Nervous System I

Anatomical Divisions

Name	Organs	Function	General Characteristics
	Brain Spinal Cord		
	Cranial Nerves Spinal Nerves		

Functional Divisions (PNS)

Name	Structures Involved	Components	Divisions	Function
Afferent	Nerves and receptors (they may be neurons or specialized cells)	–	–	Bring sensory information to the CNS
		Somatic Nervous System (SNS)	–	Carries motor commands from the CNS to skeletal muscles (VOLUNTARY)
			Sympathetic	Responds to “fight or flight” situation (INVOLUNTARY)
			Parasympathetic	Responds to “rest and digest” situation (INVOLUNTARY)

STIMULUS ► SENSORY RECEPTOR ► NERVE ► BRAIN ► ANS (EFFERENT) ► RESPONSE ORGAN

Functional Brain Systems: networks of neurons that work together.

Name	Location	Function
Limbic System	Medial aspect of each cerebral hemispheres and diencephalons.	Emotional or affective brain memory
Reticular Formation	Extends through the central core of the medulla oblongata, pons, and midbrain (brain stem).	Keeps the brain alert

Protection of Brain and Spinal Cord

Name	Constitution	Function
Skull/vertebral Column	Bone	Protection against pressure.
Meninges	Membranes-connective tissue	Cover and protect the CNS, protect blood vessels, enclose venous sinuses, contain cerebrospinal fluid, and form partitions in the skull.
Cerebrospinal Fluid	Watery cushion	Liquid cushion that gives buoyancy to the CNS organs. Helps nourish the brain.
Blood-brain Barrier	Capillary endothelial cells + tight junctions	Helps maintain a stable environment for the brain. Selective barrier. Ineffective against fat-soluble molecules, nutrients and some electrolytes.