
Heart Dissection & The Circulatory System

Introduction

The circulatory system transports food, oxygen and other gases throughout the body. The circulatory system includes the heart, blood, veins arteries and capillaries. The pump of this system is the heart. Understanding the structure of the heart is critical to understanding the overall function of the circulatory system. The purpose of this lab is to explore the anatomy and physiology of the heart in order to gain a better understanding of the overall function of the circulatory system. You will be examining a model human heart as well as an actual sheep heart.

Hypothesis

How does the structure of a sheep heart compare to that of a human heart?

How are arteries and veins different?

How do the walls of the atria differ from the walls of the ventricles?

Materials: heart, dissecting pan, probe, scissors, aprons, goggles, paper towel, and latex gloves.

Procedure

I. PRELAB- Read and color the attached sheet. Attach all color pate sheets to this heart dissection lab.

Follow the instructions given below. Answer questions in the spaces provided.

1. Explore the external anatomy of the sheep heart. Locate the **atria, ventricles, aorta, valves, venae cavae, and pulmonary vessels**. In the space below, make a drawing of the external anatomy of the heart. Label each of the structures indicated.

2. Insert a probe to explore the point of origin of blood vessels, which lead into and leave the chambers of the heart. Note the valves in the blood vessels and determine the direction of blood flow. In the space below, describe the appearance of the valves in the blood vessels.
3. Dissect the chambers of the heart. Begin by finding a diagonal deposit of fat along the lower two-thirds of the heart. Use this as a guideline that marks the wall between the two ventricles. Make an incision into each of the two ventricles. (Note: this may already be done for you.) Spread the heart open and use a probe to locate the bicuspid and tricuspid valves, which separate the ventricles from the atria.

Describe the location of the bicuspid valve.

Describe the location of the tricuspid valve.

4. Compare the thickness of the atria and ventricle walls. Which is thicker? Why? (Hint- think where blood goes from each of these chambers.)
5. Look for coronary arteries from the aorta and trace their paths as they spread over the heart. What is the function of the coronary arteries? (Use reference book.)

Discussion Questions

1. Explain what happens in a heart attack.

2. What is arteriosclerosis? Why might this be of concern for space travel?

3. What specifically does blood pressure measure? Does this give an indication of physical fitness?

4. Explain how blood is important in the digestive system.

5. Explain how blood is important in the respiratory system.

6. What is a heart murmur?

6. Explain how the structure of the heart relates to its function. What are the functions of the atria? What are the functions of the ventricles? Why is the human heart often referred to as a "double pump?"

7. In the space below, write a conclusion for this lab.