

Hes exercise lab assignment



Draw a graph that illustrates whole-body oxygen consumption as an individual progresses from rest, to 45 min bout of exercise at 60% $\dot{V}O_2\text{max}$, and through a complete recovery phase. Explain what is occurring during each of these stages in relation to ATP and oxygen supply and demand. Explain 4 ways that metabolic substrates (“fuels”) are made available to working muscles during prolonged aerobic exercise. What hormones contribute to these effects? What is the primary effect of the sympathetic nervous system on the cardiopulmonary system during exercise?

What is “sympatholysis” and why is it necessary to increase blood flow to working muscles during exercise? What happens to LV preload during the early stages of progressive aerobic exercise? How does this affect cardiac output? What factors contribute to this response? Aging is often associated with a downregulation or insensitivity of beta-adrenergic receptors in the cardiovascular system and a stiffening of left ventricle. Explain how these changes will affect the components of cardiac output at rest and during exercise.

What are the 3 primary factors that facilitate increases in whole body $\dot{V}O_2$ during exercise? How do catecholamines contribute to each of the processes? Explain why an exercise RER of 1.0 would be expected to be associated with a greater rate of ventilation than an RER of 0.8? (be sure to include chemoreceptors and the medulla in your answer). Describe how and why P_{O_2} , P_{CO_2} and blood pressure change as blood travels from the left to right ventricle. HES 403 Lab Lay Summary/Abstract (20 pts) Grading Instructions Honor Pledge:

I pledge on my honor that I have not received or given any unauthorized assistance in this assignment. You must write a lay summary/abstract to accompany a PDF file that you have read that relates to the lab topic for this week. Your task is to write in a manner that would be understandable to anyone who is NOT retained in the sciences (think about describing the study to a family member). The lay summary/abstract is limited to 250 words and must contain the following sub-sections.