

Tendon Reflex

Overview: Involuntary responses are ones that you can't control, but they are usually in place to help with survival. One good example is when you touch something hot. Your hand does not take the time to send a message to your brain and then have the brain tell your hand to pull away. By then, your hand might be seriously hurt! Instead, your body immediately removes your hand in order to protect it from further harm. Today, you will test an involuntary reflex by using the tendon reflex test, which is in place because our knees are sensitive and vulnerable parts of the body.

Materials

- knee
- partner

Experiment

1. Sit with your legs crossed at the knee on the edge of your seat. Reach forward and see if you can feel the patellar tendon. It is right below your knee cap.
2. Ask your partner to *gently* tap the tendon with the outside edge of their hand. This will look like a careful little karate chop. If your partner gets the right spot it will be obvious. You will notice your leg kick out a little in a reflex reaction.
3. Your partner can try other spots on the tendon if reaction isn't achieved at first. If it hurts, stop right away! It's possible that you might not have a tendon response reflex. Not everyone does, and that is perfectly normal.

Tendon Reflect Data Table

Location of Tap	Observation

Reading

There are two main parts that make up the nervous system. The central nervous system consists of our brain and spine and the peripheral nervous system is all the nerves and other fibers that connect our limbs and organs back to the central nervous system.

The peripheral nervous system is further divided into the somatic system and the autonomic system. The somatic system sends messages from brain to limbs so that we can move our bodies, and also collects and delivers information received from our five senses. The autonomic nerves send information to our organs, blood, and other parts of the body, keeping things going that we don't have to think about but that are still very important, like breathing and digesting food. The autonomic system also controls reflexes. We're going to test it out today.

The tendon reflex is in place because the knee is such a sensitive and vulnerable part of the body. When the tendon is stretched out and bumped, your body tries to move the leg and knee out of harm's way so that it won't get hurt. As you could probably tell, it's an involuntary response that neutralizes any conscious, voluntary control that your brain has over the leg through the motor nerves.

Exercises

1. What are the main parts of the nervous system?
2. What are the two parts of the peripheral nervous system and what are their functions?
3. Which part of the nervous system controls involuntary reflexes?

Answers to Exercises: Tendon Reflex

1. What are the main parts of the nervous system? (the central nervous system consists of the brain and spine, peripheral nervous system is nerves and other connectors that link our numerous body parts and organs back to the brain and spine)
2. What are the two parts of the peripheral nervous system and what are their functions? (somatic system sends messages from brain to limbs so that we can move our bodies, and collects information received from our five senses; autonomic sends information to our organs, blood, and other parts of the body and also controls involuntary reflexes)
3. Which part of the nervous system controls involuntary reflexes? (autonomic system)