

## Sports Physiology Exam 2: Take Home Exam

Due: March 24 at the Beginning of Class: No Late Papers Accepted. 15 Pt Exam

Answers must be typewritten in complete sentences. You are most welcome to use additional resources. When other sources are utilized make sure you site them in text and then create a reference list at the end of your paper.

1. Discuss the following questions related to **anaerobic capacity** (4 pts)
  - a. What is anaerobic capacity?
  - b. There are 4 main methods of estimating anaerobic capacity. How do each of these methods determine anaerobic capacity and what are the limitations of each?
  - c. Why are we not able to directly measure anaerobic capacity?
  
2. Discuss the following questions related to **anaerobic power** (4 pts)
  - a. What is the primary focus of anaerobic power measurements?
  - b. Peak power, mean power, and fatigue index are some of the most common measurements determined from a Wingate anaerobic test. What are each of these variables measuring? What other anaerobic test might you use to determine each of these variables if you did not have access to a Wingate bike?
  - c. What is the difference between a traditional (flying) start and stationary start Wingate? Can you directly compare the results between both? Why or why not?
  
3. A cyclist is training to compete in their first century (100 miles) race. Discuss the following questions related to **maximal lactate steady state (MLSS)** (4 pts)
  - a. What is an MLSS test measuring?
  - b. What variables, in addition to lactate, might you measure at the MLSS performed on a cycle ergometer and how would you use this information to help this cyclist train for their upcoming race?
  - c. Could you use the information obtained from a MLSS test performed on a cycle ergometer to help with their running performance? Why or why not?
  
4. In the article on **overtraining** (HRV and Overtraining posted on the WEB site), Trish and Dr. Kravitz discuss 10 ways to prevent/combat overtraining. With each of these 10 items, discuss, elaborate or give an example how this concept may indeed help to combat overtraining. (For example, #6 on adequate sleep refers to the importance of adequate sleep; you may want to do a search on the importance of sleep for optimal athletic performance.) (3 pts)
  
5. **BONUS:** Applying the Research to Anaerobic Training: Design ONE workout session for ONE person
  - a) What is the anaerobic activity or sport?
  - b) What is the training status of this person?
  - c) What is the goal of the training session?
  - d) What exercises will you be utilizing AND in what sequence will you perform them?
  - e) At what intensity will the exercises be performed?
  - f) How long will each set be in time AND how many sets will this person be doing?
  - g) How long will you recover this person between sets (if doing repeated sets)? If not doing repeated sets, will there be any recovery between exercises or sets?
  - h) How will you progressively overload this workout for a subsequent workout?

**REMEMBER TO WRITE IN COMPLETE SENTENCES**