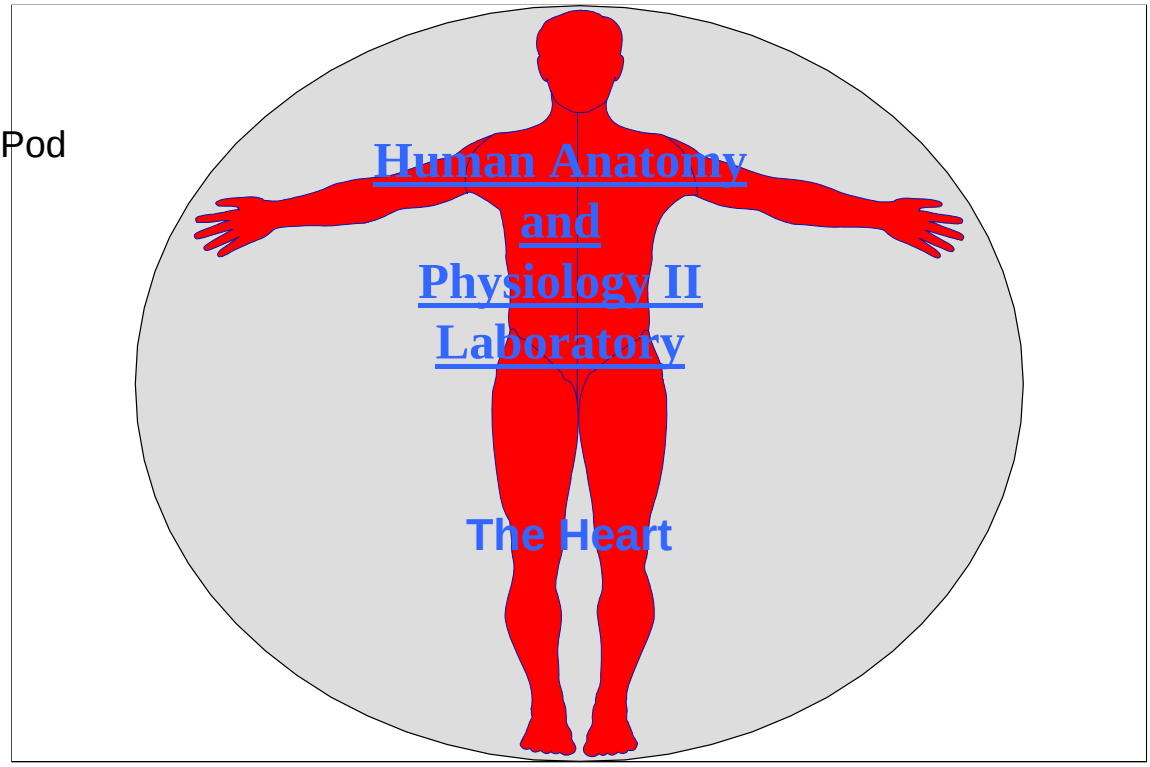
Mpeg 4 for iPod

mp3

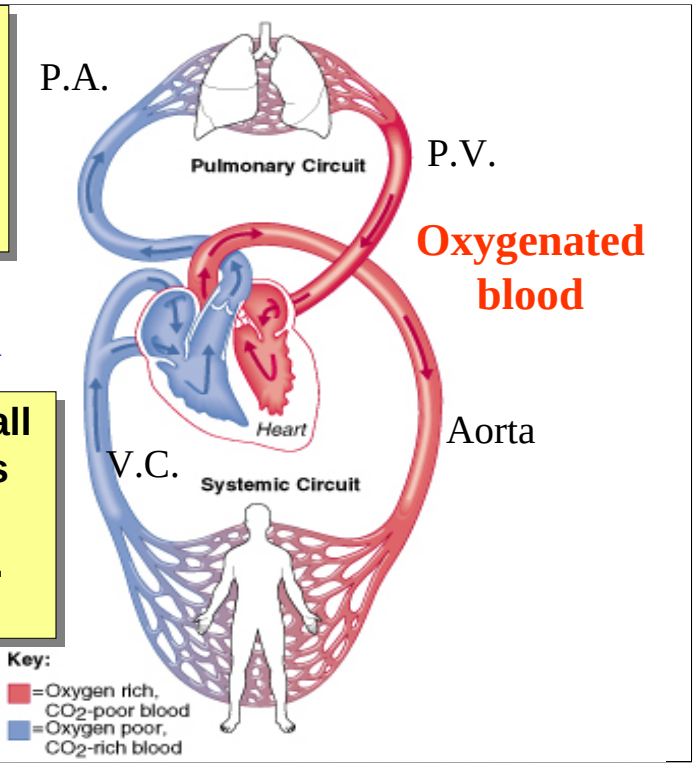


This lab involves the exercise entitled: "*Anatomy of the Heart*". Complete the Review Sheet for the exercise and take the related quiz on the heart. There is also a video clip on the sheep heart dissection.

Click on the sound icon for the audio file (mp3 format) for each slide.

There is also a link to a dowloadable mp4 video which can be played on an iPod.

Pulmonary Division: lung capillaries where blood is oxygenated from respiration.

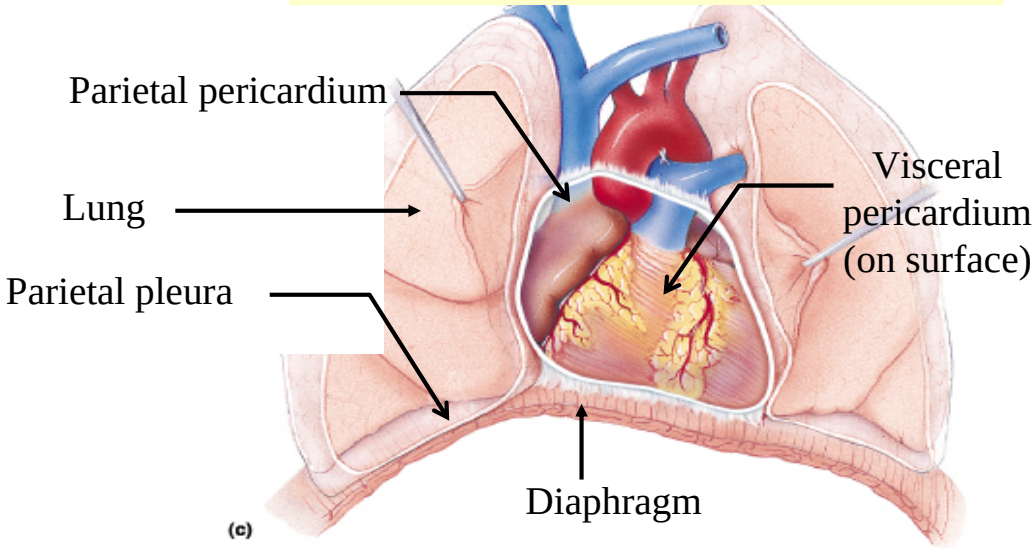


Systemic Division: all tissues and organs which receive oxygenated blood.

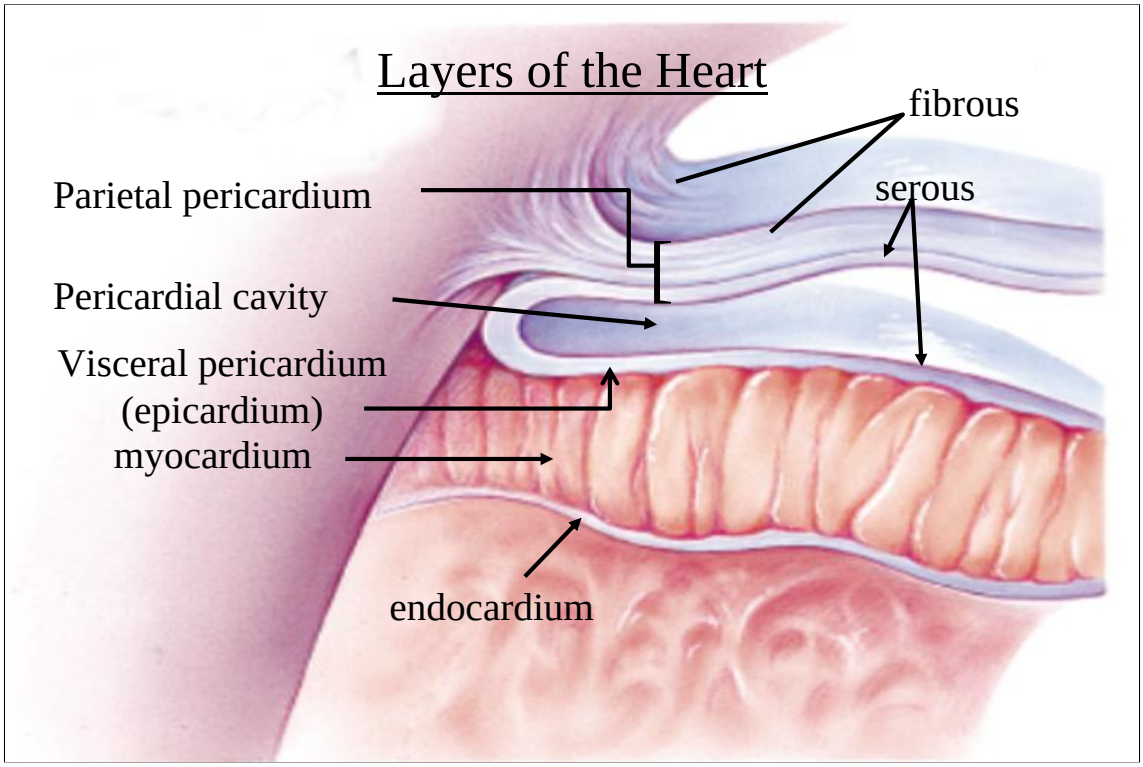
There are two divisions in the circulatory system: The **Pulmonary Division** - Lung capillaries serving structures where oxygen is obtained and carbon dioxide removed via respiration and not via the blood supply. The **Systemic Division**- All other organs and tissues where oxygen is provided by oxygenated blood in incoming arteries and carbon dioxide is carried away by outgoing veins. The heart is really two pumps: the right heart pumps de-oxygenated blood received from the systemic division to the lungs to become oxygenated, and the left heart pumps this oxygenated blood to the systemic division to deliver oxygen to the tissues and pick up carbon dioxide.

Heart, Anterior Exposure

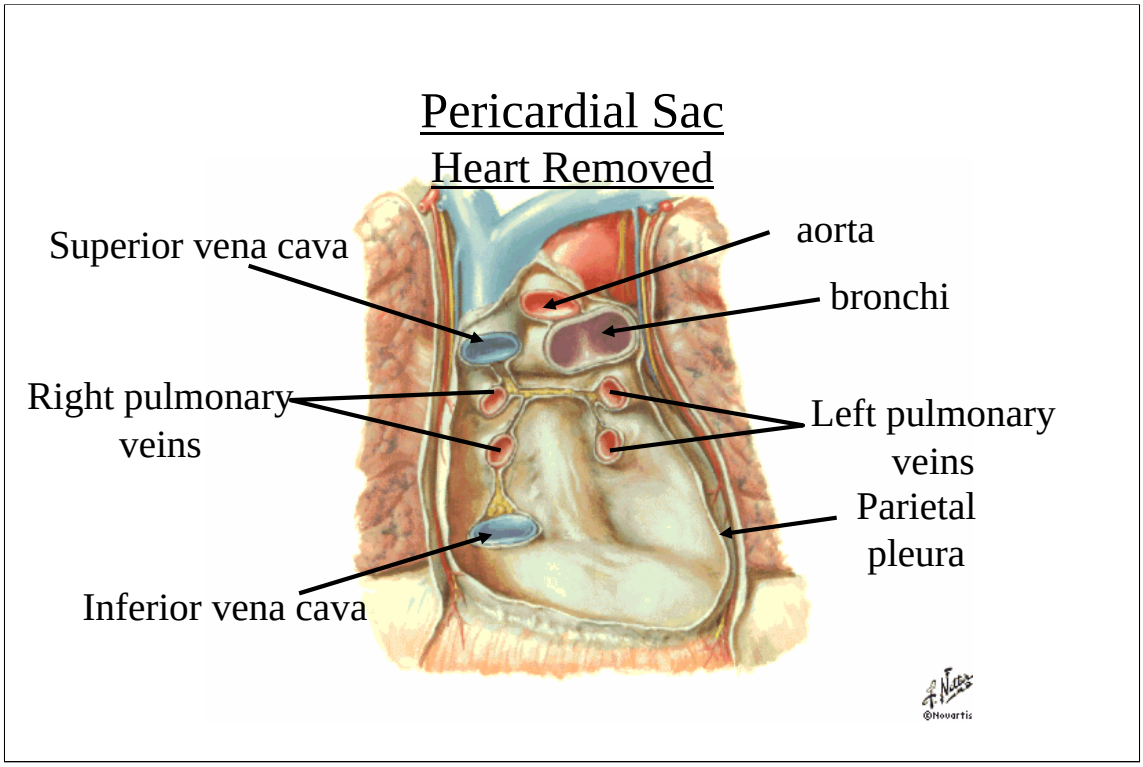
Mediastinum = cavity within the thorax containing heart and major vessels.



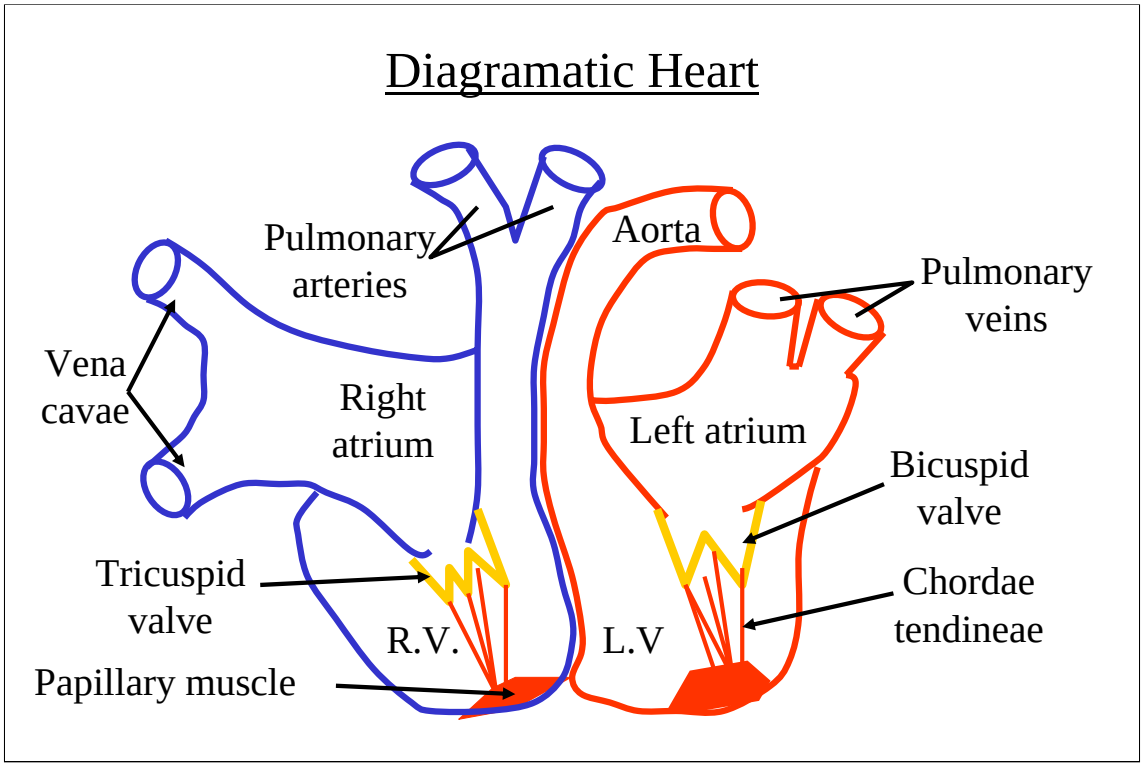
The heart is located in the **mediastinum**, a section of the thoracic cavity. It is surrounded by a double-layered membrane, the pericardium. The outer layer of the pericardium, the **parietal** layer, attaches to surrounding structures including the large vessels and the diaphragm. The inner layer, the **visceral** pericardium (see next slide) attaches to the surface of the heart. Between these layers is serous fluid, which lubricates the membranes and prevents tearing and abrasion when the heart beats and moves due to body movement.



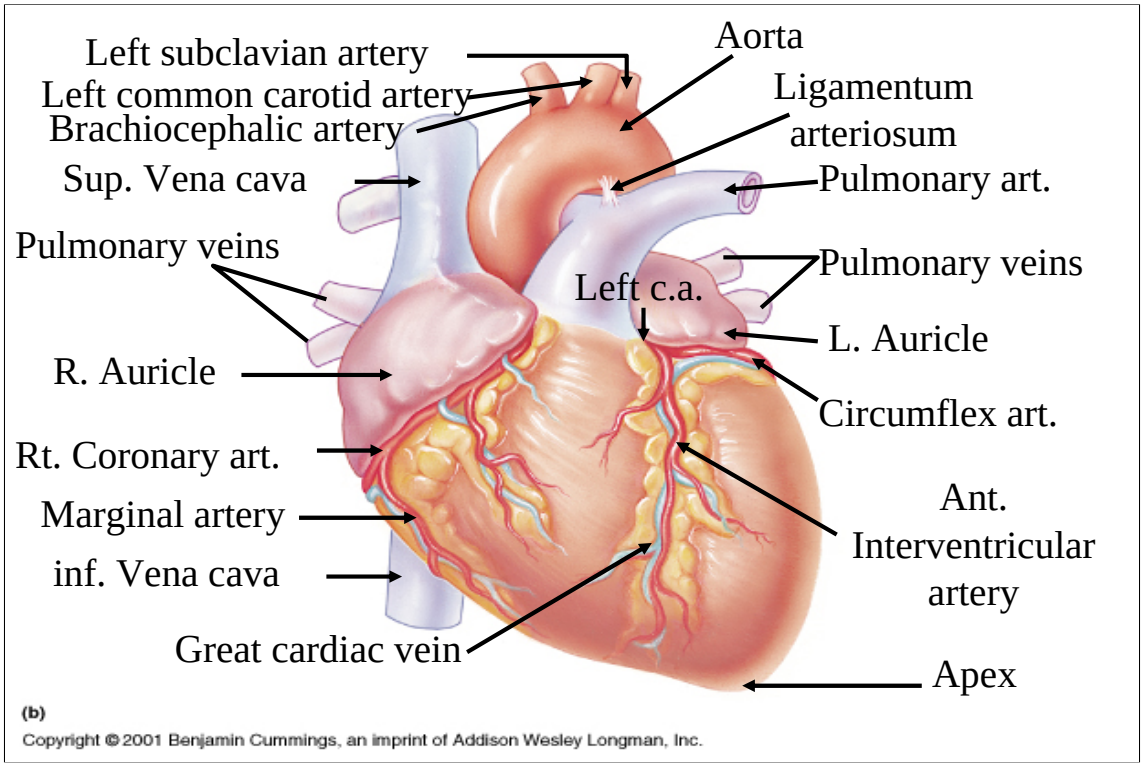
The pericardium is a double layered membrane with serous membranes lying next to one another. The serous fluid produced serves to lubricate the heart against tearing and abrasion. The endocardium is a smooth endothelial lining throughout the entire cardiovascular system.



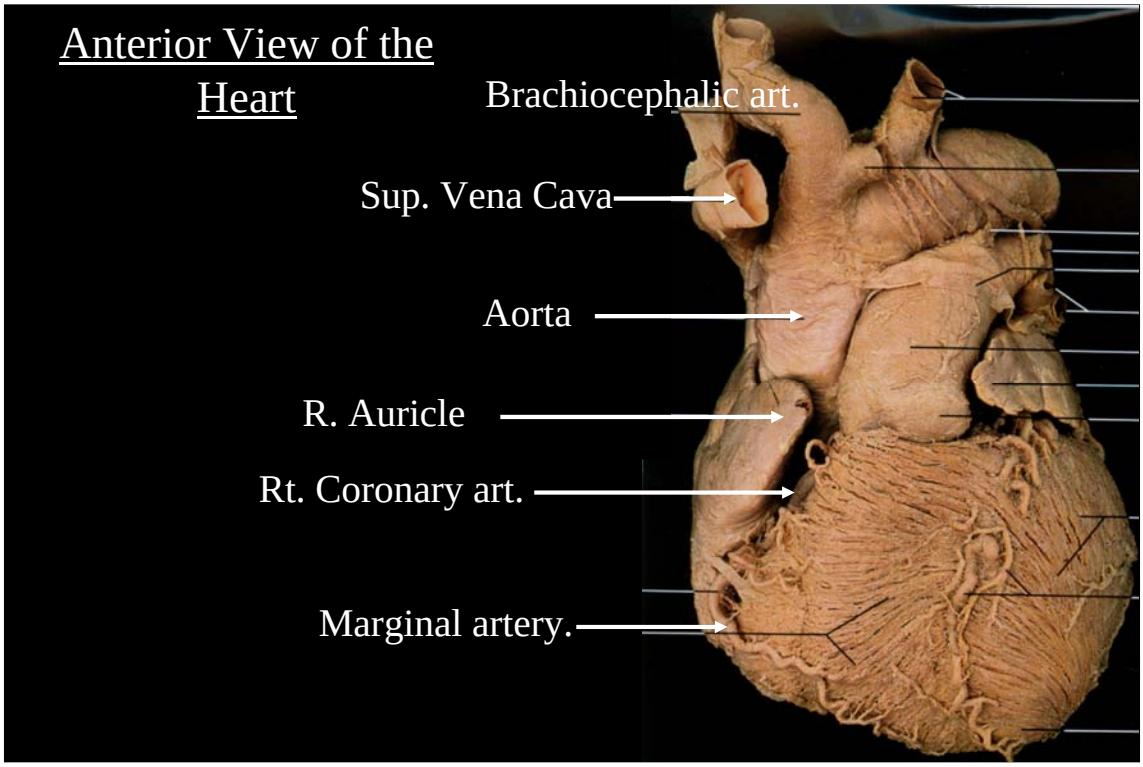
With the heart removed and the anterior pericardium removed, the student can see openings into the large veins and arteries as they penetrate the posterior portion of the parietal pericardium.



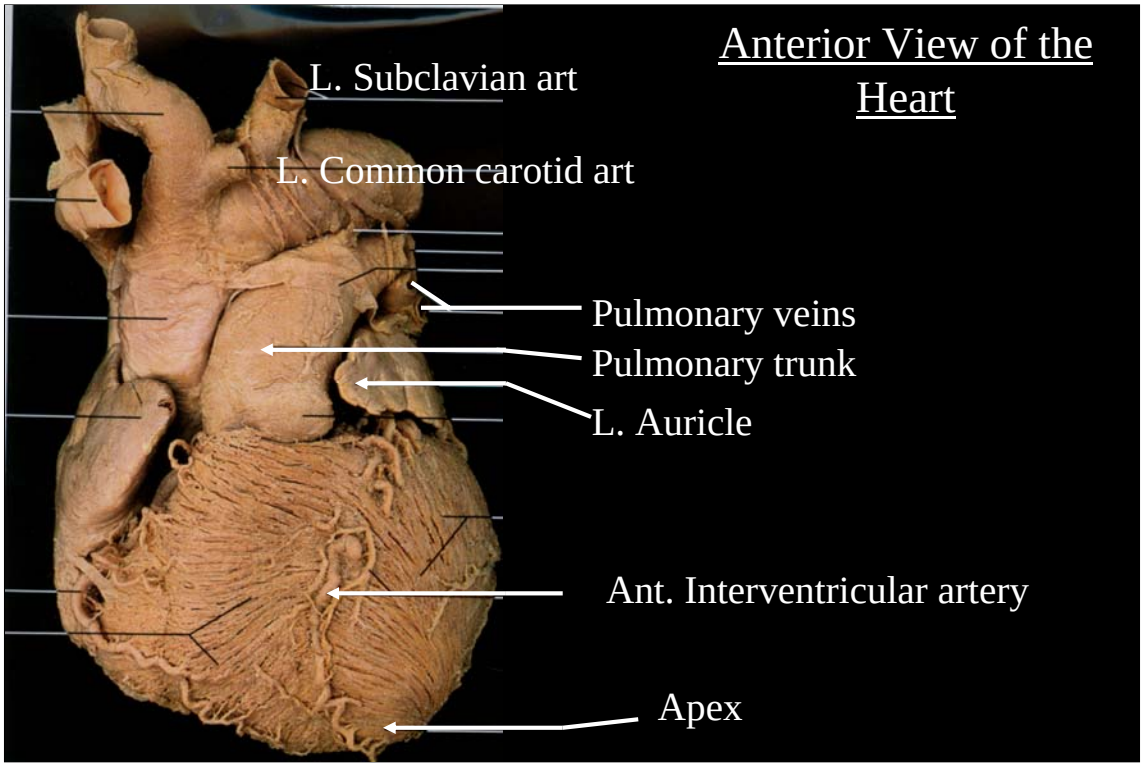
The atrioventricular valves are found at the openings between each atrium and ventricle. They are held in place by chordae tendineae, which keep them from pushing inside-out. The chordae tendineae attach to muscular extensions from the ventricular wall called papillary muscles.



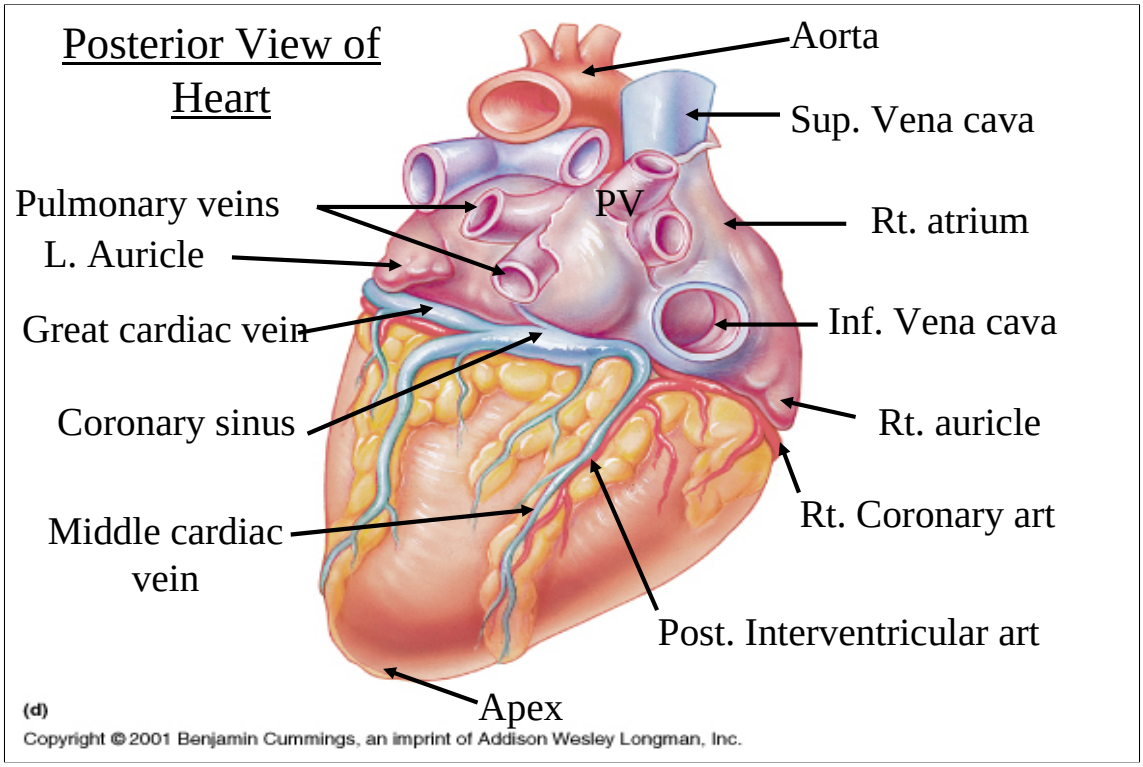
Here is the anterior view of the heart showing the major landmarks and vasculature.



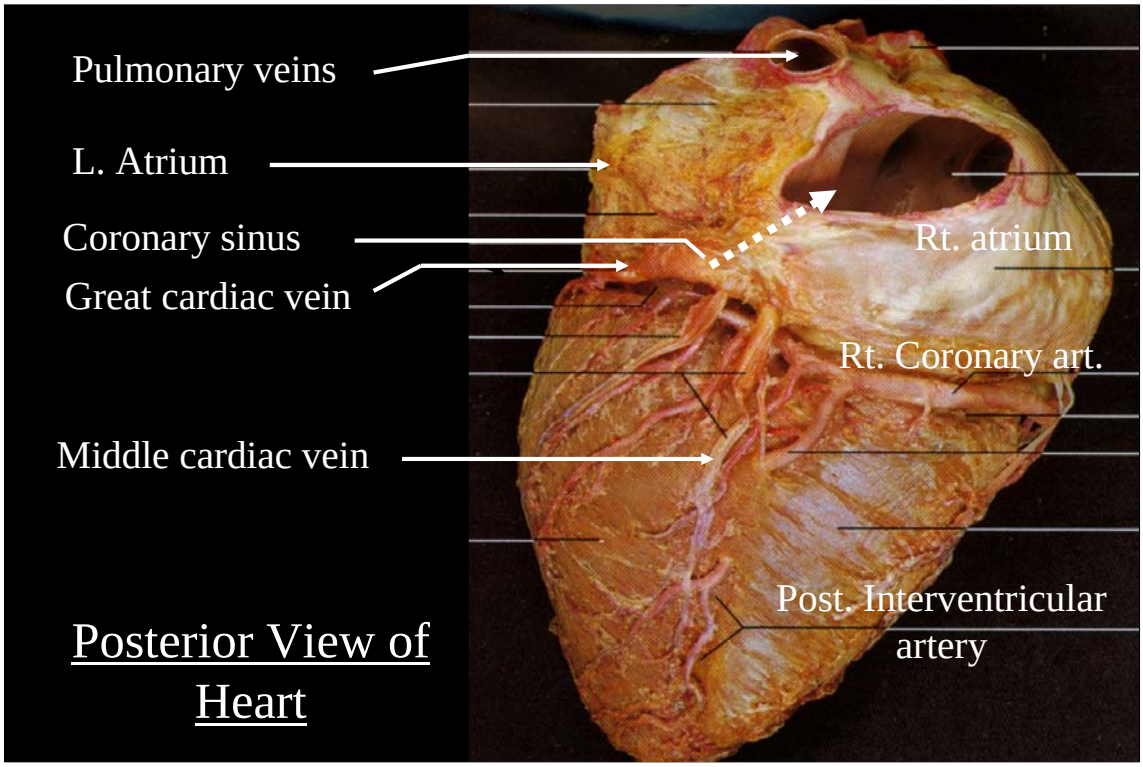
The visceral pericardium (epicardium) has been removed exposing the surface of the heart muscle (myocardium)



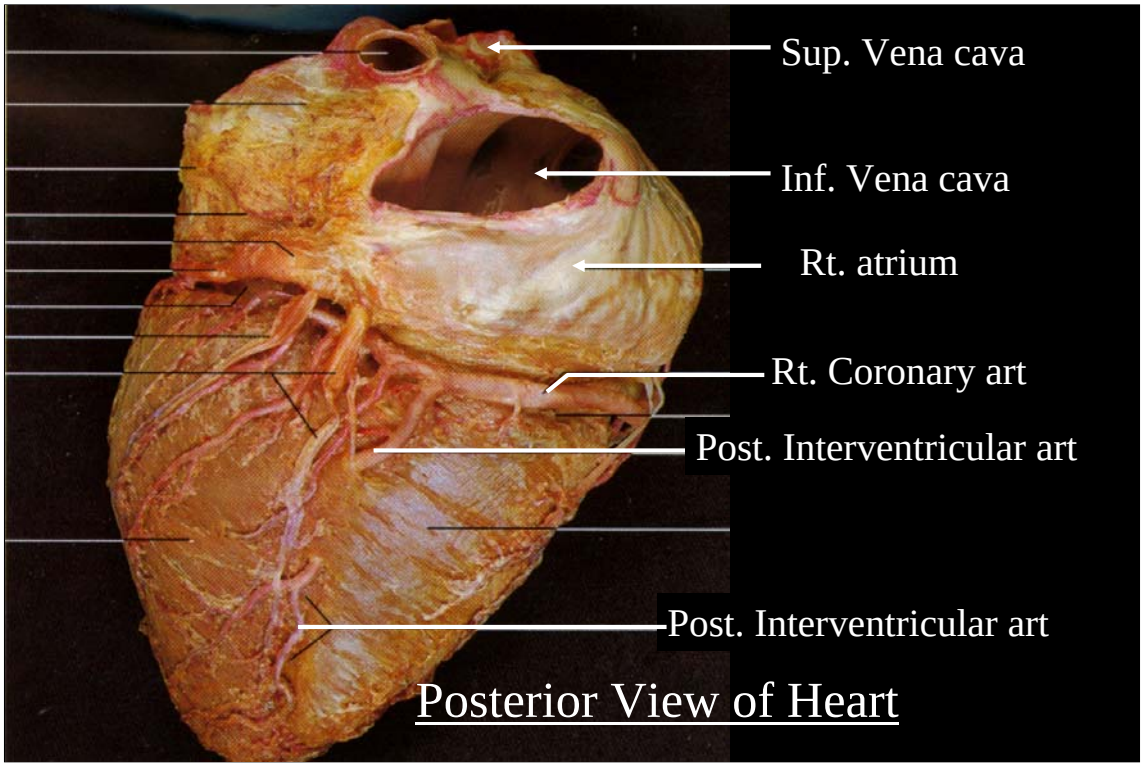
Removal of the visceral pericardium and its fatty tissue exposes the coronary arteries and veins, normally embedded in the pericardial tissue.



Posterior view of the heart showing major landmarks and vasculature.



Coronary and other veins are distinguished from their corresponding arteries by being flatter and thinner. Arteries and veins run alongside one another in the grooves (sulci or sulcuses) of the heart.



View of the heart's venous system.

Write the steps of the blood flow through the heart beginning with deoxygenated blood entering from the systemic division, and ending with oxygenated blood leaving the heart to the systemic division.

Include all vessels, valves, and chambers the blood passes through.

There is no audio file for this slide.

1) Deoxygenated blood from systemic division

2) Superior and inferior vena cavae

3) Right atrium

4) Tricuspid valve

5) Right ventricle

6) Pulmonary valve

7) Pulmonary arteries

8) Lungs

9) Pulmonary veins

10) Left atrium

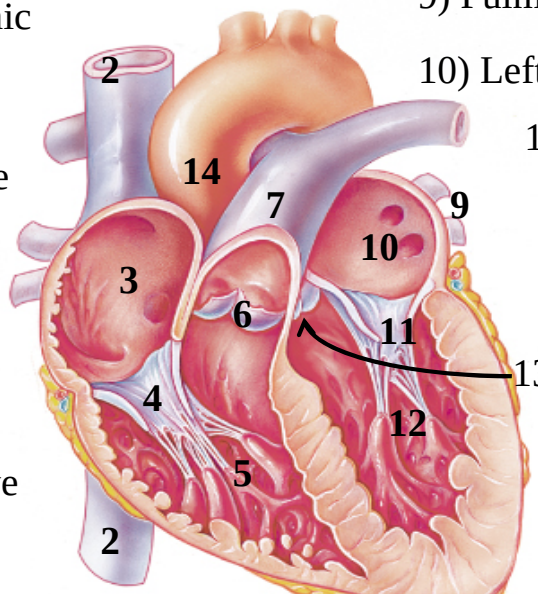
11) Bicuspid valve

12) Left ventricle

13) Aortic valve

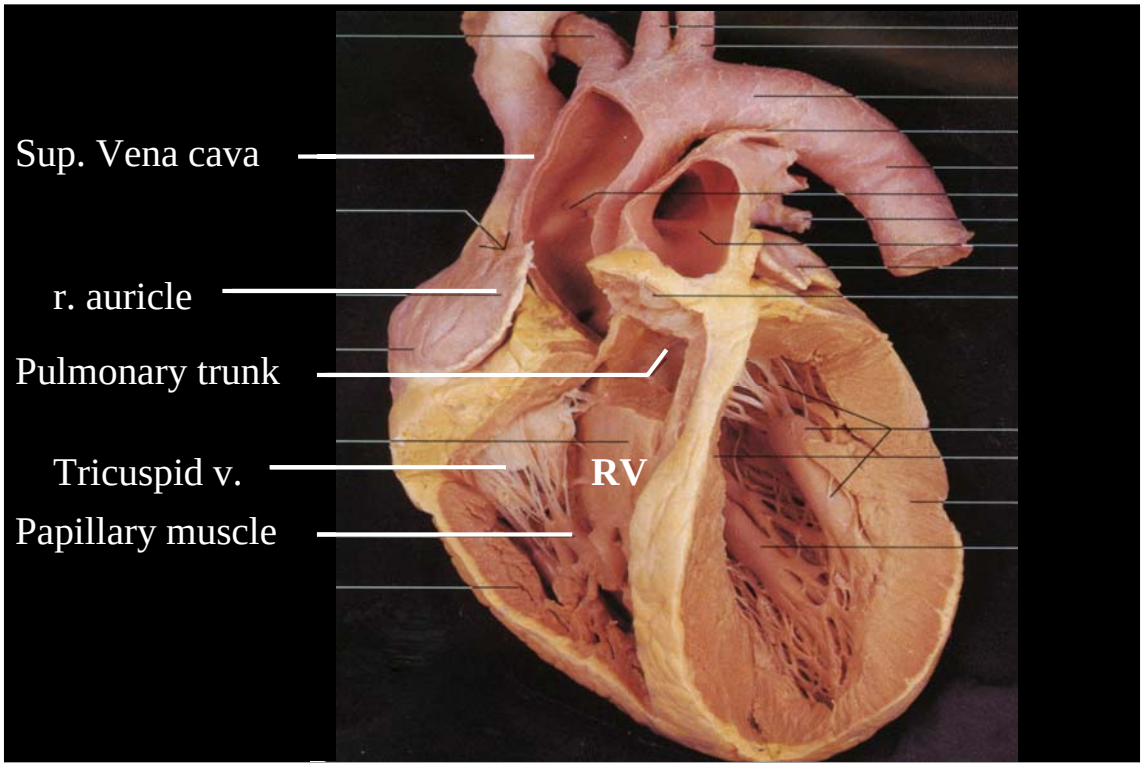
14) Aorta

15) Oxygenated blood to systemic division

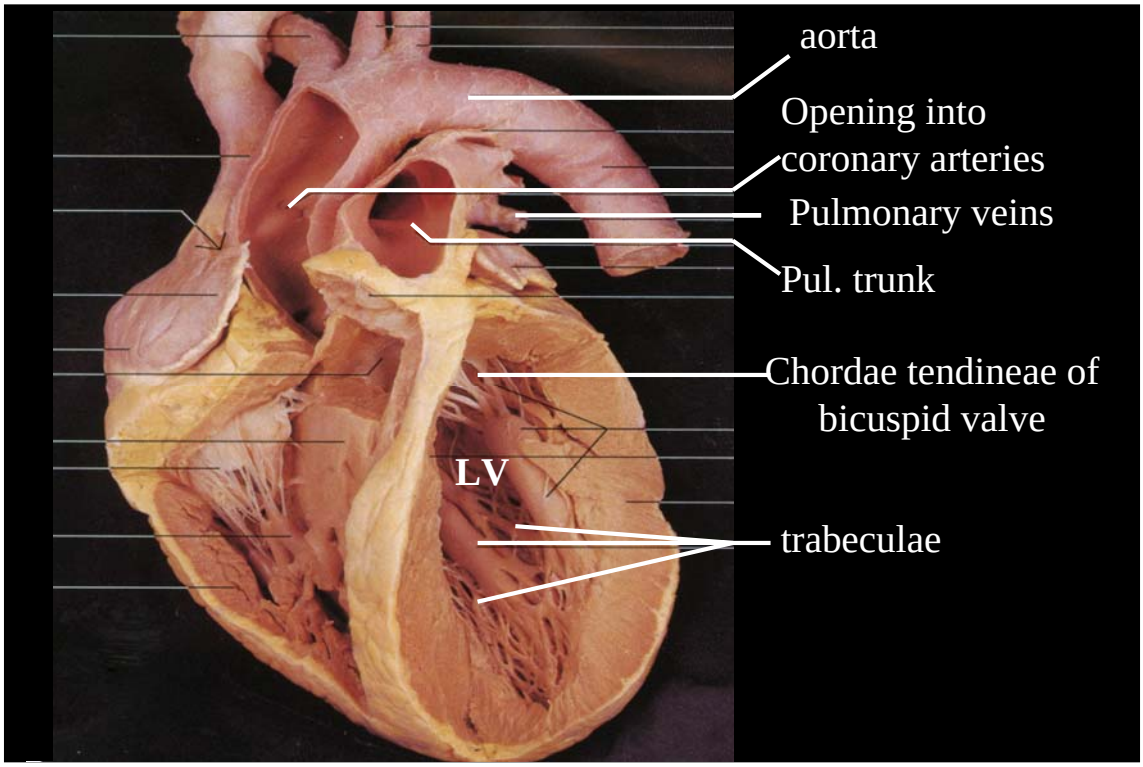


(e)

These structures depict the blood flow through the heart in the order in which it occurs, beginning with venous return from the systemic division.

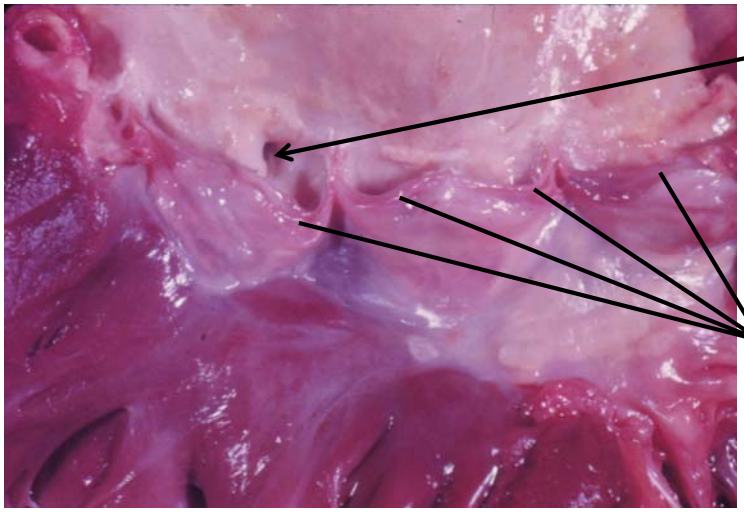


A coronal section showing the left and right ventricle.



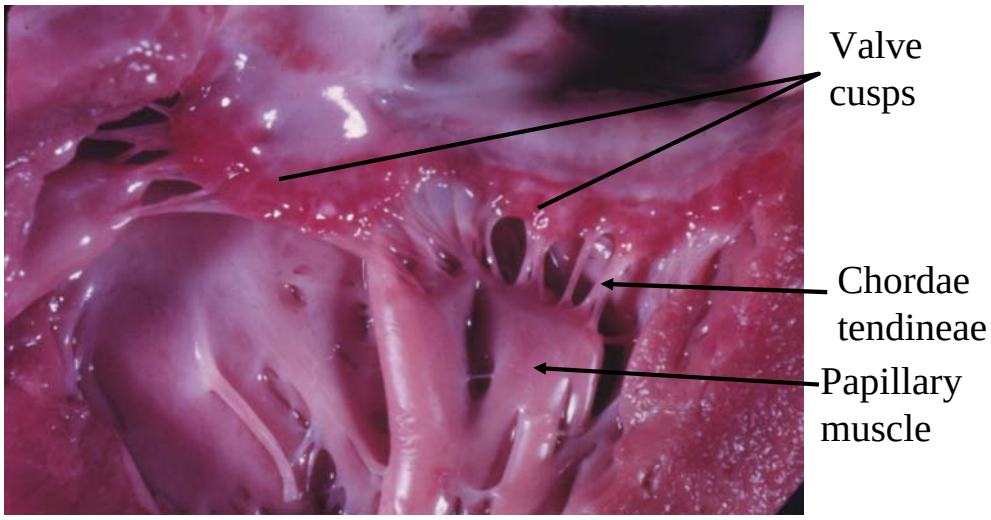
Note the greater thickness of the left ventricular myocardium.

The Aortic Semilunar Valve



An interior view of the aorta showing the cusps of the aortic semilunar valve.

AV Valve



A view of the cusps of one of the atrioventricular valves and its attachments.

There is no audio file for this slide.

Lab Protocol for The Heart

1) Complete the Review Sheet for the Heart.

2) Take the related quiz for the Heart

3) Watch the video clip on the sheep heart dissection.

4) Study ADAM interactive anatomy:

a. Views relevant to the heart: Dissectible anatomy, Male, Anterior view, Window centered on chest, Layer indicator 173

b. Dissectible anatomy, Male, Anterior view, Window centered on chest, Layer indicator 174

c. Dissectible anatomy, Male, Lateral view, Window centered on chest, Layer indicator 219

d. Dissectible anatomy, Male, Lateral view, Window centered on chest, Layer indicator 220

e. 3D Anatomy, 3D Heart, Anterior Cusp of Mitral Valve

f. 3D Anatomy, 3D Heart, Anterior Cusp of Tricuspid Valve