

# Cerebellum Encyclopedia Article

## Cerebellum

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# Contents

<a href="#">Cerebellum Encyclopedia Article.....</a>	<a href="#">1</a>
<a href="#">Contents.....</a>	<a href="#">2</a>
<a href="#">Cerebellum.....</a>	<a href="#">3</a>

# Cerebellum

The cerebellum, which is Latin for "little brain," is located in the posterior region of the **skull**. In the human **brain**, the cerebellum occupies a place partially tucked under the forebrain's **cerebral hemispheres**. The cerebellum is extensively folded into parallel folds, or folia, giving it an appearance of having irregular pleats. The cerebellum possesses right and left hemispheres that are connected with the **spinal cord** and forebrain. Between the two hemispheres is a worm-like structure known as the vermis. The two hemispheres are each divided into three lobes, the paleocerebellum (anterior), the neocerebellum (midlobe), and the archicerebellum (posterior). Each of the cerebellum's hemispheres connect with spinal cord nerves on the same side of the body, but with the opposite cerebral hemisphere.

The cerebellum's specialized function in the human brain is to maintain **posture** and balance, and to carry out coordinated movement, by processing signals that are transmitted from the cerebral cortex's motor area to the spinal cord and then to muscle groups, creating movements. The cerebellum also receives muscle and joint signals. It compares these with the cortex's signals, and makes adjustments as necessary to achieve the coordinated movement intended. Some evidence exists that the cerebellum can store a sequence of instructions for movements that are repeated frequently, and for repetitious skilled movements that are learned by rote. In some studies of the brain's responses to language-related tasks, researchers have found that, as tasks became more complex, several sites in the cerebellum are activated along with areas of the forebrain that process many types of information. Thus, some scientists suggest that the cerebellum may play a role in cognitive learning.

Another important function played by the cerebellum is its role in the reticular activating system, a widespread network of nerve cells that are the means by which humans maintain consciousness. The reticular activating system is also involved in the brain's ability to focus attention, blocking out some distractions that originate both within and outside the body.