



Structural Function and Diseases of the Central Nervous System

William Slikker*

Department of Neurology, University of Virginia, USA

DESCRIPTION

The brain and spinal cord make up the central nervous system. Our brains have two primary functions: to control behaviour and to regulate the physiological processes of the body. The brain, however, cannot do this on its own because it requires information from the body's sense receptors, which it obtains through communication with the spinal cord. The CNS is called "central" because, in addition to being in the centre of the body, it is the most important part of the nervous system for maintaining and producing behaviour. The brain is in charge of functions such as thought, memory formation, movement, and awareness. The human brain is divided into three sections: the cerebrum, the cerebellum, and the brain stem. The brain stem, which is made up of the midbrain, pons, and medulla oblongata, is located at the base of the brain and is one of the most primitive regions of the brain. Basic and physiological functions of the brain stem include automatic behaviours such as breathing and swallowing. The cerebellum is located just above the brain stem and is responsible for monitoring and regulating motor behaviour, particularly automatic movements and balance. Some animals' brains, such as amphibians', are primarily composed of a brain stem and a cerebellum. The cerebrum is the largest part of the brain and the most recently developed in human brains. The cerebrum is divided into two hemispheres that collaborate to produce various functions such as voluntary behaviour, speech, cognitive thinking, and awareness. The left hemisphere is in charge of controlling movements on the right side of the body, while the right hemisphere is in charge of movements on the left side of the body. The cerebral cortex, also known as grey matter, covers the surface of the cerebrum. Grey matter is made up of a thin layer of tissue, about 3mm thick that contains billions of neurons. The grey matter structure is where memories are stored, perceptions occur, and information is processed. Grey matter neurons are linked to oth-

er parts of the brain by a layer of nerve fibres known as white matter, so named because of the gleaming white appearance of the substance that insulates it. Grey matter has a distinct wrinkled appearance, with bulges separated by grooves. A gyrus is a bulge in the brain, or gyri when plural. Fissures are the grooves in the brain. The fissures and gyri increase the amount of surface area in the cerebral cortex, increasing the number of neurons it can hold. Animals with the largest and most complex brains, such as humans and some primates, have the most wrinkled brains and, as a result, the largest cerebral cortices. The spinal cord is a long, thin collection of neurons that runs the length of the spinal column and is attached to the base of the brain (brain stem). The spinal cord contains neuron circuits that can control some of our basic reflexes, such as moving a hand away from a hot surface, without the involvement of the brain. Neurons, or nerve cells, communicate with one another in the brain and spinal cord to send and receive messages. Neurons collaborate to transmit sensory information to the brain and are in charge of decision-making, emotions, and muscle activity. There are approximately 86 billion neurons in the CNS, with thousands of different subtypes serving various functions. A neuron is made up of three parts: a cell body (soma), axons, and dendrites. Glial cells are non-neuronal cells in the CNS that do not transmit messages but instead protect and support neurons. Glia cells account for approximately 90% of all cells in the CNS. The CNS contains three types of glia cells: astrocytes, microglia, and oligodendrocytes.

ACKNOWLEDGEMENT

None

CONFLICT OF INTEREST

The author's declared that they have no conflict of interest

| | | | |
|-------------------------|---------------|-----------------------|-----------------------|
| Received: | 01-March-2022 | Manuscript No: | ipnbi-22-13157 |
| Editor assigned: | 03-March-2022 | PreQC No: | ipnbi-22-13157(PQ) |
| Reviewed: | 17-March-2022 | QC No: | ipnbi-22-13157 |
| Revised: | 22-March-2022 | Manuscript No: | ipnbi-22-13157(R) |
| Published: | 29-March-2022 | DOI: | 10.35841/ipnbi-6.2.10 |

Corresponding author William Slikker, Department of Neurology, University of Virginia, USA, E-mail: William.slikker@fda.hhs.gov

Citation William Slikker (2022) Structural Function and Diseases of the Central Nervous System. J Neurosci Brain Imag Vol.6.2:10

Copyright © 2022 William S. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited