

### Lab #11 Cardiovascular Measurements

**Purpose:** Measure the effects of postural change and exercise on these cardiovascular parameters using several different types of equipment.

**Procedures:**

#### 11 – A: Determination of blood pressure

1. Wrap the pressure cuff of the sphygmomanometer snugly around the upper left arm of your lab partner. Your lab partner should assume a relaxed, sitting or supine position.
2. Place the stethoscope securely over the brachial artery. Close the pressure valve and begin pumping up the rubber ball.
3. You will begin to hear the arterial pulse as you pass the diastolic pressure. Continue pumping until the pulse is not heard, approximately 10 mmHg above your partner's normal systolic pressure. The brachial artery is now totally occluded.
4. Slowly open the pressure valve and listen for the pulse sounds to reappear as the pressure drops. These are known as Korotkoff sounds.
5. The first sound heard signals the systolic BP. Record this value from the scale.
6. The sound will become louder as the pressure drops until it finally starts to become muffled. Record the pressure at which the sound vanishes. This signals the diastolic BP. Record your blood pressure as systole/diastole
7. Alternate with your lab partner and repeat these procedures.
8. Next, measure the BP of each of you immediately upon standing. (NOTE: be sure to have your cuff inflated prior to standing, so that you can begin to release pressure immediately upon standing.)
9. Lastly, measure the BP three minutes after standing. Record these values for your use and on the chalkboard.
10. Discuss the orthostatic response in terms of the receptors used and the effects of postural change. Include any limitations to obtaining reliable results.

**Results:**

1. 120/80 mmHg
2. 115/70 mmHg
3. 118/76 mmHg

**Discussion:** Cardiovascular parameters, other than EKG, may be measured which reflect the general condition of an individual. Blood pressure (BP) generally refers to the pressure of blood that is applied to the arterial walls. Systolic, the highest, blood pressure results when the ventricles contract. Diastolic, the lowest, blood pressure results when the ventricles relax.

Conclusion: In conclusion, all three of my results of blood pressure indicated a healthy blood pressure measurement. We recorded the blood pressure as systole/diastole. In this experiment we learned the normal blood pressure values for ventricular systole and diastole. We also now understand the effects of postural changes on blood pressure.