

Nervous System

by Sophia Tutorial



WHAT'S COVERED

This tutorial will cover the nervous system, specifically the functions of the central nervous system (CNS) and the peripheral nervous system (PNS). Our discussion breaks down as follows:

1. Nervous System
2. Central Nervous System
3. Peripheral Nervous System

1. Nervous System

The **nervous system** is the body's communication system. It sends information to and from the brain and allows it to control the rest of the body and its actions. It is made up of individual neurons, which are the cells that transmit information within the nervous system.

The nervous system consists of two systems:

- Central Nervous System (CNS)
- Peripheral Nervous System (PNS)



TERM TO KNOW

Nervous System

The body's communication system, which sends information to and from the brain and allows it to control the rest of the body

2. Central Nervous System

The first--and most important---part of the nervous system is the **central nervous system (CNS)**. This is the area of the body which acts as the control center for the rest of the nervous system. It collects information from the rest of the body and everything outside of it, then sends out information and causes the body's various responses.

The most recognizable part of the central nervous system is the **brain**. The brain is housed inside of your

head and is the central processing unit of the nervous system and the rest of the body.

The CNS is where everything that we think of as being a person and being human is housed. All of the things that involve personality and mental states in thinking and deciding and planning--all of those things are housed directly within the brain. As you can see, it's the most important thing in psychology, and the most important organ in the body.

The other main part of the central nervous system is the **spinal cord**, which is a thick bundle of neurons that connects directly to the brain and runs along your back. This is also where you'll find the vertebrae, which protect the spinal cord.



Think of the spinal cord as an information superhighway. It conducts information to the rest of the body and vice versa.

When the spinal cord is damaged, it can lead to paralysis of different parts of the body. Because it acts as a conductor for all of this information, if a certain part is damaged, then none of those messages can be sent to the corresponding parts of the body.

The spinal cord also acts as a control for certain reflexes, which don't go directly to the brain, but rather simply go to the spinal cord and cause a quick involuntary response by the body.



Central Nervous System

The control center of the nervous system, which collects information from the rest of the body and causes the body's responses; contains the brain and spinal cord

Brain

Central processing unit located in the head, where all mental information about a person is kept and used to control the rest of the body

Spinal Cord

A thick bundle of nerves that connects to the brain and acts as an "information superhighway", conducting info to and from the brain along the back

3. Peripheral Nervous System

The second part of the nervous system is the **peripheral nervous system (PNS)**. The PNS essentially includes the rest of the neurons that are within the body--everything outside of the brain and spinal cord.

The peripheral nervous system acts to control muscles and to carry sensory information from the outside world. It also controls involuntary behaviors, like the functioning of our organs.

🔗 **EXAMPLE** The peripheral nervous system tells your stomach when to digest and when to grumble, as well as telling your heart how to beat.

The PNS also controls involuntary reactions. Sweating, for example, is a result of the PNS responding to the

outside environment.



TERM TO KNOW

Peripheral Nervous System

The neurons in the rest of the body outside of the brain and spinal cord, which control muscles, carry sensory information from the environment, and control involuntary actions



SUMMARY

This lesson focused on the nervous system. It is broken into two parts: the **central nervous system (CNS)** and the **peripheral nervous system (PNS)**. The central nervous system is comprised of the brain and spinal cord. The peripheral nervous system comprises the rest of the neurons outside the brain and spinal cord and acts to control involuntary reactions to the outside world.

Good luck!

Source: This work is adapted from Sophia author Erick Taggart.



TERMS TO KNOW

Brain

Central processing unit located in the head, where all mental information about a person is kept and used to control the rest of the body.

Central Nervous System

The control center of the nervous system, which collects information from the rest of the body and causes the body's responses; contains the brain and spinal cord.

Nervous System

The body's communication system, which sends information to and from the brain and allows it to control the rest of the body.

Peripheral Nervous System

The neurons in the rest of the body outside of the brain and spinal cord, which control muscles, carry sensory information from the environment, and control involuntary actions.

Spinal Cord

A thick bundle of nerves that connects to the brain and acts as an "information superhighway", conducting info to and from the brain along the back.