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## Central Nervous System and its Distribution

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**Annotation:** This article provides information about the nervous system, the origin of nervous diseases, the localization of the nervous system and the central nervous system.

**Keywords:** Spinal cord, Brain, diencephalon, Visual cortex, Vorolev Bridge, Long brain.

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**Central Nervous System:** This includes the brain and spinal cord. Because these two brains are located inside (inside the skull and spine) - in the center.

**Spinal cord.** The spinal cord is located in the longitudinal canal of the spine. In adults, it has a length of 41-45 cm, a thickness of 1-1.5 cm, and a mass of 34-38 g. The spinal cord begins at the top of the first cervical vertebra and ends at the top of the second lumbar vertebra. In newborns, the second and third vertebrae end in the middle of the vertebrae. The spinal cord is as wide as the neck and waist, due to the large number of nerve fibers in the arms and legs. The spinal cord is divided into segments. The segment refers to two pairs of roots of the spinal cord. The spinal cord consists of 31-32 pairs of segments. These are: 8 - neck, 12 - chest, 5 - waist, 5 - sacrum, 1-2 - tail segments. Each segment of the spinal cord has 2 pairs of roots, the anterior pair of which are motor roots and the posterior pair are sensory roots. The internal structure of the spinal cord can be seen in its cross section (Fig. 3). In the center of the cross section is a butterfly-shaped gray matter surrounded by white matter. Gray matter is made up of nerve cells and their axons. It consists of motor cells in the anterior horns of the spinal cord and sensory cells in the posterior horns. Autonomic nerve cells are located in the lateral branches. The white matter of the spinal cord surrounds the gray matter called the pillars. Descending motor tracts, ascending superficial sensory tracts, and extrapyramidal tracts pass through the lateral column.

From the posterior column - deep sensory pathways - bundles of Burdakh and Gaulle Will pass. From the previous column - the paths of movement that did not intersect look down

will pass. White matter is pathways.

The spinal cord is divided into the following sections:

- upper neck consists of segments C1-C4;
- the width of the neck consists of segments C5 - C8 - D1;
- the thoracic part consists of segments D2 - D10;
- waist width consists of segments D11-D12-L1-5-S1-2;
- The cone of the spinal cord consists of segments S3-5 - Co1-2.

**Brain. The brain is located inside the skull and is large.**

**1375 g in the elderly, 1275 g in women, 330-340 g in newborns 14 children. The brain consists of two hemispheres, that is, the right and left hemispheres. It is divided into two hemispheres by an upper vertical furrow. On the underside of the penis is a packet-shaped body formed from white matter. The brain consists of the medulla oblongata, Vorolev's bridge, the cerebellum and the cerebral peduncles.**

**The brain has 3 surfaces:**

- **upper part - convex part;**
- **interior;**
- **The basal part or base of the brain.**

The hemispheres of the brain are divided into the frontal, superior, temporal and occipital lobes. In these places centers are located, and each part is known is responsible for the item. The frontal part is for movement, the upper part is for sensation, the temporal part is for hearing, taste, smell, the occipital part is for vision. The brain is a cavity of the hemispheres and represents the lateral ventricles. The two hemispheres are connected to each other by the corpus callosum. Histologically, the brain consists of 2 parts. White matter is made up of pathways and gray matter is made up of nerve cells. The white matter of the brain is the pathways.

Through these places pass the paths of intuition and movement. These, in turn, is divided into the following.

Associative fibers - these fibers connect the centers of one hemisphere connects with

Commissural fibers - the centers of the two hemispheres with each other connects

Projection pathways run from the cerebral cortex to the spinal cord. connects with

In the white matter there is also an internal capsule, from which ascending and descending pathways pass. From the anterior surface of the thigh of the inner capsule - the frontal-bridge paths of the brain; from the back of the thigh - craniocerebral spinal tracts (these are the paths of movement, sensation, vision, hearing); and the cranial nerves pass through the knee. The gray matter of the brain consists only of nerve cells. This gray matter is called the cerebral cortex and is 5 mm thick. The cerebral cortex is made up of 6 layers of nerve cells. There are about 14 billion neurons in the cerebral cortex. A person is born with so many cells, but at first these cells are immature, then gradually mature.

**Midbrain:** The midbrain is located between the cerebral hemispheres and is bounded externally by the brain by the internal capsule, superior omentum, corpus callosum, and dome of the brain. The inner part of the midbrain consists of the side walls of the third ventricle of the brain. The midbrain is divided into the following sections:

- the upper part of the diencephalon - the epithalamus;
- the middle part of the diencephalon or visual cortex - the thalamus;
- The lower part of the diencephalon, the hypothalamus.

**Visual cortex:** The main part of the midbrain consists of the visual cortex. The optic disc forms the side walls of the third ventricle. The second neuron of the pathways of skin sensitivity and muscle-articular sensitivity ends in the visual cortex. On the back of the visual cortex are the inner and outer geniculate bodies. The lateral geniculate body is the visual center of the cerebral cortex, and the internal geniculate body is the auditory center of the cerebral cortex. The visual cortex is composed of several nuclei. The brain stem consists of 3 parts:

**The midbrain** is located between the cerebral hemispheres and the bridge and includes legs and 4 vertebrae. In the lower part of the midbrain between the legs of the brain are the nuclei of the III-IV cranial nerves.

**The bridge of Vorolev** is located between the medulla oblongata and the legs of the brain. At the same time, the nuclei of the V-VI-VII-VIII pair of cranial nerves Located. White matter consists of pathways (motor and sensory pathways). The gray matter contains the nuclei of the cranial nerves. There is also a reticular formation or mesh structure in the brainstem.

**The medulla oblongata** is the anterior part of the spinal cord. On the lower side it is bounded by the spinal cord, and on the upper side by the Vorolev bridge. The nuclei of the IX-X-XII pair of cranial nerves are located in the medulla oblongata.

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