Central And Peripheral Nervous System

by Sophia

WHAT'S COVERED

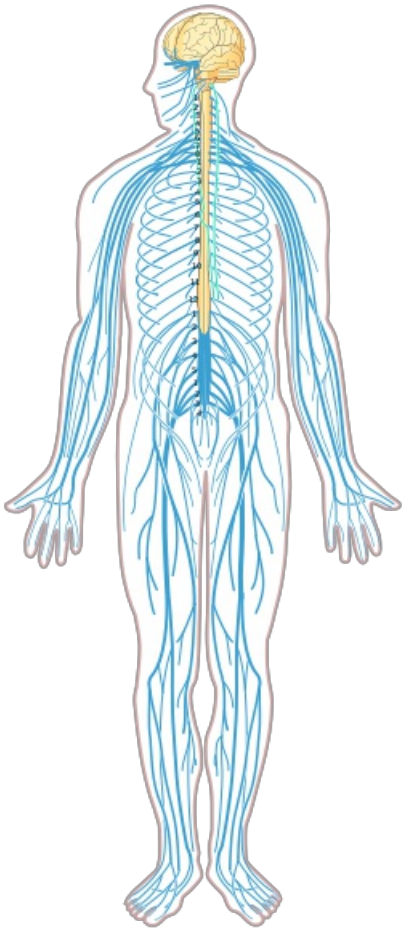
In this lesson, you will learn the structure and function of both the central and peripheral nervous systems. Specifically, this lesson will cover:

1. The Central Nervous System

The **central nervous system**, sometimes abbreviated CNS, is composed of the brain and the spinal cord and contains all of the interneurons of the nervous system.

The central nervous system contains both afferent and efferent nerves. Afferent nerves carry information toward the central nervous system, while efferent nerves carry information away from the central nervous system.

In the diagram below, the central nervous system is in yellow.



TERM TO KNOW

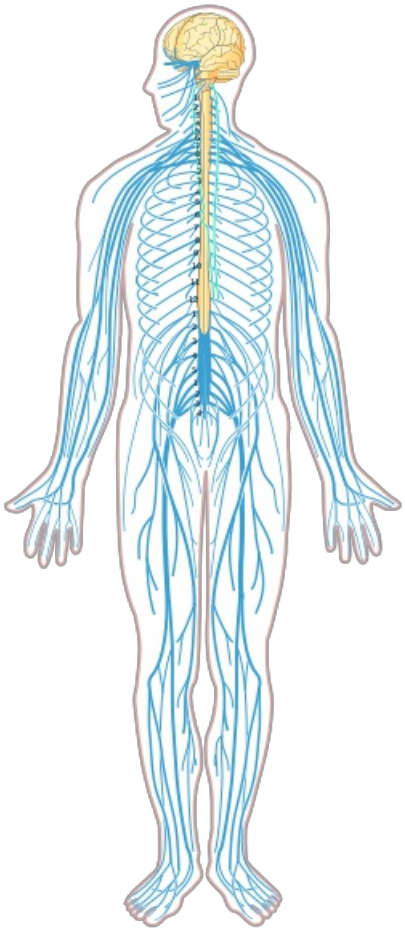
Central Nervous System

Division of the nervous system that consists of the brain and spinal, is the processing center of the body, and contains interneurons.

2. The Peripheral Nervous System

The other division of the nervous system is the **peripheral nervous system**, sometimes abbreviated PNS. The peripheral nervous system innervates the rest of the body (everything excluding the brain and spinal cord). It is composed of 31 pairs of spinal nerves and 12 pairs of cranial nerves.

In the diagram below, the peripheral nervous system is in blue.



The peripheral nervous system is also divided into two divisions, the somatic division and the autonomic division.

<table>
<tr><th colspan="3">Divisions of the Peripheral Nervous System</th></tr>
<tr><th>Somatic Division</th><th colspan="2">Autonomic Division</th></tr>
<tr><td>Somatic nerves are nerves that carry signals to the head, the trunk, and the limbs. The effectors for somatic nerves would be skeletal muscle, for example.</td><td colspan="2">Autonomic nerves are nerves that carry signals to your internal organs. The effectors, in this case, would be smooth muscles or glands.

From there, we can actually break the autonomic division into two more divisions:</td></tr>
<tr><td></td><td>Sympathetic Division</td><td>Parasympathetic Division</td></tr>
<tr><td></td><td>Sympathetic nerves are nerves that dominate at times of danger, stress, excitement. They increase the force and the rate of your heartbeat, increase your blood pressure, and increase your breathing. By doing this, the sympathetic nerves prime the body to respond to an emergency.</td><td>Parasympathetic nerves are nerves that dominate during quiet, low-stress situations. They slow the body down and divert energy to things like digestion or other housekeeping items.</td></tr>
</table>

TERMS TO KNOW

Peripheral Nervous System

Division of the nervous system that sends signals to and from the central nervous system and contains sensory and motor neurons.

Somatic Nerves

Motor nerves that innervate skin and muscle.

Autonomic Nerves

Motor neurons that innervate deeper organs and regulate unconscious organ activity.

Sympathetic Nerves

A division of the autonomic nerves which prepare the body for stressful situations by increasing physiological activity.

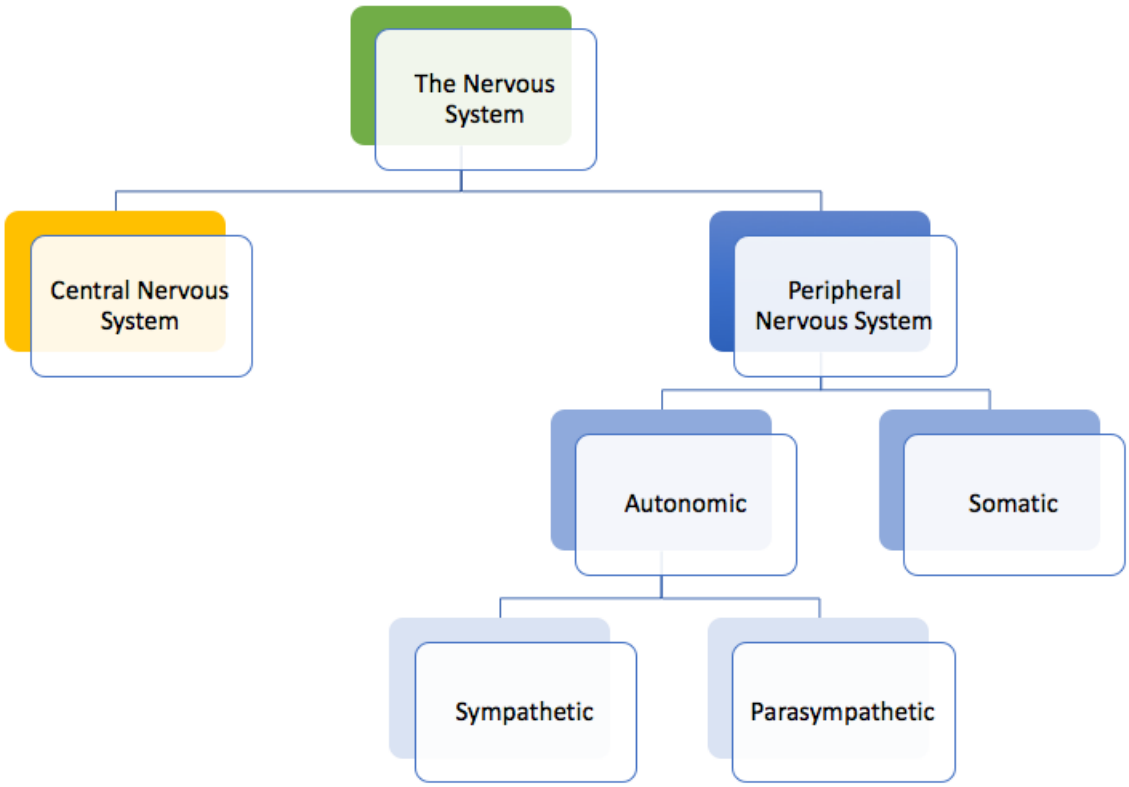
Parasympathetic Nerves

A division of the autonomic nerves which allow the body to recover from stressful situations by slowing down physiological activity.

3. Nervous System

If you take a look at a diagram below, the nervous system is broken down into two divisions: the central nervous system (CNS) and the peripheral nervous system (PNS).

Then, the peripheral nervous system can be broken down even further into the autonomic division and the somatic division. And the autonomic division can be broken down even further into sympathetic and parasympathetic nerves.



SUMMARY

This lesson gives a visual of how the nervous system can be broken down into the different divisions and different nerves. You've had an **overview** on the **central and peripheral nervous systems**.

Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND

ATTRIBUTIONS

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TERMS TO KNOW

Autonomic Nerves
Motor neurons that innervate deeper organs and regulate unconscious organ activity.

Central Nervous System
Division of the nervous system that consists of the brain and spinal cord, is the processing center of the body, and contains interneurons.

Parasympathetic Nerves
A division of the autonomic nerves which allow the body to recover from stressful situations by slowing down physiological activity.

Peripheral Nervous System
Division of the nervous system that sends signals to and from the central nervous system and contains sensory and motor neurons.

Somatic Nerves
Motor nerves that innervate skin and muscle.

Sympathetic Nerves
A division of the autonomic nerves which prepare the body for stressful situations by increasing physiological activity.