

EXERCISE LAB

Introduction

The purpose of this lab is to determine what, if any, relationship exists between your heartbeat and how fast you breathe (respiration). You will need to make a data table (describe what this is) reflecting two variables, both heart rate (pulse rate) and respiration (number of breaths) rate. You will be exercising, and if at any point you feel faint or extremely out of breath, please stop exercising.

Materials

Stopwatch

Rulers

Graph paper

This lab sheet

Procedures

- 1) Make sure you have all of the materials. If not, ask your teacher.
- 2) Pass the stopwatch(s) around so that every group member gets a chance to practice using the stopwatch. If there is a group leader, he/she can initial here _____ indicating that everyone in the group has practiced with the stopwatch.
- 3) The first part of the lab is to record a resting pulse, that is, how many times your heart beats when you are sitting down watching a boring TV show for example. Believe it or not, the two best places to find your pulse do not involve putting your hand over your heart (Extra credit: Why is it so hard to feel your heart while resting? _____)
_____) You will need to practice finding your pulse in the two places before recording a resting pulse.
An important note: never use your thumb to try to find a pulse. When you apply pressure to a surface with your thumb, you will feel your own pulse beating rather than another person's pulse. Can you find your own pulse with a thumb?) Are students supposed to find their pulse in this step, and if so, where?
- 4) **PULSE PLACE #1:** The radial artery. The radial artery might sound familiar (radius bone anyone?), but if not, know that it is the major supplier of blood to your arms. The best place to find the pulse of the radial artery is to put a hand down on your table/desk with the palm up. You should see two straight "bars" sticking up (Extra credit: What are those "bars" sticking up by your wrist? _____). Take your pointer finger and your middle finger and place them on the thumb side directly beside the two "bars". Be sure to apply adequate pressure; you will not feel your pulse if you place your fingers lightly on the artery. The team leader can initial here _____ after everyone in the group has successfully located their pulse on the radial artery.

- 5) PULSE PLACE #2: The carotid artery. The carotid artery is vital to your survival because it supplies your face and brain with blood. The best method for finding the carotid artery is to find the nearly 90-degree angle in your mandible (lower jaw). Place your pointer finger and middle finger on your neck directly below the place on the 90-degree angle where the mandible sticks out. Be sure to apply adequate pressure; you will not feel your pulse if you place your fingers lightly on the artery. The team leader can initial here _____ after everyone in the group has successfully located their pulse on the carotid artery.
- 6) You are now ready to record a resting pulse for everyone in your group (be sure to make a data table! Make sure you explain to students here or in the introduction what a data table is). The unit for heart rate is beats per minute (bpm). There are several ways to record a pulse using the stopwatches. The most accurate way is to record a pulse for an entire minute. Easier, but less accurate, is to record the pulse for 30 seconds and multiply the number by _____. Easier still, but less accurate, is to record the pulse for 15 seconds and multiply the number by _____. Any time less than 15 seconds will not be accurate enough. The team leader can initial here _____ when everyone in the group has recorded their resting pulse on a data table with the correct unit.
- 7) Now record a resting respiration rate (how many breaths per minute when a person is resting, use rpm for the unit) for each person on a data table. The team leader can initial here _____ when everyone in the group has recorded their resting respiration rate on a data table with the correct unit.
- 8) Pick an exercise. Any exercise. This will be the exercise you do for the rest of the lab. Please describe the exercise your group did

_____. Everyone in the group will do this exercise for 30 seconds. As soon as the time is up, everyone must record their heart rate and record the number on the data table. The team leader can initial here _____ when everyone in the group has recorded their 30-second exercise heart rate on a data table with the correct unit.
- 9) Using the same exercise, everyone in the group will do this exercise for 30 seconds. As soon as the time is up, everyone must assess their breathing rate and record the number on the data table. The team leader can initial here _____ when everyone in the group has recorded their 30-second exercise-breathing rate on a data table with the correct unit.
- 10) Using the same exercise, everyone in the group will do this exercise for 1 minute. As soon as the time is up, everyone must record their heart rate and record the number on the data table. The team leader can initial here _____ when everyone in the group has recorded their 1-minute exercise-heart rate on a data table with the correct unit.
- 11) Using the same exercise, everyone in the group will do this exercise for 1 minute. As soon as the time is up, everyone must record their breathing rate and record the number

