

"Glossopharyngeal Nerve(Cranial Nerve IX)"

» Overview

- The glossopharyngeal nerve is both a motor and a sensory nerve.

"Glossopharyngeal Nerve Nuclei"

1) Main Motor Nucleus

- Located deep in the reticular formation of the medulla oblongata.
- Formed by the superior end of the nucleus ambiguus.
- Receives corticonuclear fibers from both cerebral hemispheres.
- Efferent fibers supply the stylopharyngeus muscle.

2) Parasympathetic Nucleus

- Also known as the inferior salivatory nucleus.
- Receives afferent fibers from the hypothalamus via descending autonomic pathways.
- Thought to receive information from the olfactory system through the reticular formation.
- Receives taste information from the nucleus of the solitary tract from the mouth cavity.
- Efferent preganglionic parasympathetic fibers travel to the otic ganglion via:
 - Tympanic branch of the glossopharyngeal nerve
 - Tympanic plexus
 - Lesser petrosal nerve
 - Postganglionic fibers innervate the parotid salivary gland.

3) Sensory Nucleus

- Part of the nucleus of the tractus solitarius.
- Sensations of taste travel through peripheral axons from ganglion cells on the glossopharyngeal nerve.
- Central processes synapse on nerve cells in the sensory nucleus.
- Efferent fibers cross the median plane and ascend to the ventral group of nuclei in the opposite thalamus and hypothalamic nuclei.
- Axons from the thalamus pass through the internal capsule and corona radiata to the lower part of the postcentral gyrus.
- Afferent information regarding common sensations enters the brainstem through the superior ganglion of glossopharyngeal nerve and terminates in the spinal nucleus of the trigeminal nerve.

- Afferent impulses from the carotid sinus (baroreceptor at common carotid artery bifurcation) travel with the glossopharyngeal nerve, terminating in the nucleus of the tractus solitarius and connecting to the dorsal motor nucleus of the vagus nerve.
- The carotid sinus reflex helps regulate arterial blood pressure.

"Glossopharyngeal Nerve Course"

- Exits the anterolateral surface of the upper medulla oblongata as rootlets in the groove between the olive and inferior cerebellar peduncle.
- Passes laterally in the posterior cranial fossa, leaving the skull through the jugular foramen.
- Superior and inferior glossopharyngeal sensory ganglia located on the nerve.
- Descends in the neck with the internal jugular vein and internal carotid artery to the posterior border of the stylopharyngeus muscle.

- Passes forward between the superior and middle constrictor muscles of the pharynx, providing sensory branches to the mucous membrane of the pharynx and the posterior third of the tongue.