

BLOOD PRESSURE RESPONSE TO ACUTE EXERCISE STUDY:

Why is this study being done? Describe purpose of the research

The purpose of this research is to determine the effects of acute exercise on blood pressure (BP) and heart rate (HR) variability in post-menopausal women. High daily BP variability and low HR variability are associated with increased risk of coronary heart disease (CHD). Endurance exercise lowers BP and resting HR and raises HR variability more consistently in hypertensive than in normotensive subjects. In hypertensive subjects, BP changes last for several hours after exercise. Both systolic BP and HR increase (and HR variability decreases) in proportion to exercise intensity during acute exercise, but it is not clear whether and how exercise intensity affects these variables during recovery from exercise and how long any such changes last. This study examines how exercise intensity affects the time course of changes in BP and HR and their variabilities in normotensive post-menopausal women immediately following an exercise bout both at low intensity and at high intensity, and compares it to a control day when no special exercise is carried out.

What is involved in the study.

First we will measure your height, weight and several body dimensions (circumferences and skin-fold thickness) that will allow us to estimate your body fat level. Next, you will wear a BP and HR monitors for 24 hours to record the fluctuations in your blood pressure and heart rate over one day. You will undergo a walking treadmill test to establish your ventilatory threshold (VT). That is the speed at which you become winded. You will walk on the treadmill two other times, once at a low intensity and once at a high intensity. The low intensity walk will consist of three 15-minute walks at 95% of your VT with 4 minutes of standing rest in between. The high intensity walk will consist of three 10-minute walks at 115% of your VT with 4 minutes of slow-walking rest inbetween. After walking tests, you will wear HR and BP monitors for 48 hours to record how exercise has affected your blood pressure during the immediate post-exercise period. After each bout of HR and BP monitoring, you will need to come back to the lab so that we can remove the monitors and record the data.

How long will the subjects participate in the study.

The entire study can be completed in 9 days although it may take a few days longer depending on particular scheduling needs. The initial treadmill test to determine your aerobic fitness, along with body composition measurements and orientation to monitoring equipment, require between 30 minutes and one hour. The exercise tests each require approximately one hour. Seven days have to separate high-intensity and low intensity tests. The two monitors need to be returned after 48 hours of use before they can be used again.

COMPENSATION: Health information and health benefits, but no payment.

