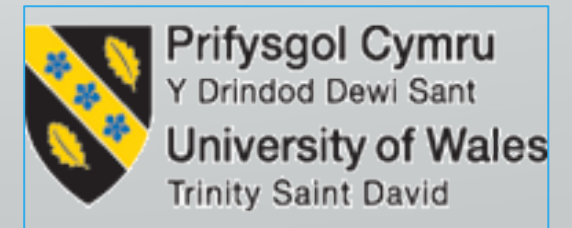


Introduction to Exercise Physiology SHSS4072



Practical 4 – Blood Pressure

Learning Objectives

- To gain more knowledge on the subject of blood pressure for the subject of health and fitness
- To understand why you might need to utilise blood pressure monitoring in the assessment of health
- To describe the process of and perform a blood pressure assessment on each other using an appropriate measure and test against variables.

What is blood pressure?

- Blood pressure refers to the force exerted by circulating blood on the walls of blood vessels.
- The pressure of the circulating blood decreases as blood moves through arteries, arterioles, capillaries, and veins.
- Blood pressure values are reported in millimetres of mercury (mmHg).
- Blood pressure is recorded as systolic over diastolic e.g. 120/60.

Blood Pressure Overview

- Heart Pumps blood
- Produces bulges
- These pressure waves = pulse
- Rhythm and strength of pulse in distal arteries
- Garden hose – force on the walls

Blood pressure

- Measured in mm Hg
- Measurement is made with a sphygmomanometer
- It measures changes in blood pressure according to the pulse – giving an indirect measure
- Mercury – hazardous!!

Procedure

- **Simple steps to an accurate reading**
- There are a few simple steps that you can follow to be sure that you get an accurate reading of your blood pressure.
- **Before you take your blood pressure reading**
- **1.** Many things can make your blood pressure rise for a short time. Make sure you do not need to use the toilet, and that you have not just eaten a big meal. Do not measure your blood pressure within 30 minutes of drinking caffeine or smoking.
- **2.** Wear loose-fitting clothes like a short sleeved t-shirt so that you can push your sleeve up comfortably.
- **3.** Always use the same arm for blood pressure readings, as each arm will give you a slightly different reading. If possible, use the arm that your doctor or nurse uses when measuring your blood pressure.
- **4.** Before you take your readings, rest for five minutes. You should be sitting down in a quiet place, preferably at a desk or table, with your arm resting on a firm surface and your feet flat on the floor.
- **5.** Make sure your arm is supported and that the cuff around your arm is at the same level as your heart. You may need to support your arm with a cushion to be sure it is at the correct height. Your arm should be relaxed, not tensed.

Tasks

- Automatic /Manual sphygmomanometer
- Check whether it is working (batteries)
- Rest for 5 mins to get baseline
- Test group one - subjects after exercise HR zone 110-130 bpm (15mins)
- Test group two – subjects after a coffee (30mins)
- Re-check post test
- Document your results on your excel spreadsheet

Interpretation

- Why does the blood pressure vary with exercise?
- What happens to the blood pressure when you lie down?
- Explain variations in the group?

Further Reading

- Cardiovascular Effects of Coffee: Is It a Risk Factor?
 - <http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=2223af18-0090-43f9-8aa3-48fd96d9fc17%40sessionmgr4006&vid=1&hid=4212>
- Effect of Aerobic Exercise on Blood Pressure: A Meta-Analysis of Randomized, Controlled Trials (2002)
 - http://www.zf.uni-lj.si/data/datoteke/acam21/polonap/NBG%C5%A1tudijskogradivoo0708/2SRCEINO%C5%BDILJE/Arterijskahipertenzija/1_Effect_of_Aerobic_Exercise_on_Blood_Pressure.pdf