

# Structure and Clinical Significance of Cerebral Hemisphere

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## Opinion Article

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## DESCRIPTION

The longitudinal fissure divides the two cerebral hemispheres that make up the vertebrate cerebrum (brain). Therefore, the left and right cerebral hemispheres of the brain can be considered to be separate. The cerebral cortex, which is the outermost layer of grey matter in each of these hemispheres, is supported by an inner layer of white matter.

The central sulcus is a noticeable fissure that divides the primary motor cortex from the primary somatosensory cortex and the parietal lobe from the frontal lobe. According to the cerebral cortex's microscopic cytoarchitecture, there is a clear asymmetry between the hemispheres in terms of cell activities, neurotransmitter levels, and receptor subtypes.

Each brain hemisphere has an exterior layer of grey matter called the cerebral cortex and an inner layer or core of white matter called the centrum semiovale in the center. The occipital pole, frontal pole, and temporal pole are the three poles of the cerebrum. The back of each occipital lobe in each hemisphere is known as the occipital pole. Compared to the rounder frontal pole, it is more pointed. The frontal pole is rounder than the occipital pole and is located at the front of each hemisphere's frontal lobe. The anterior portion of the middle cranial fossa in each temporal lobe houses the temporal pole, which is situated between the frontal and occipital poles.

The central white matter will be visible if the upper portion of either hemisphere is removed, at a level approximately 1.25 cm above the corpus callosum, surrounded by a narrow convoluted margin of grey substance, and studded with numerous small red dots (puncta vasculosa), produced when blood leaks from split blood arteries. The labia cerebri are the hemisphere margins that overlie the corpus callosum, which can be seen if the remaining hemispheres are slightly pushed apart. The corpus callosum connects the remaining hemispheres at the bottom of the longitudinal fissure.

The callosal sulcus is the groove between each labium and the upper surface of the corpus callosum. Each labium is a component of the cingulate gyrus, which has already been defined. The white substance of the corpus callosum, which connects the two hemispheres, can be seen if the hemispheres are severed at a level with its upper surface.

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The centrum semiovale is the term used to describe the vast area of medullary matter that is currently visible and encircled by the wavy margin of grey stuff. The superficial middle cerebral artery supplies blood to the centrum semiovale. This artery's cortical branches descend to supply the centrum semiovale with blood. The central white matter will be exposed as an oval-shaped area, the centrum semiovale, surrounded by a narrow convoluted margin of grey substance, and studded with numerous tiny red dots (puncta vasculosa), produced by the escape of blood from divided blood vessels, if the upper portion of either hemisphere is removed, at a level approximately 1.25 cm above the corpus callosum. The corpus callosum connects the remaining hemispheres at the bottom of the longitudinal fissure.

The callosal sulcus is the groove between each labium and the upper surface of the corpus callosum. Each labium is a component of the cingulate gyrus, which has already been defined. The white substance of the corpus callosum, which connects the two hemispheres, can be seen if the hemispheres are severed at a level with its upper surface. The centrum semiovale is the term used to describe the vast area of medullary matter that is currently visible and encircled by the wavy margin of grey stuff. The superficial middle cerebral artery supplies blood to the centrum semiovale. This artery's cortical branches descend to supply the centrum semiovale with blood.

The telencephalon gives rise to the cerebral hemispheres. Five weeks after conception, they appear as bilateral wall invasions. The internal hemisphere structures, such as the ventricles, are pulled round by the hemispheres as they grow in a C-shape and then back again.

The centrum ovale may experience infarcts. In a technique called as a corpus callosotomy, the corpus callosum can be removed as an epilepsy treatment to break the main connection between the hemispheres. One of the brain's hemispheres is removed or rendered inoperable during a hemispherectomy. When other therapies fail to control severe forms of epilepsy, this uncommon technique may be employed.