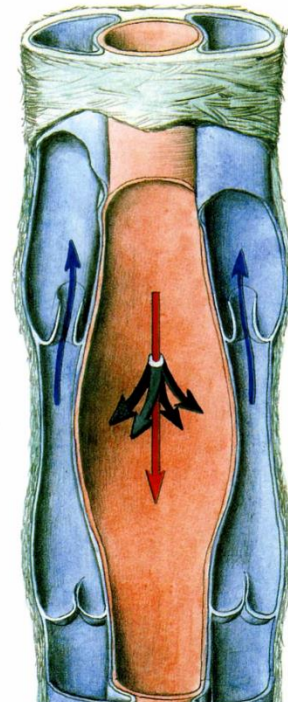
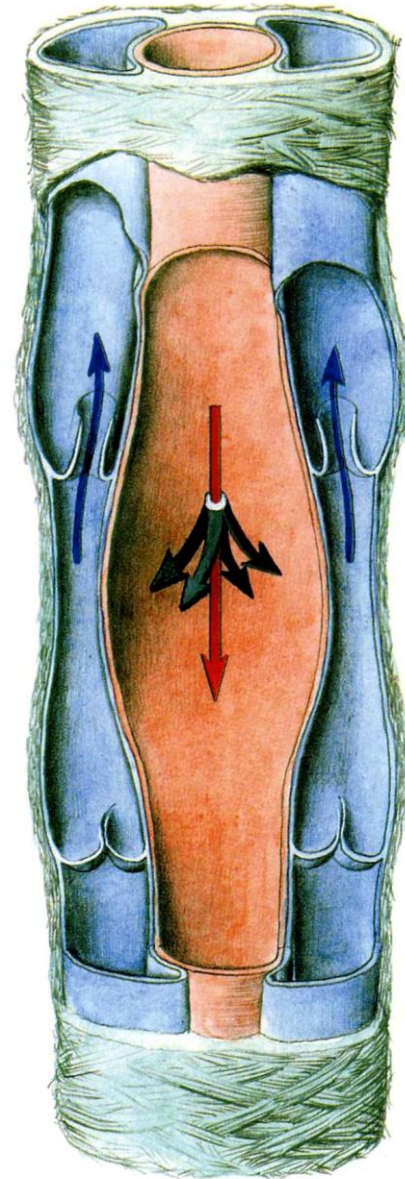
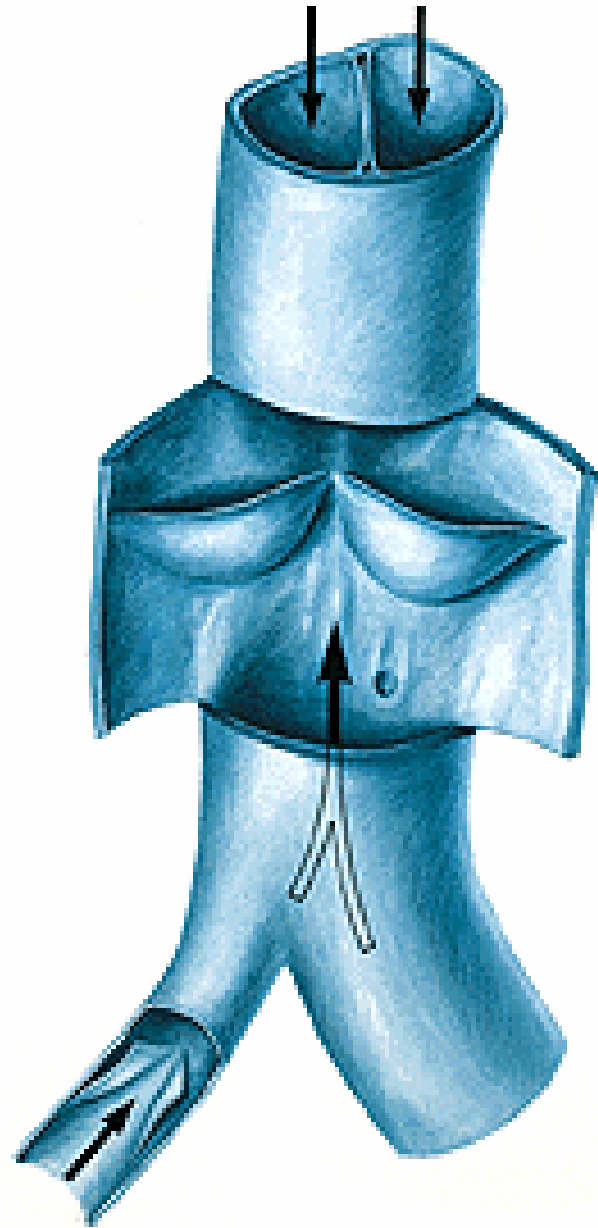


**VEINS**

- **CAPILLARIES, SINUSOIDS, POSTCAPILLARY VENULES**
- **VENULES, VEINS**
- **TUNICA INTIMA, MEDIA, ADVENTITIA**
- **VASA VASORUM, SYMPATHETIC AND AFFERENT NERVES**
- **VALVES, SINUS**
- **PHLEBOGRAPHY**
- **VENAE COMITANTES**

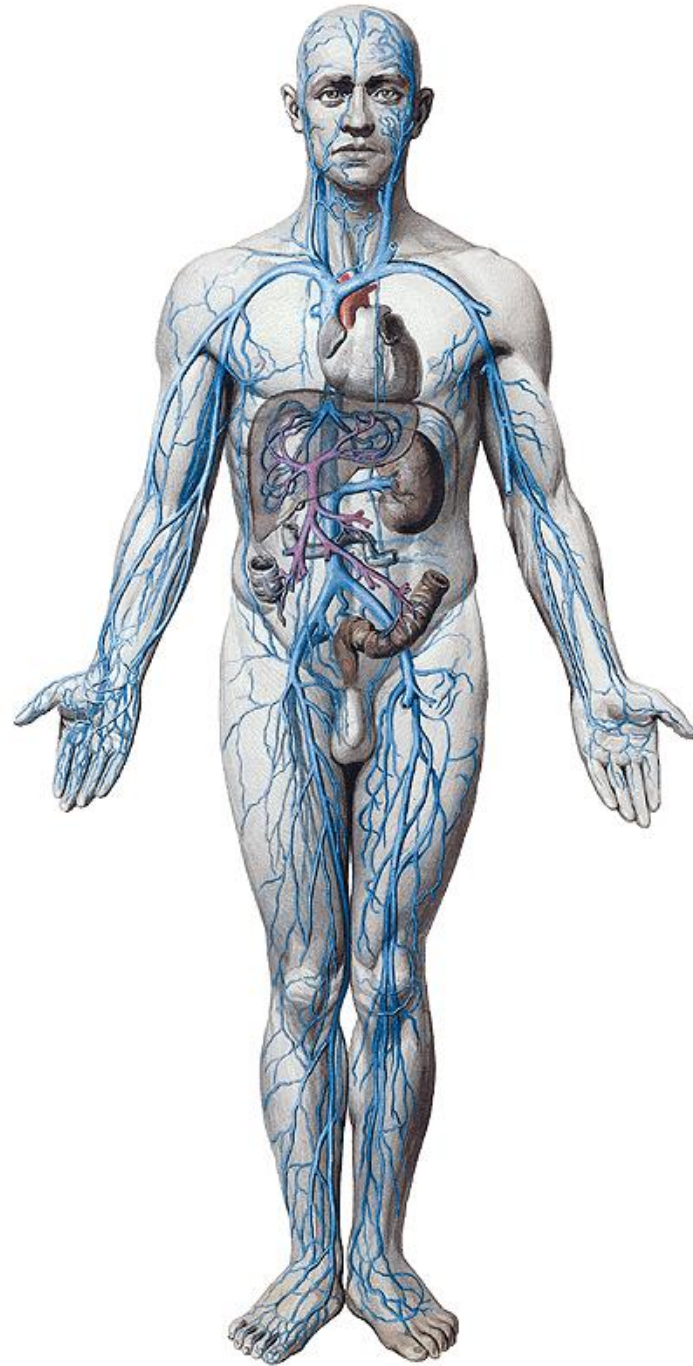




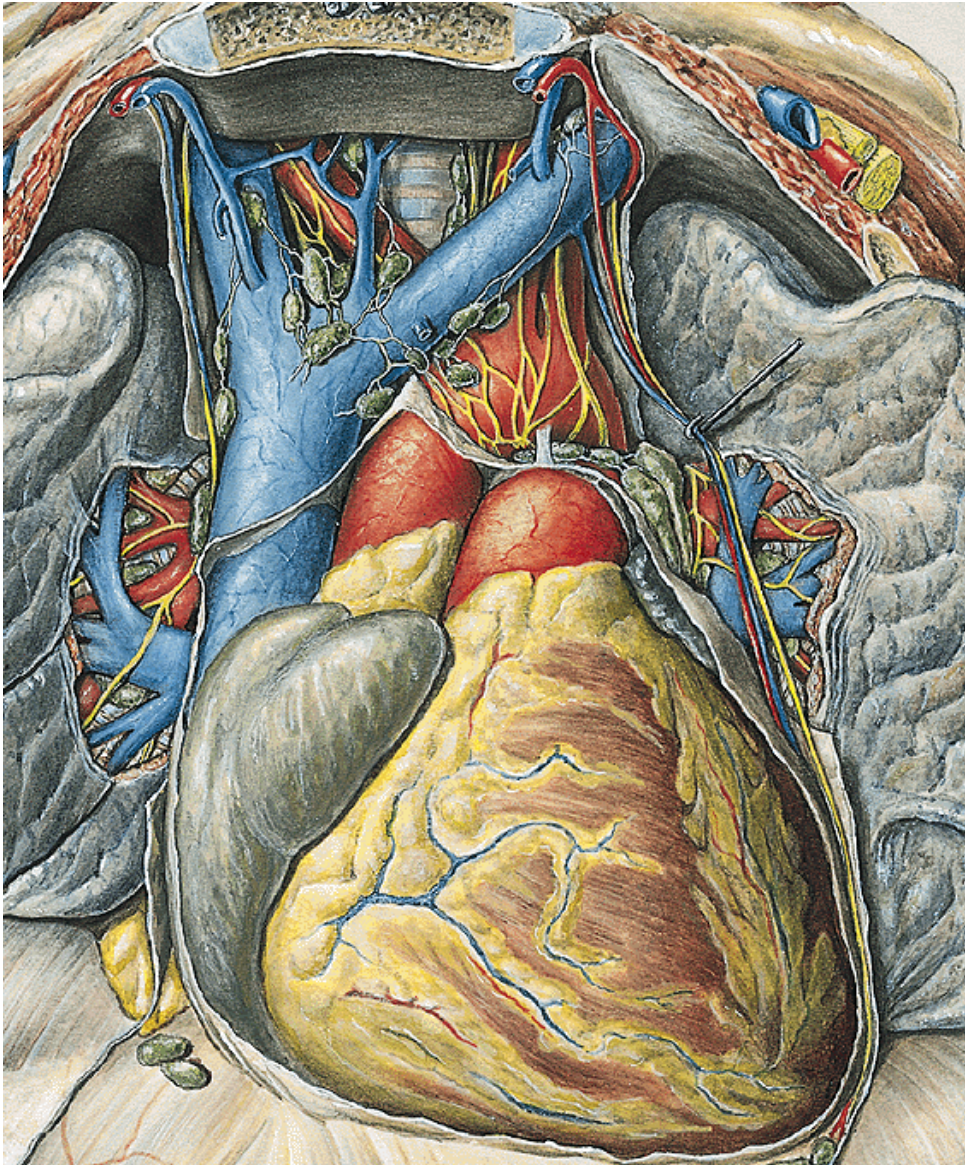
**v. cava superior**



**v. cava inferior**

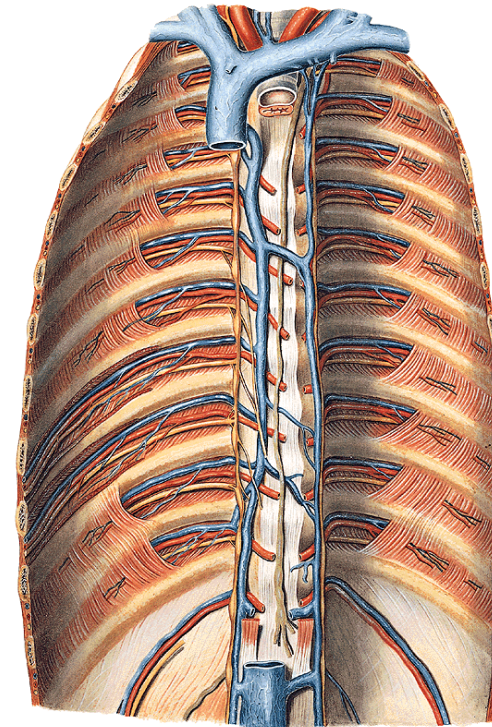


# Vena cava superior

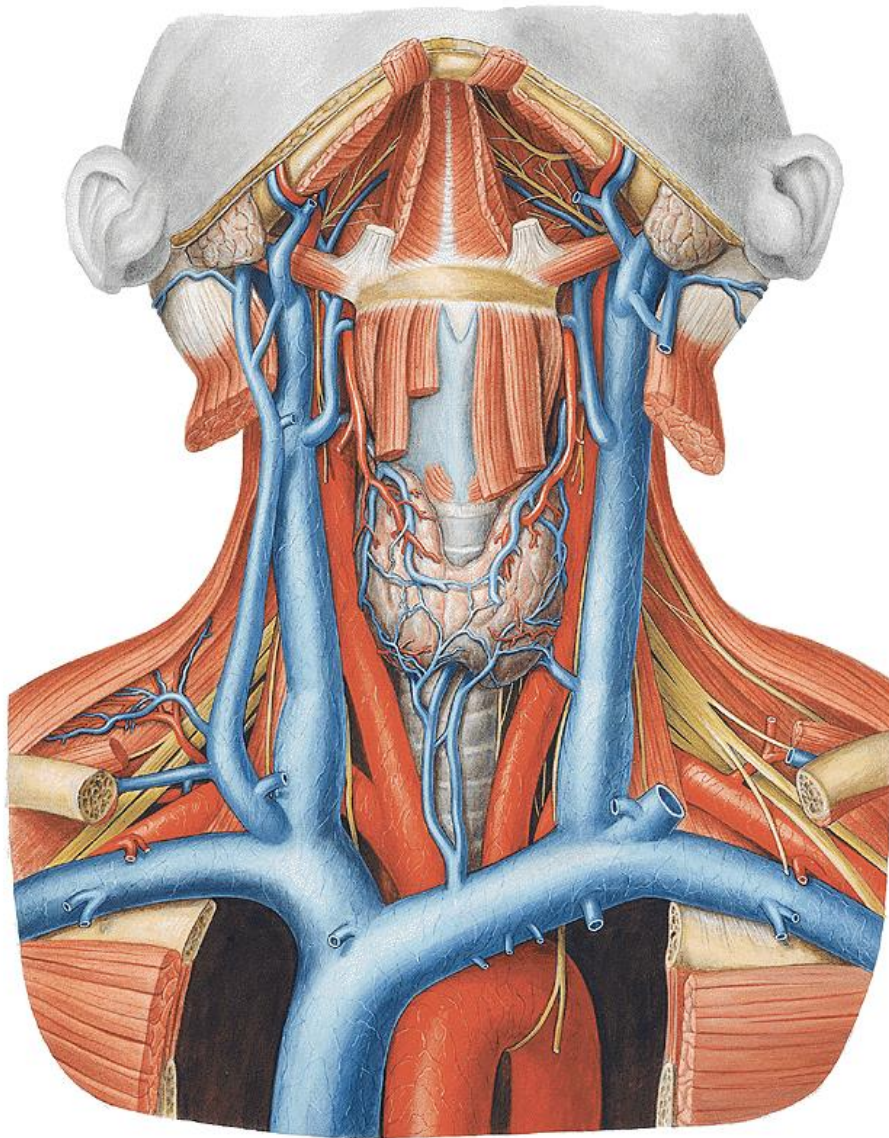


## V. CAVA SUP.

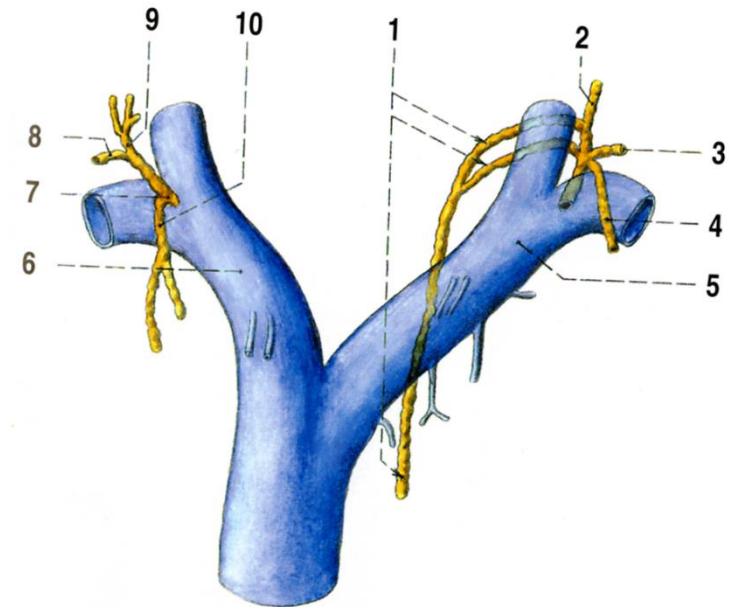
- v. brachiocephalica dx. et sin.
- v. azygos



# Venae brachiocephalicae

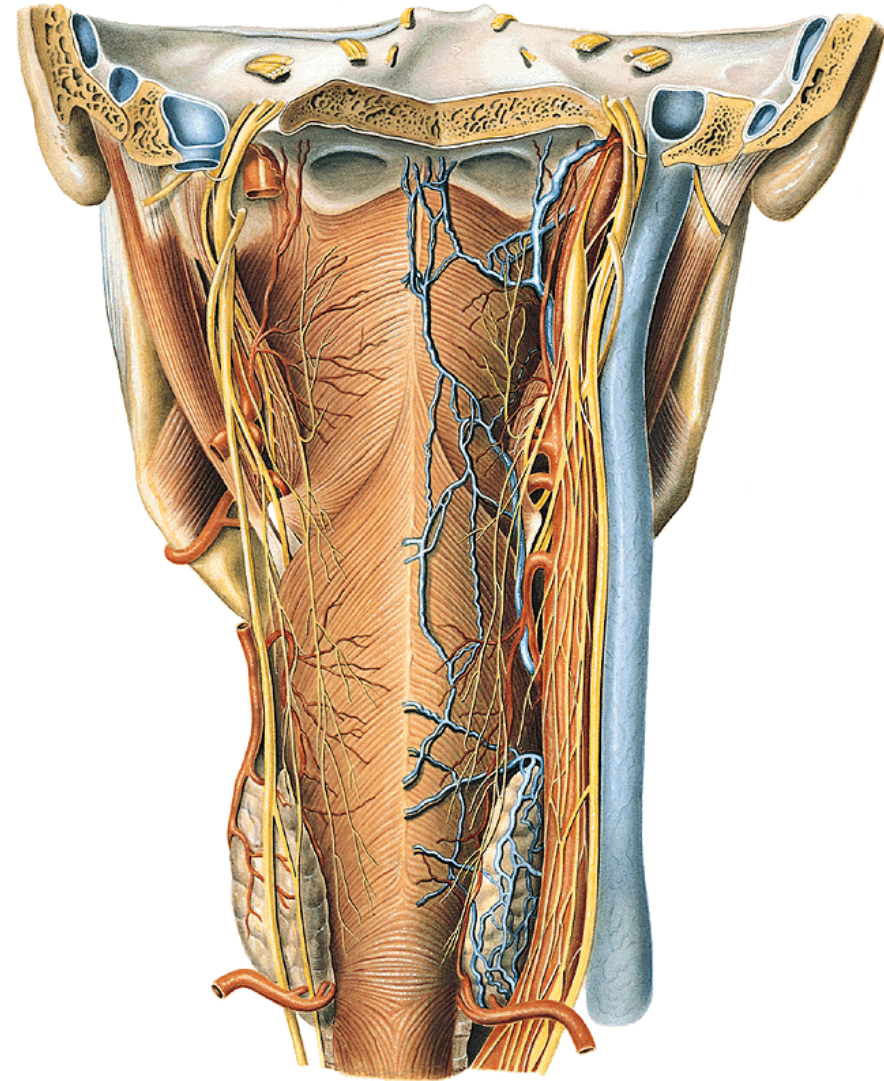
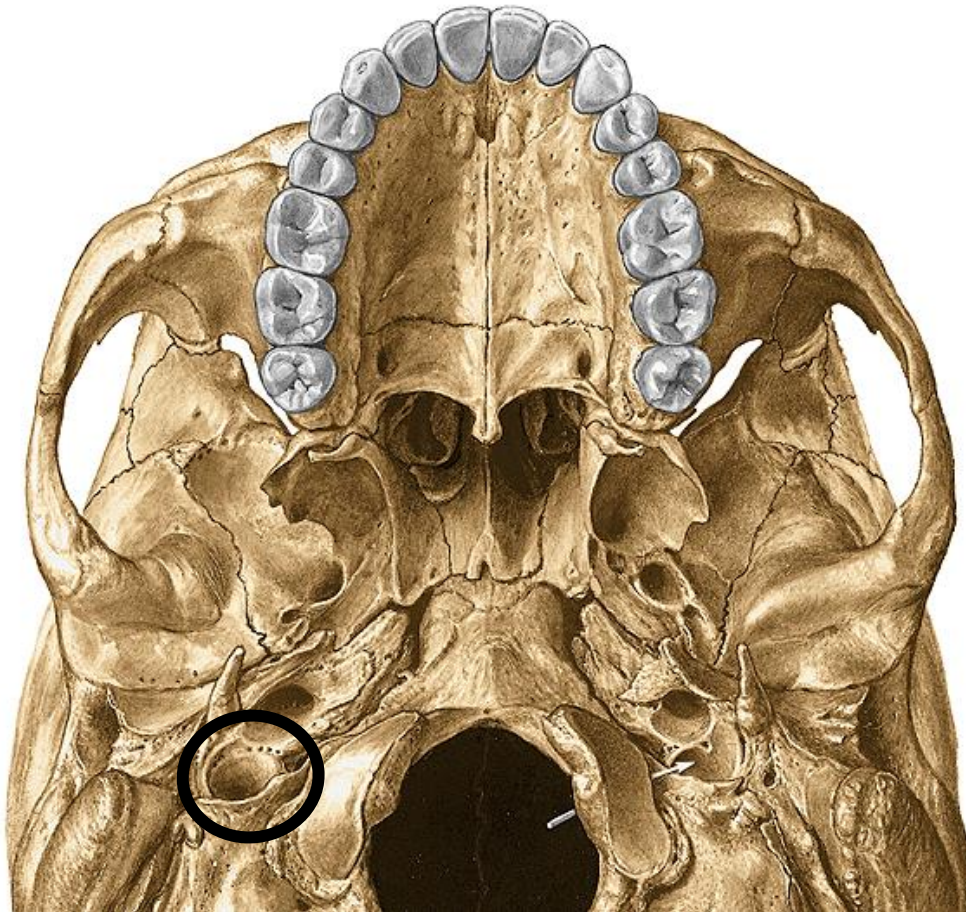


Angulus venosus dx. a sin.

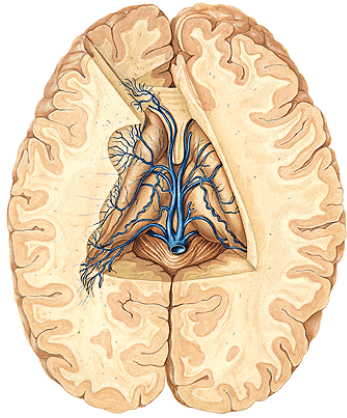


# Vena jugularis interna

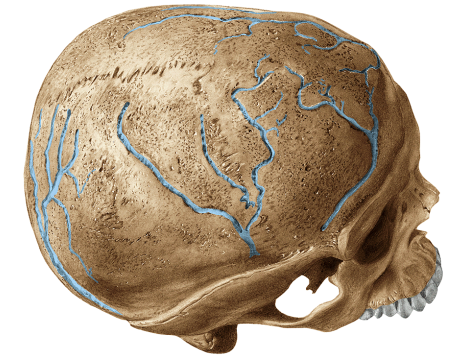
- **INTRACRANIAL TRIBUTARIES**  
(region supplied by a. carotis interna)
- **EXTRACRANIAL TRIBUTARIES**  
(region supplied by a. carotis externa)



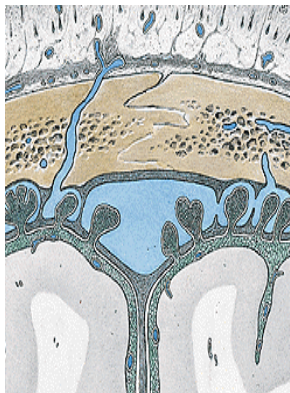
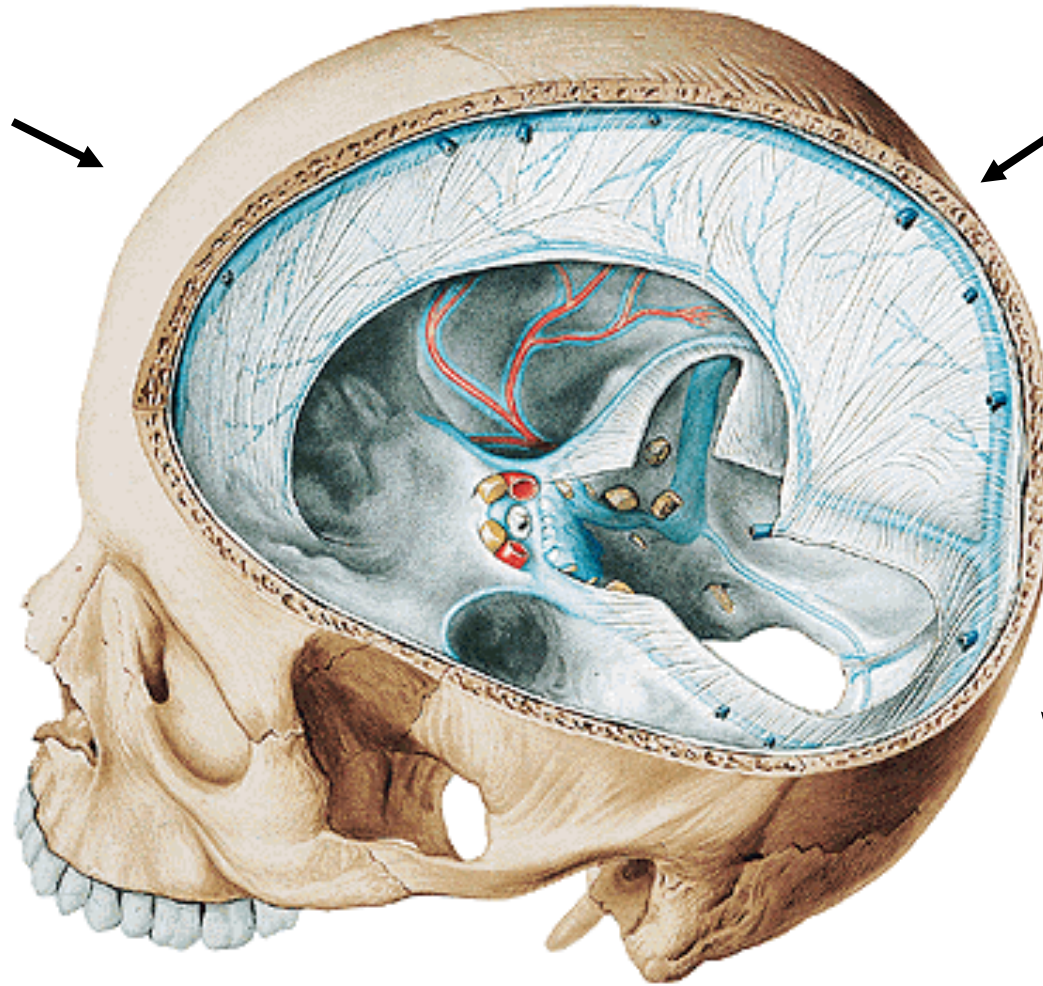
Intracranial tributaries



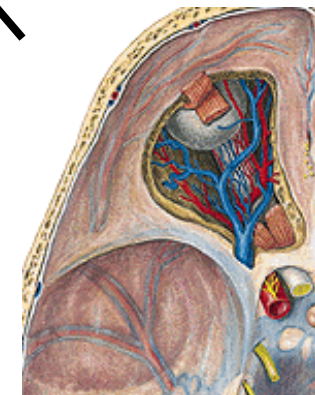
**venae cerebri**



**venae diploicae**



**venae emissariae**



**venae ophtalmicae**



## Extracranial tributaries

### Anterior (separately, from stem...)

- v. facialis
- v. lingualis
- v. thyroidea superior
- v. thyroidea media

### Medial (separately)

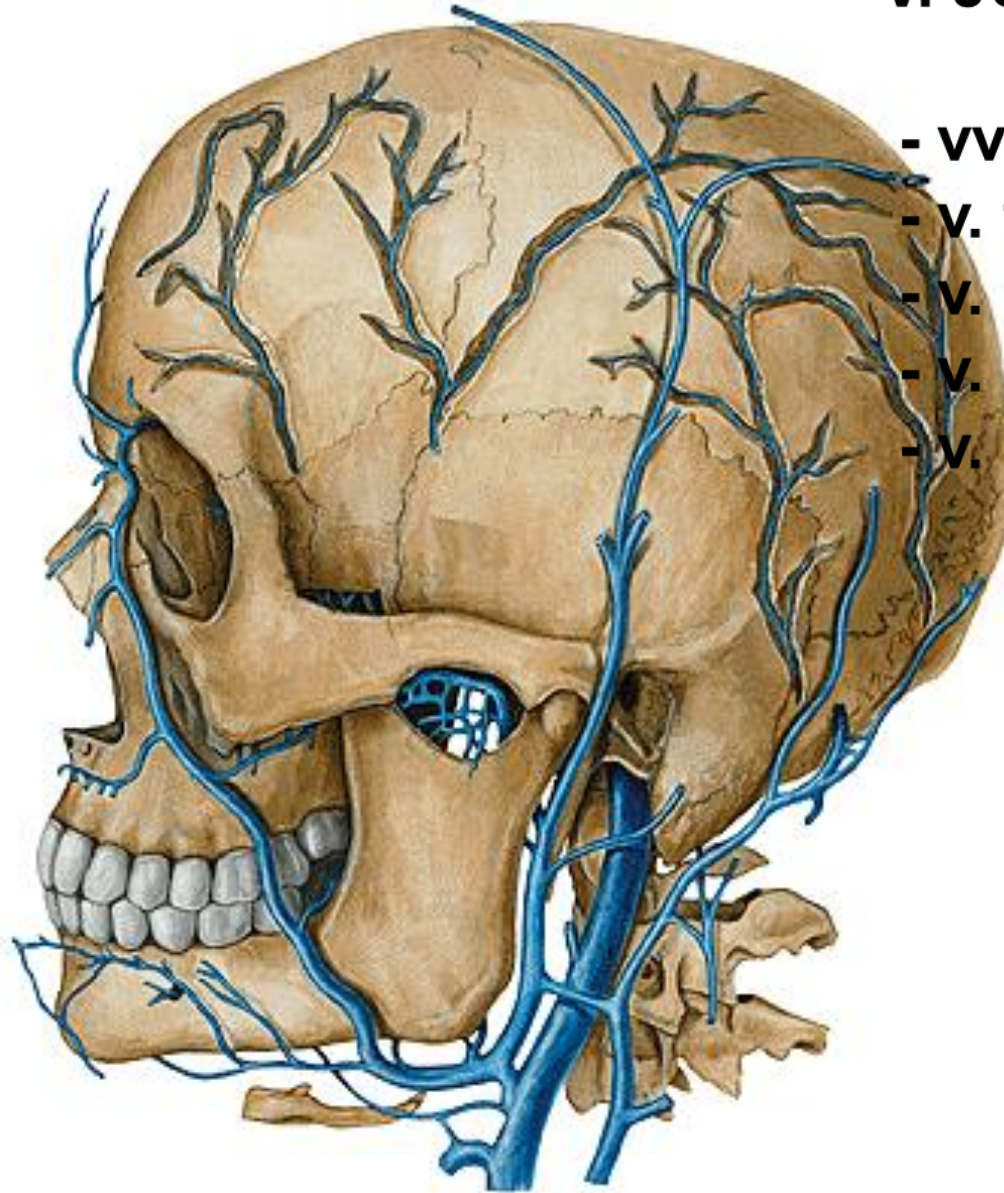
- v. pharyngea (plexus pharyngeus)

### Posterior (vena jugularus externa)

- v. auricularus posterior
- v. occipitalis

### Stem (vena retromandibularis)

- v. temporalis superficialis
- v. maxillaris (plexus pterygoideus)



## V. JUGULARIS INT.

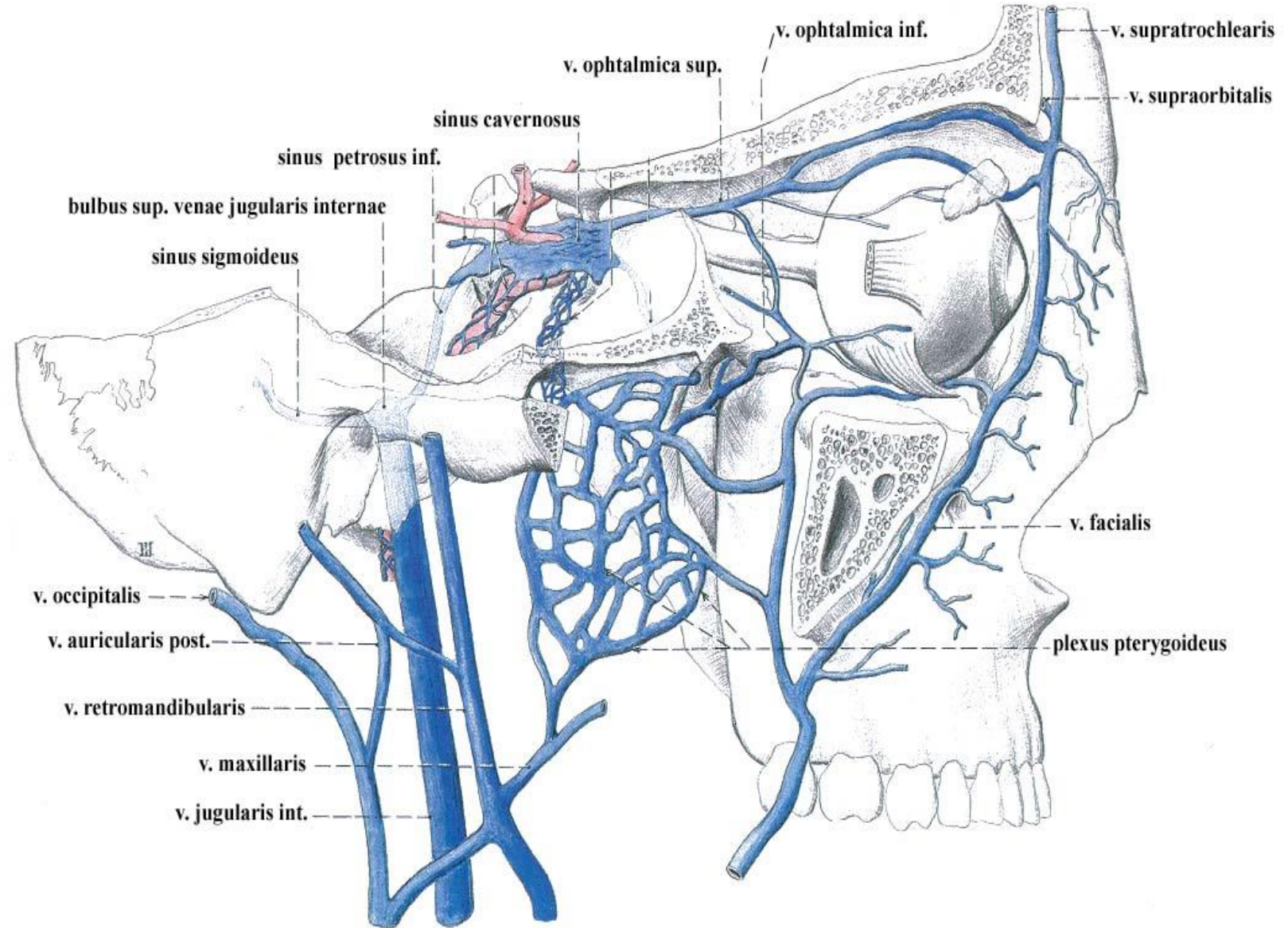
- vv. pharyngeae
- v. facialis communis
- v. lingualis
- v. thyroidea sup.
- v. thyroidea media

## V. RETROMANDIBULARIS

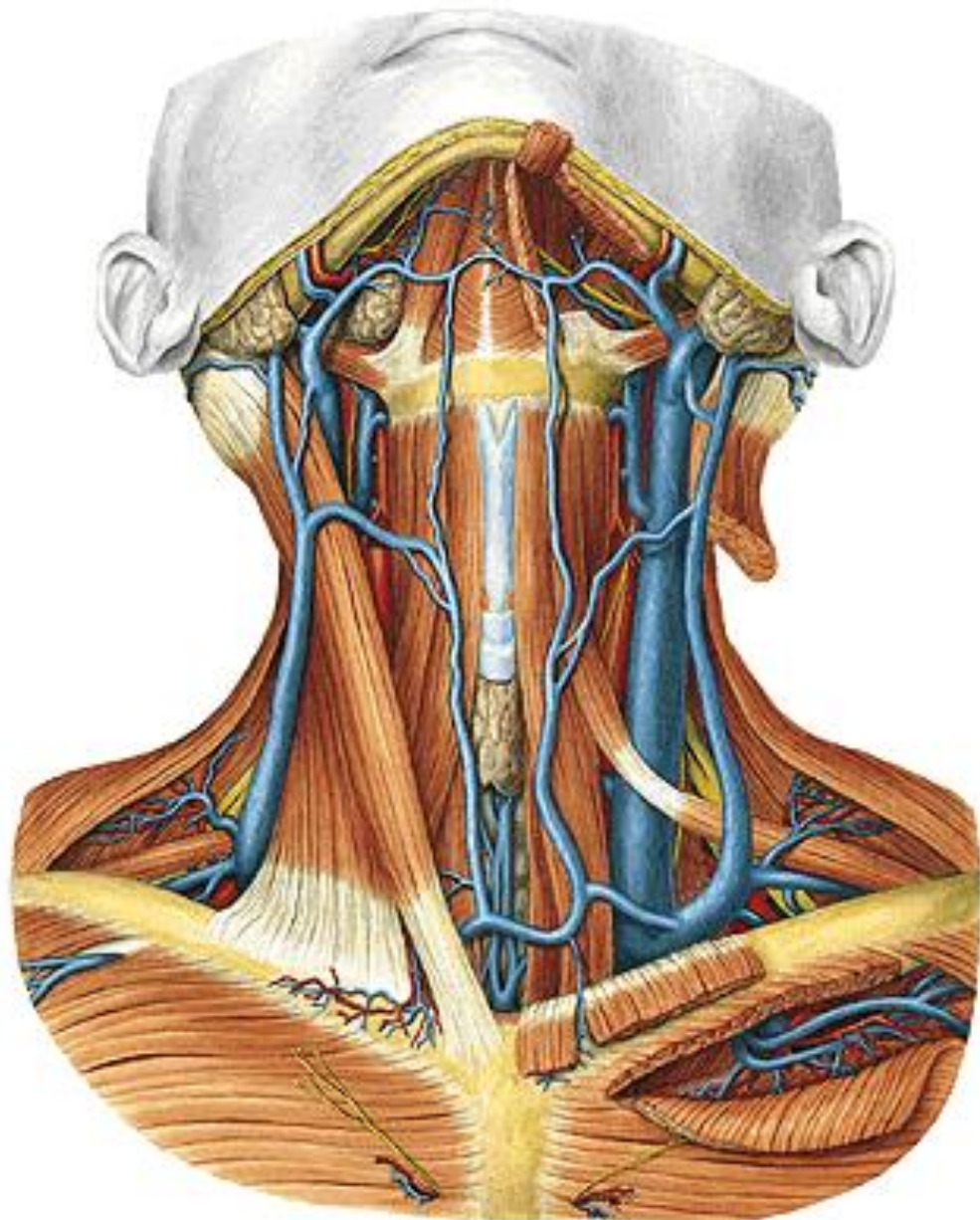
- v. temporalis spf.
- v. maxillaris
- v. temporalis media
- v. transversa faciei

## V. FACIALIS

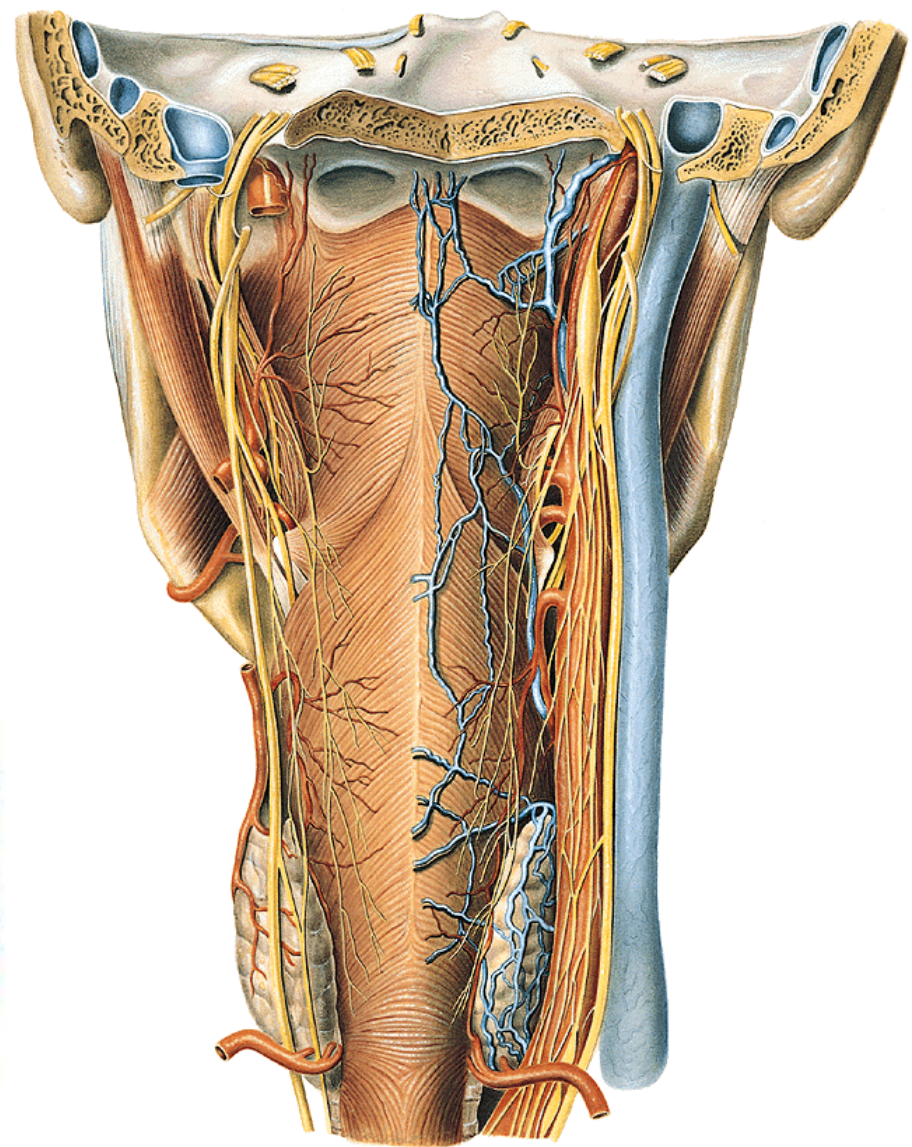
- v. angularis
- v. prof. faciei
- v. palatina ext.



**Vena jugularis anterior**



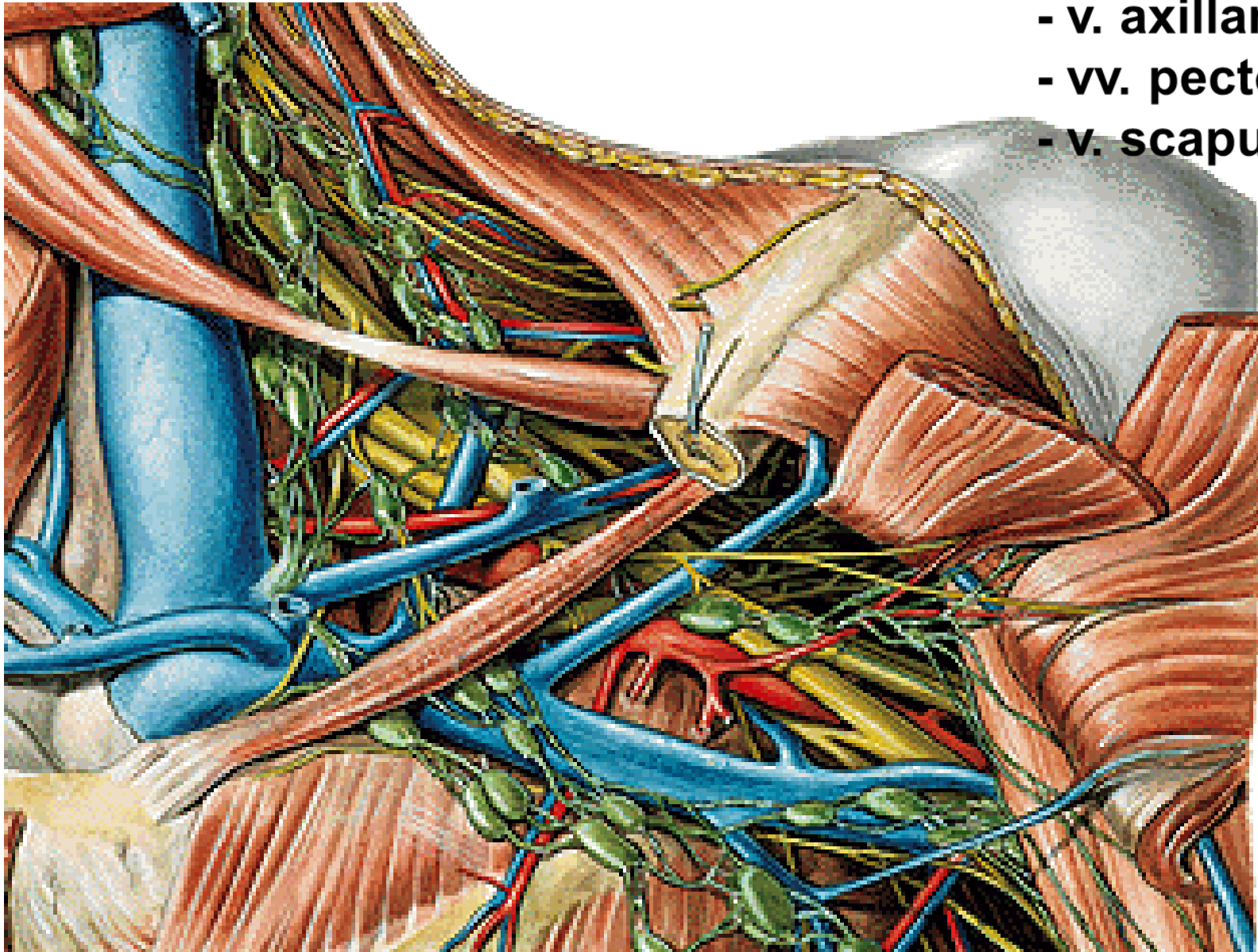
**Venae pharyngeae  
(plexus pharyngeus)**



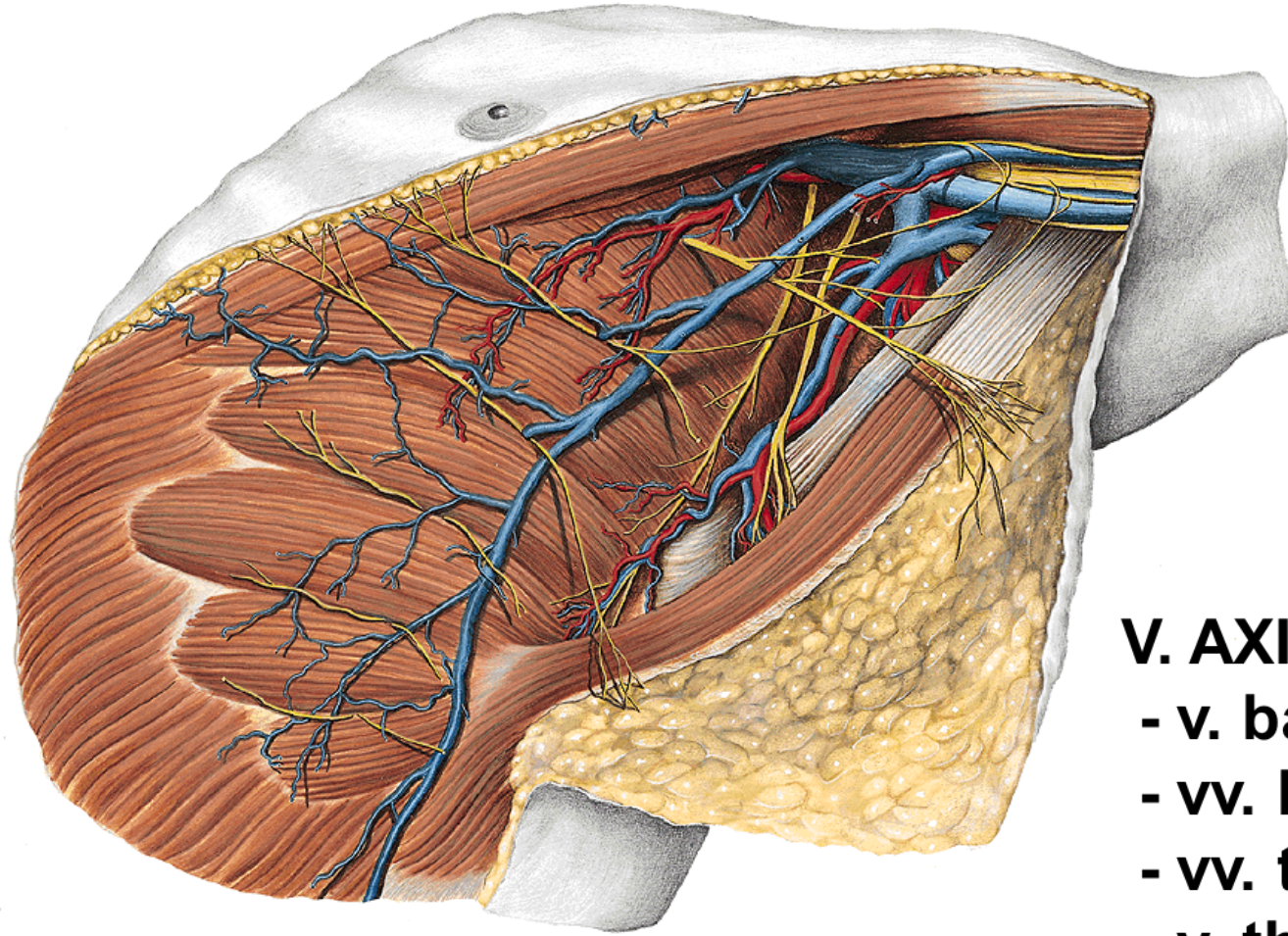
## Vena subclavia

## V. SUBCLAVIA

- v. axillaris
- vv. pectorales
- v. scapularis dorsalis



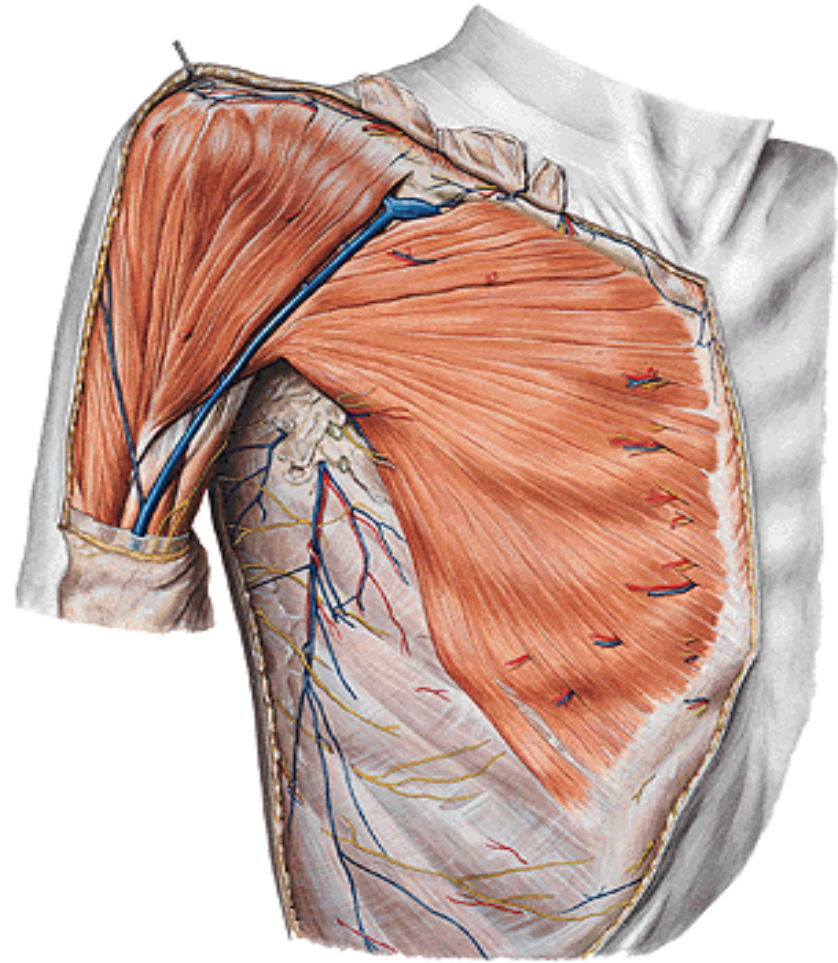
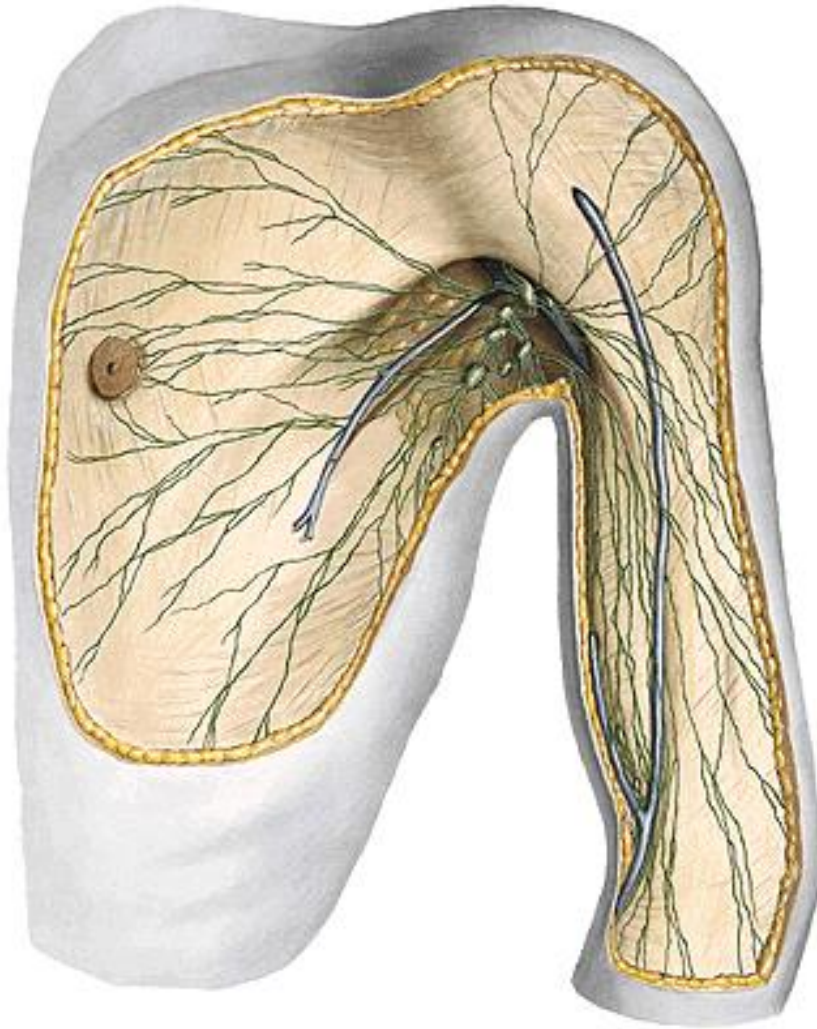
## Vena axillaris



### **V. AXILLARIS**

- v. basilica
- vv. brachiales (deep veins)
- vv. thoracoepigastricae
- v. thoracica lateralis
- v. cephalica

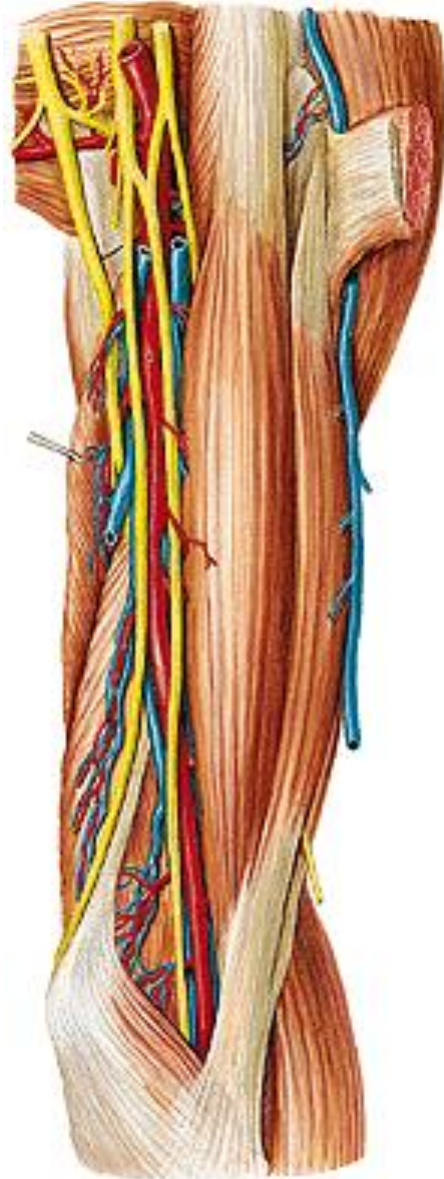
Vena thoracoepigastrica and vena cephalica



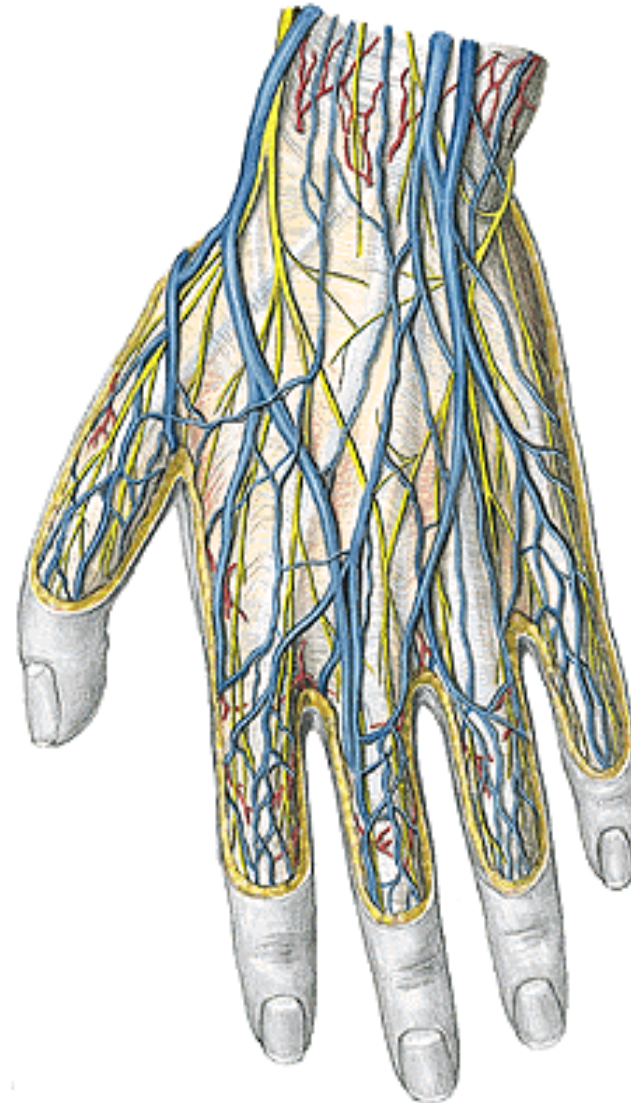
**Trig. clavipectorale  
(deltoideopectorale)**

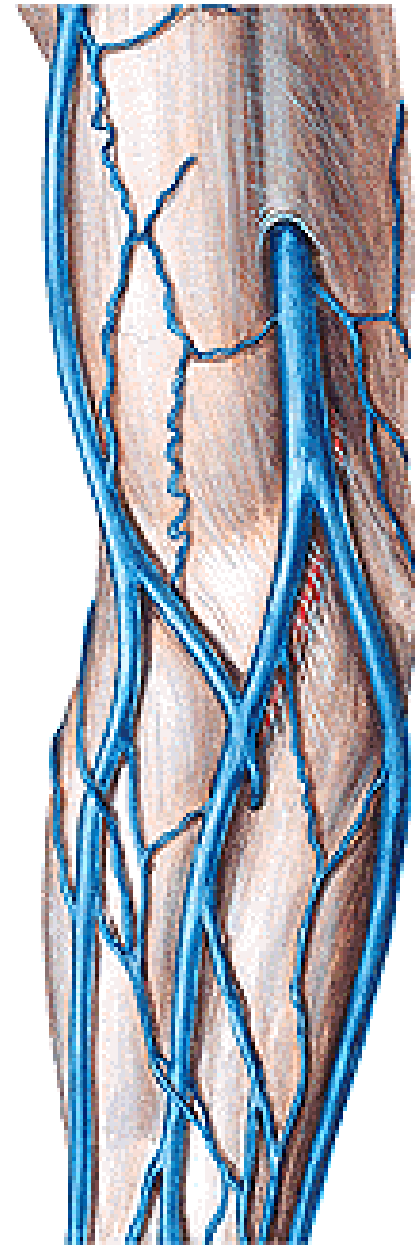
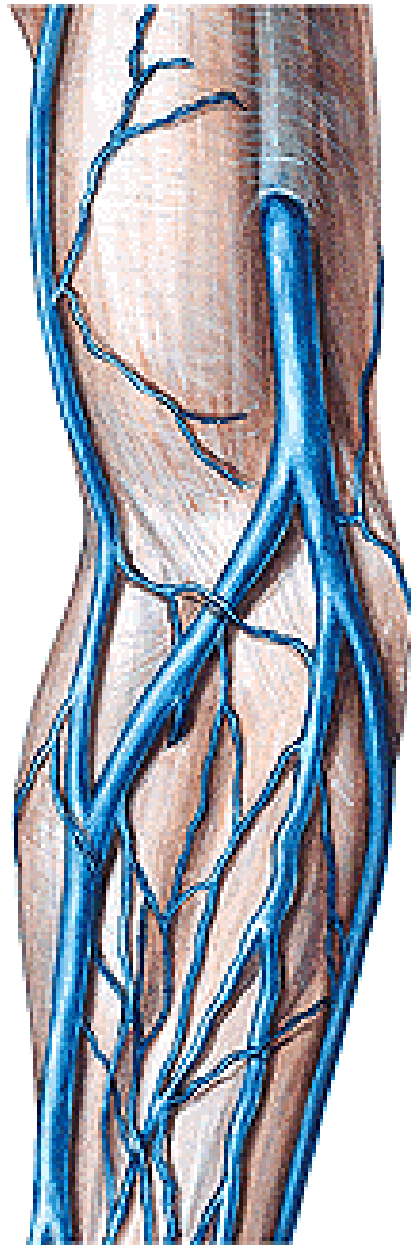
# Veins of the upper extremity

Deep - following arteries



Superficial (vena cephalica, vena basilica)

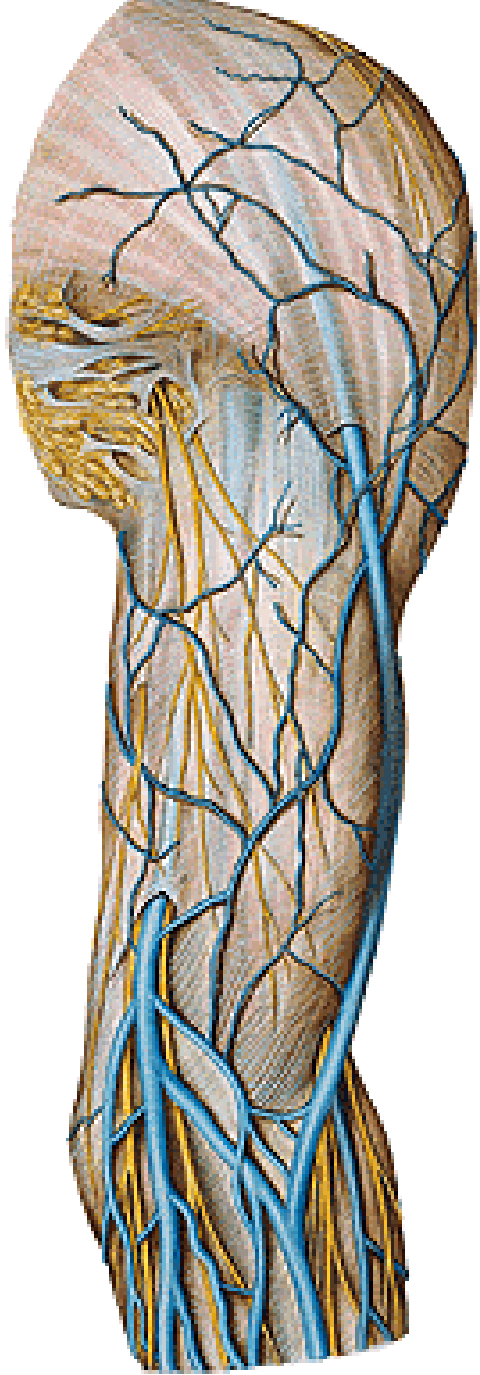




**V. mediana cubiti**

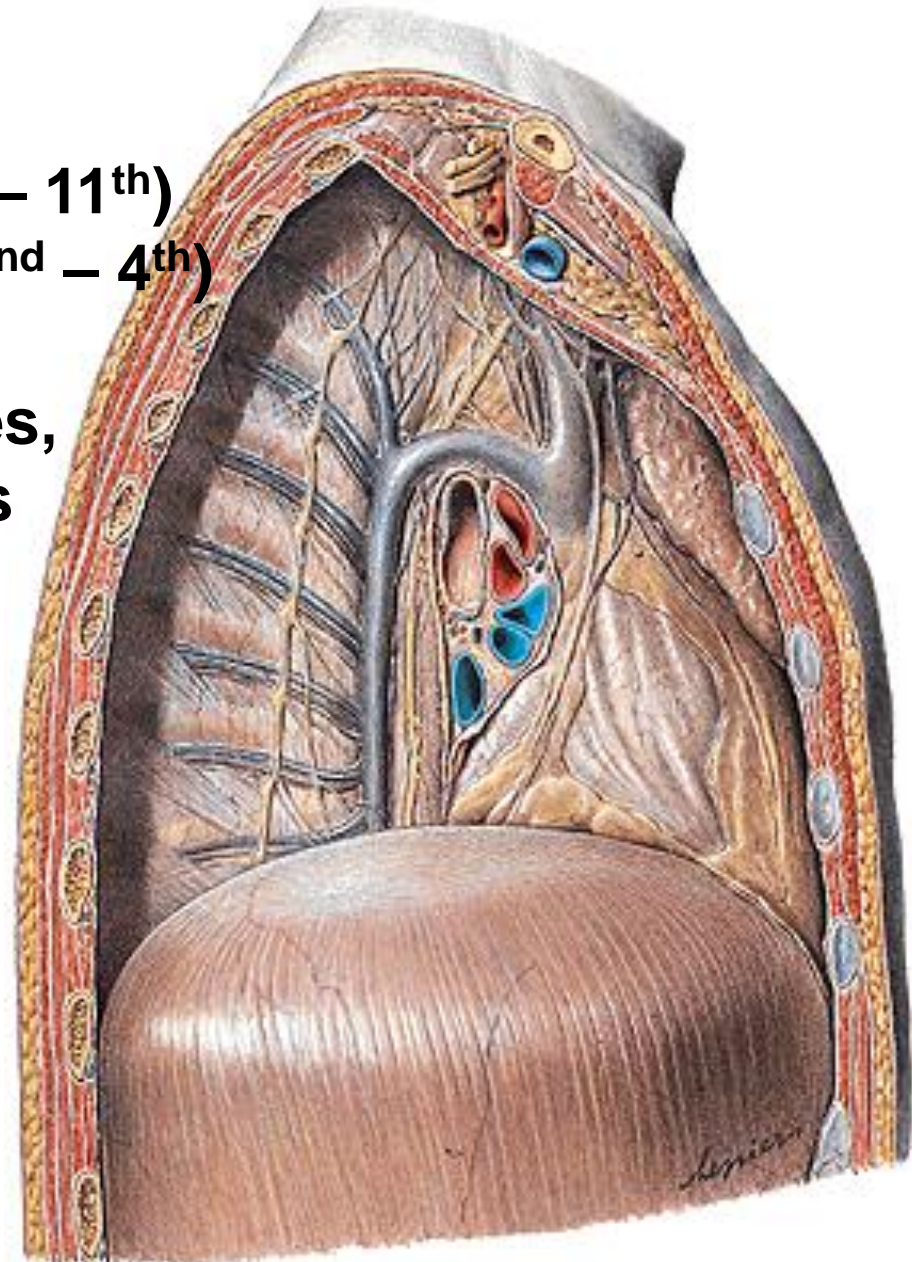
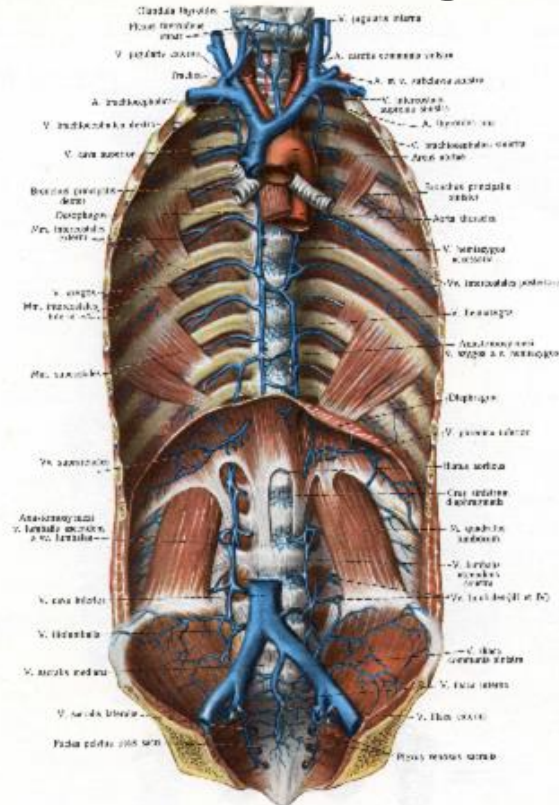
**V. mediana antebrachii – v. mediana cephalica et basilica**





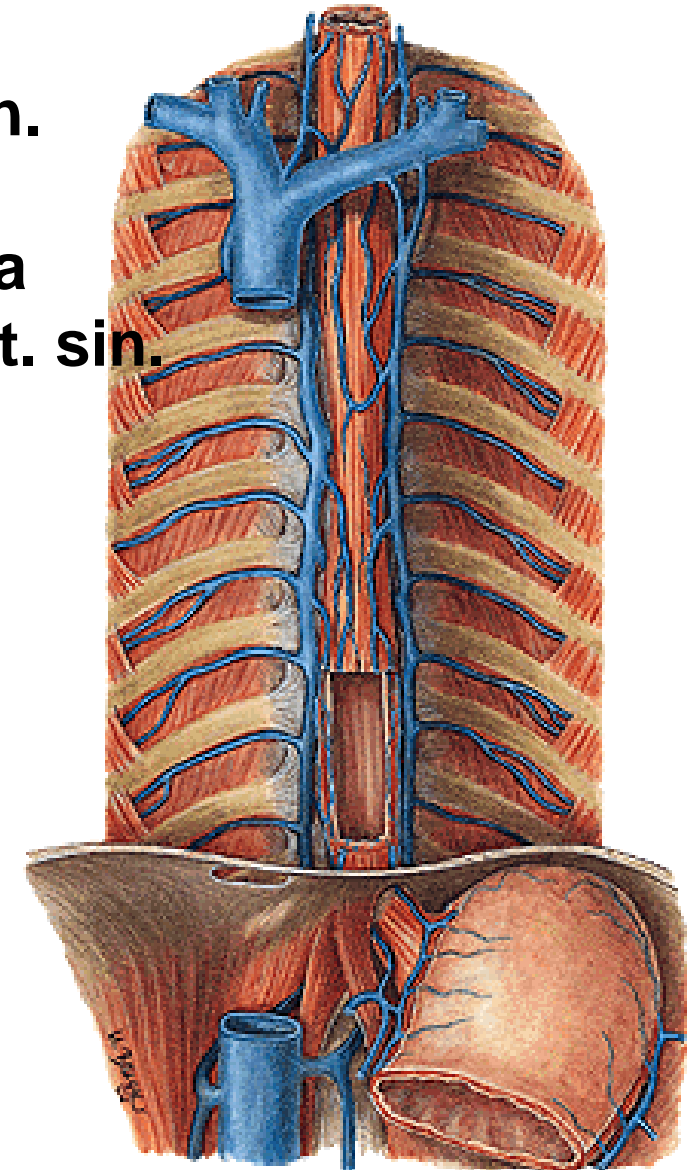
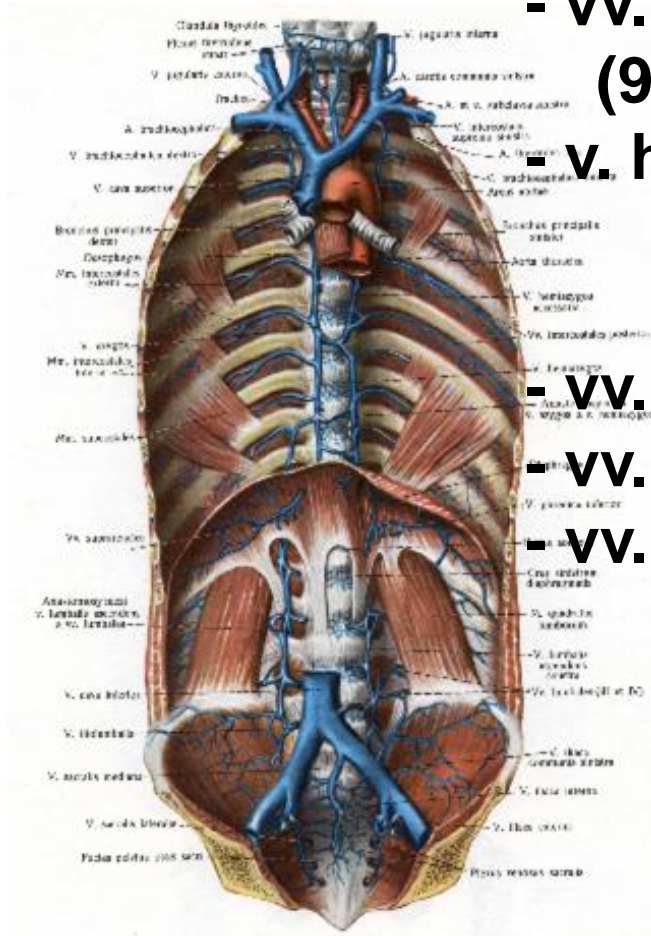
# V. AZYGOS

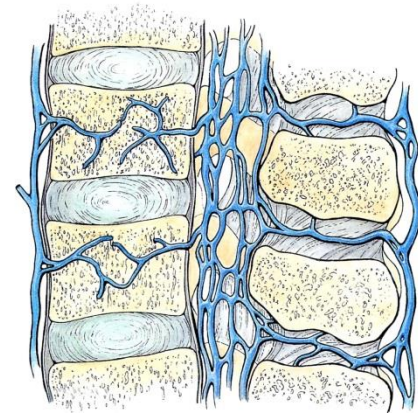
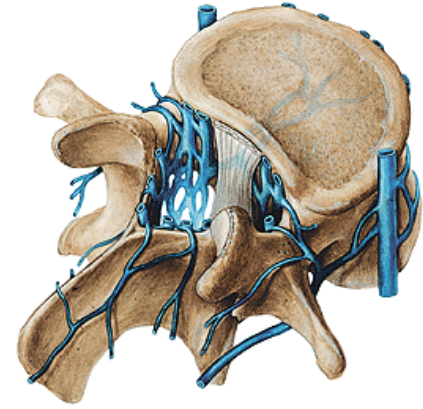
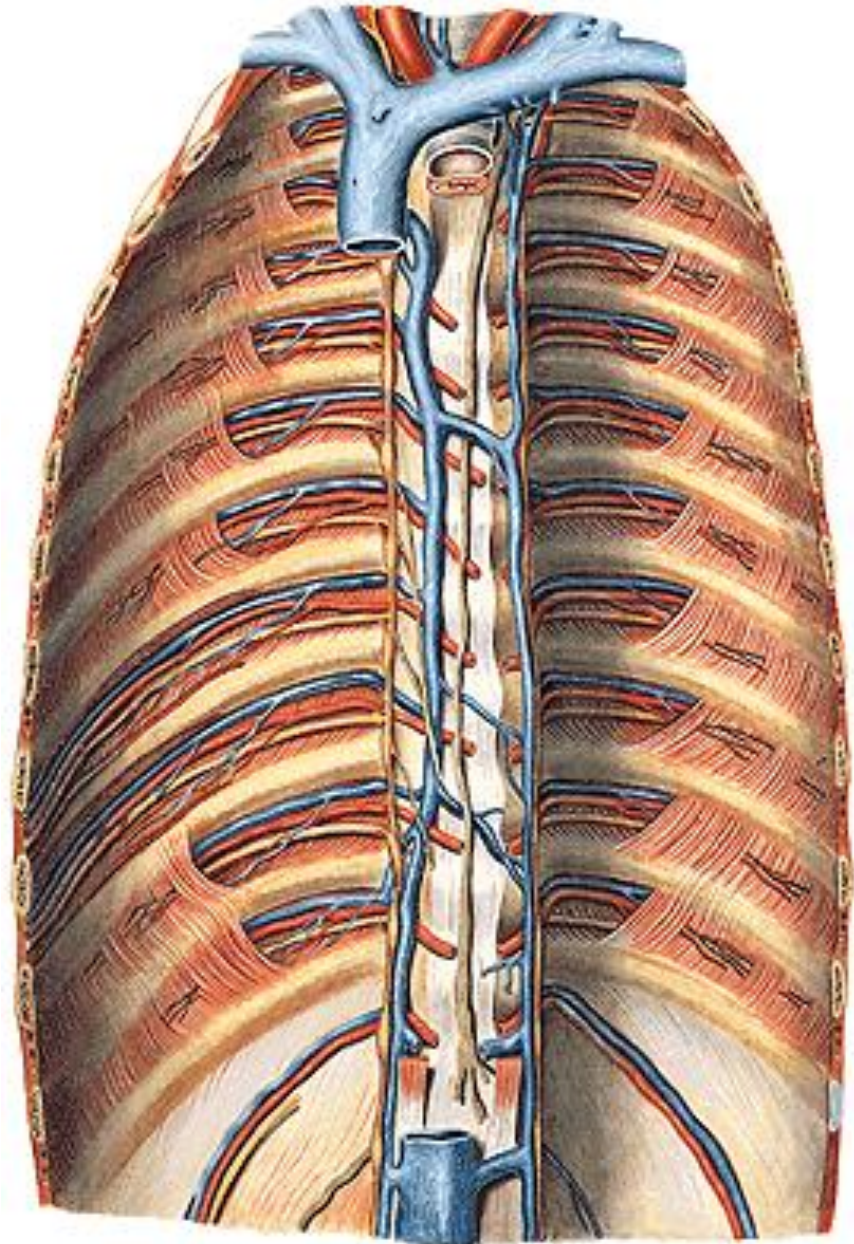
- v. lumbalis ascendens dx. + v. subcostalis dx.  
(vv. lumbales dx.)
- v. phrenica sup. dx.
- vv. intercostales post. dx. (5<sup>th</sup> – 11<sup>th</sup>)
- v. intercostalis suprema dx. (2<sup>nd</sup> – 4<sup>th</sup>)
- v. hemiazygos
- vv. oesophageales, bronchiales,  
mediastinales



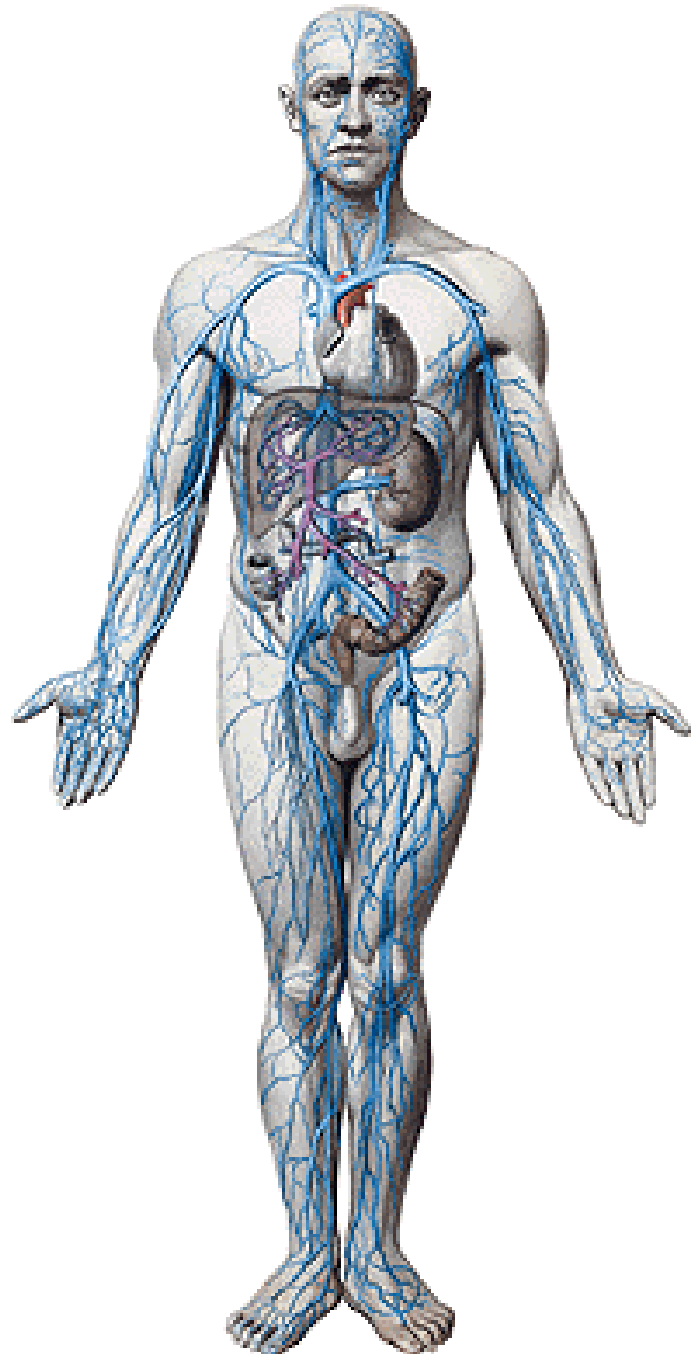
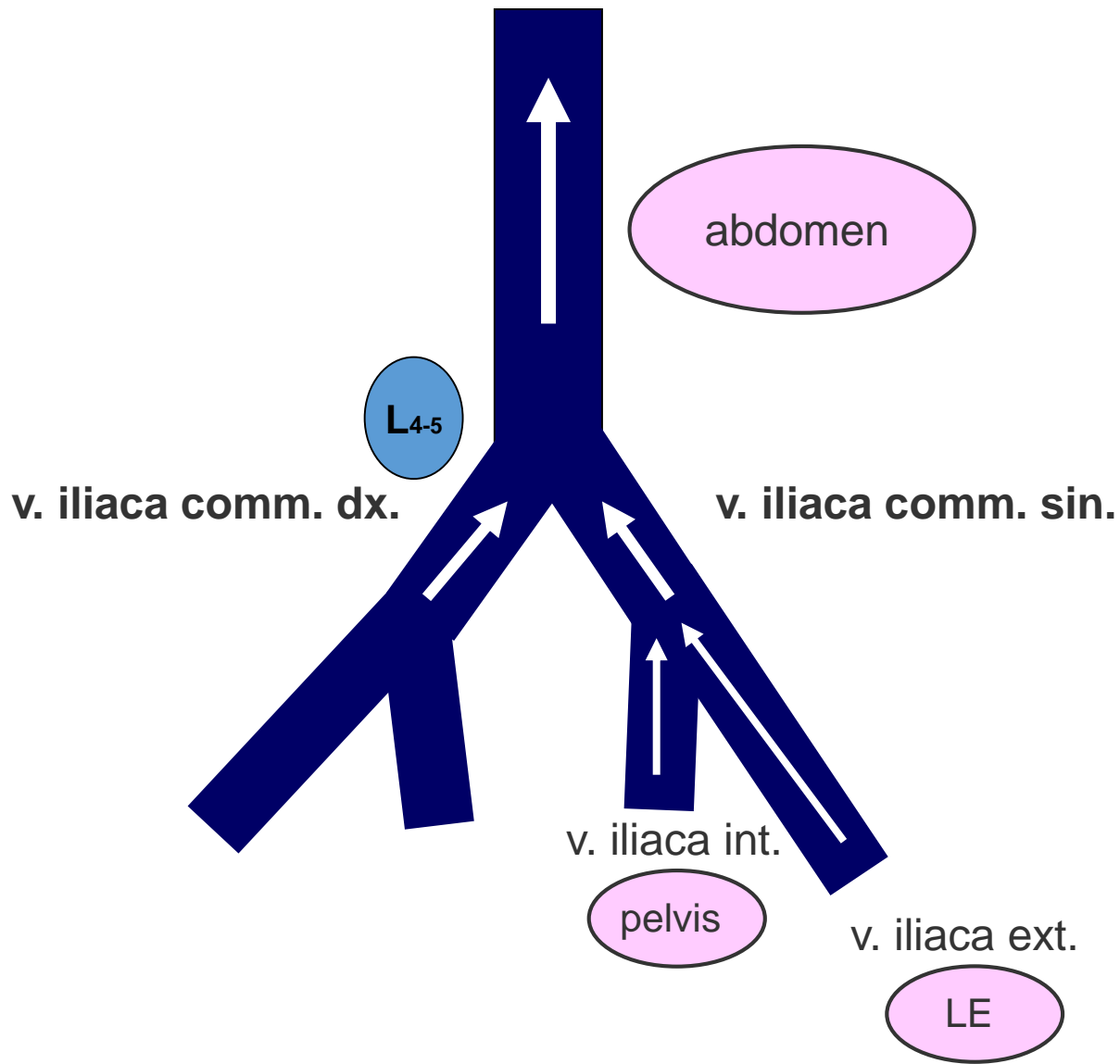
## V. HEMIAZYGOS

- v. lumbalis ascendens sin. + v. subcostalis sin.  
(vv. lumbales sin.)
- v. phrenica sup. sin.
- vv. intercostales post. sin.  
(9<sup>th</sup>-11<sup>th</sup>)
- v. hemiazygos accessoria  
(vv. intercostales post. sin.  
5<sup>th</sup> – 8<sup>th</sup>)
- vv. oesophageae
- vv. bronchiales,
- vv. mediastinales



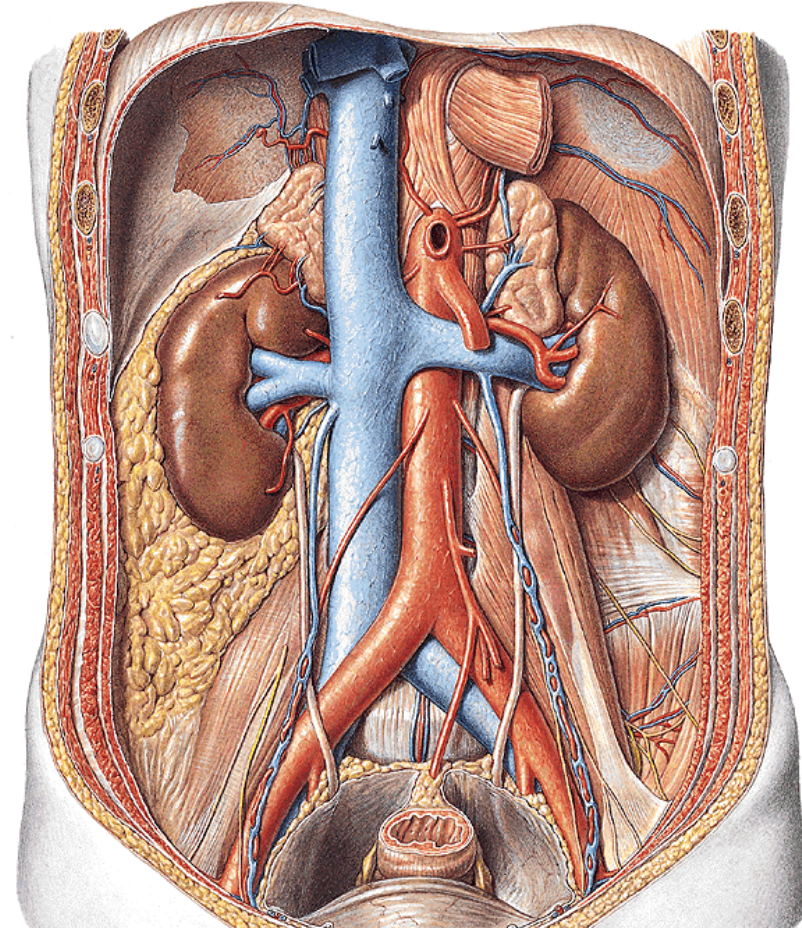
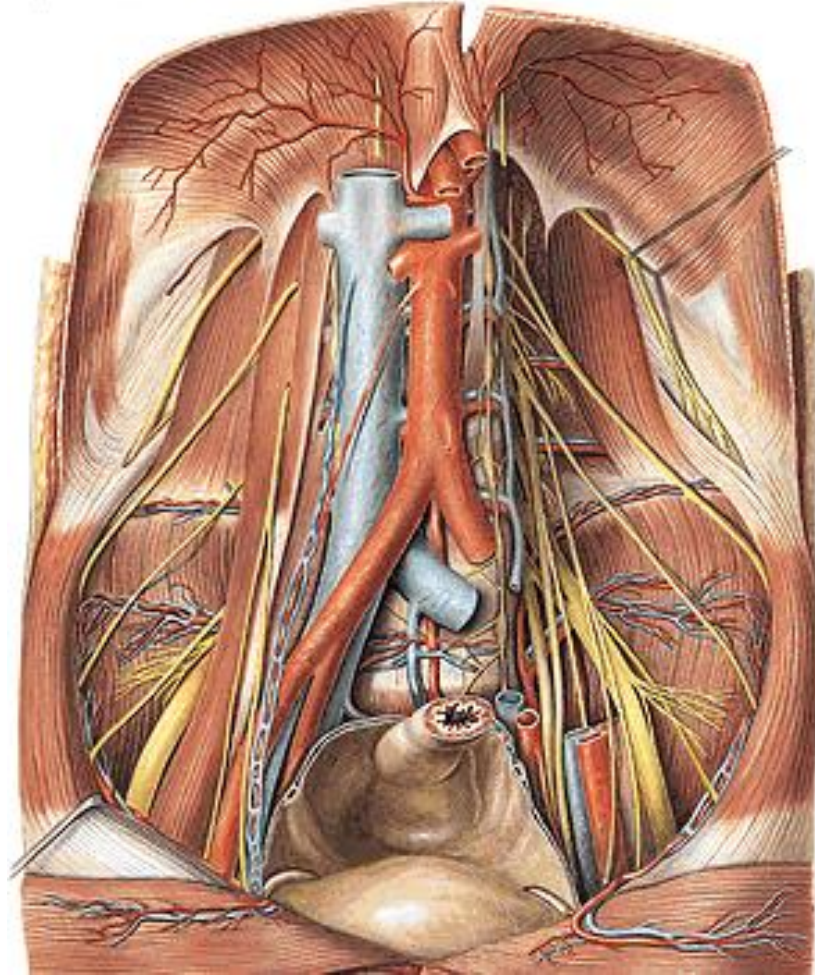
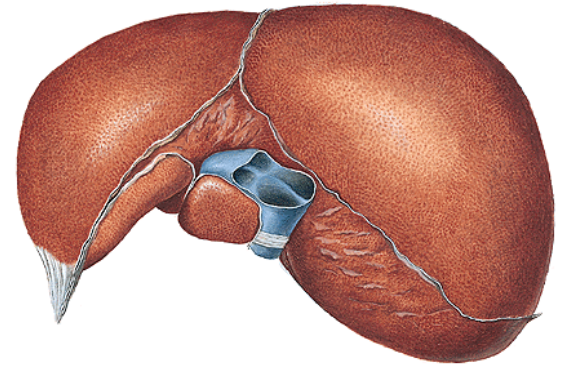
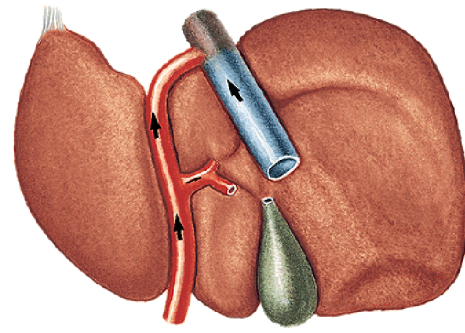


# v. cava inferior

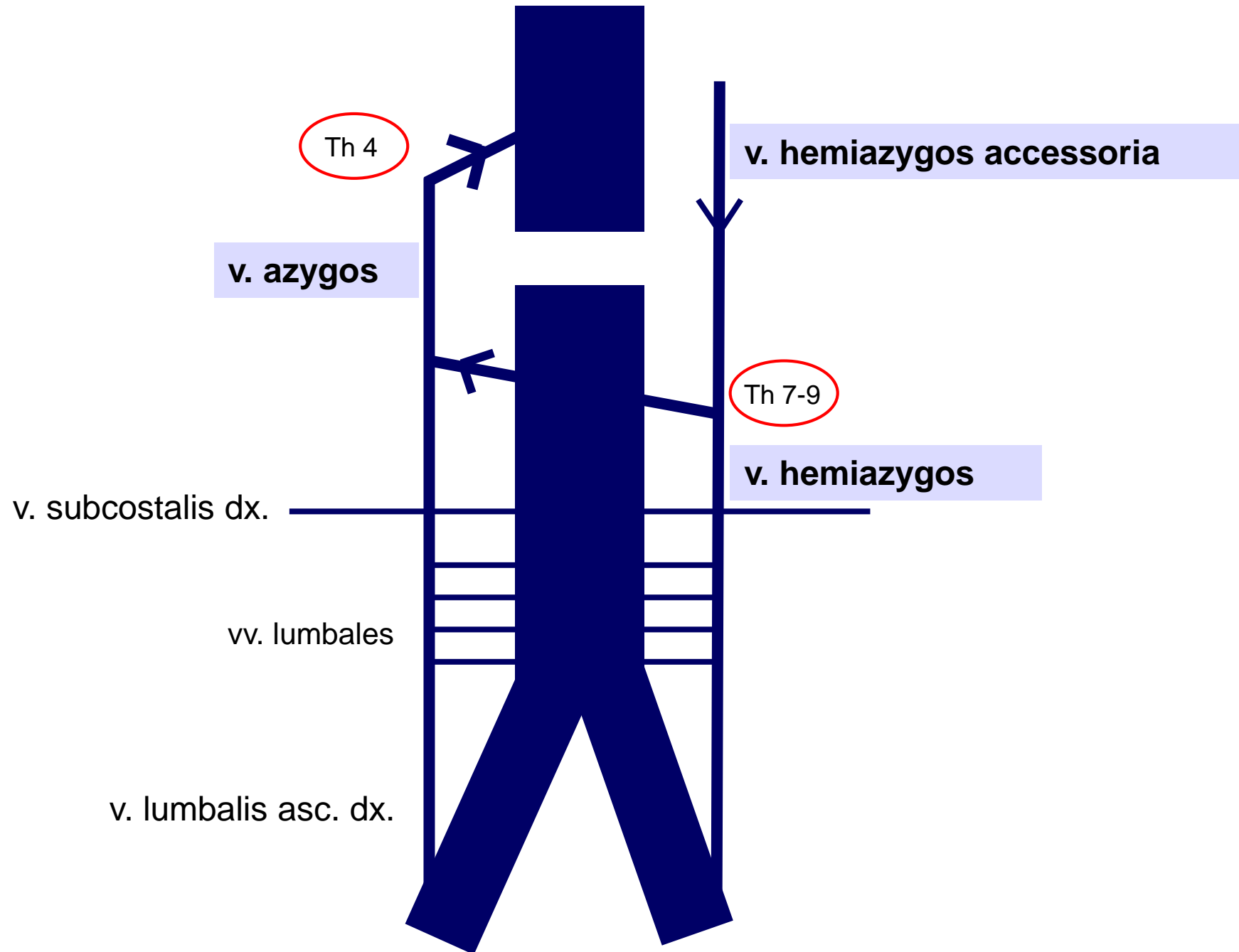


## V. CAVA INF.

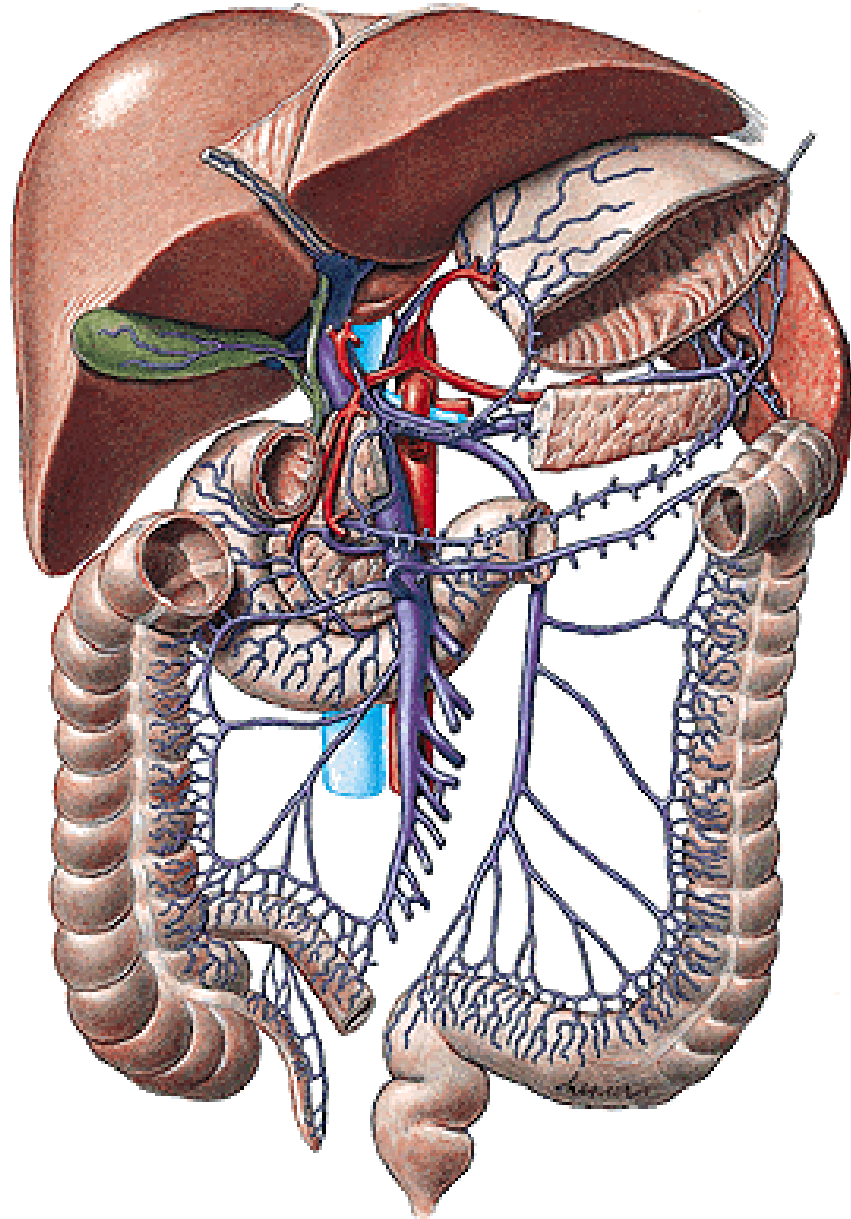
- v. iliaca communis dx. et sin.
- vv. lumbales
- vv. phrenicae inf.
- v. sacralis mediana
- v. testicularis dx.  
(- v. ovarica dx.)
- vv. renales
- v. suprarenalis dx.
- vv. hepaticae



# Cavo-caval anastomoses



# Vena portae



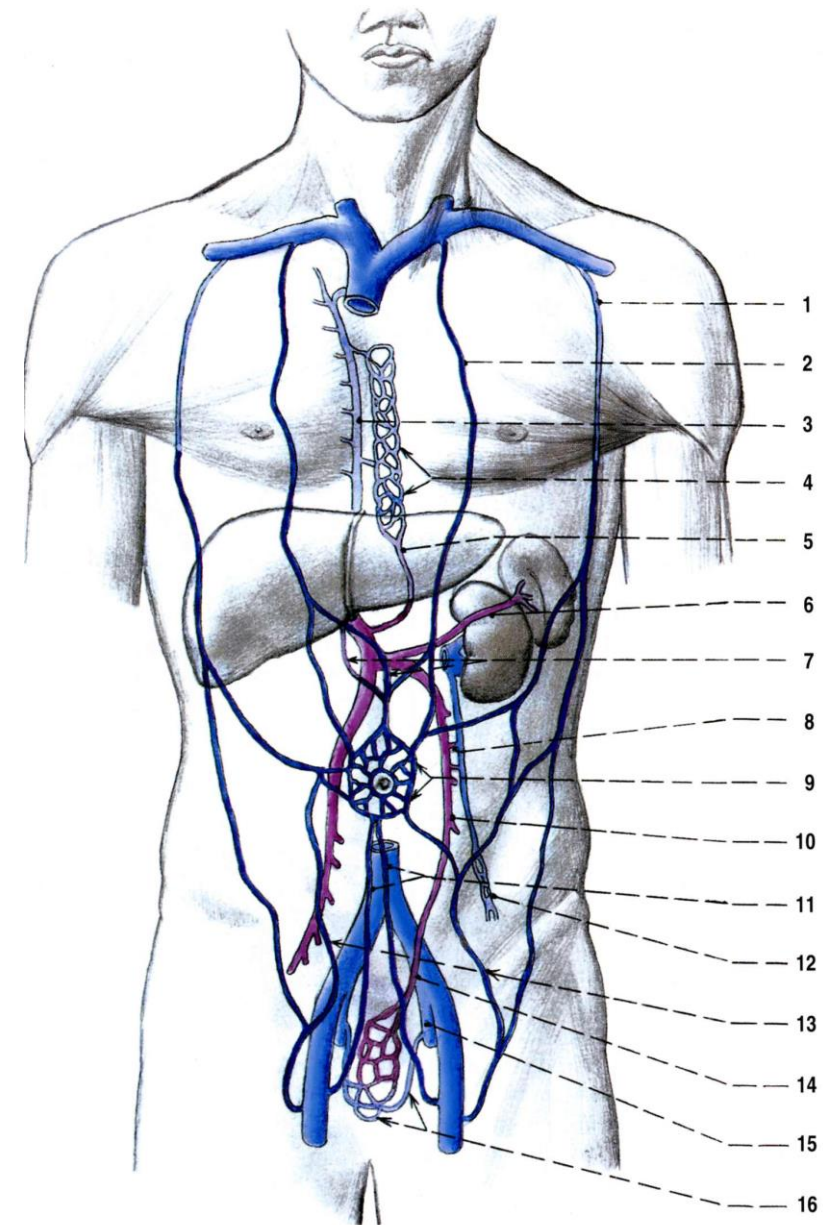
## V. PORTAE

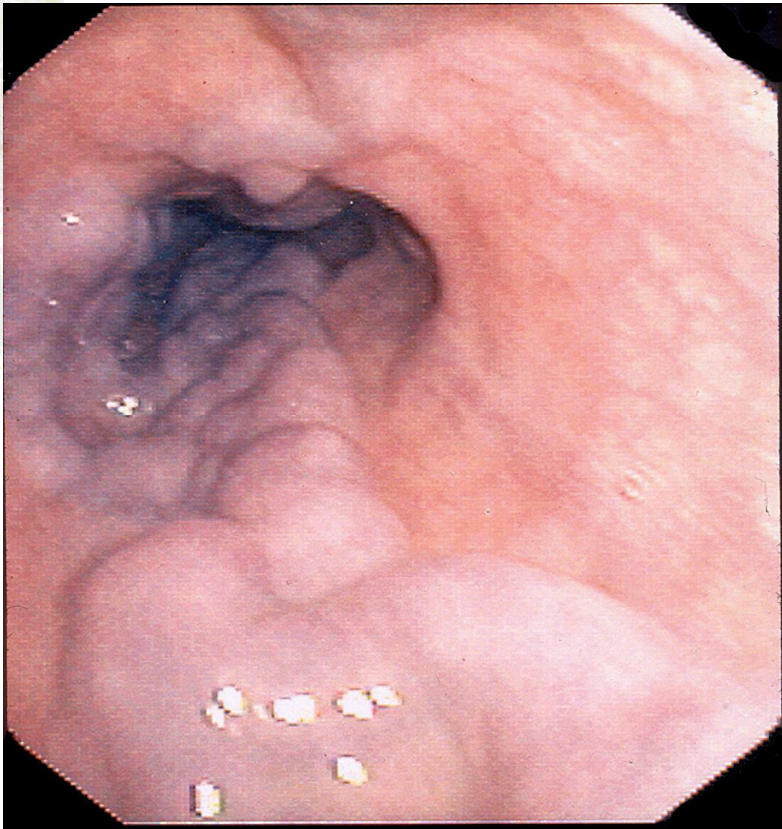
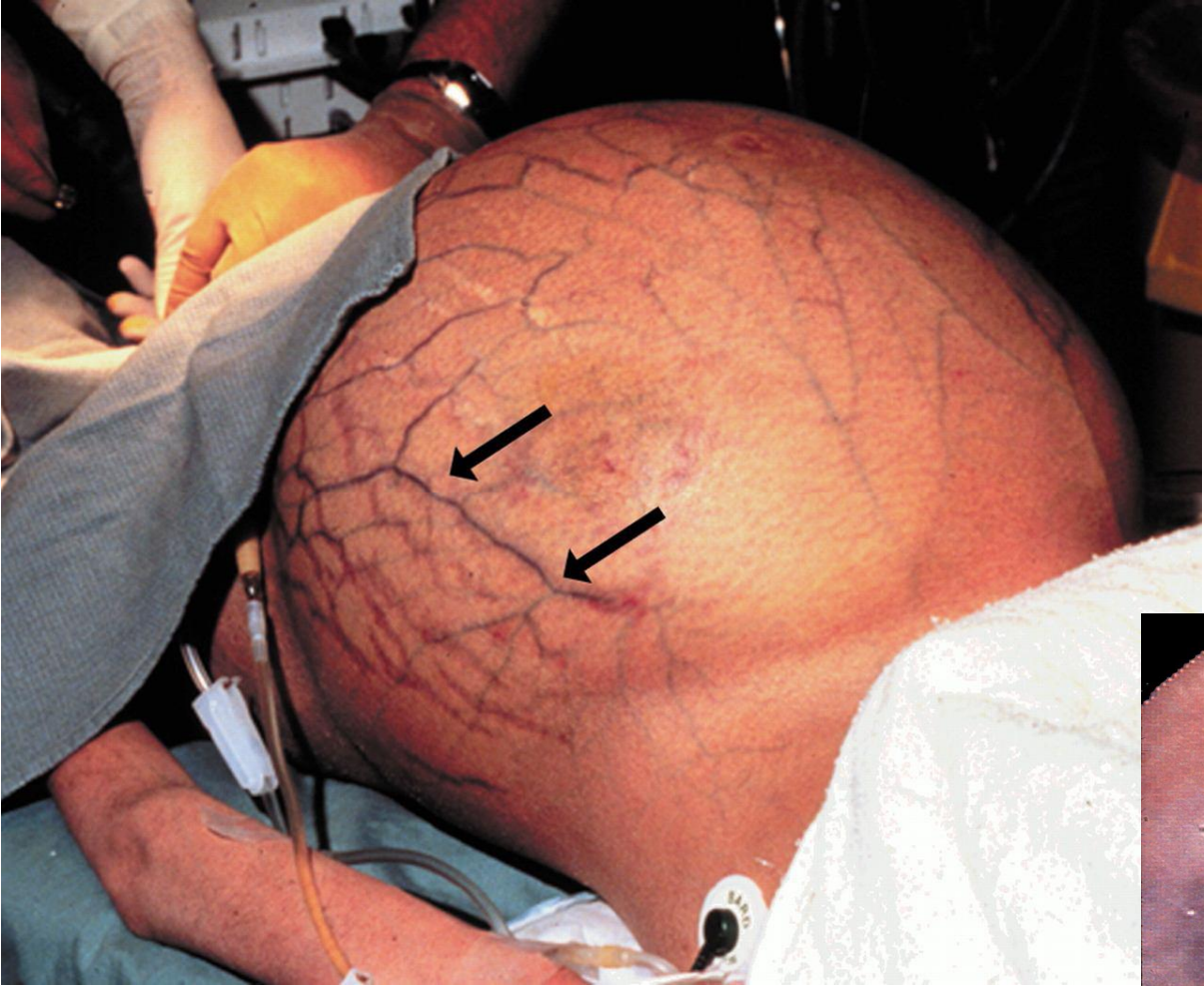
- vv. cysticae
- v. gastrica sin.
- v. gastrica dx.
- v. mesenterica sup.
  - vv. pancreaticoduodenales
  - vv. pancreaticae
  - v. gastromentalis dx.
  - vv. jejunales et ileales
  - v. ileocolica
  - v. colica dx. et media
- v. splenica/lienalis
  - vv. gastricae breves
  - v. gastromentalis sin.
  - vv. pancreaticae
- v. mesenterica inf.
  - v. colica sin., vv. sigmoideae, v. rectalis sup.



## PORTAL-CAVAL / PORTAL-SYSTEMIC ANASTOMOSES

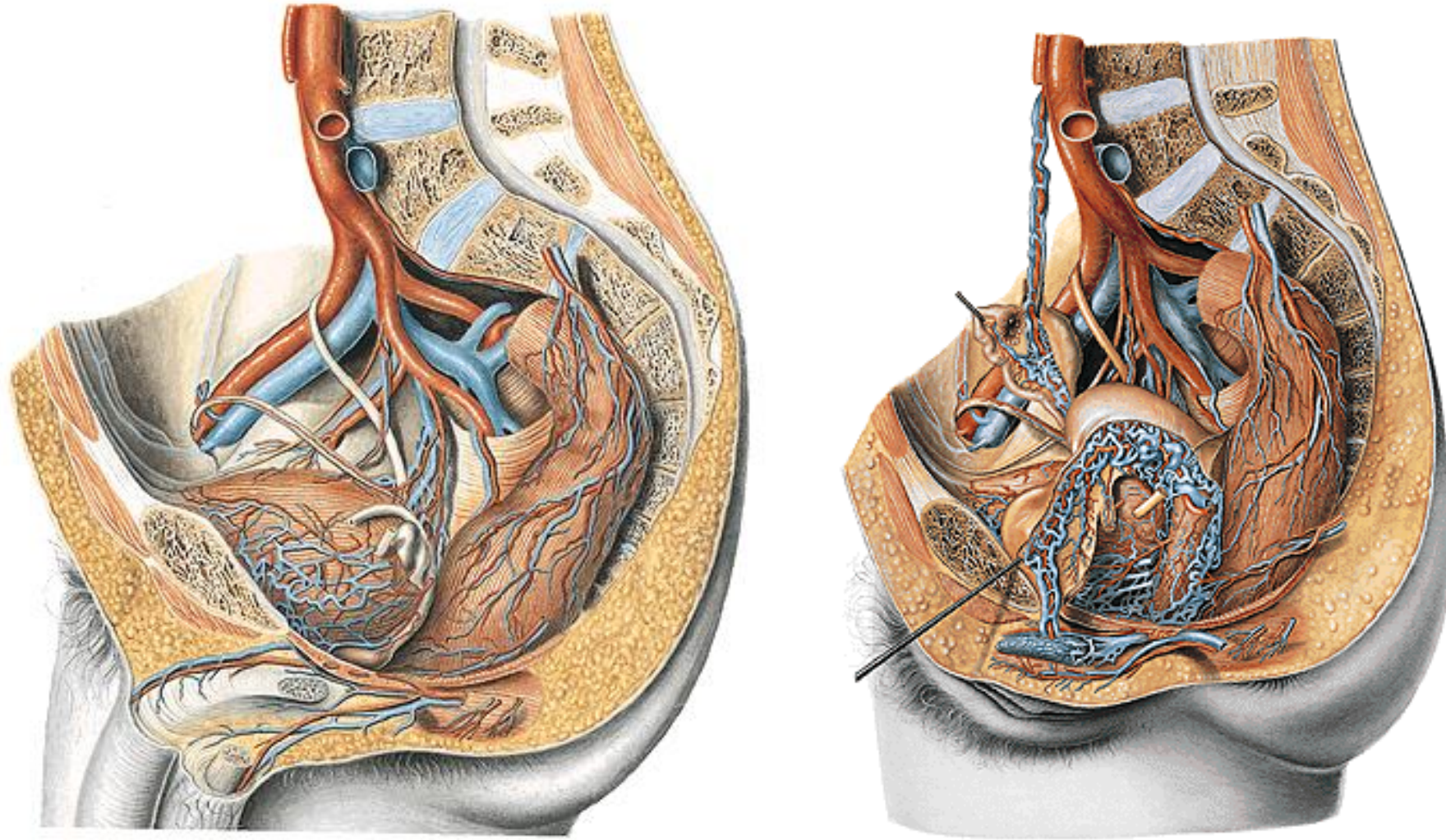
1. Vv. gastricae – vv. oesophageae
2. Vv. paraumbilicales  
(caput Medusae, Burrow's veins)
3. Plexus rectalis - hemorrhoids
4. Retzius' veins
5. Vv. hepaticae – vv. phrenicae







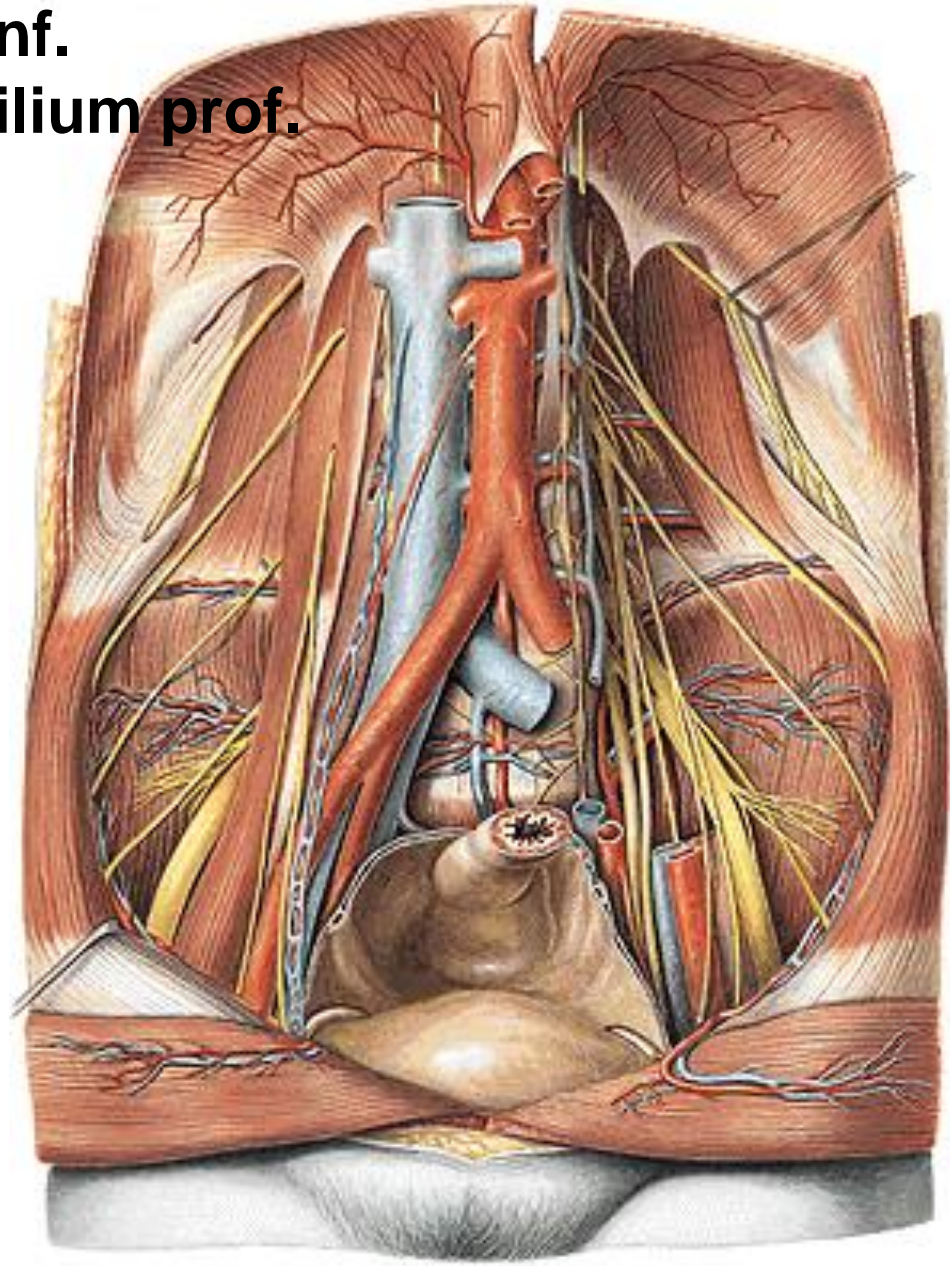
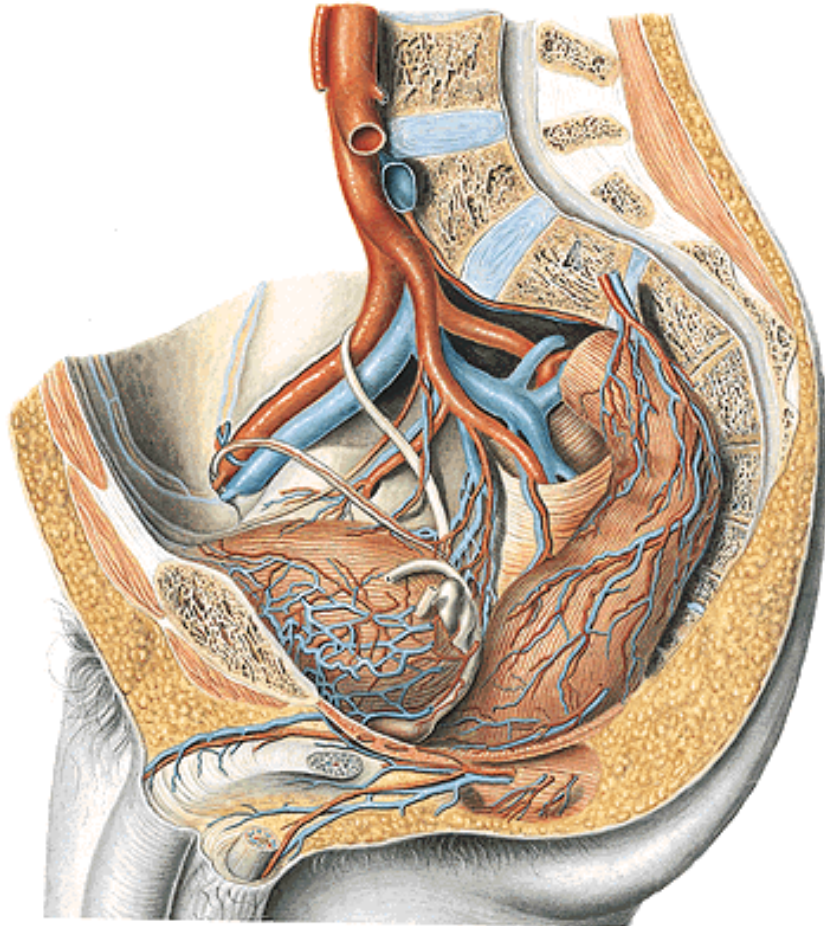
## Vena iliaca (comm., externae et internae)



**Parietal and visceral tributaries (plexuses)**

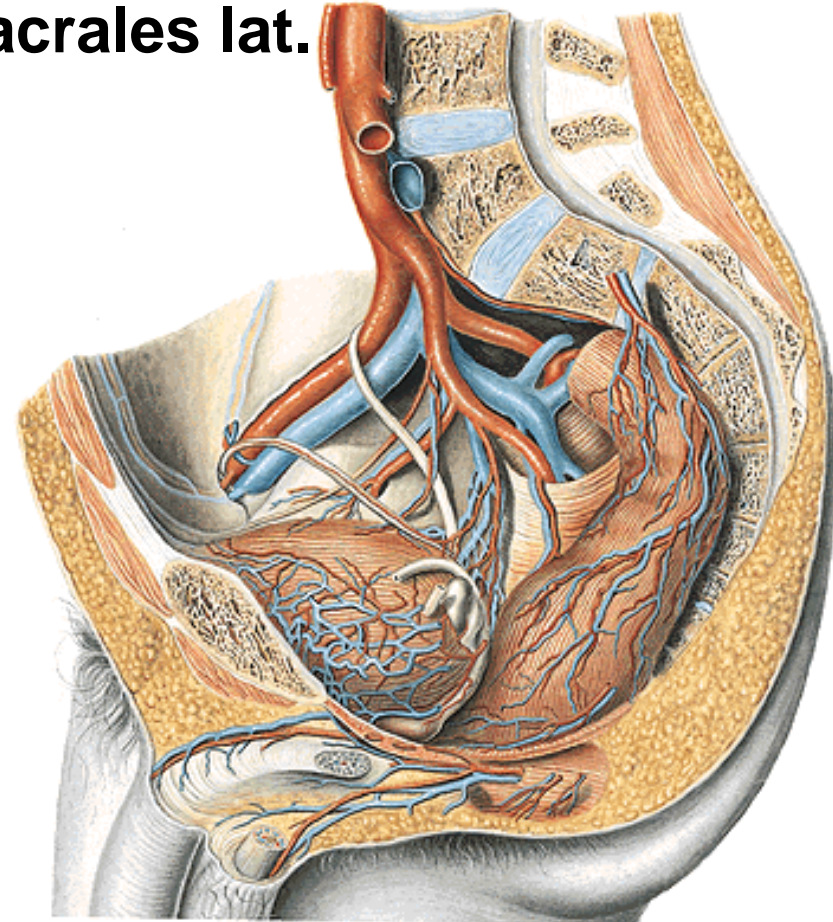
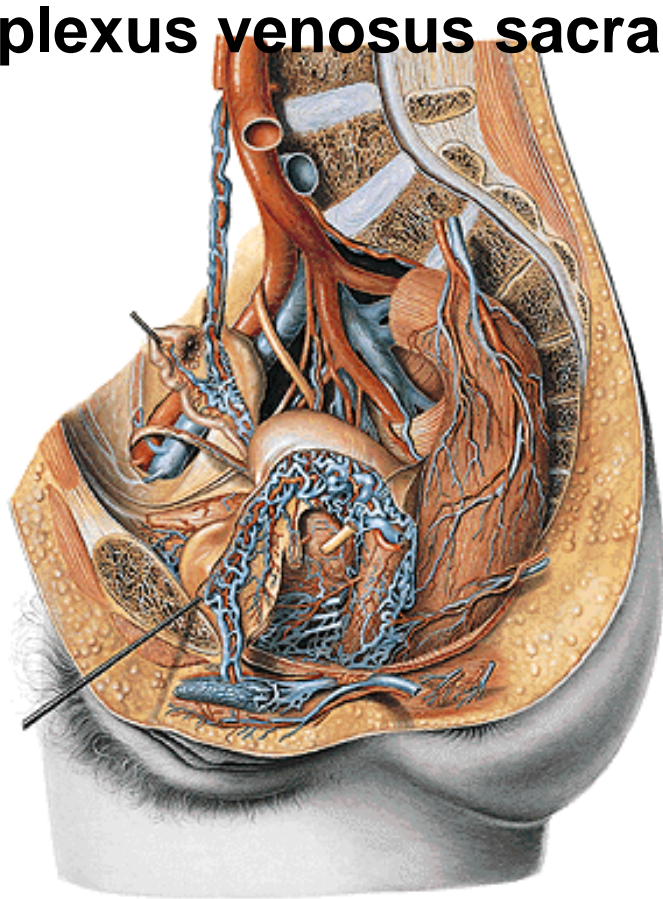
## V. ILIACA COMMUNIS

- v. iliaca ext - v. femoralis
- v. epigastrica inf.
- v. circumflexa ilium prof.
- v. iliaca int.



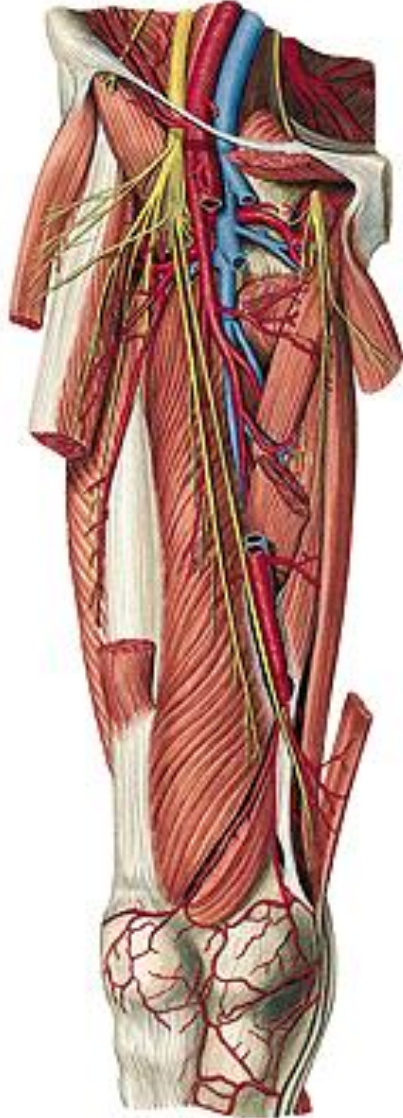
## V. ILIACA INTERNA

- plexus venosus vesicalis – vv. vesicales
- plexus venosus prostaticus – v. dorsalis penis prof.
- plexus venosus vaginalis – v. dorsalis clitoridis prof.
- plexus venosus uterinus – vv. uterinae
- plexus venosus rectalis – v. rectalis sup., media, inf.
- plexus venosus sacralis – vv. sacrales lat.

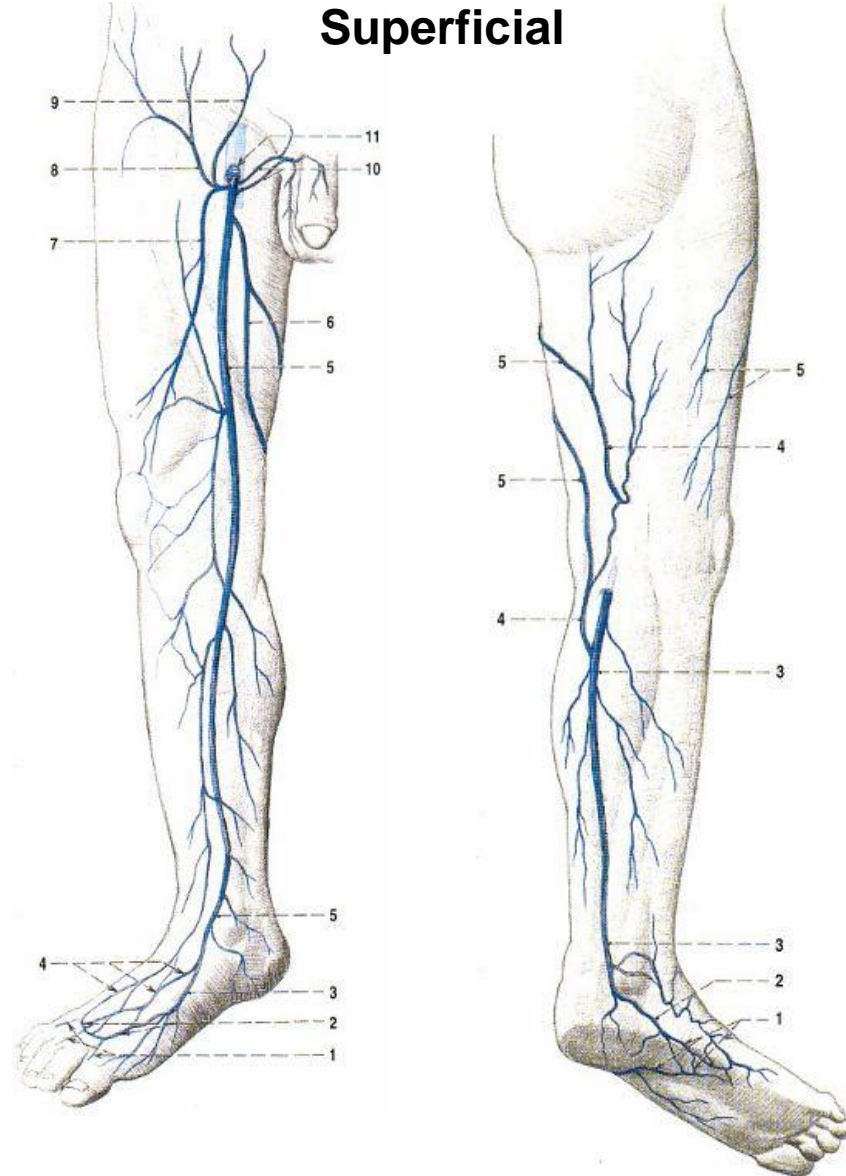


# Veins of the lower extremity

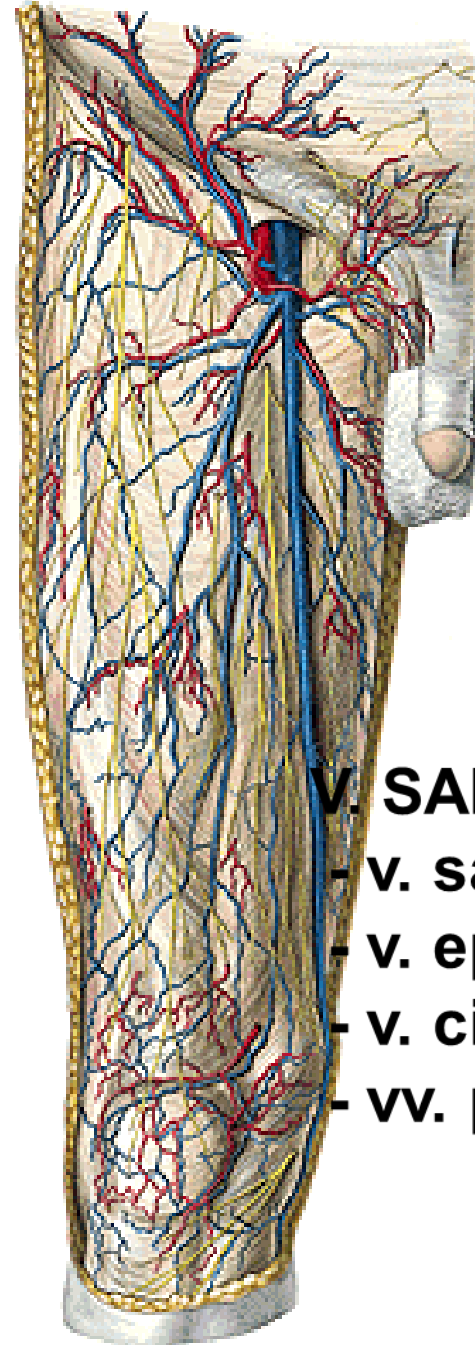
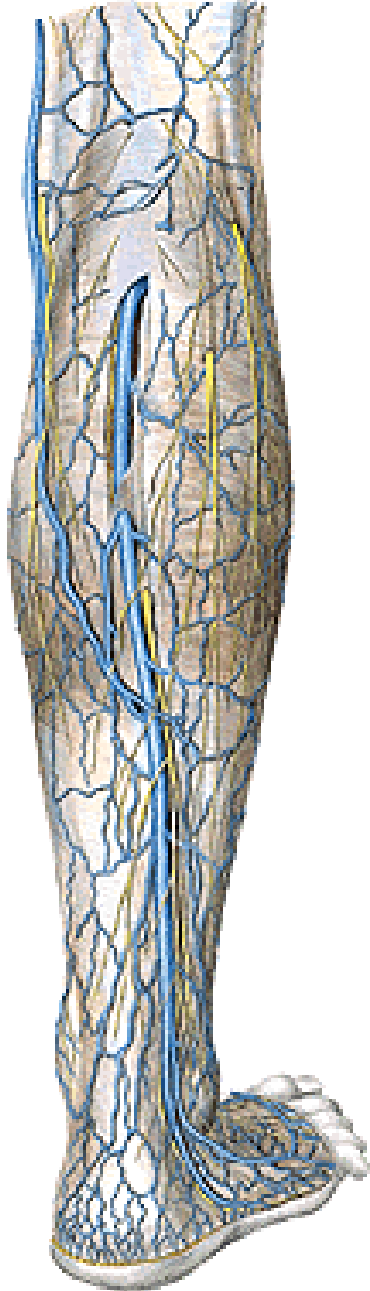
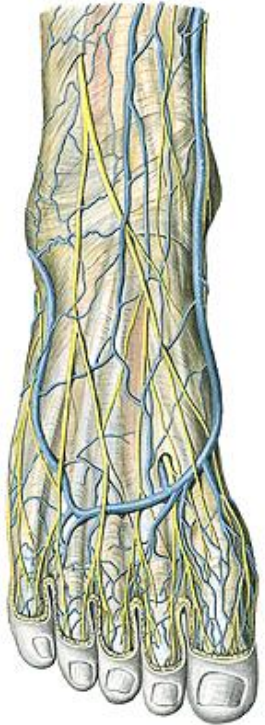
**Deep**



**Superficial**



## V. SAPHENA PARVA



## V. SAPHENA MAGNA

- v. saphena accessoria
- v. epigastrica spf.
- v. circumflexa ilium spf.
- vv. pudendae ext.



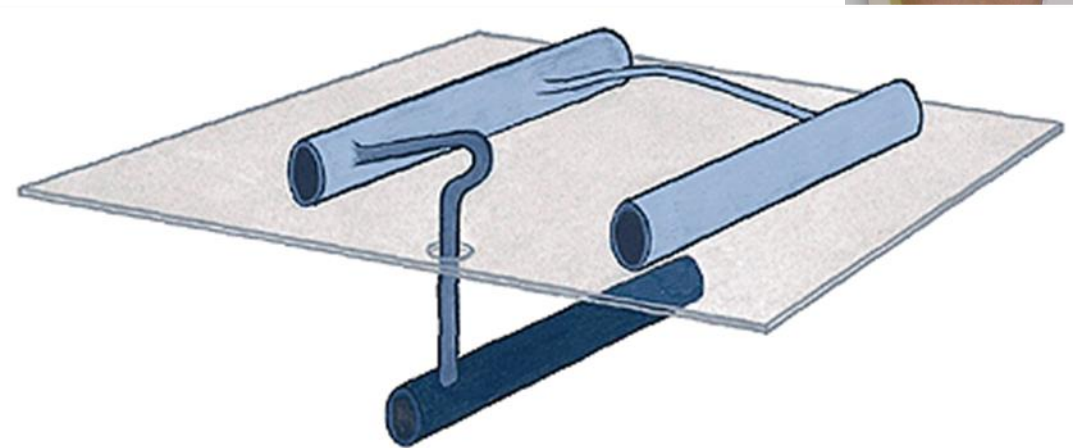
## Varices



**vv. perforantes**



**VARICOSE VEINS**

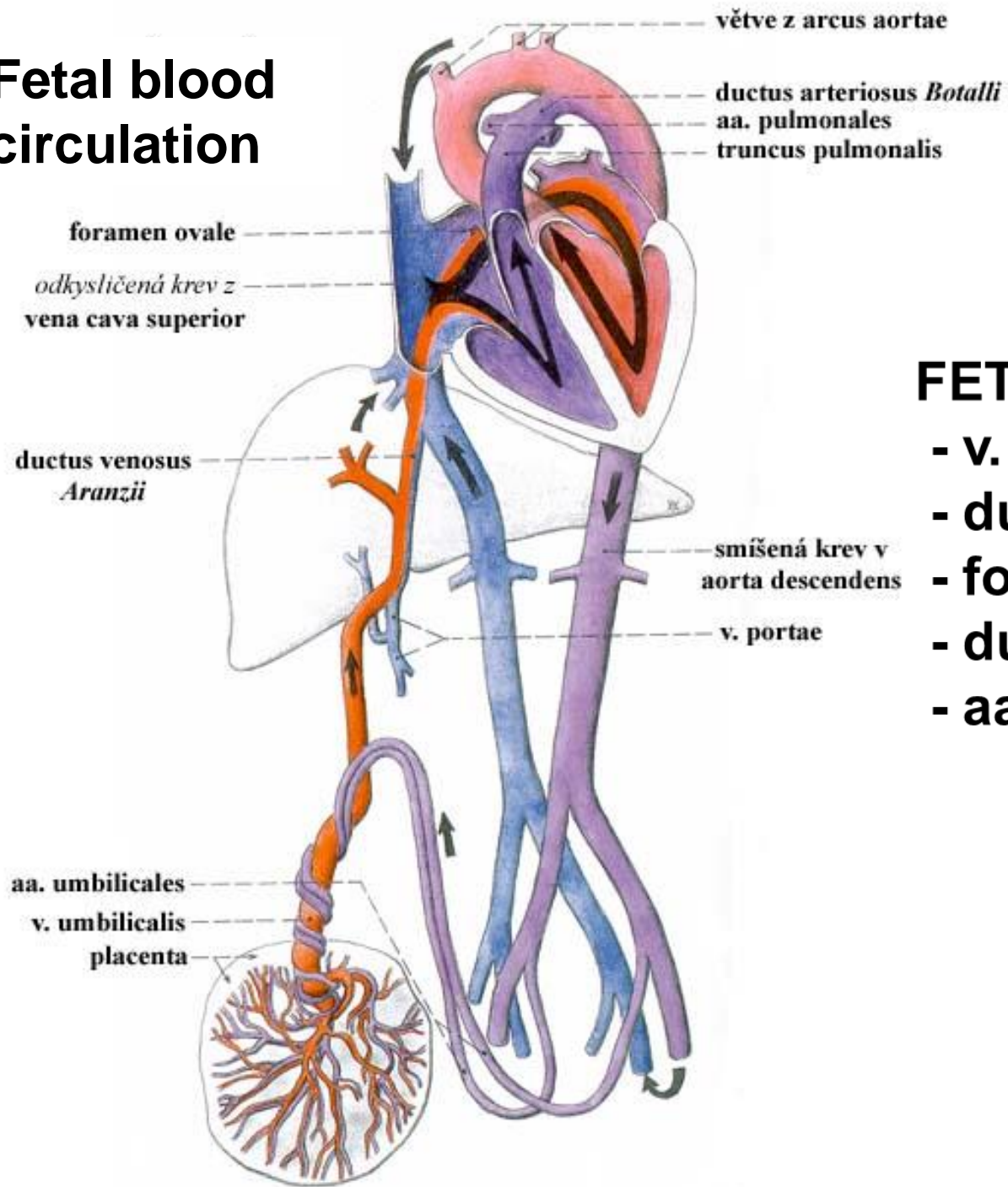


**v. saphena magna**



**femur**

# Fetal blood circulation



## FETAL CIRCULATION

- v. umbilicalis – lig. teres hepatis
- ductus venosus – lig. venosum
- foramen ovale – fossa ovalis
- ductus arteriosus – lig. arteriosum
- aa. umbilicales – chordae aa. umbilicales

Illustrations were copied from:

**Atlas der Anatomie des Menschen/Sobotta.  
Putz,R., und Pabst,R. 20. Auflage. München:  
Urban & Schwarzenberg, 1993)**

**Netter: Interactive Atlas of Human Anatomy.  
Windows Version 2.0**

**Čihák R: Anatomie 2 (Splanchnologia). Avicenum,  
zdravotnické nakladatelství, Praha, 1988.**