

CARDIOVASCULAR SYSTEM

Arteries

Veins

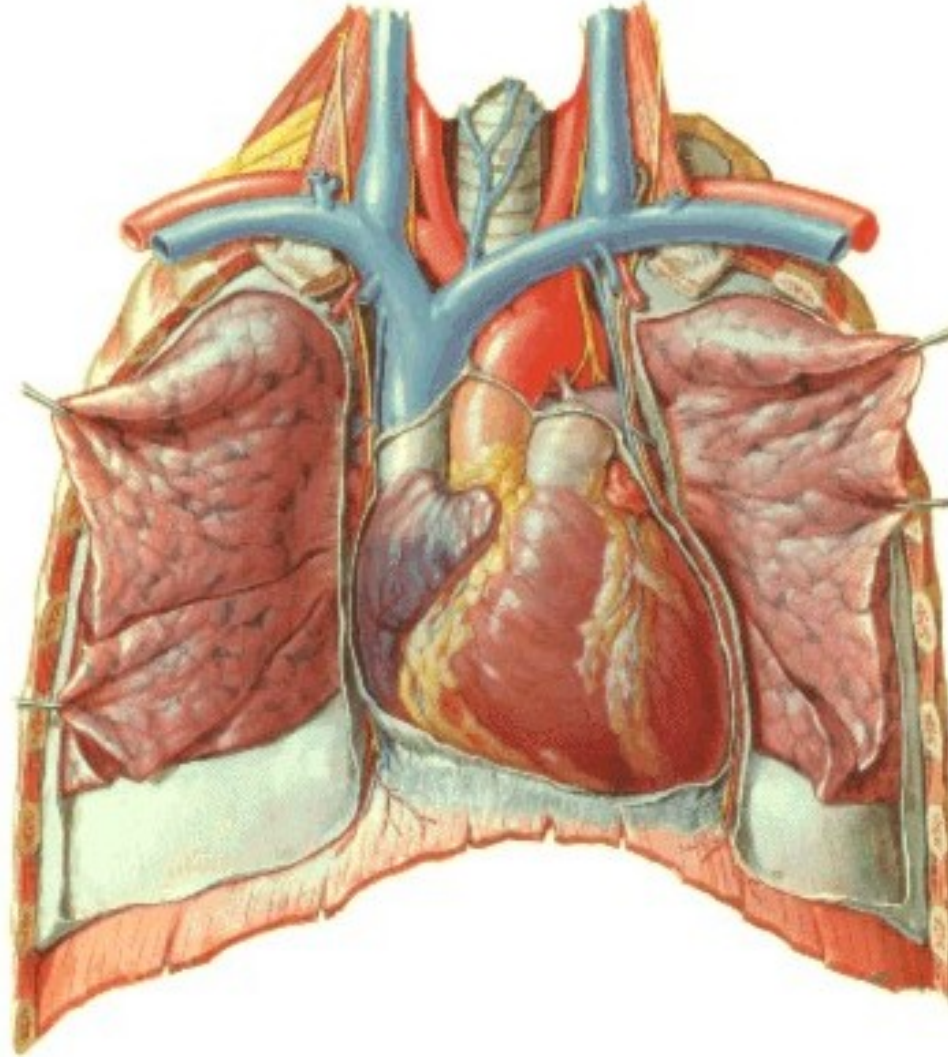
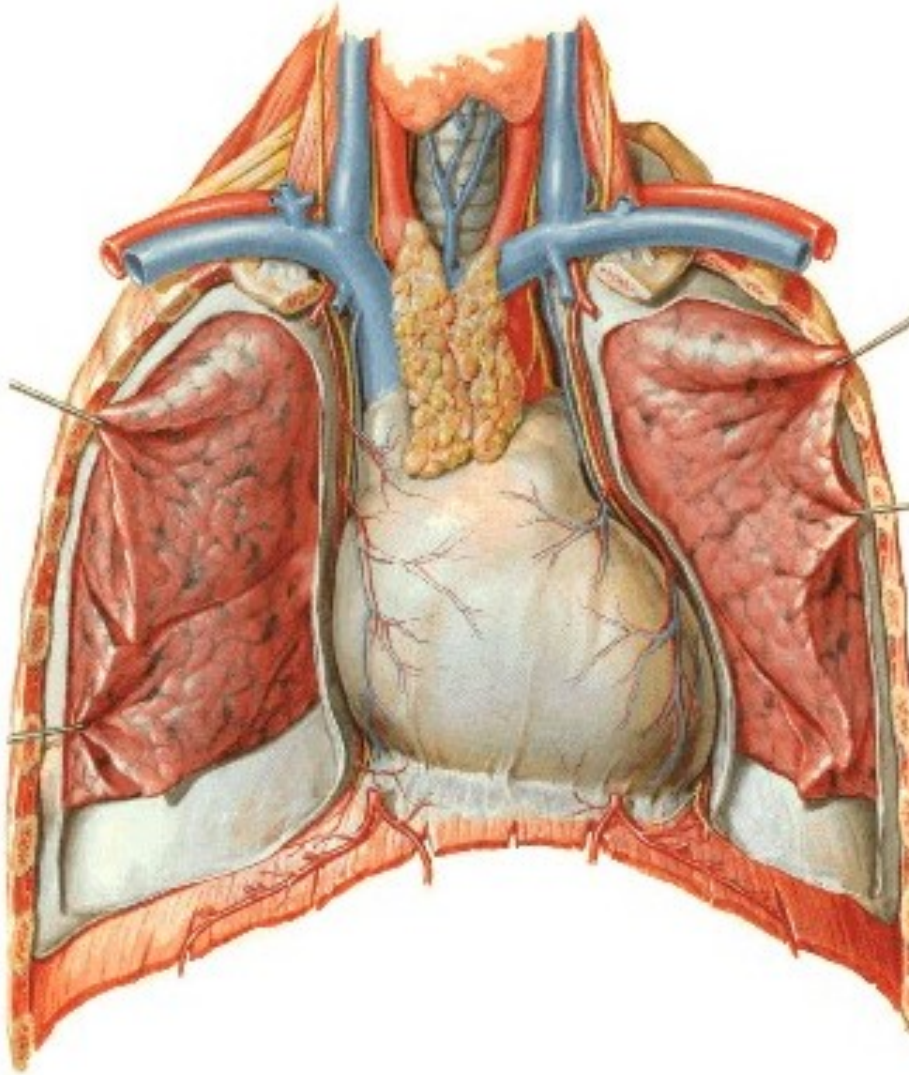
Capillaries

HEART

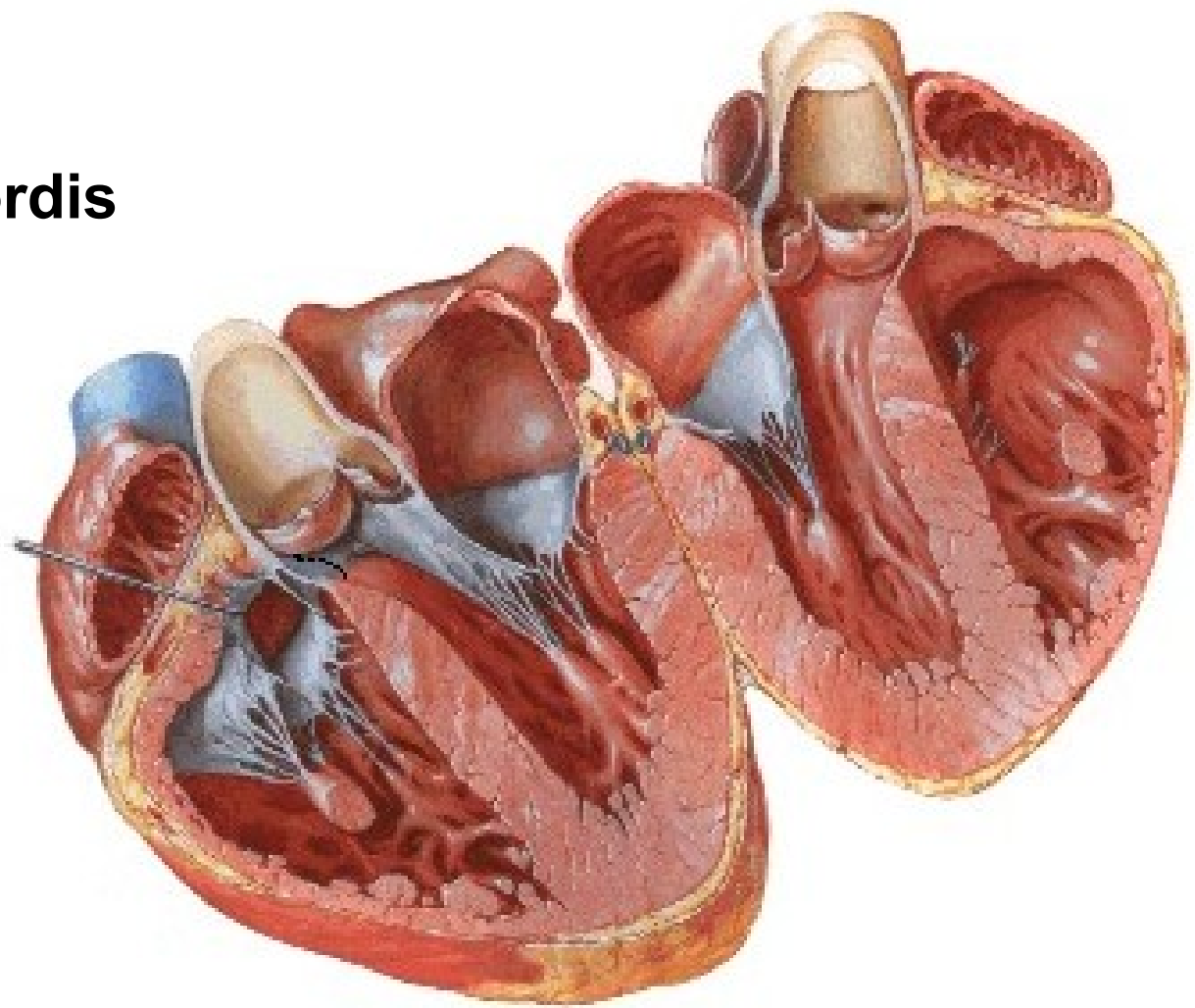
Adult 240 – 320 g

Newborn 20 – 30 g

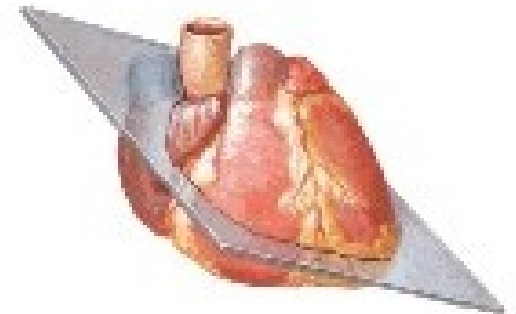
COR



Atrium cordis
Ventriculus cordis



Septum interatriale
Septum interventriculare



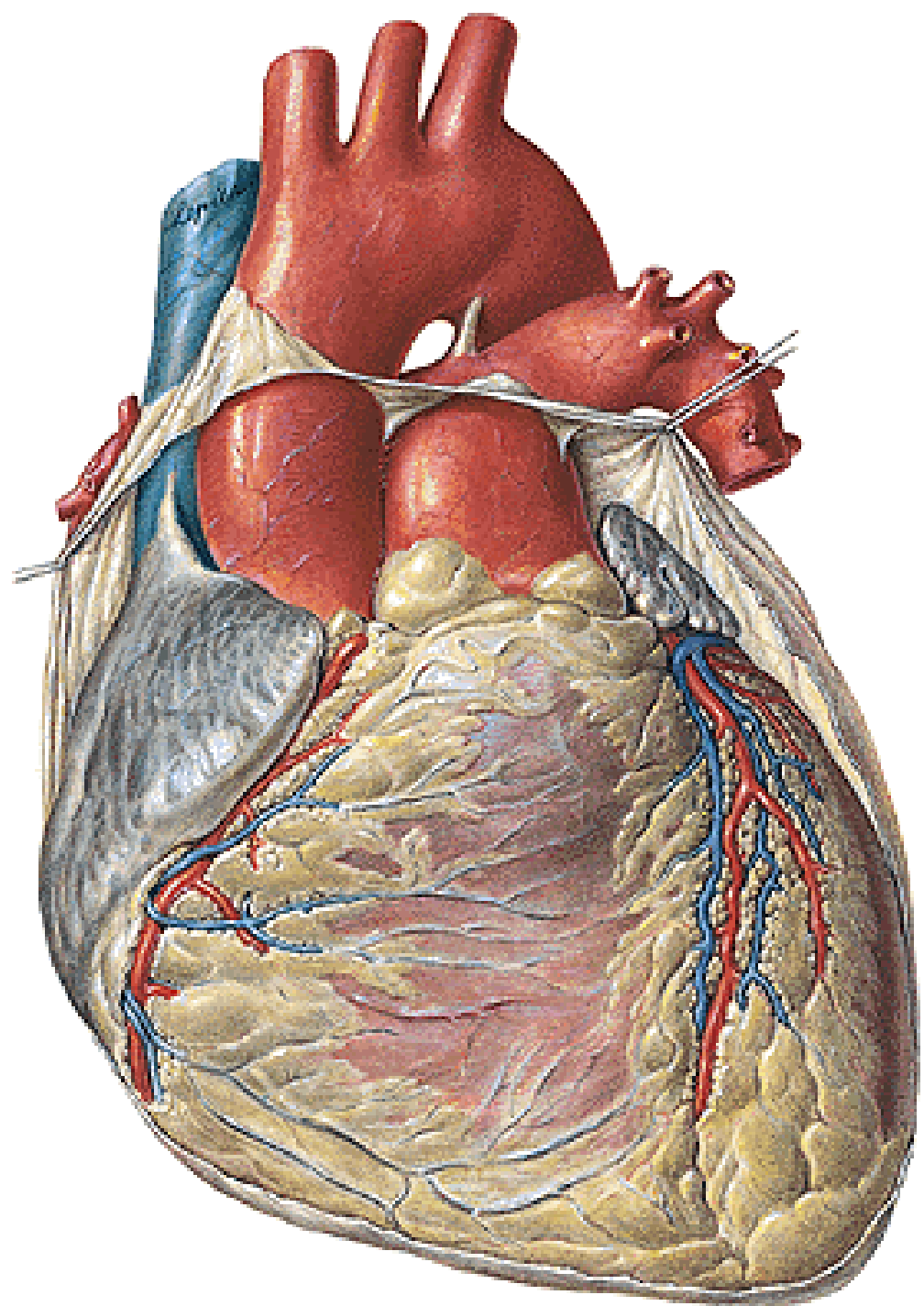
COR

Atrium dextrum

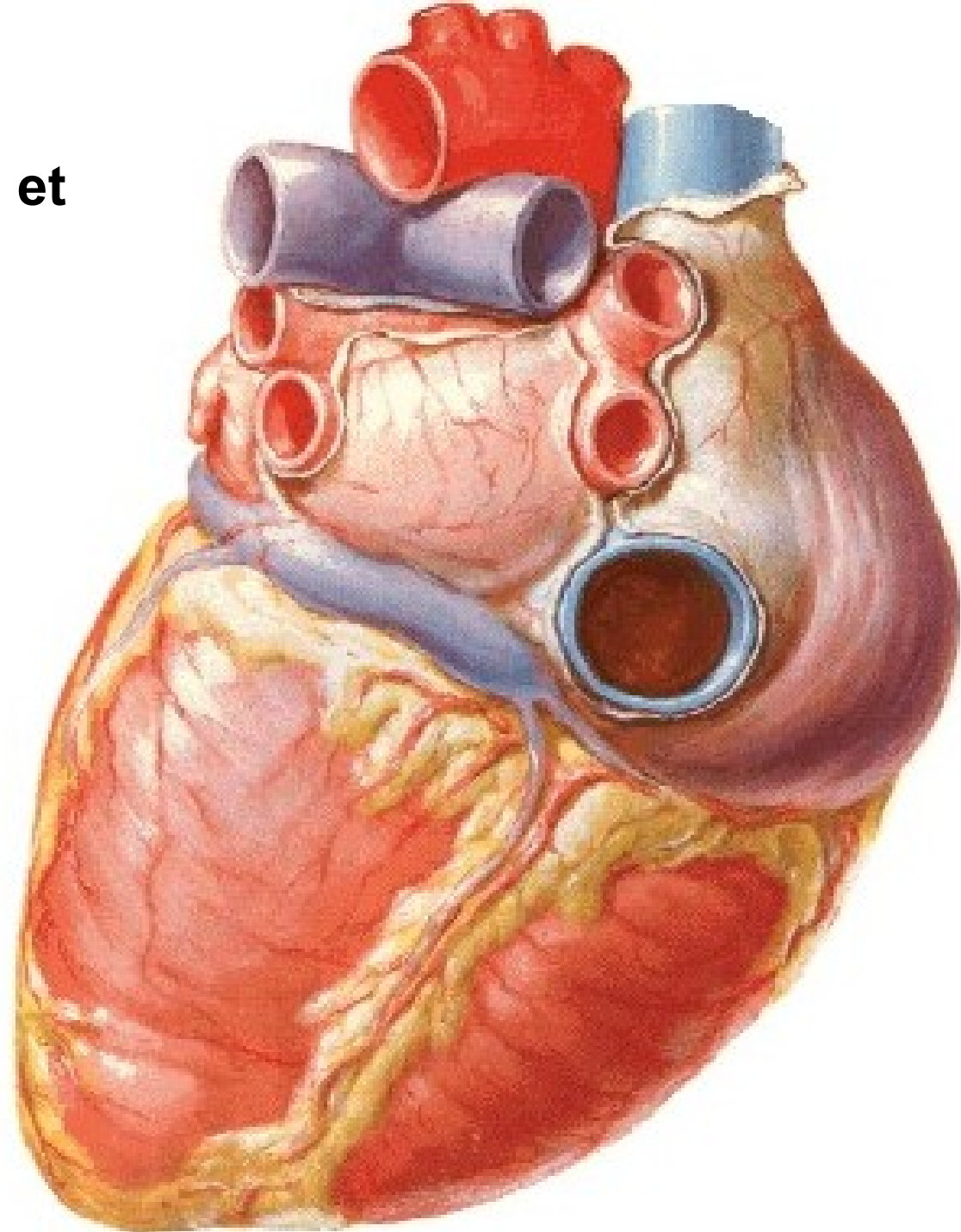
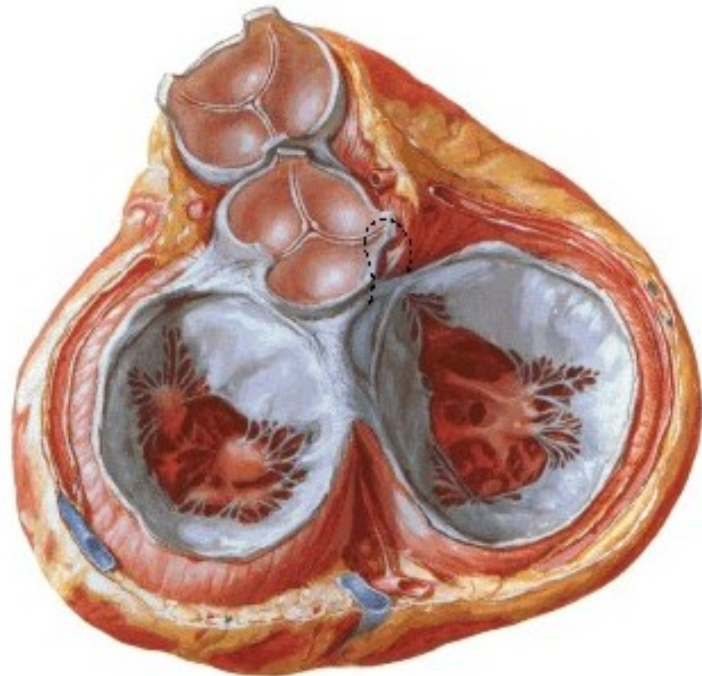
- vena cava sup. et inf.

Ventriculus dexter

- truncus pulmonalis



**Atrium sinistrum
vv. pulmonales dextrae et
sinistrae
Ventriculus sinister
- aorta**



Basis, apex

Facies sternocostalis (anterior)

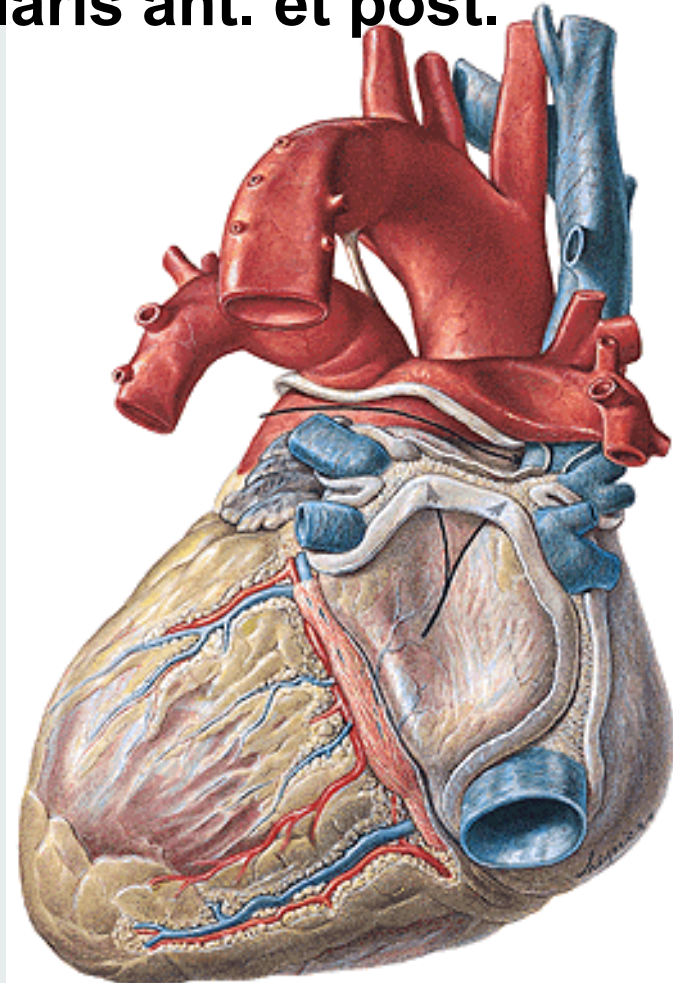
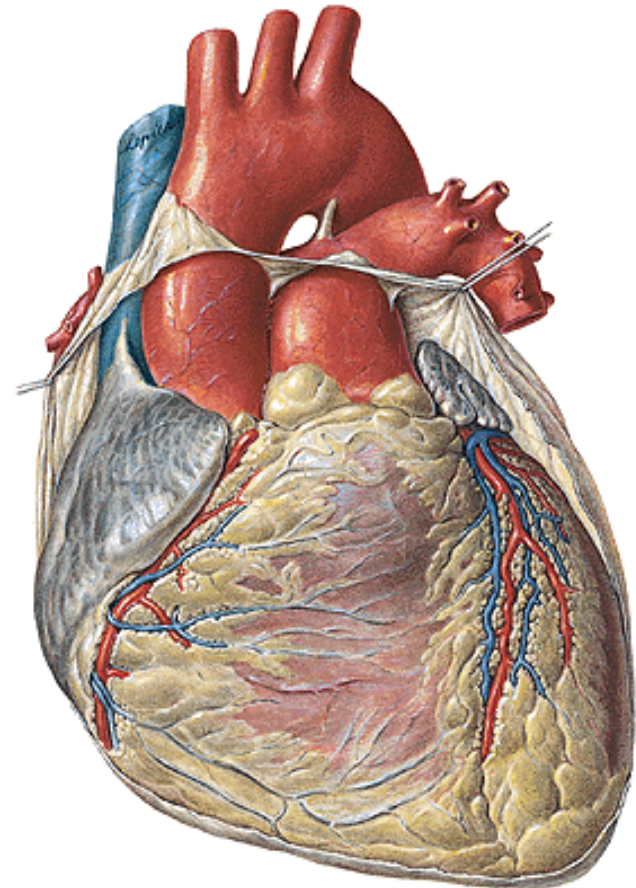
Facies diaphragmatica (inferior)

Facies pulmonalis dx. et sin.

Margo dexter (acutus) et sinister (obtusus)

Sulcus coronarius, sulcus interventricularis ant. et post.

Auricula dextra et sinistra



ATRIUM DEXTRUM

Septum interatriale – fossa ovalis

Ostium v. cavae sup.

**Ostium v. cavae inf. –
valvula v. cavae inf.**

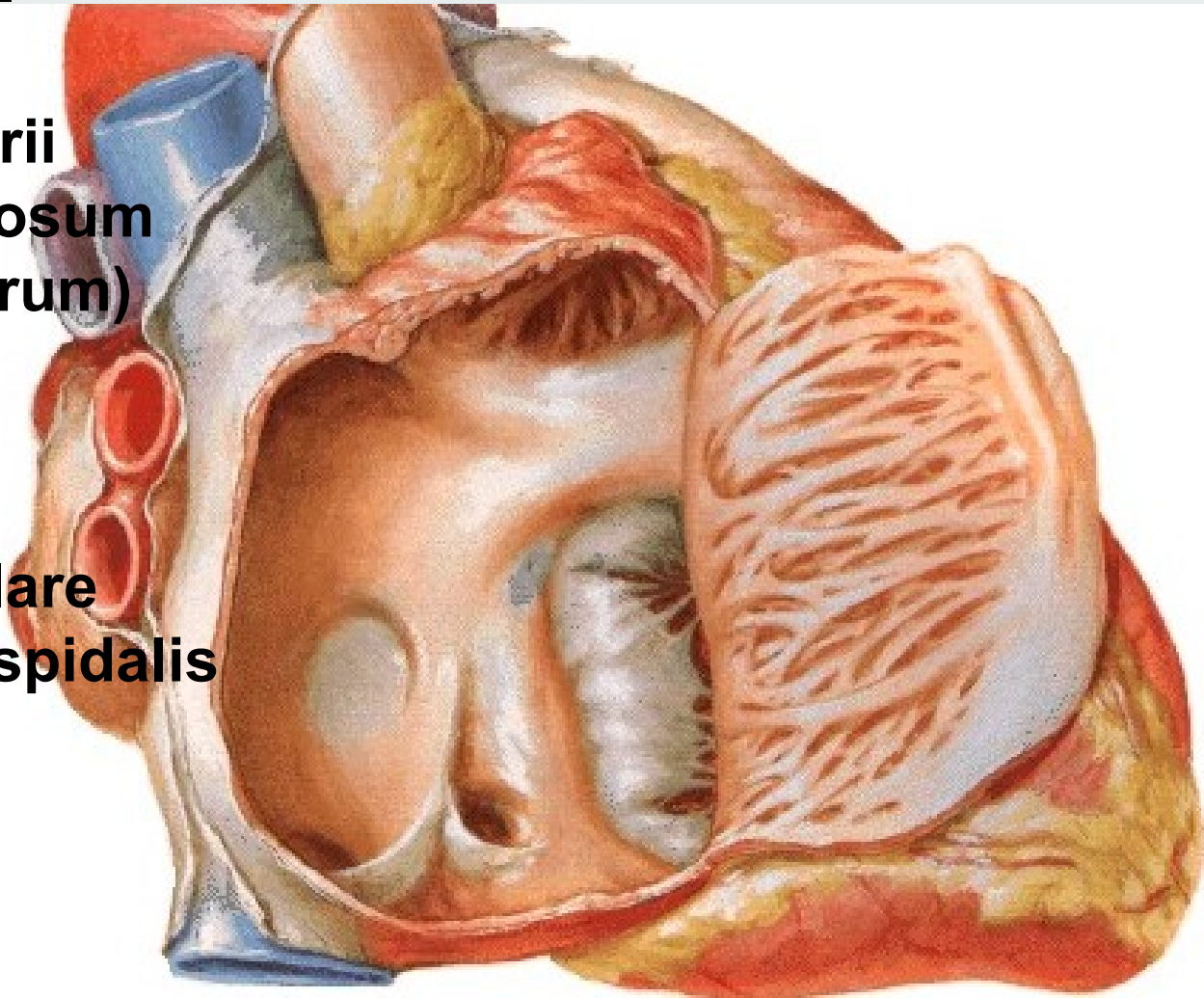
Ostium sinus coronarii

**Tuberculum intervenosum
(sinus venarum cavarum)**

Crista terminalis

**Auricula dextra –
musculi pectinati**

**Ostium atrioventriculare
dextrum - valva tricuspidalis**



VENTRICULUS DEXTER

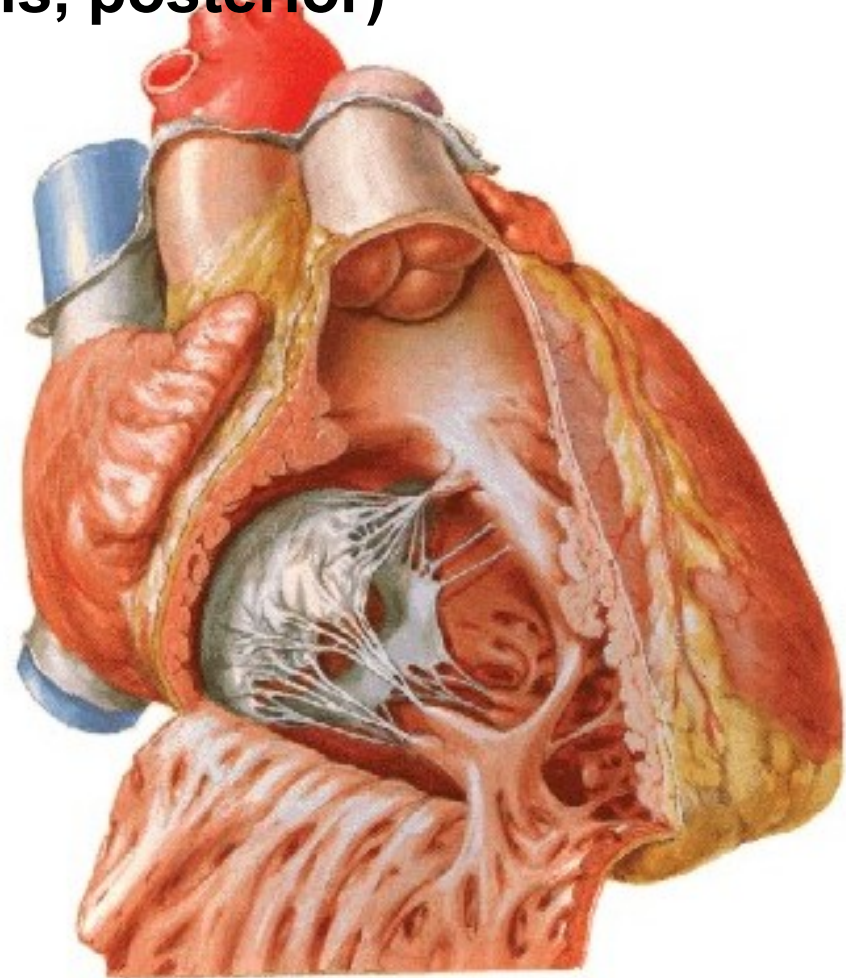
Pars trabecularis - trabeculae carnea

Crista supraventricularis, trabecula septomarginalis

Ostium atrioventriculare dextrum, valva tricuspidalis
– cuspis ant., septalis, post.

Musculi papillares (anterior, septalis, posterior)

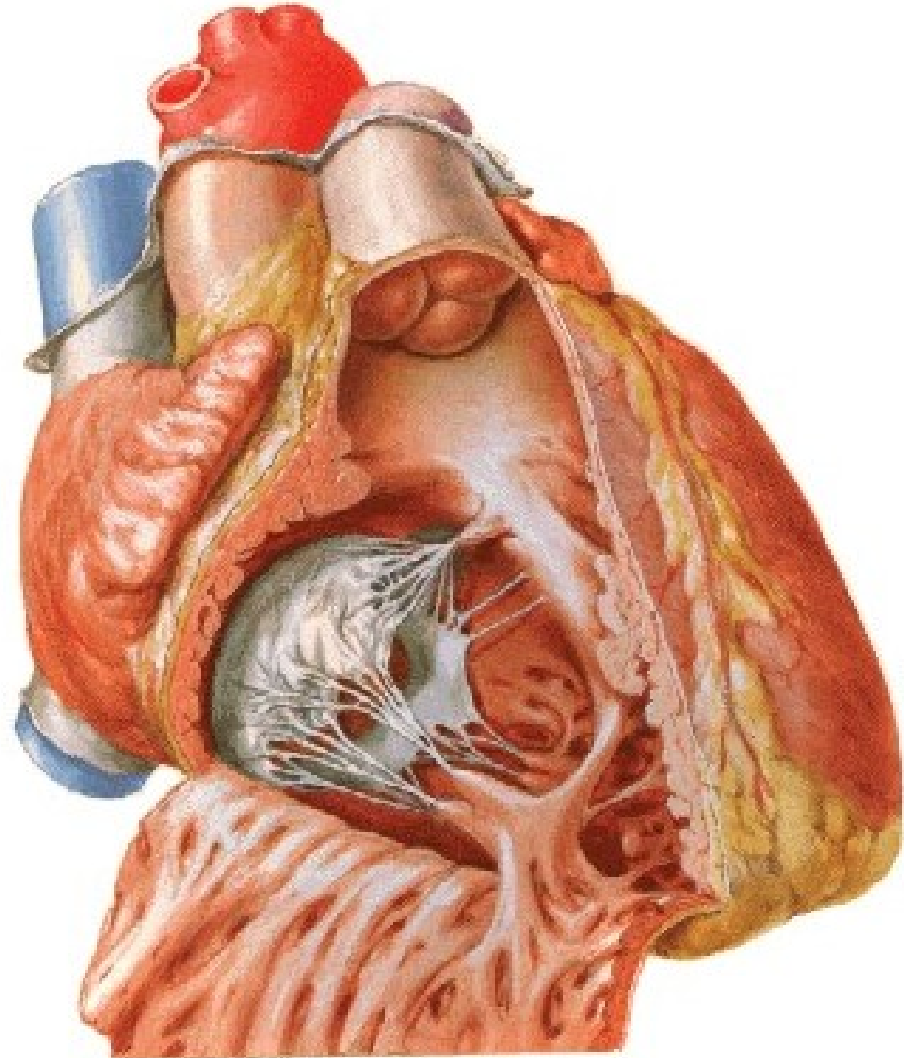
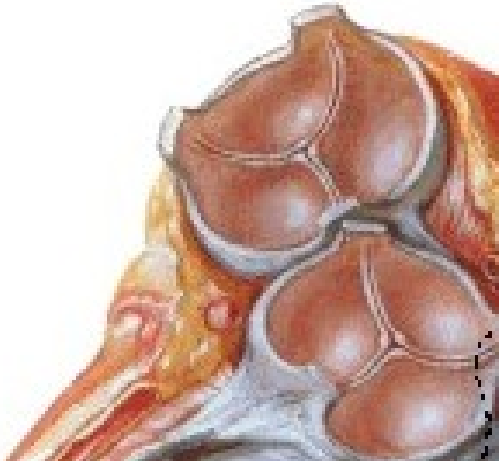
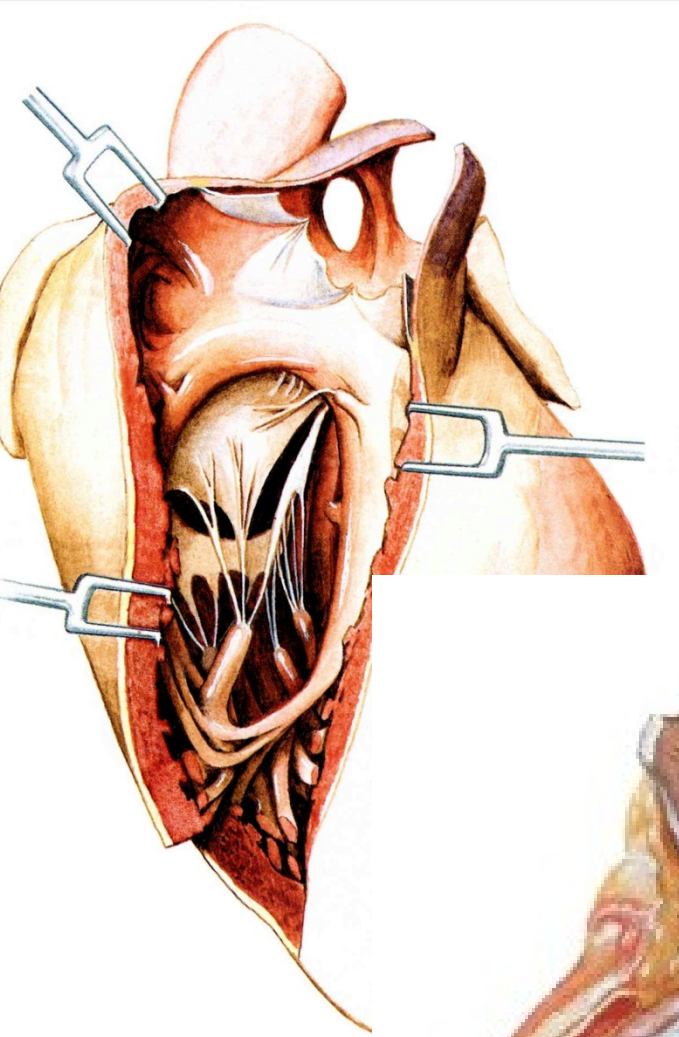
Chordae tendineae



VENTRICULUS DEXTER

Pars glabra – conus arteriosus

Ostium trunci pulmonalis – valva trunci pulmonalis –
valvula semilunaris ant., dx., sin. – lunula, nodulus, sinus



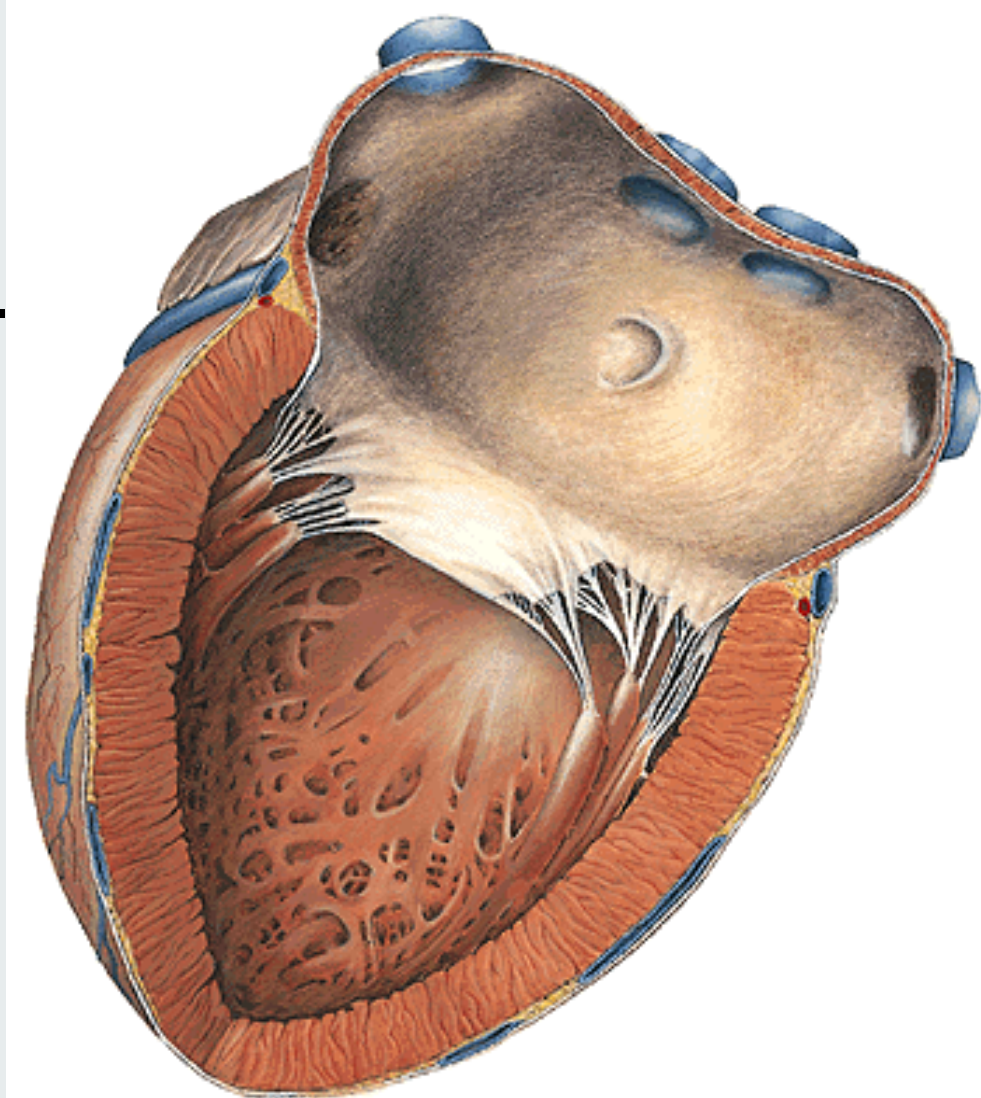
ATRIUM SINISTRUM

Ostia venarum pulmonalium

Septum interatriale –
fossa ovalis

Auricula sinistra –
musculi pectinati

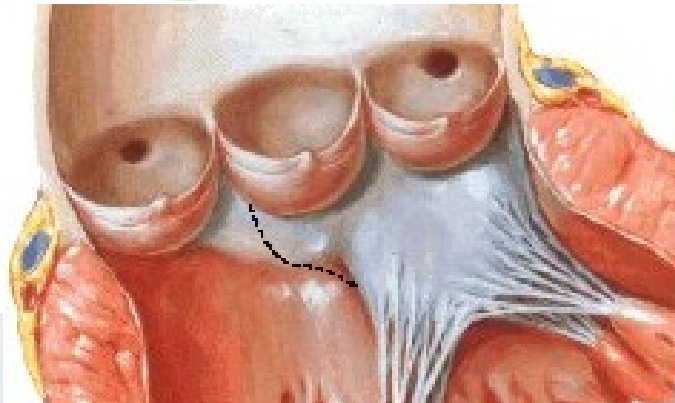
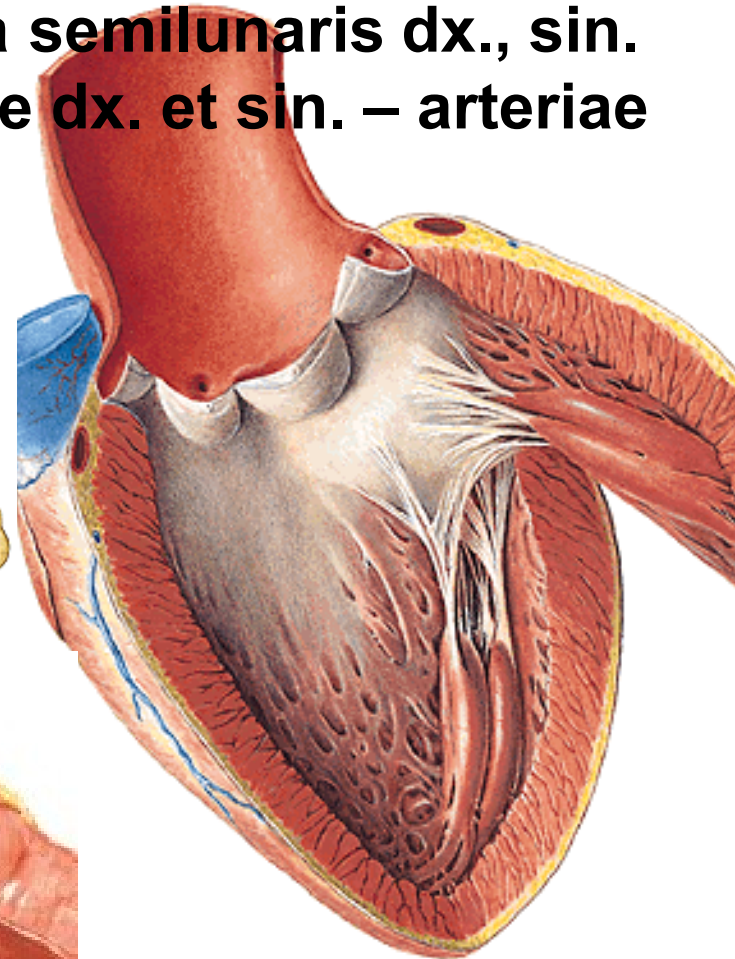
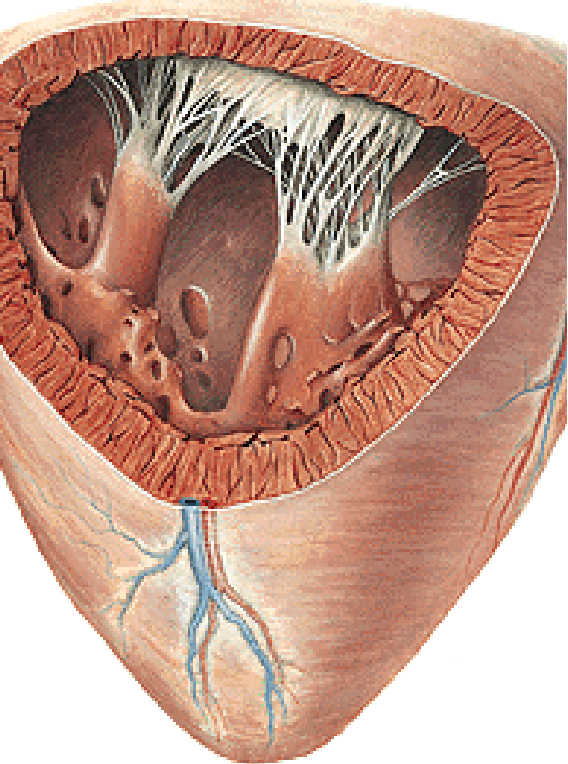
Ostium atrioventriculare sin.



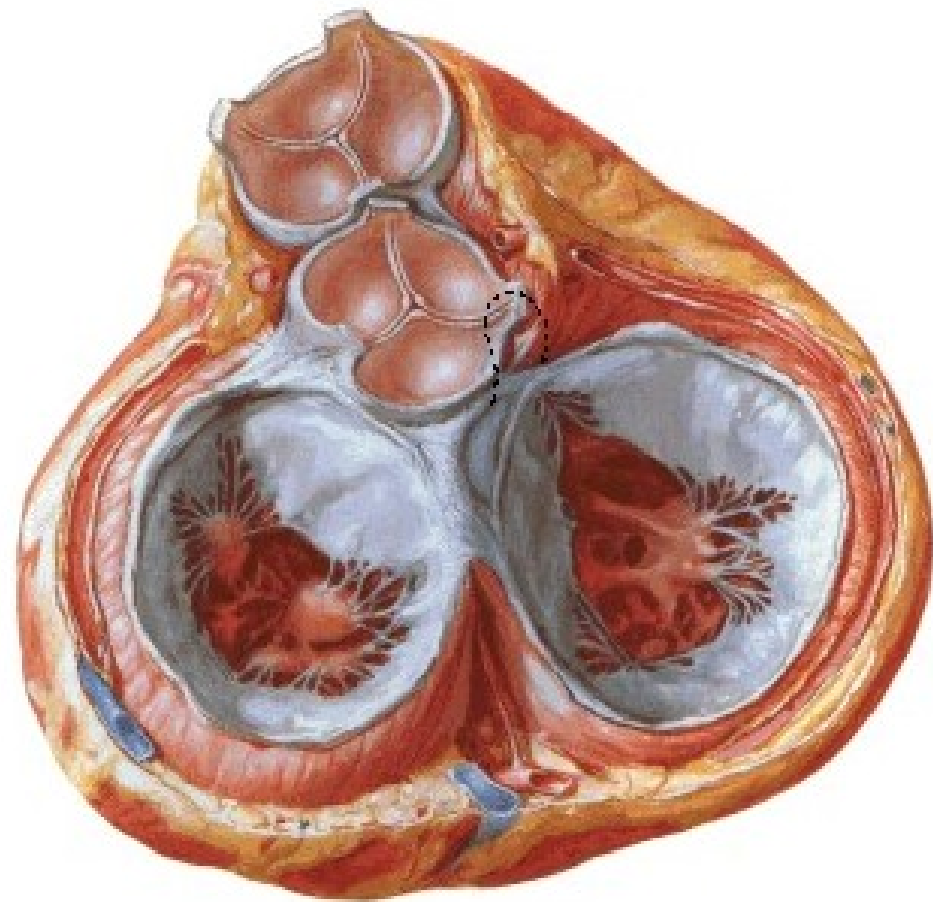
VENTRICULUS SINISTER

Ostium atrioventriculare sin.– valva bicuspidalis (mitralis) –
cuspid ant. et post. – m. papillaris ant. et post. – chordae
tendineae

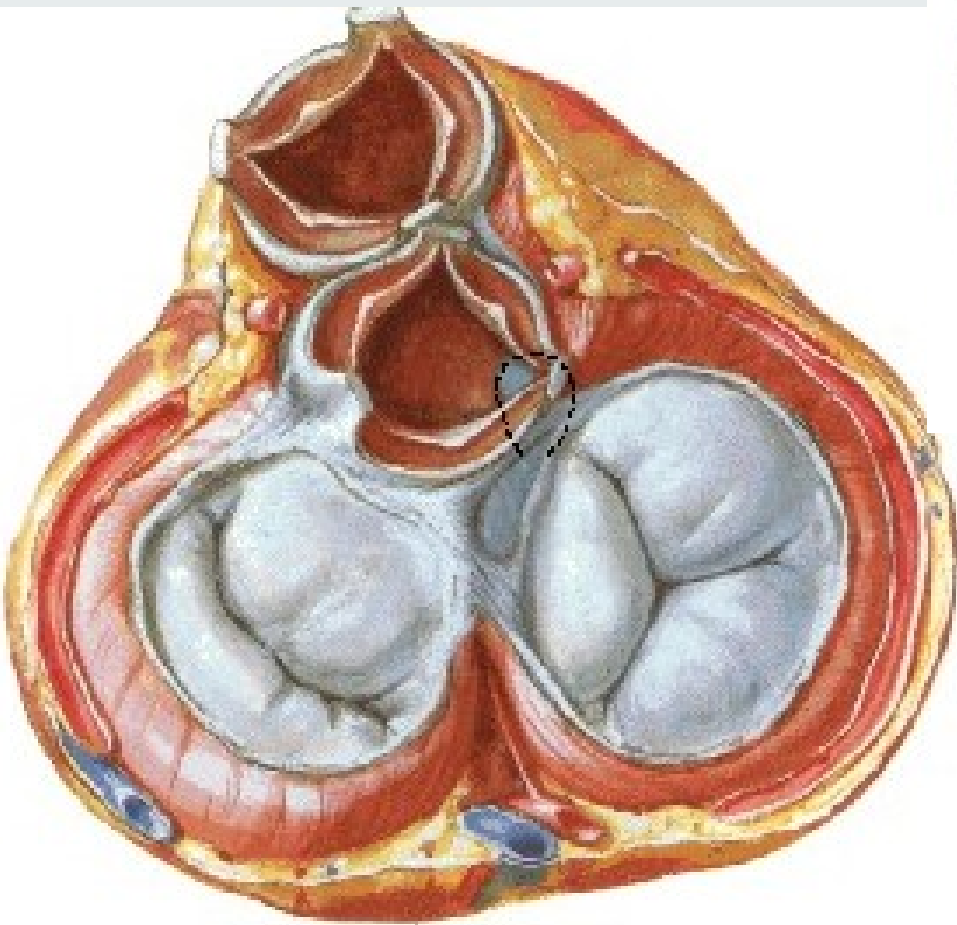
Ostium aortae – valva aortae – valvula semilunaris dx., sin.
et post. – lunula, nodulus, sinus aortae dx. et sin. – arteriae
coronariae, bulbus aortae



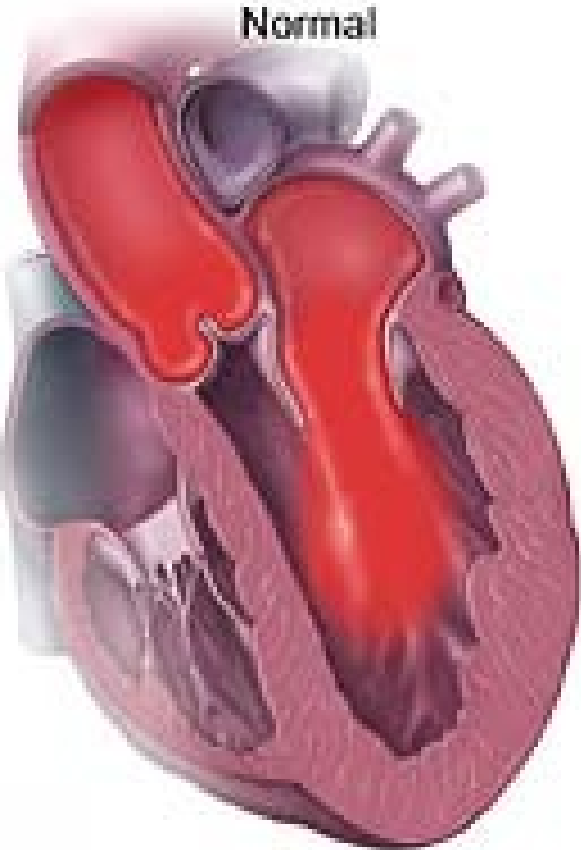
SYSTOLE



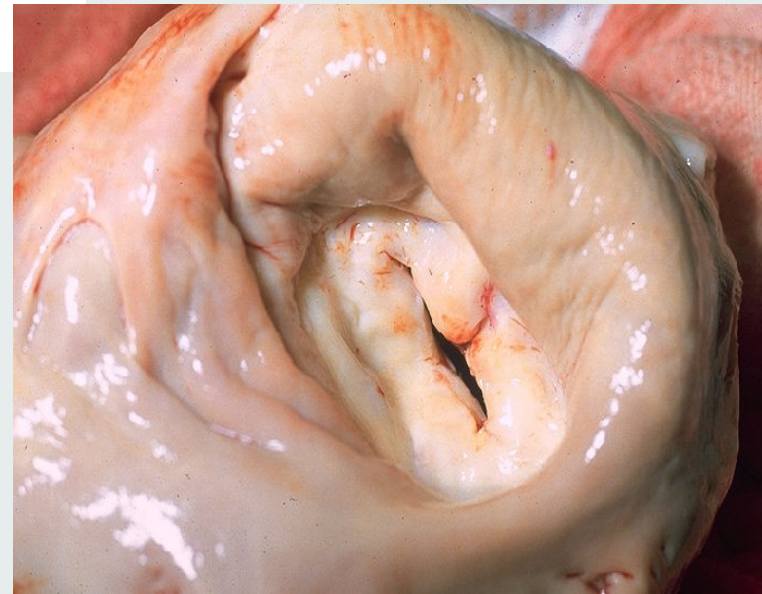
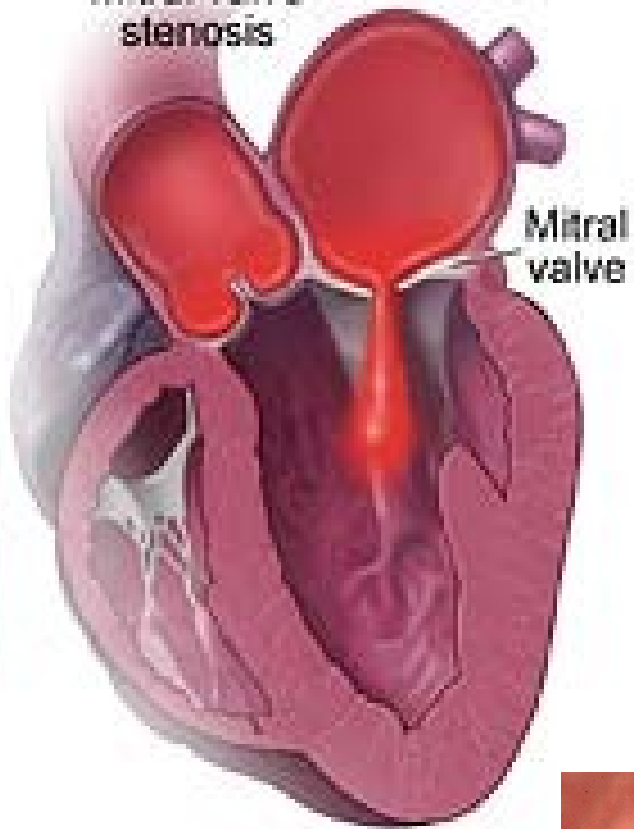
↑
DIASTOLE



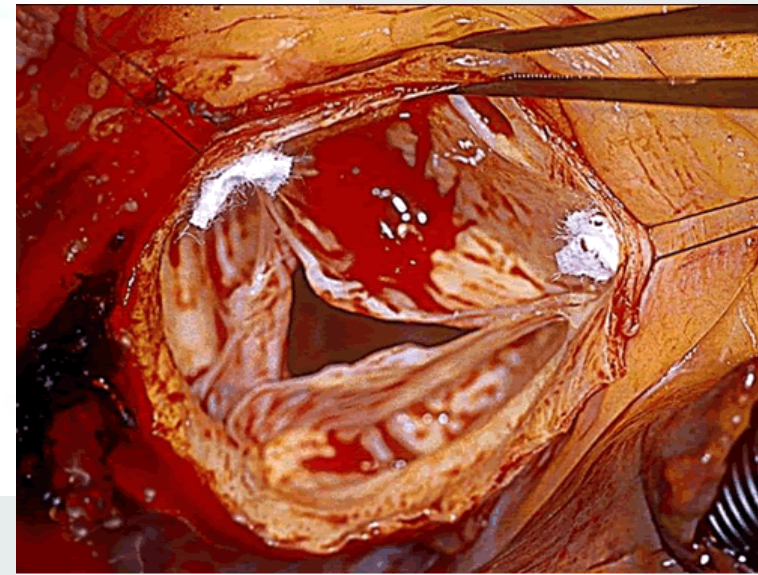
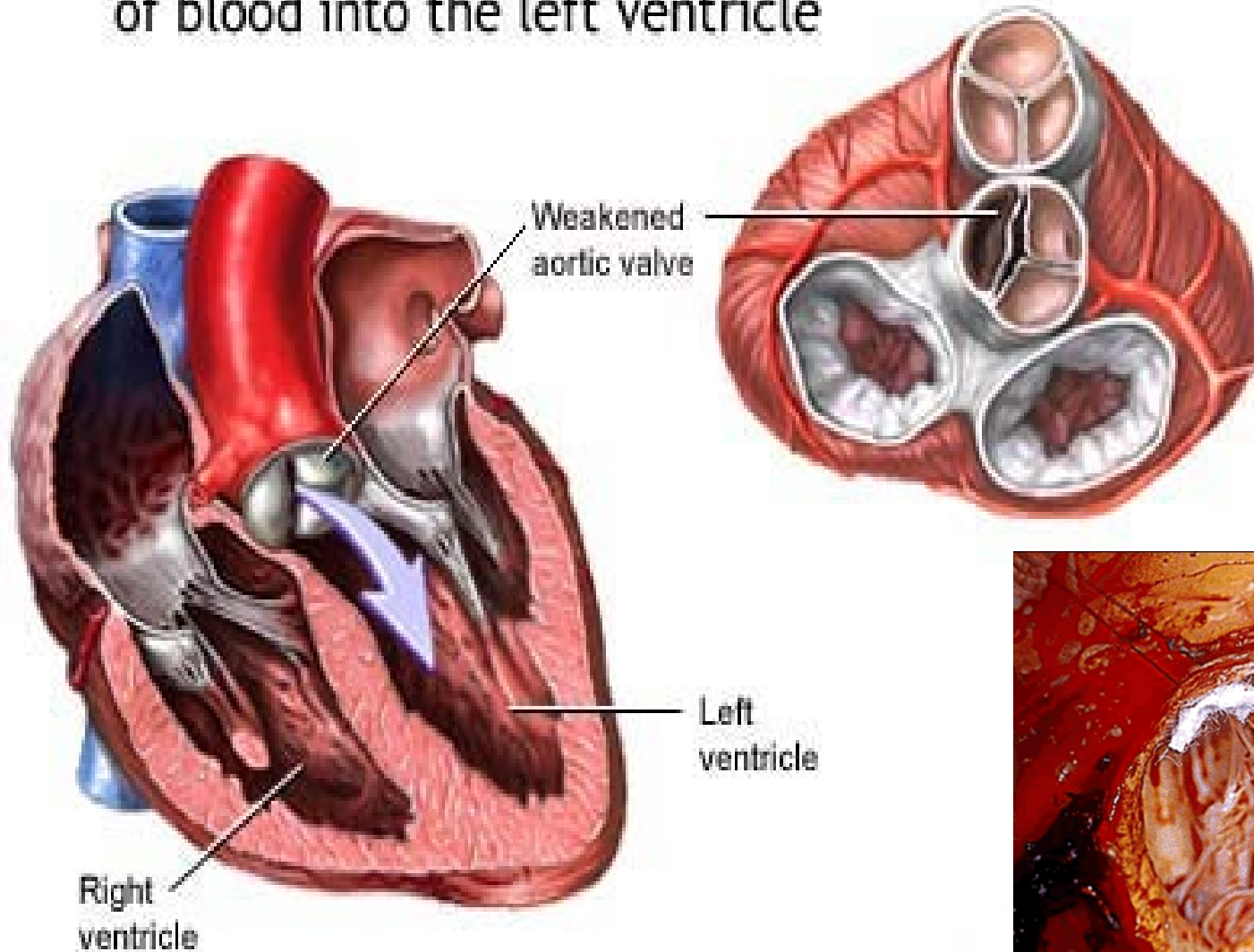
Normal



Mitral valve stenosis



Failure of the aortic valve to close tightly causes back flow of blood into the left ventricle



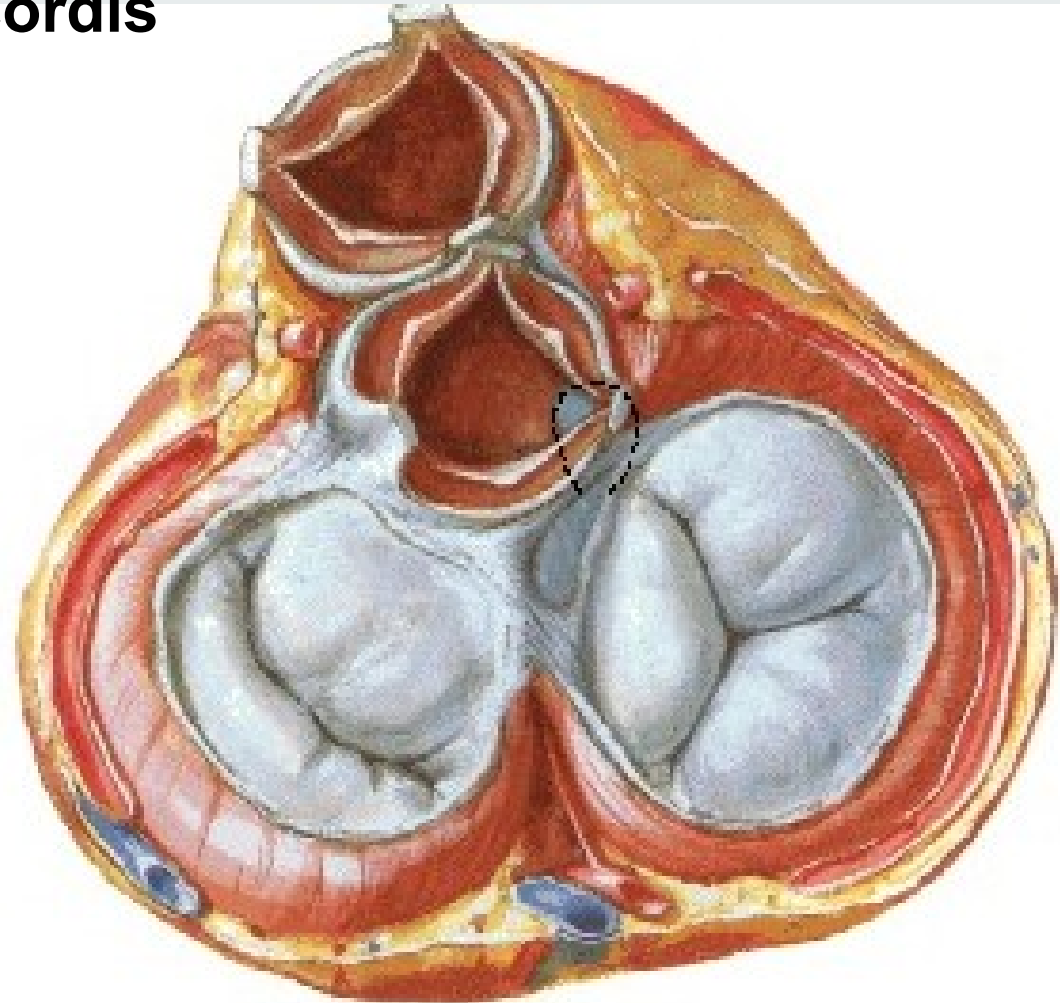
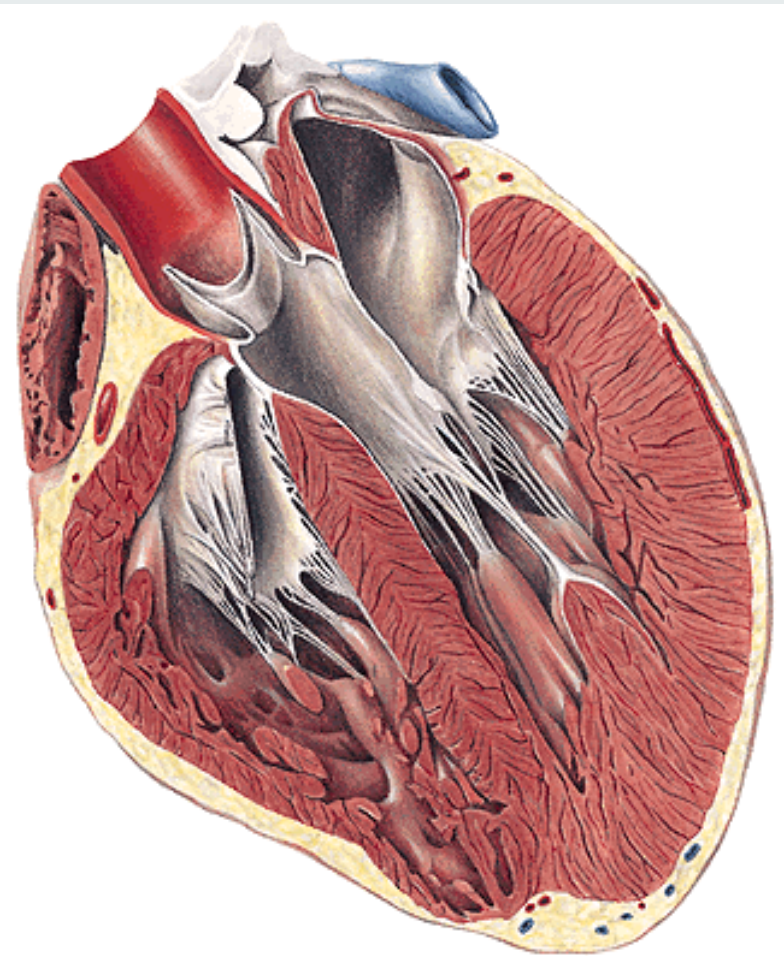
Endocardium, myocardium, pericardium

SKELETON OF THE HEART

Anulus fibrosus dexter, sinister, aorticus, trunci pulmonalis

Trigonum fibrosum dextrum et sinistrum

Pars membranacea septi cordis

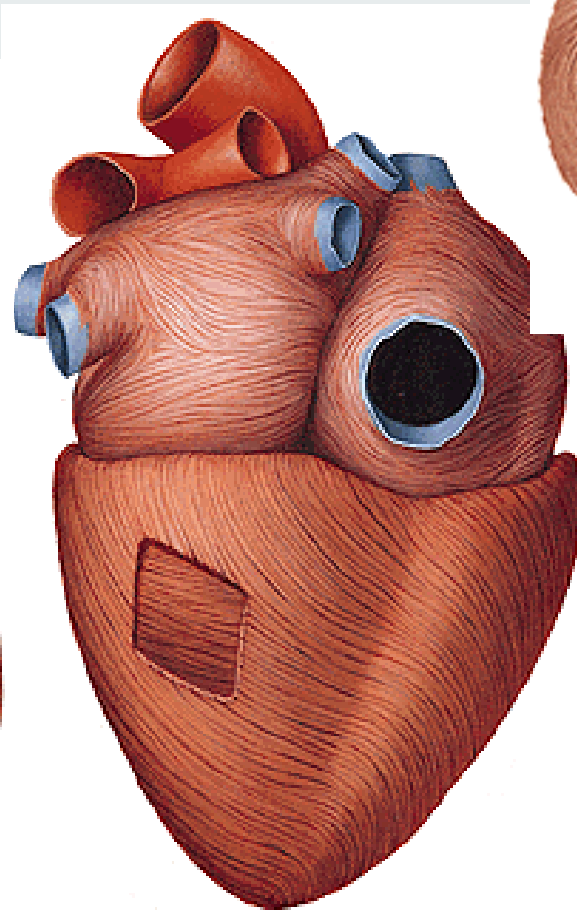
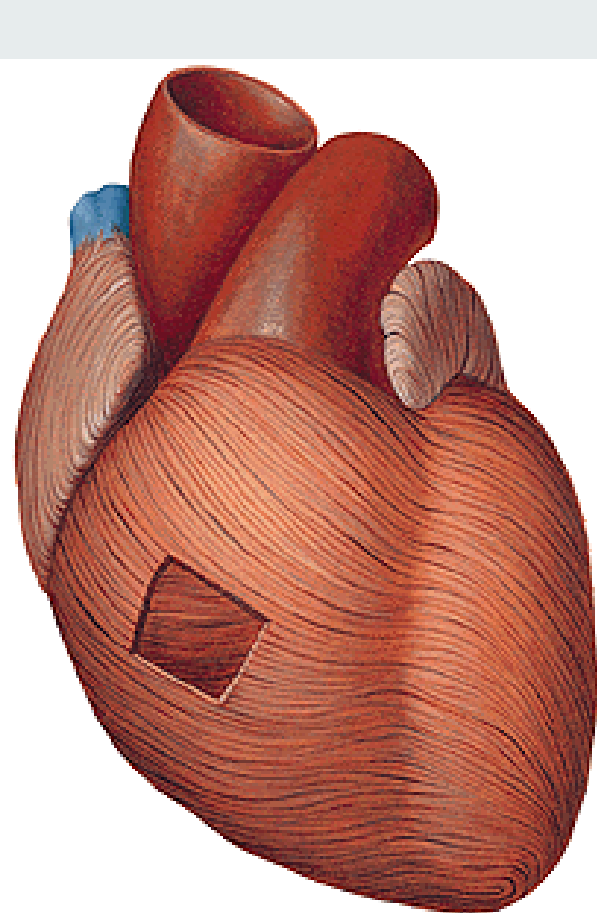


MYOCARDIUM

Mm. pectinati

Trabeculae carneae, mm. papillares

Vortex cordis



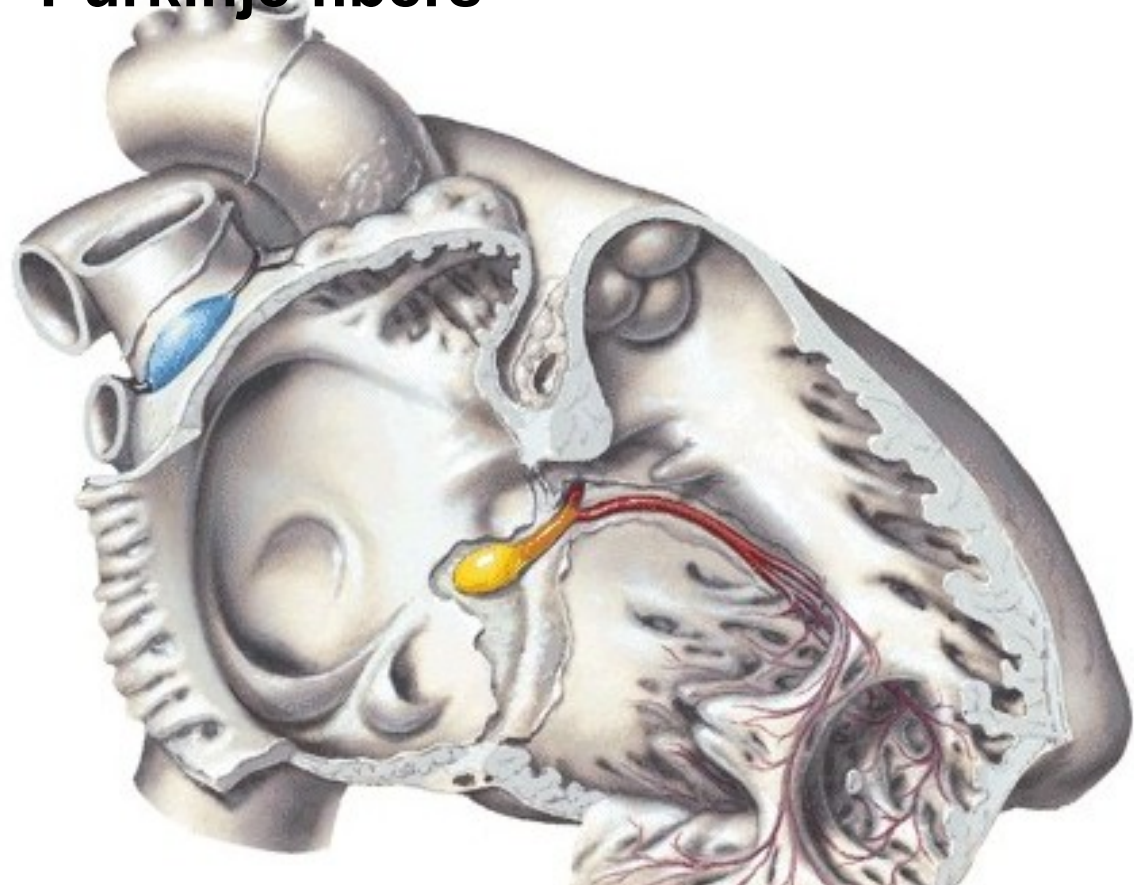
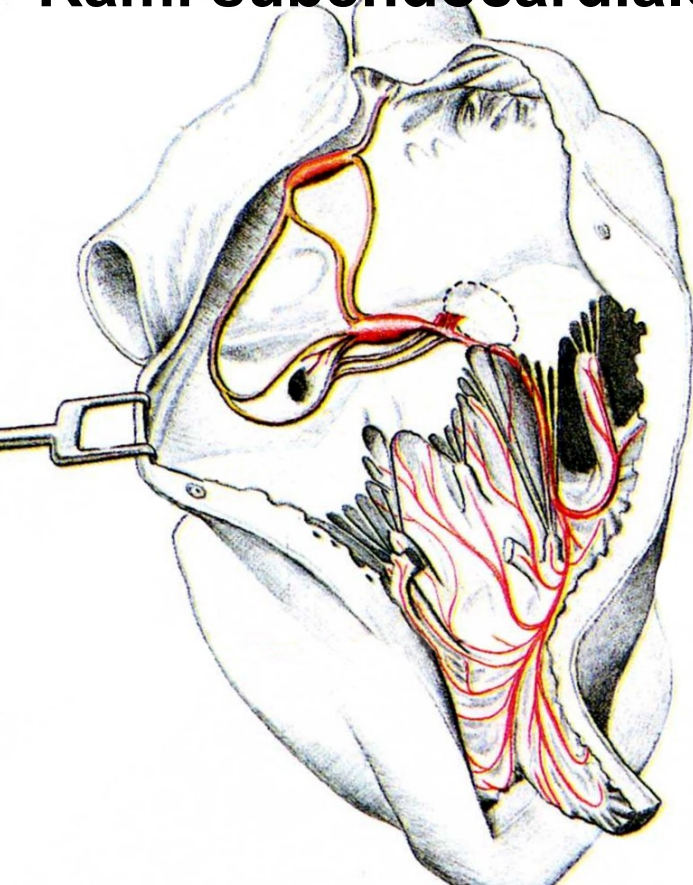
CONDUCTING SYSTEM (Complexus stimulans cordis)

Nodus sinuatrialis (Bachmann interatrial, anterior, middle and posterior internodal tracts)

Nodus atrioventricularis (accessory AV connections – Kent fibres)

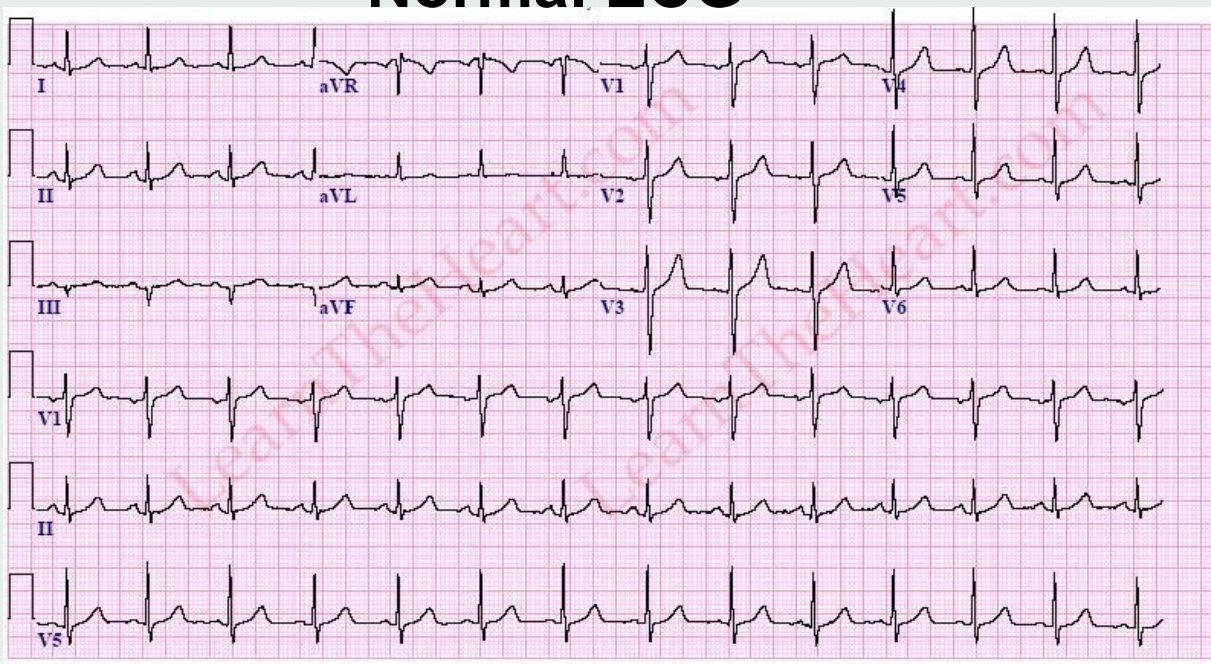
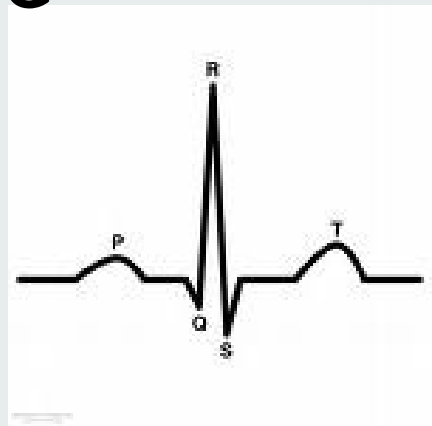
Fasciculus atrioventricularis (His) – crus dextrum et sinistrum

Rami subendocardiales - Purkinje fibers



ECG

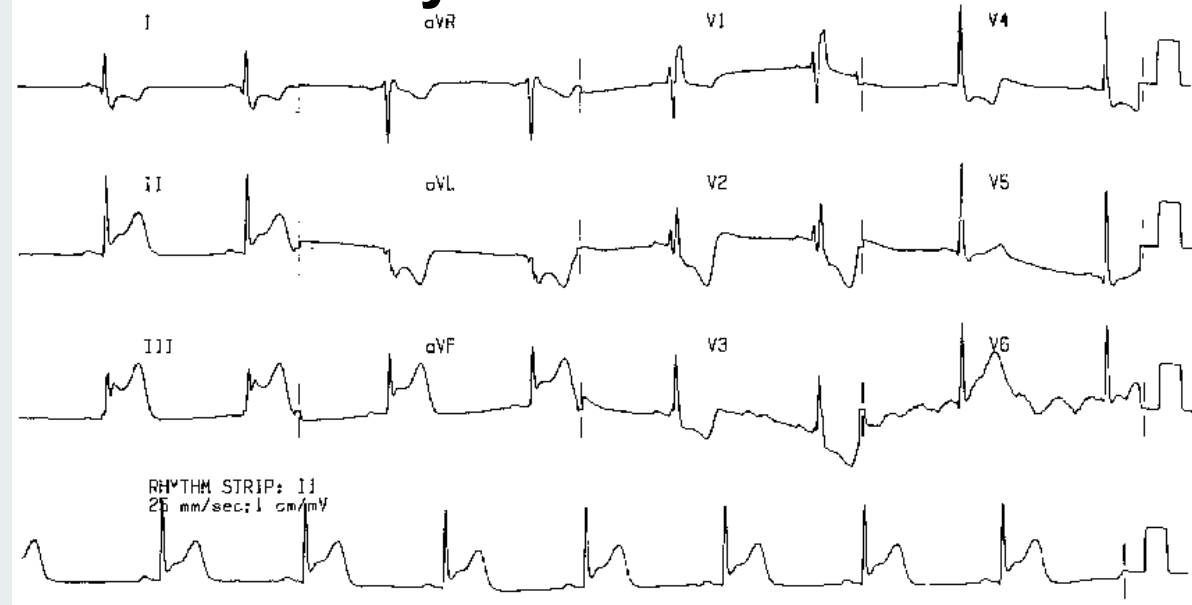
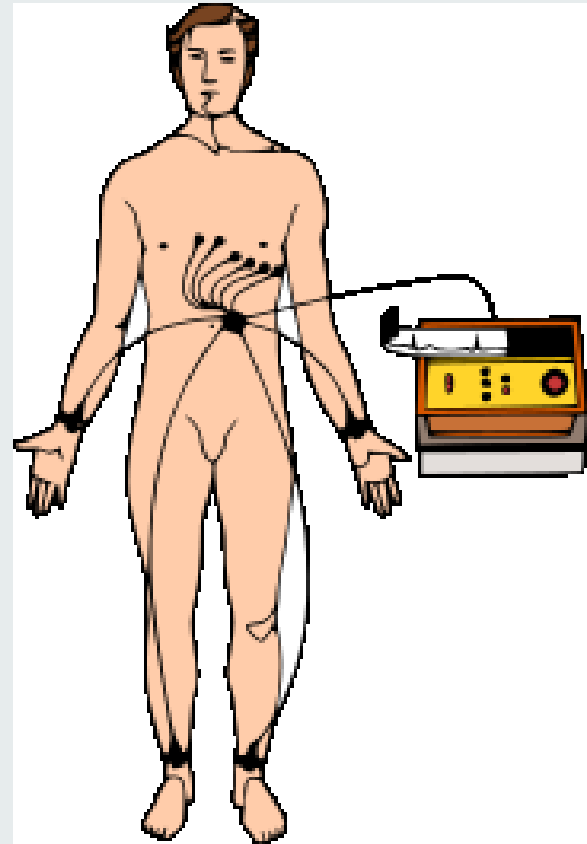
Normal ECG



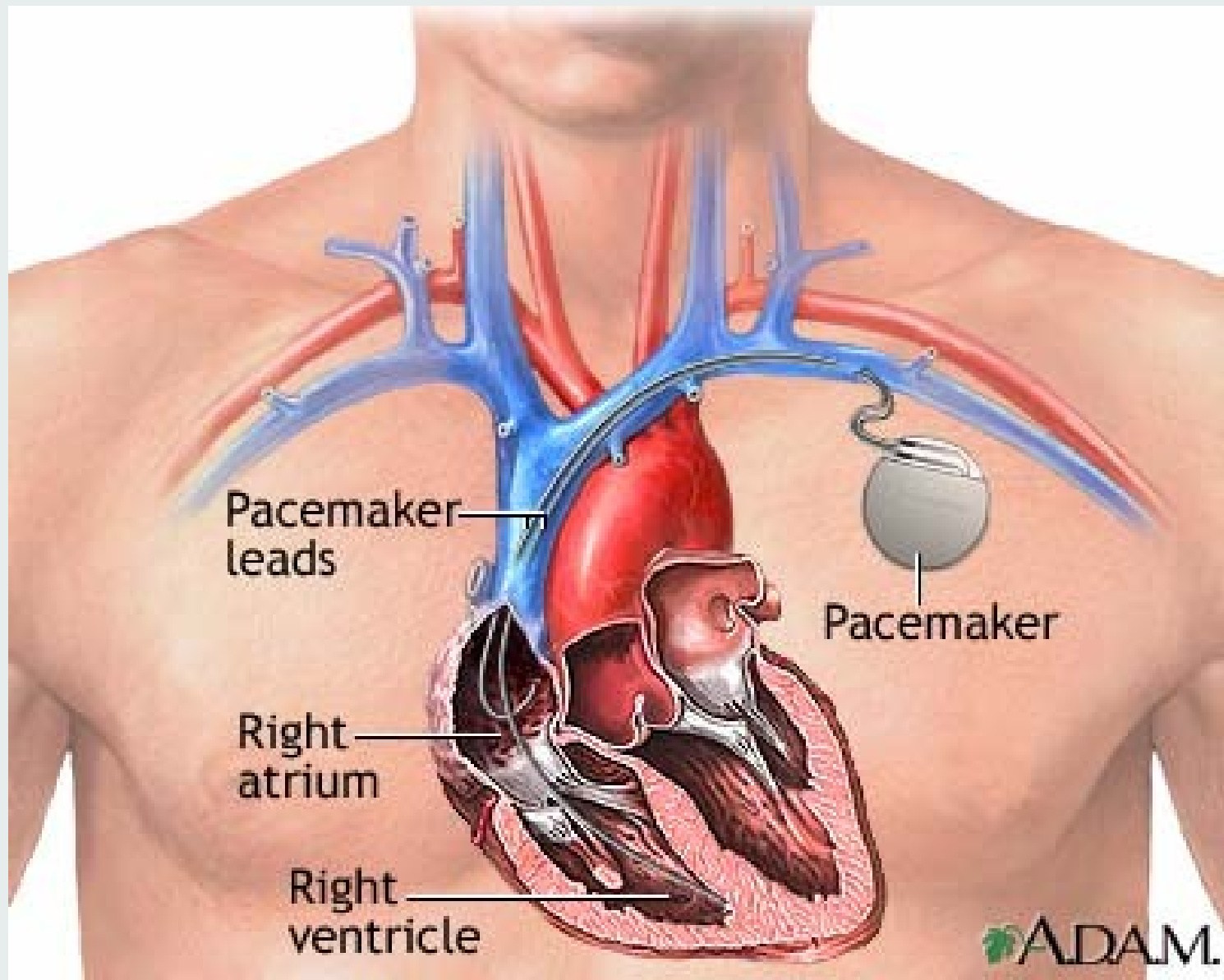
25mm/s 10mm/mV 40Hz 005C 12SL 254 CID: 26

EID: Unconfirmed EDT: ORDER.

Myocardial infarction



Artificial pacemaker



PERICARDIUM FIBROSUM

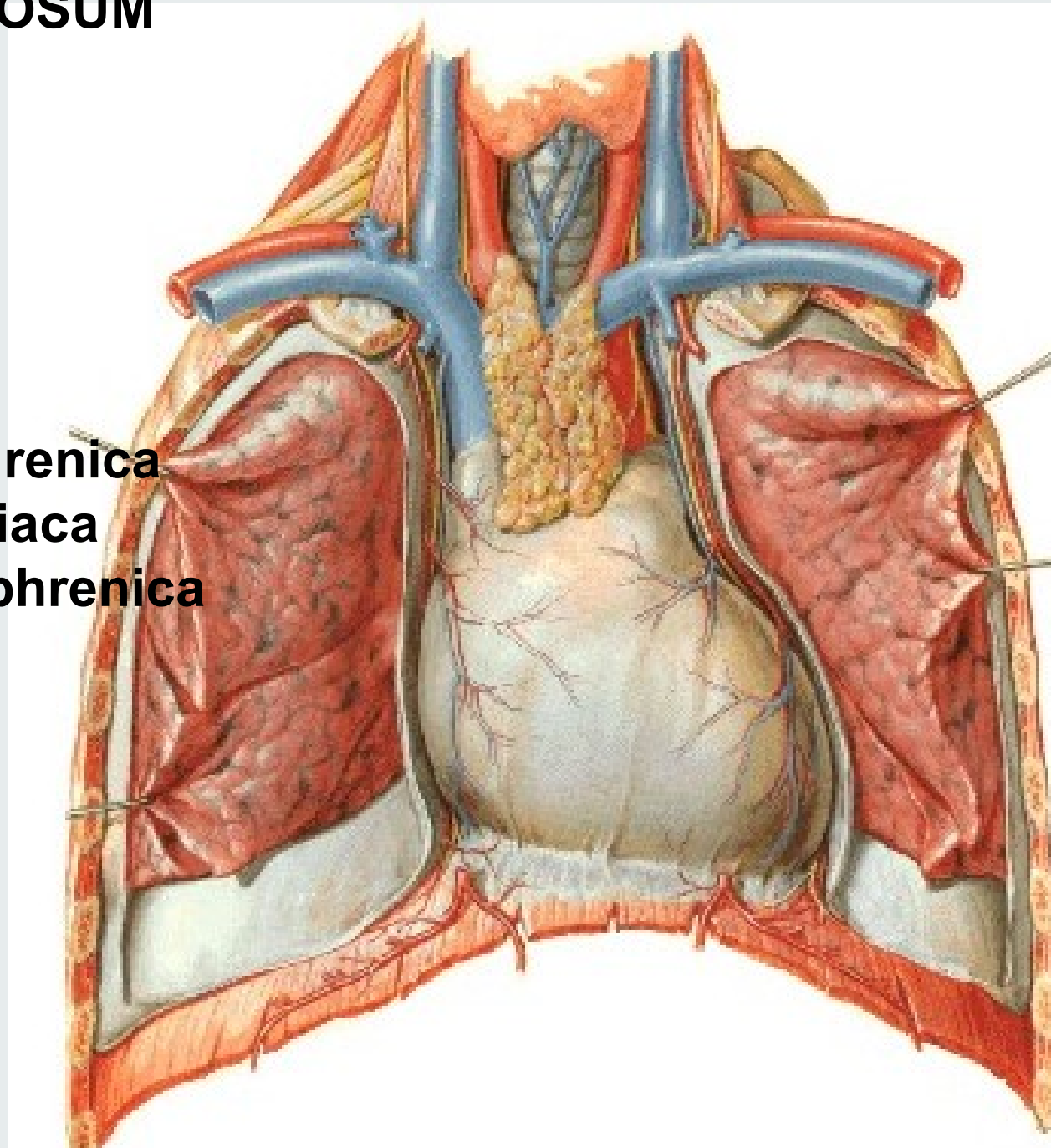
- basis
- cupula
- pars sternalis,
- partes laterales
- pars dorsalis

Ligg. pericardiacophrenica

Ligg. sternopericardiaca

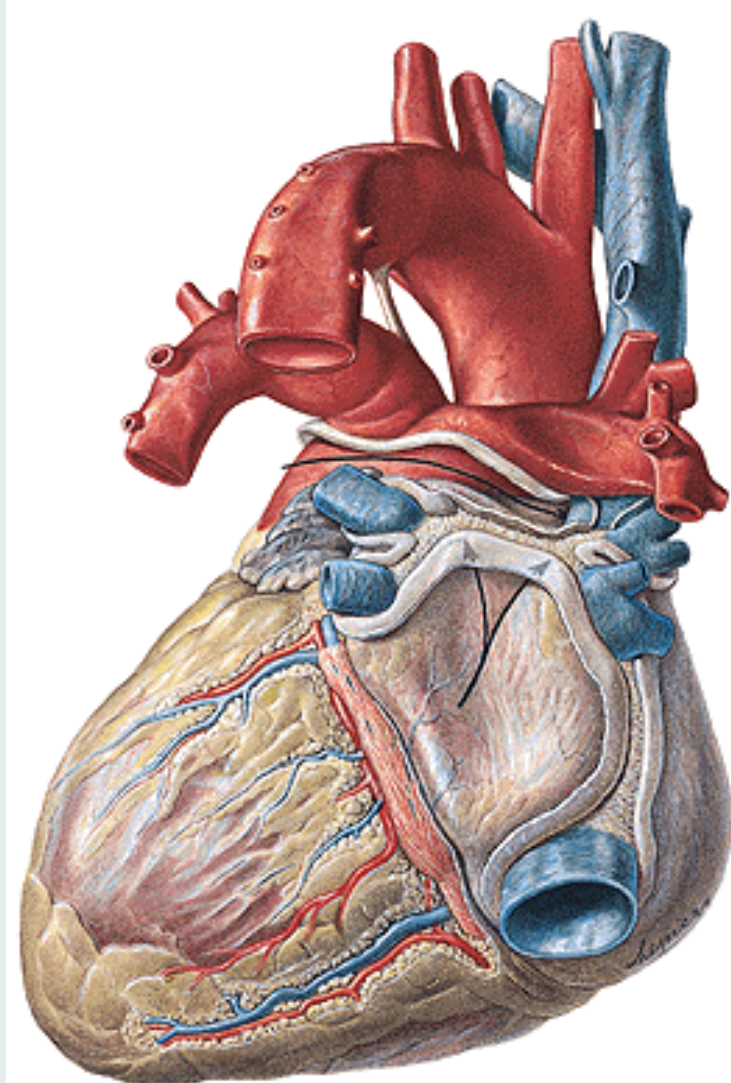
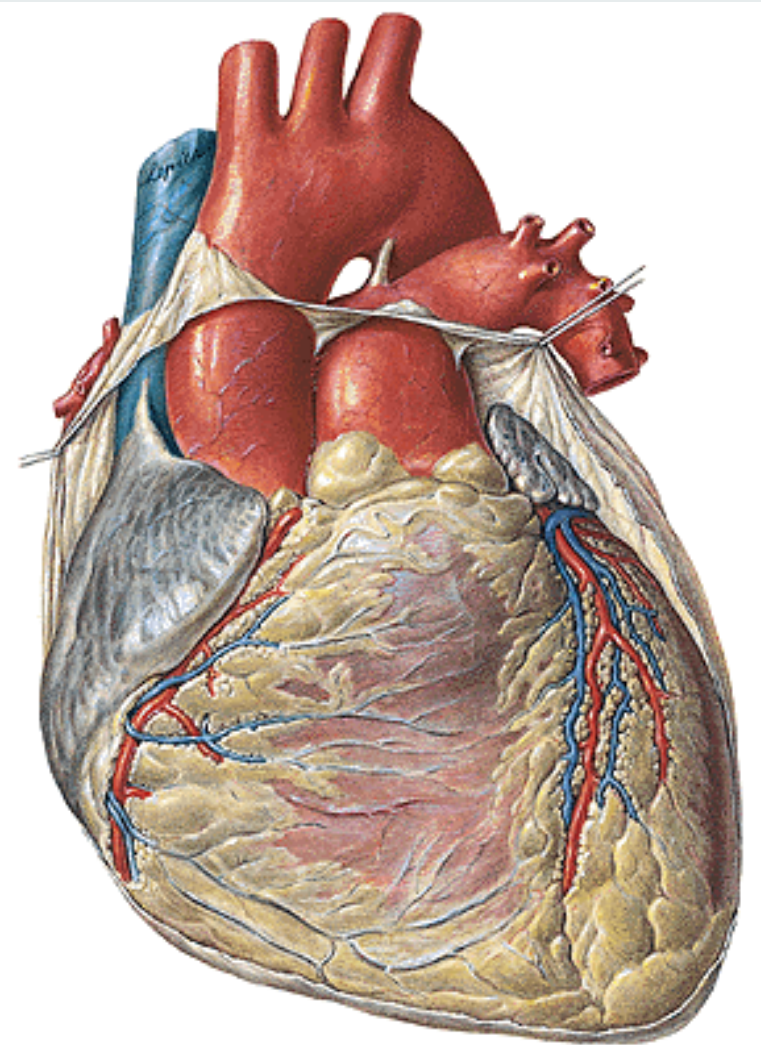
A. et v. pericardiacophrenica

N. phrenicus

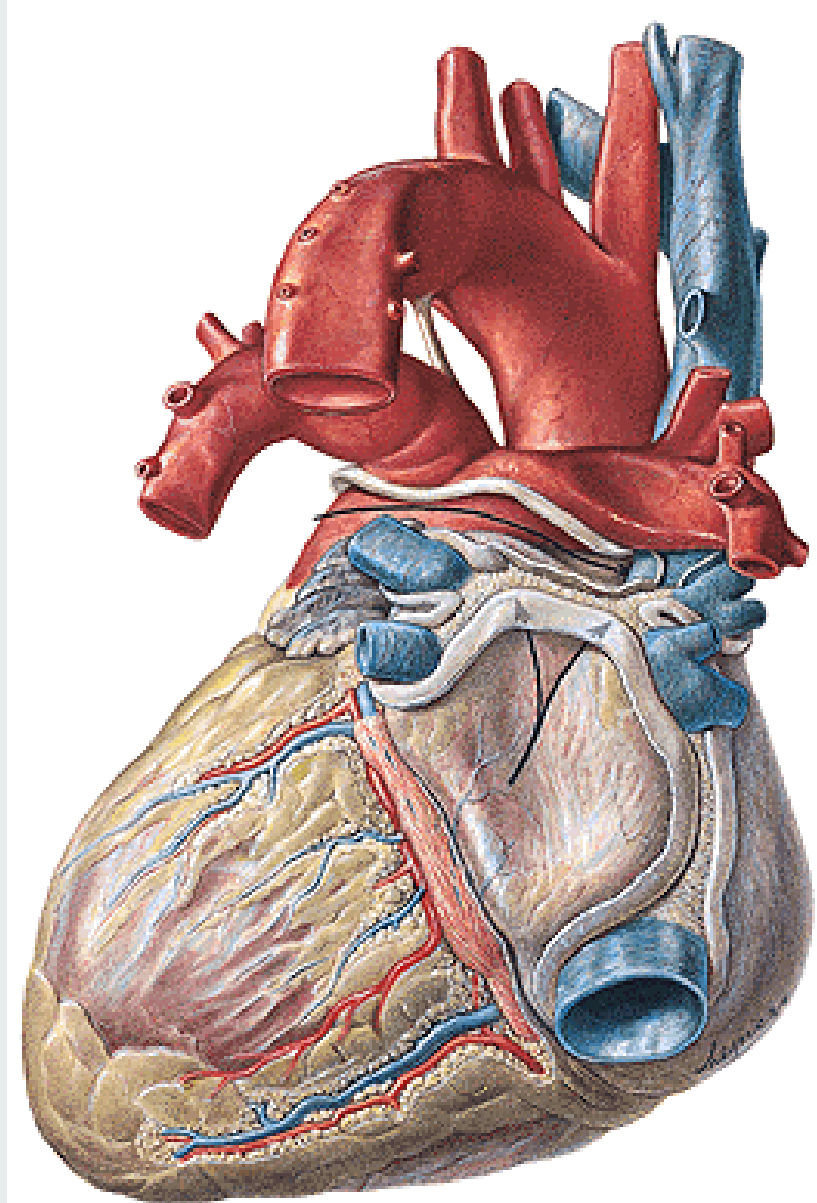
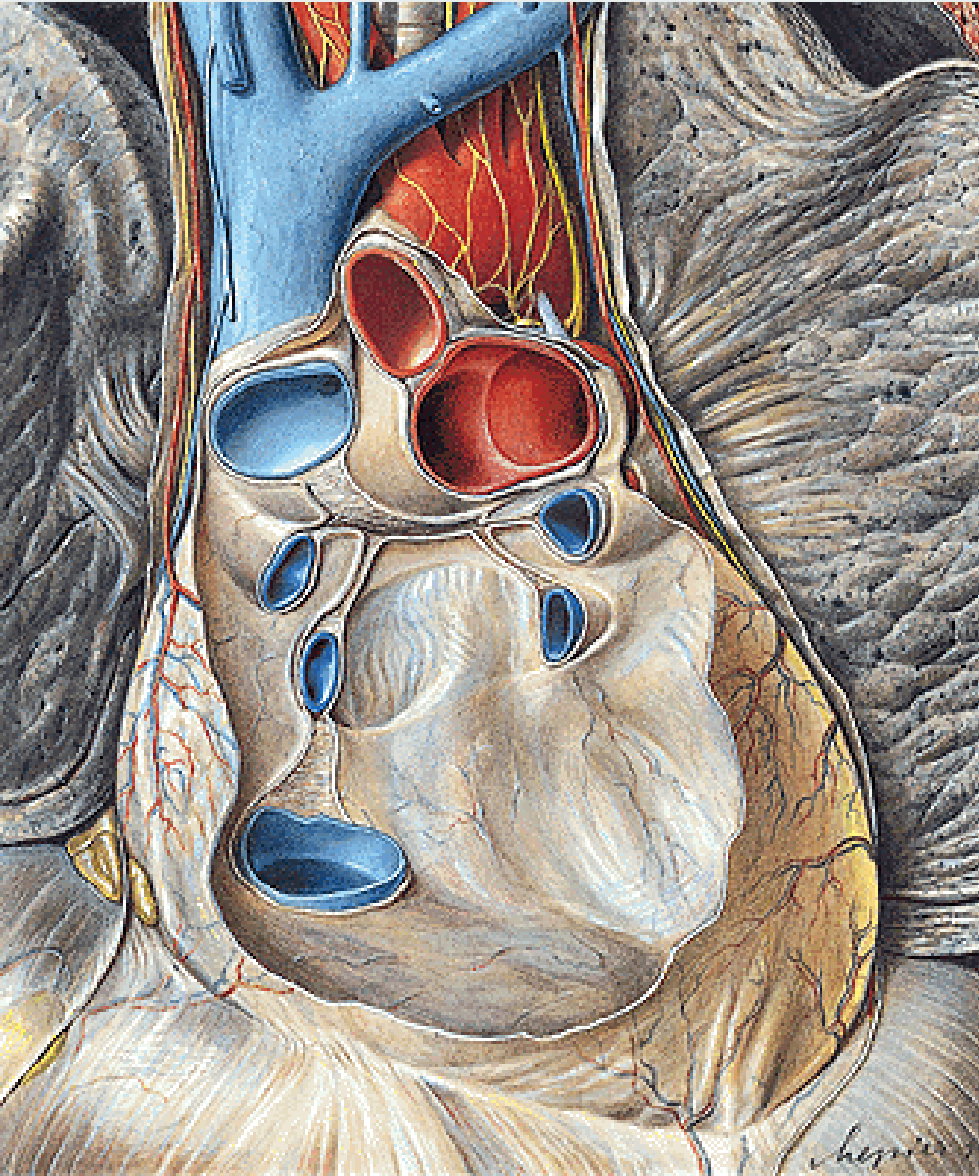


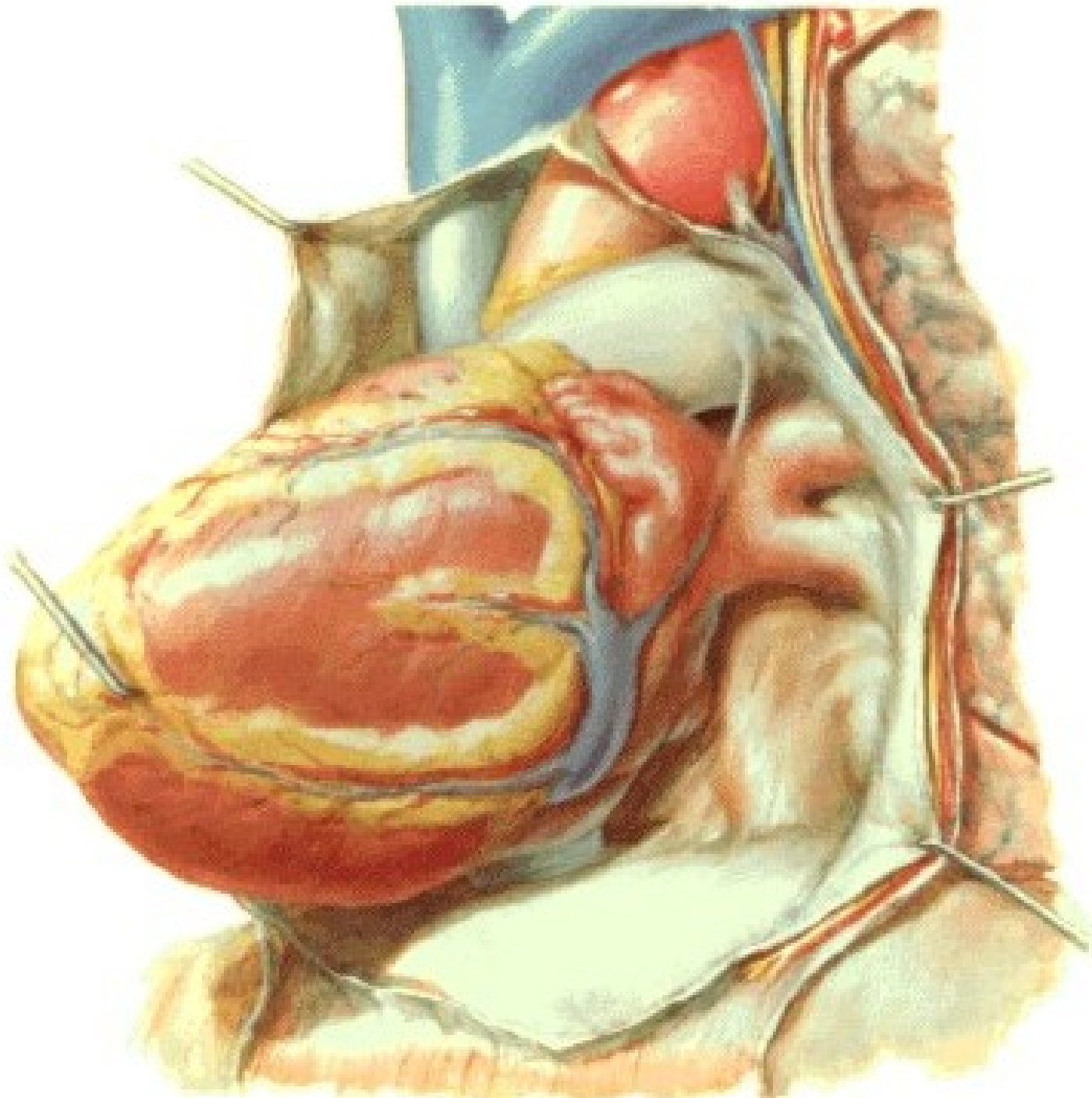
PERICARDIUM SEROSUM

- lamina parietalis
- lamina visceralis (epicardium)
- cavitas pericardii – liquor pericardii



Porta arteriarum – sinus transversus pericardii
Porta venarum – sinus obliquus pericardii





A. coronaria cordis dx. - rr. atriales

- rr. ventriculares

- r. marginalis dx.

- r. coni arteriosi

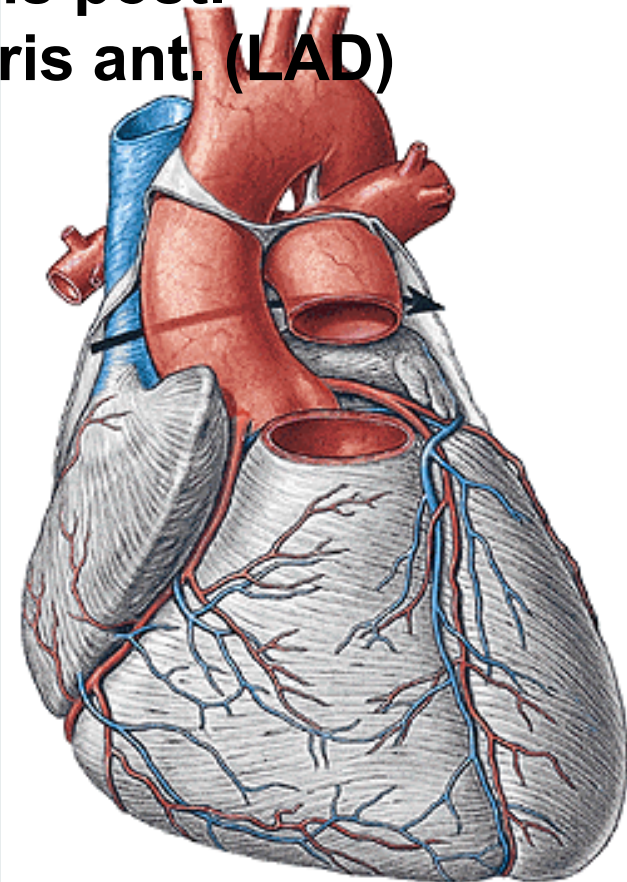
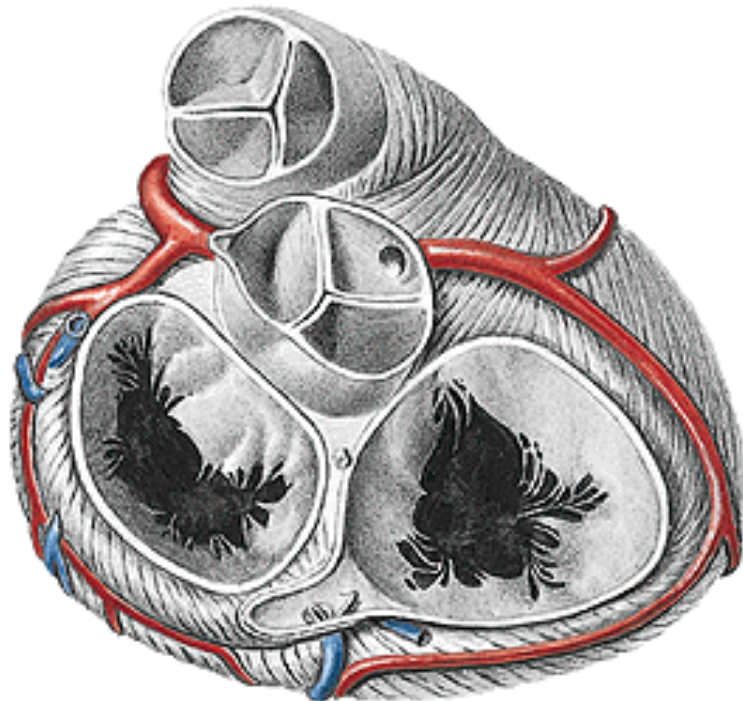
- r. nodi sinuatrialis

- r. nodi atrioventricularis

- r. interventricularis post.

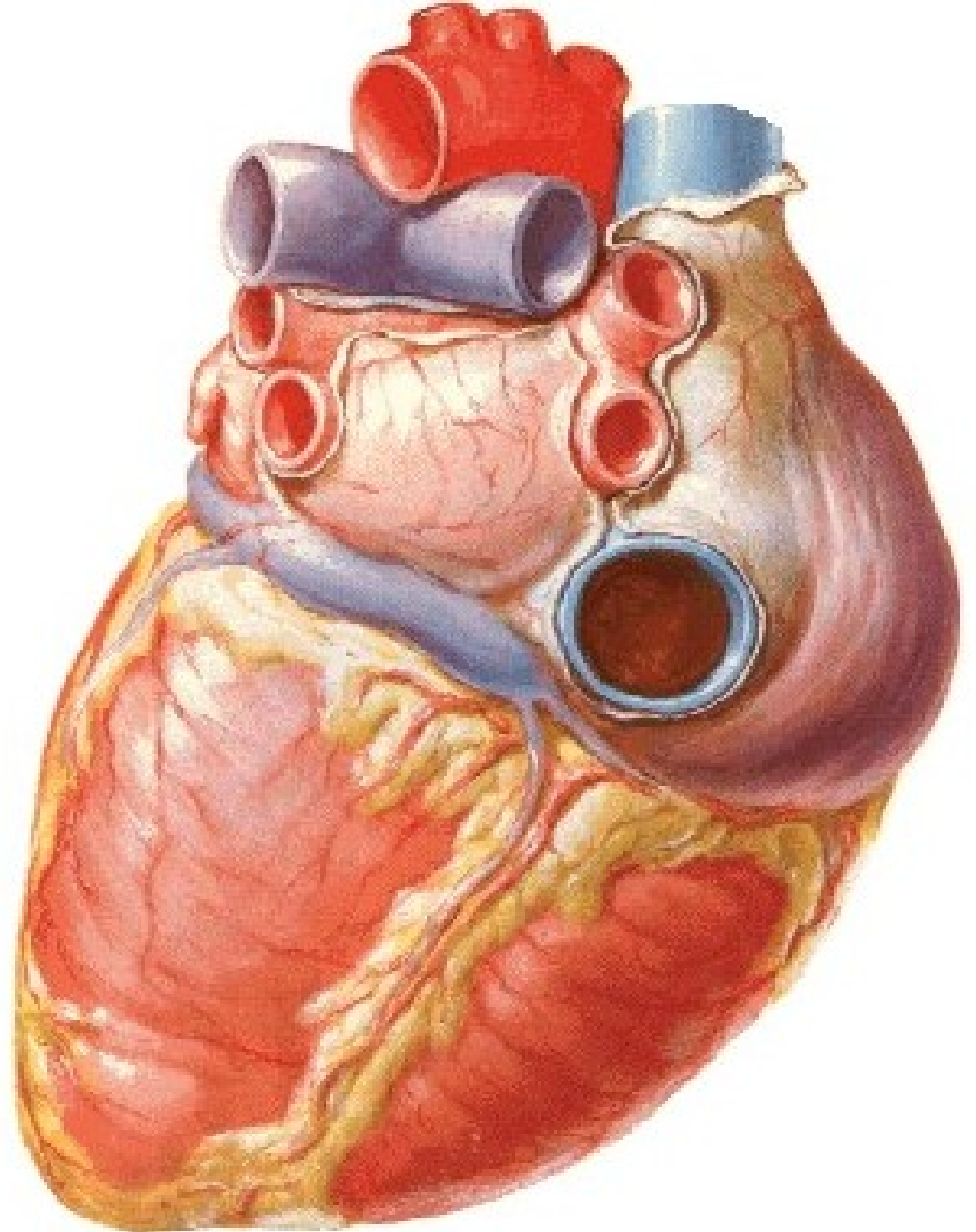
A. coronaria cordis sin. - r. interventricularis ant. (LAD)

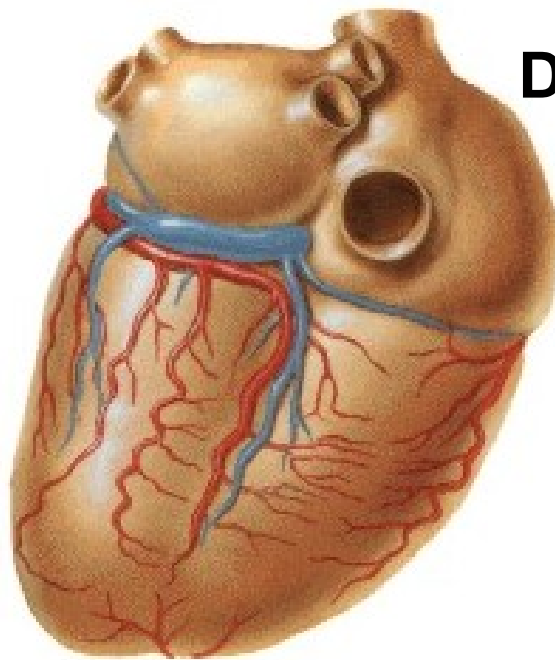
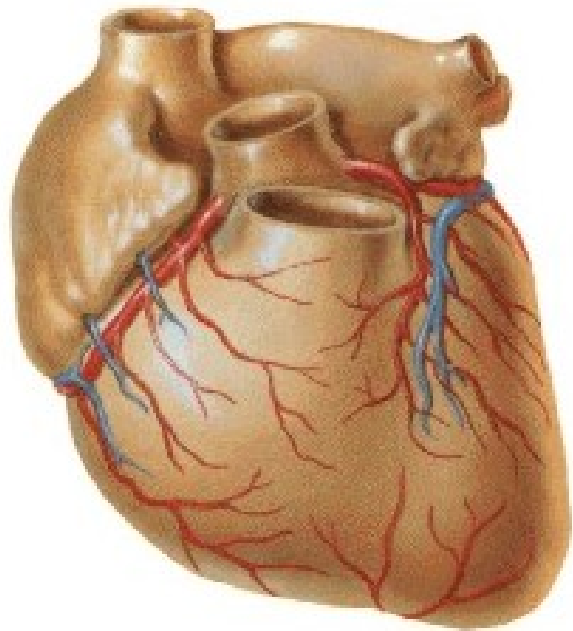
- r. circumflexus



Dominance of RCA

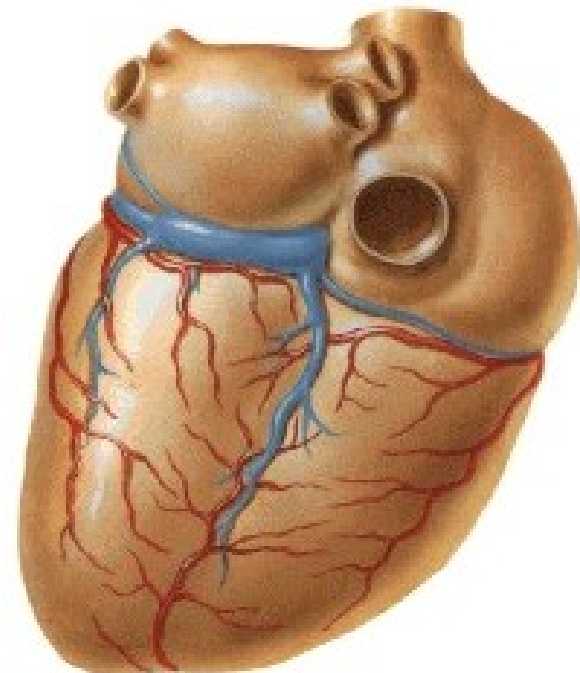
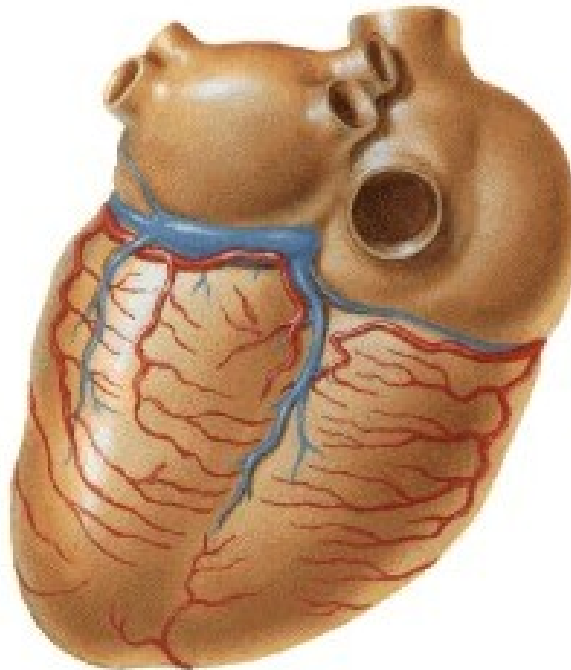
67%

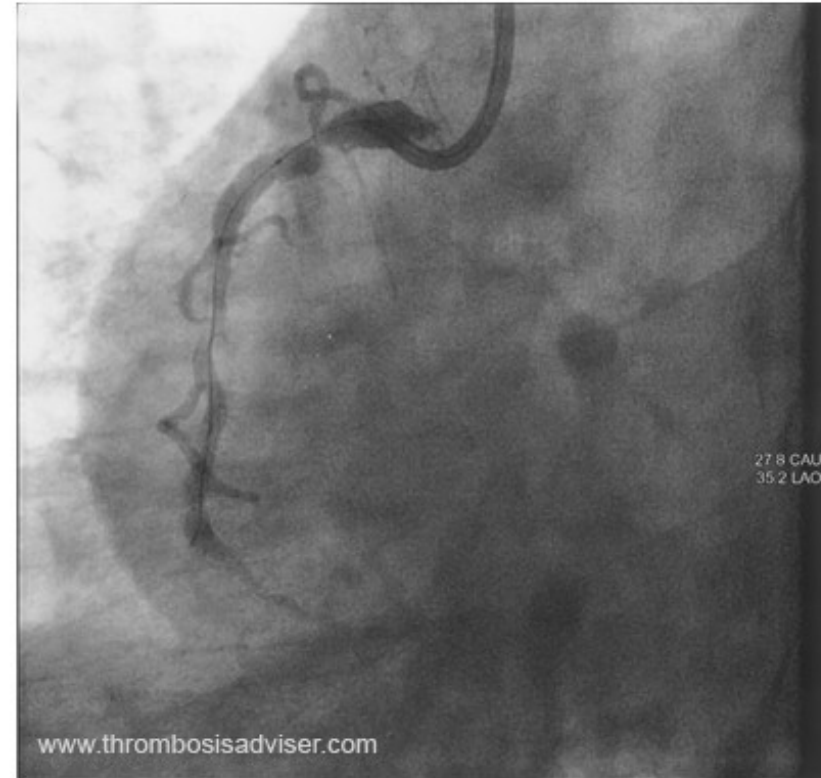




**Dominance of LCA
15%**

**Codominance
18%**

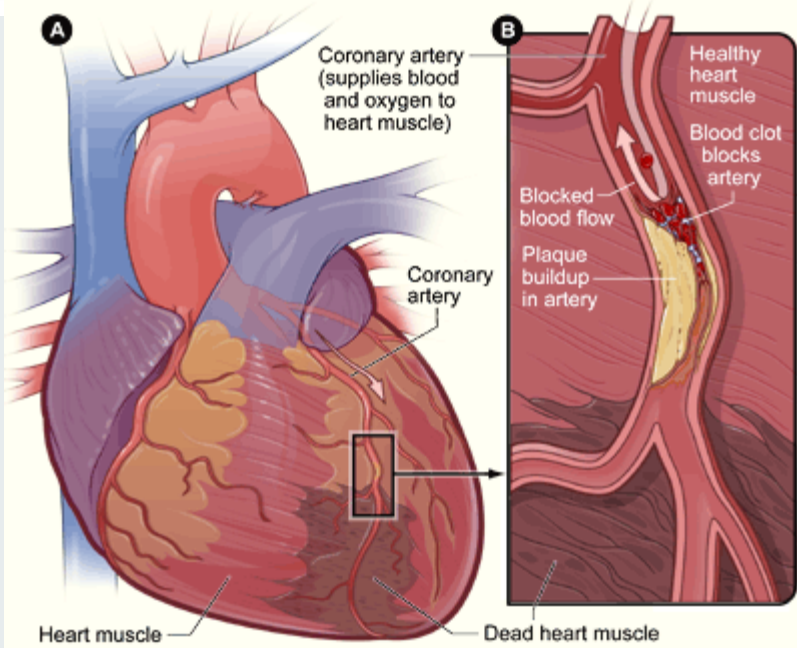
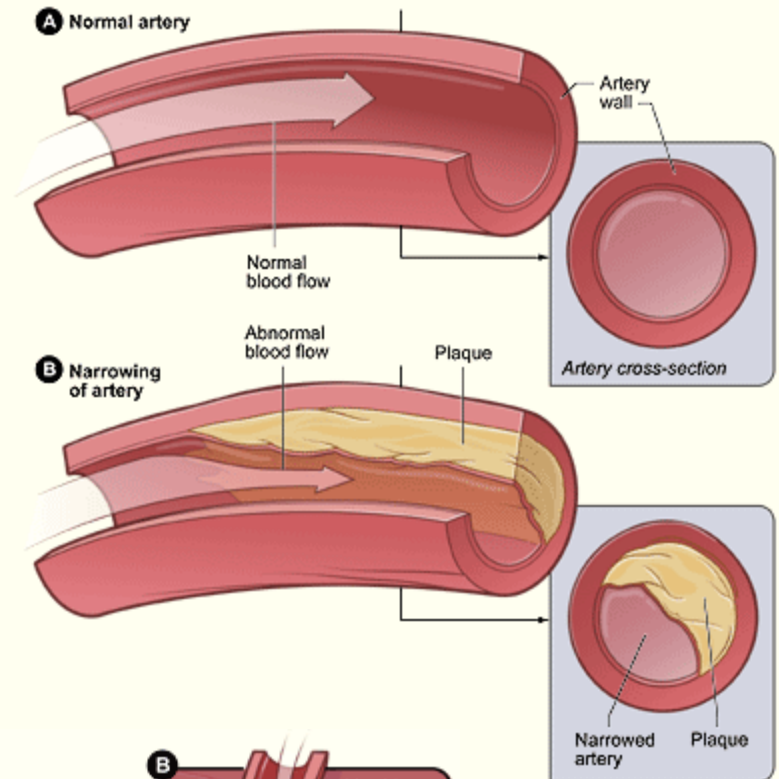




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Angina pectoris

Myocardial infarction



Venae cordis

1. Sinus coronarius cordis

a) v. cordis magna

b) v. cordis media

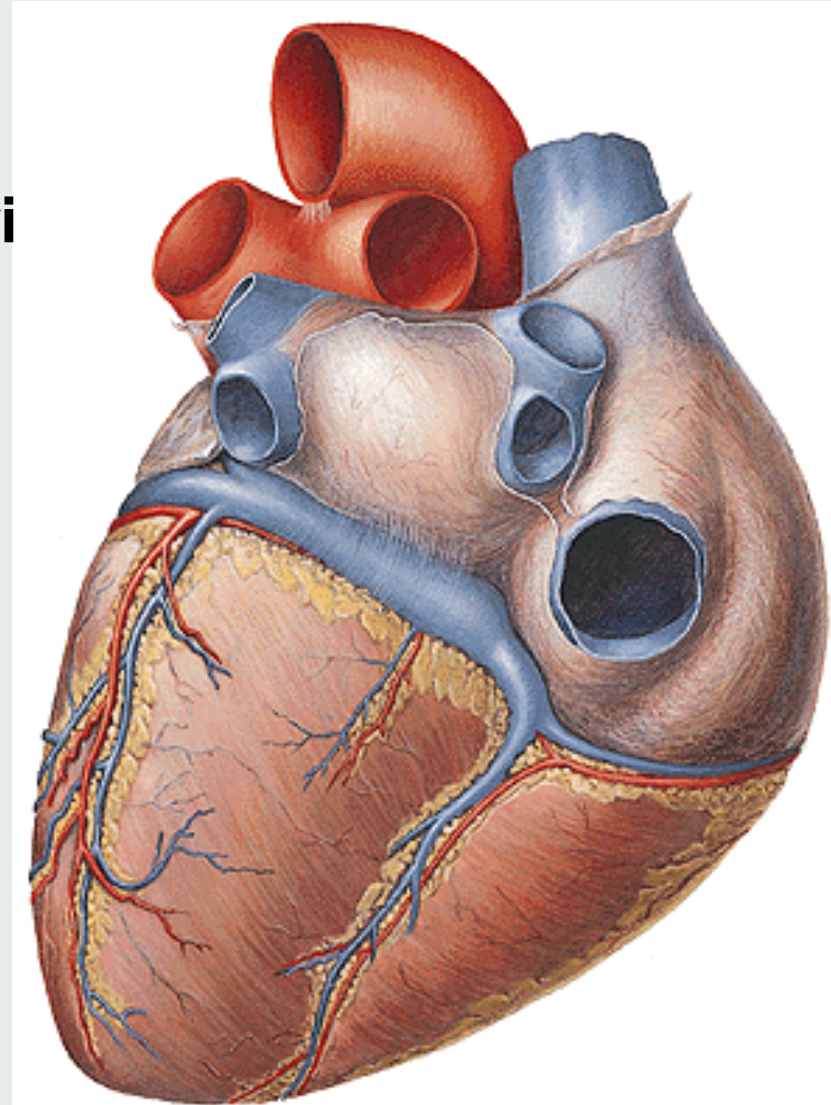
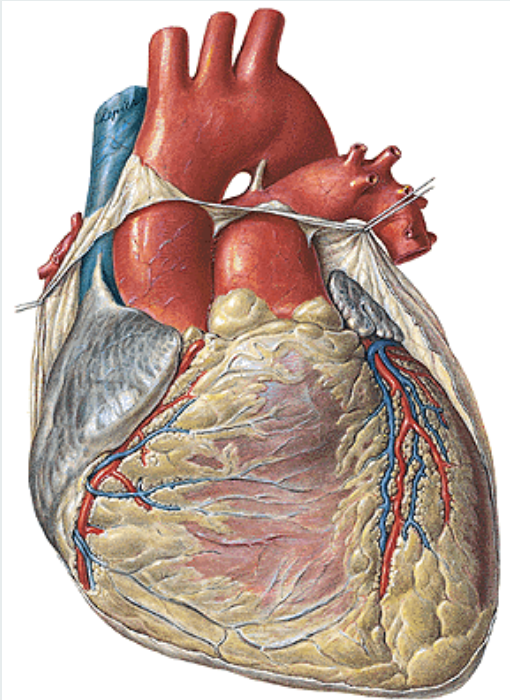
c) v. cordis parva

d) v. obliqua atrii sinistri

e) v. posterior ventriculi sinistri

2. Vv. cordis anteriores

3. Vv. cordis minimae



Lymphatics:

Truncus lymphaticus anterior sinister + truncus lymph. post. – nodus lymph. retroaorticus
Truncus lymph. ant. dx. – nodus lymph. praeaorticus

Nerves:

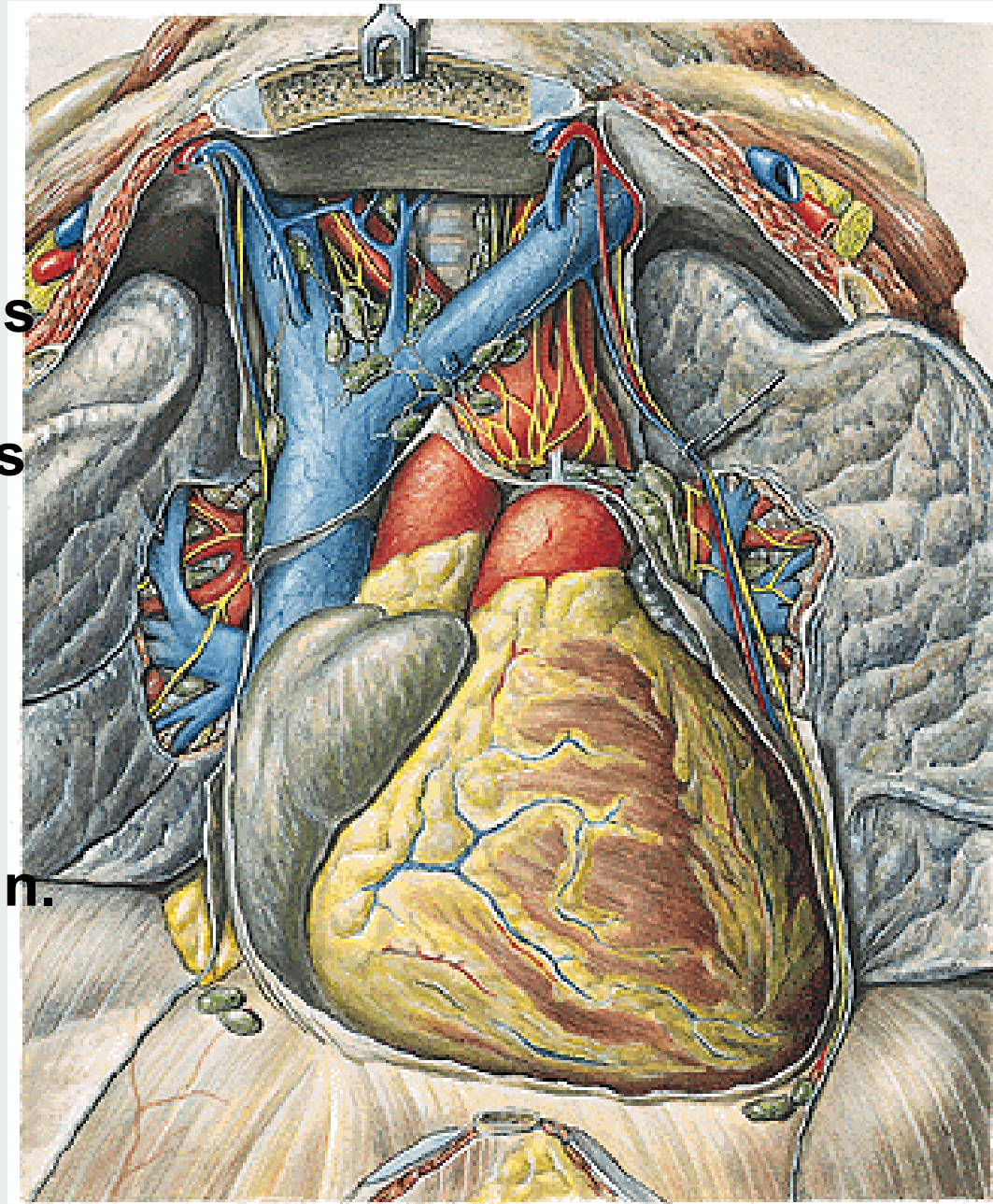
Plexus cardiacus spf. (ganglion cardiacum)
Plexus cardiacus prof.
Plexus coronarius dx. et sin.

Nn. cardiaci (symp.)

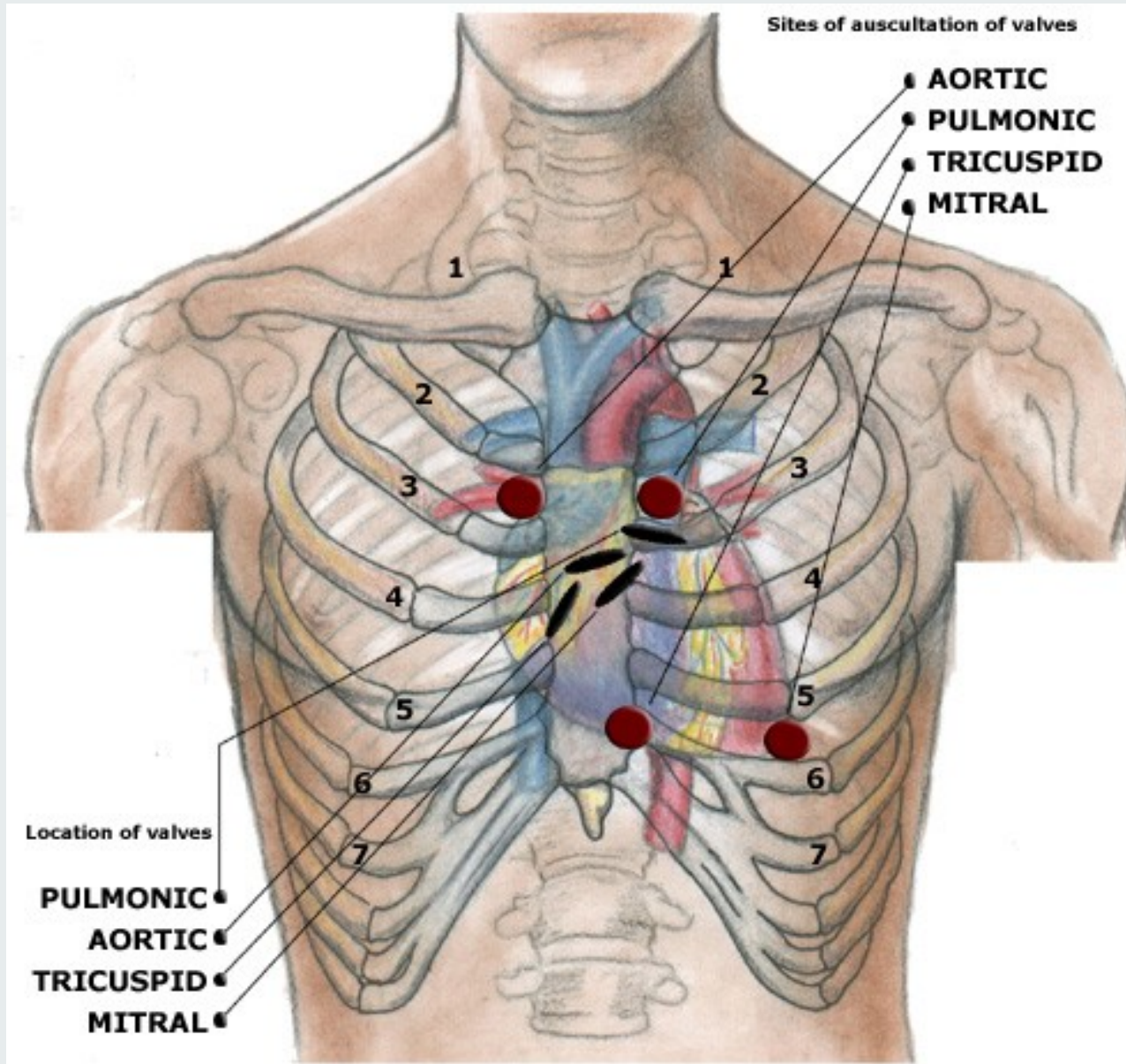
– accelerantes

Rr. cardiaci (parasymp.)

– retardantes



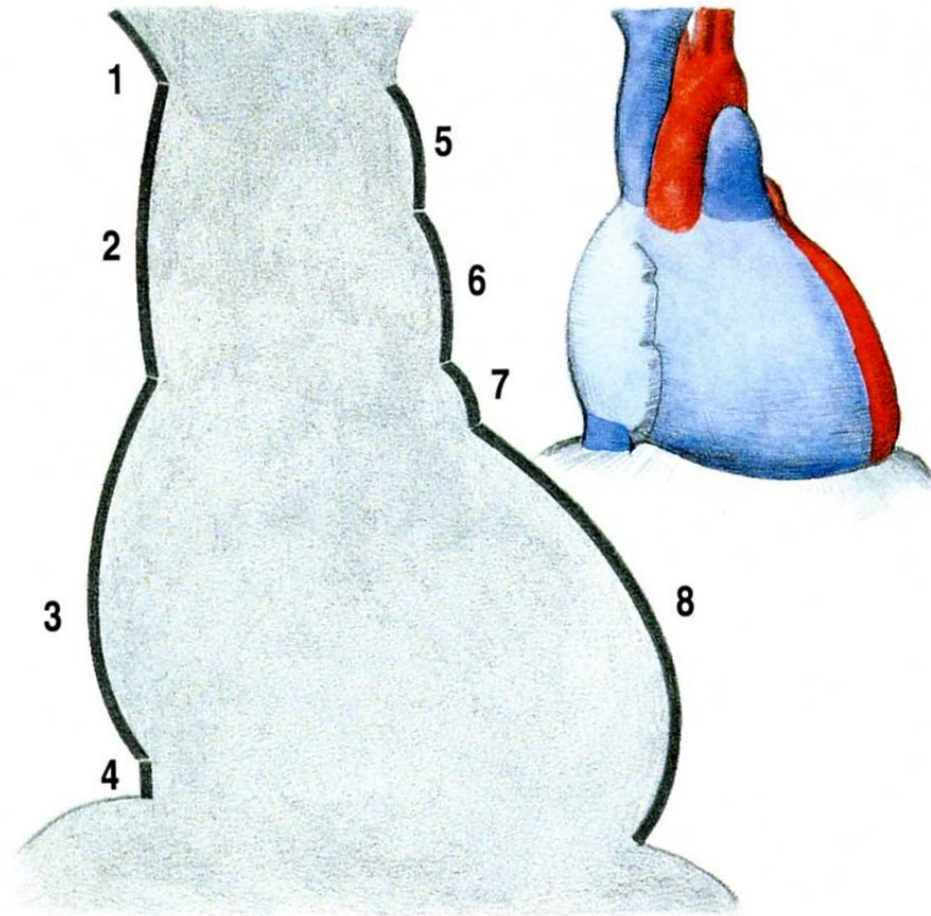
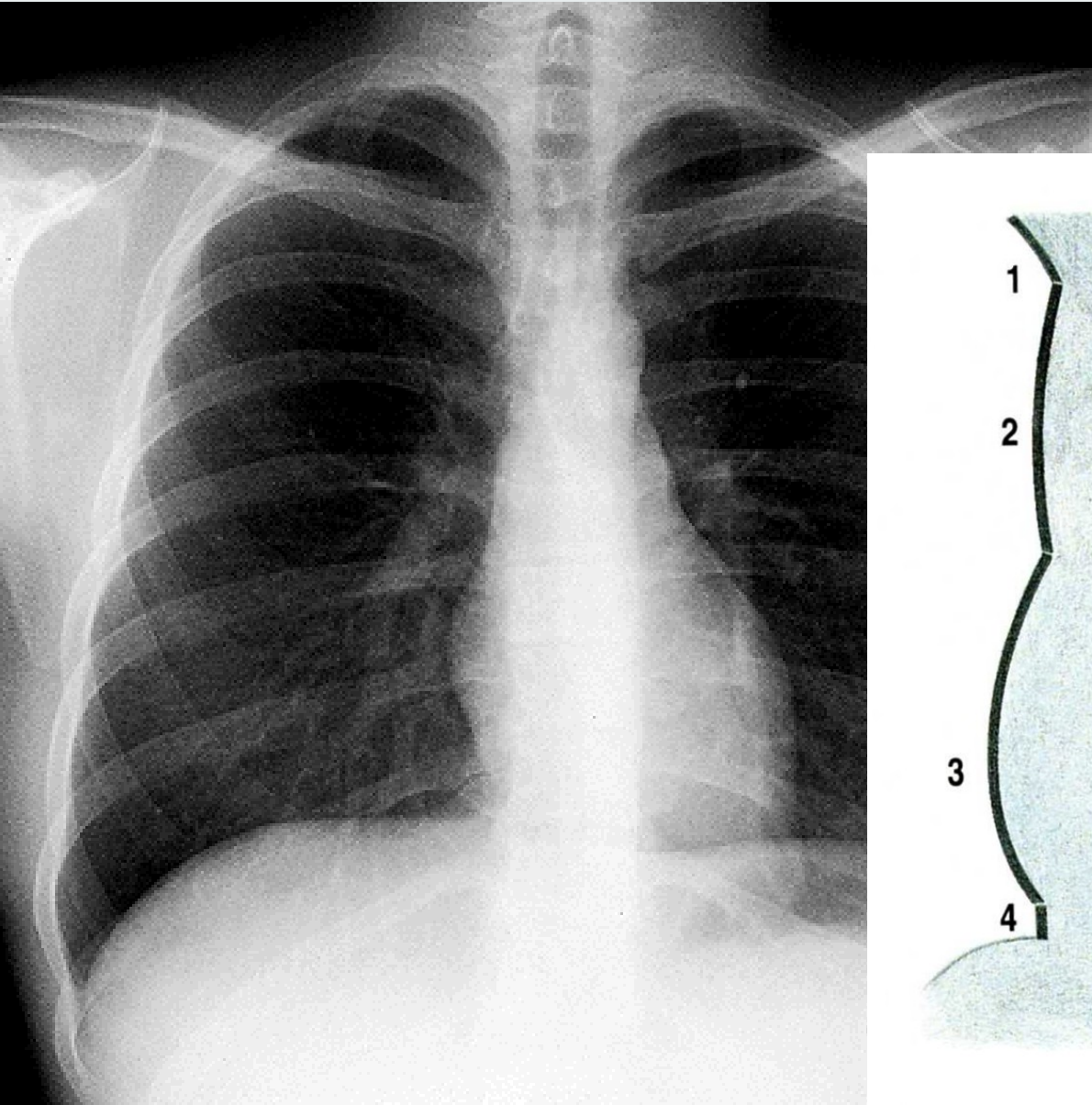
Sites of auscultation:

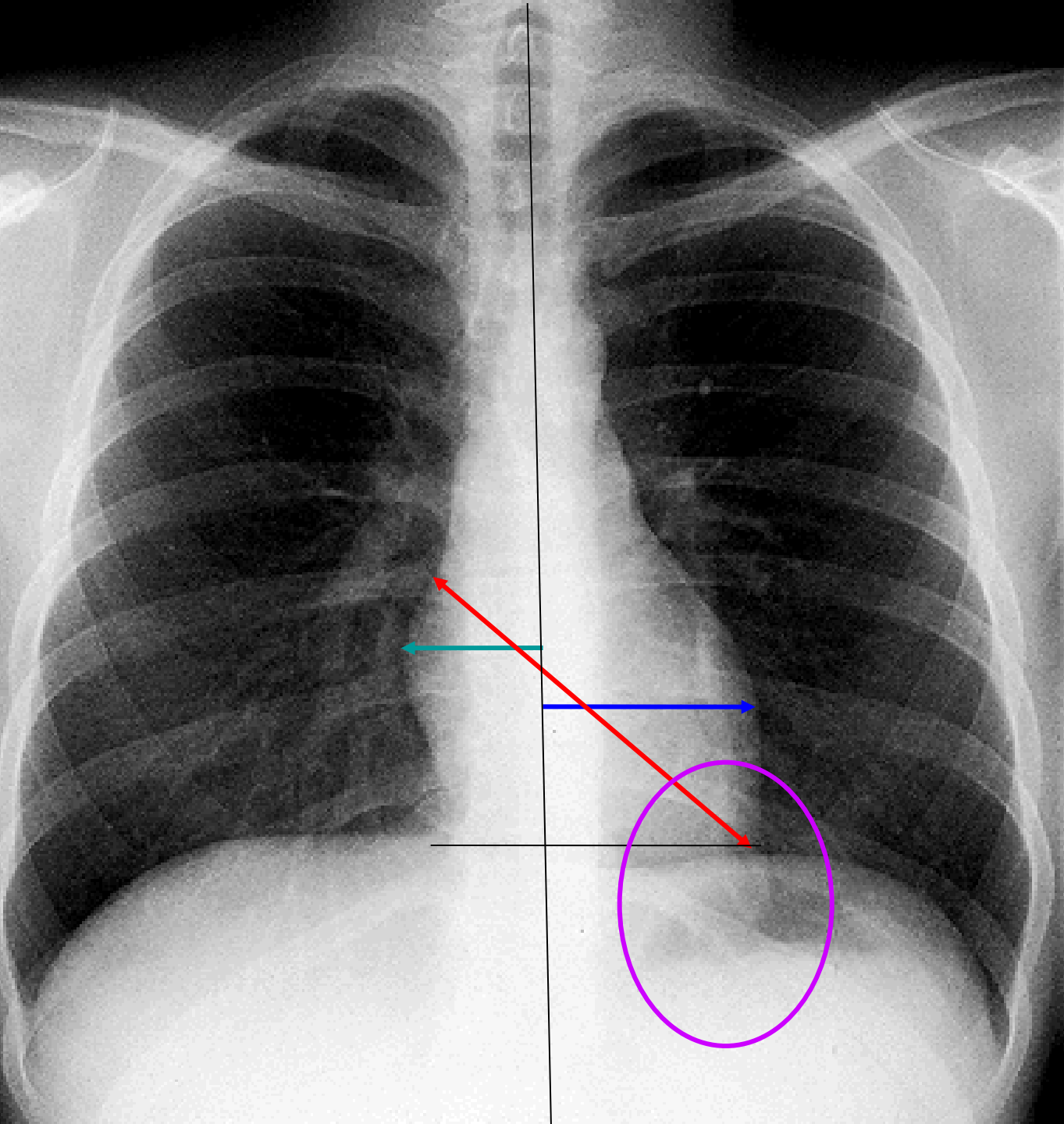


Heart shadow:

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.





**Distantia
mediodextra**

**Distantia
mediosinistra**

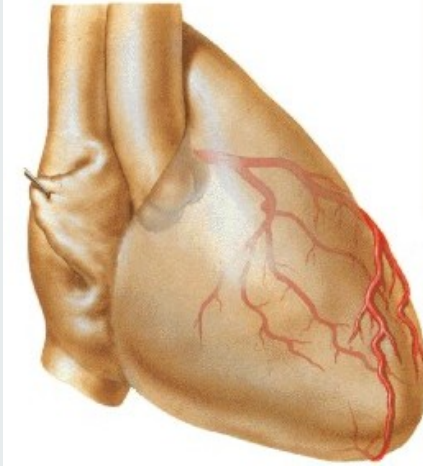
**Transverse
line = DMd+DMs**

Length

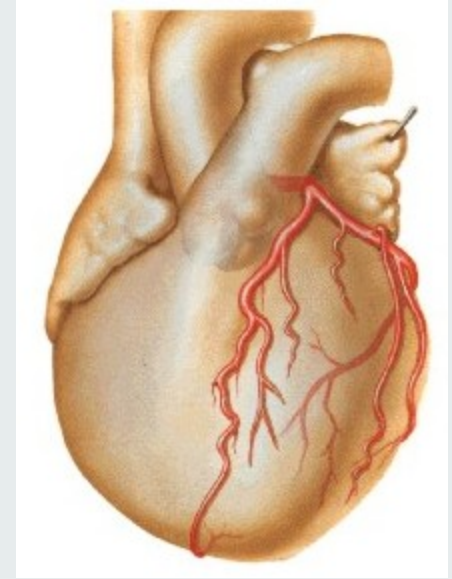
Gradient

Area

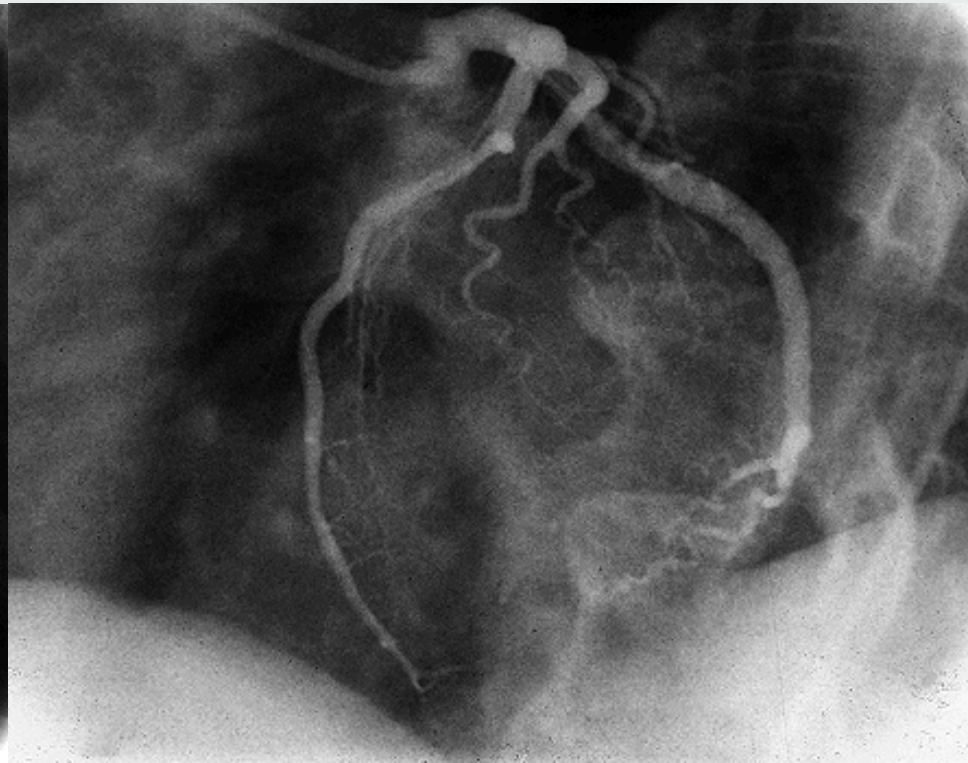
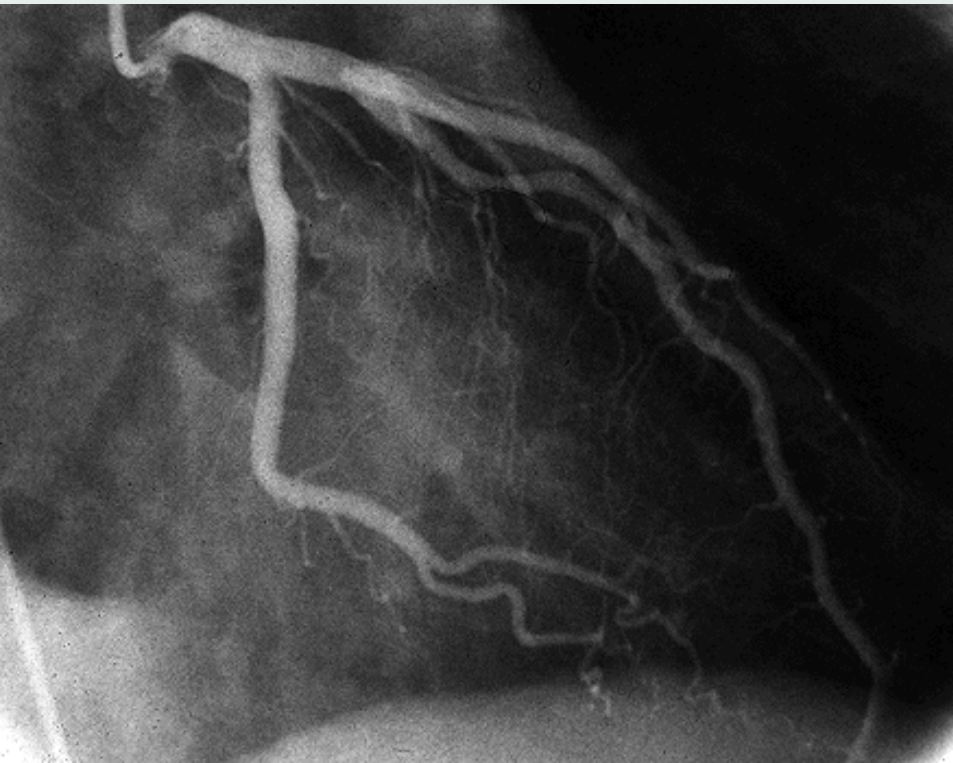
Coronary angiography – left coronary artery



Right anterior oblique projection

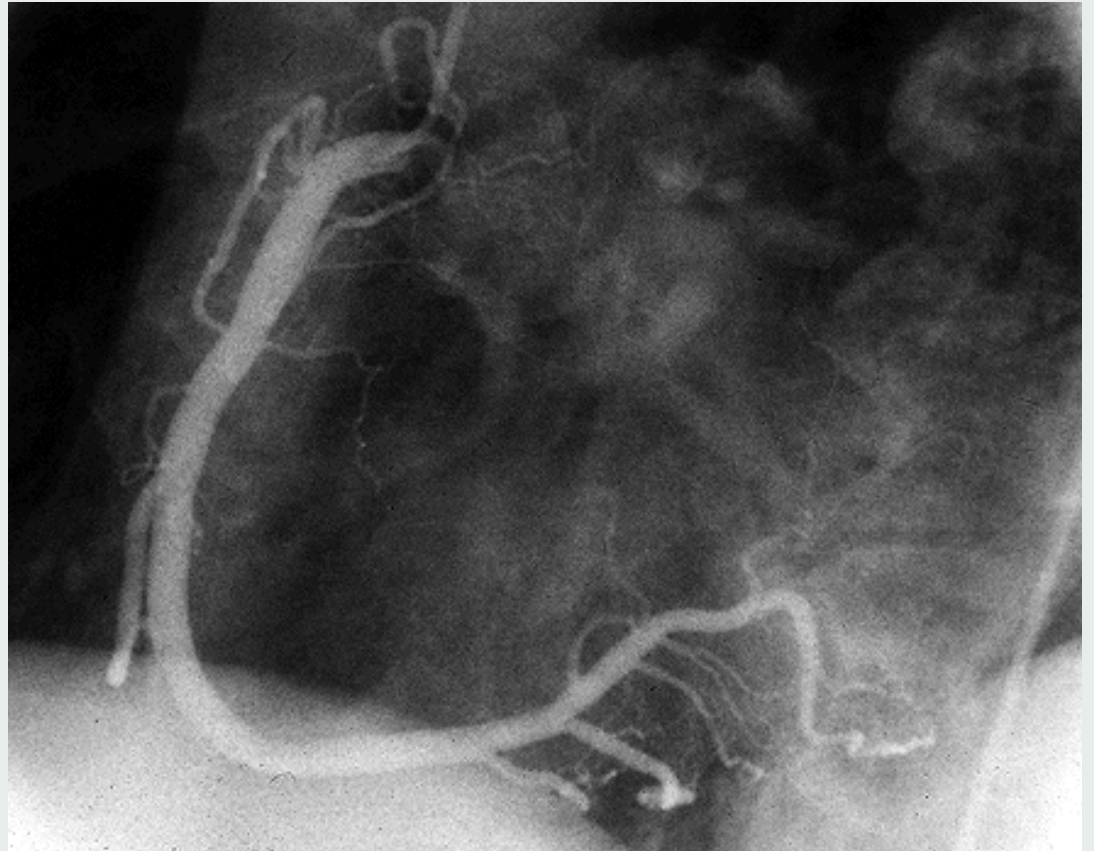
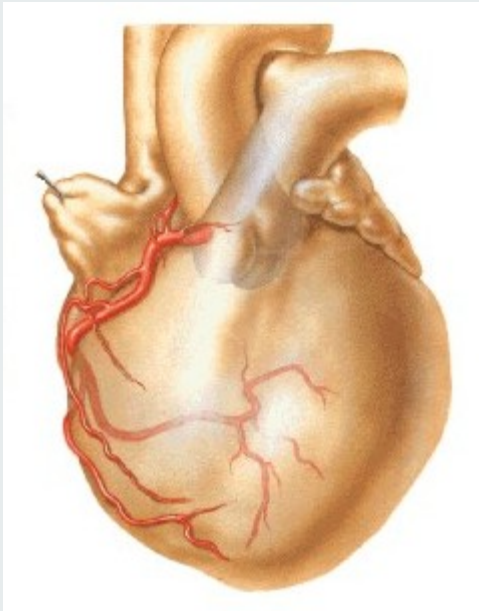


Left anterior oblique projection



Coronary angiography – right coronary artery

Left anterior oblique projection



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.**

