Assessing Aerobic Power during Different Forms of Exercise

TOPICS/QUESTIONS TO CONSIDER FOR YOUR FORMAL LAB REPORT:

This lab is about the effects of different forms of exercise on physiological and biomechanical responses by the body. If we think about Olympic athletes, why is it that a great downhill skier would be a poor ice skater, or a hockey player a marginal snowboarder? Olympic athletes not only have trained for their specific sport, but their physiology is matched to the exercise task at hand.

Your physiological responses to the three forms of exercise that you performed in this lab are also related to your level of training for each of these exercise tasks as well as how your body is built (i.e., do you think that your muscles are primarily fast twitch or slow twitch – is endurance running easier for you that sprinting? Incorporate these questions into your report.)

Below are some suggestions for topics that you should cover in your formal lab report. Incorporate published literature (at least 3 scientific papers) as well as your results. What did you find? How did you feel as you tried to accomplish each of the exercise tasks?

INTRODUCTION
Consider these questions in your introduction:

1. In general how does the heart and respiratory system respond to exercise in the human?
2. What is the maximum heart rate for various types of exercise? What is the maximum respiratory rate? Which sports elicit these maximum responses?

At the end of your introduction make some statement(s) to the effect that during the course of this study you tested the effects of three types of exercise on physiological responses in individual subjects. (DO NOT copy this word for word!!)

DISCUSSION
Discuss the following:

How do different forms of exercise impact physiological function? Is heart rate or respiratory rate more or less sensitive to exercise type? (Evidence is found by comparing the slope of the lines in your graphs.)

What factors affect the speed of locomotion? How does water exercise compare to air?

Does your level of training affect your responses? Here you might compare your responses to others in the class. Identify the superior swimmers, runners and bikers in your class. What effect does a sedentary lifestyle have on exercise responses?

Given your results, what are the challenges of trying to be a tri-athlete (runner, biker AND swimmer)? Can an athlete really excel at more than one sport? Or will the tri-athlete, in trying to do everything, always be slower than the person that specializes in one sport? Conduct a literature search on the top speeds for specialists versus tri-athletes.