Anatomy & Physiology

Muscular System Modeling Activity (post-unit) (worth 25 points)

Due: Today

Today you will individually develop a model of the leg. Complete this assignment on the **back of this handout**. Consider this a post-unit model, as we have already covered these concepts in class. Even though this is an individual model, you may discuss the concepts with your group and use whatever notes you have. As this is a post-unit model, it will be graded based on whether you have:

(1) correctly included all necessary components (listed below) – 10pts

(2) correctly labeled every part of your model – 5pts

(3) included a detailed paragraph description of your model – 10pts

You can do: picture, flow diagram, chart, etc. (any way to demonstrate your understanding of these concepts)

Required Components:

1. Diagram the leg with extension at the knee
   1. Include femur, tibia, fibula, patella, and all muscles surrounding these bones
   2. Label all bones and muscles (if you do not know their names, label them as Muscle A, Muscle B, etc.)
   3. Include a close up (zoom in) of one sarcomere in any extended muscle of the upper leg
      1. Include and label all parts of the sarcomere you know, and especially of the thin filaments, thick filaments, and H zone
2. Diagram the leg with flexion at the knee
   1. Include femur, tibia, fibula, patella, and all muscles surrounding these bones
   2. Label all bones and muscles (if you do not know their names, label them as Muscle A, Muscle B, etc.
   3. Include a close up (zoom in) of one sarcomere in the same muscle of the upper leg that you used in the extended leg diagram (this muscle should now be flexed)
      1. Include and label all parts of the sarcomere you know, and especially of the thin filaments, thick filaments, and H zone

**Be sure to include a paragraph describing all aspects of your model and how each sarcomere changes to result in the leg extending or flexing.**

This will be collected from you today and I will then grade it.

Do not bring this home; it is due today!

Leg w/knee flexion

Leg w/knee extension

Sarcomere of flexed muscle

Sarcomere of extended muscle