

Subarachnoid cistern

The [subarachnoid cisterns](#) are spaces within the [subarachnoid space](#) where the [pia mater](#) and [arachnoid](#) membrane are not in close approximation. These spaces are filled with the [cerebrospinal fluid](#) ¹⁾.

Some major subarachnoid cisterns

[Cisterna magna](#) (cerebellomedullary cistern): the largest of the subarachnoid cisterns

[Perimesencephalic cistern](#)

[Pontine cistern](#)

[Suprasellar cistern](#)

[Interpeduncular cistern](#)

[Quadrigeminal cistern](#) (superior cistern or cistern of the great cerebral vein)

[Ambient cistern](#).

In neuroanatomy, a cistern (Latin: “box”) is any opening in the [subarachnoid space](#) created by a separation of the [arachnoid](#) and [pia mater](#). These spaces are filled with [cerebrospinal fluid](#).

Although the pia mater adheres to the surface of the brain, closely following the contours of its gyri and sulci, the arachnoid covers only its superficial surface. It follows from this that in certain areas around the brain the pia and arachnoid are separated widely; in such regions are formed cavities called the subarachnoid cisterns.

Although they are often described as distinct compartments, the subarachnoid cisterns are in fact not truly anatomically distinct. Rather, these subarachnoid spaces are separated from each other by a trabeculated porous wall with various-sized openings.

There are many cisterns in the brain with several especially large, notable ones each with their own name.

see [Posterior fossa cisterns](#).

Carotid cistern

It is situated between the [carotid artery](#) and the ipsilateral [optic nerve](#). It contains: The internal carotid artery. The origin of the anterior choroidal artery. The origin of the posterior communicating artery. Insular/Sylvian cistern. It is situated in the fissure between the frontal and temporal lobes. It contains: The middle cerebral artery. The middle cerebral veins. The fronto-orbital veins. Collaterals to

the basal vein of Rosenthal.

Cistern of lamina terminalis

It is situated just rostral to the third ventricle. It contains: The anterior cerebral arteries (A1 and proximal A2). The anterior communicating artery. Heubner's artery. The hypothalamic arteries. The origin of the fronto-orbital arteries.

Lumbar cistern

It extends from the [conus medullaris](#) (L1-L2) to about the level of the second sacral vertebra. It contains the filum terminale and the nerve roots of the cauda equina. It is from the cistern that CSF is withdrawn during lumbar puncture. It is of clinical significance that cerebral arteries, veins and cranial nerves must pass through the subarachnoid space, and these structures maintain their meningeal investment until around their point of exit from the skull.

Opening of the basal cisterna for evacuation of the [cerebrospinal fluid](#) is a well-recognized and effective method for brain relaxation in microneurosurgical approaches to the skull base especially in microvascular surgery ^{2) 3)}.

Cerebellopontine angle cistern

[Cerebellopontine angle cistern](#)

References

¹⁾

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