

Lab #3: I. The Heart (fetal and adult)

After this lab you should be able to:

- ✓ Trace the flow of blood through the human heart
- ✓ Identify all the chambers, major vessels, and valves of a calf heart
- ✓ Identify the differences and similarities between a fetal heart and an adult heart

❖ Key Terms

- ♥ Aorta
- ♥ Right and left ventricles
- ♥ Right and left atria
- ♥ Superior and inferior vena cava
- ♥ Pulmonary trunk
- ♥ Pulmonary veins and arteries
- ♥ Semilunar valves
- ♥ Right and left atrioventricular valves
- ♥ Cardiac veins and coronary arteries
- ♥ Arterial duct
- ♥ Umbilical vein/umbilical arteries/placenta

14.1 & 14.2: Introduction

pp. 173 -175: **The adult heart.** Read the introduction and do all questions.

pp. 176 – 178. **The Fetal Heart.** Read, follow all directions and answer all questions. Fill in Table 14.3.

Keep in mind the change in circulation between the fetal heart to the adult heart.

Dissections:

- ♥ Fetal Pig Heart: pp. 176-178
- ♥ Calf Heart: pp. 190-193. Follow all instructions, read the directions and fill in the answers.

Does oxygenated blood and deoxygenated blood ever mix with in the fetal heart?

- ♥ Know the difference between the fetal heart and circulatory pattern and that of the adult. Be able to trace the movement of blood through the fetal heart (Figure 14.2 and top of pg. 177)

II. Heartbeat and Blood Pressure

After doing this lab you should be able to:

1. Determine your own pulse rate and blood pressure.
2. State the “normal and accepted” pulse rate and blood pressure for a young adult at rest.
3. State what the 2 numbers in a blood pressure reading represent.
4. Explain how exercise affects pulse rate and blood pressure in a young adult.

Key Terms:

- ♥ Systole (systolic)
- ♥ Diastole (diastolic)

15.3 & 15.4:

pp. 195-196. Heartbeat: Read, follow all procedures and answer the questions. You may use the hallway or staircase for exercise.

pp. 196-197. Read about blood pressure in your manual, follow the written directions below and answer questions 6-14 on page 198.

Procedure for determining blood pressure:

1. Strap the cuff around your upper arm and clip the gauge dial in place on the side of the cuff.
2. Slide the stethoscope under the cuff and position it so you can hear a pulse.
3. Pump the rubber bulb until you no longer hear a pulse (around 160).
4. Release the pressure slowly and gently and listen. When you hear pulse again, take a reading and this will be the systolic pressure.
5. Continue releasing the pressure while listening for the pulse to disappear again. Take this reading and this will be the diastolic pressure.

III. Electrocardiogram: AKA the ECG. (Or EKG)

After this portion of the lab you should be able to:

- ♥ Trace the path of electrical signals that causes the contractions of the heart.
- ♥ Describe what causes the "P", "QRS", and "T" waves in an electrocardiogram.
- ♥ Draw a "normal" ECG and label all of its components.

Key Terms:

- ♥ Electrocardiogram
- ♥ P wave, QRS wave and T wave
- ♥ Depolarization and repolarization
- ♥ SA (pacemaker) and AV node

15.2 Conduction System of the Heart

- ♥ Read bottom of pg. 193 about the SA and AV nodes.
- ♥ Observe the demonstration on the ECG.
- ♥ Answer questions 1 & 2 at bottom of page 194.
- ♥ Read C49-C51 and answer questions.

Reminder: Next week (Lab #4) there will be a quiz on Labs 1-3.

We will still have lab after the quiz, so make sure you have your gloves, goggles and dissection kits with you!!!!