

The Autonomic nervous system

There are two parts to the nervous system:

- Central nervous system.
- Peripheral nervous system.

The Autonomic nervous system is a sub-division of the Peripheral nervous system.

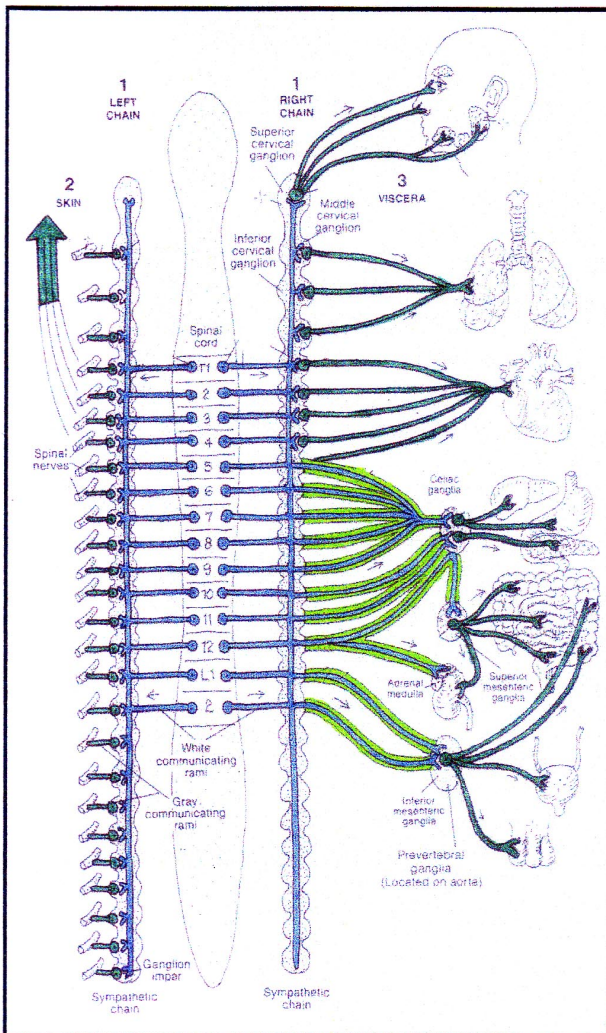
The Autonomic nervous system regulates events within the body that are Autonomic (self governed). It supplies nerves to all the internal organs of the body and to the blood vessels.

The Autonomic nervous system is divided into two parts :

- The Sympathetic nervous system
- The Parasympathetic nervous system

The Sympathetic nervous system

The Sympathetic nervous system is made of ganglia (a collection of nerve cells).

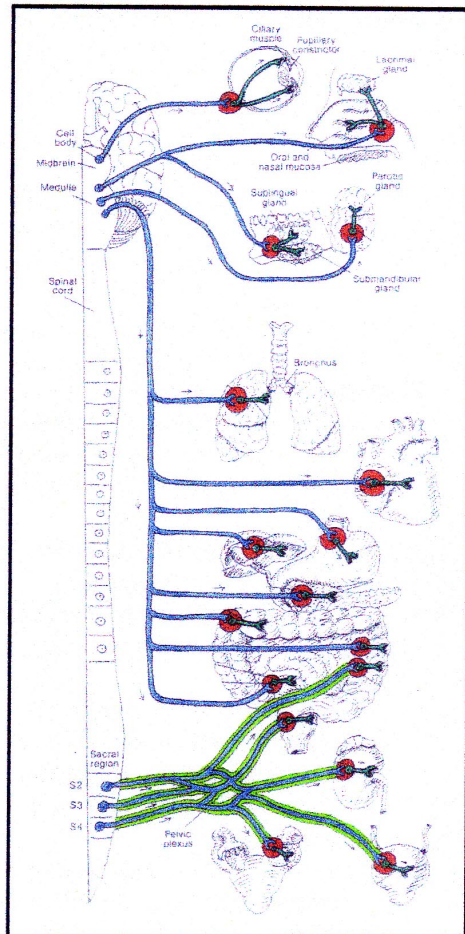


Functions:

- Stimulates the Adrenal gland releasing nor adrenaline, which prepares the body for excitement and stress (fight or flight response).
- Accelerates action of heart increasing rate and force of contraction.
- Causes dilation (relaxation) of arteries increasing blood supply to the heart muscles.
- Causes dilation of blood vessels, supplying skeletal muscles, increasing the nourishing and waste removal processes enabling the muscles to perform better.
- Causes sustained contraction of the spleen, thus increasing volume of blood circulating.
- Raises blood pressure by constricting small arteries and arterials that supply the skin.
- Constricts blood vessels in secretory glands of the digestive system, restricting flow of digestive juices.
- Stimulates secretion of glands and muscle contraction in the male genital ducts causing ejaculation, and stimulates uterine contractions in women.

The Parasympathetic Nervous System

The Parasympathetic Nervous System consists of four cranial nerves which branch off to all organs and the pelvic splanchnic nerves.



Functions:

- Slows action of heart, reducing rate and force of contraction.
- Constricts flow of blood to heart muscles.
- Releases Acetylcholine a neurotransmitter.
- Encourages secretory activity on the bodies' mucus and serous membranes.
- Promotes digestion by increased peristalsis and glandular secretion.
- Induces contraction of the urinary bladder.

The Sympathetic and Parasympathetic divisions of the autonomic nervous system are not antagonistic. Their respective activities are coordinated and synchronised to achieve dynamic stability of bodily function during a broad range of life functions such as eating, running, fear or relaxation.

Bibliography

2002 Wynn Kapit, Elson M Lawrence, *The Anatomy Colouring Book, 3rd Edition*, Benjamin Cummings Publishing.