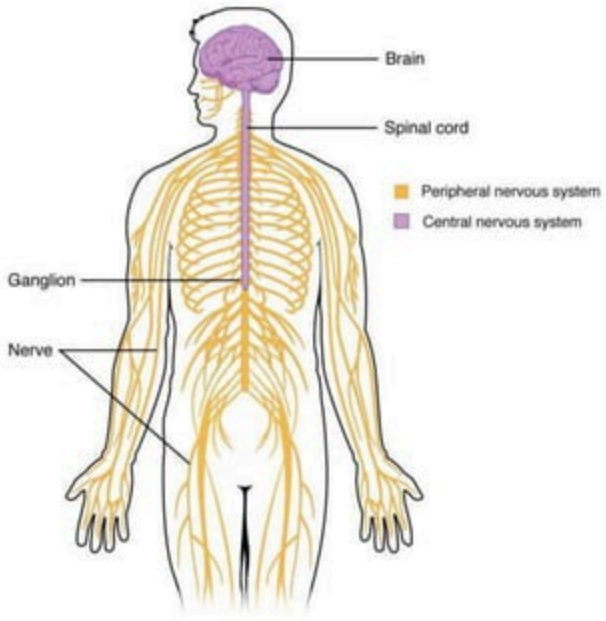
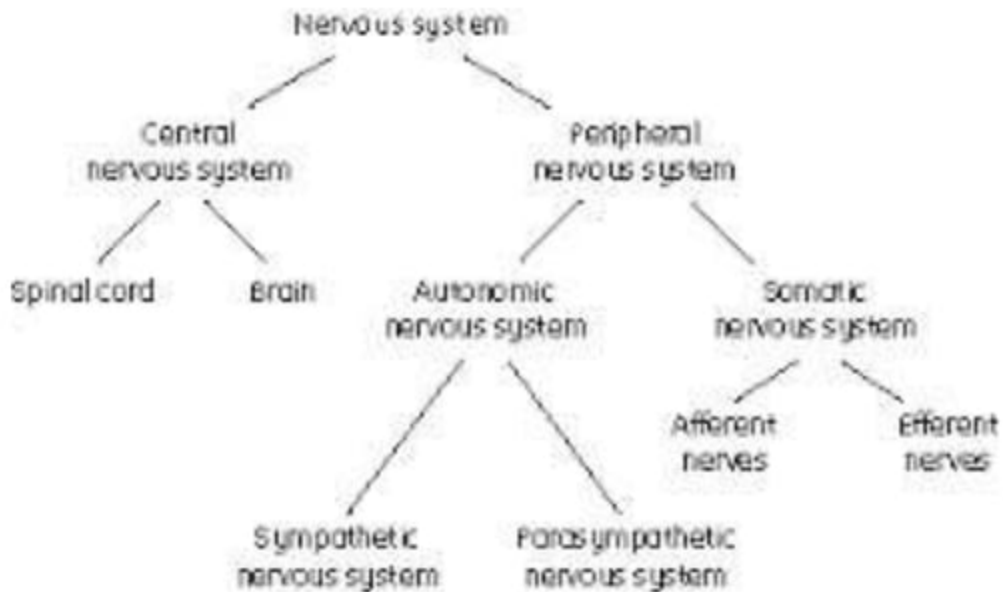


AUTONOMIC NERVOUS SYSTEM

Dr Awot Luke



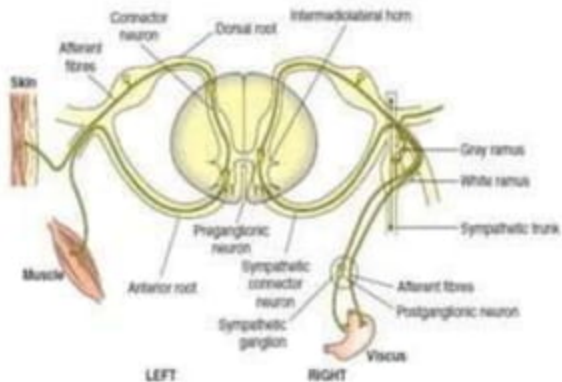


Autonomic nervous system

- Autos: self
- Nomos: Control

General organization

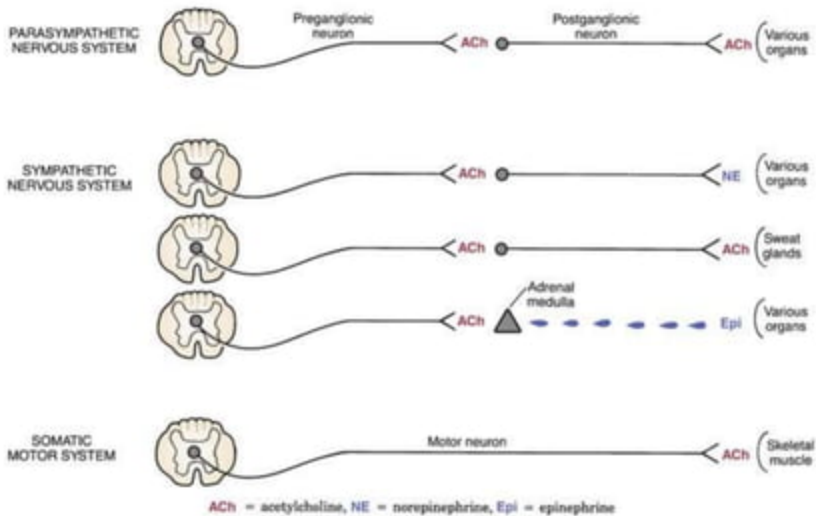
General arrangement of somatic part of nervous system (on left) compared with autonomic part of nervous system

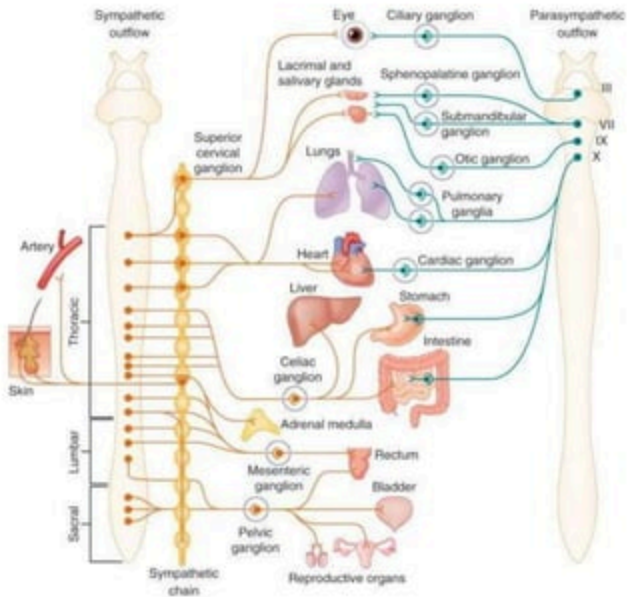


Centers in the nervous system

- Autonomic areas in the cerebral hemispheres are: Structures included in limbic system ,Prefrontal cortex, Hypothalamus and Part of thalamus.
- Autonomic centers in the brain stem :located in the reticular formation and in the general visceral nuclei of cranial nerves.
- Autonomic centers in the spinal cord
- Peripheral part of ANS

Neurotransmitters of the ANS





Physiological considerations

- Adrenergic fibres: Norepinephrine (mainly), or epinephrine (All postganglionic sympathetic fibres other than cholinergic).
- Cholinergic fibres: Acetylcholine (the post-ganglionic sympathetic cholinergic nerve fibers supplying sweat glands, blood vessels in heart and skeletal muscles).
- All pre-ganglionic fibres (sympathetic as well as parasympathetic) release acetylcholine.
- All post-ganglionic parasympathetic fibres release acetylcholine.
- Most post-ganglionic sympathetic (adrenergic) fibres release norepinephrine.
- A few post-ganglionic sympathetic (cholinergic) fibres release acetylcholine

Autonomic receptors

- Cholinergic receptors On the basis of their pharmacologic properties, these are of two types:
 - Nicotinic receptors and
 - Muscarinic receptors.

Autonomic receptors

- Adrenergic receptors On the basis of their pharmacologic properties, adrenergic receptors are of two types:
- Alpha (a) adrenergic receptors : α_1 and α_2
- Beta (b) adrenergic receptors : β_1 , β_2 and β_3 .

Applied aspects

- Autonomic drugs
- Autonomic failure
- Autonomic function tests.

The End