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SCHIZOPHRENIA Factsheet

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What is the cerebellum?

The cerebellum sits below the larger cerebrum of the brain, and is connected via the brainstem. The cerebellum is divided into two hemispheres separated dorsally by a midline zone called the vermis. It contains three primary lobes, the flocculonodular lobe, anterior lobe, and posterior lobe. Broadly, the cerebellum is thought to function in fine motor control (coordination and precision) and motor learning, balance, posture, as well as some cognitive and emotional capacity. The interaction of sensory, cognitive and motor functions may also contribute to proprioception (the awareness of self in space), planning movements, and evaluating information for action. The detailed functions of each region of the cerebellum are determined largely by their connectivity.

What is the evidence for changes in the cerebellum?

Structural changes

Moderate quality evidence suggests reductions in grey matter in bilateral cerebellum of people with chronic or first-episode schizophrenia, particularly treatment-naïve patients. Moderate to low quality evidence suggests reduced white matter integrity in the cerebellum. High quality evidence suggests no differences in reduction of cerebellum volume over time in people with schizophrenia compared to controls.

Functional changes

Moderate to low quality evidence suggests changes in functional activity in the cerebellum in people with schizophrenia are most frequently identified during motor, cognitive/executive, and emotional tasks. Moderate quality evidence suggests functional activation is decreased in the left cerebellum during episodic memory retrieval tasks. Moderate to low quality evidence suggests functional activity in the cerebellum in first-degree relatives of people with schizophrenia is reduced compared to controls during working memory tasks, with no differences during cognitive control, long-term memory, and language processing tasks.

For more information see the technical table

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NeuRA (Neuroscience Research Australia) is one of the largest independent medical and clinical research institutes in Australia and an international leader in neurological research.

Diseases of the brain and nervous system pose the greatest health, economic and social burden of any disease group because they are chronic, debilitating and have no known cures.

Medical research is the cornerstone of efforts to advance the health and wellbeing of families and the community. Our dedicated scientists are focussed on transforming their research into significant and practical enefits for all patients.

While we hope you find this information useful, it is always important to discuss any questions about schizophrenia or its treatment with your doctor or other health care provider.

HOW YOUR SUPPORT HELPS

We are able to make significant advances due to the generosity of countless people. Your donation allows us to continue to work towards transforming lives. For information on how you can support our research, phone **1300 888 019** or make a secure donation at **neura.edu.au/donate/schizophrenia**.

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