

# Nervous tissue

[Health & Medicine](#)



**ASSIGN  
BUSTER**

Nervous2 Running Head: Nervous.... Topic: Nervous Tissue

Order#: 350318

Topic: Nervous Tissue

The function and responsibility of the nervous tissue is to sense stimuli and transmit signals to and from different parts. The basic unit of nervous tissue is neuron. Its structure is eminently suited to its functions within the nervous tissue.

Its two important parts are (1) Cell Body, that has the neurons nucleus, other organelles and associated cytoplasm. (2) Nerve Processes are projection in the shape of a finger emanating from the cell body and they transmit signals. They are identified into two types, axons that carry signals away from the cell body and dendrites that take the signals toward the cell body. The nervous system has many-fold functions and remains in command of the entire activities of body and mind. The important ones are, integration, sensory input, controls of glands and muscles, homeostasis and all mental activities.

In brief, nervous tissue is the be-all and end-all of the functioning of the body and mind. The smallest and the routine, and the biggest and the challenging functions are all in the domain of the nervous tissue. It reacts to a stimuli, carries impulses to various organs in the body and thus brings about the response to the stimulus. These specialized cells also called neurons, are instantly stimulated and transmit impulses at great speed.

Nervous tissue is organized into two basic systems. They are, “ (1) the Central Nervous System (CNS) and (2) the Peripheral Nervous System (PNS). The peripheral system responds to stimuli and sends impulses to the central system (brain and spinal cord). These impulses are interpreted by the CNS

<https://assignbuster.com/nervous-tissue/>

and then other impulses initiated in the CNS travel back through the PNS to effector organs to produce the proper response.”(NERVOUS...)

Neuron is the basic cell of the nervous system. Its structure is, “(1) the cell body, containing the nucleus and synthetic organelles; (2) the axon, a long cytoplasmic process associated with the cell body used to communicate with target organs; and (3) the dendrites, shorter cytoplasmic processes off the cell body used to communicate between neurons.”(NERVOUS....)

### Central Nervous System

Spinal Cord consists of gray and white matter. Gray matter consists of nerve cell bodies. The white matter is composed of axonal projections and they surround gray matter.

### Brain

Brain too has gray and white matter. In some parts, an additional outer gray layer exists that has well-defined functions.

### Cerebral Cortex

This starts at the surface of the cortex and moves inward. The first three layers of the cell bodies are identified thus: (1) superficial molecular layer, containing only a few small cell bodies; (2) outer granular layer, containing small round cell bodies; (3) pyramidal cell layer, containing cell bodies triangular in shape. The other three layers are, an inner granular layer, polymorphic cell layer and the internal pyramid layer.

### Cerebellar Cortex

This is another part of brains gray matter, with three layers.(1) the superficial molecular layer that has mostly unmyelinated axons and few cell bodies; (2) a deeper layer of large flask-shaped cells named Purkinje cells and (3) an inner granular layer with many small cell bodies. The purkinje

cells transmit long dendrite projections into the molecular layer.

#### The Meninges - Connective Coverings of the Brain

Three layers of connective tissue enclose the brain. " The outer most (dura mater) consists of dense connective tissue. Underlying the dura is the arachnoid layer, often described as a " roof with pillars" made of dense connective tissue. Spaces within the arachnoid are filled with cerebrospinal fluid. The inner most layer, the pia mater, consists of loose connective tissue on the surface of the brain and lining channels which penetrate the brain carrying the vascular system (Pia Mater)." (NERVOUS.....) Glial cells, Choroid plexus, Nerve fibers, Ganglion, are other issues/fluids that are part of the overall nervous system and do their specified functions.

#### References:

NERVOUS TISSUE Nervous tissue is the fourth basic tissue type of the body...

Retrieved on January 4, 2010.