

The skeletal muscle length-tension relationship essay sample

[Life](#), [Relationships](#)



**ASSIGN
BUSTER**

In a force-length graph,

- a. the muscle length is the independent variable.
- b. the amount of force generated is the dependent variable.
- c. both active and passive forces must be considered.
- d. All the above are correct. correct answer

According to your lab manual, the protein titin is the primary cause of _____ . Passive Force

In this lab simulation, the muscle length of _____ mm was able to generate the largest active force. 75mm – Active force of 1. 82

The force that results from muscles being stretched is called

- a. active force.
- b. passive force. correct answer
- c. maximal tetanic force.
- d. stretch force.

37. What happens to the amount of total force that the muscle generates during the stimulated twitch? Total force is altered by the starting resting length. My prediction was correct in that it would change either way, with either lengthening the muscle or shortening it, both methods changed the total force generated by the muscle. If the muscle is lengthened the passive force increases, and if the muscle is shortened the active force increases. With each force (a&p) the total force is changed depending on the amount of either A or P forces.

Based on the unique arrangement of myosin and actin in skeletal muscle sarcomeres, explain why active force varies with changes in the muscle's resting length. Active force is generated from myosin thick filaments bind to thin actin filaments, engaging the cross bridge cycle and ATP hydrolysis. Active force data changes as the resting length of the muscle changes. When the resting length of the muscle is shortened, the active force amount increases. When the resting length of the muscle is lengthened, the active force amount decreases. The change in the active force amount is completely caused by the amount of myosin bound to actin. The shorter the muscle's resting length is, the more myosin filaments bind to actin filaments.

What range of skeletal muscle lengths generated passive force? 80, 90, and 100

If you were curling a 7-kg dumbbell, when would your bicep muscles be contracting isometrically? At any point in which the bicep muscle remains at a fixed length. My best example is holding 2 dumbbells parallel to the floor and holding them in that position for 30 seconds. The muscles are contracting but are not shortening.