

Editorial on Functioning of Brain

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The nervous system allows us to communicate with the outside world while controlling many internal mechanisms at the same time. It is made up of all the nerve cells in your entire body, and by taking in information through our senses, it processes the information and triggers reactions, allowing your muscles to move or causing you to feel pain. Metabolic processes are also controlled by the nervous system. Nervous systems are exceedingly complex: it has been determined that as much as 70% of an animal's genome is expressed in a single nerve cell. Both the brain and the spinal cord contain grey and white matter. Grey matter is made up of neuron cell bodies. White matter consists of bundled axons, making up the outer layer of the spinal cord. It links the CNS to sensory and motor neurons of the PNS. In the brain, white matter is located mostly in the interior. The CNS also contains fluid-filled spaces, called the central canal in the spinal cord and ventricles in the brain. The cerebrospinal fluid is formed in the brain by filtering arterial blood, supplying the CNS with nutrients and hormones and carrying away waste. It circulates through the ventricles and central canal before draining into the veins. The most common cause of a hand lump in the palm of the hand is a ganglion cyst.

These are fluid filled sacs which come from the joint or tendon fluid in the hand. Ganglion cysts are not cancer. They often fluctuate in size and can go away on their own. If the cyst is painful, it can be drained with a needle by a doctor or removed by a hand surgeon. Drainage of the cyst with a needle is a simple treatment in the office, but the cyst comes back about 50% of the time. After surgery, the chance of recurrence is 5-10%. The spinal cord is a long tube-like structure that extends from the brain. The spinal cord is composed of a series of 31 segments. A pair of spinal nerves comes out of each segment. The spinal cord region from which a pair of spinal nerves originates is called the spinal segment. Both motor and sensory nerves are located in the spinal cord. These also consist of motor nerve fibers that come out of the brain and take the messages for movement and necessary action to the skeletal muscles. For example, on touching a hot object, the sensory nerves carry information about the heat to the brain, which in turn, via the motor nerves, tells the muscles of the hand to withdraw it immediately. This nervous system controls the nerves of the body's inner organs on which humans have no conscious control. This includes the heartbeat, digestion, breathing (except conscious breathing), etc. The nerves of the autonomic nervous system innervate the smooth involuntary muscles of the (internal organs) and glands and cause them to function and secrete their enzymes.