

Posterior cranial fossa

The internal surface of the base of the skull consists of three cranial fossae, the anterior, middle, and posterior. They increase in size and depth from anterior to posterior. The anterior and middle fossae are separated by the lesser wing of the sphenoid bone, and the middle and posterior fossae are separated by the petrous part of the temporal bone.

The **anterior** cranial fossa is adapted for reception of the frontal lobes of the brain, and is formed by portions of the frontal, ethmoid, and sphenoid bones. The **crista galli**, a midline process of the ethmoid bone, gives attachment to the anterior end of the falx cerebri. On each side of the crista galli are the grooved **cribriform plates** of the ethmoid bone, providing numerous orifices for the delicate olfactory nerves from the nasal mucosa to synapse in the olfactory bulbs.

The **middle** cranial fossa is composed of the body and great wings of the sphenoid bone, the squamous and petrous parts of the temporal bones and the frontal angles of the parietal bones. This fossa is the “busiest” of the cranial fossae. This fossa contains laterally the **temporal lobes** of the brain. This fossa contains the optic chiasma, optic canal, sella turcica, and the hypophyseal fossa that houses the pituitary gland. Within this fossa, the superior orbital fissure, foramen rotundum, foramen ovale, foramen lacerum, and foramen spinosum are found. In the temporal bone, the hiatus for both the lesser and greater petrosal nerves are found. On the anterior surface of the petrous portion of the temporal bone is the trigeminal impression, which lodges the trigeminal ganglion (*semilunar or gasserian*) of the fifth nerve.

The **posterior** cranial fossa, the deepest of the fossae, houses the **cerebellum, medulla, and pons**. Anteriorly, the posterior cranial fossa extends to the apex of the petrous temporal. Posteriorly, it is enclosed by the occipital bone. Laterally, portions of the squamous temporal and mastoid part of the temporal bone form its walls. It contains four important foramina, the internal acoustic meatus (*in the petrous part of the temporal bone*), the jugular foramen (*between the **temporal** and occipital bones*), the hypoglossal canal (*in the occipital bone*), and the foramen magnum (*a large median opening in the floor of the fossa, where the medulla oblongata is continuous with the spinal cord*).