**Exercise Physiology Lab #3: (10 pts) Your Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**PLEASE TYPE YOUR ANSWERS ON THIS WORKSHEET: SUBMIT WHEN COMPLETE.**

**INTRODUCTION: Let’s watch a WINGATE TEST first!** Please complete answers.

1) What energy systems are emphasized during the Wingate? (1 pt)

2) What muscle fibers are being challenged the most? (1 pt)

3) What performance applications might the Wingate assessment be beneficial? (1 pt)

4) What are some physiological characteristics of endurance athletes? (1 pt)

5) What are some physiological characteristics of anaerobic athletes? (1 pt)

**METHODS:**

Equipment: The equipment used will be a specially designed Monark cycle ergometer.

Procedures:

Each participant will warm-up for a period of five minutes prior to performing the Wingate cycle test. Once the participants are finished warming-up, place the appropriate amount of weight on the carriage. For men, multiply their body weight in kilograms by .092 kg of body weight to get their resistance load. For women, multiply by .075 kg of body weight.

Data Collection:

Data will be displayed on the same graph. The muscular power data points will be displayed every second during the test. **Record the peak power, relative power, and % decrement in power.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Participant/Age | Training They Do? | Body Wt (kg) | Resistance Load (kg) | Peak Power  (Watts) | Relative  Power  (Watts/kg) | Percent  Decrement  (%) | Anaerobic or Aerobic  Characteristics? |
| 1) |  |  |  |  |  |  |  |
| 2) |  |  |  |  |  |  |  |

**RESULTS/DISCUSSION**: Please complete the Table of the Wingate Muscular Power Test above: (1 pt)

6. Based on the results of their test, for each participant discuss whether the participant appears to have more anaerobic or aerobic physiological characteristics. (1 pt)

PEAK POWER **NORM** AVERAGES: Peak Power **Males**: 699.5W; Peak Power **Females**: 454.5W

NOTE: For Peak Power, Anaerobic Athletes will score HIGHER; Aerobic Athletes will score LOWER

% Decrement **Male** Ave. Range: 20.77-55.01%; % Decrement **Female** Ave. Range: 18.65 - 48.05%

NOTE: With % Decrement, aerobically trained tend to have smaller decrements

*Source: Maud & Schultz, Research Quarterly. 1989;60:144-49.*

7. Finally, Let’s MAKE A LIST of factors that may affect the performance of this test. (1 pt)

**MUSCULAR FATIGUE: Two Questions (2 pts)**

8. Explain **Peripheral Fatigue at the Neuromuscular Junction:**

9. Explain the **TWO sites of Fatigue in Muscle.**