

# 8.3 The Central Nervous System

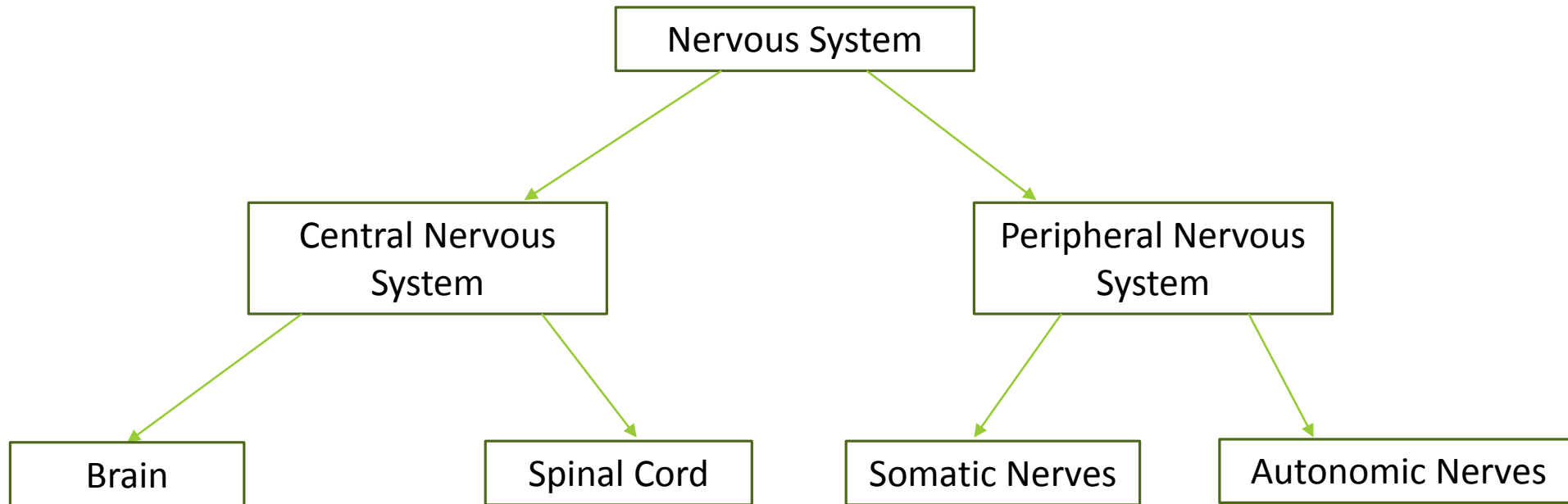
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# Nervous System Overview

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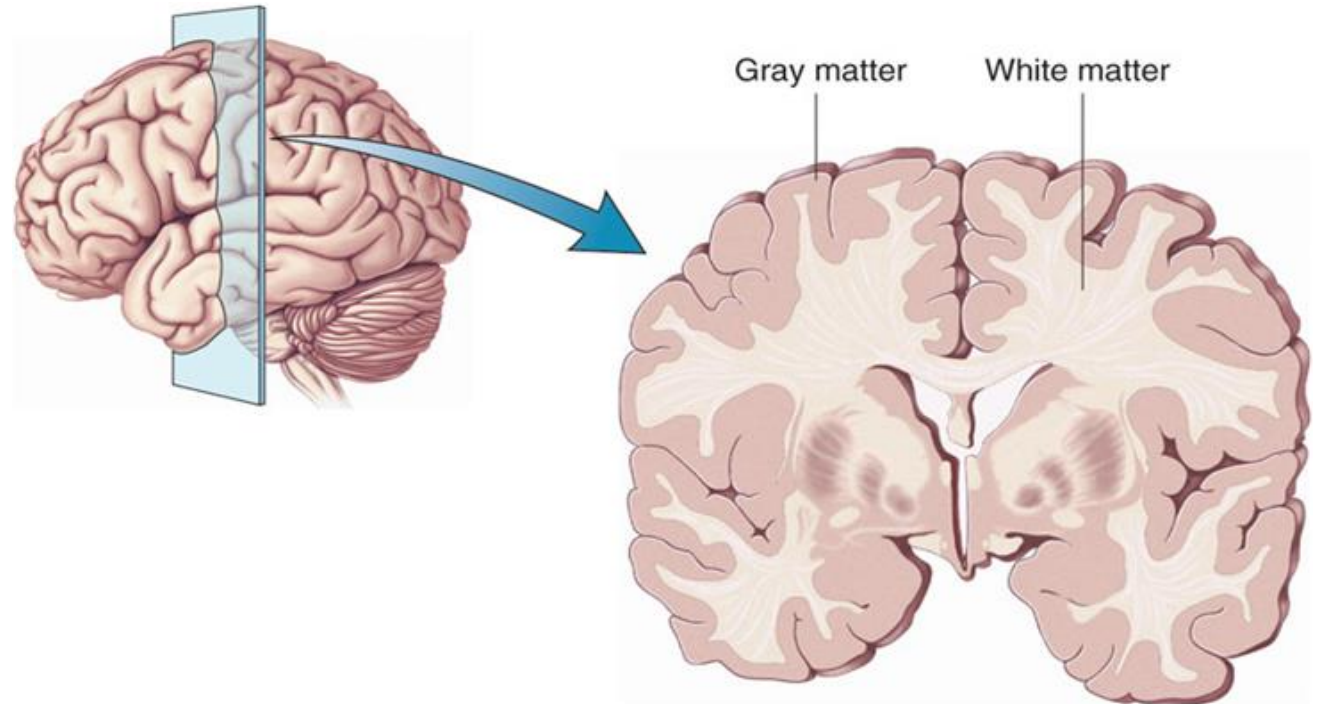


# The Central Nervous System

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Grey matter:

White matter:

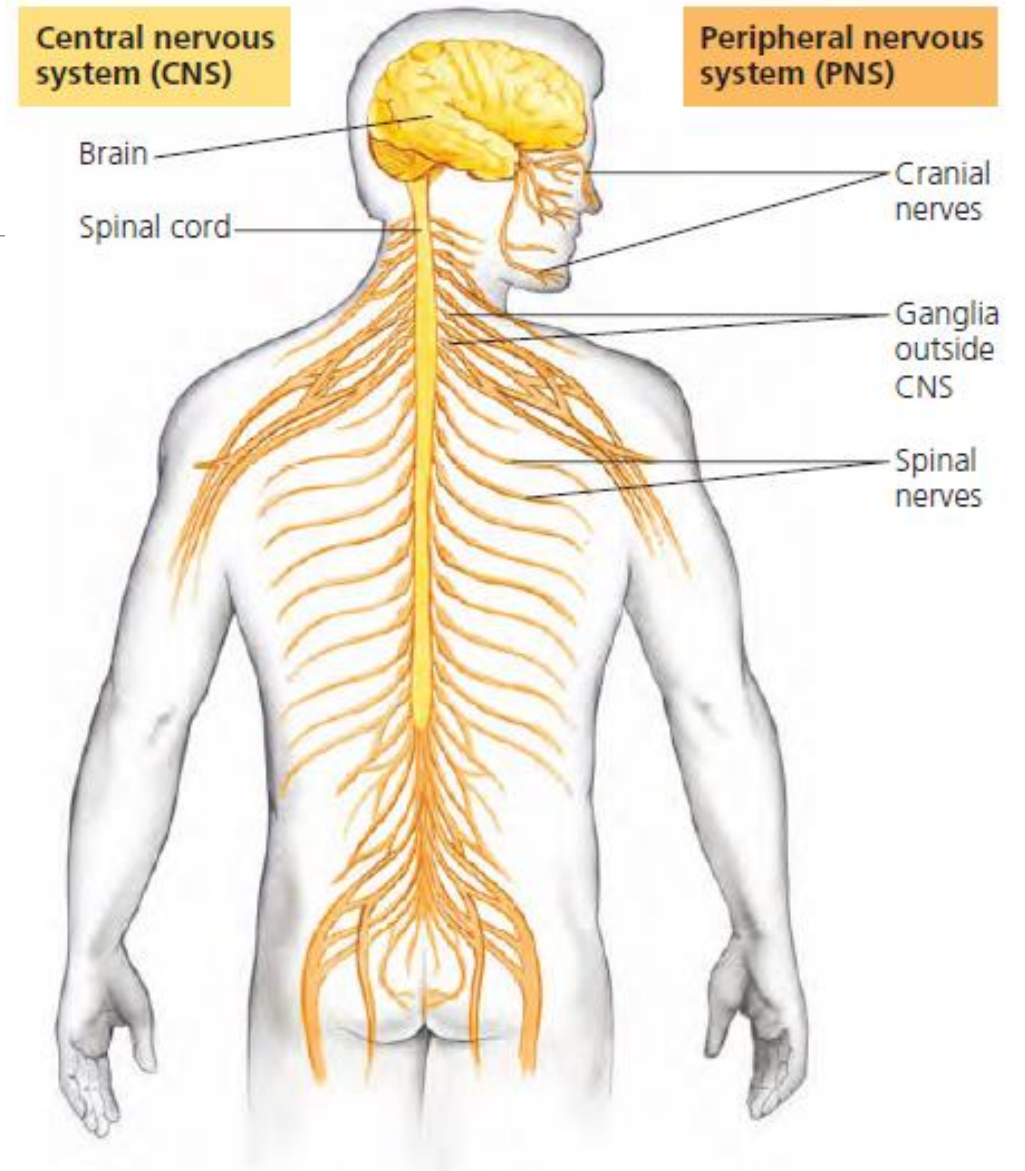


# The Spinal Cord

The spinal cord connects the brain to the rest of the body. All of the peripheral nerves from the PNS connect to the spinal cord.

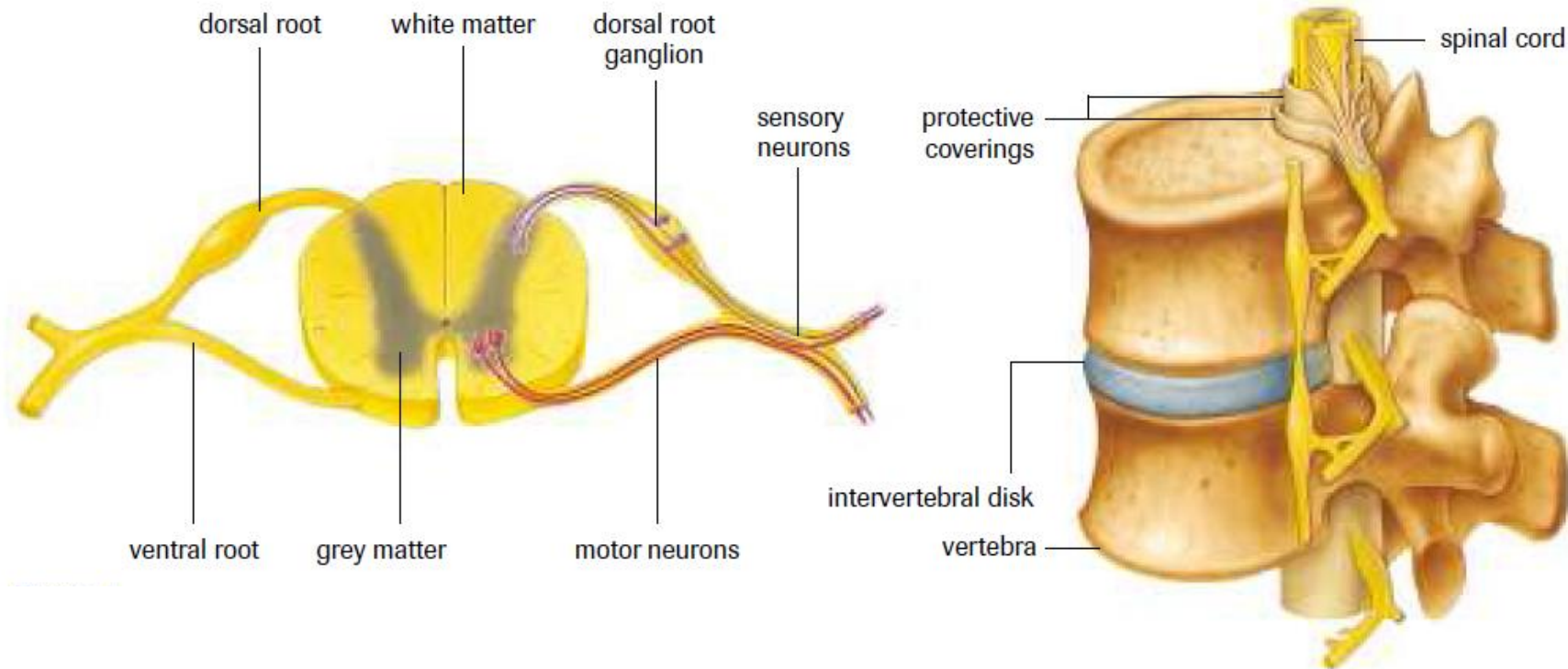
Sensory neurons:

Motor neurons:

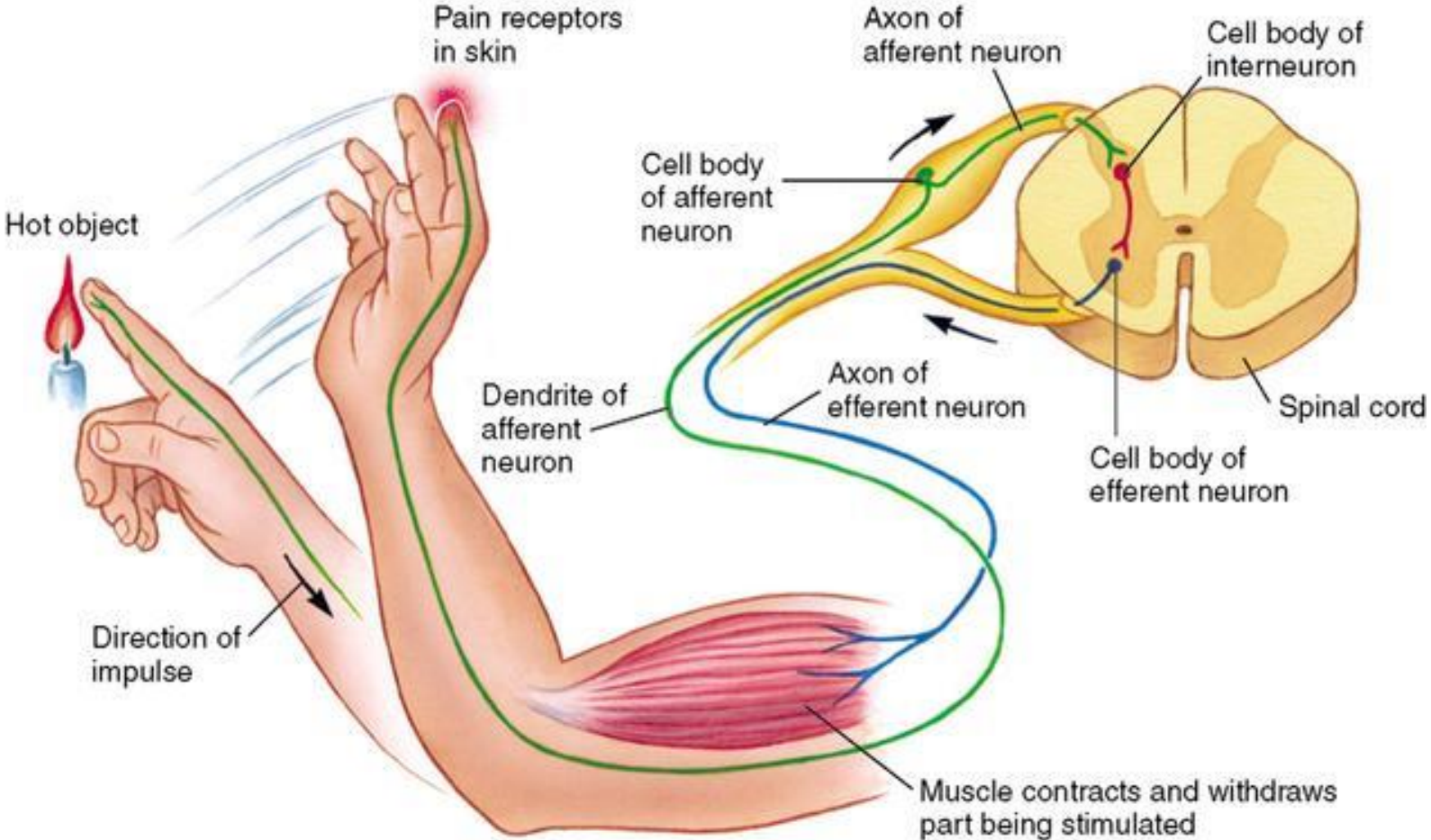


# The Spinal Cord

The dorsal nerve brings information towards the spinal cord through the help of sensory neurons. Whereas, the ventral root send out information from the spinal cord through the help of motor neurons.



# Neural Reflex Arc



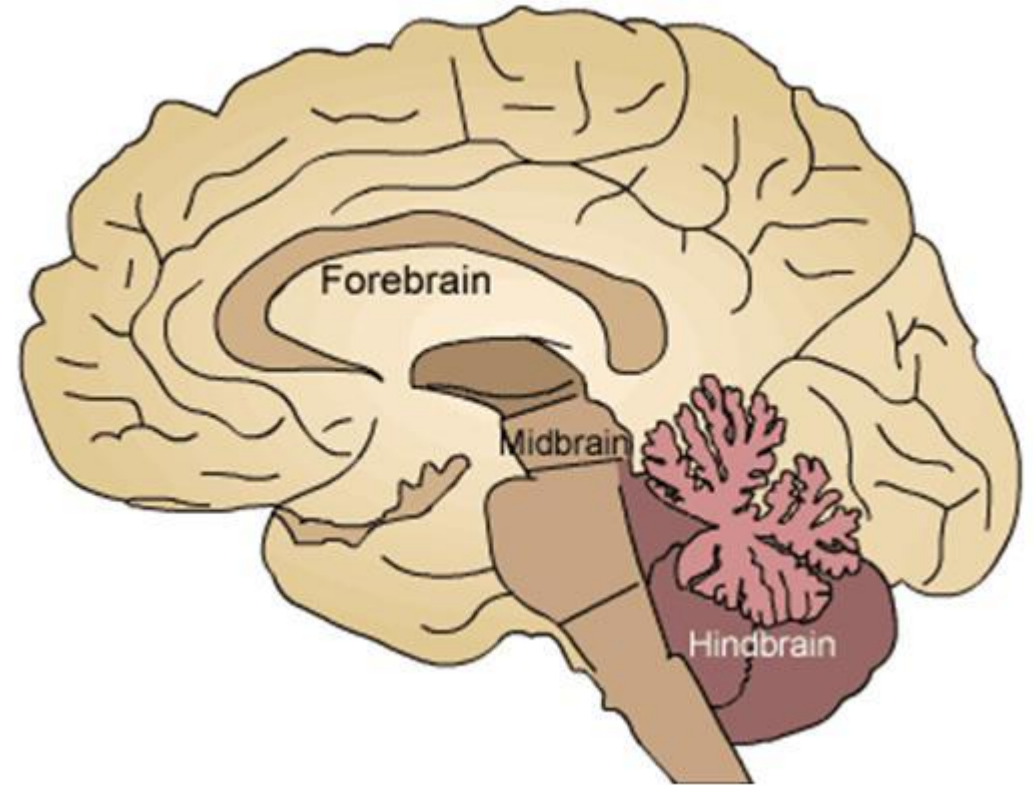
# The Brain

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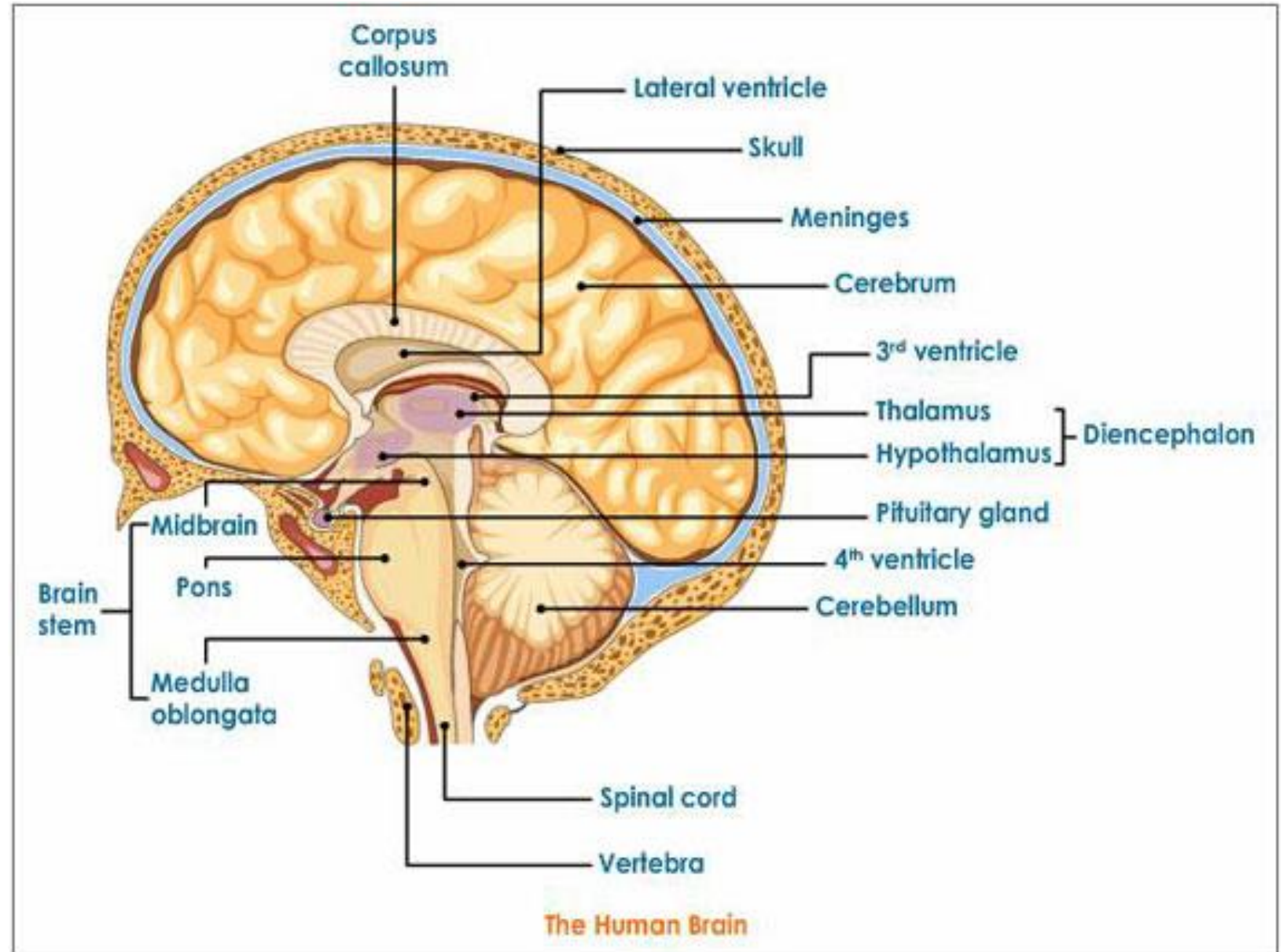
The brain is the control center of the body. Not only does it control emotion and thoughts, but one of its primary goals is to maintain homeostasis.

The brain responds to information relayed from the sensory neurons around the body and send the appropriate messages to specific effectors that can appropriately respond to the changes that have occurred in the body.

The brain is separated into 3 main sections:  
**Forebrain, Midbrain, and Hindbrain**



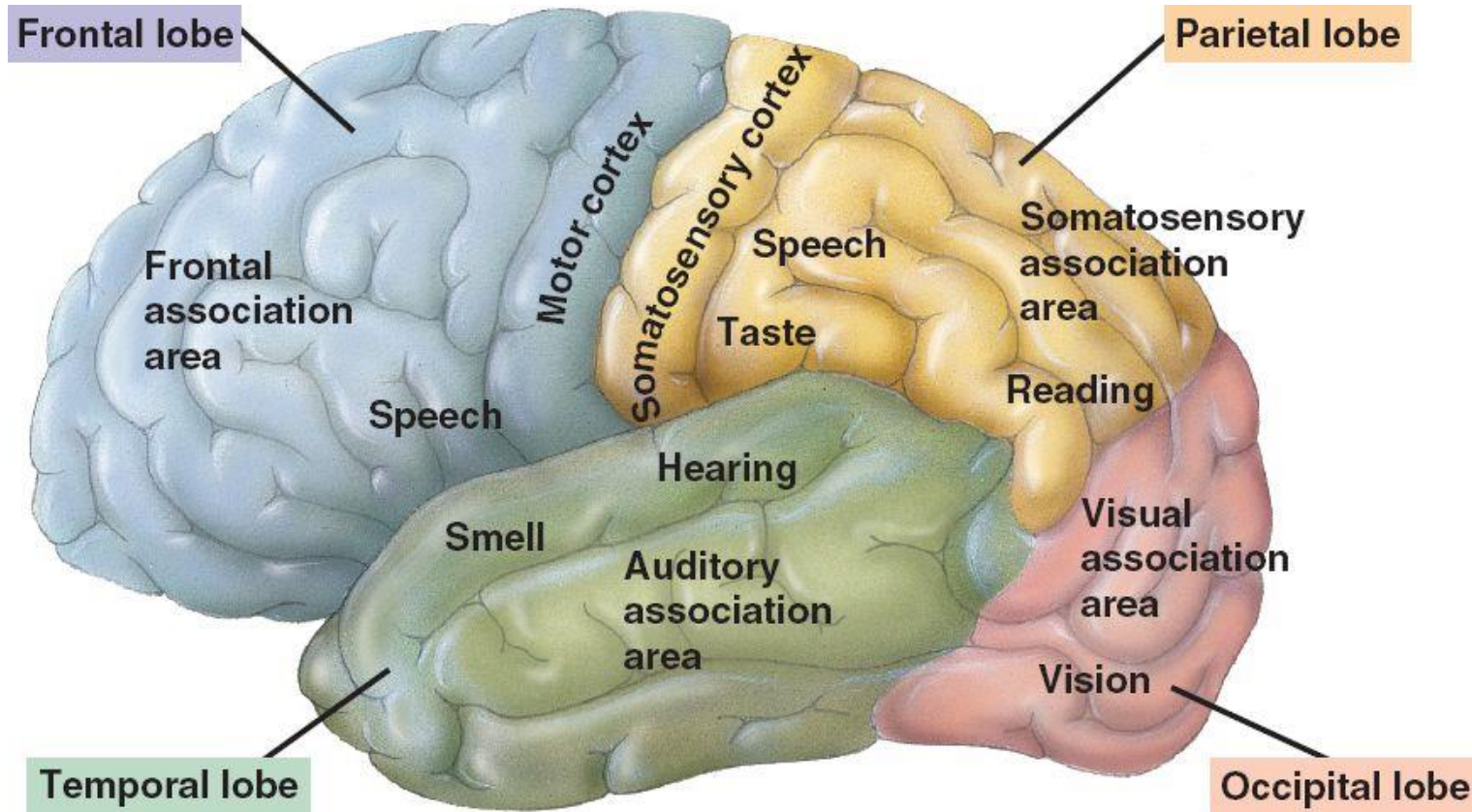
# The Brain





# The Cerebral Cortex

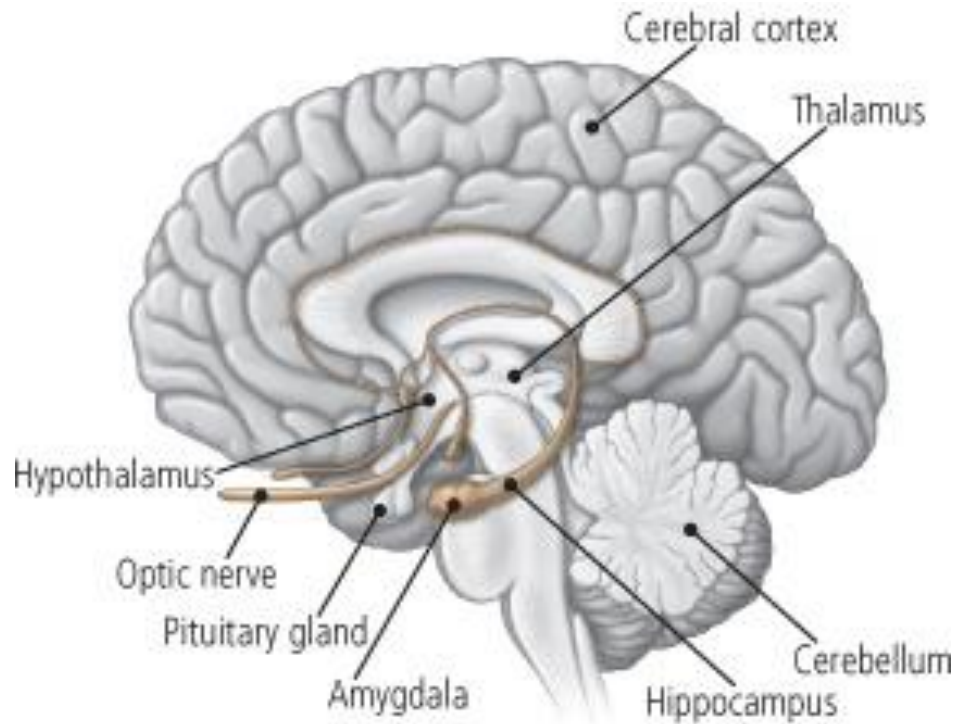
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*Each hemisphere of the cerebral cortex contains four main lobes. Each lobe is responsible for different functions.*

# The Brain

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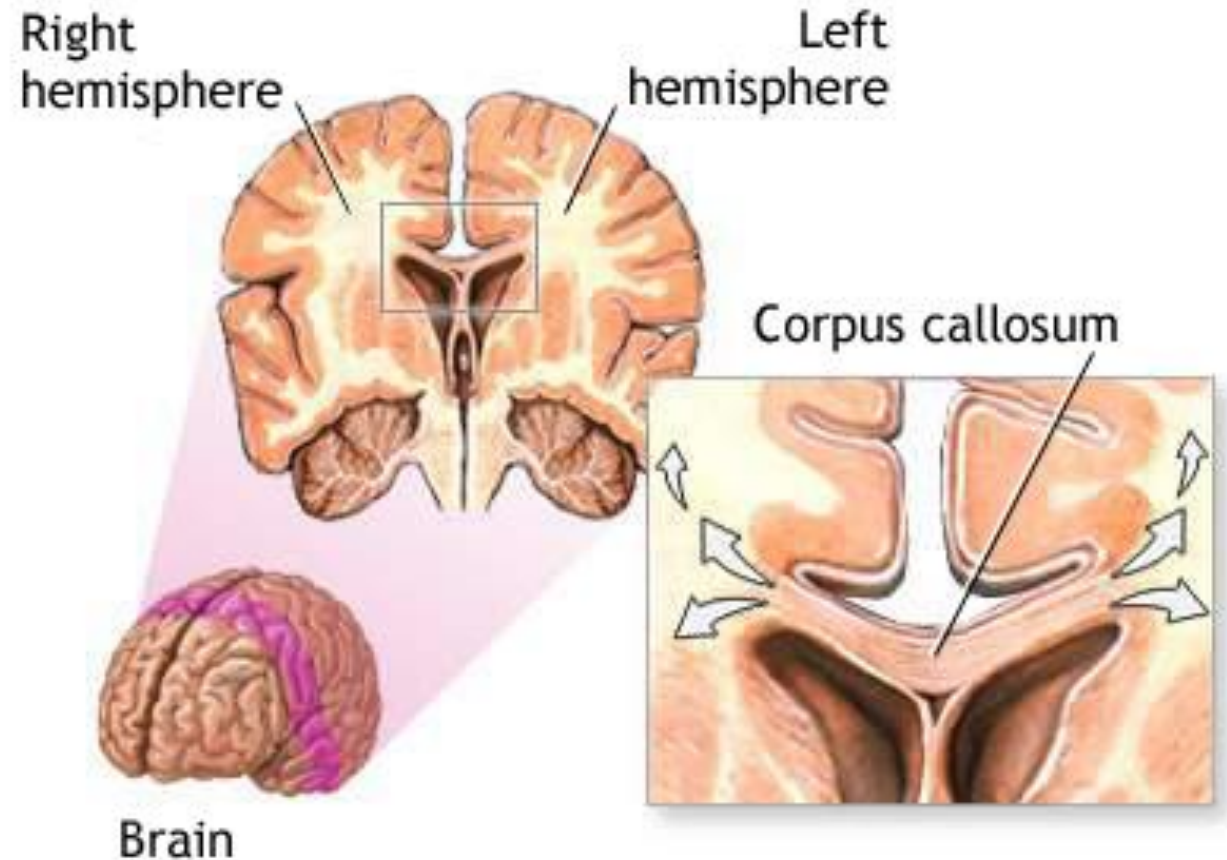
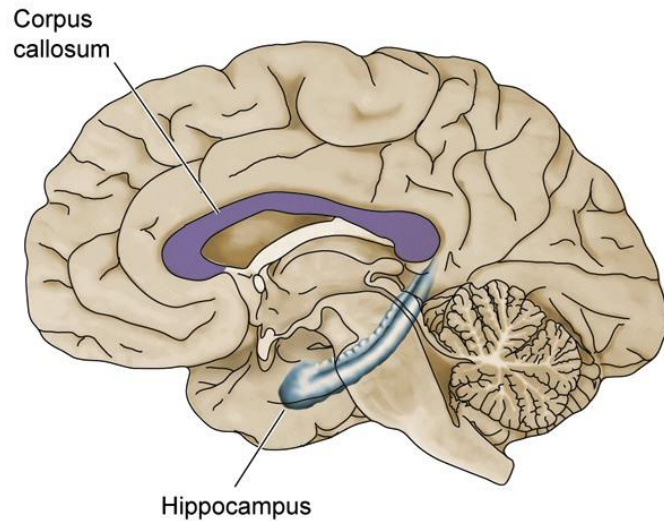
The brain is very fragile and must be protected by the skull.

The brain consists of two main hemispheres; right and left hemisphere. Each hemisphere is responsible for different aspects of human functioning.

The grey matter that surrounds each hemisphere is known as the **Cerebral Cortex**

# The Brain

The corpus callosum is the white matter of the brain and it joins both hemispheres together. It is able to relay information between the hemispheres so that each hemisphere is aware of what the other is doing.



# 8.4 The Peripheral Nervous System

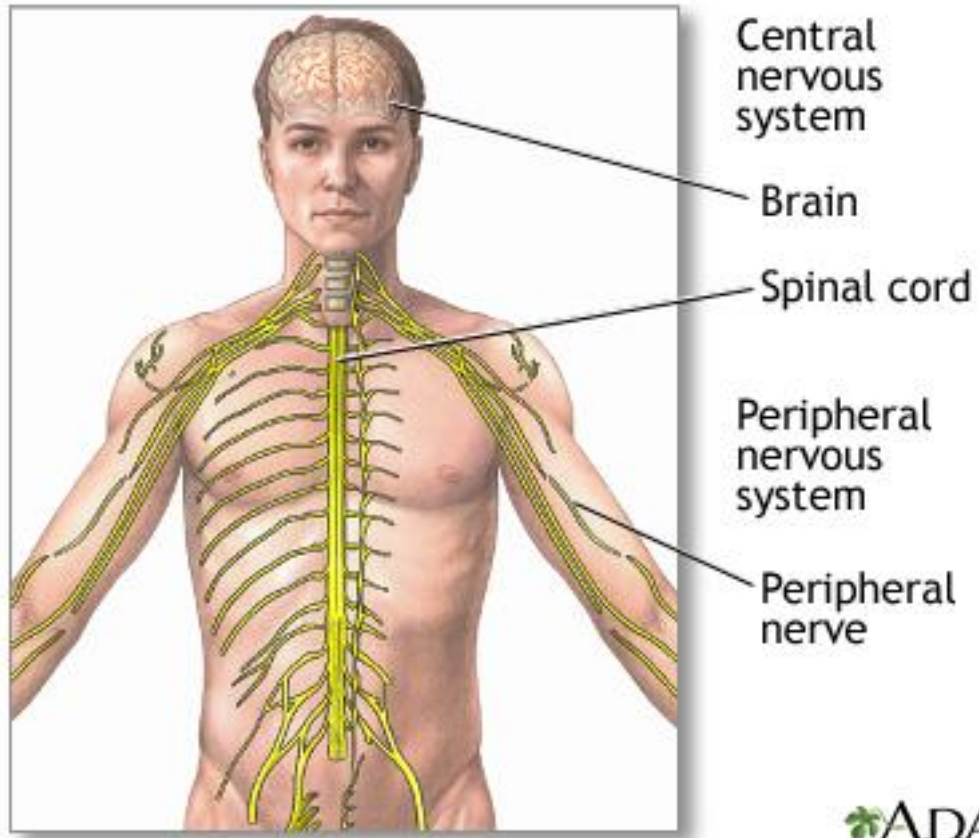
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# The Peripheral Nervous System

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*The Peripheral Nervous System connects organs, glands, muscles and senses to the CNS. Sensory neurons send information from the rest of the body to the CNS. The CNS sends information through the motor neurons to the rest of the body.*

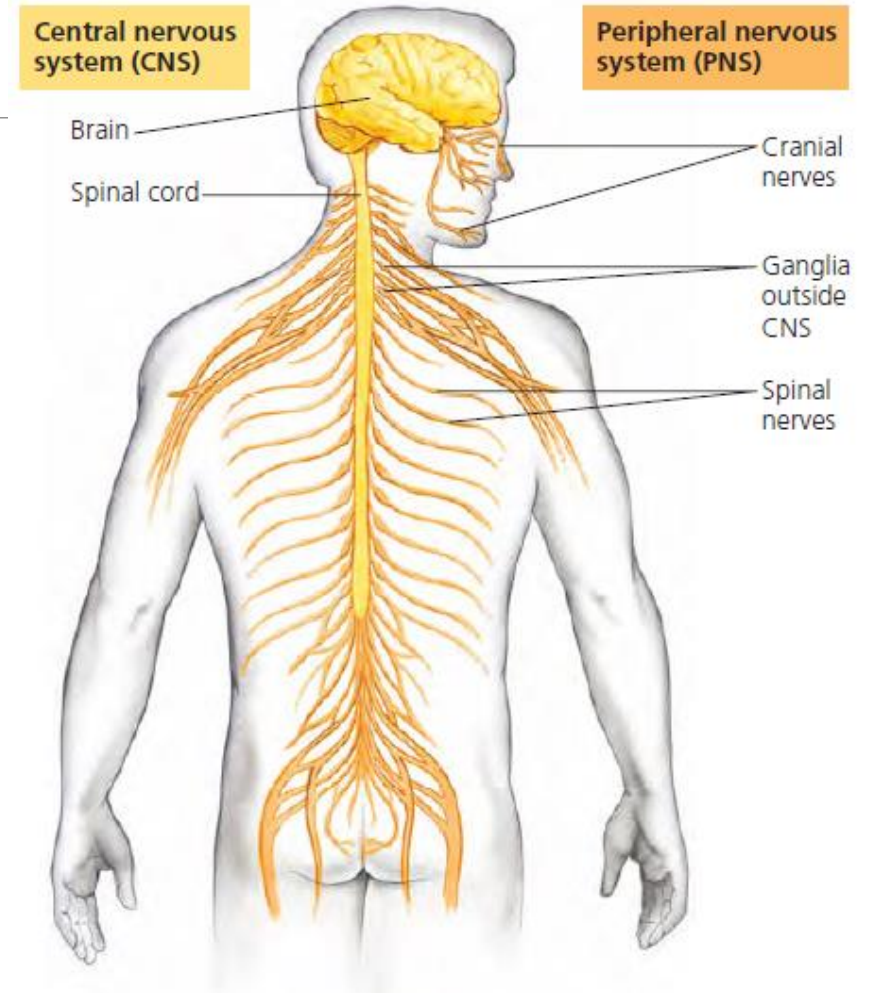
# The Peripheral Nervous System

The sensory neurons relay information from the external environment to the CNS. The motor neurons relay information from the CNS to the skeletal muscles.

*Two types of Nerves:*

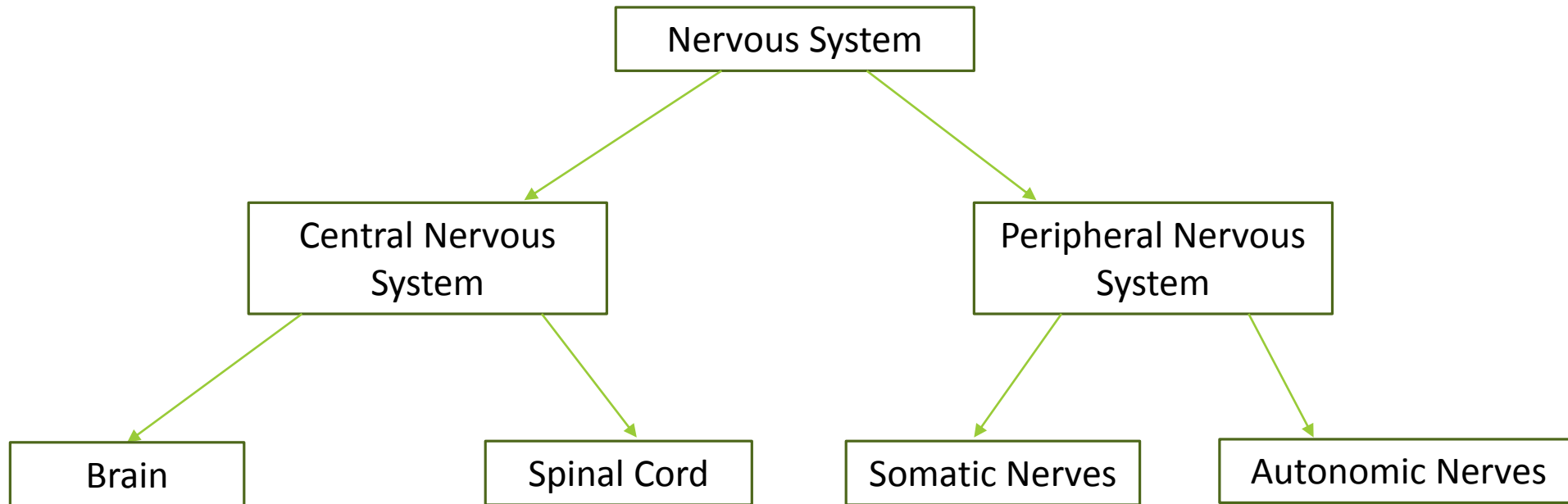
Cranial Nerves:

Spinal Nerves:



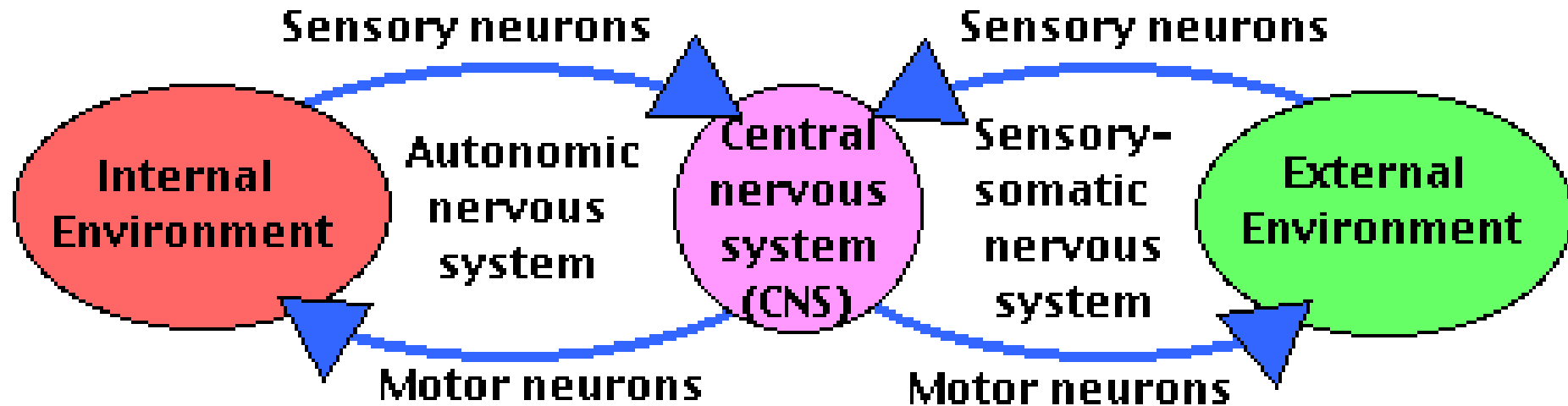
# Nervous System Overview

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# The Peripheral Nervous System

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# The Peripheral Nervous System

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The PNS can be subdivided into two main systems: Somatic System and Autonomic System.

Somatic Nervous System:

Autonomic Nervous System:

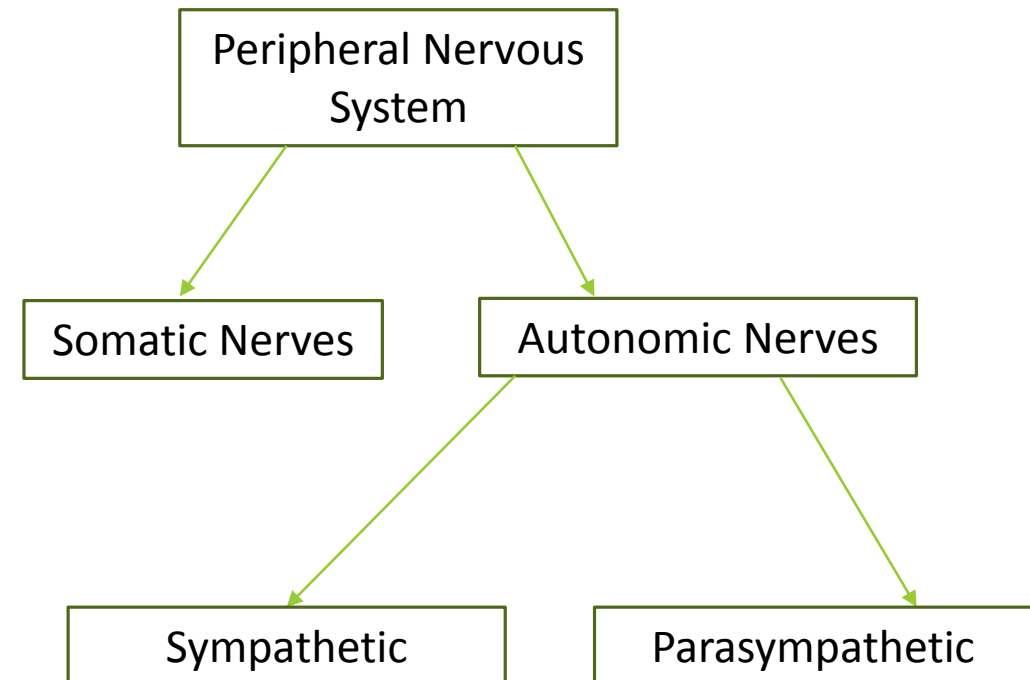
# The Peripheral Nervous System

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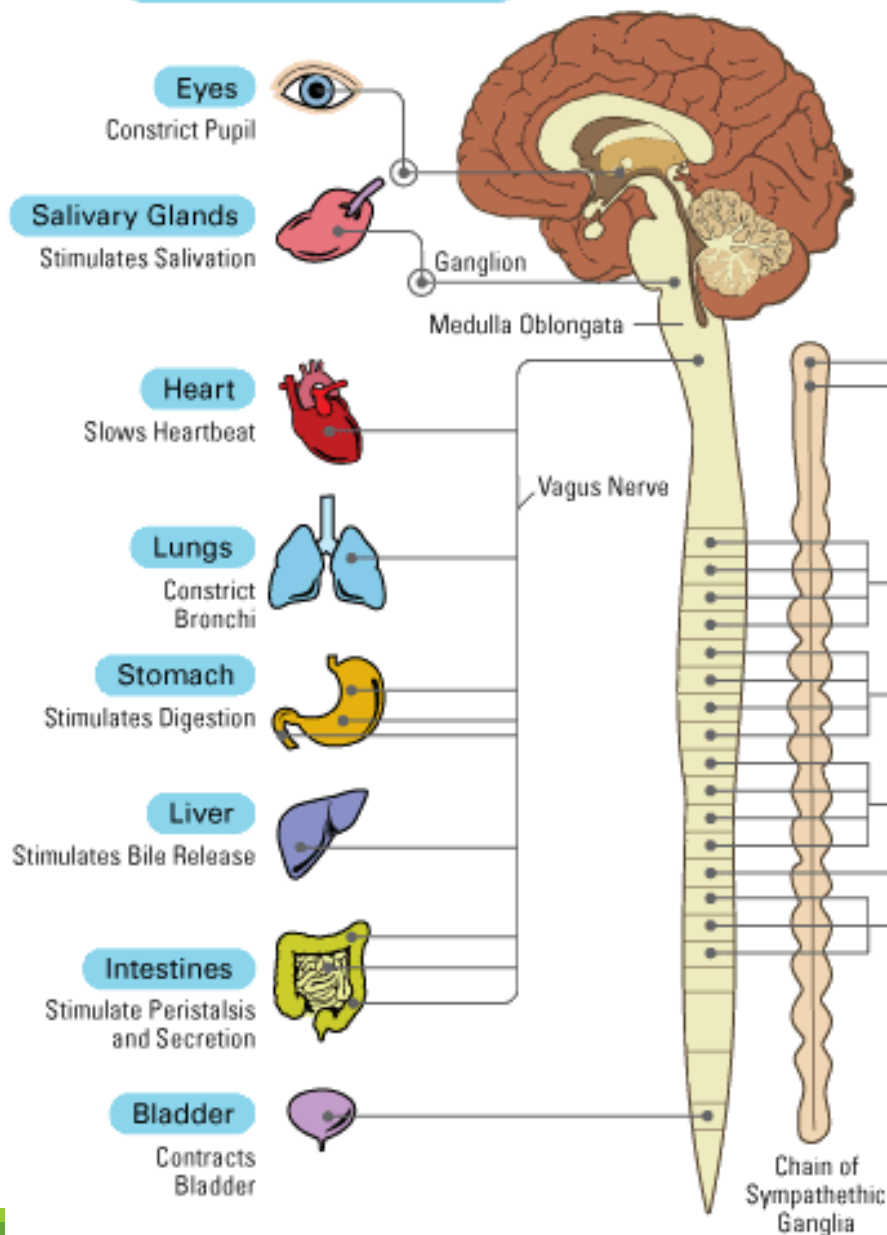
The sympathetic and parasympathetic systems are associated with the flight-or-fight response and rest-and-digest response.

## Sympathetic System:

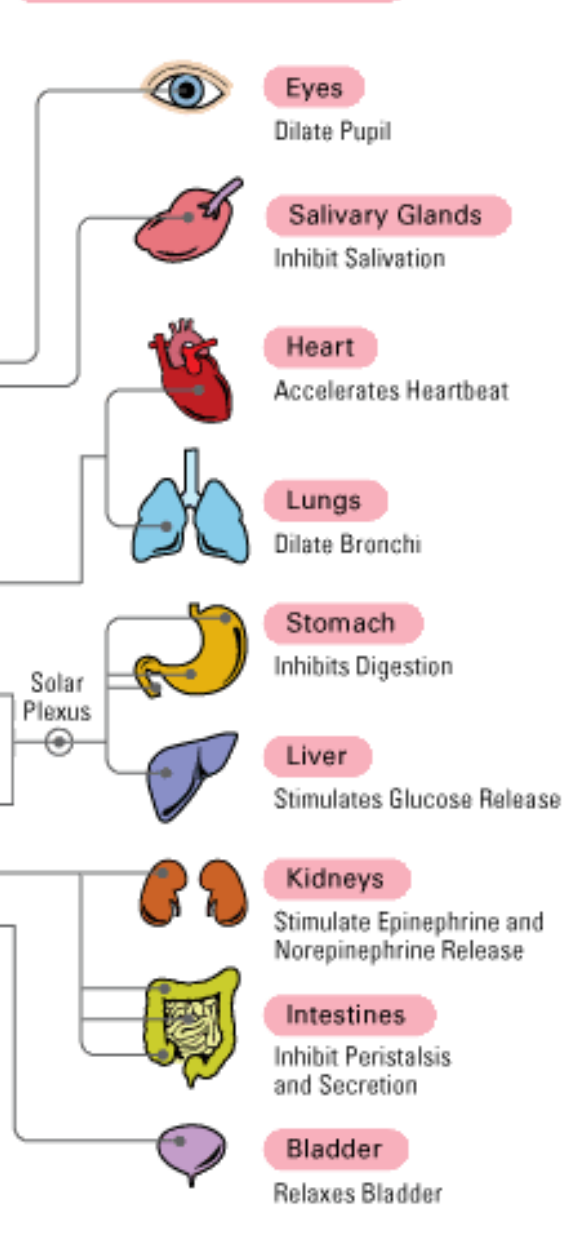
## Parasympathetic System:



## Parasympathetic



## Sympathetic



# Homework

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Textbook: pg. 373 # 1, 2, 4, 5, 7, 8 & 9