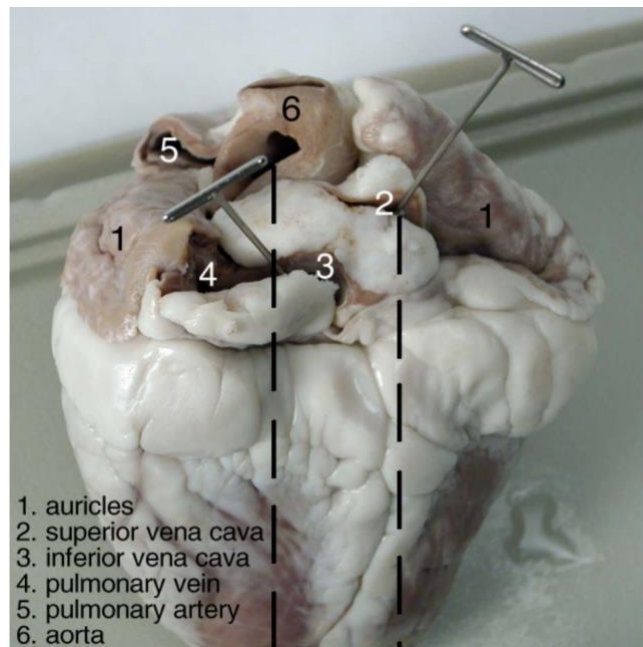
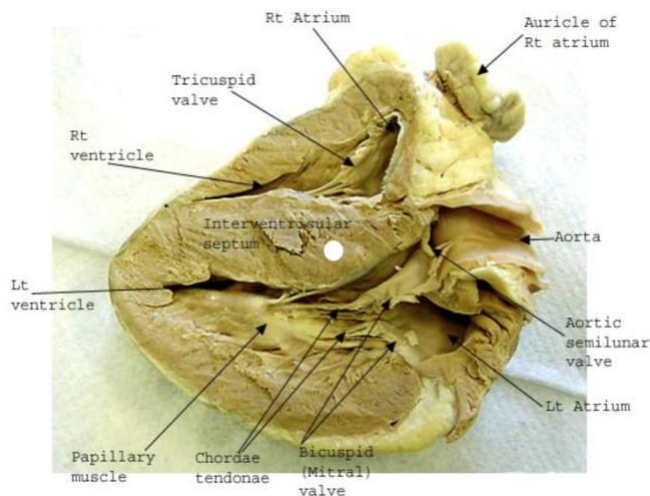


Objectives

1. Identify heart structures and functions while performing heart dissection.
2. Describe blood pressure procedures.
3. Explain the importance of using leg cuffs after surgery.

Activity 1: Sheep Heart Dissection

- A. Place the sheep heart on a dissecting tray with its anterior surface up and the apex pointing towards you. The left atrium and left ventricle will be on your **RIGHT** side. (Imagine this is the heart of a person who is standing facing you).
- B. Identify the **interventricular sulcus**.
- C. Before making any cuts, flip the heart over and locate the **pulmonary artery, the aorta, the vena cava, and the pulmonary veins** which are near the base of the heart.
- D. Once the blood vessels (or their remainders) are identified, perform a coronal cut starting from the apex. The coronal cut will split the heart into anterior and posterior.
- E. After the heart is separated into two halves, identify the **right atrium, tricuspid valves, right ventricle, left atrium, mitral/bicuspid valves, and left ventricle**.
- F. Try to trace blood flow starting from the **right atrium**.



- a) Which side of the heart should be called the “low O₂” side? Why?
- b) Which ventricle has more myocardium? Why?

Activity 2: Taking Blood Pressure

- A. Deflate the air bladder of the cuff and place it around the upper arm so it fits snugly. If you're right-handed, you should hold the bulb/pump in your left hand to inflate the cuff. Hold it in the palm so your fingers can easily reach the valve at the top to open and close the outlet to the air bladder.
- B. Put the head of the stethoscope just under the edge of the cuff, a little above the crease of the person's elbow.
- C. Inflate the cuff with brisk squeezes of the bulb. Watch the pressure gauge as you do it, you should go to around 150 mmHg or until the pulse is no longer heard. At this point blood flow in the underlying blood vessel is cut off by pressure in the cuff.
- D. At around 150, slightly open the valve on the air pump (held in your left hand). This part takes practice, it's important that you don't let the air out too suddenly. 5. Now, pay attention to what you hear through the stethoscope as the needle on the pressure gauge falls. You will be listening for a slight "blrrp" or something that sounds like a "prpshh". The first time you hear this sound; note the reading on the gauge. This value is the **systolic blood pressure**.
- E. The sounds should continue and become louder in intensity. Note the reading when you hear the sound for the last time. This is the **diastolic blood pressure**.

Blood Pressure Activity

Blood Pressure Activity video: <https://www.youtube.com/watch?v=Gmic13mvsgo>

Arterial Blood Pressure

Measurement:

- A. With the subject seated, apply the cuff of the sphygmomanometer around the upper arm of the subject so that the hosing for the cuff is positioned over the cubital fossa.
- B. Apply the bell of the stethoscope to the skin over the brachial artery in the cubital fossa.
- C. Close the screw valve on the hand pump and pump the cuff to a pressure of ~160 mmHg. **Do not exceed 180 mmHg.**
- D. Open the screw valve on the pump to slowly release the pressure, listening to the brachial artery through the stethoscope and noting at what pressure the sounds of Korotkoff (the sounds generated by blood turbulence in a partially occluded artery) begin (systolic pressure) and end (diastolic pressure). Record these values.
- E. Calculate pulse pressure for subject as follows:
 - o **Pulse Pressure = Systolic BP – Diastolic BP**
 - a) How do venous pressures compare to arterial pressures? Why?
 - b) Calculate pulse pressure after doing the following:

Before Jogging	After Jogging
	After 30 seconds
	After 1 minute
	After 1 minute and 30 seconds

Leg Cuffs Activity

This activity is going to have you use a leg calf massager to simulate what patients often wear after surgeries that leave them bed ridden.

- A. Make sure both leg cuffs are connected to the controller. Both **must** be connected for it to function properly;
- B. Wrap each leg cuff around each leg, being mindful of which cuff corresponds to each leg. Make sure the Velcro faces away from your leg, this will help avoid confusion as to how to wrap each leg;
- C. Once each leg is wrapped, hold the power button for 3 seconds to turn it on;
- D. You can adjust the intensity of the massage by pressing the button that has 3 lights above it, **green** = low, **yellow** = medium, **red** = high. You can also adjust which mode you would like to experience, with **M** = multi massage mode, and **P** = single massage mode;
- E. Have each participant use these cuffs for at least 3 minutes and discuss how each participant feels after using it.

As mentioned previously, this is often used in a hospital setting after surgeries.

- a) Why might this be helpful for patients that are to remain in bed for long periods of time?
- b) What do you think would happen if patients did not have these cuffs?