

Parasympathetic (cholinergic) Nervous system:-

- The parasympathetic division is most important and is necessary for normal existence of organism.
- This division of ANS is involved in maintaining the vegetative functions (concerned $\bar{e}$ maintenance of life) of the body like - (Motility and GI secretions)
- unlike sympathetic system that get activated during emergency situation.



The parasympathetic system is active even during normal (or) rest condition. So, it is also called "Rest & digest division".

- The parasympathetic division mainly operates to store energy and utilizes it according to demand of body.

Anatomical organization:- similar to sympathetic system



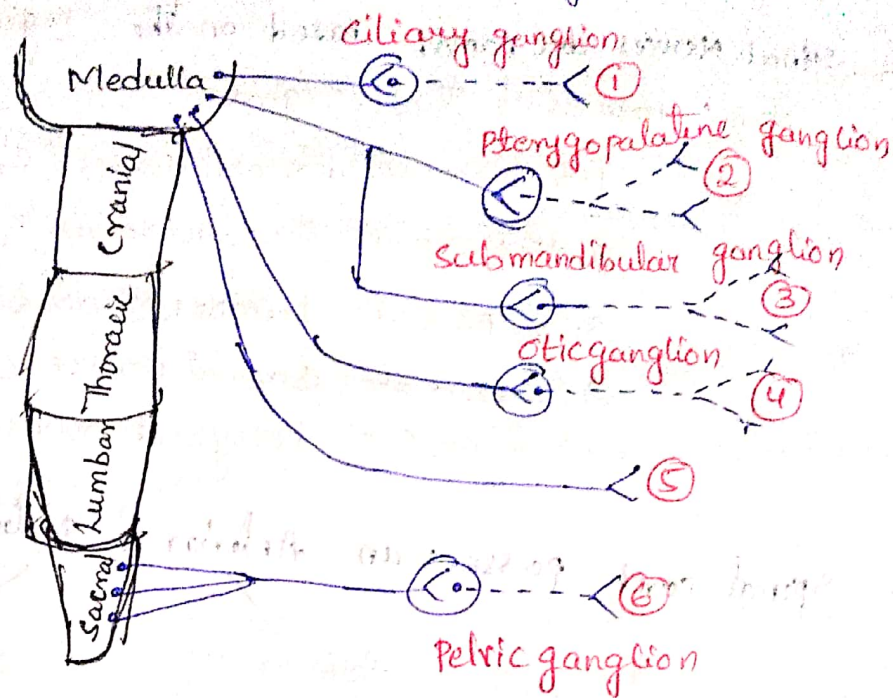
The parasympathetic system has

- preganglionic neurons
- parasympathetic ganglia
- post ganglionic neurons

- cell bodies of parasympathetic preganglionic neurons are found in nuclei in the brain stem and in lateral gray matter of second to fourth sacral segments of spinal cord.
- Their axons emerge as part of a cranial nerve (or) as part of anterior root of spinal nerve.
- The cranial parasympathetic outflow consists of preganglionic axons that extend from brain stem in four cranial nerves.
- The sacral parasympathetic outflow consists of preganglionic neurons in anterior roots of second through fourth sacral spinal nerves.

The preganglionic axons of both cranial & sacral outflow end in terminal ganglia.

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where they synapse & post-ganglionic neurons.



- (1) ciliary and circular muscle of Iris.
- (2) Lacrimal Gland.
- (3) submaxillary and sublingual salivary glands.
- (4) Parotid Gland
- (5) Heart, lung and Intestine
- (6) Kidney, urinary bladder, colon, genitals

FUNCTIONS:- The parasympathetic system is called **Rest and digest system** because response produced by it is mainly concerned & restoring (or) conserving energy.

- During period of rest the parasympathetic division mainly increases the digestive activities.

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Resulting in release of and storage of energy obtained from food.

- Stimulating responses are → salivation, lacrimation, urination, digestion & defecation.
 - Inhibitory responses are → Decrease heart rate, bronchoconstriction, constriction of pupils.
- [Expel undigested portions of food]