

Tishk International University
Faculty of Applied Science
Nutrition and Dietetics Department



Nervous System

Human Anatomy / 3rd Lecture
1st Grade / Spring Semester

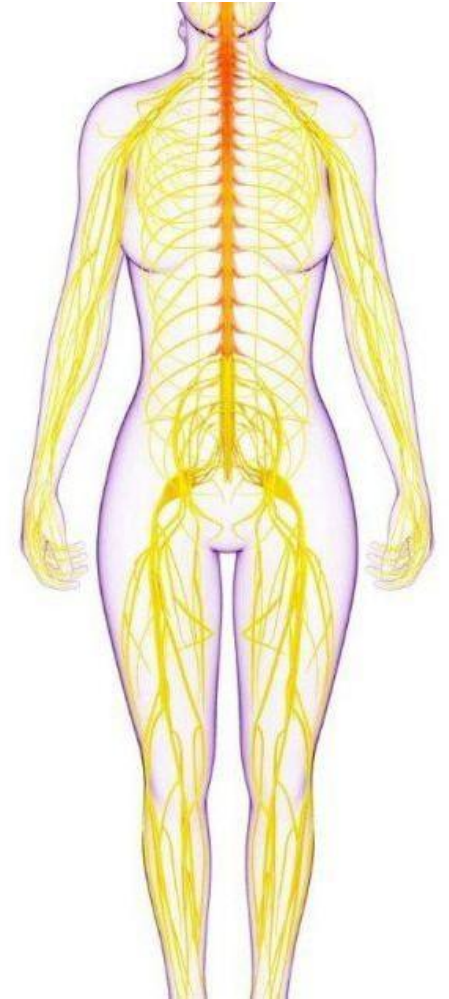
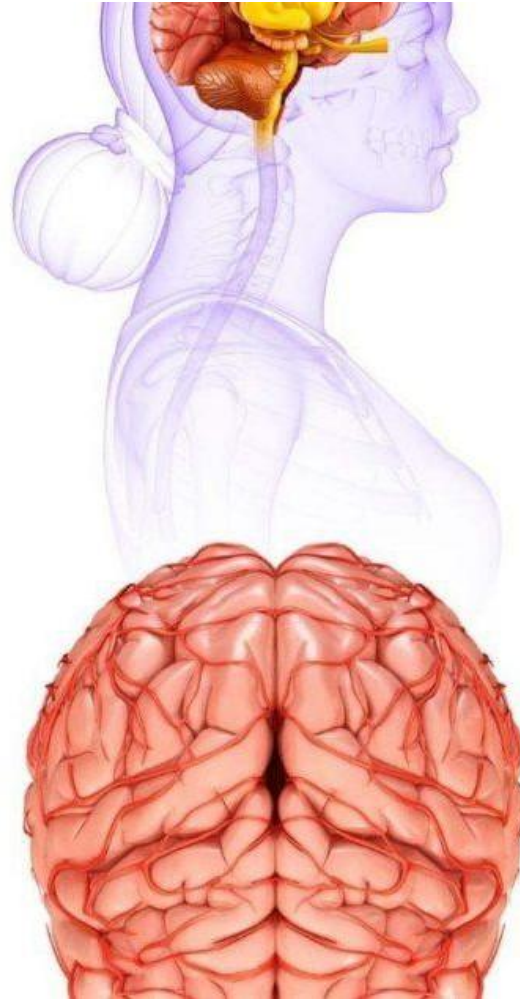
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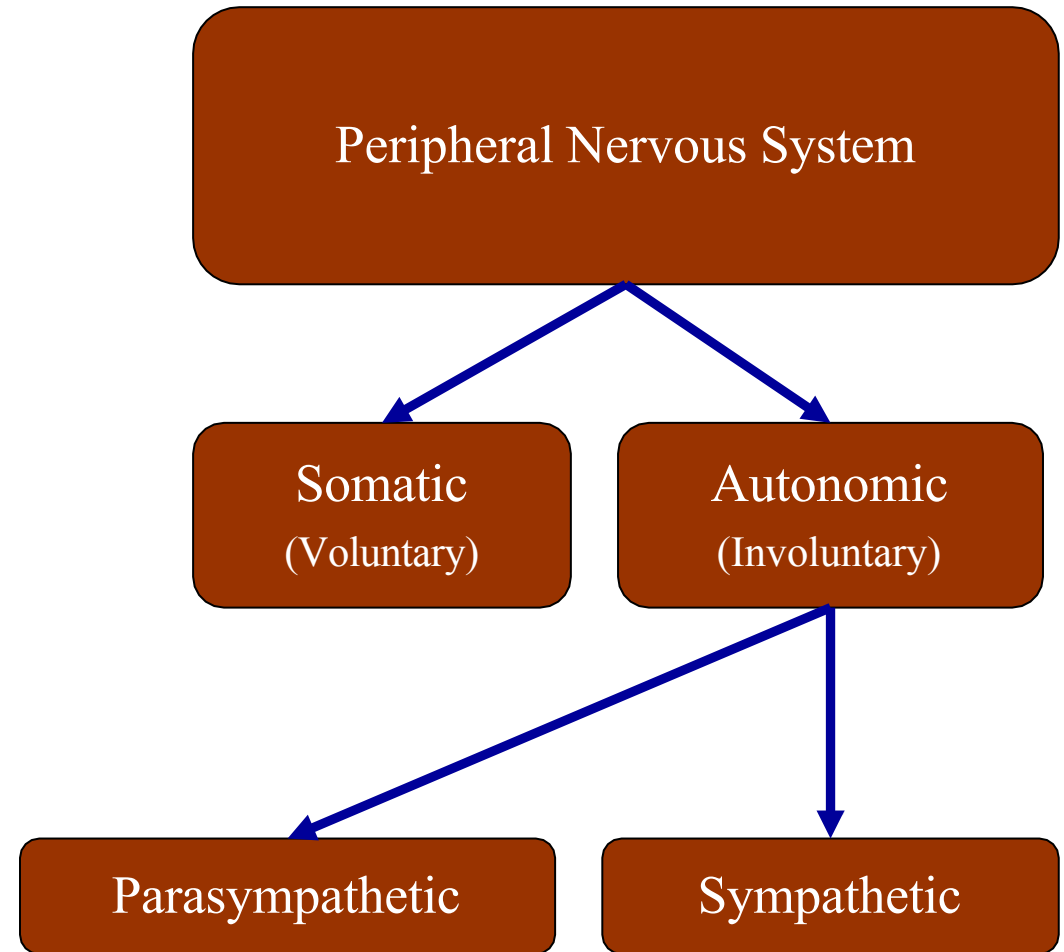
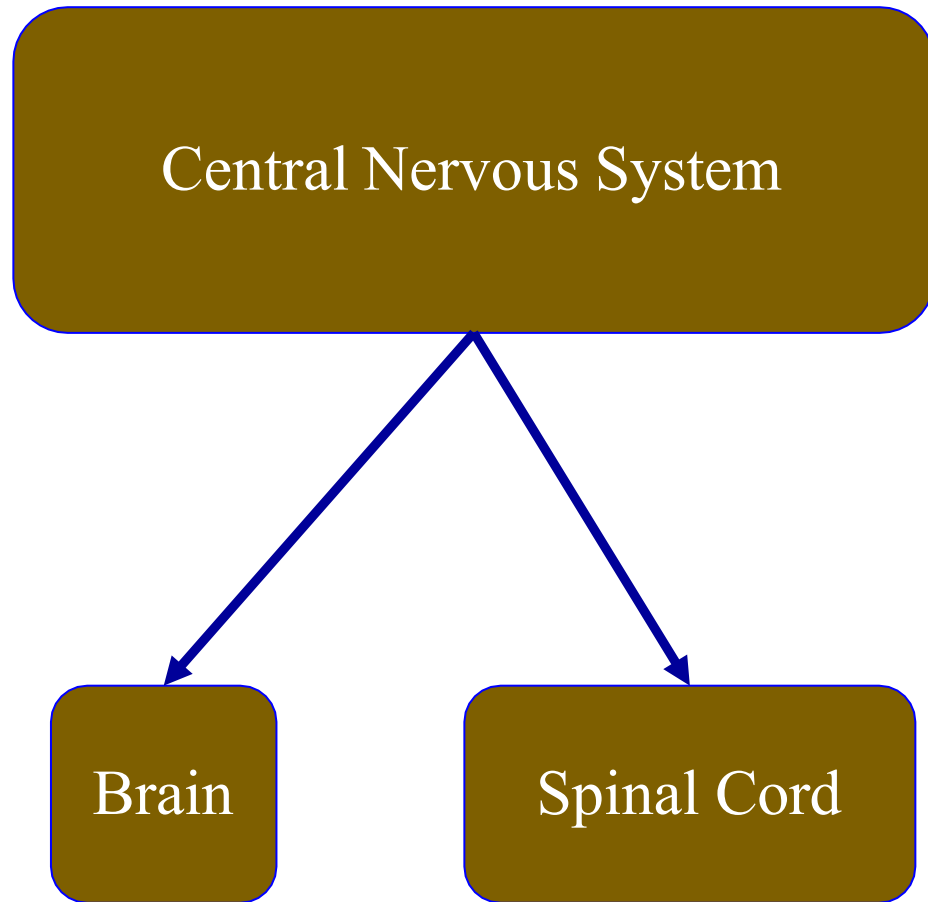


Outlines

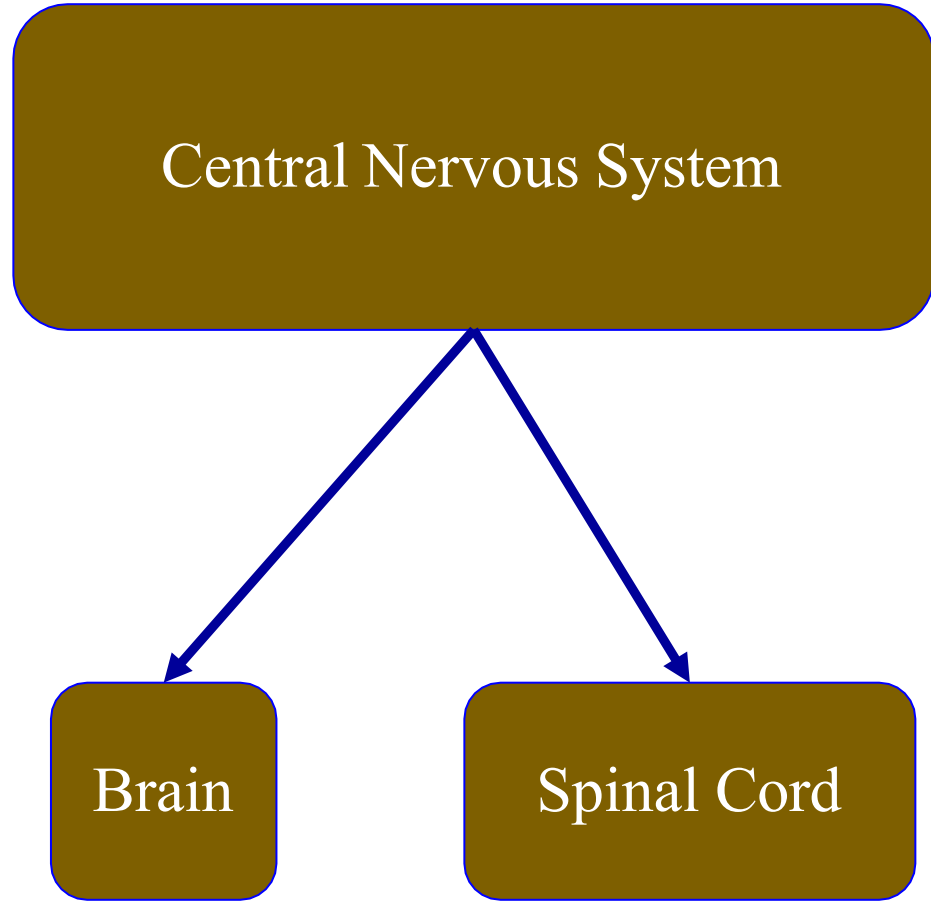
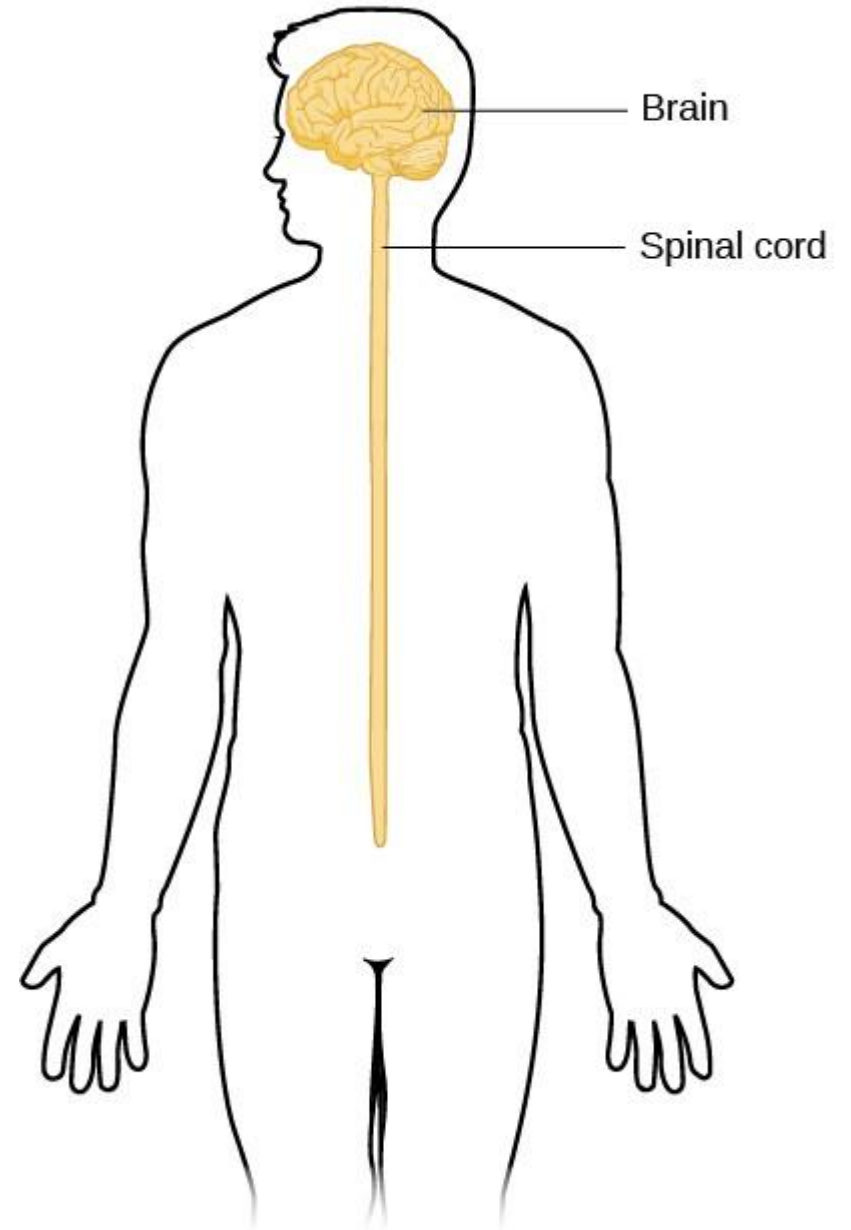
- **Divisions of the nervous system.**
- **Central Nervous system**
- **Peripheral Nervous system**
- **Somatic nervous**
- **Autonomic nervous**



Nervous System Divisions



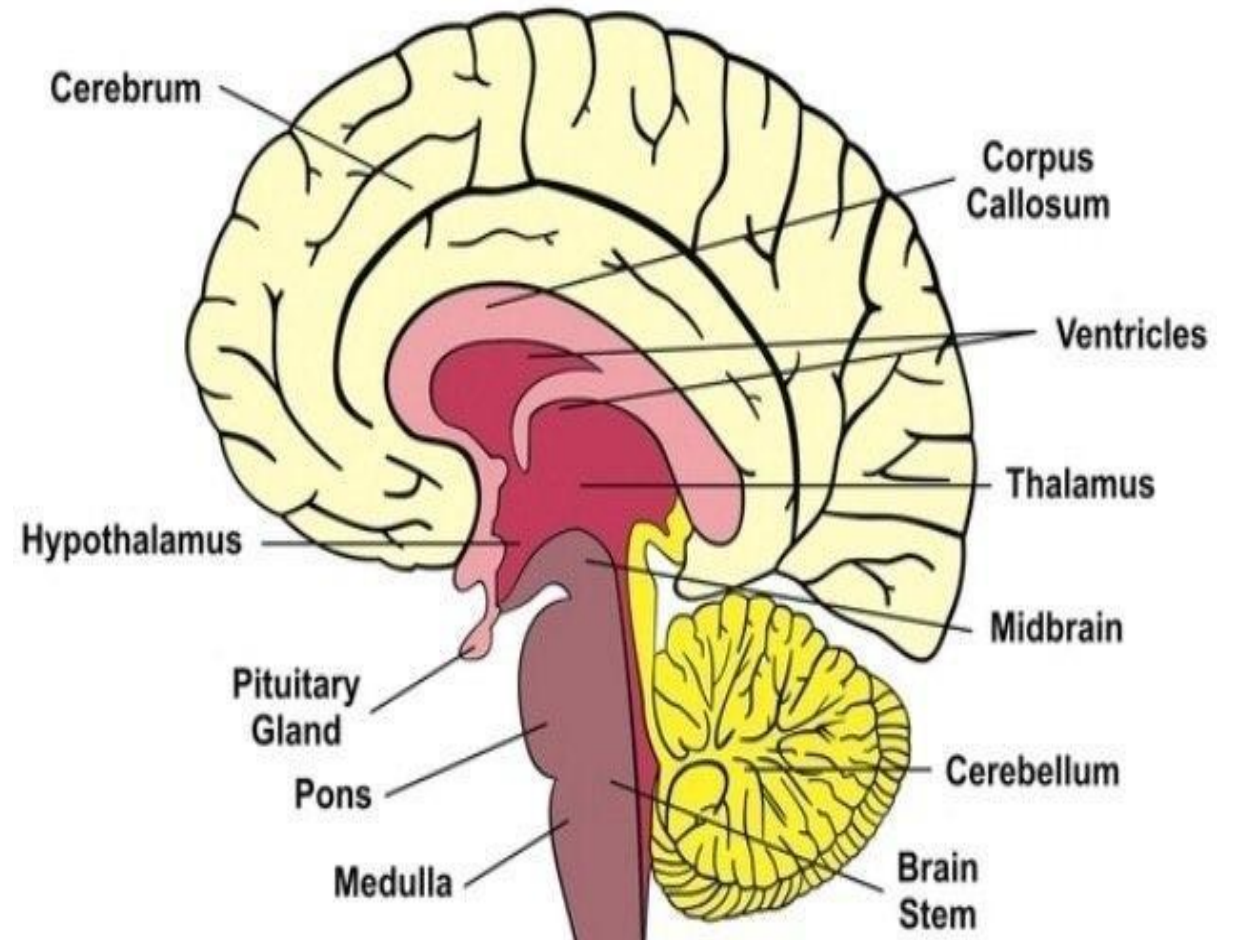
Central Nervous System



Central Nervous System

Brain

- ◆ Largest most complex mass of nervous tissue
- ◆ Divisions of the Brain: Cerebrum, Cerebellum, Brain Stem
- ◆ Other structures: thalamus, hypothalamus, pituitary gland, meninges



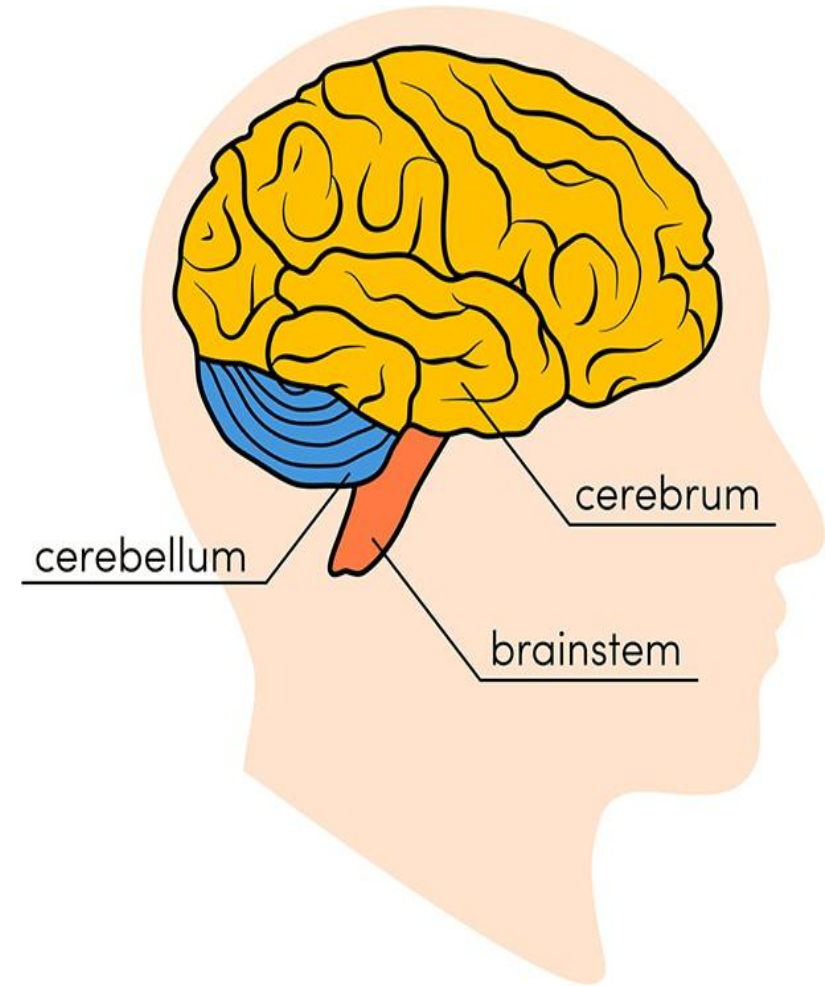
Central Nervous System: Brain

The brain is composed of :

1.Cerebrum

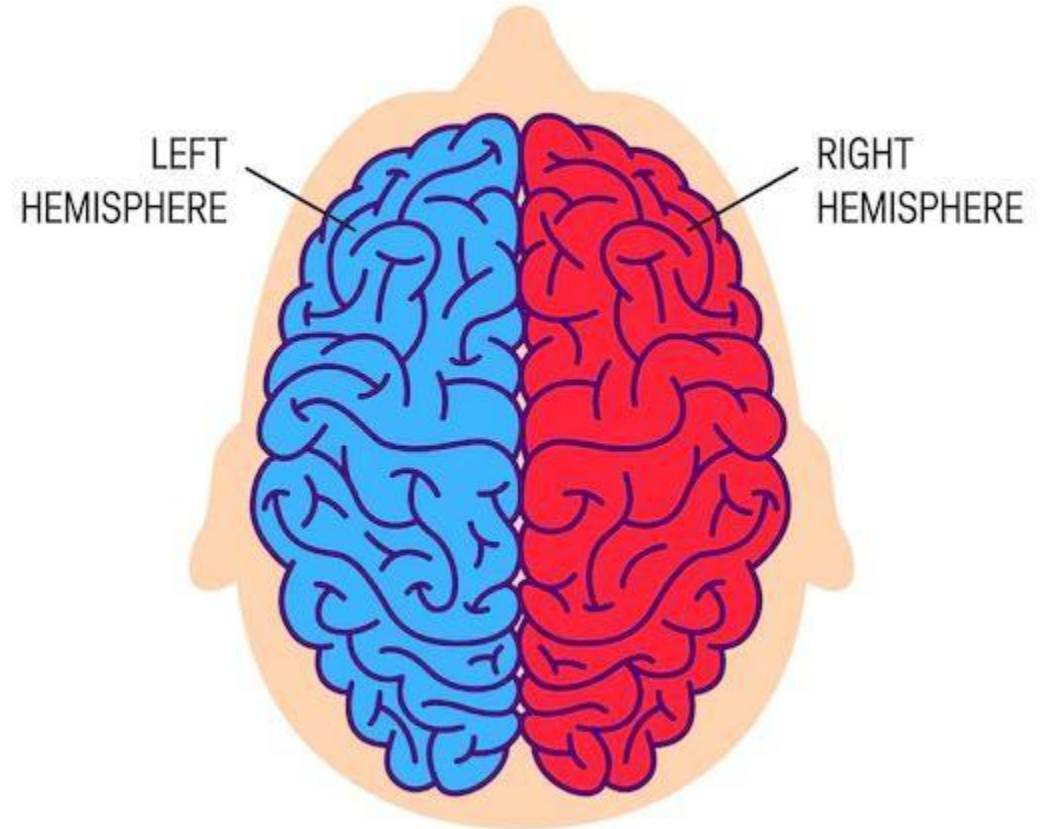
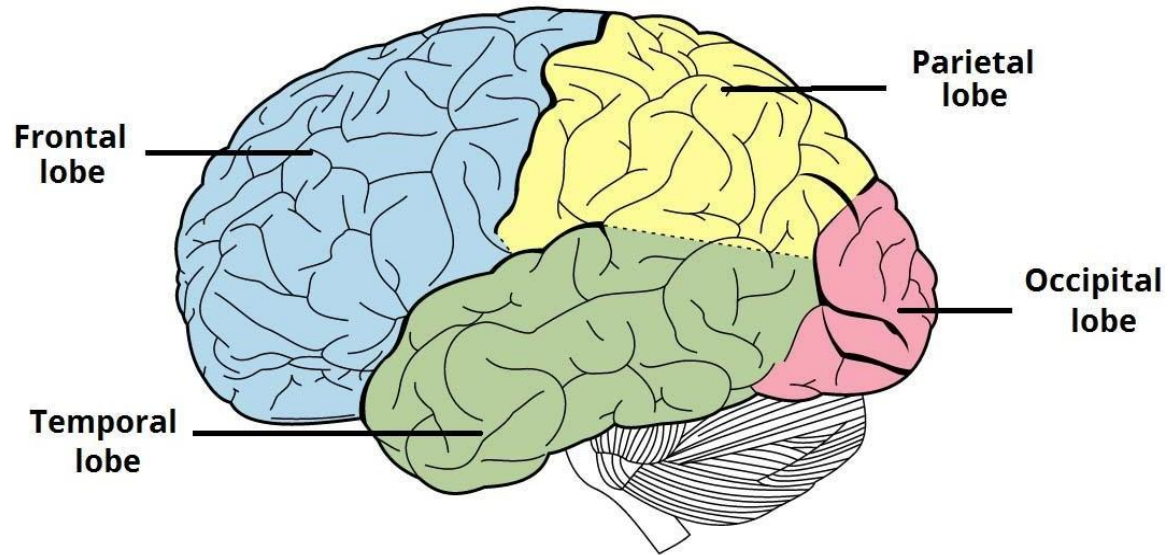
2.Cerebellum

3.Brainstem



Central Nervous System: Brain, 1. Cerebrum

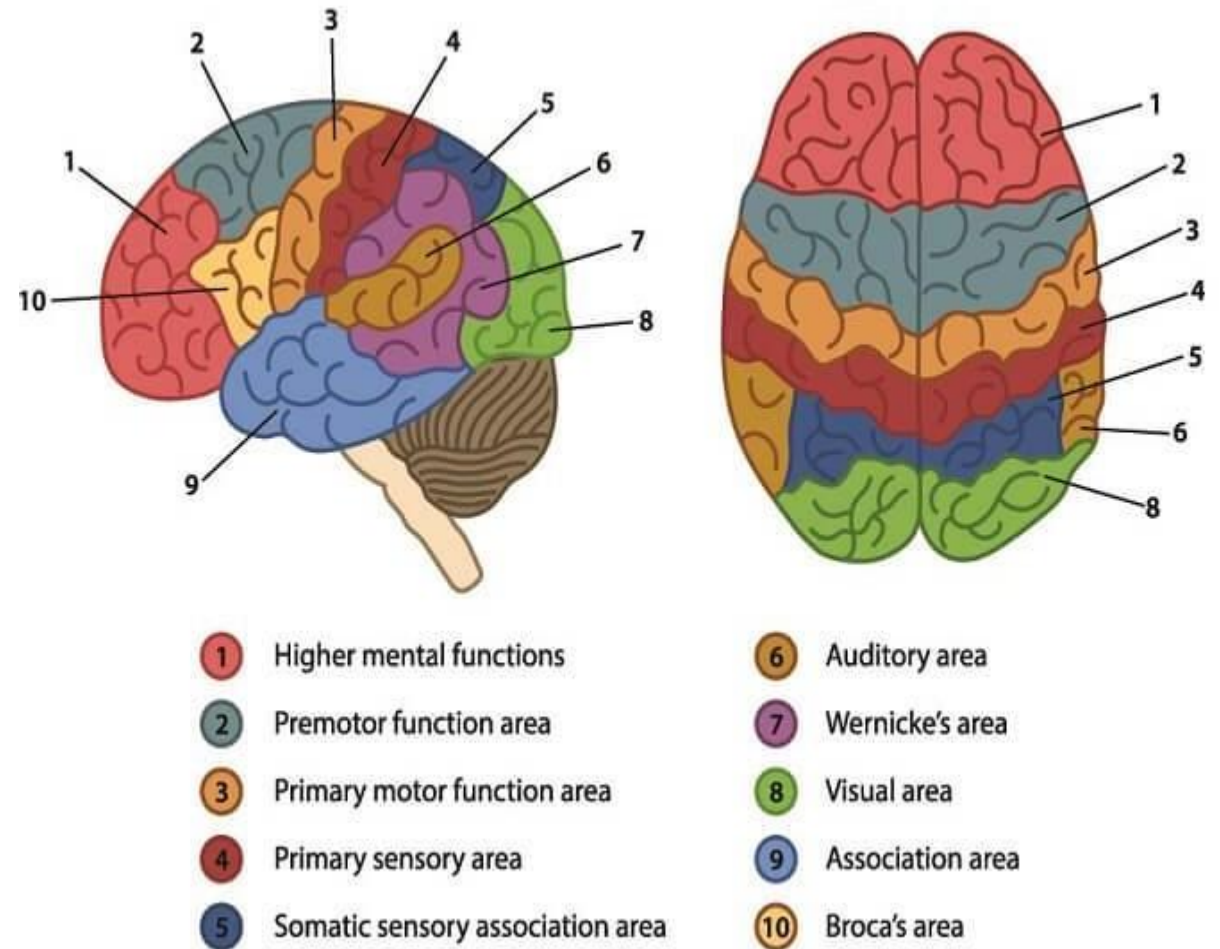
1. Cerebrum: is the largest part of the brain and is composed of right and left hemispheres.



Central Nervous System: Brain, 1. Cerebrum

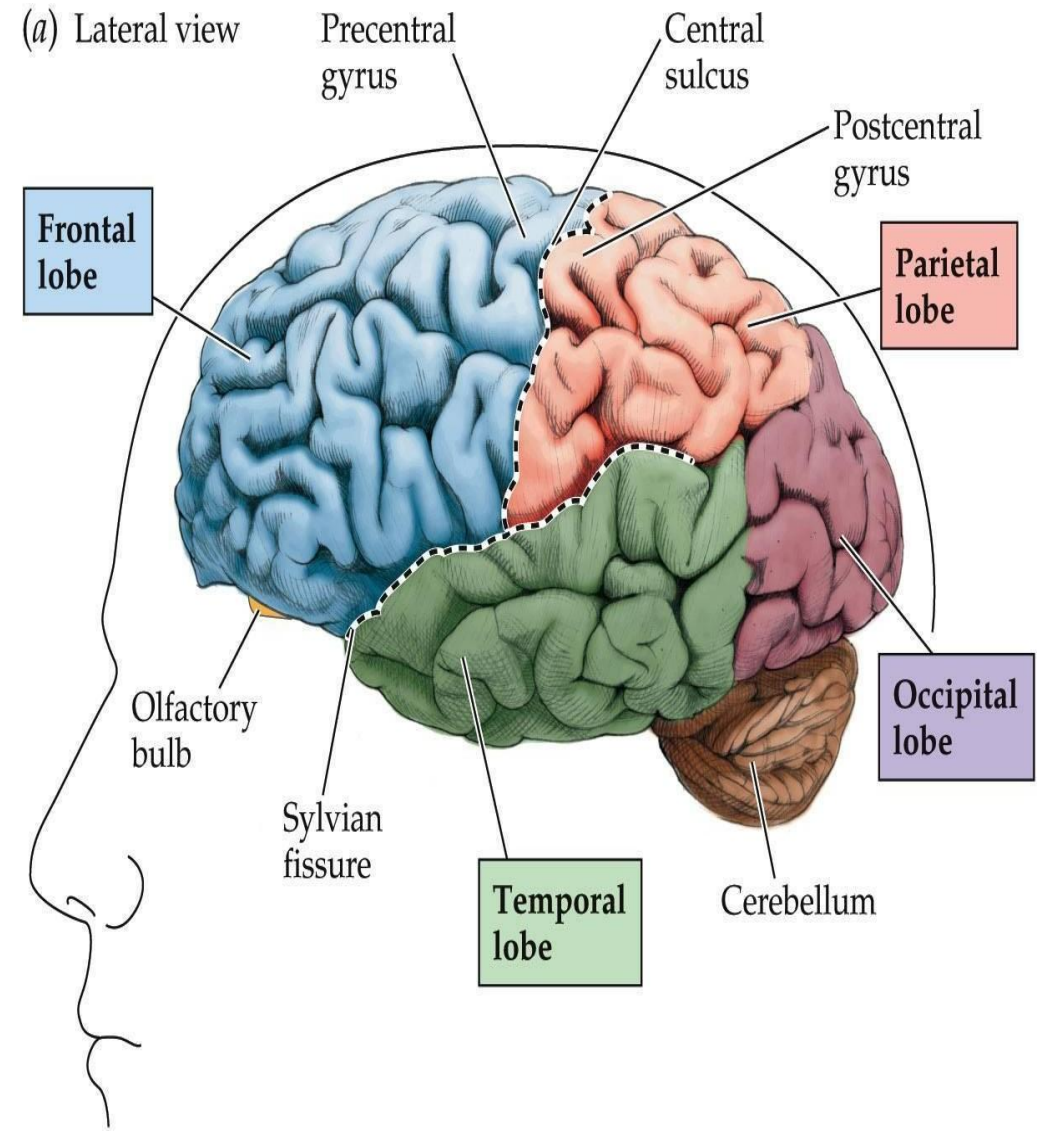
Functions of Cerebrum:

- A. Interpreting touch
- B. Vision and hearing
- C. Speech
- D. Reasoning
- E. Emotions
- F. Learning,
- G. Control of movement.



Central Nervous System: Brain, 2. Cerebellum

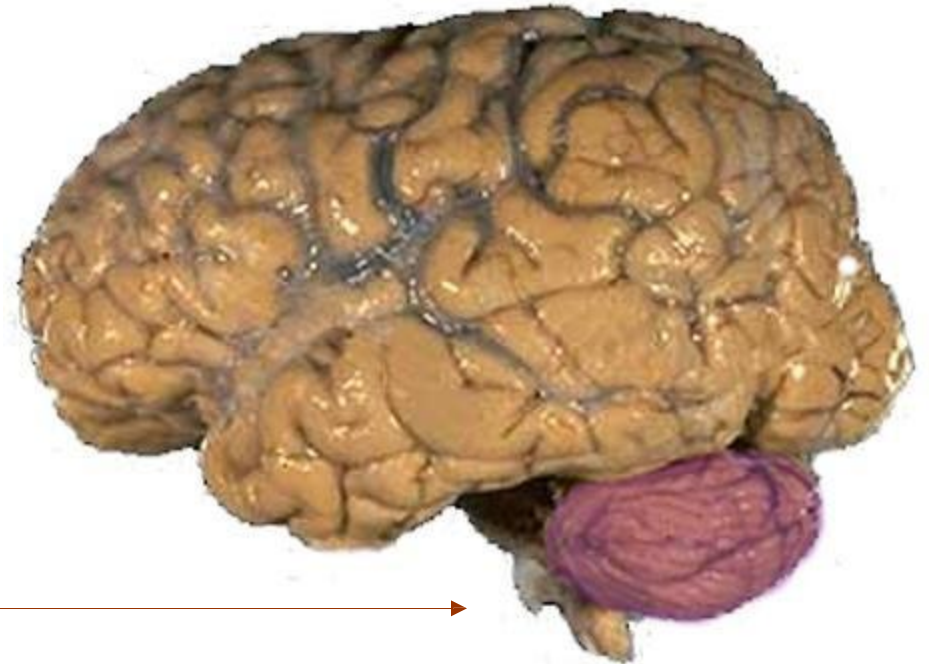
2. **Cerebellum** (“little brain”) is a structure that is located at the back of the brain, underlying the occipital and temporal lobes of the cerebral cortex.



Central Nervous System: Brain, 2. Cerebellum

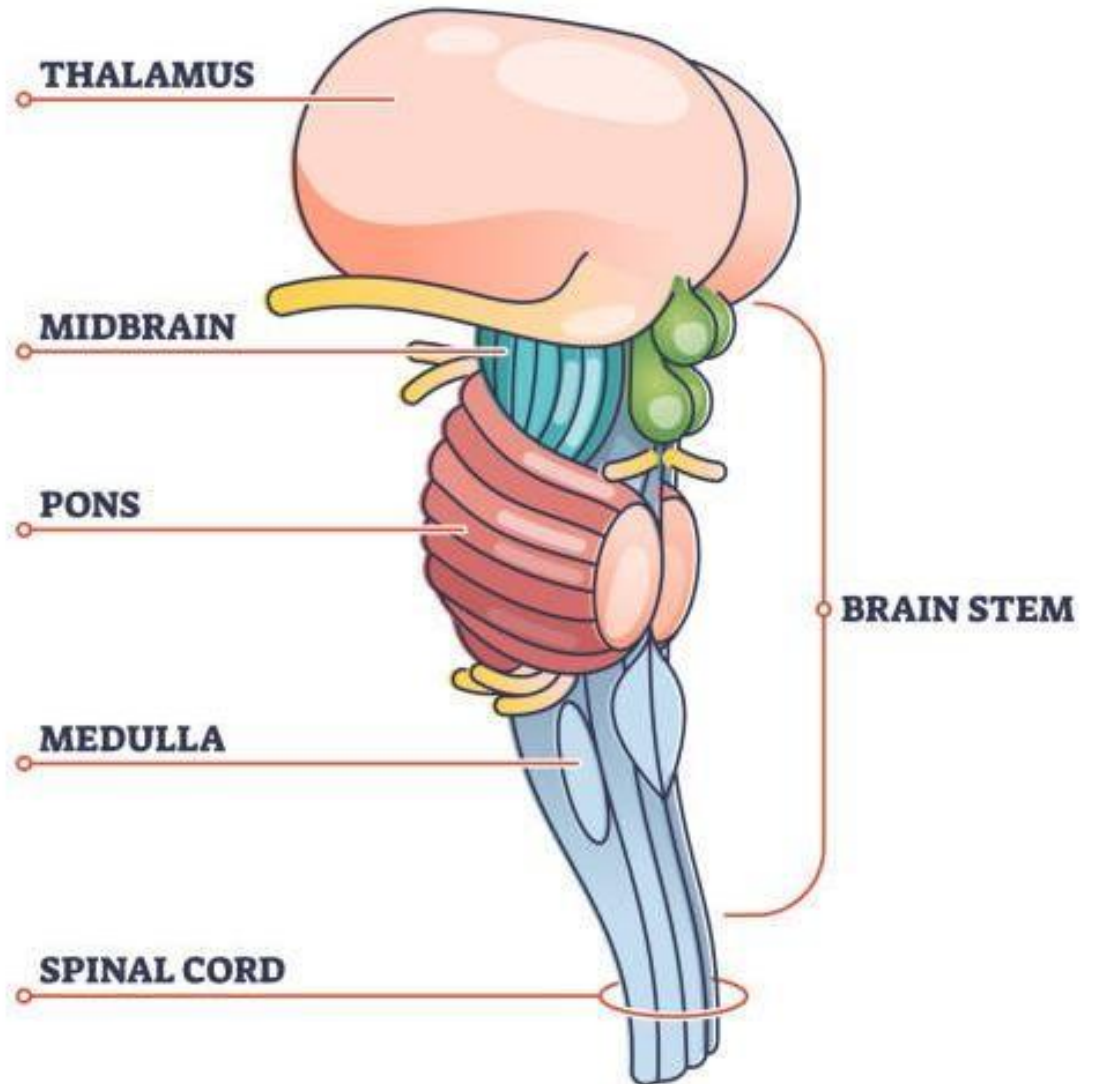
The **CEREBELLUM** controls voluntary movements such as:

1. Walking.
2. Posture.
3. Balance.
4. Coordination.
5. Eye movements.
6. Speech



Central Nervous System: Brain , Brainstem

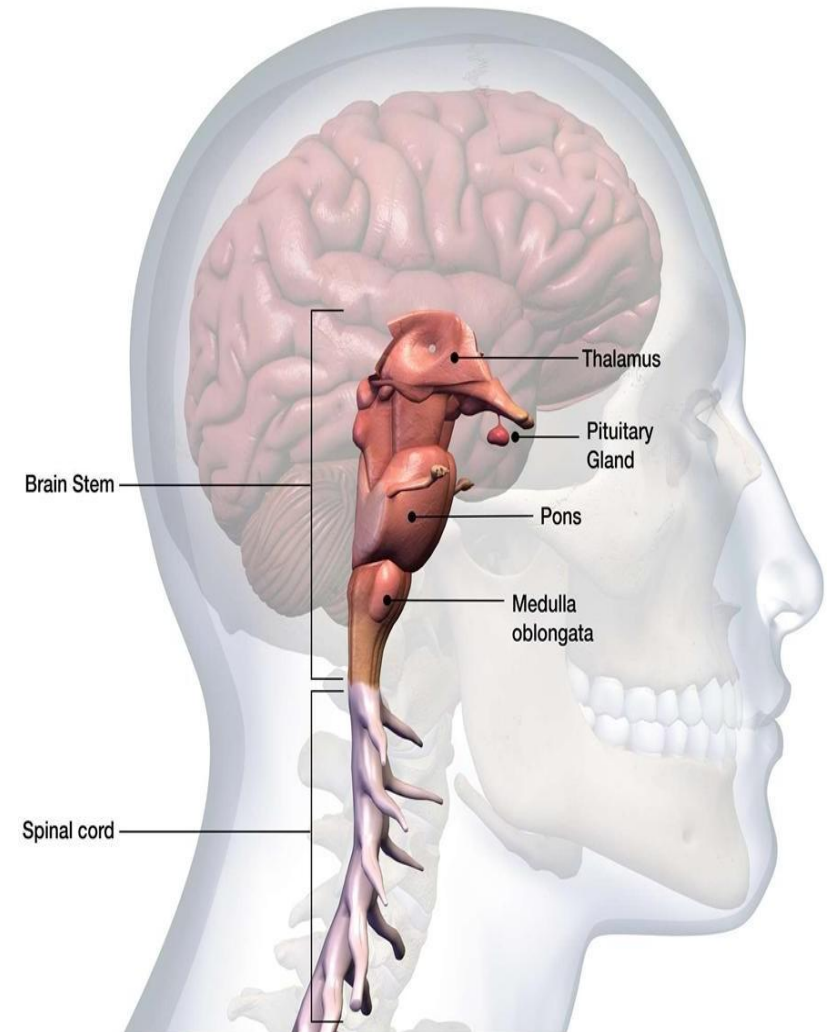
3. Brainstem: is the stalk like part of the brain that connects the brain to the spinal cord.



Central Nervous System: Brain

3. Brainstem

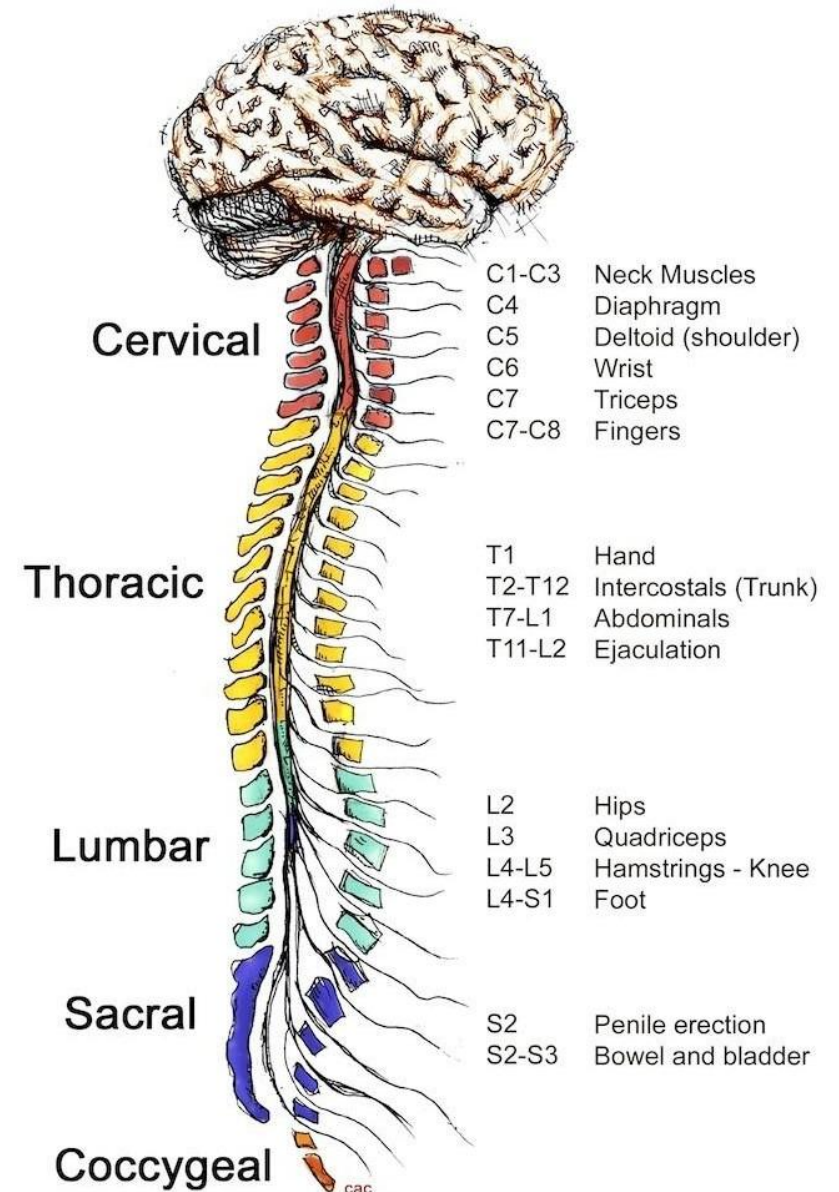
The **Brainstem** has many basic functions, including **regulation of heart rate, breathing, sleeping, and eating.** It also plays a role in **conduction.**



Central
Nervous
System:
Spinal Cord

Spinal Cord :

A column of nerve tissue that runs from the base of the skull down the center of the back.

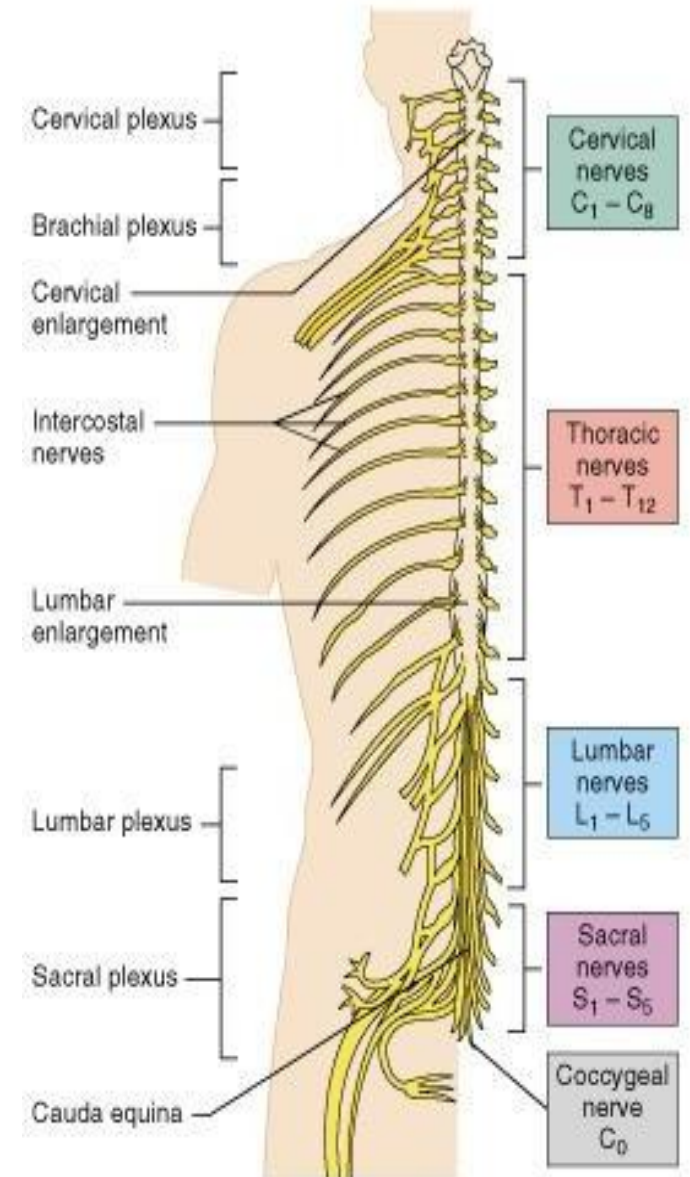


Central Nervous System:

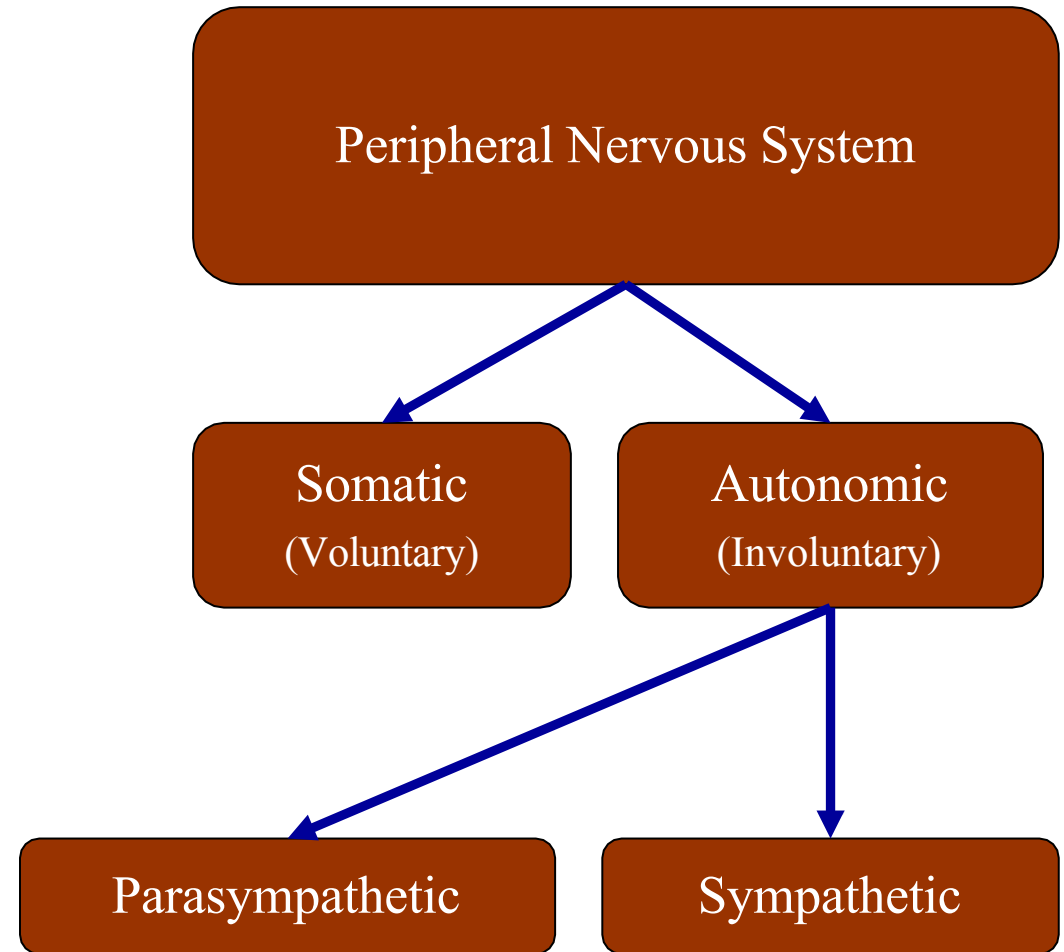
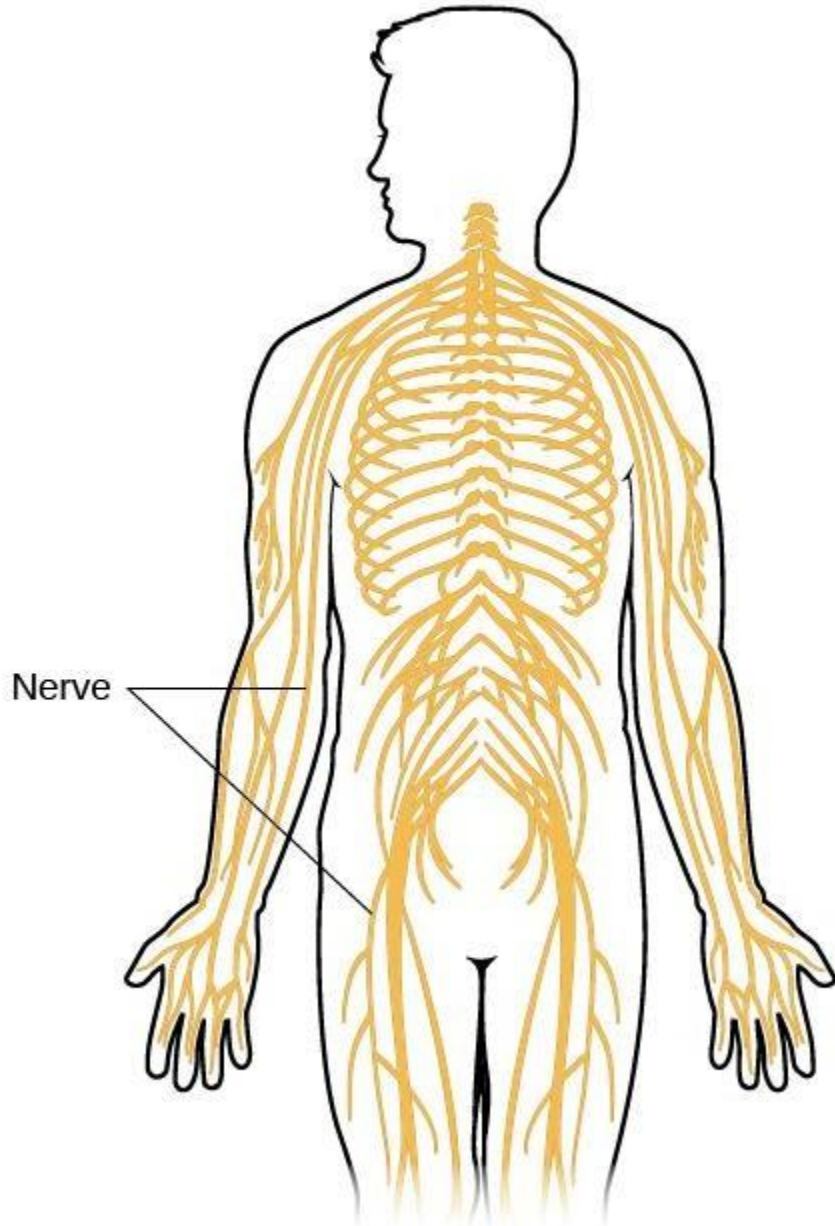
Spinal Cord

The spinal cord is a cylindrical structure of nervous tissue composed of white and gray matter, is uniformly organized and is divided into four regions:

1. CERVICAL (C)
2. THORACIC (T)
3. LUMBAR (L)
4. SACRAL (S)



Peripheral Nervous System



Peripheral Nervous System

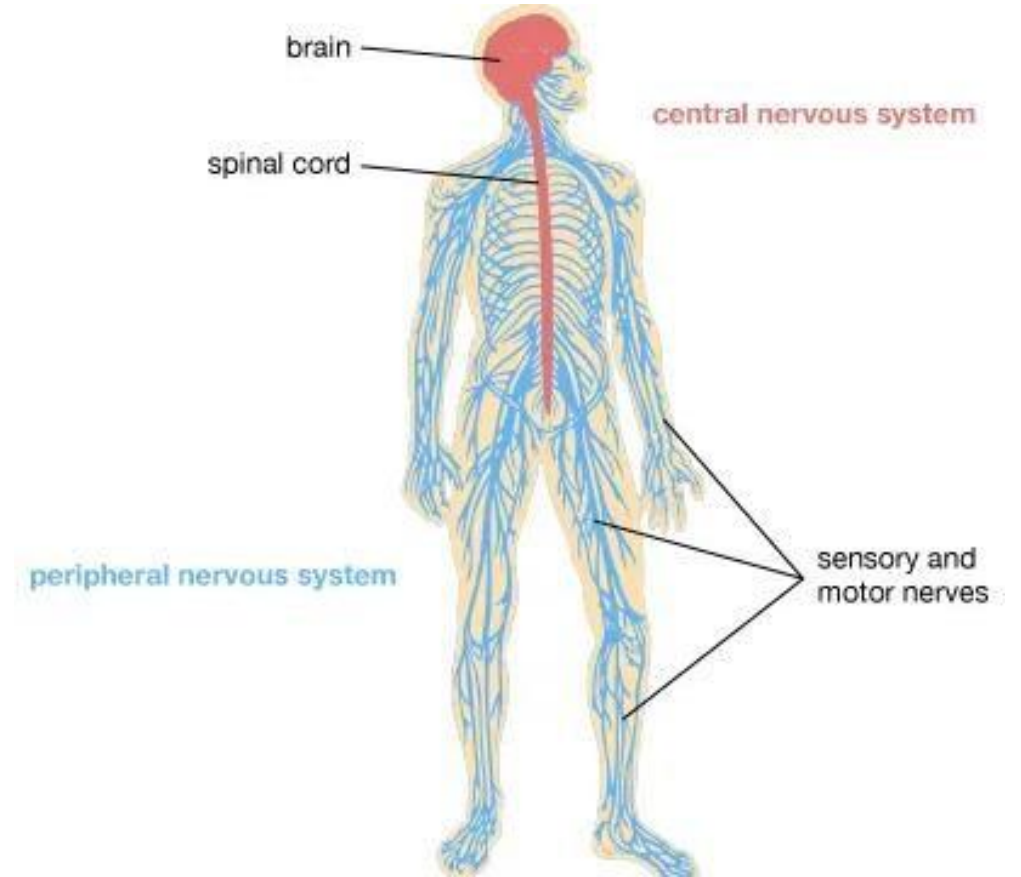
The peripheral nervous system **consists of the nerves that branch out from the brain and spinal cord.**

These nerves form the communication network between the CNS and the body parts.

The peripheral nervous system is further subdivided into the **somatic nervous system** and the **autonomic nervous system.**

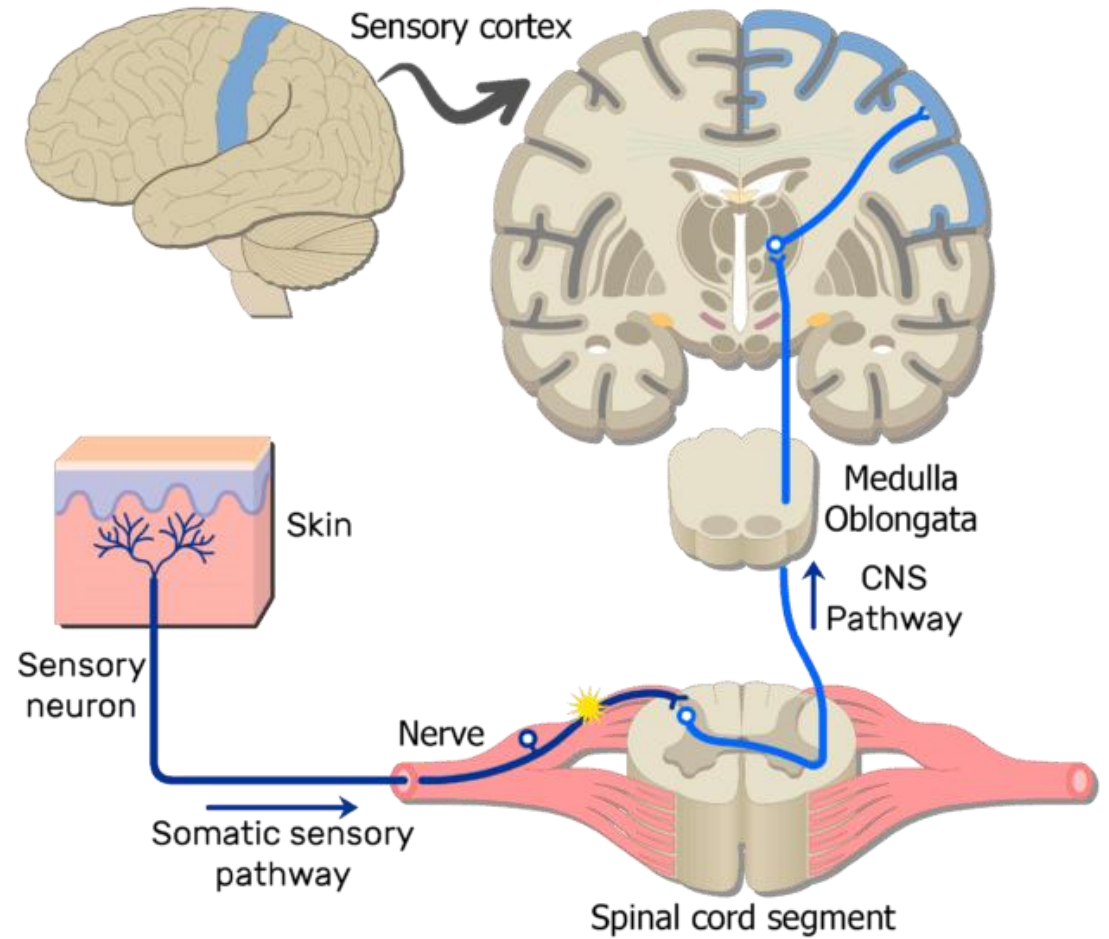
Types of Peripheral Nervous System

The peripheral nervous system is divided into the **somatic nervous system** and the **autonomic nervous system**.



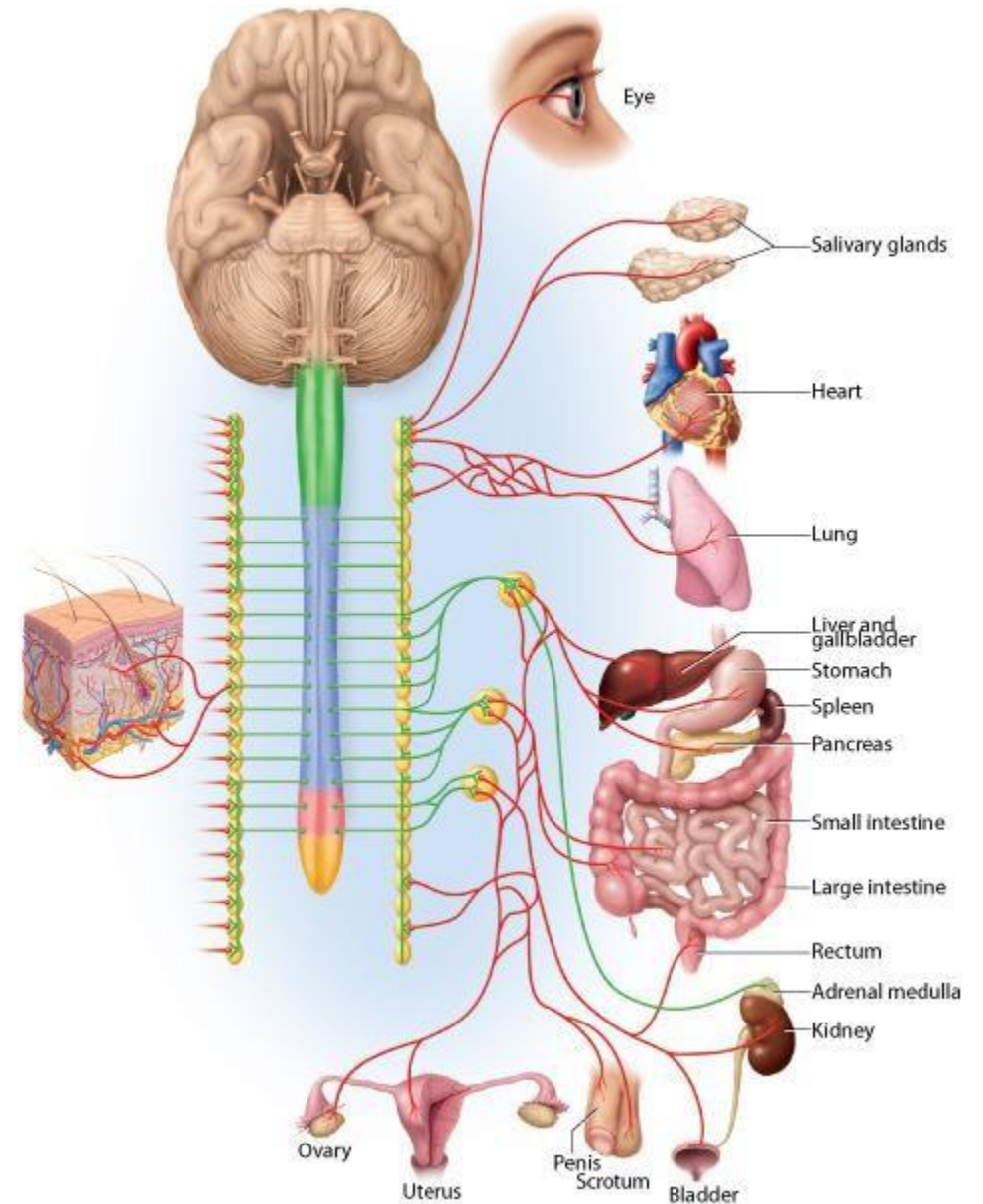
Types of Peripheral Nervous System

The somatic nervous system, or voluntary nervous system is the part of the peripheral nervous system associated with the voluntary control of body movements via skeletal muscles.

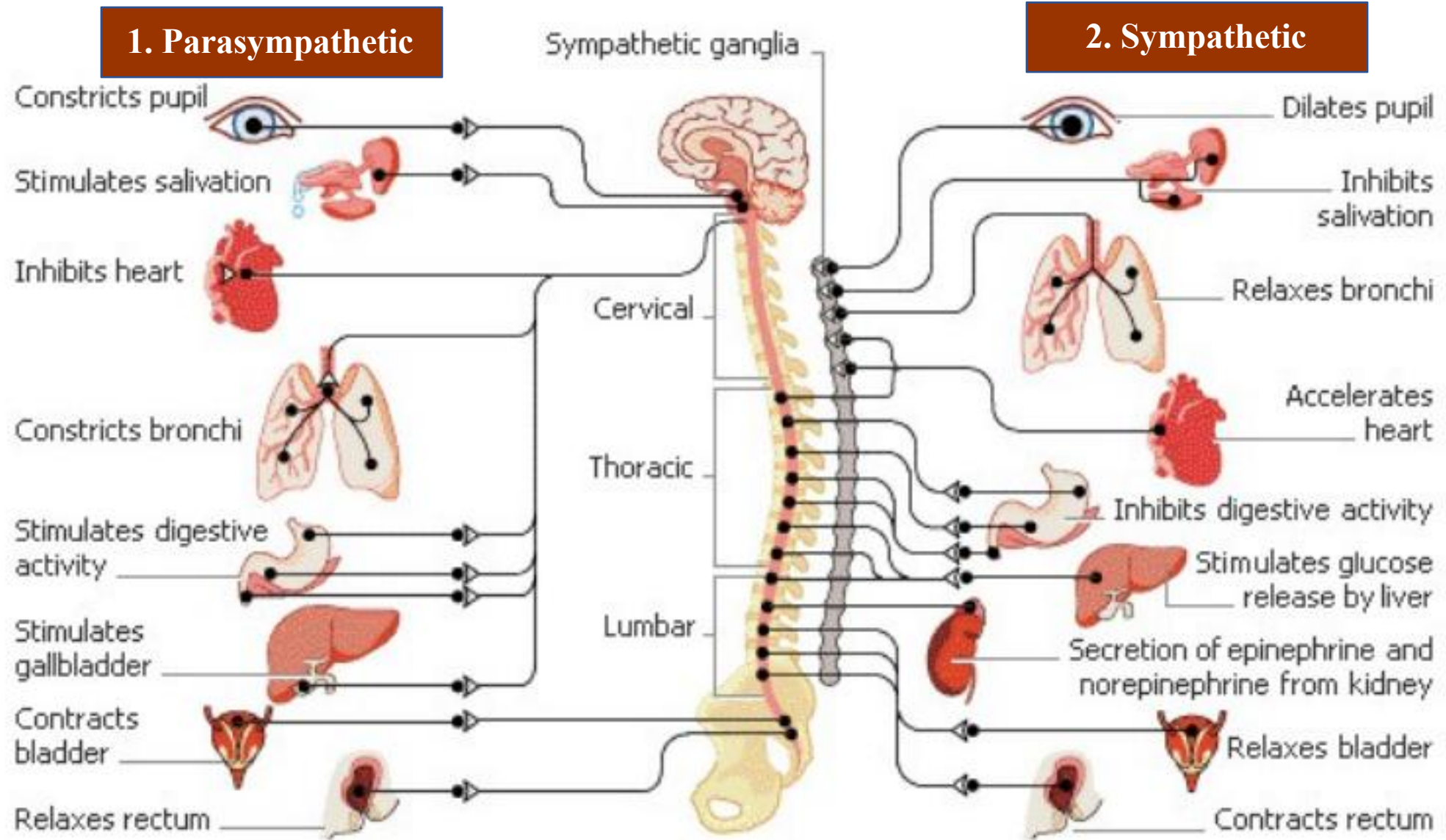


Autonomic Nervous System

The autonomic nervous system is a component of the peripheral nervous system that regulates involuntary physiologic processes including heart rate, blood pressure, respiration, and digestion.

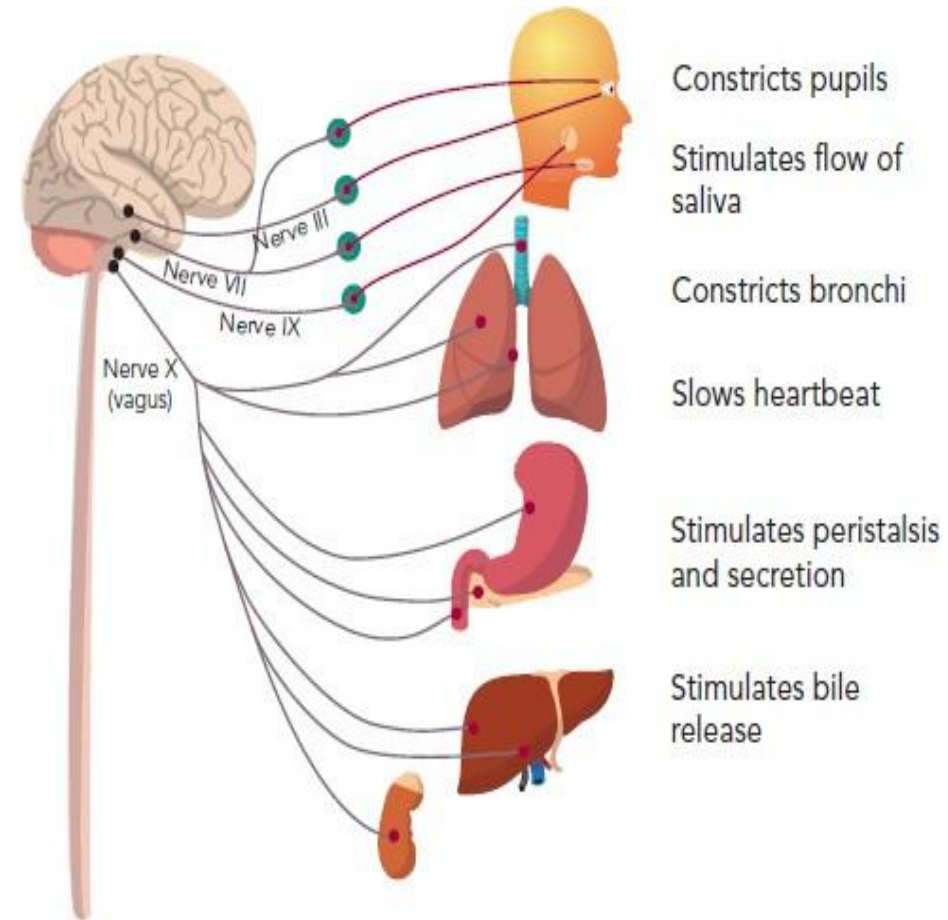


Autonomic Nervous System



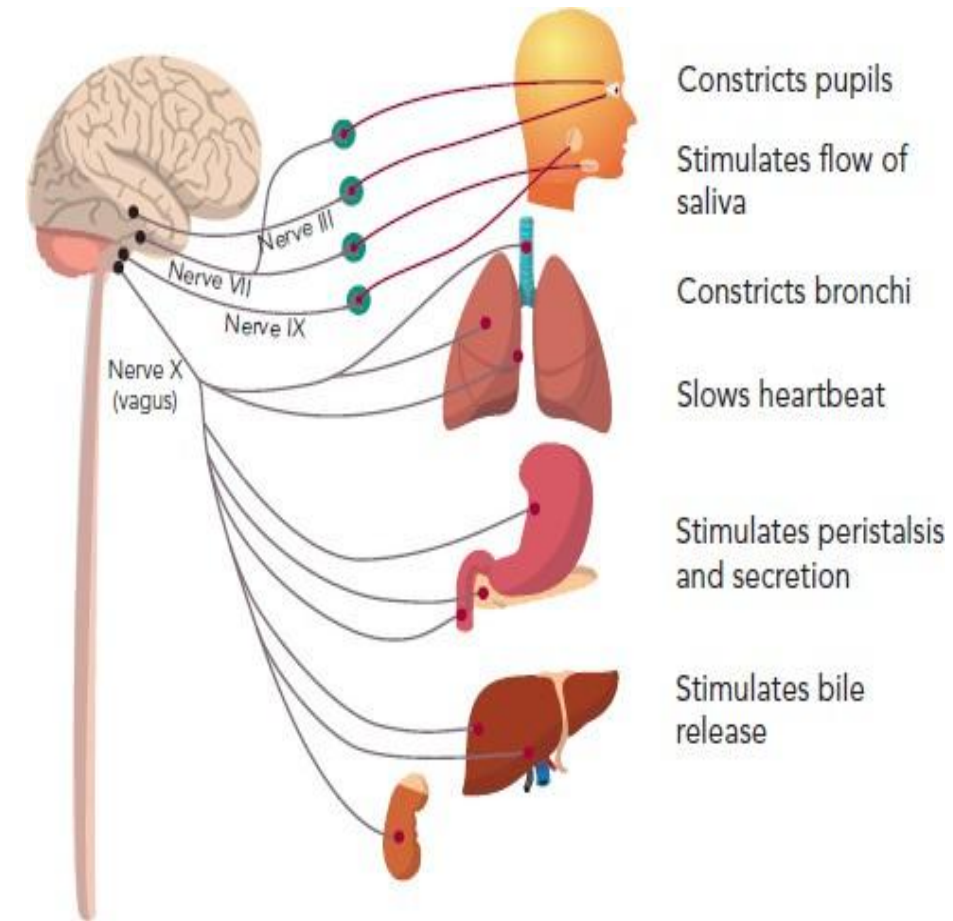
1. Parasympathetic nervous system

Parasympathetic nervous system:
is a division of the autonomic nervous system (ANS) that controls the activity of the smooth and cardiac muscles and glands.



1. Parasympathetic nervous system

The functions of the Parasympathetic nervous system are commonly described as the “rest and digest” response, since it is involved in slowing down the heart rate, relaxing the sphincter muscles in the gastrointestinal and urinary tracts and increasing intestinal and gland activity.

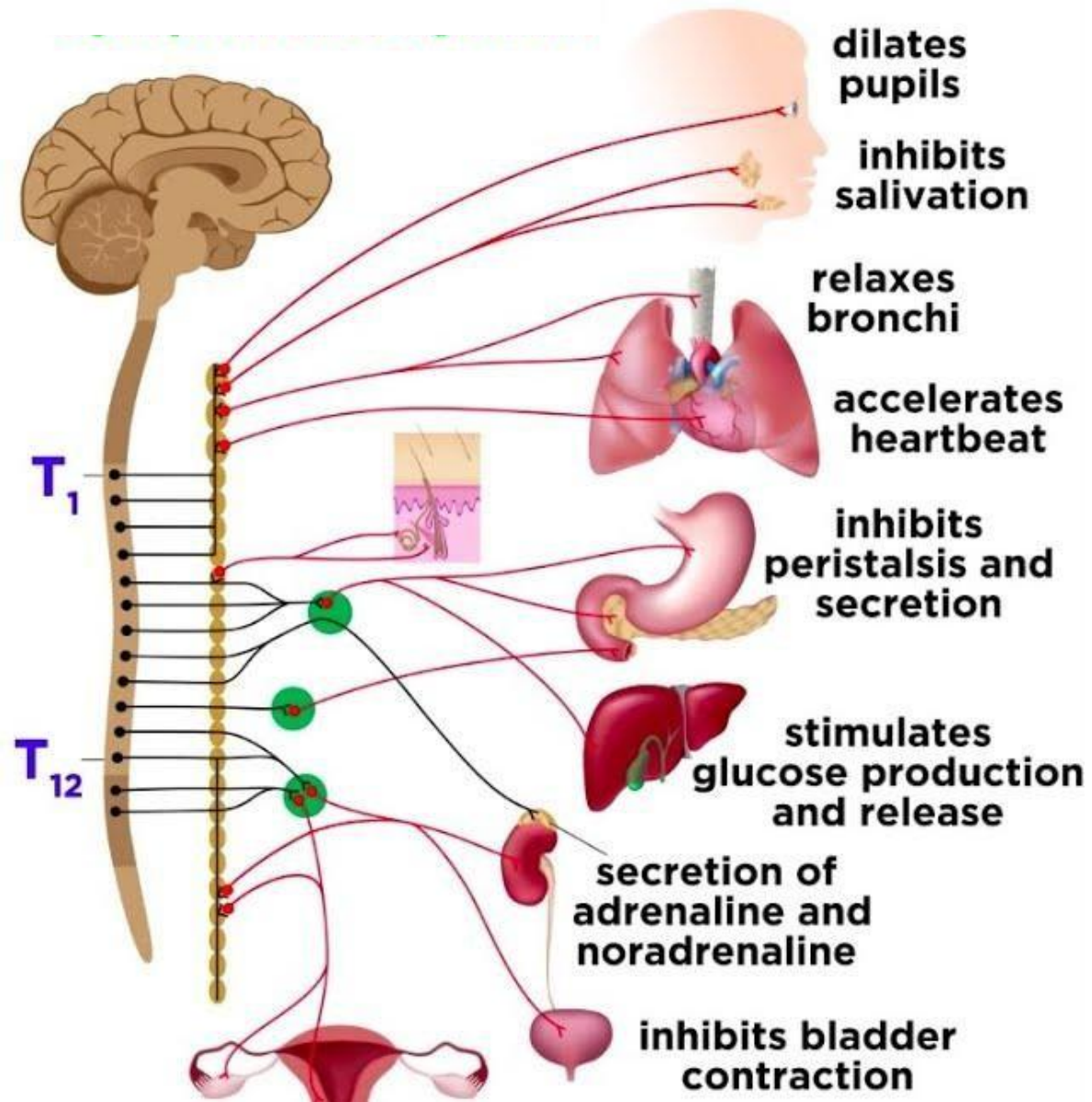


2. Sympathetic nervous system

Sympathetic Nervous System: is one of the two divisions of the autonomic nervous system (ANS), along with the parasympathetic nervous system (PNS).

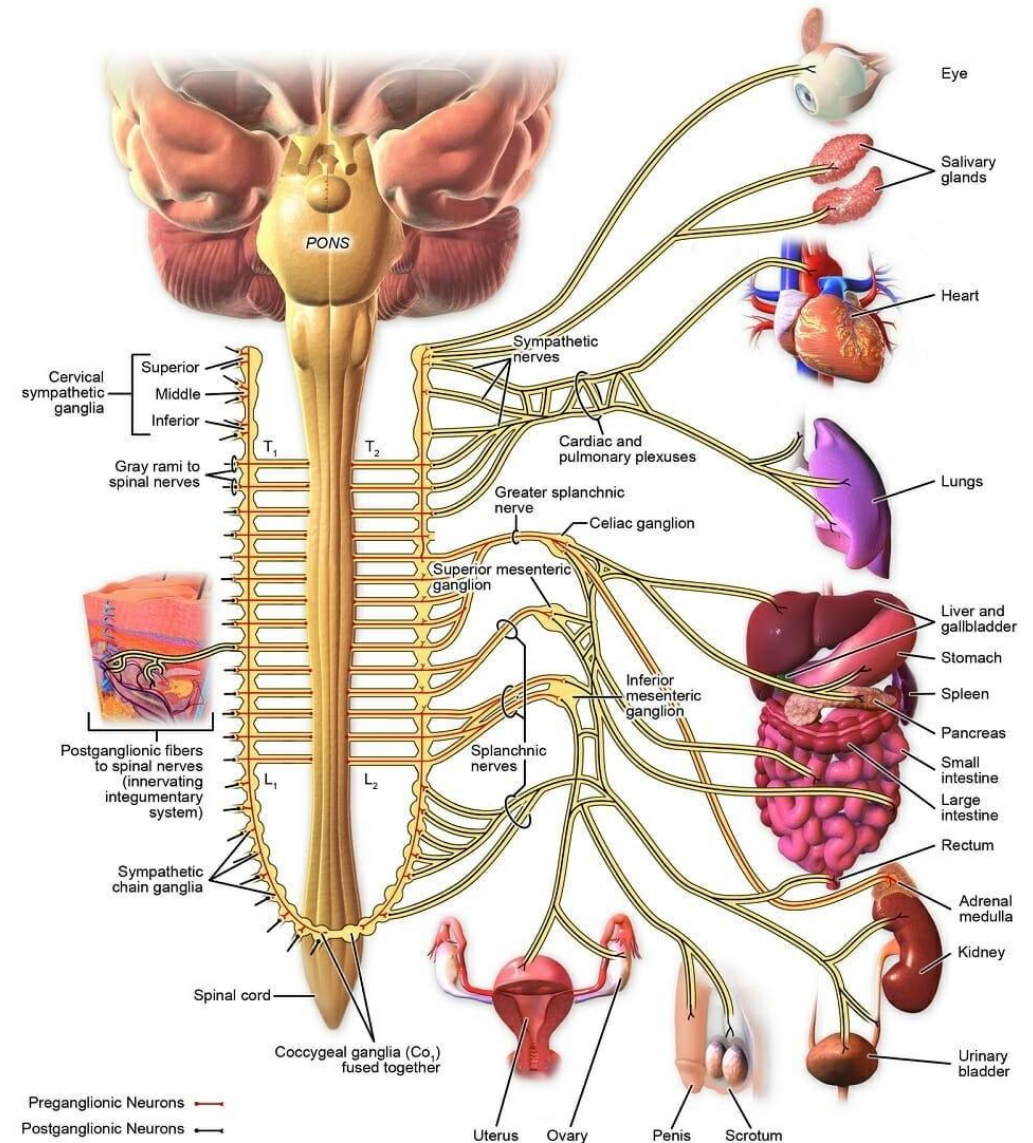
Sympathetic Nervous System primarily work unconsciously in opposite ways to regulate many functions and parts of the body.

2. Sympathetic nervous system



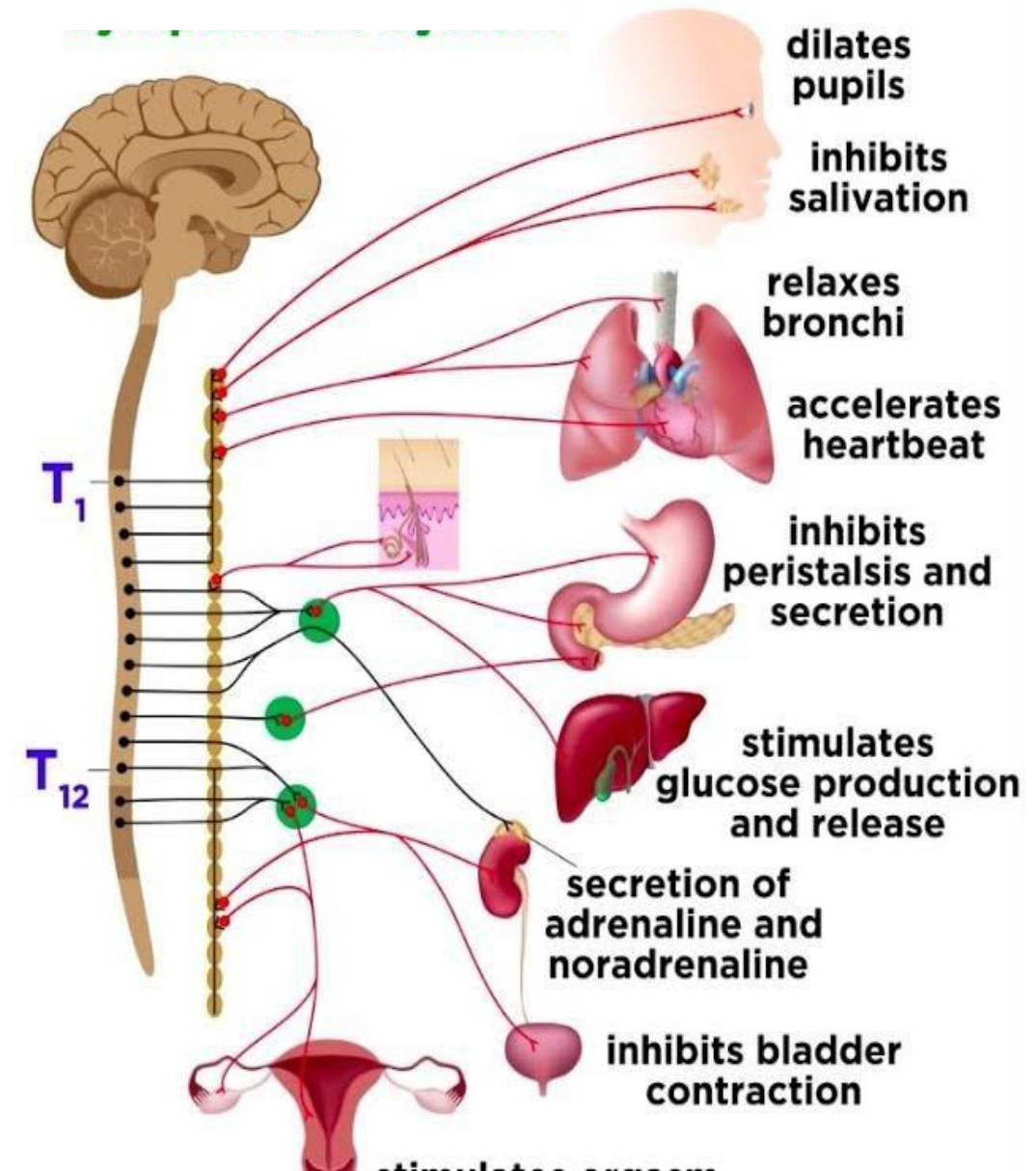
Sympathetic nervous

The sympathetic chain is found at the base of the skull and extends to the lowest part of the vertebral column at the coccyx.

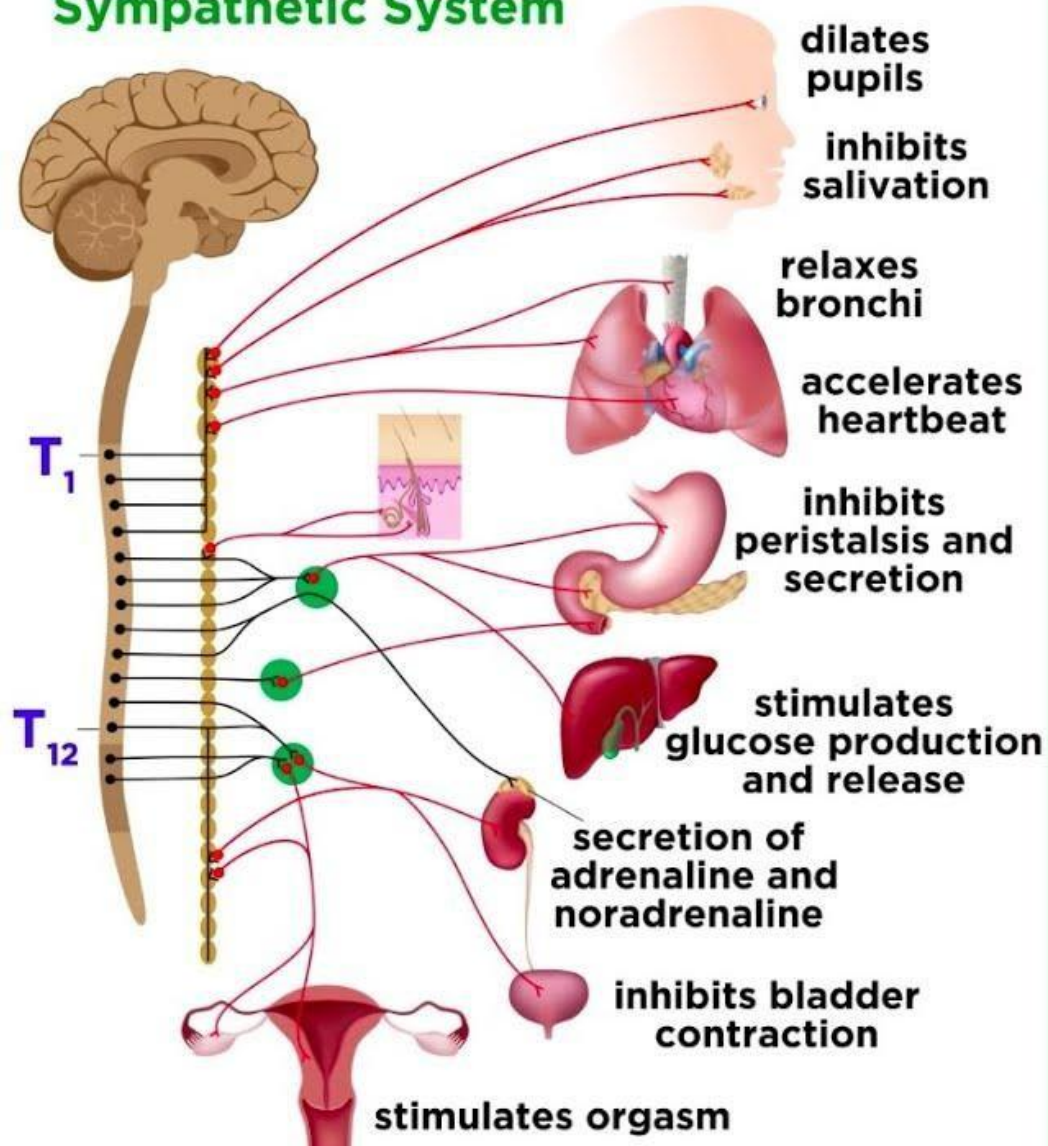


2. Sympathetic nervous system

The sympathetic nervous system directs the body's rapid involuntary response to dangerous or stressful situations. A flash flood of hormones boosts the body's alertness and heart rate, sending extra blood to the muscles.



Sympathetic System



Parasympathetic System

