Oxygen Consumption Laboratory
Stress Testing
Spring 06

Purpose: To demonstrate a stress test with metabolic gas analysis using methods similar to those required in class project 1.

The exercise Protocol

a. Cycle exercise graded GXT protocol
c. Measurements: VO2, Ve, VCO2, BP, HR

Resting Data (sitting)

a. Body weight
b. Resting heart rate
c. Resting blood pressure
d. VO_2, RER, VE, O_2 pulse

Exercise Data collection:

a. protocol time
b. watts
c. heart rate
d. blood pressure
e. EKG—mark work level on the tracing!
f. VO_2, VCO_2, RER, V_E (beat by beat data collection)
g O_2 sat at the end of the exercise level, if measured
h. RPE, note any signs or symptoms
i. Reason for termination

Data Analysis and Questions to Answer

a. Graph the HR during exercise and recovery-normal or abnormal?
b. Graph blood pressure at rest, during exercise and recovery—normal or abnormal?
c. Graph the double product and O_2 pulse at rest and during exercise. Did these values change in the expected direction with exercise?
d. Determine the anaerobic threshold by 3 different methods: 1) plot Ve/VO_2 and Ve/VCO_2 vs. watts (see lecture notes); 2) plot VO_2 and VCO_2 vs. watts (see lecture notes); plot VO_2 vs. VCO_2. Did your estimates for AT agree? Which method is easier? What is a normal value of AT for a healthy person? How does the AT change in an athlete?
e. Review your graph of VO_2 vs. watts? Did the curve plateau? According to a table of normative values, characterize the aerobic fitness (VO_2max) of this subject. Do you think this was a normal test?