

Muscle Physiology Pre-lab Assignment

Instructions: Answer the questions below before the beginning of lab. View the “Muscular System” module of the InterActive Physiology CD-ROM included with your lecture text. This assignment covers the “Contraction of Motor Units” and “Contraction of Whole Muscle” topics. Click on each of these topics and answer the relevant questions below. Note: students lacking the CDs will be able to use them in the open labs or in the library.

Topic: Contraction of Motor Units

1. What is a motor unit?
2. What is meant by recruitment?
3. Why do some motor units only have a few muscle cells?
4. The constant state of low level tension in a muscle is called _____.

Topic: Contraction of Whole Muscle

5. A _____ is a contraction due to a single stimulus.
6. What are the three phases of muscle contraction?
Phase 1: _____
Phase 2: _____
Phase 3: _____
7. _____ summation occurs when a second contraction is added to the first before complete relaxation.
8. _____ occurs when stimulation is so rapid that the contraction is smooth and continuous without any relaxation.
9. What are the three factors that determine the strength of a muscle contraction?
10. According to the simulation, **unstretched/moderately-stretched /overstretched** (circle one) muscles have the strongest contractions.