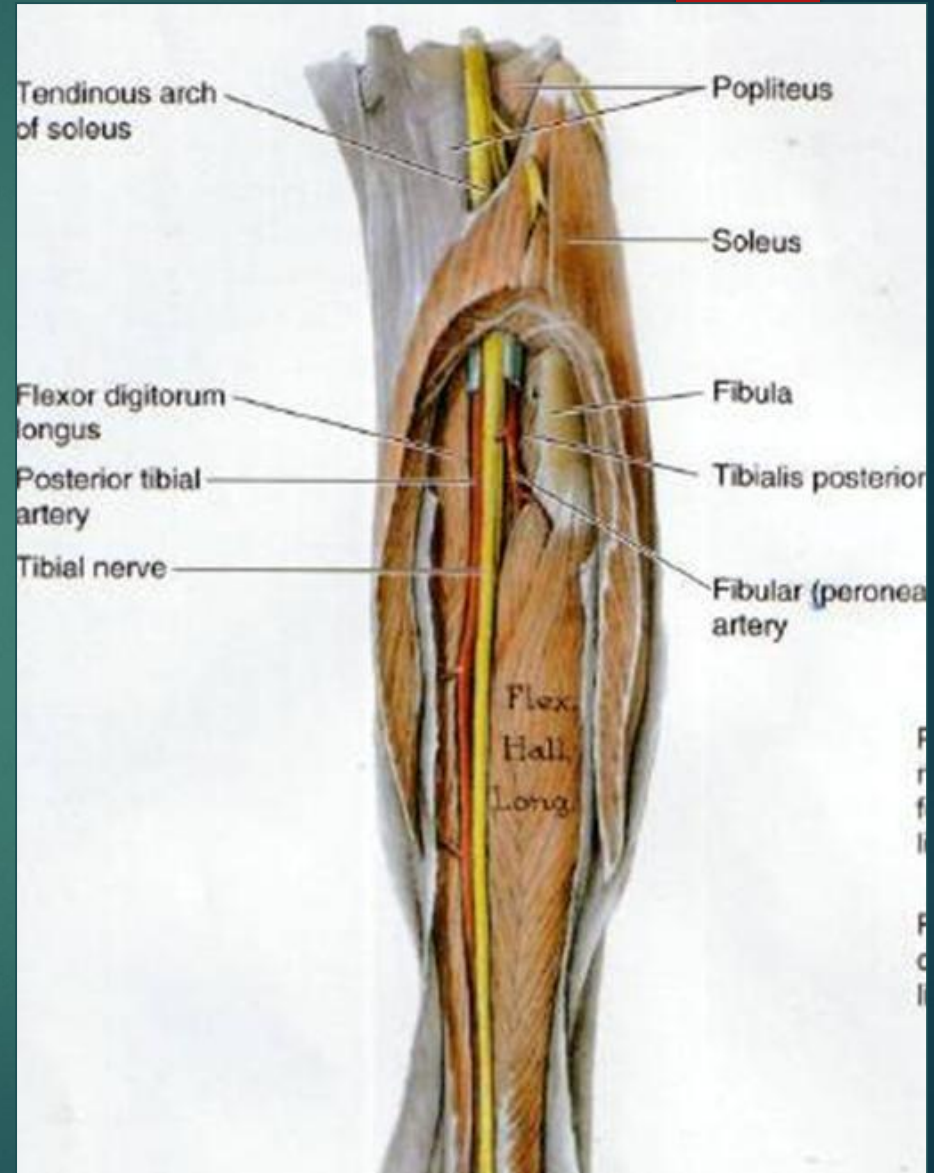
**Gastrocnemius  
(lateral head)** \_\_\_\_\_





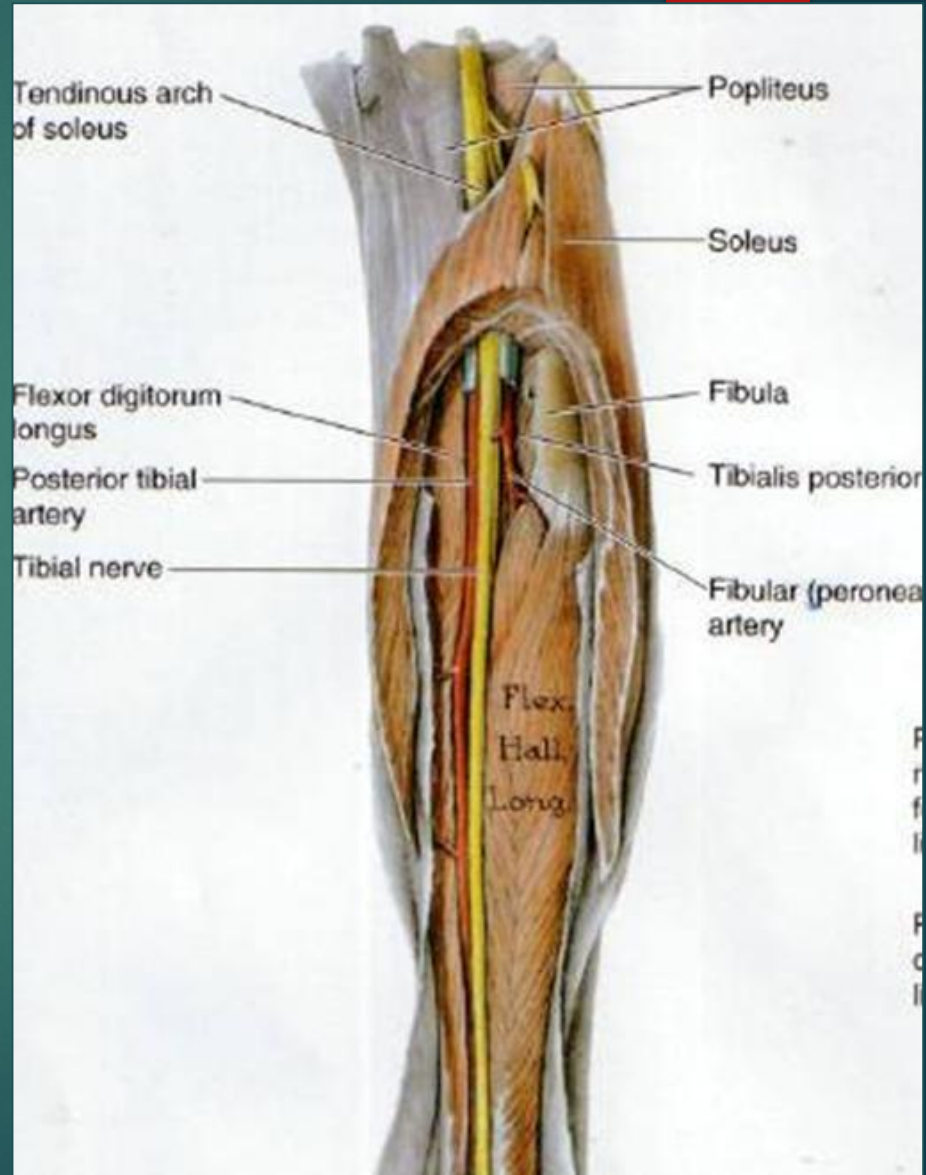
# Canalis cruropopliteus

- ▶ Between deep (m.tibialis posterior) and superficial (m.soleus) muscles
- ▶ Has two walls and three openings
- ▶ Transmits tibial vessels and nerves



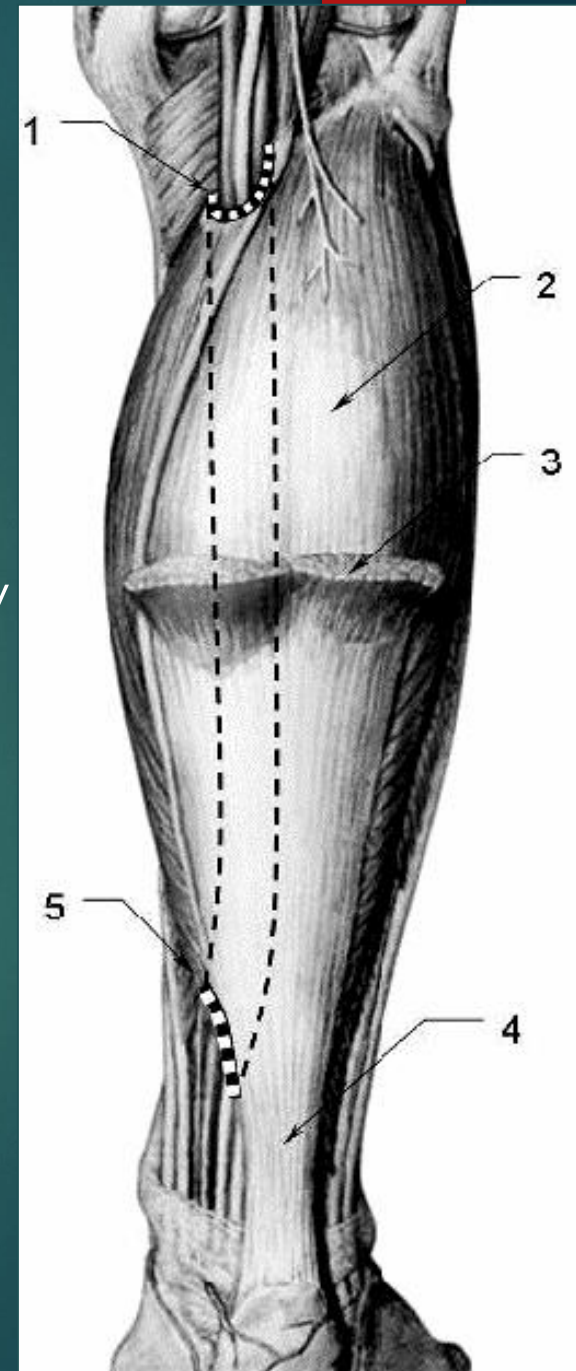
# Walls of canalis cruropopliteus

- ▶ **anterior** – m.tibialis posterior
- ▶ **posterior** – m.soleus



# Openings of canalis cruropopliteus

- ▶ **Entrance** – below the arcus tendineus of m.soleus (1)
- ▶ **Exit** – medially from lig.calcaneus (5) (medially from Achill tendon - 4)
- ▶ **Anterior** – in membrana interossea cruris (not shown)

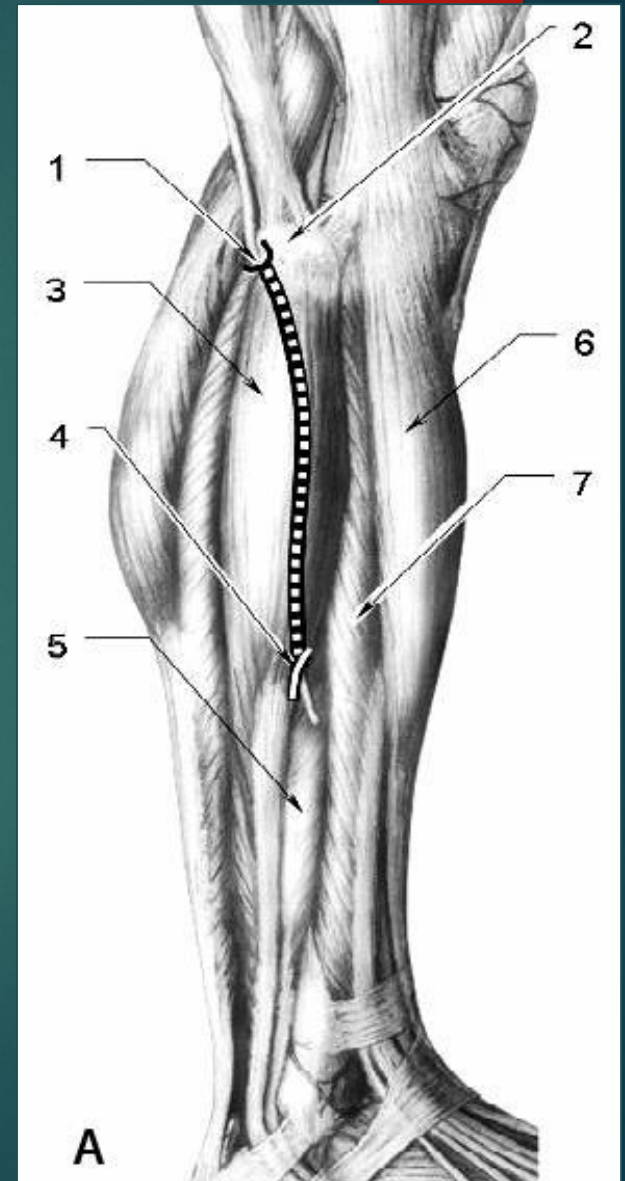




# Canalis musculoperoneus superior

- ▶ located between:
  - ▶ Upper part of fibula
  - ▶ m.fibularis (peroneus) longus

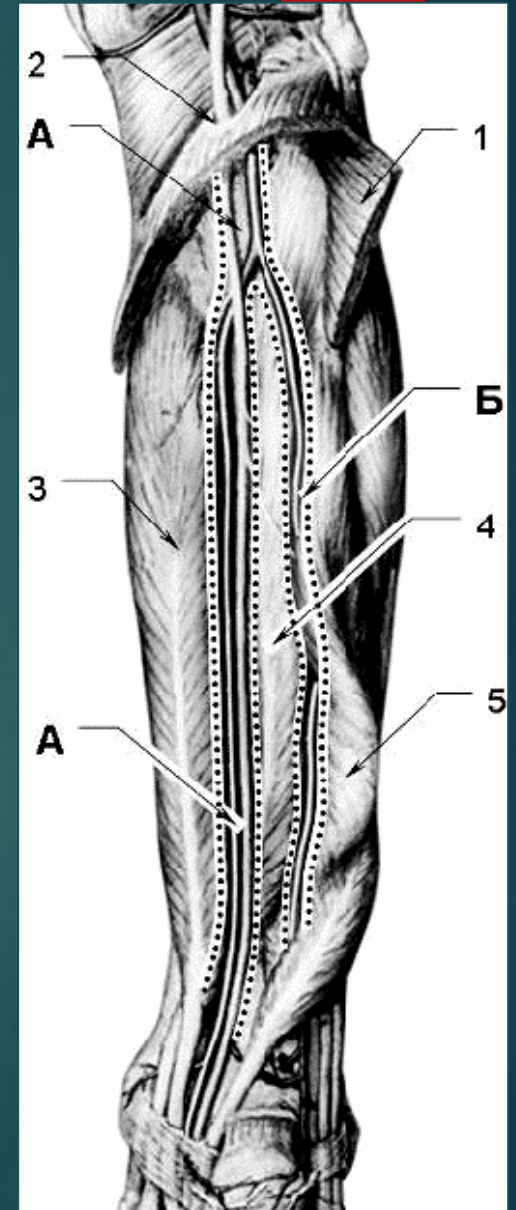
Transmits n. fibularis (peroneus) superficialis

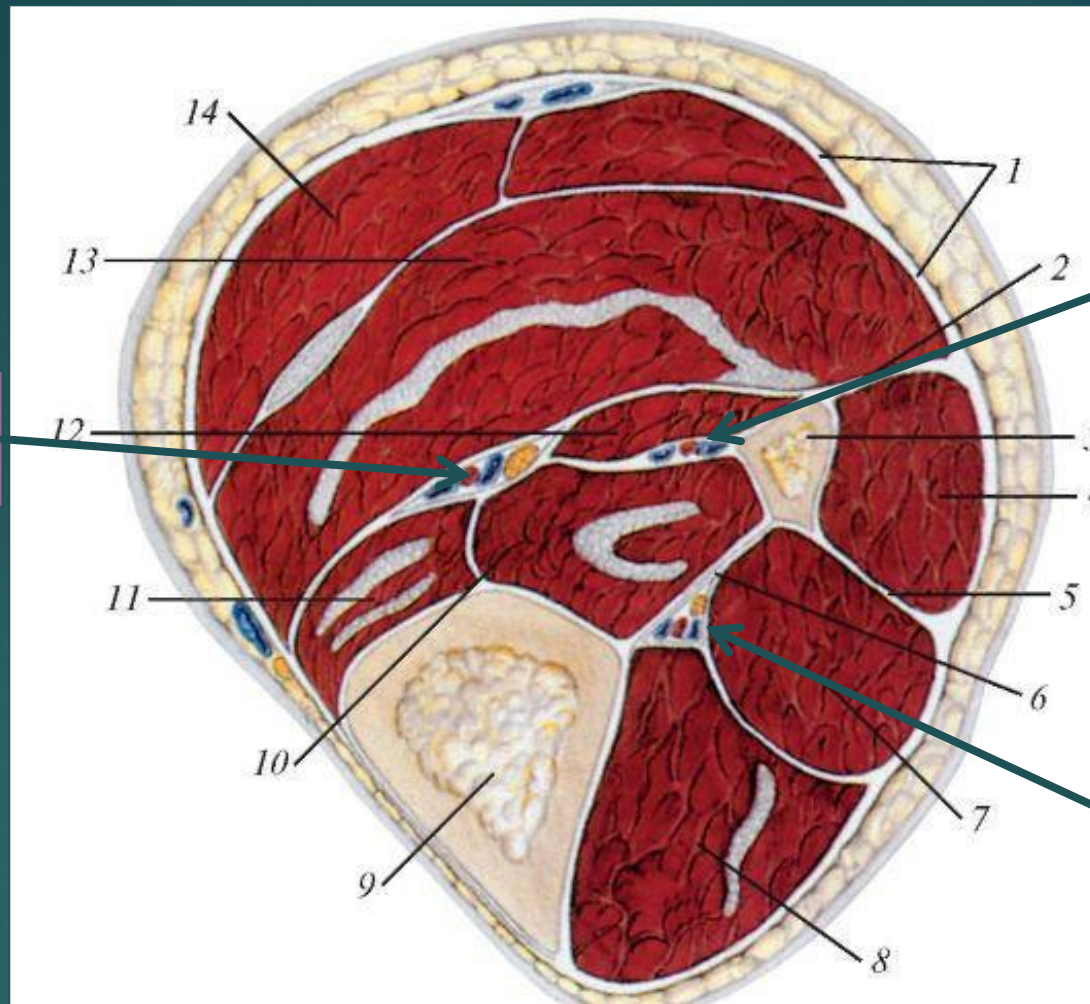


# Canalis musculoperoneus inferior

- ▶ located (Б) between:
  - ▶ inferior part of fibula
  - ▶ m. flexor hallucis longus
  - ▶ m. tibialis posterior

Transmits a. et v. fibulares





Canalis  
cruropopliteus

Canalis  
musculo-peroneus  
inferior

Canalis  
musculo-peroneus  
superior

Cross section through the shin in the middle third :

1 – fascia of the shin; 2 – posterior intermuscular partition of the shin; 3 - fibula;  
 4 – m. peroneus longus; 5 – anterior intermuscular partition of the shin;  
 6 – membrana interossea; 7 – m. extensor digitorum longus; 8 – m. tibialis anterior;  
 9 - tibia; 10 – m. tibialis posterior; 11 – m. flexor digitorum longus; 12 – m. flexor  
 hallucis longus; 13 – m. soleus; 14 – m. gastrocnemius



