

## Lab 3: The Heart

### I. Dissections: Fetal Pig Heart and Calf Heart

#### GOALS:

You should be able to.....

- ★ Trace the flow of blood through the human heart.
- ★ Locate and identify the chambers, valves, and major vessels of a calf heart (see key terms below).
- ★ Compare and contrast blood flow through a fetal heart with blood flow through an adult heart.

#### Key Terms You Should Know:

- |  |                                  |
|--|----------------------------------|
| ♥ right & left atria                   | ♥ right & left ventricles        |
| ♥ aorta                                | ♥ superior & inferior vena cavae |
| ♥ pulmonary trunk & pulmonary arteries | ♥ pulmonary veins                |
| ♥ right & left atrioventricular valves | ♥ semilunar valves               |
| ♥ cardiac veins & coronary arteries    | ♥ arterial duct                  |
| ♥ umbilical vein/umbilical arteries    | ♥ placenta                       |

- **Fetal Pig Heart:** p. 174-178: Read, follow instructions, and answer questions. Locate the heart in your pig and identify the *left and right atria, left and right ventricles, anterior and posterior vena cava, aorta (aortic arch) and arterial duct*.

-Be sure you can trace the flow of blood in the fetal heart compared to an adult heart (see p. 174-179 for reference).

-What is the purpose of the arterial duct in fetal pigs/humans?

- **The Heart (use your book and the calf heart):** p. 190-192: Read introduction, follow instructions, and answer questions.

-Be able to identify the structures of the heart listed in the key terms using your calf heart.

-Trace the flow of blood from when it enters the heart from the vena cava until it leaves through the aorta.

-Use your probe to explore the heart chambers and how blood enters and leaves the chambers.

-Be able to explain how the muscles in the heart execute contractions and how the signal travels within the heart.

-How does a heart attack affect the path of the signal within the heart?

## II. Heartbeat & Blood Pressure:

### GOALS:

You should be able to....

- ★ Draw a normal ECG and describe what causes each wave.
- ★ State what the two numbers in a blood pressure reading represent.
- ★ Determine your pulse rate and explain how/why exercise affects it.
- ★ Determine your blood pressure and explain how/why exercise affects it.

### Key Terms You Should Know:

- ♥ systole (systolic)
- ♥ diastole (diastolic)

□ Heartbeat: p. 195-196 Read, follow procedures, and answer questions.

□ Blood Pressure: p. 196-197 Read manual, follow directions, and answer questions.

## III. Electrocardiogram (ECG)

### GOALS:

You should be able to....

- ★ Describe the path of electrical signals that pace the contraction of the heart.
- ★ Draw a normal ECG and describe what causes each wave.

### Key Terms You Should Know:

- ♥ electrocardiogram (ECG)
- ♥ SA node (pacemaker)
- ♥ P wave, QRS wave, T wave
- ♥ depolarization & repolarization

□ Observe the ECG demonstration.

□ Conduction System of the Heart: p. 193-194 & p. C53-55: Read and answer questions.

### REVIEW:

P. 186: Answer questions 1-4

p. 198: Answer questions 6-8, 10-14, and 17

## DO NOT FORGET ABOUT THE QUIZ NEXT WEEK ON LABS 1-3!!!!

Lab 1: digestion experiment and oral cavity

Lab 2: thoracic cavity, abdominal cavity, respiration, digestion, and spirometer

Lab 3: the heart, ECG, heartbeat, and blood pressure