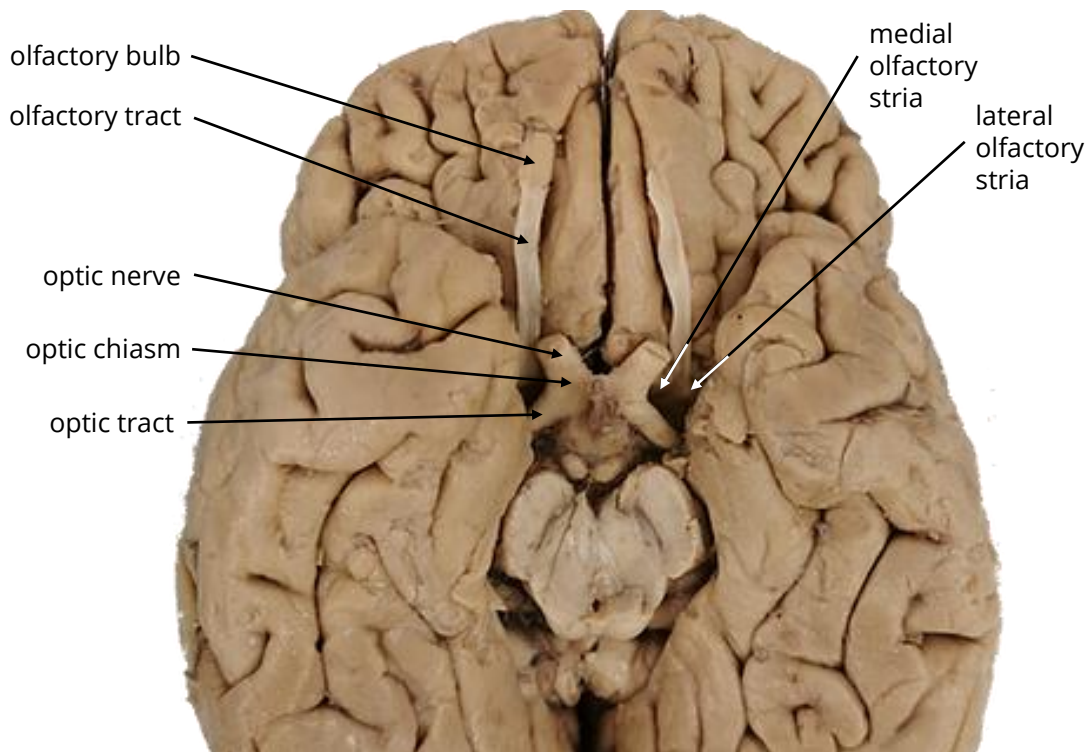


Cranial nerves

There are twelve pairs of nerves that connect the central and peripheral nervous systems and pass through openings in the skull.

1. The olfactory nerves (CN I) are located at the roof of the nasal cavities and their fibers reach the olfactory bulb. The fibers coming out of the olfactory bulb form the olfactory tract that splits into a lateral olfactory stria and a medial olfactory stria.
2. The optic nerve (CN II) consists of the fibers from the retina of the eye. Some of the fibers of each optic nerve cross to the opposite side in the optic chiasm. From there, the fibers of the optic tract contain visual information from both eyes and reach the lateral geniculate nucleus (LGN) of the thalamus.

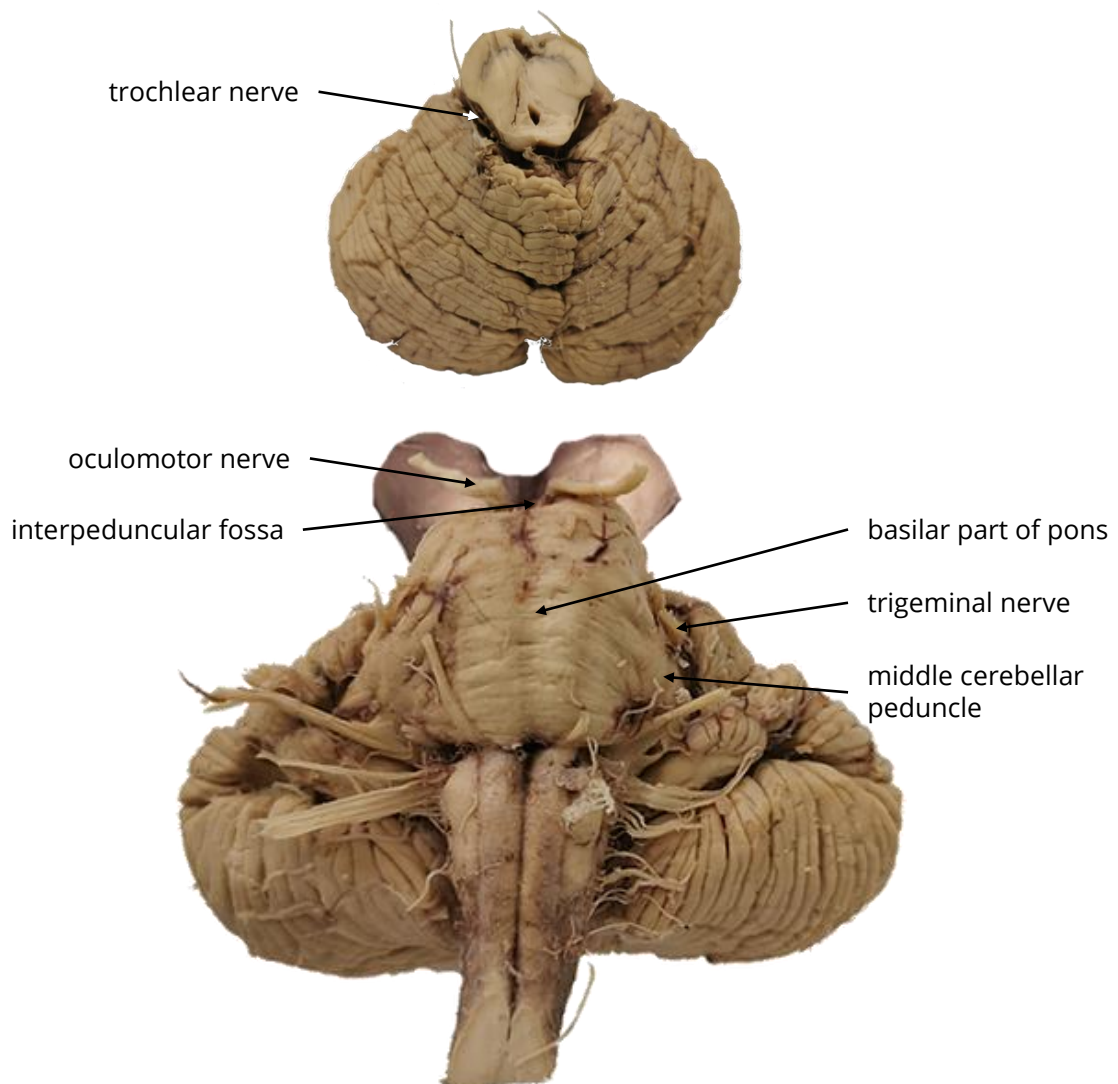


The nuclei of cranial nerves III - XII are all located in the brainstem.

3. The oculomotor nerve (CN III) exits at the interpeduncular fossa and innervates four of the ocular muscles (superior rectus, medial rectus, inferior rectus & inferior oblique), the levator palpebrae superioris (upper eyelid) and the sphincter pupillae (iris).

4. The trochlear nerve (CN IV) is the only cranial nerve that exits from the dorsal aspect of the brainstem, below the inferior colliculi. It innervates one of the ocular muscles (superior oblique).

5. The trigeminal nerve (CN V) exits from the pons and defines the boundary between the basilar part of pons and the middle cerebellar peduncle. It has three branches that bring sensory information from the face and innervate some of the jaw muscles.



Cranial nerves VI-VIII are located in the pontomedullary sulcus.

6. The abducens nerve (CN VI) is the most medial, it innervates one of the ocular muscles (lateral rectus).

7. The facial nerve (CN VII) innervates the facial muscles and brings taste information from the anterior two thirds of the tongue.

8. The vestibulocochlear nerve (CN VIII) is the most lateral, it has two branches that bring sensory information from the ear: auditory information from the cochlea and vestibular information from the vestibular system.

Cranial nerves IX-XI are located between the olive and the inferior cerebellar peduncle.

9. The glossopharyngeal nerve (CN IX) is the most superior, it brings taste information from the posterior one third of the tongue and innervate muscles in the pharynx.

10. The vagus nerve (CN X), parasympathetically innervates the heart, lungs and digestive system.

11. The accessory nerve (CN XI) is the most inferior, it innervates the neck and trapezius muscles.

12. The hypoglossal nerve (CN XII) exits between the olive and the pyramid and it innervates the muscles of the tongue.

