

Introduction

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The nervous system controls and correlates basic body functions and behavior. There are two main parts: the central nervous system (brain and spinal cord) and the peripheral nervous system (cranial nerves, spinal nerves, and those of the autonomic system).

Neurons These basic units of the nervous system intercommunicate electrochemically via synapses (junctions) between their projecting axons and dendrites - processes whose number and arrangement divide neurons into three types: unipolar, bipolar, and multipolar. From unipolar or bipolar receptor neurons, sensory or afferent neuron bundles (nerve fibers) conduct impulses to the central nervous system. From there, motor, or efferent, neurons conduct impulses to muscles.

Brain The brain or encephalon, an outgrowth of the spinal cord, includes: the rhombencephalon (hindbrain), featuring the medulla oblongata, pons, and cerebellum, between them automatically controlling respiration, consciousness, and coordination; the mesencephalon (midbrain), largely a relay station; and the prosencephalon (forebrain) handling higher mental functions and comprising an inner diencephalon (between brain) and outer telencephalon (endbrain), mostly cerebrum.

Spinal cord From the brain this descends inside the backbone, bulging at levels where pairs of nerves branch out to the body. It routes some impulses to and from the brain but sends some incoming impulses to lower nerve centers.

Cranial nerves These twelve pairs of peripheral nerves, rooted in the brain, supply ears, eyes, nose, jaw muscles, facial skin, etc.

Spinal nerves These 31 pairs of nerves sprout from the spinal cord and control muscles, in descending order pairs are grouped as eight cervical, twelve thoracic, five lumbar, five sacral, and one pair of coccygeal spinal nerves.

Autonomic nervous system This system's neuron chains, linked to the central nervous system, control involuntary processes. There are two subsystems: sympathetic and parasympathetic, adjusting bodily activity respectively during stress and relaxation. Circumstances decide which system prevails.