

What are the two branches of the nervous system? Give brief description of each.

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2

What are the two branches of the autonomic nervous system?

1

2

Which neurons transmit signals **from the CNS** to the rest of the body?

Which neurons pick up information from the outside environment and send information **to the CNS**?

Where are muscle spindles found?

What does a motor unit consist of?

What is the 'all or none' principle?

What two things determine the strength of a muscle contraction?

What are some the adaptations that occur within the nervous system with regular exercise?

Additional information:

Source: <http://healthyeating.sfgate.com/>

Sodium and Potassium

Sodium and potassium play essential roles in muscle contraction because of their importance in nerve function. Your nervous system communicates with your muscles through structures called neuromuscular junctions, and the activation of a nerve triggers muscle contraction. Sodium and potassium help your nerve cells send electrical signals, called action potentials, that signal for your muscles to contract. A loss of either mineral prevents your nerves from communicating properly with your muscle fibers, leading to muscle weakness or twitching. A healthy diet should include 1,500 milligrams of sodium and 4,700 milligrams of potassium each day, according to the Linus Pauling Institute.

Calcium and Magnesium

Calcium and magnesium work together to control muscle contraction. Both minerals interact with the proteins actin and myosin -- structural proteins that shorten with each muscle contraction, then lengthen to relax your muscles. Actin and myosin rely on calcium to shorten and contract your muscles, then rely on magnesium to relax after a contraction. While low calcium levels primarily affect your bones -- causing bone loss and putting you at risk for osteoporosis -- magnesium deficiency affects your muscles, causing abnormal muscle contraction. Women should get 320 milligrams of magnesium daily while men require 420 milligrams, according to the Linus Pauling Institute, and all adults need 1,000 milligrams of calcium each day to prevent a deficiency.

Iron

Iron also helps your muscles contract. Each muscle contraction uses up energy as well as oxygen. Iron helps support continued muscle function by supporting energy production in your muscle cells, so that your muscle fibers always have the energy they need to contract properly. Iron also helps your muscles store oxygen to fuel muscle contractions, and promotes healthy circulation so that your muscles can get additional oxygen from your bloodstream. Men need 8 milligrams of iron each day to prevent a deficiency, according to the Linus Pauling Institute, while women need 18 milligrams.