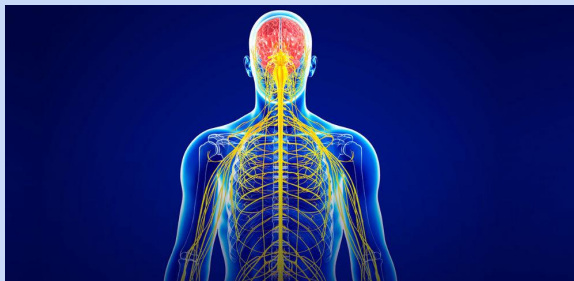


# NERVOUS SYSTEM

CREATED BY: Carly Amlie and Yharai Casas

# General Functions:

- The nervous system's job is to collect information **internally and externally**
- **It processes and interprets the information,** and then responds to the information
- The programming of reflexes is in the spinal cord
- It is in charge of memory and learning
- **Maintains** homeostasis throughout the body
- Controls movement

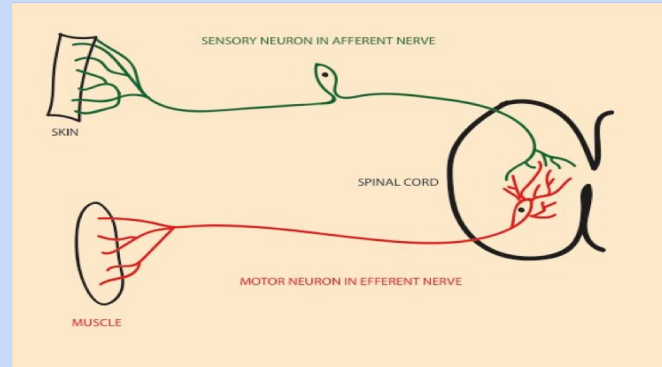
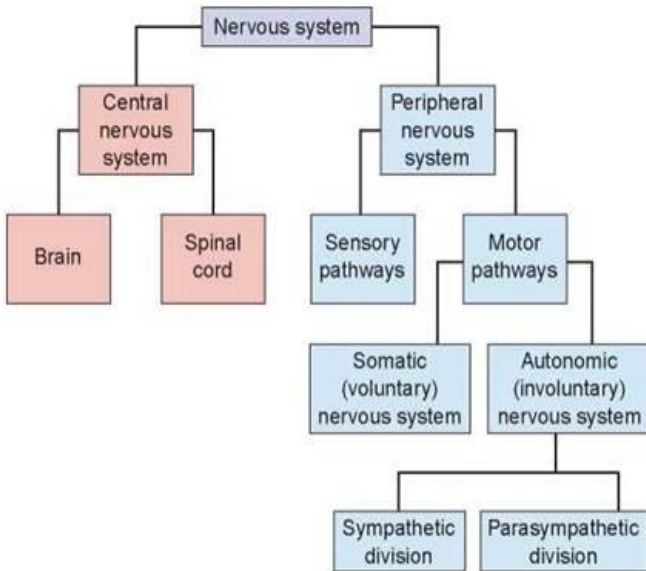


Two parts  
of the  
nervous  
system:

- There are two parts to the nervous system:
  - **The Peripheral Nervous System** and the **Central Nervous System**
- **The Peripheral Nervous System:** cranial nerves, spinal nerves, ganglia, somatic nervous system, autonomic nervous system.
- **The Central Nervous System:** the brain, and the spinal cord

# The Peripheral Nervous System

- The Peripheral System surrounds nerves outside the brain and spinal cord
- It is not protected by bones, therefore it is more vulnerable to trauma
- The PS connects to limbs, glands, and organs; in a way it checks up on them and brings the information back to the brain
  - This is because of “motor nerves”



## Cell Types:

- There are two types of cells in the nervous system:

### **Glial cells, and neurons**

- **Glial cells'** main function is to physically support the neurons
- **Neurons'** main function is to process and transmit information, and neurons are the main component of the brain, spinal cord, and the nerves of the body

# Homeostasis in the nervous system:

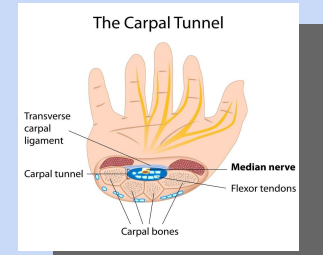
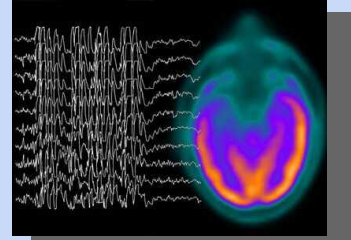
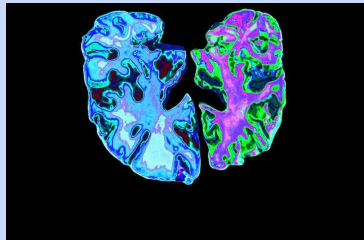
- A most important part of the body that maintains homeostasis
- The nervous system **regulates, responds, and monitors** all systems of the body in humans and other life
- The nervous system monitors everything from the tiniest of cells in the body to core organs in the body

## How the NS interacts with other systems:

- The nervous system works closely with the **endocrine system** to help produce hormones and enzymes
- The nervous system also is required for the **muscular system**, because the nervous system tells your muscles how and when to move
- The **respiratory system** is supported by the nervous system because the brain regulates the respiratory rate
- The **digestive system** is supported by the nervous system because the brain sends signals for eating and drinking behaviors

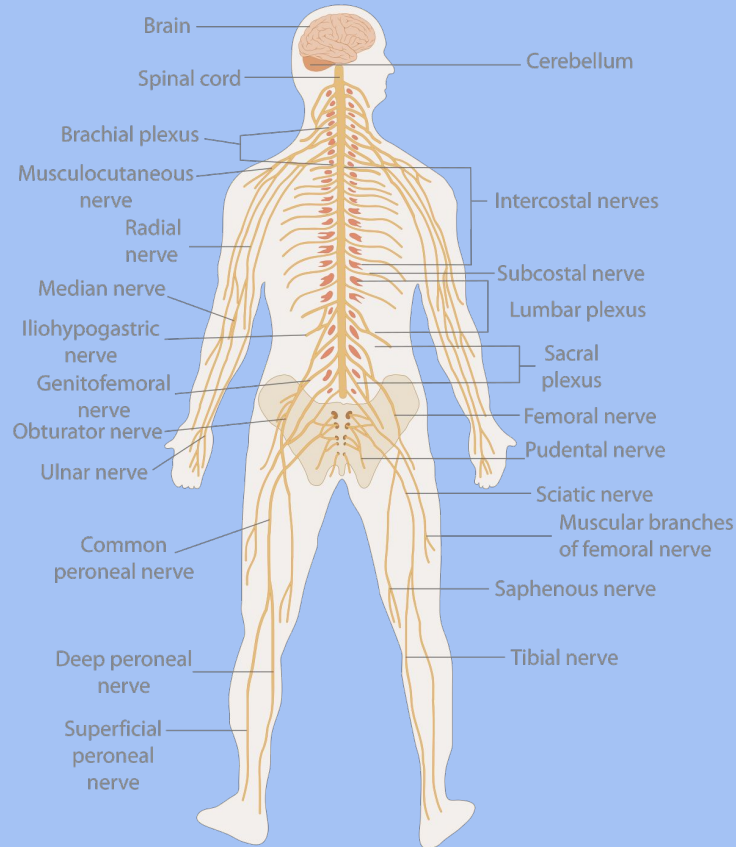
# Disorders and Diseases within the NS:

- Alzheimer's Disease is a **central nervous system disease** that causes the decay of brain cells until the brain dies
- Epilepsy is a **central nervous system disorder** that causes frequent seizures, as well as unusual sensations and behaviors due to abnormal brain activity
- Carpal tunnel syndrome is a **peripheral nervous system syndrome** that because of a pinched nerve in the wrist, causes tingly and numb sensations in the wrist





# Dr. Charles Martin Answers



# How does the nervous system respond appropriately to the sensory input?

- The nervous system respond to the sensory input because of the brain
- The brain receives the information, analyzes it, and then responds
  - Every time it has to respond, it tries to response even better
  - The brain is constantly trying to improve its system

# How does the neuron operate?

- Based through “depolarization”
  - It starts on one end and communicates all the way to the other end of a human body
- It communicates through central processing
- It is also based on the inheritance
  - Humans have more evolved neurons
- Since neurons are constantly evolving, the brain is constantly trying to keep up with the neurons
- It is a very dynamically complex process
  - “Think how complex you can and then think about how it way more than that”

## What are the differences between the Sympathetic branch and the Parasympathetic branch?

- Sympathetic has 3 nervous systems and they are layered
  - Primitive = enteric so the movement, digestive, and homeostatic functions
  - Cerebral Spinal = joints, muscles, no connection to digestion but it does help the movement of the body
  - Autonomic NS = releases sugar, and favors the motility side
- COVID-19, the panic, rising of blood pressure, worrying, and the mental stress triggers the Sympathetic branch
- Parasympathetic is more physical reaction that trigger the Parasympathetic branch

# What occurs during reflex arc?

- 3 components
  - Sensory - receives information
  - Central processing
  - Reflex sensoring
- The nervous system is a reflection of everything you do and your thoughts
  - In the sense of whatever you do physically effects/is mimicked by your brain for your internal self
- Almost all actions or thoughts are processed through the brain, some just happen without the brain really acknowledging it
- Your brain then sends an order to respond to the action or to show effect of a thought

# Advice to keeping your nervous system healthy

- “Move well, Think well, and Eat well”
- Put healthy inputs into yourself
  - Exercise, keep your body active and healthy
  - Think positively, try to be happy
  - Put good things that your body will thank you for into your body
- Mental health and physical health will keep your nerve system sharp
- Treat your body well because a nerve system isn't easy to fix

# Thank You!

“Nerve system is complex and it is evolving, so there is something always changing which make it difficult to learn about” - Dr. Charles Martin