

## Heart

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### CARDIOVASCULAR SYSTEM COMPOSITION

HEART (COR)

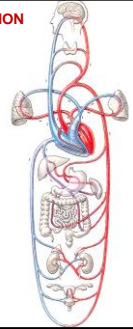
VESSELS (VASA)

BLOOD (SANGUIS)

SYSTEMIC BLOOD CIRCULATION

PULMONAR BLOOD CIRCULATION

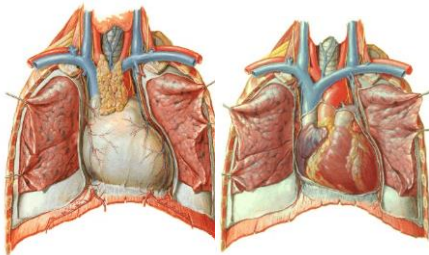
PORTAL BLOOD CIRCULATION



### COR (HEART)

270-320 g

2/3 left, 1/3 right



### HEART DIVISION

Septum cordis (interatriale, interventriculare)

Septum atrioventriculare dx., sin.

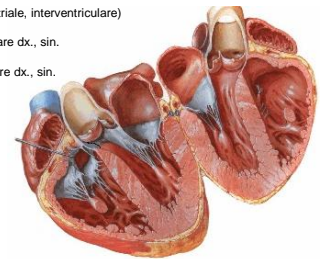
Ostium atrioventriculare dx., sin.

Valva tricuspidalis

Valva bicuspidalis

Atrium dx. et sin.

Ventriculus dx. et sin.

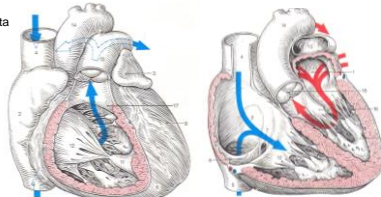


Vena cava sup. et inf.

Truncus pulmonalis

Vv. pulmonales

Aorta



### SURFACE OF THE HEART

Basis cordis

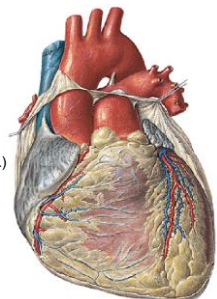
Apex cordis

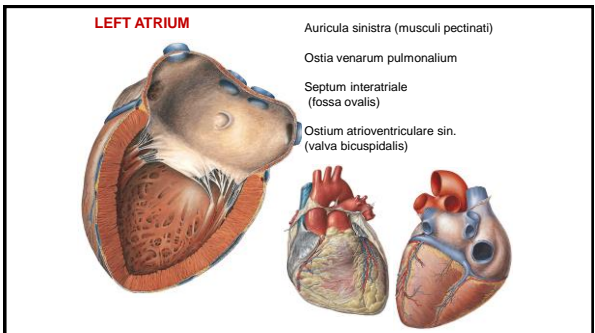
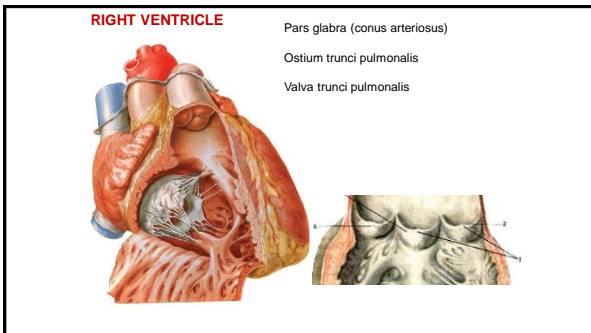
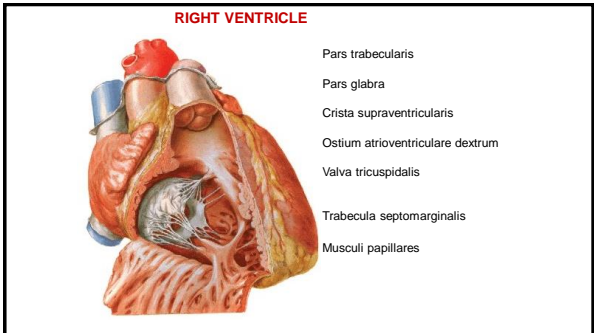
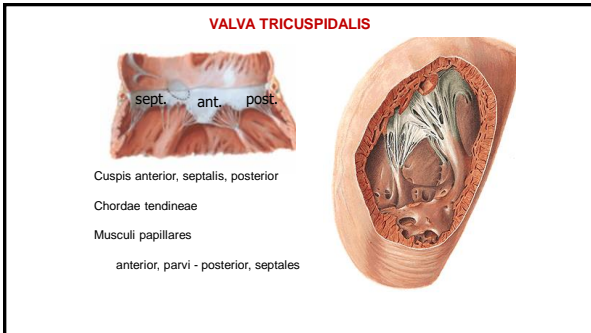
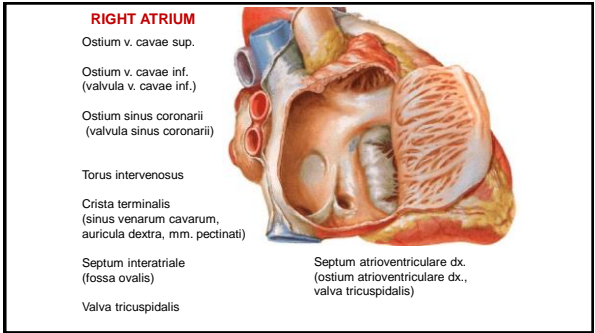
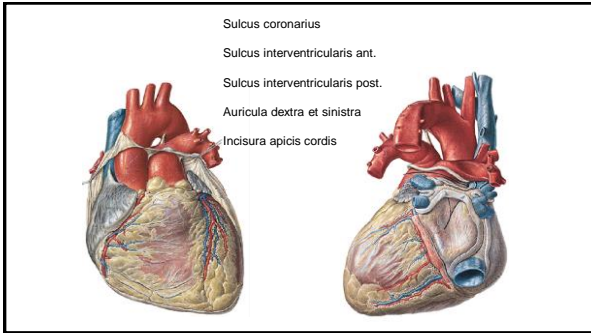
Facies sternocostalis (ant.)

Facies diaphragmatica (post.)

Margo acutus (dexter)

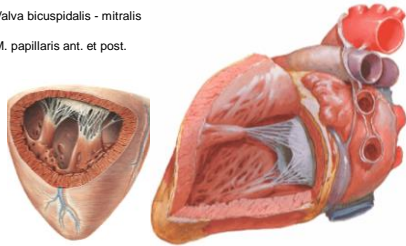
Margo obtusus (sinister)  
= facies pulmonalis





**LEFT VENTRICLE**

Ostium atrioventriculare sin.  
 Valva bicuspidalis - mitralis  
 M. papillaris ant. et post.

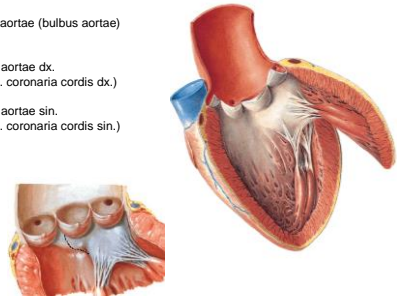


Ostium aortae

Valva aortae (bulbus aortae)

Sinus aortae dx.  
 (a. coronaria cordis dx.)

Sinus aortae sin.  
 (a. coronaria cordis sin.)



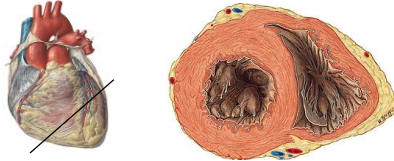
**MORPHOLOGY OF HEART WALL**

ENDOCARDIUM

MYOCARDIUM (muscular layer, conductive system of heart)

EPICARDIUM (pericardium serosum - lamina visceralis)

PERICARDIUM (fibrosum et serosum - lamina parietalis)



**ENDOCARDIUM**

Thicker in the atria

Thicker in left portion of the heart

Background of valves



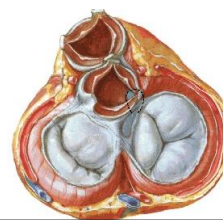
**Cardiac skeleton**

- Anulus fibrosus dexter
- Anulus fibrosus sinister
- Anulus aorticus
- Anulus trunci pulmonalis
- Conus ligament
- Trigonum fibrosum dextrum
- Trigonum fibrosum sinistrum
- Pars membranacea septi cordis



**Heart valves**

SYSTOLE



↑  
 DIASTOLE

**MYOCARDIUM OF THE ATRIA**

fasciculus interauricularis horizontalis



fasciculus interauricularis verticalis



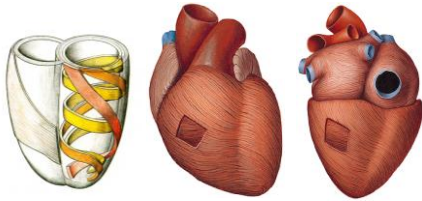
**MYOCARDIUM OF THE VENTRICLES**

Superficial layer of myocardium



vortex cordis

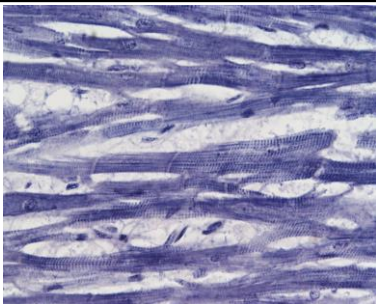
**Middle layer of myocardium**



**Deep layer of myocardium**

Trabeculae carneae

Mm. papillares



Intercalar discs

**CONDUCTIVE SYSTEM OF THE HEART**

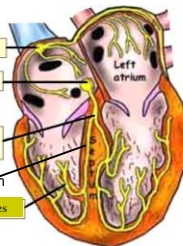
nodus sinuatrialis

nodus atrioventricularis

fasciculus atrioventricularis

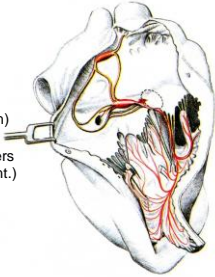
crus dextrum

Purkyne's fibres



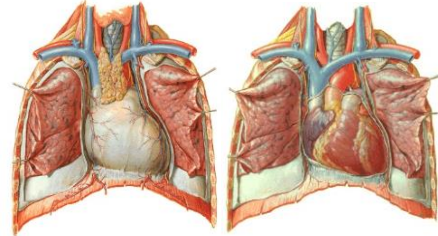
**Accesory fibres of the conductive system**

1. Internodal connections
  - dorsal (Thorel)
  - middle (Wenckenbach)
  - ventral (James, Bachman)
2. Mahaim's paraspecific fibers (divided fasciculus atriovent.)
3. Kent's fibers (circular)
4. By pass tractus



**PERICARDIUM**

Pericardium fibrosum      Lamina parietalis  
 Pericardium serosum      Lamina visceralis (epicardium)



**PERICARDIUM**

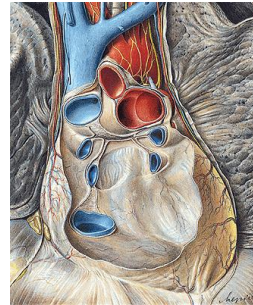
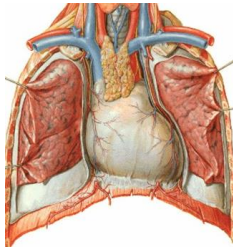
Basis pericardii - facies diaphragmatica (ligg. phrenicopericardiaca)

Cupula pericardii (aorta, v. cava sup., tr. pulmonalis)

Pars sternalis (ligg. sternopericardiaca)

Partes laterales (vasa pericardiophrenica, n. phrenicus)

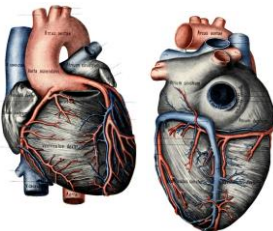
Pars dorsalis



Porta arteriarum = vagina serosa arteriarum (aorta, tr.pulmonalis)

Porta venarum (vv.cavae, vv.pulmonales) sinus transversus pericardii sinus obliquus pericardii

**Coronary arteries**

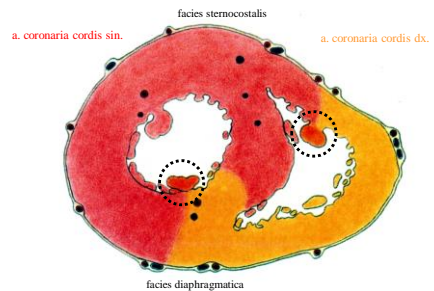


**Arteria coronaria cordis dextra**

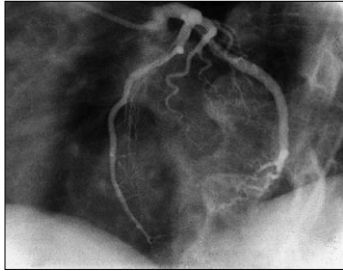
- r. conii arteriosi
- r. nodi sinuatrialis
- r. nodi atrioventricularis
- rr. atriales dx.
- rr. ventriculares dx.
- r. marginalis dx.
- r. interventricularis post.

**Arteria coronaria cordis sinistra**

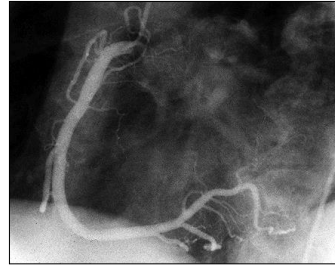
- r. interventricularis ant.
- r. conii arteriosi
- r. lateralis
- rr. interventriculares septales
- r. circumflexus
- r. marginalis sin.
- rr. atriales
- r. nodi sinuatrialis
- r. nodi atrioventricularis



**Coronarography (a. coronaria cordis sin.)**



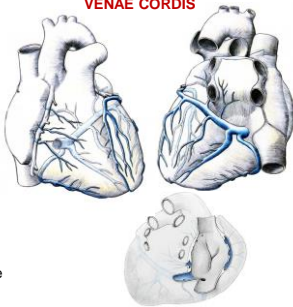
**Coronarography (a. coronaria cordis dx.)**



■ 60%  
sinus coronarius

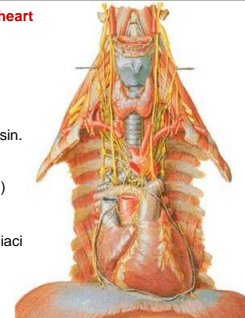
**VENAE CORDIS**

- v. cordis magna
- v. cordis media
- v. cordis parva
- v. obliqua atrii sin
- v. post. ventriculi :
- 40%
- vv. cordis ant.
- vv. cordis minimae



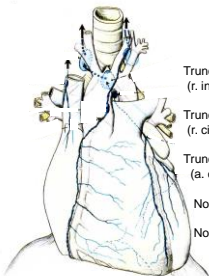
**Innervation of the heart**

- 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)

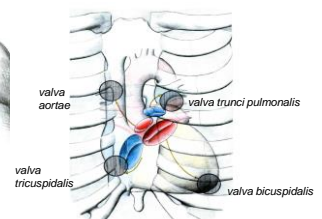
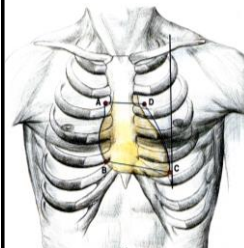


**Lymphatic system of the heart**

- Lymphatic plexuses: subendocardial
- myocardial
- subepicardial
- Truncus lymphaticus anterior sinister (r. interventricularis a. coronariae cordis sin.)
- Truncus lymphaticus posterior (r. circumflexus a. coronariae cordis sin.)
- Truncus lymphaticus anterior dexter (a. coronaria cordis dx.)
- Nodus lymphaticus praeaorticus
- Nodus lymphaticus retroaorticus



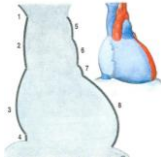
**AUSCULTATION POINTS**



### 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.

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