

**Cardiovascular system**

**CARDIOVASCULAR SYSTEM COMPOSITION**

HEART (COR)

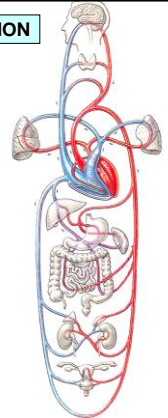
VESSELS (VASA)

BLOOD (SANGUIS)

SYSTEMIC BLOOD CIRCULATION

PULMONAR BLOOD CURCULATION

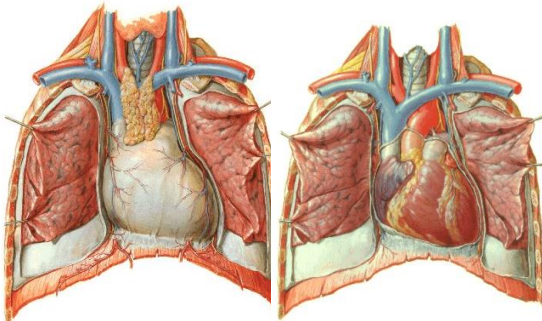
PORTAL BLOOD CIRCULATION



**COR (HEART)**

270-320 g

2/3 left, 1/3 right



**HEART DIVISION**

Septum cordis (interatriale, interventriculare)

Septum atrioventriculare dx., sin.

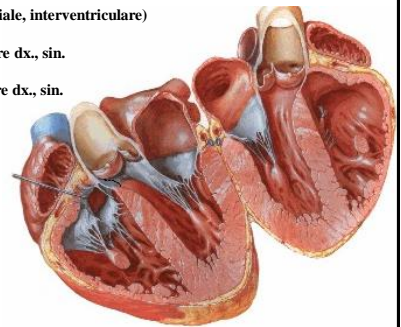
Ostium atrioventriculare dx., sin.

Valva tricuspidalis

Valva bicuspidalis

Atrium dx. et sin.

Ventriculus dx. et sin.

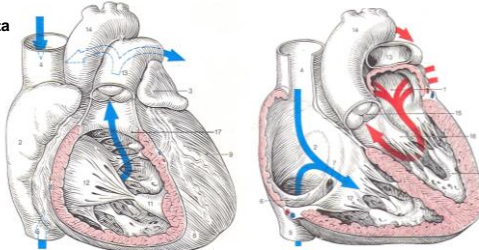


Vena cava sup. et inf.

Truncus pulmonalis

Vv. pulmonales

Aorta



**SURFACE OF HEART**

Basis cordis

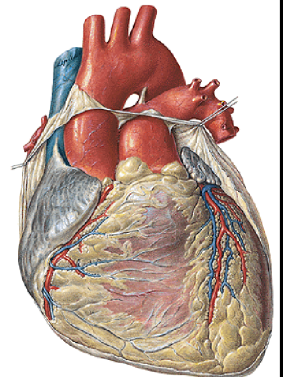
Apex cordis

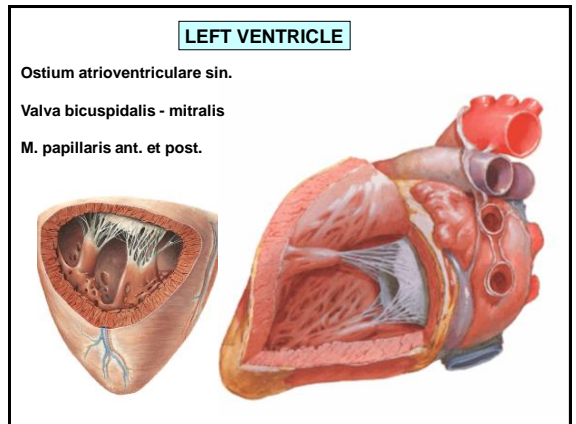
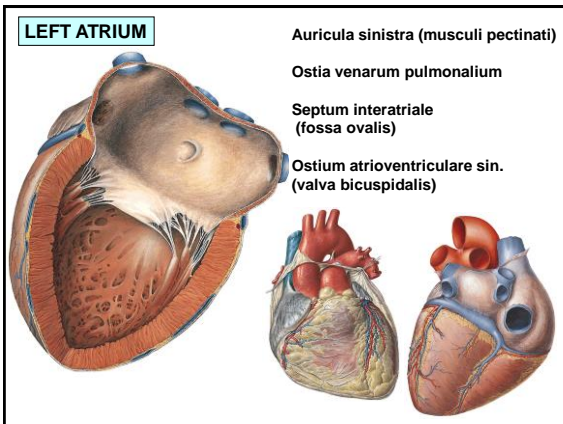
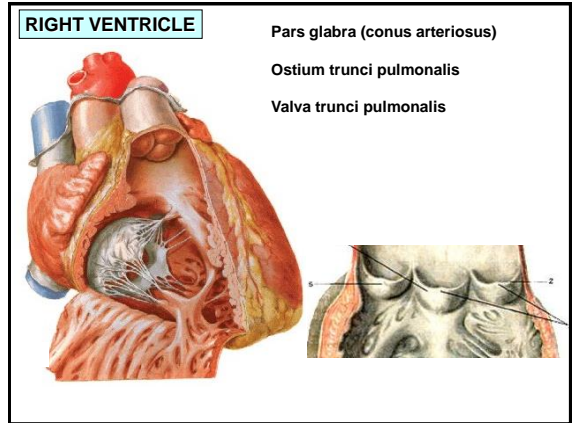
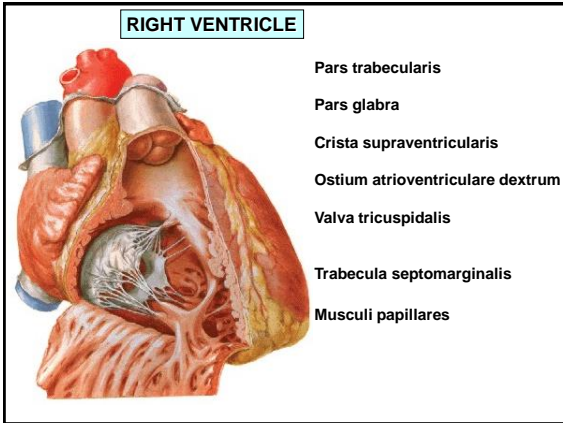
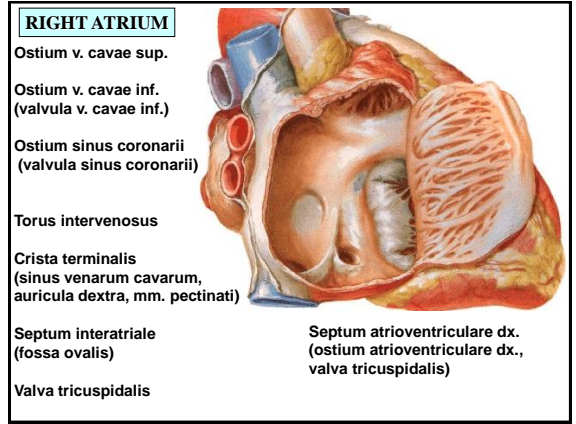
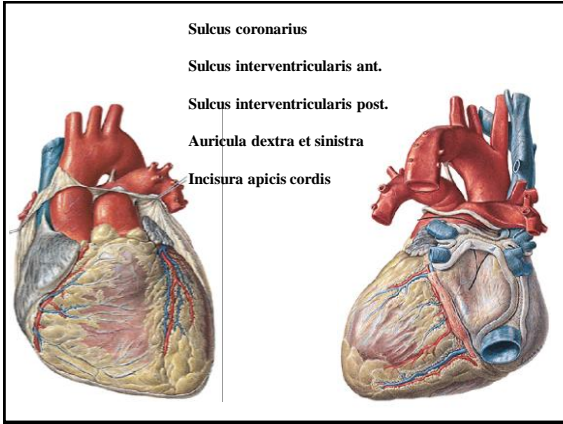
Facies sternocostalis (ant.)

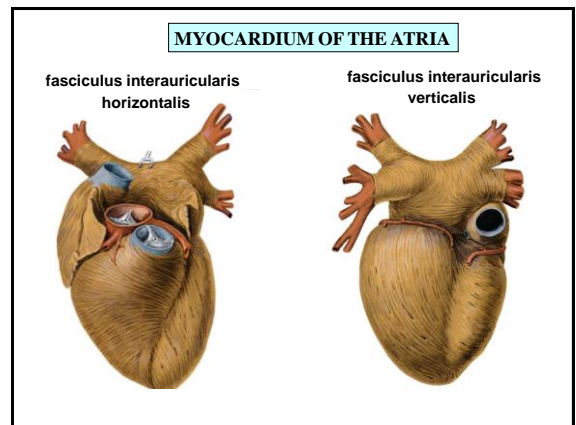
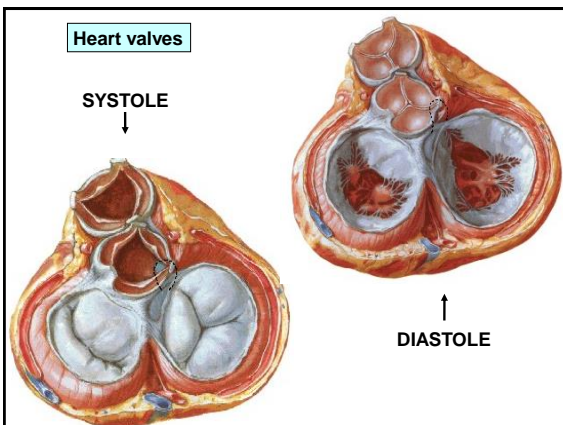
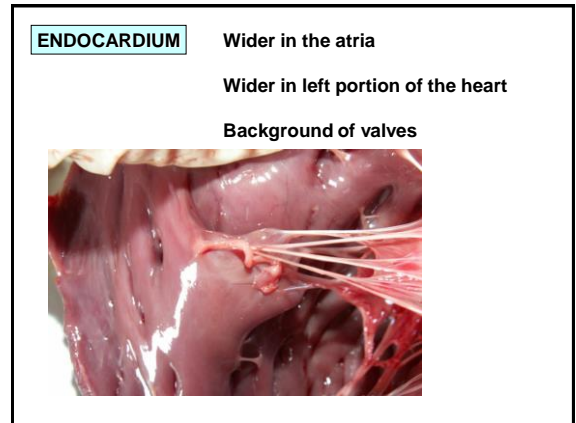
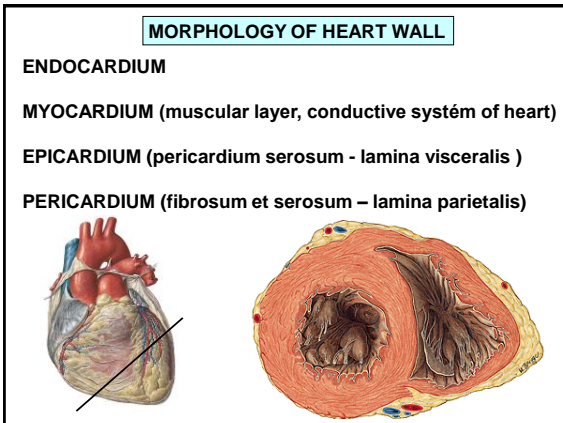
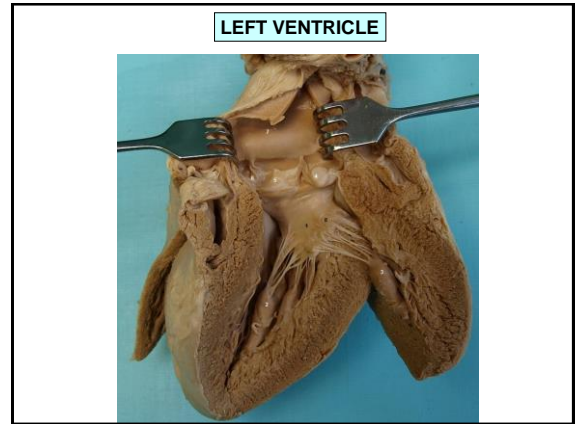
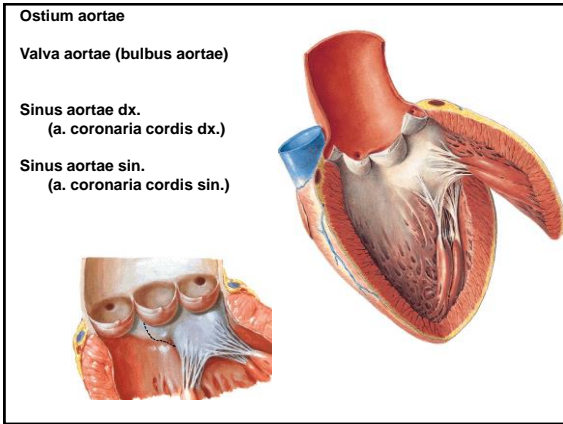
Facies diaphragmatica (post.)

Margo acutus (dexter)

Margo obtusus (sinister)  
= facies pulmonalis

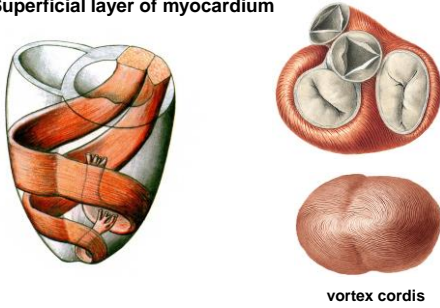






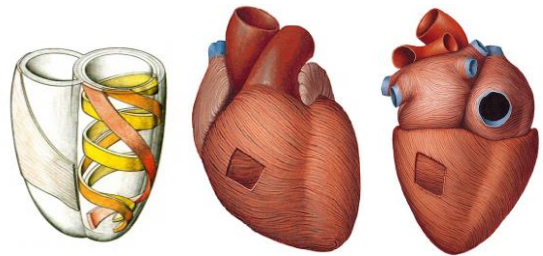
**MYOCARDIUM OF THE VENTRICLES**

Superficial layer of myocardium



vortex cordis

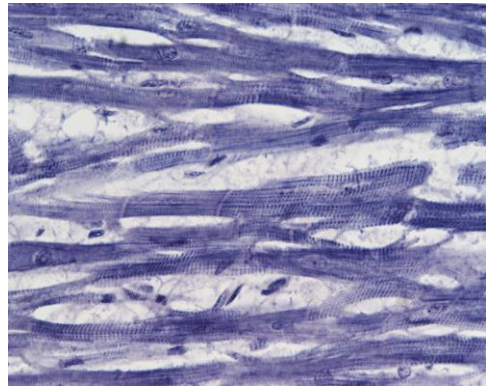
**Middle layer of myocardium**



**Deep layer of myocardium**

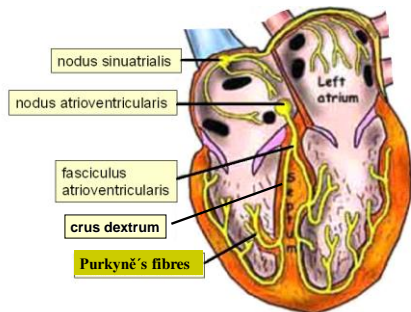
Trabeculae carnae

Mm. papillares



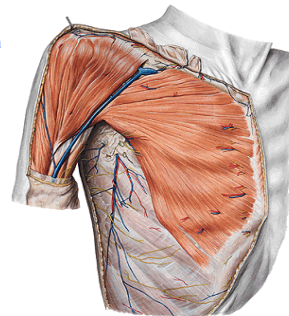
Intercalar discs

**CONDUCTIVE SYSTEM OF THE HEART**



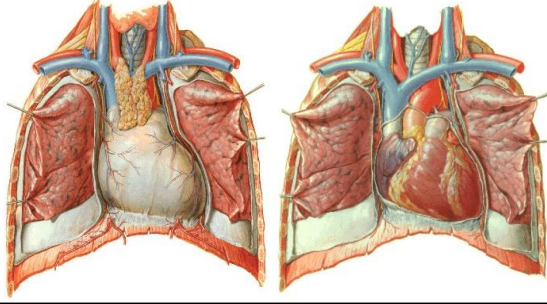
**Cardiostimulator instalation**

v. cephalica



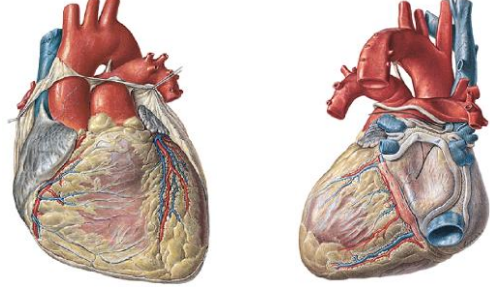
**PERICARDIUM**

Pericardium fibrosum lamina parietalis  
 Pericardium serosum lamina visceralis (epicardium)

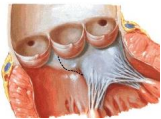


**PERICARDIUM**

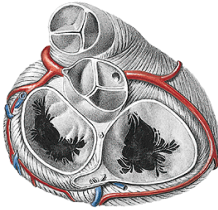
Cavum pericardii Epicardium  
 Liquor pericardii Subepicardial fibrotic tissue



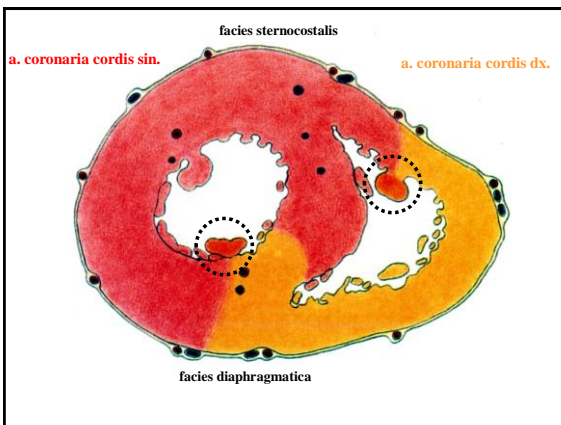
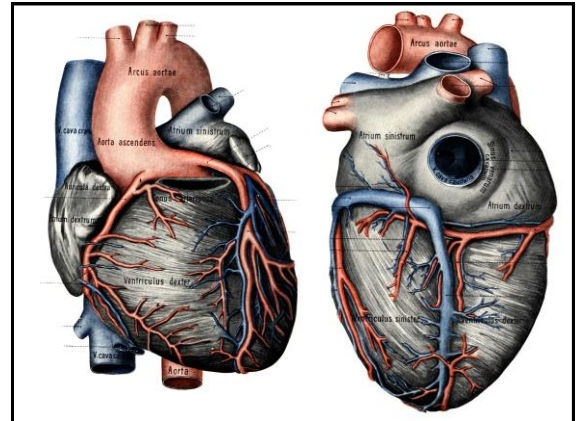
**Coronary arteries**



Arteria coronaria cordis dextra  
 r. coni arteriosi  
 r. nodi sinuatrialis  
 r. nodi atrioventricularis  
 rr. atriales dx.  
 rr. ventriculares dx.  
 r. marginalis dx.  
 r. interventricularis post.

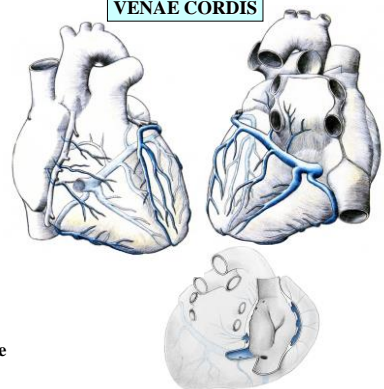


Arteria coronaria cordis sinistra  
 r. interventricularis ant.  
 r. circumflexus



**VENAE CORDIS**

■ 60%  
 sinus coronarius  
 v. cordis magna  
 v. cordis media  
 v. cordis parva  
 v. obliqua atrii sin  
 v. post. ventriculi :  
 ■ 40%  
 vv. cordis ant.  
 vv. cordis minimae



**Innervation of the heart**

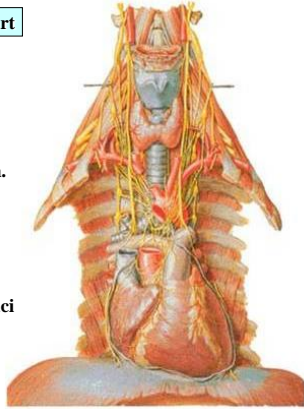
Plexus cardiacus spf.  
(ganglion cardiacum)

Plexus cardiacus prof.

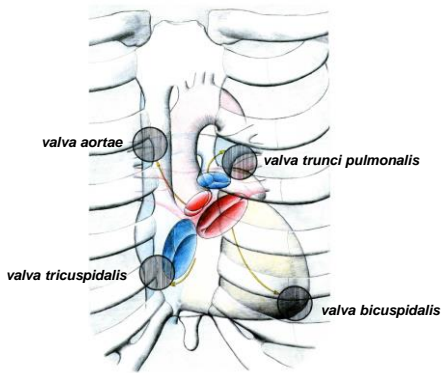
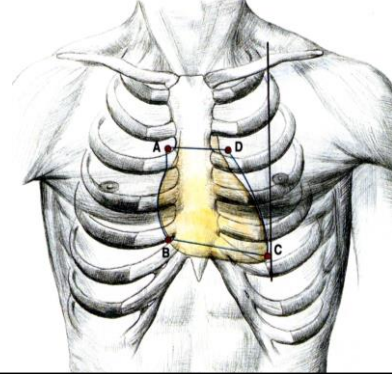
Plexus coronarius dx. et sin.

Nn. accelerantes  
(sympaticus, nn. cardiaci)

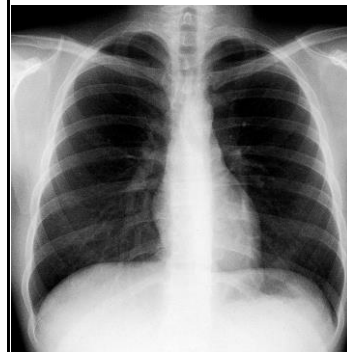
Nn. retardantes  
(parasympaticus, rr. cardiaci  
n. vagi)



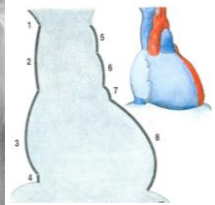
**AUSCULTATION POINTS**



**NATIVE X-RAY OF THE CHEST**



1. V. brachiocephalica dx.
2. V. cava sup.
3. Atrium dx.
4. V. cava inf.



5. Arcus aortae
6. Truncus pulmonalis
7. Auricula sin.
8. Ventriculus sin.

**Vasa (vessels)**

Arteriae  
(terminales, collaterales)

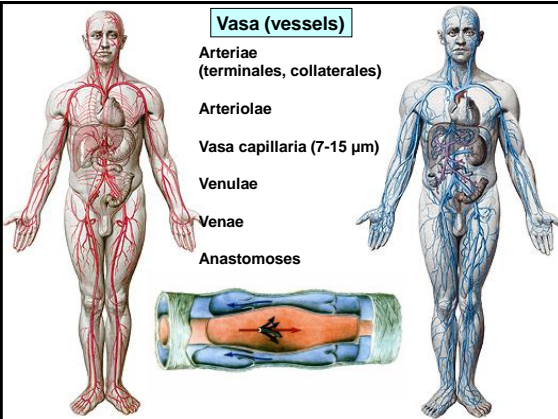
Arteriolae

Vasa capillaria (7-15 µm)

Venulae

Venae

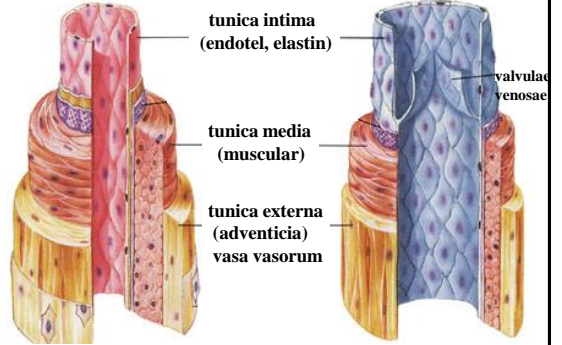
Anastomoses

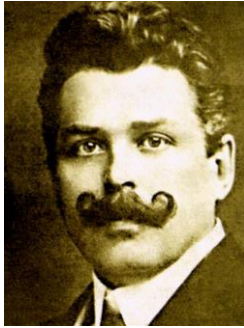


**MORPHOLOGY OF THE WALL**

**ARTERY**

**VEIN**





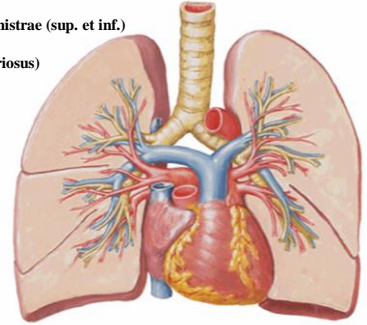
Jan Janský : 1873-1921. r. 1907 – aglutination of erythrocytes  
 Karl Landsteiner : (Wien) r. 1901 - A,B,O.  
 Alfr. Decastello, Adriano Sturli : r.1902 - AB

**TRUNCUS PULMONALIS**

arteria pulmonalis dx. et sin. (angle 180°)

vv. pulmonales dextrae et sinistrae (sup. et inf.)

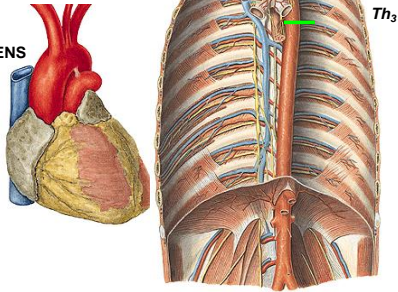
lig. arteriosum (ductus arteriosus)



**AORTA**

2. art. sternocostalis dx.

- AORTA ASCENDENS
- ARCUS AORTAE
- AORTA DESCENDENS
- Aorta thoracica
- Aorta abdominalis

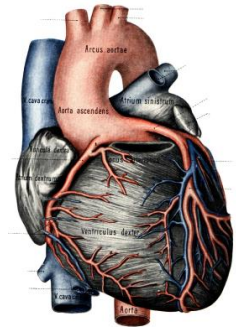
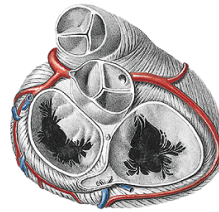


L<sub>4</sub> (bifurcatio aortae)

**AORTA ASCENDENS**

Arteria coronaria cordis dx. et sin.

Bulbus aortae

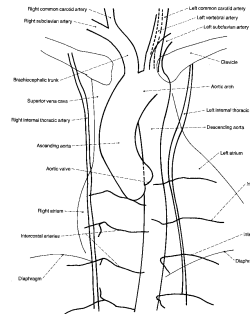
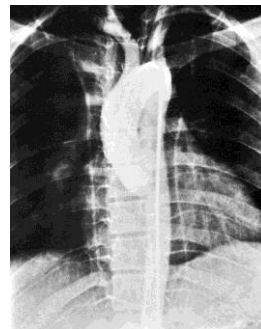
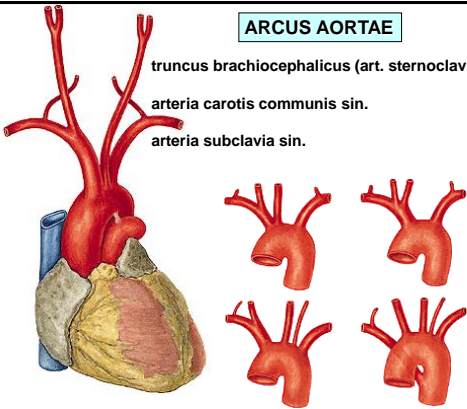


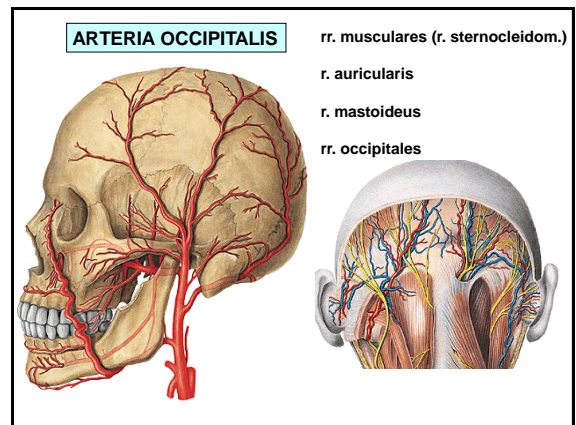
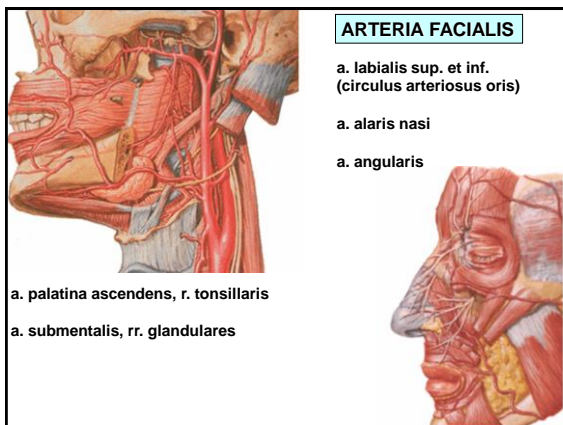
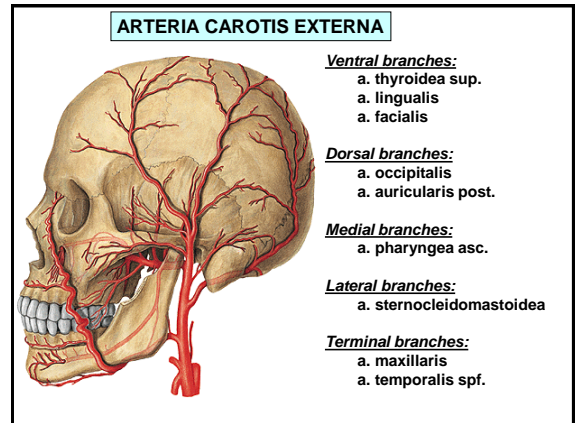
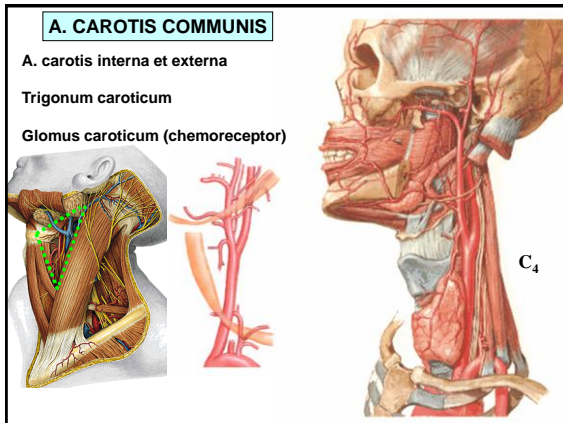
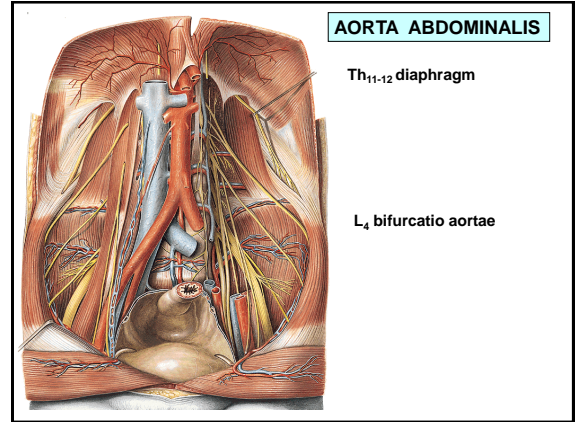
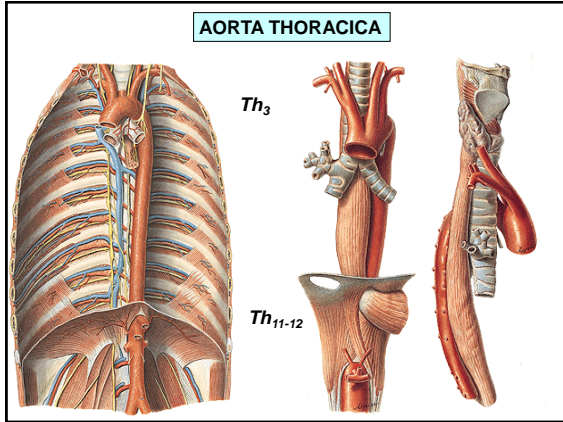
**ARCUS AORTAE**

truncus brachiocephalicus (art. sternoclavicularis dx.)

arteria carotis communis sin.

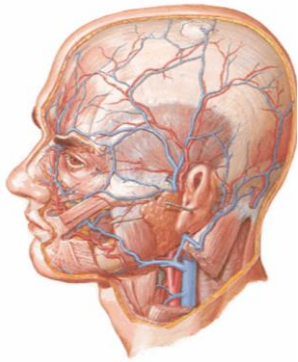
arteria subclavia sin.





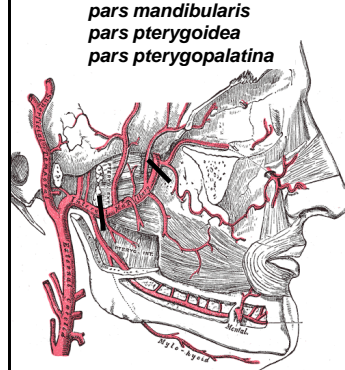


**ARTERIA TEMPORALIS SUPERFICIALIS**



- rr. parotidei
- a. transversa faciei
- rr. auriculares ant.
- a. zygomaticoorbitalis
- a. temporalis media
- r. frontalis
- r. parietalis

**A. MAXILLARIS**

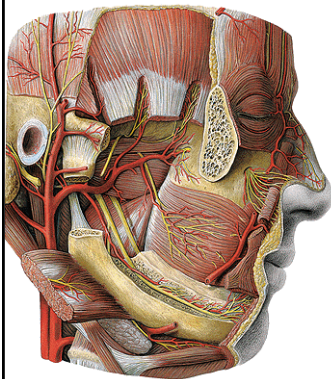


- pars mandibularis*
- pars pterygoidea*
- pars pterygopalatina*

***Pars mandibularis***

- a. meningea media
- a. alveolaris inf.
- r. mylohyoideus
- rr. dentales
- rr. gingivales
- a. mentalis
- a. auricularis prof.
- a. tympanica ant.

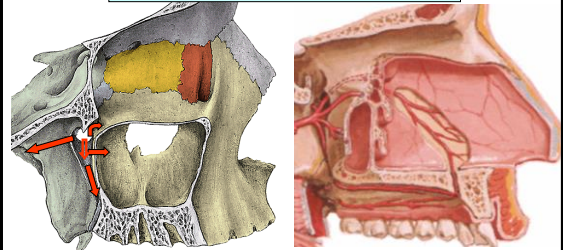
**A. MAXILLARIS**



***Pars pterygoidea***

- a. masseterica
- aa. temporales prof.
- rr. pterygoidei
- a. bucalis

**A. MAXILLARIS - pars pterygopalatina**



- a. infraorbitalis
- a. alveolaris sup. post.

- a. palatina descendens
- a. canalis pterygoidei
- a. sphenopalatina

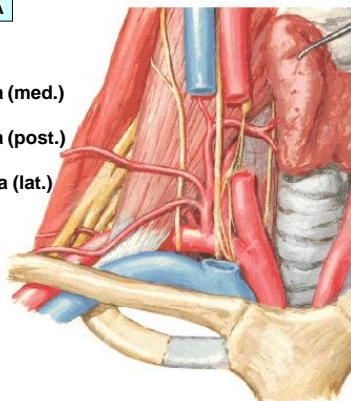
**ARTERIA SUBCLAVIA**

**Fissura scalenorum**

- Pars intrascalenica (med.)
- Pars interscalenica (post.)
- Pars extrascalenica (lat.)

**Sulcus a. subclaviae**

- cupula pleurae
- costa prima



**ARTERIA SUBCLAVIA**

***Pars intrascalenica:***

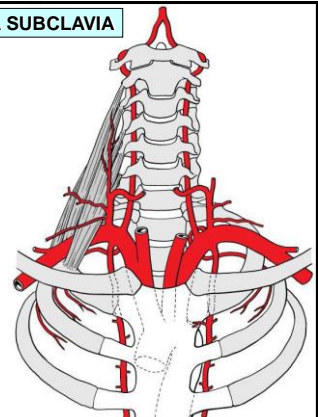
- a. vertebralis
- a. thoracica interna
- tr. thyrocervicalis

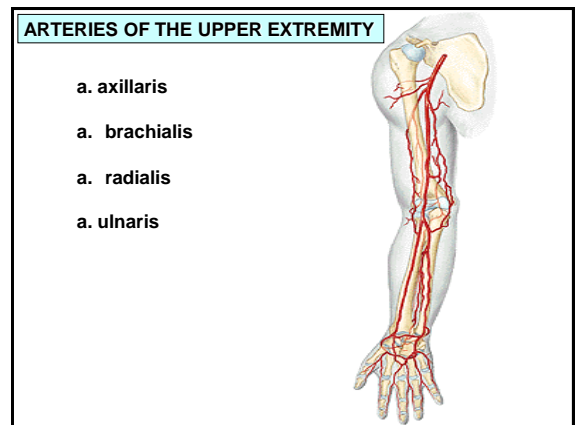
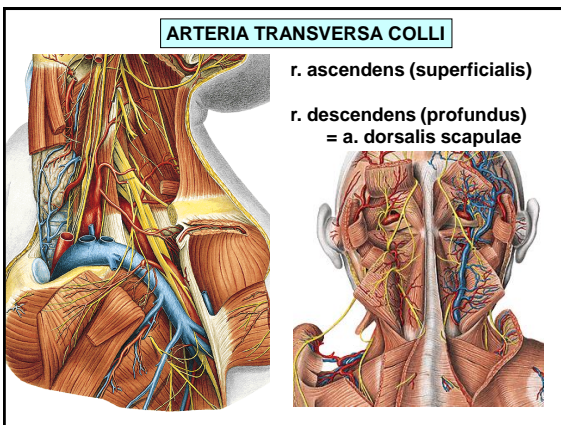
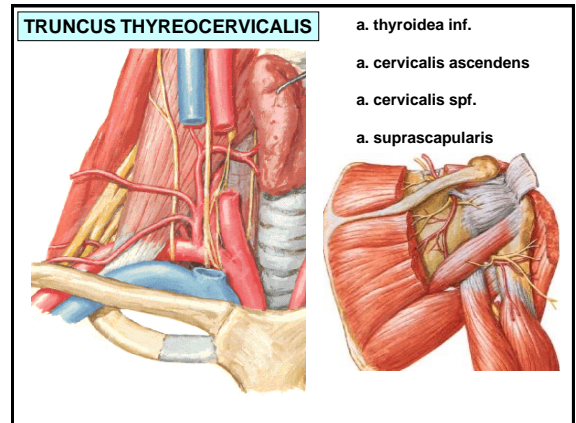
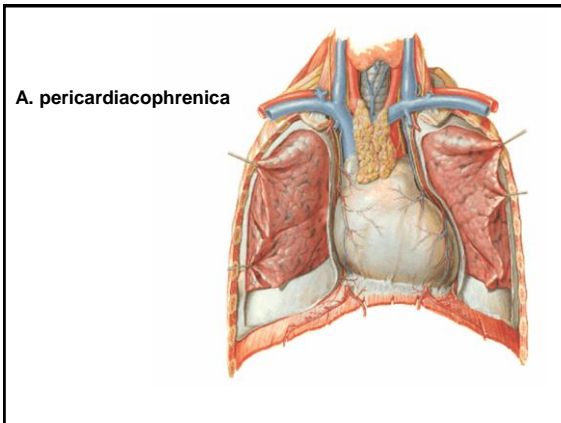
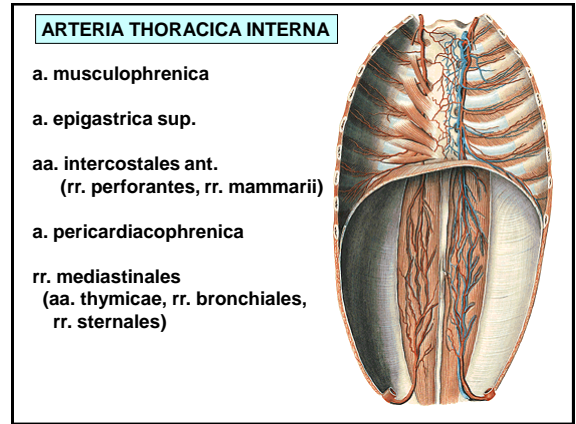
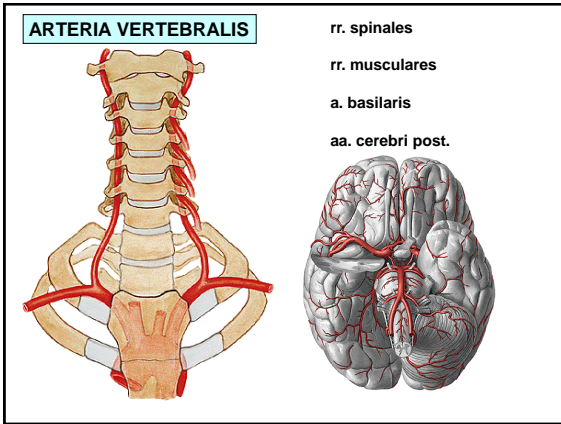
***Pars interscalenica:***

- tr. costocervicalis

***Pars extrascalenica:***

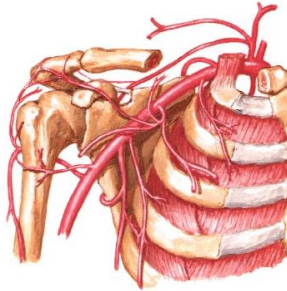
- a. transversa colli



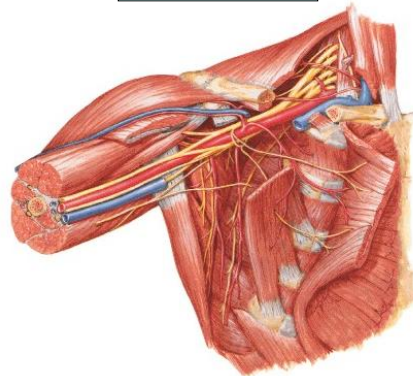


**ARTERIA AXILLARIS**

- rr. subscapulares
- a. thoracica supra
- a. thoracoacromialis
- a. thoracica lateralis
- a. subscapularis
  - a. thoracodorsalis
  - a. circumflexa scapulae
- a. circumflexa humeri ant.
- a. circumflexa humeri post.



**ARTERIA AXILLARIS**



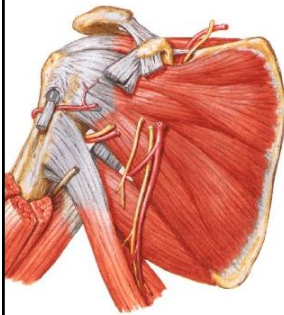
**ARTERIA AXILLARIS**

**A. CIRCUMFLEXA SCAPULAE**

- foramen omotricipitale
- m. teres minor
- m. teres major
- caput longum m. tricipitis brachii

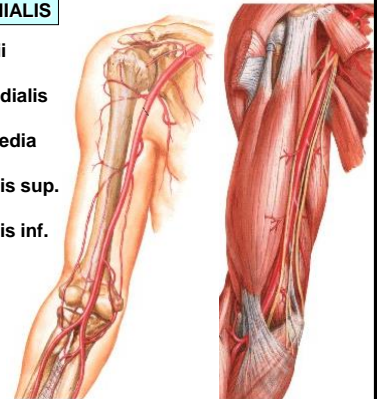
**A. CIRCUMFLEXA HUMERI POST.**

- foramen humerotricipitale
- m. teres minor
- m. teres major
- caput longum m. tricipitis brachii
- humerus



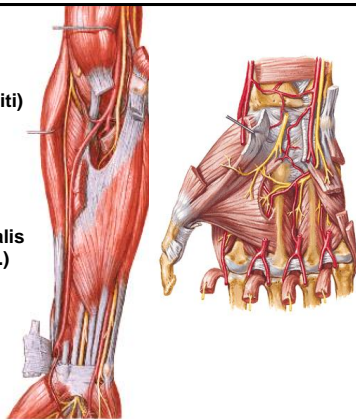
**ARTERIA BRACHIALIS**

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



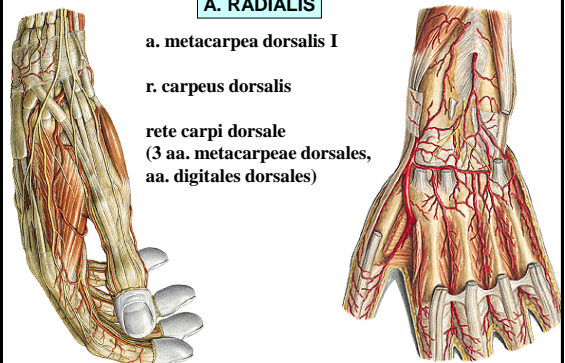
**A. RADIALIS**

- a. recurrens radialis (rete articulare cubiti)
- rr. musculares
- r. carpeus palmaris
- r. palmaris superficialis (arcus palmaris spf.)



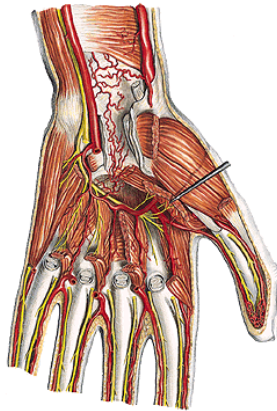
**A. RADIALIS**

- a. metacarpea dorsalis I
- r. carpeus dorsalis
- rete carpi dorsale (3 aa. metacarpeae dorsales, aa. digitales dorsales)



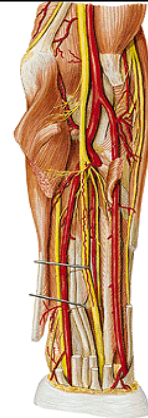
**A. RADIALIS**

- a. princeps policis
- r. palmaris profundus (arcus palmaris prof.)



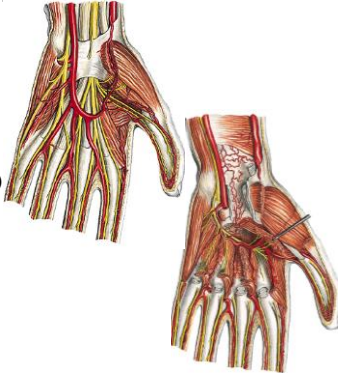
**A. ULNARIS**

- a. recurrens ulnaris (rete articulare cubiti)
- rr. musculares
- a. interossea communis
  - a. interossea ant.
  - a. interossea post. (a. recurrens interossea)



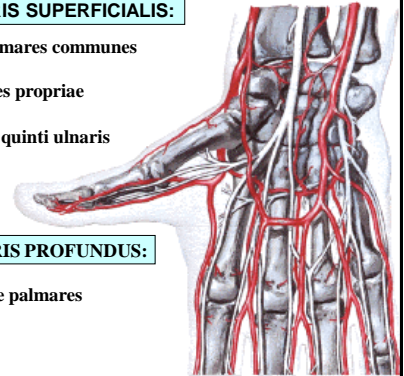
**A. ULNARIS**

- r. carpeus palmaris (rete carpi palmare)
- r. carpeus dorsalis (rete carpi dorsale)
- r. palmaris prof. (arcus palmaris prof.)
- r. palmaris spf. (arcus palmaris spf.)



**ARCUS PALMARIS SUPERFICIALIS:**

- 3 aa. digitales palmares communes
- 2 aa. dig. palmares propriae
- a. palmaris digiti quinti ulnaris



**ARCUS PALMARIS PROFUNDUS:**

- aa. metacarpeae palmares
- rr. perforantes

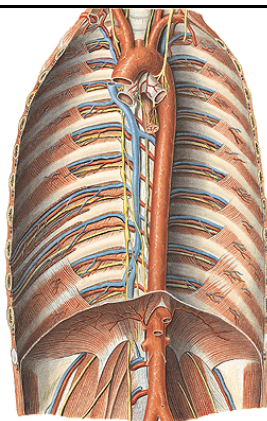
**AORTA THORACICA**

*Parietal branches*

- aa. intercostales post. (VAN)
  - r. dorsalis
  - rr. musculares
  - r. collateralis
  - r. cutaneus lat. (rr. mammarii lat.)
- a. subcostalis
- a. phrenica sup.

*Visceral branches:*

- rr. bronchiales
- rr. oesophagei
- rr. pericardiaci



**R. dorsalis a. intercostalis post. :**

- rr. musculares
- r. spinalis
- rr. cutanei med. et lat.

