

The nervous system is a [system](https://simple.wikipedia.org/wiki/System) in the [body](https://simple.wikipedia.org/wiki/Body) which sends signals around the body. It lets people and animals [respond](https://simple.wiktionary.org/wiki/react) to what is around them. Millions of interconnected neurons form the nervous system.

Human nervous system two major parts:

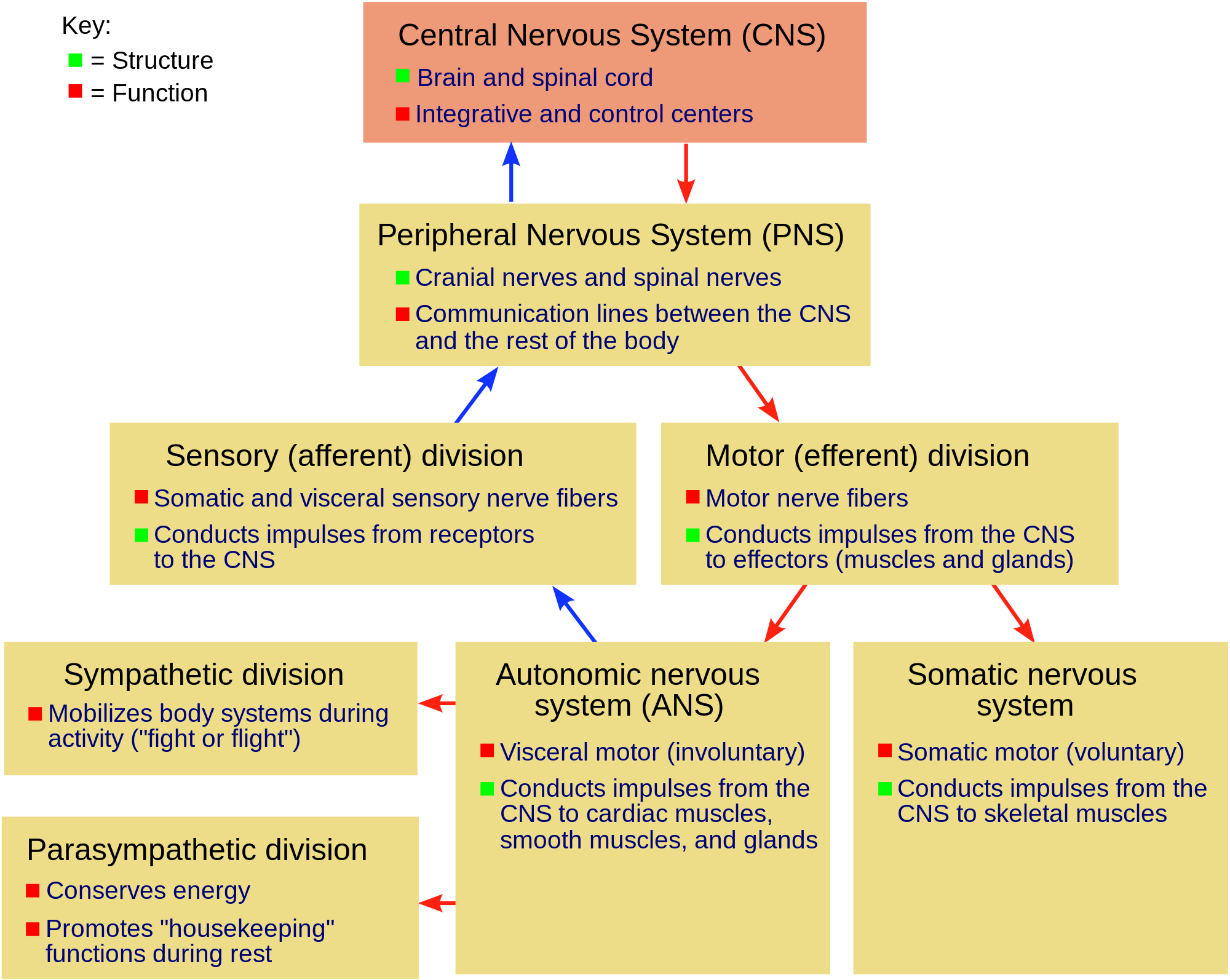
1. Central nervous system 2. Peripheral nervous system

1. Central nervous system (CNS):

* Made up of brain and spinal cord
* Acts as body’s control center, coordinates body’s activities
* Impulses travel through the neurons in your body to reach the brain

1. Peripheral nervous system (PNS)—all nerves

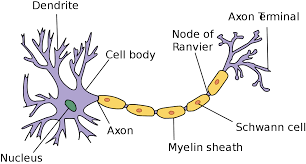
* Made up of all the nerves that carry messages to and from the central nervous system.
  + 1. Similar to telephone wires that connect all of our houses in the community
* Central Nervous System and Peripheral Nervous System work together to make rapid changes in your body in response to stimuli.



* Somatic Nervous System
  + Relay information between skin, skeletal muscles and central nervous system
  + You consciously control this pathway by deciding whether or not to move muscles (except reflexes)
  + Reflexes: Automatic response to stimulus
* Autonomic Nervous System
  + Relay information from central nervous system to organs
  + Involuntary: You do not consciously control these
  + Sympathetic Nervous System: controls in times of stress, such as the flight or fight response
  + Parasympathetic Nervous System: controls body in times of rest

**NEURONS**

* The basic unit of structure and function in the nervous system
* Cells that conduct impulses.
  + Made up of dendrites, cell body and an axon



* + Dendrites: branch-like extensions that receive impulses and carry them toward cell body.
  + Axon: single extension of the neuron that carries impulses away from the cell body.
  + The axon branches out at ending to send impulses to many different neurons. Dendrites receive impulses from many other axons.
* **3 types of neurons**
* Sensory Neurons: carry impulses from inside and outside the body to brain and spinal cord.
* Interneurons: found within brain and spinal cord, process incoming impulses and pass them on to motor neurons.
* Motor Neurons: carry impulses away from the brain and spinal cord.

**So how do these neurons work if someone taps you on the shoulder . . .**

1. Receptors in the skin sense touch or other stimuli. MCj01975880000[1]
2. Sensory neurons transmit the touch message.
3. Information is sorted and interpreted in the brain. A response in determined by interneurons.
4. Motor neurons transmit a response message to the shoulder muscles.
5. The shoulder muscles are activated, causing the head to turn.