

Will You Be My Valentine?

Cardiac Anatomy Lab

Clench your fist. Your heart, which is about the size of your fist, is perfectly structured to pump your blood. To understand how it works, you must understand its structure. In this lab, we will investigate the internal and external anatomy of the heart. We will be using preserved sheep hearts for this lab. Sheep hearts are very similar to human hearts.

What you will need:

- Dissecting tray
- Preserved sheep heart
- Glass stirring rod

External Anatomy of the Heart

Take some time to observe the heart. See if you can determine its anatomical position. Place it in the tray so that it is in the same position as you diagram from last class.

1. What characteristic of the heart did you use to determine up, down, left, right, back and front?

2. Which end of the heart has most of the vessels?

3. How many vessels are there?

4. In the space below, make a rough sketch of the outside of the sheep heart. Label the top (superior) end, bottom (inferior) end as well as the anatomical left and right sides. Also, be sure to indicate where the four chambers are located. Use your diagram from last class as a reference.

Internal Anatomy of the Heart

Inside the heart are four spaces or chambers. Each chamber in the top half of the heart is called an "atrium". These receive blood from parts of the body. They used to be called "auricles" because they look like little ears. They are smaller and thinner walled than the lower chambers.

Locate the atria on your sheep heart. Using your glass stirring rod, find the vessels that attach to the atria

1. What types of vessels are these?

The two chambers below the atria pump blood out of the heart. They are very thick-walled with muscles. Using your glass stirring rod, figure out which thick-walled vessels service the thick-walled ventricles.

2. What type of blood vessels are these?

3. Why is the wall of the left ventricle so much thicker (more muscular) than the right ventricle?

Analysis and conclusion questions:

1. What are the vessels that bring blood to the heart called?

2. What are some characteristics of those vessels?

3. What are the vessels that bring blood away from the heart called?

4. What are some other characteristics of those vessels?

5. What is the whitish-yellowish stuff all over the outside of the heart?

6. How many chambers are in the heart?

7. What are the top chambers called?

8. What are the two bottom chambers called?

9. Is blood coming from the body tissues into the right atrium oxygenated or deoxygenated?
10. Is blood coming from the lungs into the left atrium oxygenated or deoxygenated? (What happens to blood in the lungs?)
11. If the pulmonary artery brings blood from the right ventricle to the lungs, what does the pulmonary vein do?
12. Where does blood from the right atrium go to next? From the left atrium?

Thinking further

1. Why is there so much fat on the outside of the sheep heart?
2. If you could look at someone's or any other organism's heart, who's/which organism's heart would you check out and, most importantly, **why**?