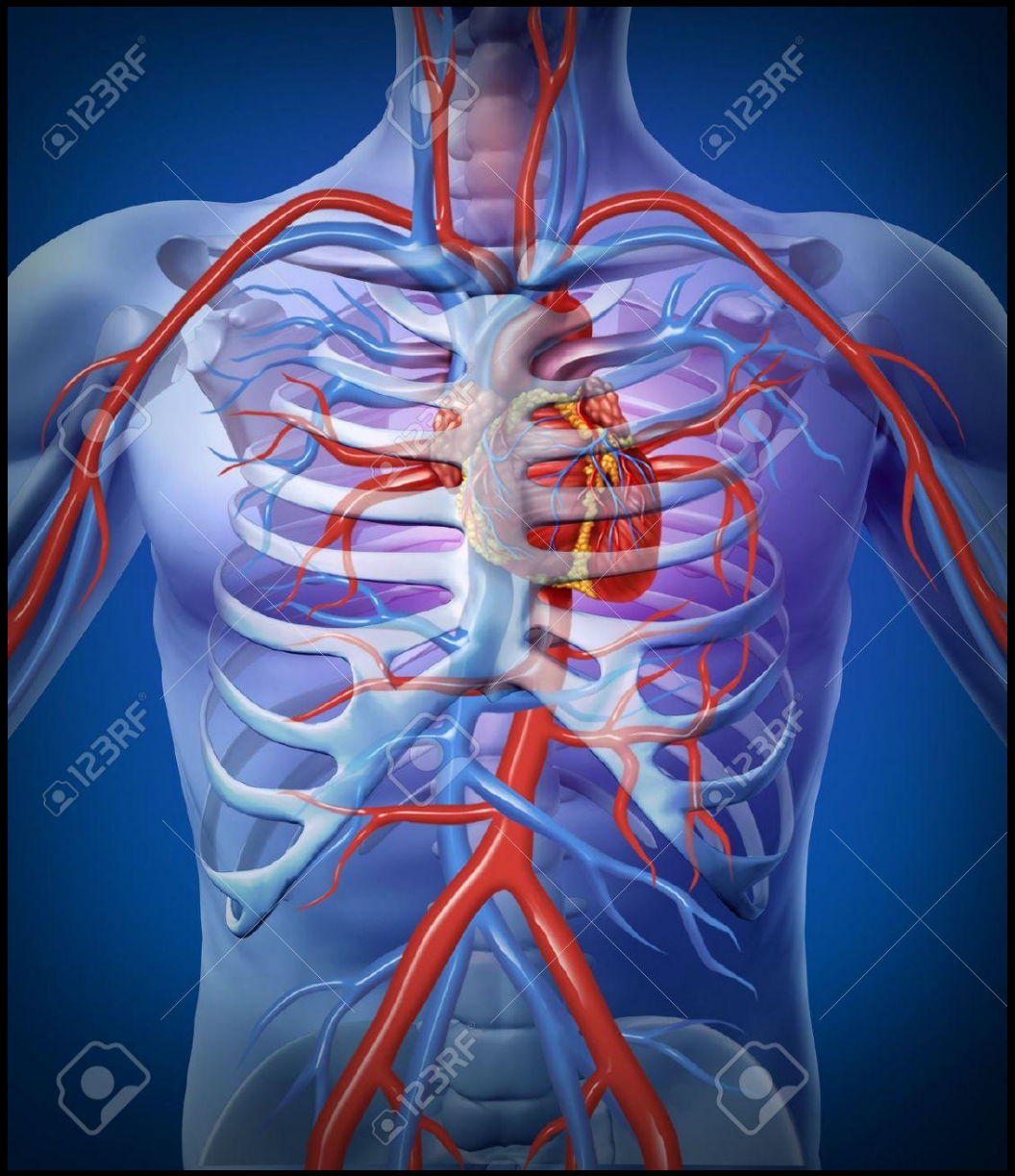
HEART

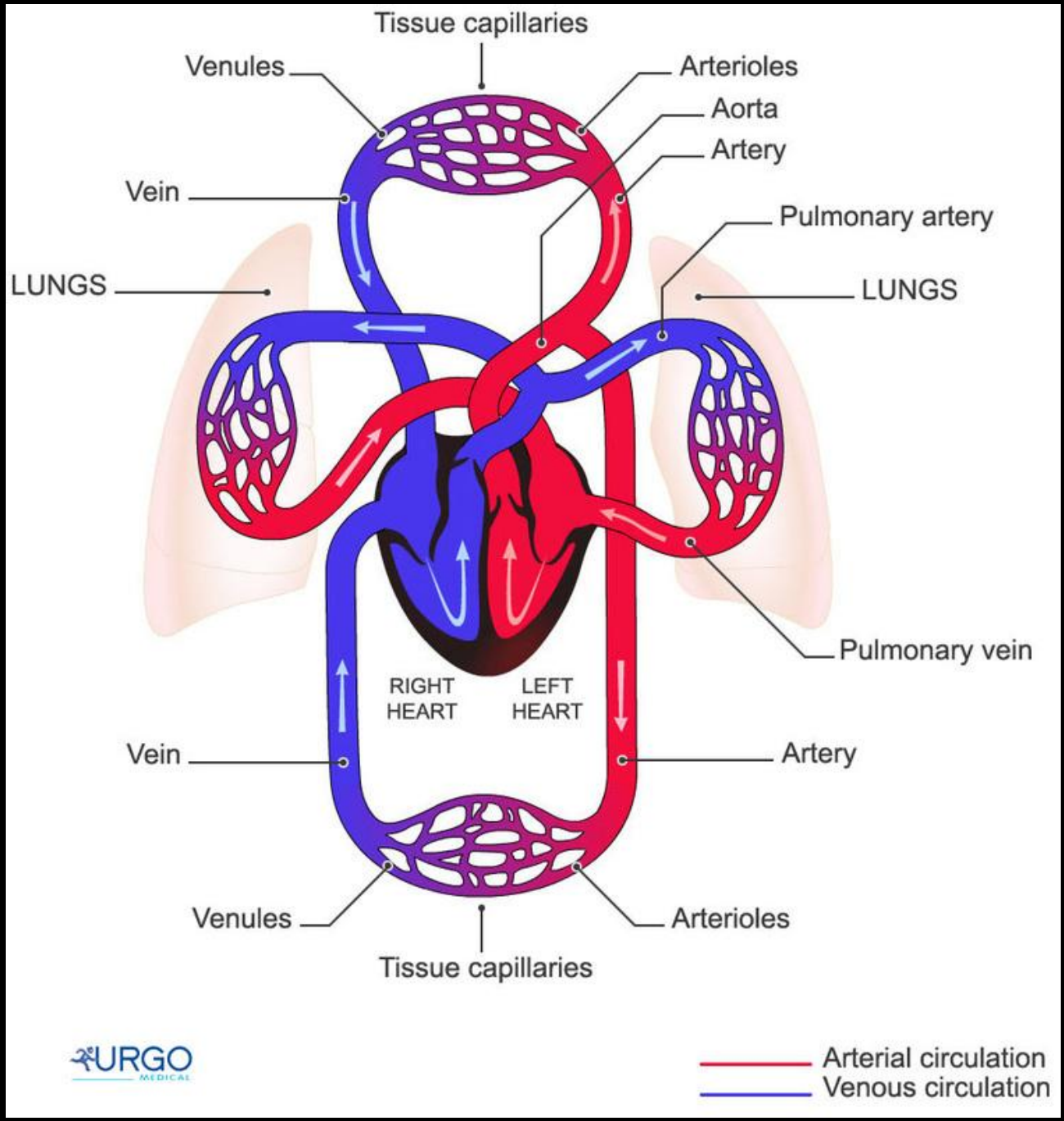
II semester

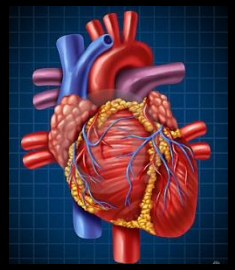
Associate Professor,

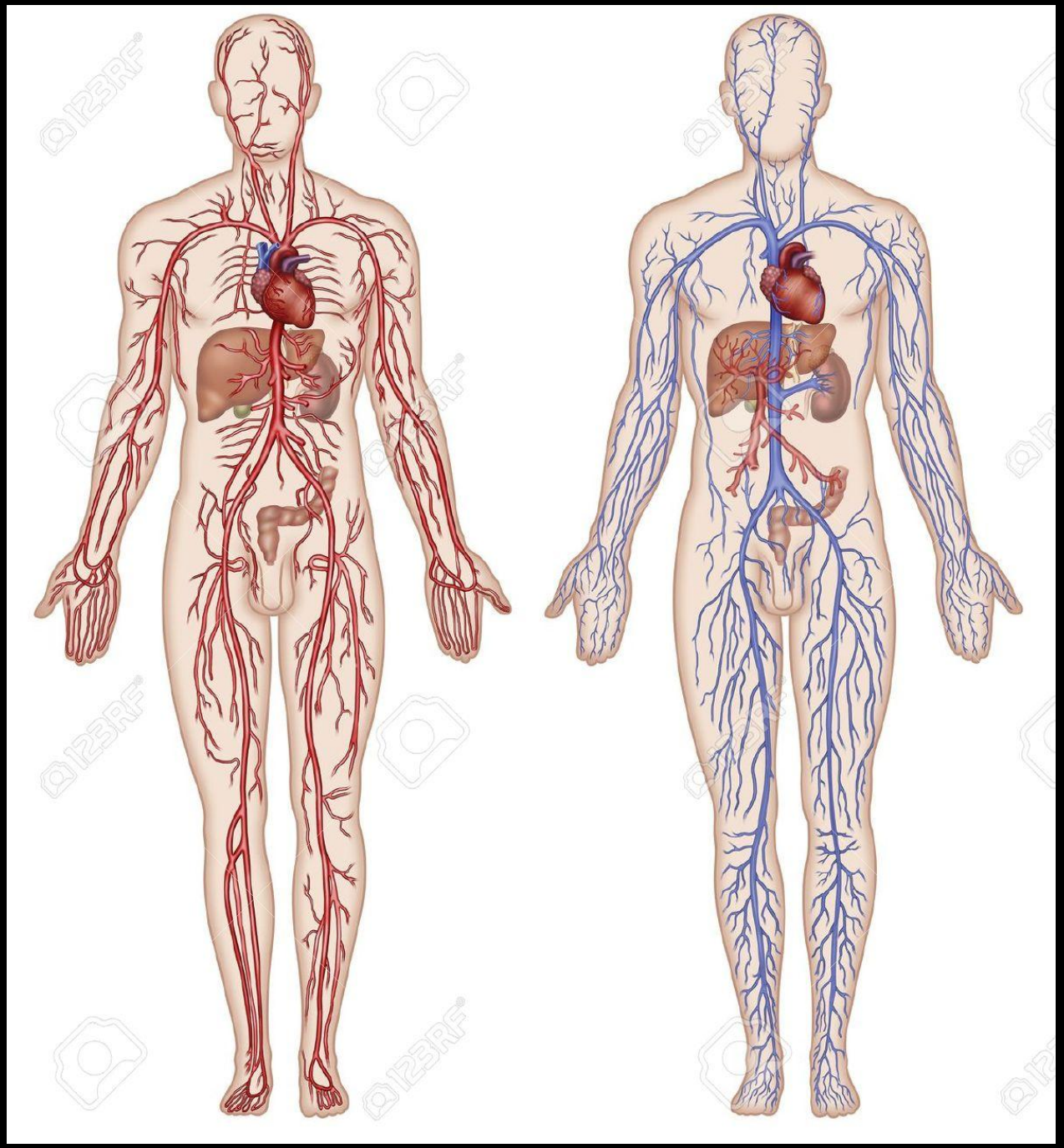
Lilia R. Shaymardanova, M.D., Ph.D.



Круги кровообращения


Tissue capillaries
Venules
Arterioles
Aorta
Artery
Vein
Pulmonary artery
LUNGS
LUNGS
Pulmonary vein
RIGHT HEART
LEFT HEART
Vein
Artery
Venules
Arterioles
Tissue capillaries
URGO MEDICAL
Arterial circulation
Venous circulation

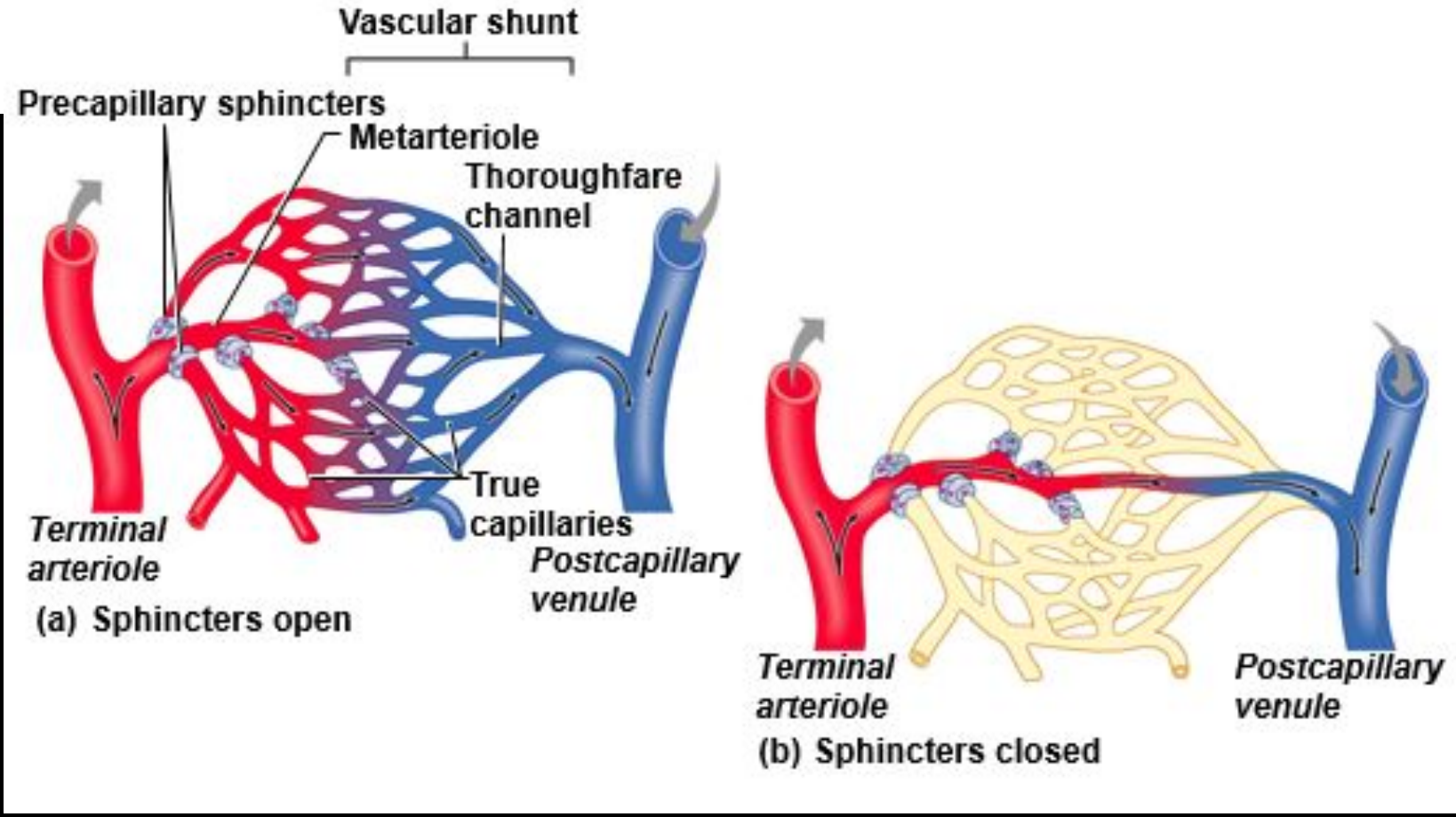


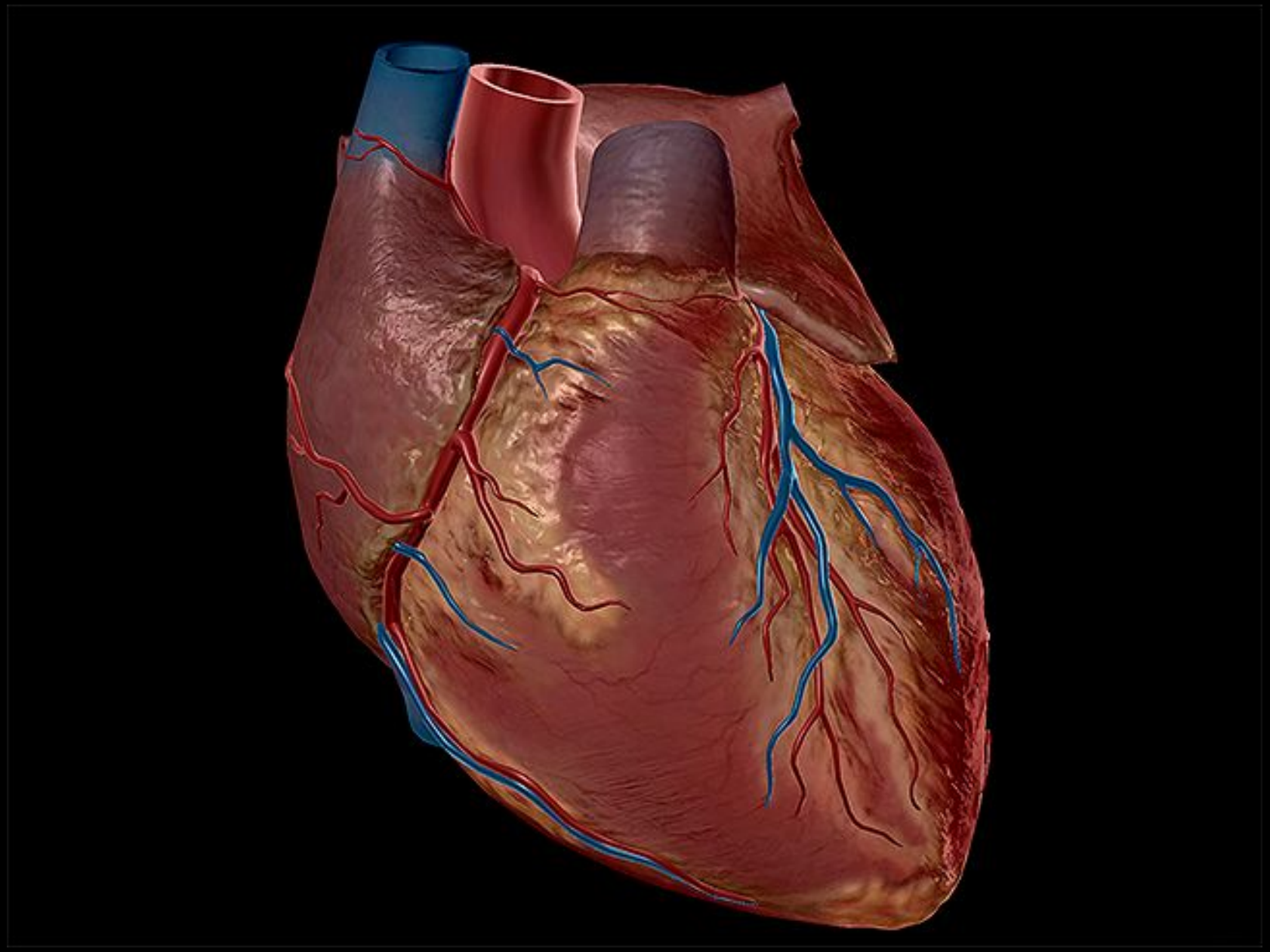


MICROCIRCULATORY BED COMPRISES SEVEN STRUCTURES

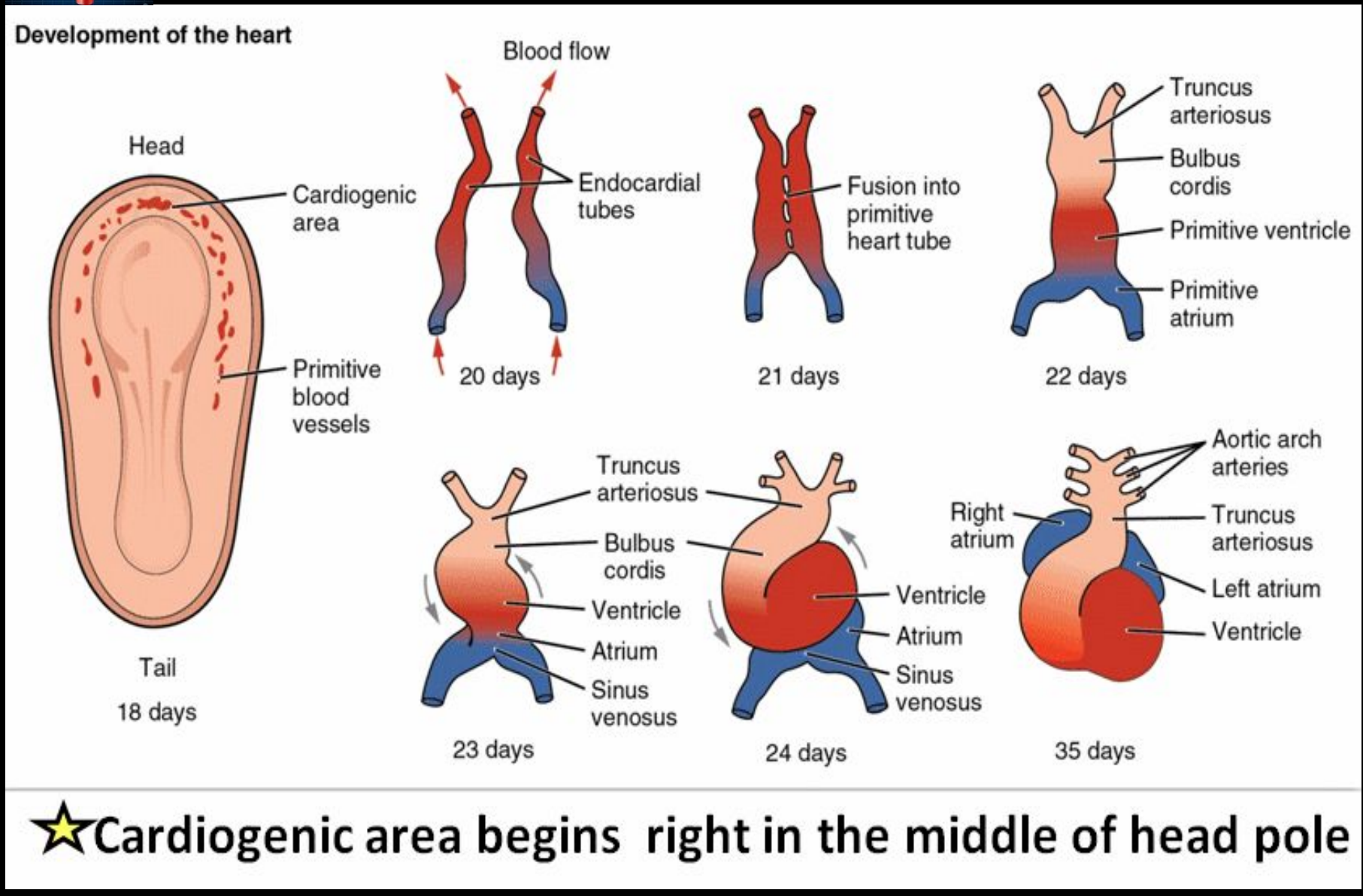
- ARTERIOLES
- PRECAPILLARY ARTERIOLES
- CAPILLARIES
- POSTCAPILLARY VENULES
- VENULES
- PRECAPILLARY SPHINCTERS
- AV SHUNT

Микроциркуляторное русло

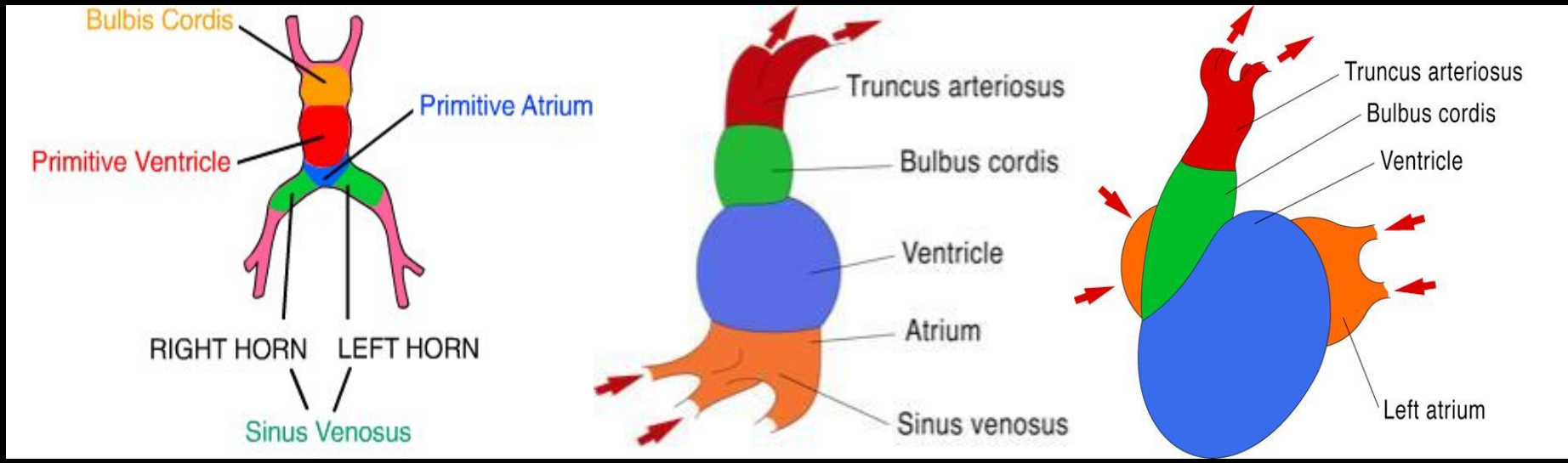


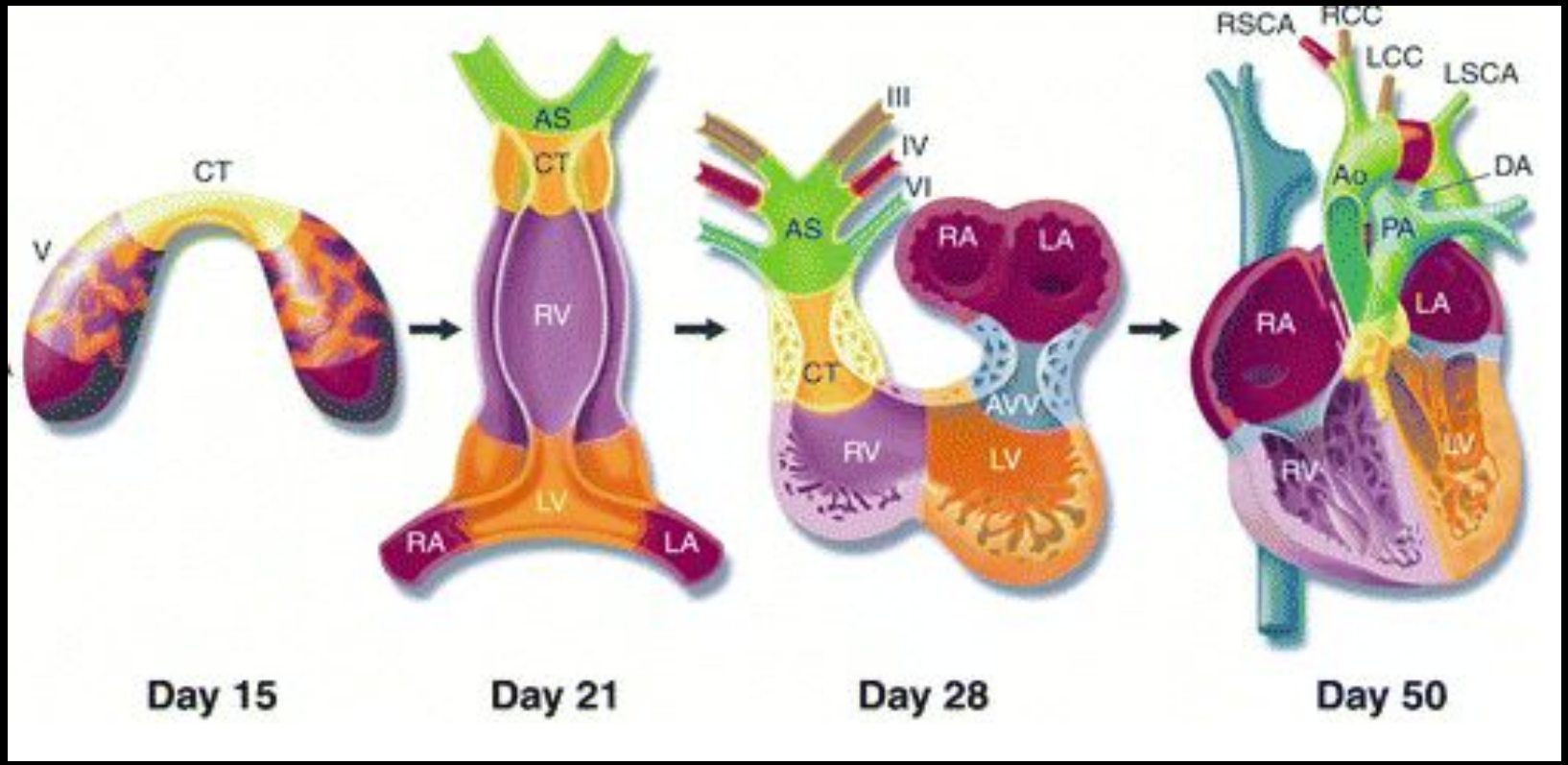


развитие

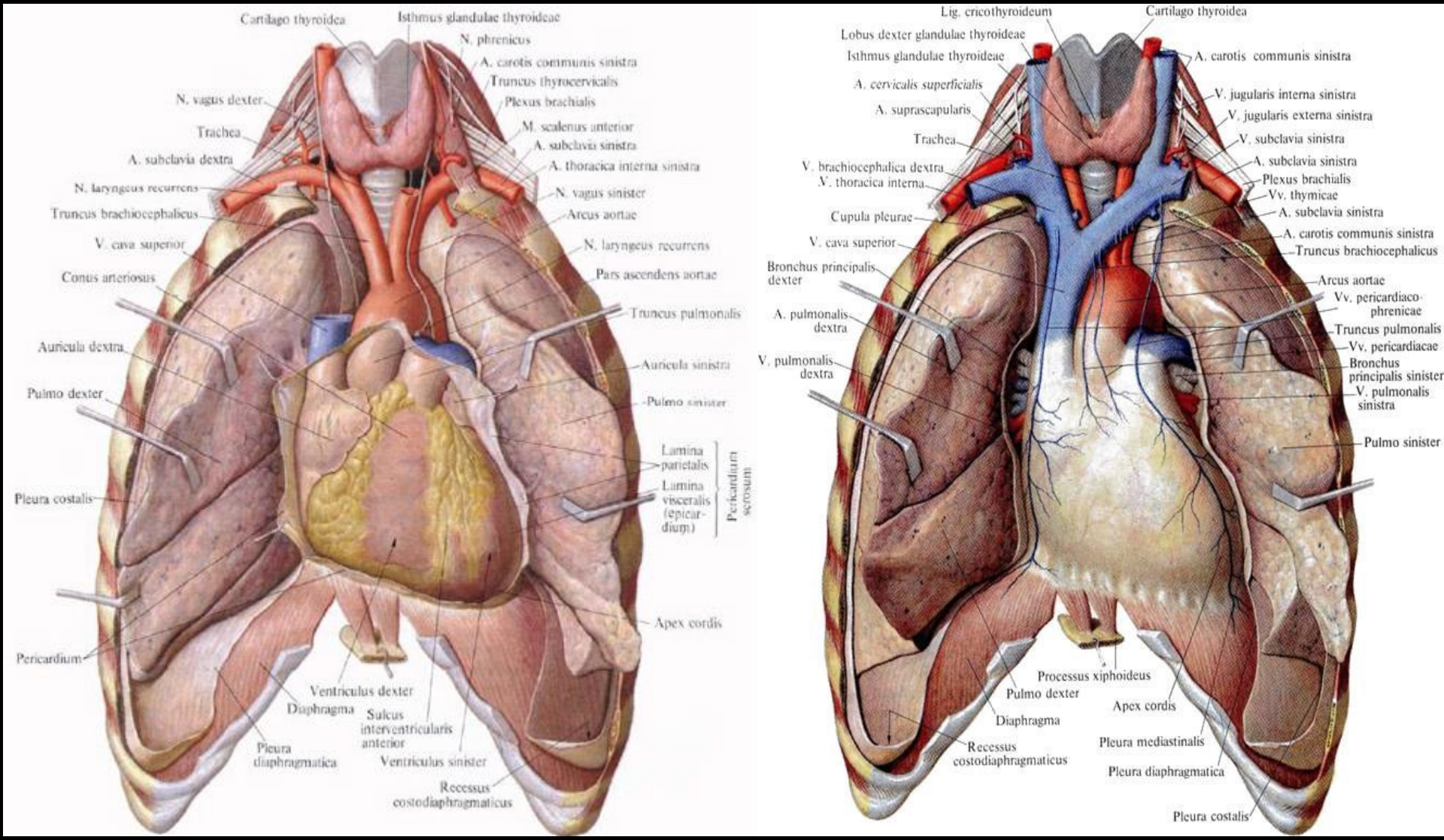


☆Cardiogenic area begins right in the middle of head pole

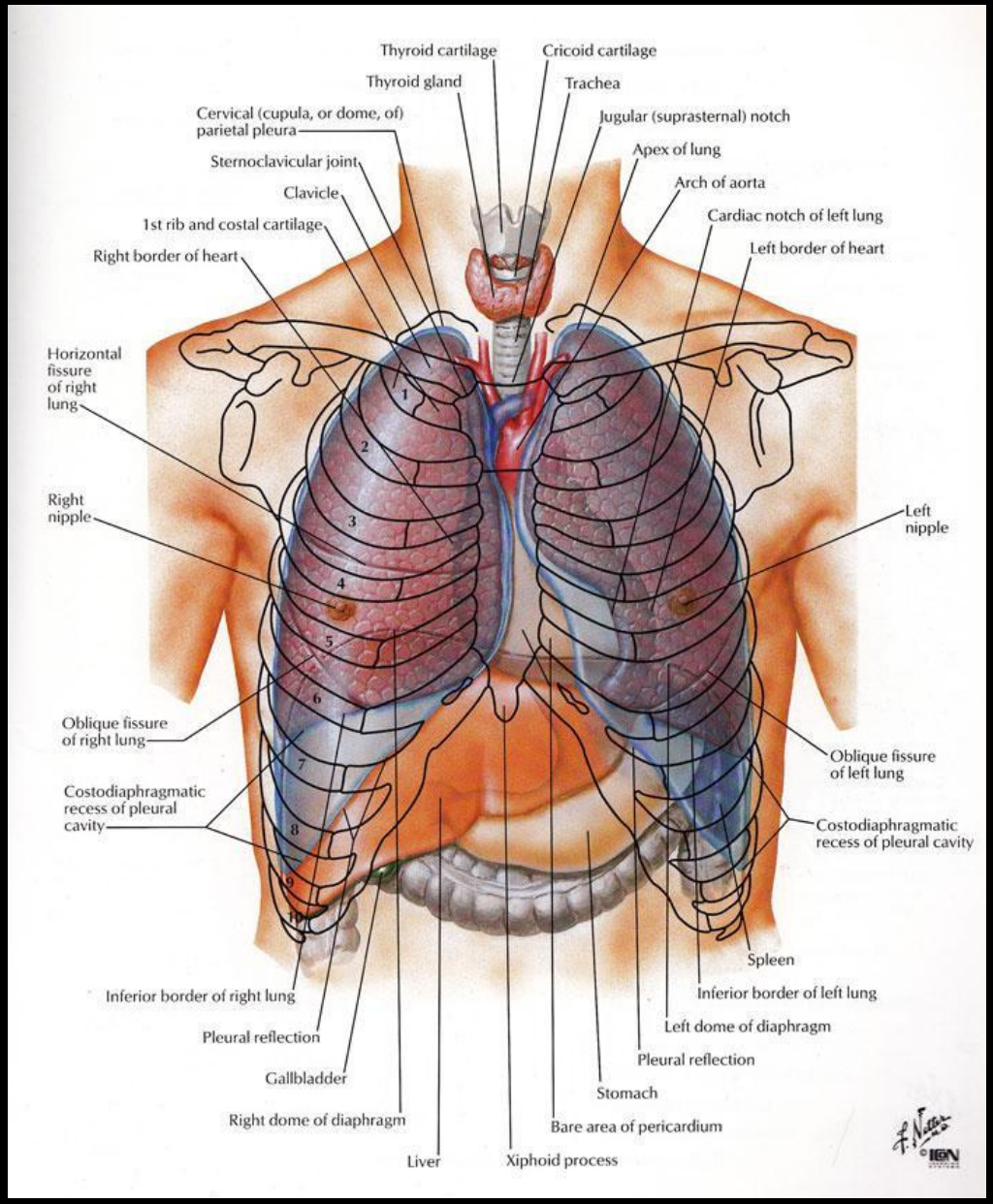

Bulbis Cordis
Primitive Atrium
Primitive Ventricle
RIGHT HORN
LEFT HORN
Sinus Venosus
Truncus arteriosus
Bulbus cordis
Ventricle
Atrium
Sinus venosus
Truncus arteriosus
Bulbus cordis
Ventricle
Left atrium


CT
V
AS
CT
RV
LV
RA
LA
III
IV
VI
AS
RA
LA
CT
AVV
RV
LV
RSCA
RCC
LCC
LSCA
Ao
DA
PA
RA
LA
RV
LV
Day 15
Day 21
Day 28
Day 50

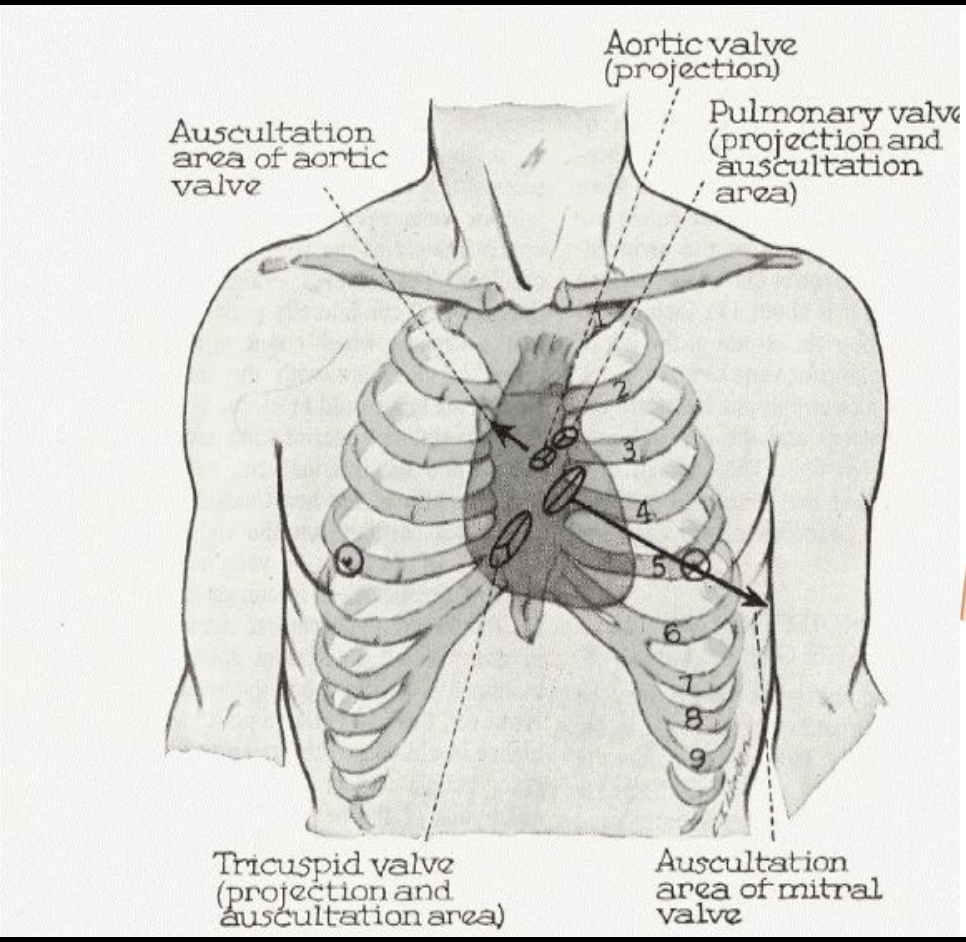
Топография - голотопия

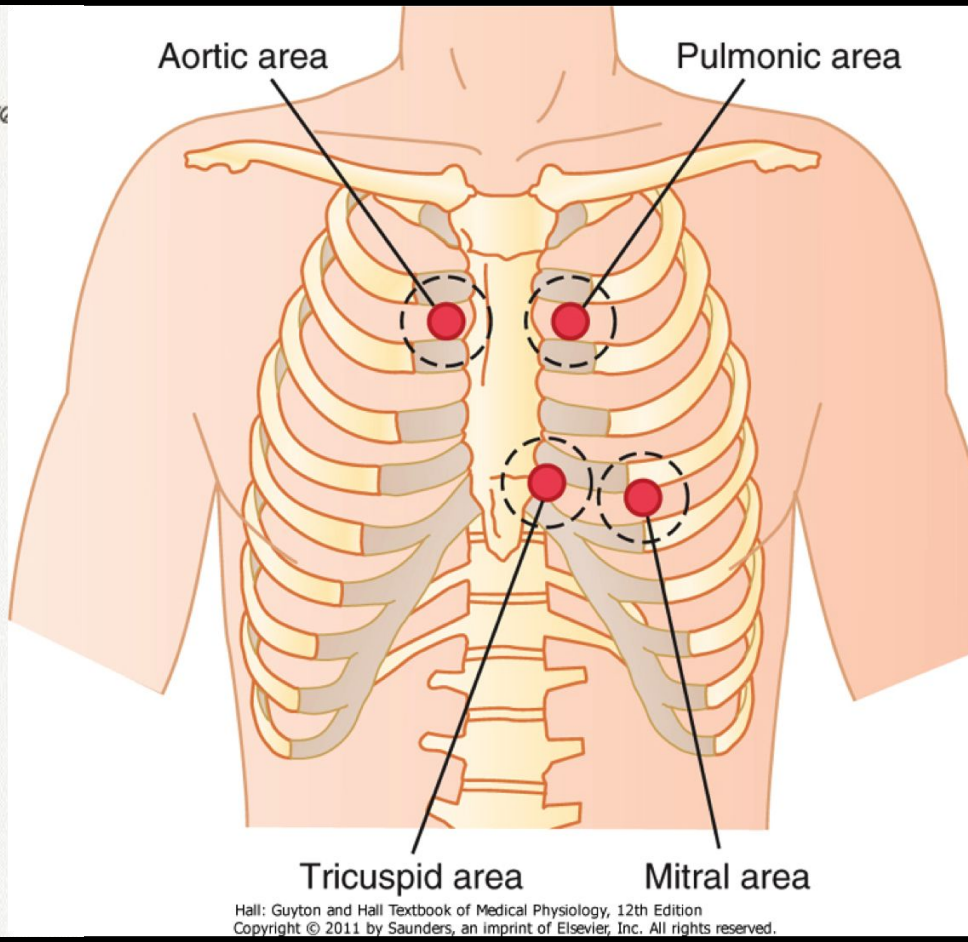


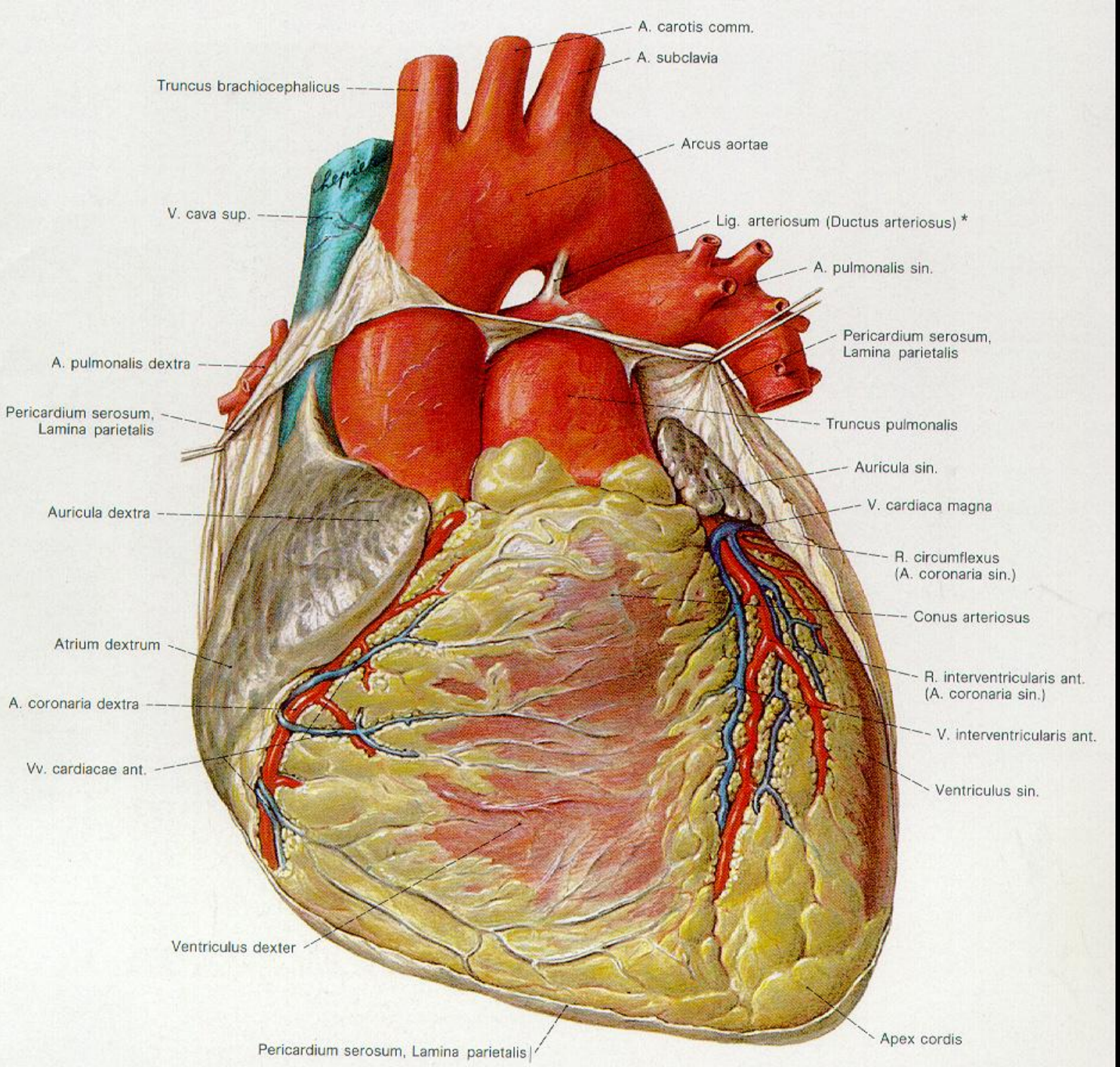
Топография - синтопия



Топография - склелетотопия

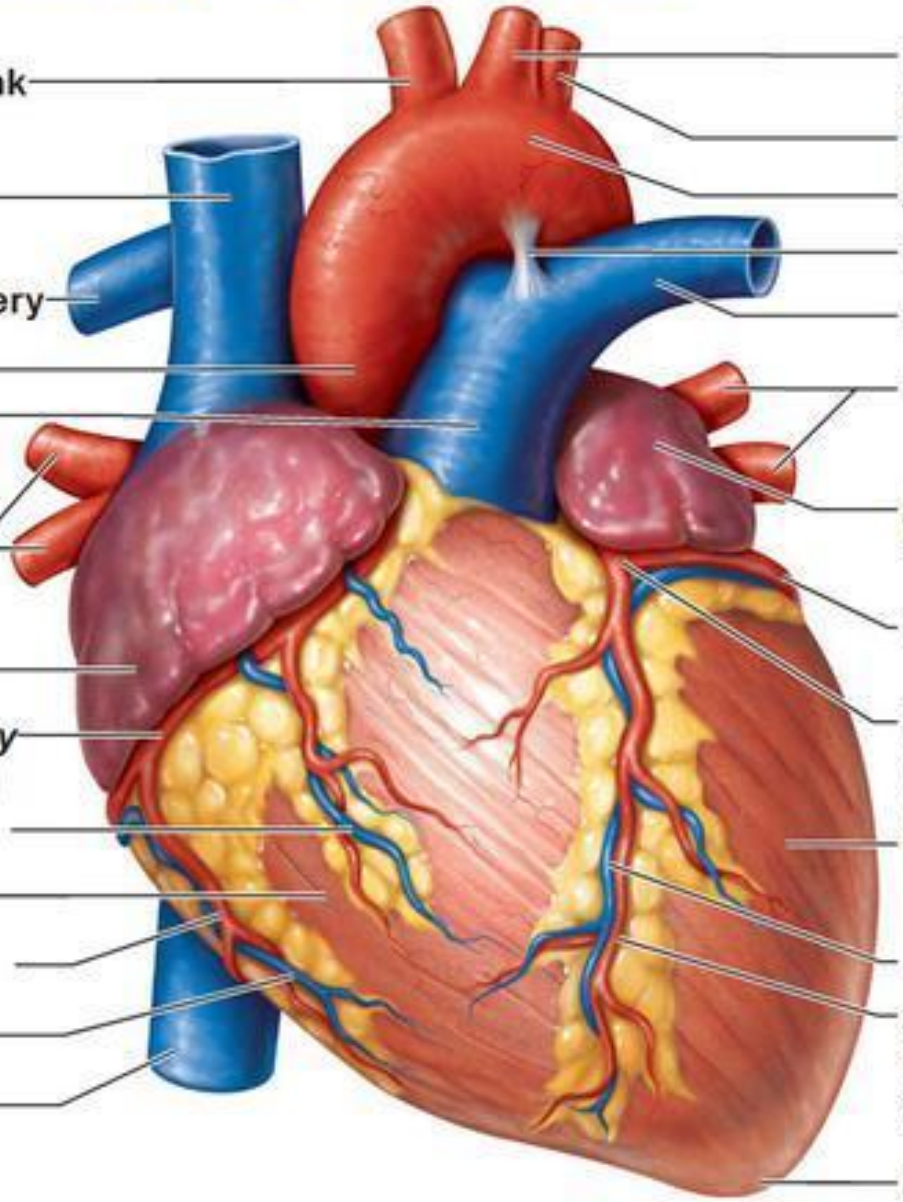





A. carotis comm.
A. subclavia
Truncus brachiocephalicus
Arcus aortae
V. cava sup.
Lig. arteriosum (Ductus arteriosus) *
A. pulmonalis sin.
Pericardium serosum, Lamina parietalis
A. pulmonalis dextra
Pericardium serosum, Lamina parietalis
Truncus pulmonalis
Auricula sin.
Auricula dextra
V. cardiaca magna
R. circumflexus (A. coronaria sin.)
Conus arteriosus
Atrium dextrum
R. interventricularis ant. (A. coronaria sin.)
A. coronaria dextra
V. interventricularis ant.
Vv. cardiacae ant.
Ventriculus sin.
Ventriculus dexter
Pericardium serosum, Lamina parietalis
Apex cordis

Gross Anatomy of the Heart

Anterior view



Brachiocephalic trunk

Superior vena cava

Right pulmonary artery

Ascending aorta

Pulmonary trunk

Right pulmonary veins

Right atrium

Right coronary artery (in coronary sulcus)

Right ventricle

Inferior vena cava

Left common carotid artery

Left subclavian artery

Aortic arch

Ligamentum arteriosum

Left pulmonary artery

Left pulmonary veins

Auricle of **left atrium**

Circumflex artery

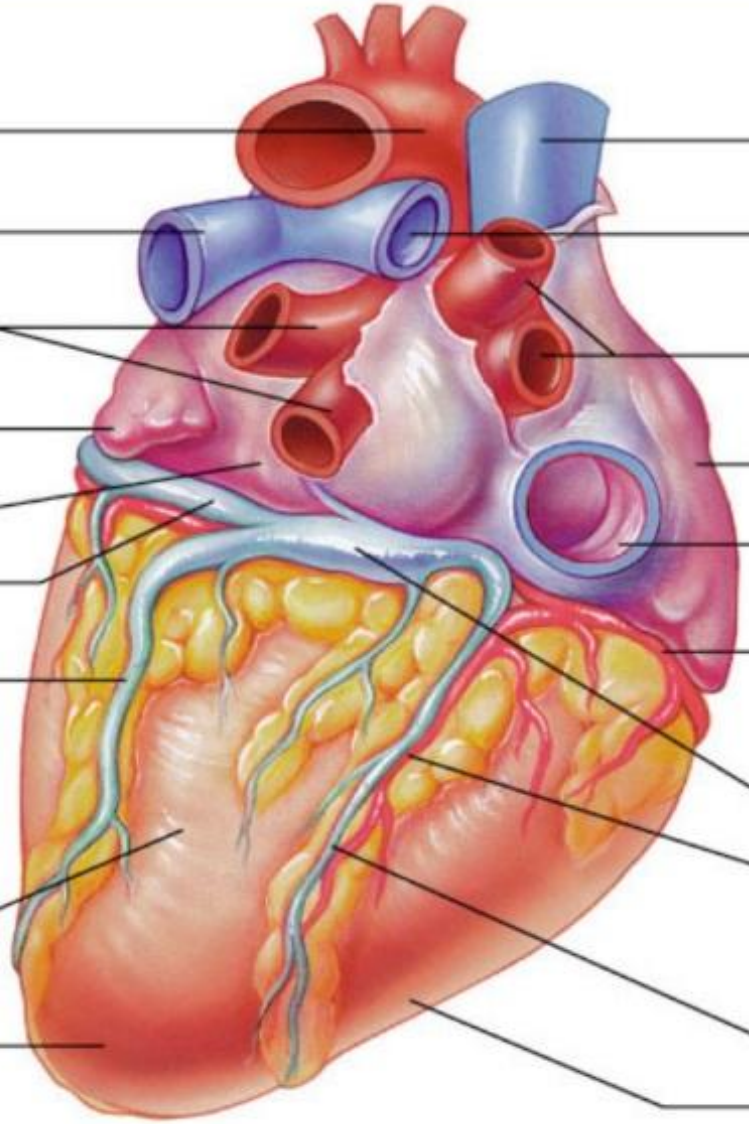
Left coronary artery (in coronary sulcus)

Left ventricle

Anterior interventricular artery (in anterior interventricular sulcus)

Apex

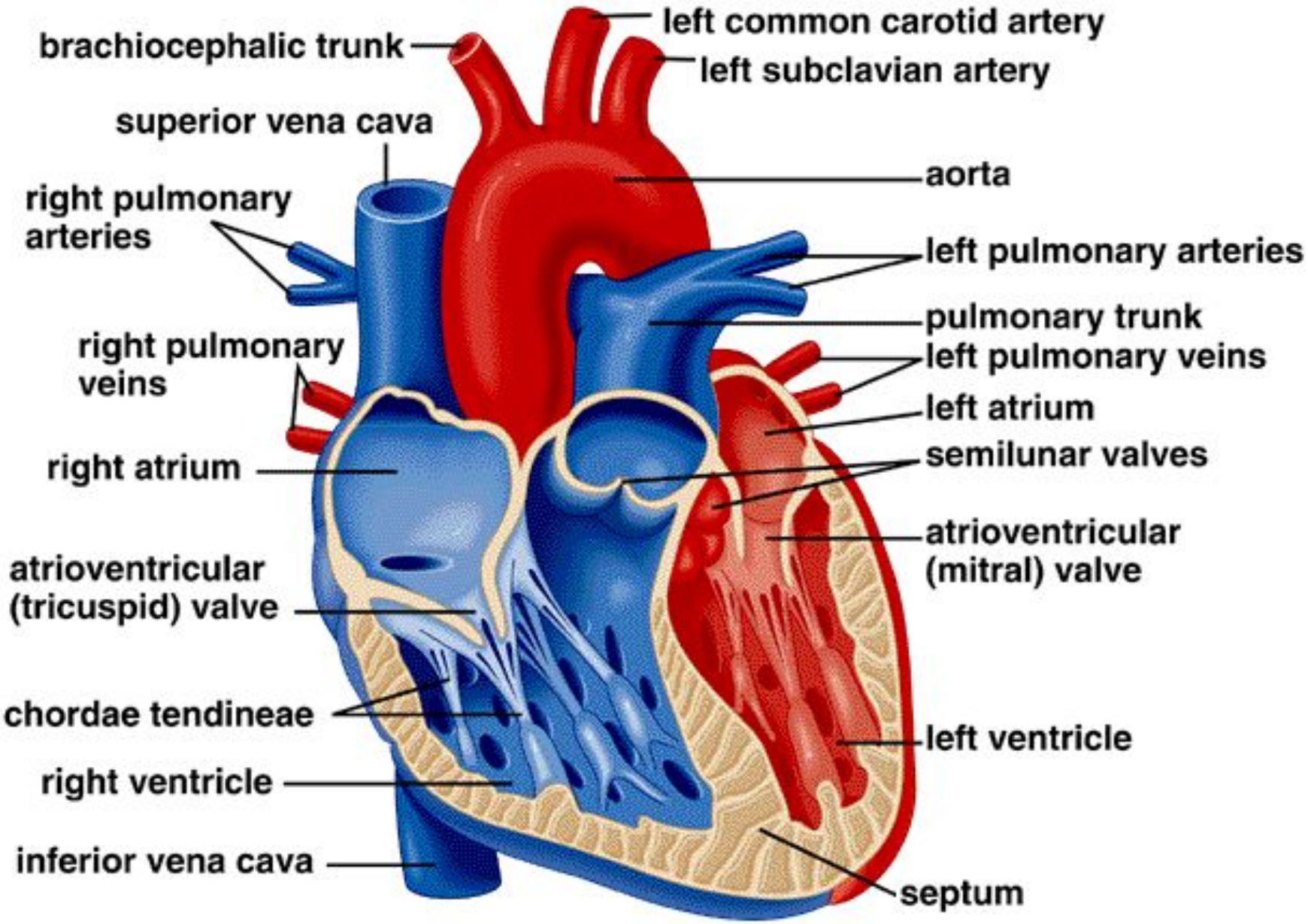
External Heart: Posterior View



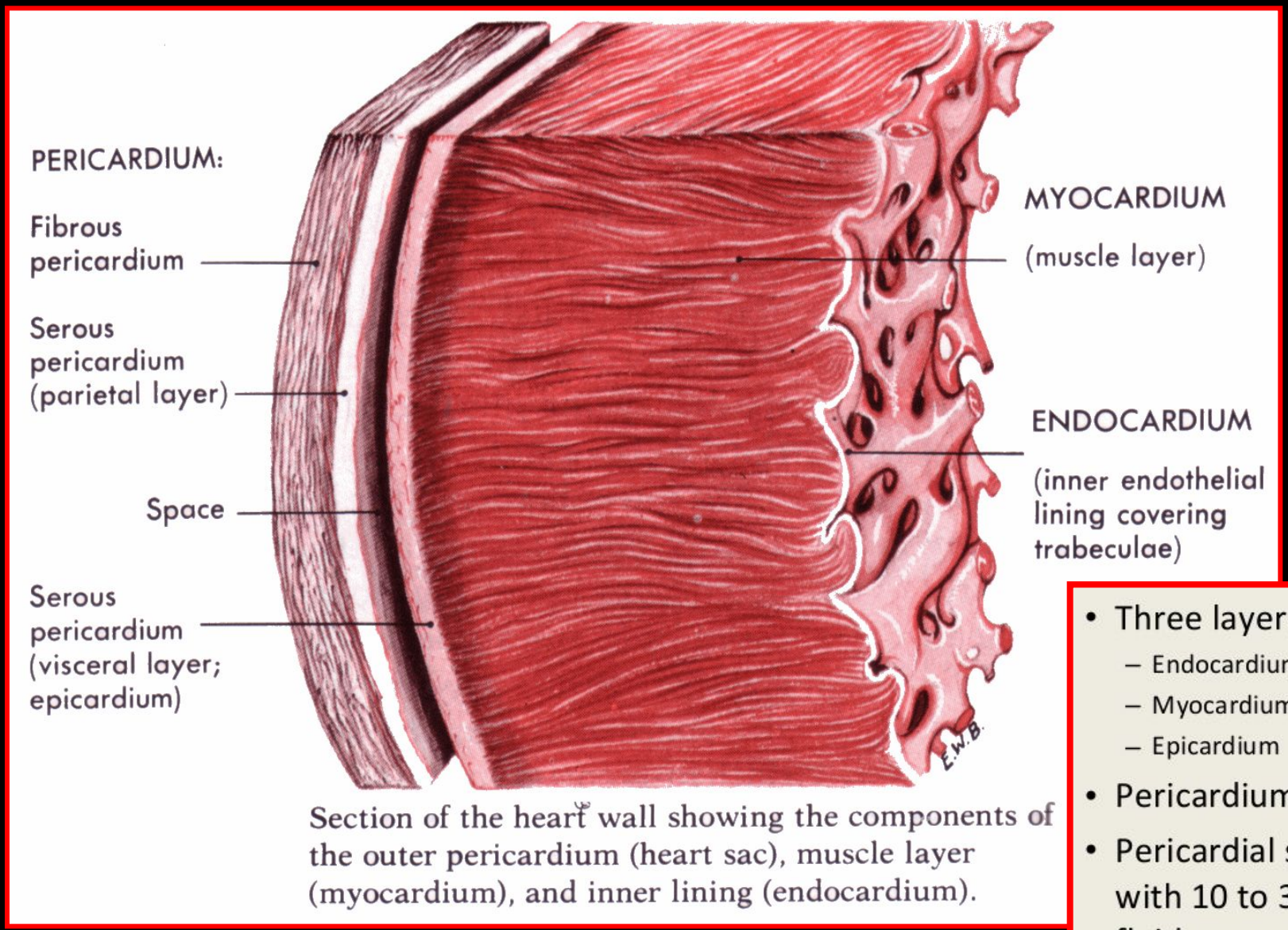
Aorta
Left pulmonary artery
Left pulmonary veins
Auricle of left atrium
Left atrium
Great cardiac vein
Posterior vein of left ventricle
Left ventricle
Apex
(d)

Superior vena cava
Right pulmonary artery
Right pulmonary veins
Right atrium
Inferior vena cava
Right coronary artery (in right atrioventricular groove)
Coronary sinus
Posterior interventricular artery (in posterior interventricular sulcus)
Middle cardiac vein
Right ventricle

Internal View of Heart



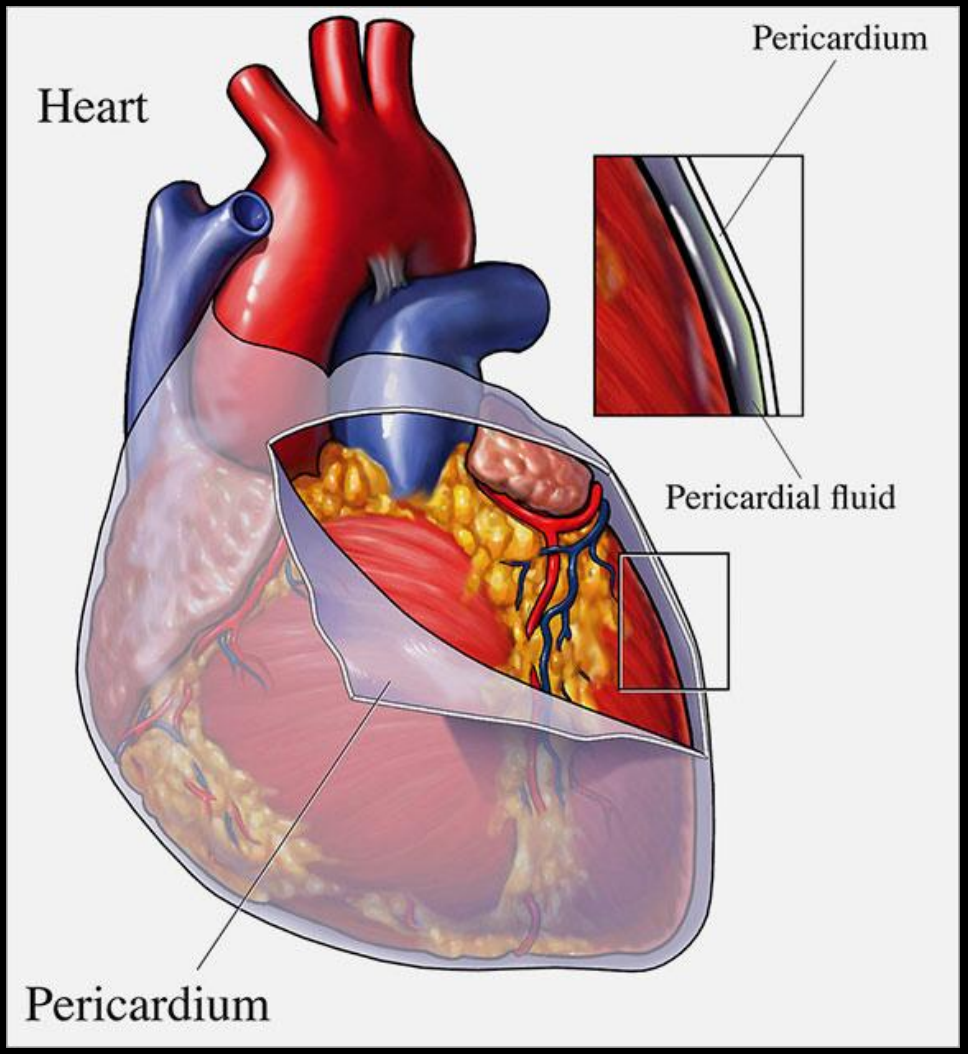
Оболочки сердца

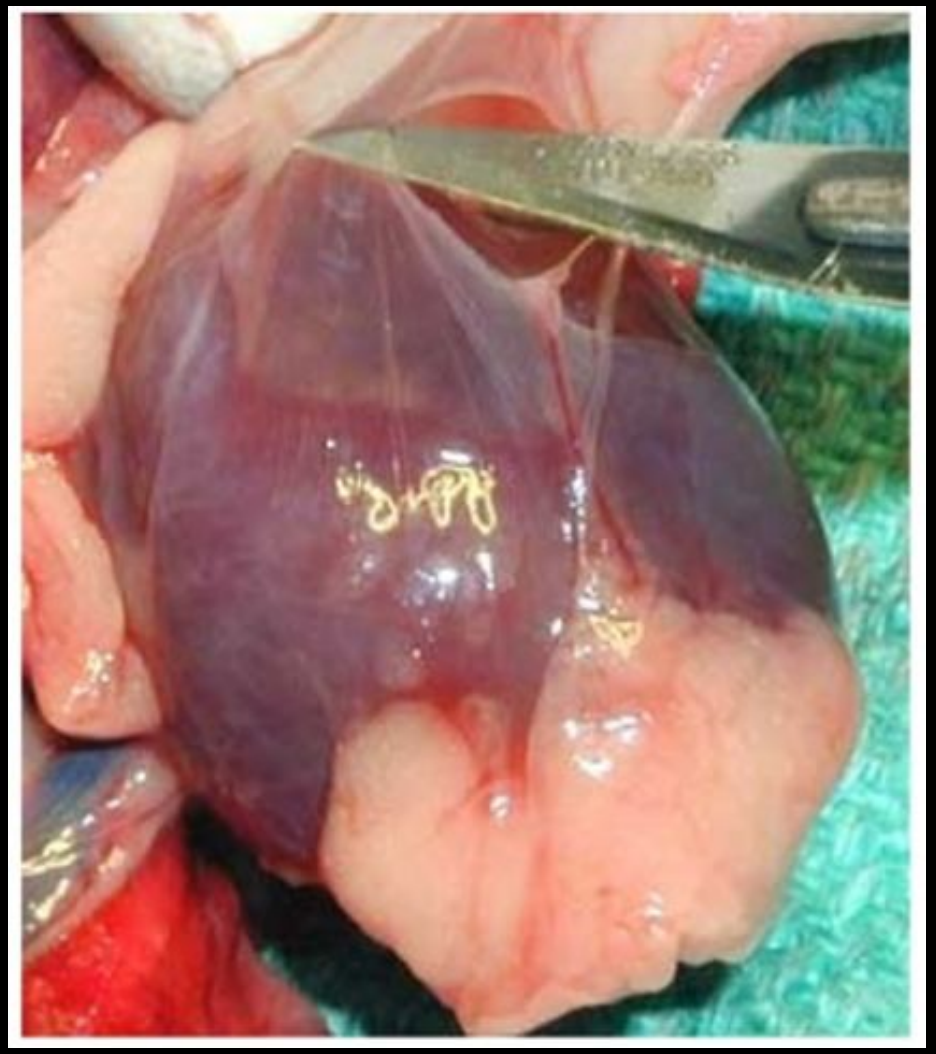


Section of the heart wall showing the components of the outer pericardium (heart sac), muscle layer (myocardium), and inner lining (endocardium).

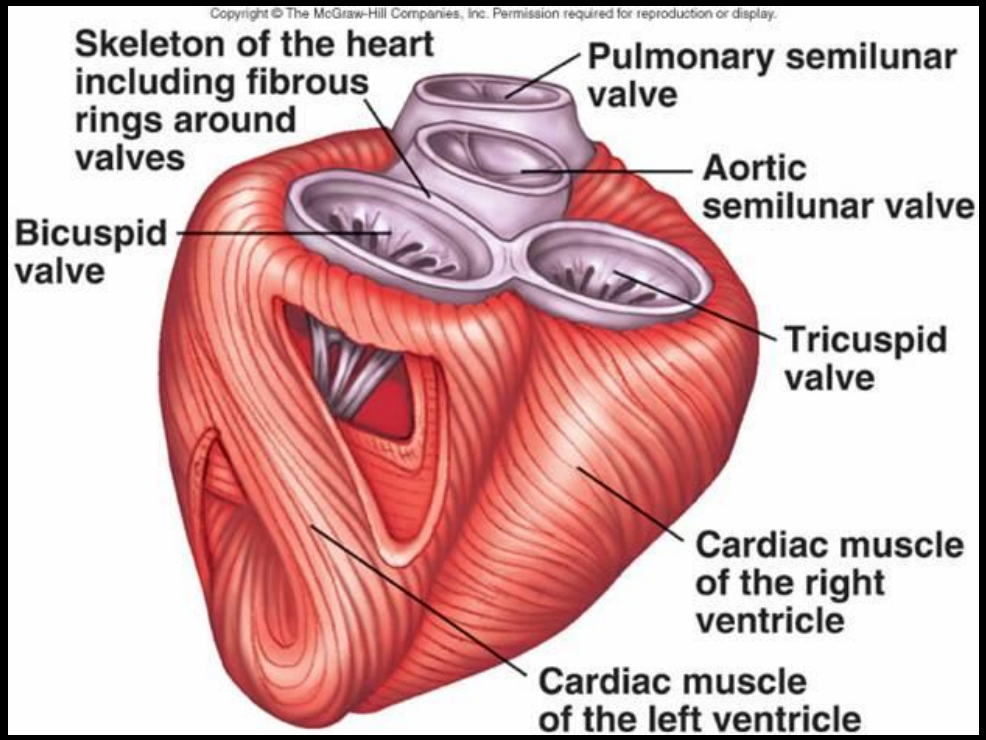
- Three layers of heart
  - Endocardium
  - Myocardium
  - Epicardium
- Pericardium
- Pericardial space, with 10 to 30 mL fluid

Перикард





Миокард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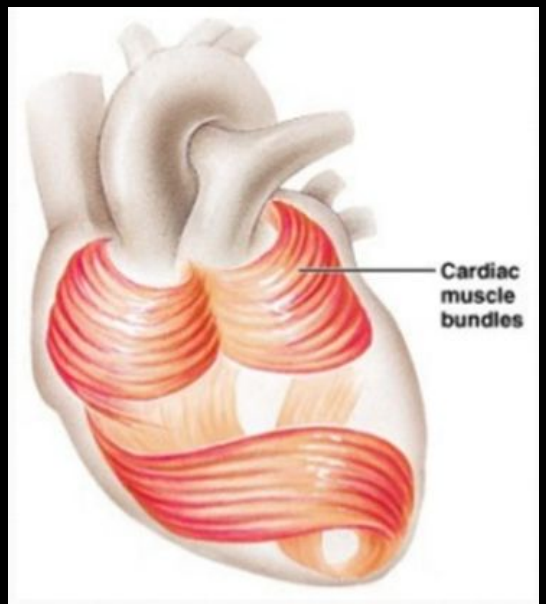
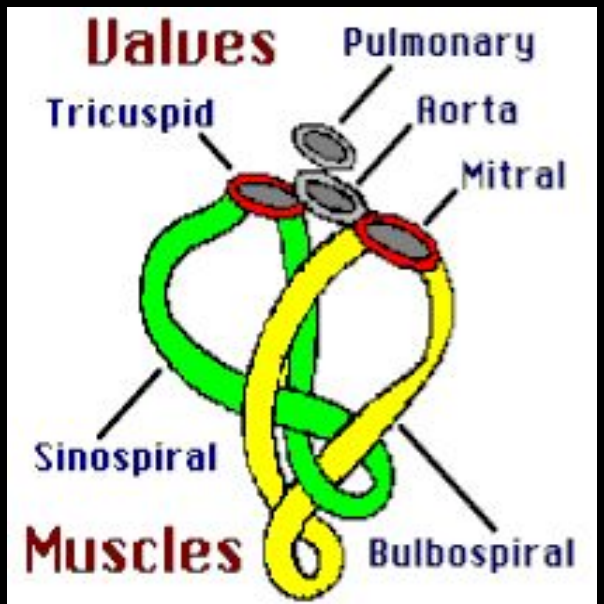
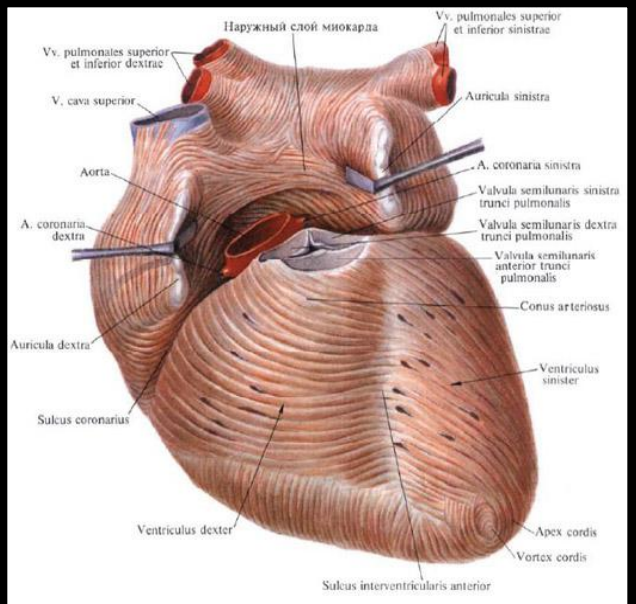
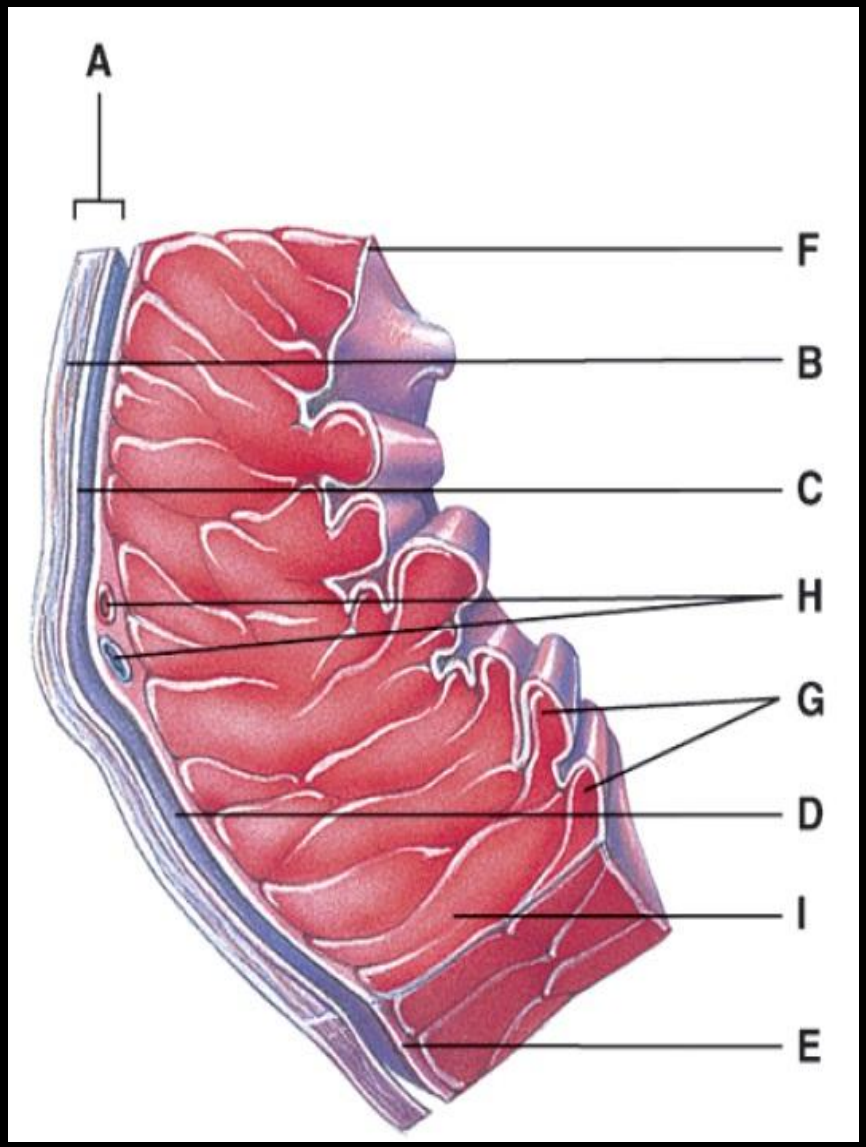
Skeleton of the heart including fibrous rings around valves
Pulmonary semilunar valve
Aortic semilunar valve
Bicuspid valve
Tricuspid valve
Cardiac muscle of the right ventricle
Cardiac muscle of the left ventricle

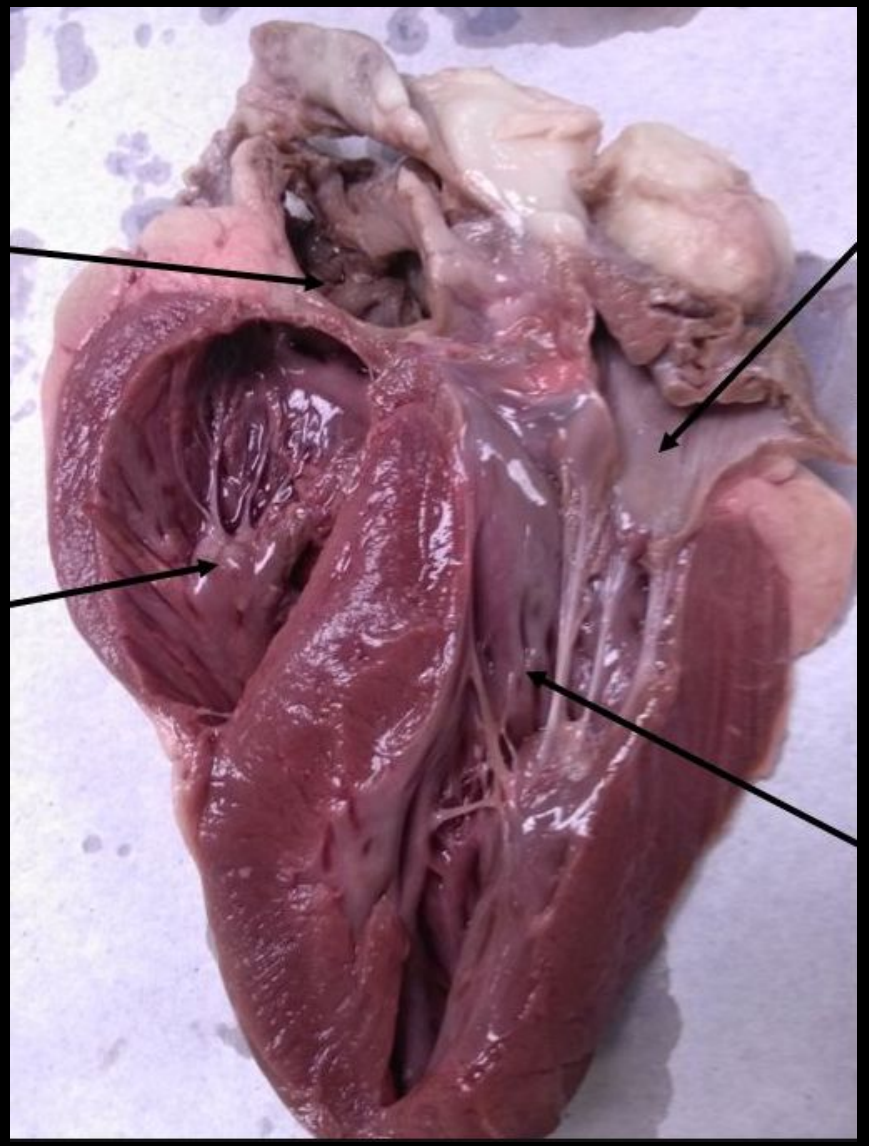

Cardiac muscle bundles


Valves
Pulmonary
Tricuspid
Aorta
Mitral
Sinospiral
Muscles
Bulbospiral

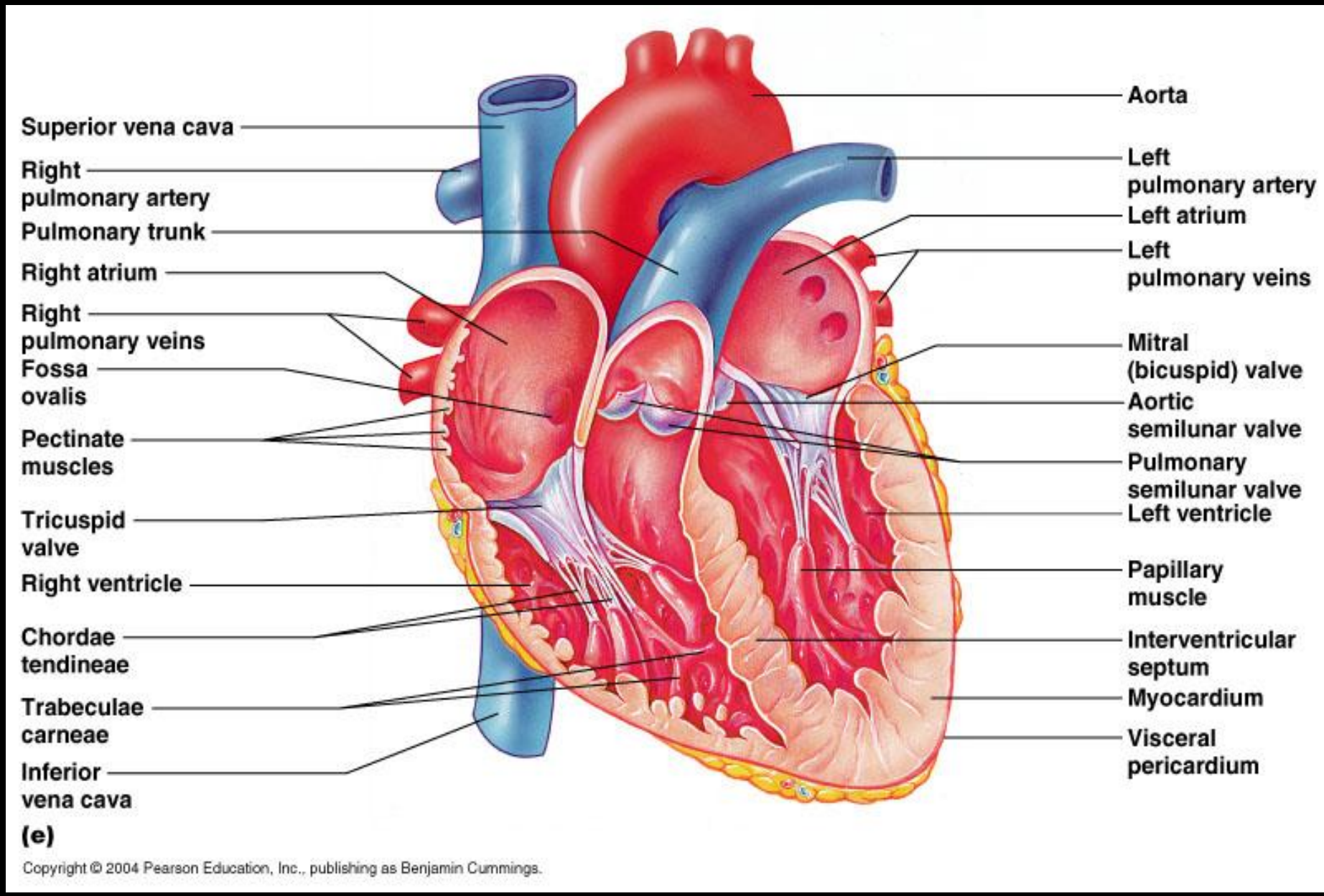

Наружный слой миокарда
Vv. pulmonales superior et inferior sinistrae
Vv. pulmonales superior et inferior dextrae
V. cava superior
Auricula sinistra
A. coronaria sinistra
Aorta
Valvula semilunaris sinistra trunci pulmonalis
A. coronaria dextra
Valvula semilunaris dextra trunci pulmonalis
Valvula semilunaris anterior trunci pulmonalis
Conus arteriosus
Auricula dextra
Ventriculus sinister
Sulcus coronarius
Ventriculus dexter
Apex cordis
Vortex cordis
Sulcus interventricularis anterior

Эндокард

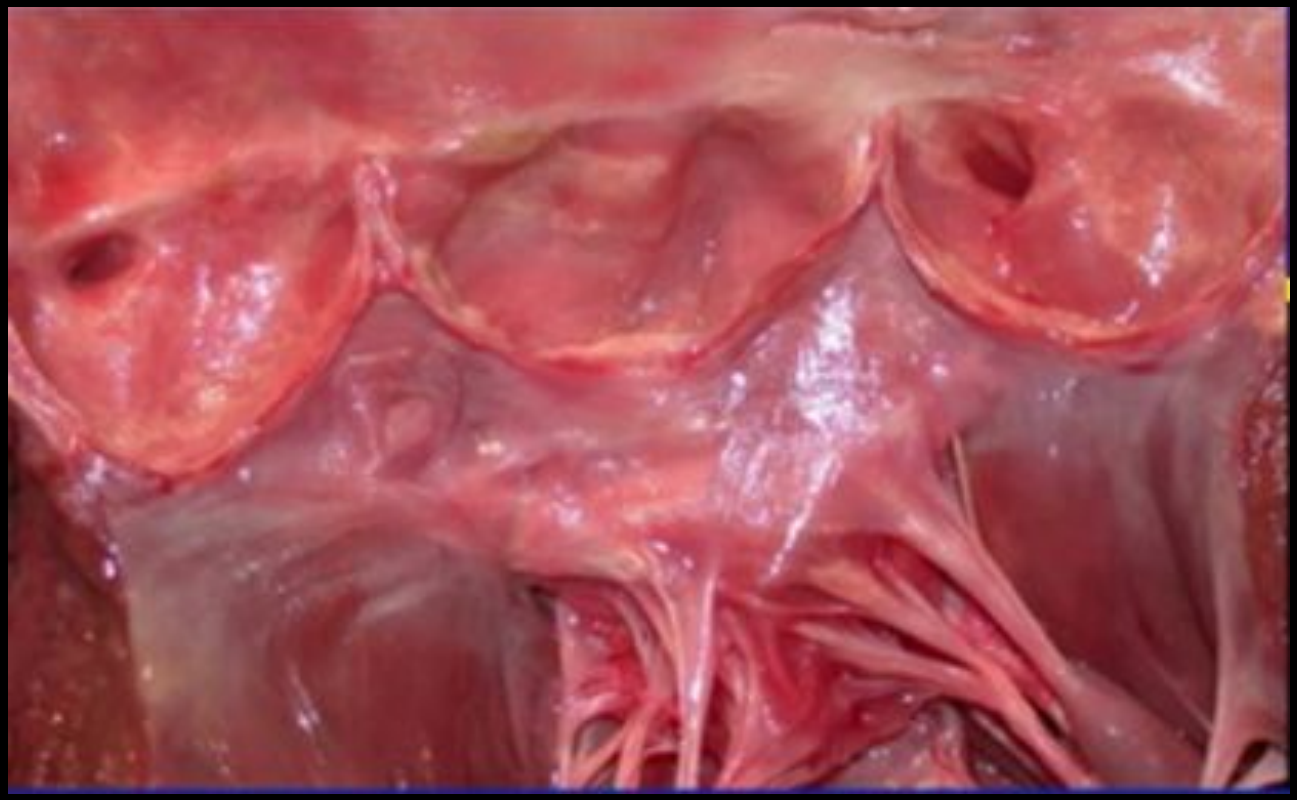




клапаны

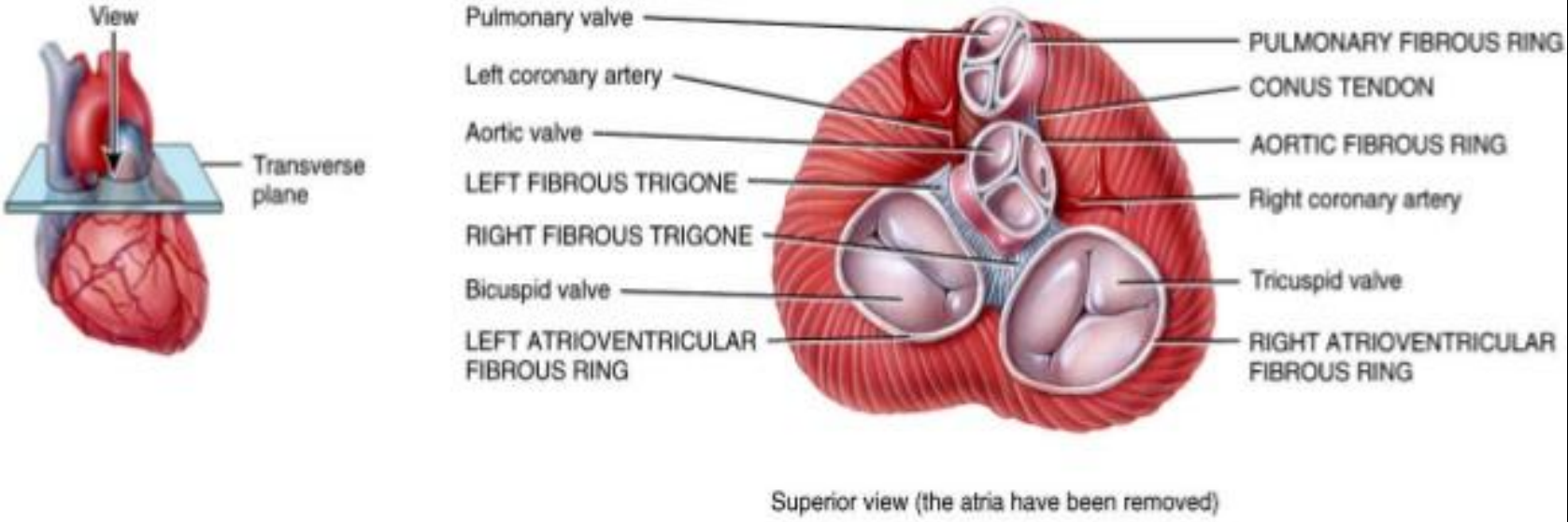


клапаны



Строение клапанов

Fibrous Skeleton of Heart



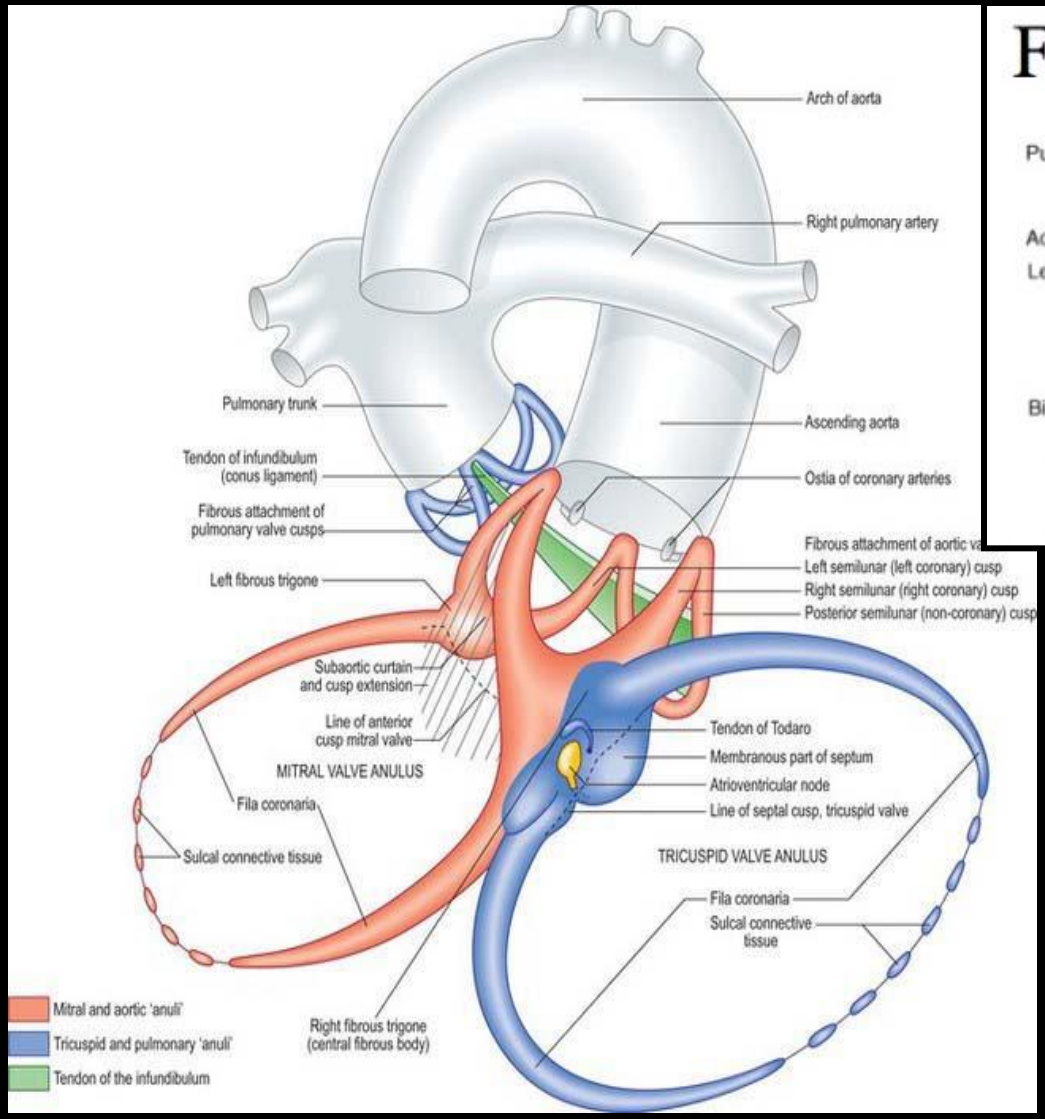
Superior view (the atria have been removed)

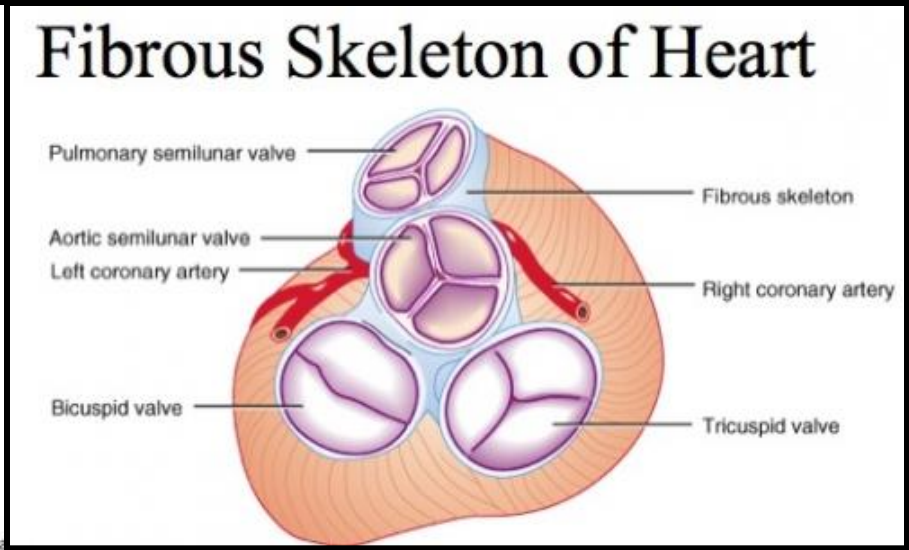
Dense CT rings surround heart **valves**
- fuse together & merge with interventricular septum

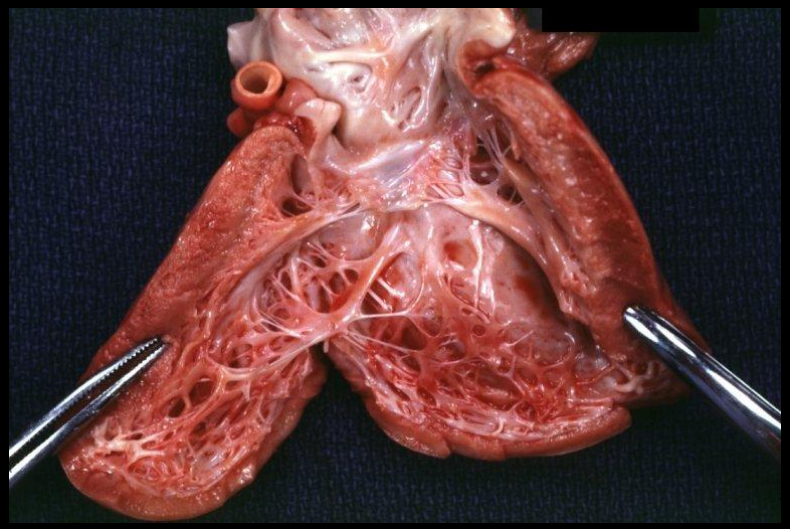
Functions of fibrous skeleton:

- valve support structure
- Prevents overstretching of the valves
- insertion point for cardiac muscle bundles
- electrical insulator b/w atria & ventricles

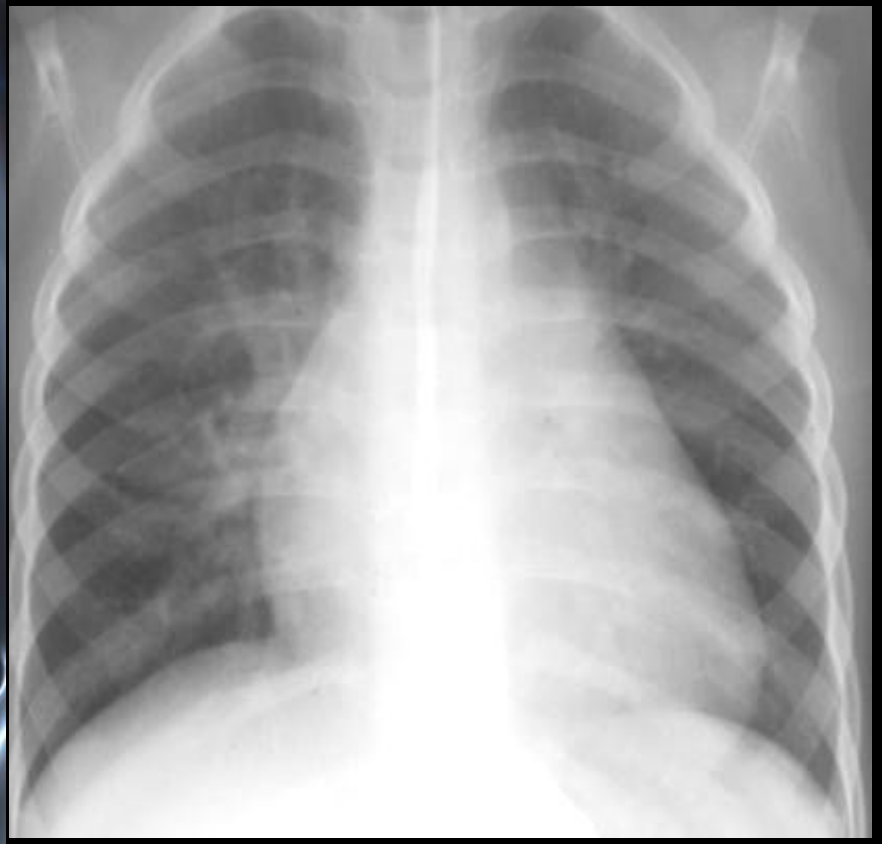
Фиброзный скелет сердца

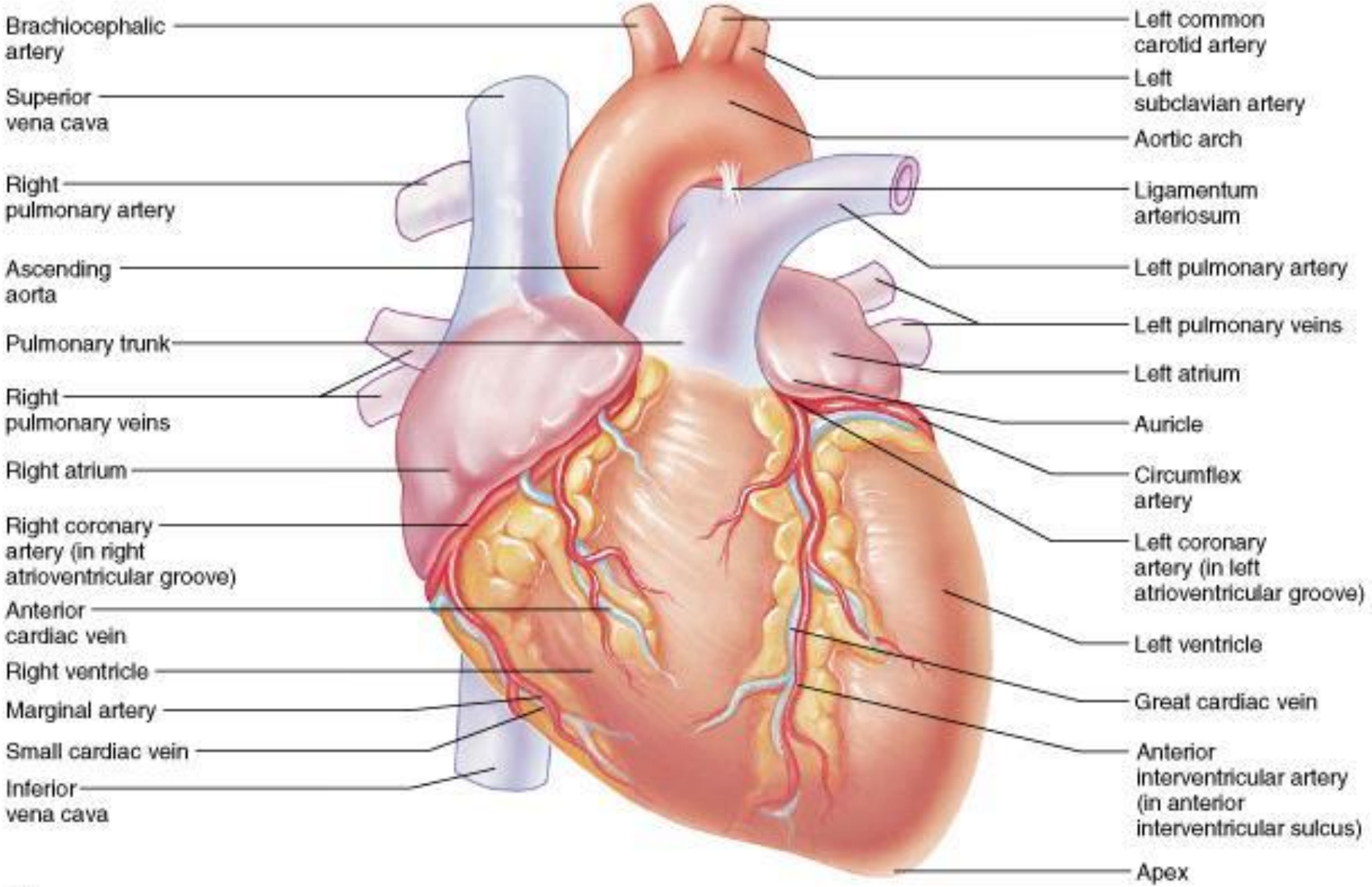






Проекция камер сердца на рентгенограмме





(b)