CARDIOVASCULAR LAB

Sp95

PART I. GOLDFISH CIRCULATION

MATERIALS - Microscope & lamp, goldfish, cheesecloth, dropper, 2 slides, and lenspaper.

Solutions - Acetylcholine, adrenaline, alcohol, caffeine, warm water, and ice water (6 total).

1. Cut a piece of cheesecloth (approx. 4 inches square), and thoroughly moisten with tap water.
2. Wrap the cheesecloth neatly around a fresh goldfish, exposing only the tail fin.
3. Place the fish lengthwise on a slide, and gently lay another slide crosswise on top of the tail fin.
4. Scan the tail with the microscope at low power until you locate an active capillary.
5. Add 2 drops of a test solution to the tail, taking care to avoid the head and gills.
6. Record any changes to the speed of the blood flow resulting from the test solution.
7. Rinse the tail off with tap water before proceeding to the next test solution.
8. If your fish stops responding during any test, obtain a new one and resume the experiment.

PART II. BLOOD PRESSURE

In measuring blood pressure, the larger number on top is the systole, which represents the pressure in the blood vessels immediately after the heart contracts. The smaller number on the bottom is the diastole, which represents the pressure when the heart is relaxed between contractions. The systole averages 120 mmHg in adults, and does vary substantially throughout the day. The diastole measures 60-80 mmHg and remains relatively steady.

High blood pressure (or hypertension) occurs at 140/90 or higher. If left unchecked, it can lead to serious heart ailments as well as damage to the eyes and kidneys. Methods for reducing hypertension include decreasing salt in foods, increasing physical exercise, eliminating tobacco, avoiding stress, and taking any prescribed medications regularly.

MATERIALS - Sphygmomanometer (blood pressure cuff), stethoscope, and alcohol pads.

1. Clean the earpieces of the stethoscope with an alcohol pad, if necessary.
2. Wrap the blood pressure cuff securely around the upper arm of your partner.
3. Pump the cuff pressure to about 100 mmHg, and check for the brachial pulse with the stethoscope.
5. Increase the cuff pressure to about 150 mmHg; you should no longer hear the brachial pulse.
6. Slowly release the air from the cuff until you can hear the pulse again -- this will be the systole.
7. Continue releasing more air until you can not hear the pulse anymore -- this will be the diastole.
8. Record the reading of the systole over the diastole -- both should be written as even numbers.
9. Switch positions with your lab partner so your blood pressure can be measured.