

Name _____

Course/Section _____

Date _____

Professor/TA _____



Activity 49.2 What would happen if you modified particular aspects of muscle function?

Test your understanding of muscle function by asking yourself what would happen if (some part) was damaged. What would the system still be able to do? What would it be unable to do?

In each of the following experimental situations, indicate which of the proposed answers is true or correct and which is incorrect. If an answer is not correct, indicate why.

1. A toxin in a newly discovered bacterial strain causes irreversible inactivation of the acetylcholine receptor. If you were infected with this organism, the symptoms would include:

T/F a. Uncontrollable muscular contractions

Explain:

T/F b. Muscular paralysis

Explain:

T/F c. Loss of membrane potential of muscle fibers

Explain:

2. In another experiment, a physiologist was able to destroy some but not all of the motor neurons to a specific skeletal muscle. Given what you know about motor units, what is the result of this action?

T/F a. There is no effect because motor neurons are redundant; multiple neurons innervate each muscle fiber as backup.

Explain:

T/F b. The muscle will contract faster if the physiologist destroyed inhibitory motor neurons.

Explain:

T/F c. The muscle will in general contract more weakly because fewer fibers are capable of contracting.

Explain:

T/F d. The ability of the muscle to contract will not change because the electrical potential will spread from stimulated fibers to adjacent fibers.

Explain: