

Name \_\_\_\_\_ Date \_\_\_\_\_

## Chapter 11 Lab Investigation: The Heart

### Purpose

In this activity you will identify and compare heart rates before and after exercise.

### Background

You can measure your pulse by counting the number of beats for one minute. Use the fingertips of your index and third fingers to apply light pressure to any point where an artery comes close to your skin. Following are three frequently used areas of the body to obtain a pulse:

- radial artery—with your palm facing upward, feel for your pulse on the thumb side of your wrist
- carotid artery—on the side of your neck, feel for your pulse to the right of your trachea (windpipe)
- brachial artery—at the fold of your elbow, feel for your pulse along the inner portion of your arm

### Materials

your textbook, a timer, your body

### Procedure

#### Exercise

1. Count your number of heartbeats in one minute. Do this three times, find the average, and then record your average pulse rate.

first minute: \_\_\_\_\_

+

second minute: \_\_\_\_\_

+

third minute: \_\_\_\_\_

=

total pulse \_\_\_\_\_

divided by 3 = your at-rest pulse rate: \_\_\_\_\_

2. Do 25 vigorous jumping jacks. Immediately afterward, sit down and count your pulse rate for one minute. Continue to record your pulse each minute until your pulse rate returns to its at-rest rate.

minute 1: \_\_\_\_\_

minute 2: \_\_\_\_\_

minute 3: \_\_\_\_\_

(continue as needed)

number of minutes required for pulse rate to return to its at-rest rate: \_\_\_\_\_

3. Run in place for two minutes. Immediately afterward, sit down and count your pulse rate for one minute. Continue to record your pulse each minute until your pulse rate returns to its at-rest rate.

minute 1: \_\_\_\_\_

minute 2: \_\_\_\_\_

minute 3: \_\_\_\_\_

(continue as needed)

number of minutes required for pulse rate to return to its at-rest rate: \_\_\_\_\_

## Conclusions

1. What is bradycardia?

\_\_\_\_\_  
\_\_\_\_\_

2. Did your resting heart rate qualify as bradycardia?

\_\_\_\_\_

3. What is tachycardia?

\_\_\_\_\_  
\_\_\_\_\_

4. Did either of your exercising heart rates qualify as tachycardia?

\_\_\_\_\_

5. Compare your pulse rate one minute after doing the jumping jacks to your pulse rate one minute after running in place. Is there a difference between these numbers?

\_\_\_\_\_  
\_\_\_\_\_

6. Which type of exercise caused a faster pulse rate?

\_\_\_\_\_

7. Why do you think one type of exercise causes a faster pulse rate than another type of exercise?

\_\_\_\_\_  
\_\_\_\_\_

8. Starting with the blood returning to the heart from the body, arrange the following heart components in the order that the blood would move through them: lungs, left ventricle, right atrium, left atrium, right ventricle, mitral valve, tricuspid valve, aortic semilunar valve, pulmonary semilunar valve.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_