

# Glossopharyngeal Nerve

Template:Infobox - nerv ***The glossopharyngeal nerve*** is the ninth cranial nerve . It is a mixed nerve with a motor, sensitive and parasympathetic component. It also has a sensory function, as it guides taste sensations.

Together with the vagus nerve and the accessory nerve, it belongs to the lateral mixed system. All these nerves exit the brainstem laterally from the olive in the posterolateral sulcus and contain all types of fibers.

## Innervation

- **It motorically** innervates the muscles of the palate, pharynx and stylopharyngeus muscle. **The exception** is the tensor veli palatini muscle, which innervates the C.N. V.
- **It parasympathetically** innervates the mucosa of the middle ear cavity and the otic ganglion .
- It provides **sensory innervation** to the middle ear cavity, auditory tube, pharynx , tonsils, and the back third of the tongue .
- It provides **sensory innervation** the posterior third of the tongue for the sensation of **taste**.

## Nuclei

Common to a lateral mixed system, ie:

- **ncl. ambiguus** - *somatomotor*
- **Inferior Salivatory Nucleus** - *parasympathetic visceromotor for parotid gland*.
- **nucleus of tractus solitarius** - viscerosensitive fibres from the dorsal third of the tongue

**spinal nucleus of the trigeminal nerve** - viscerosensitive and somatosensitive fibres from the palate, middle ear, palatine tonsil

## Nerve Pathway

It emerges from the oblongata, continues to the common exit from the skull through the **jugular foramen** , where it has the **superior and inferior ganglion of the vagus nerve**.

It is located under the base of the skull behind the **internal carotid artery** , below it runs between the internal carotid artery and the internal jugular vein. The trunk is short and thins gradually.

It runs parallel to the **'stylopharyngeus muscle'** ***below and expands, joining the superior pharyngeal constrictor*** muscle. It reaches the **radix linguae** and the deep part of the styloglossus muscle and sinks into the tongue.

## Branches

1. **Nervus tympanicus** - separates at the level of the ganglion inferius and passes upwards through the *canaliculus tympanicus* into the middle ear cavity to the *promontory* , forming the *plexus tympanicus*, into which several other connections go (**Jacobson's anastomosis**).

N. tympanicus conducts *sensory fibers* to innervate the mucosa of the middle ear cavity and the wall of the auditory tube.

The parasympathetics continue from the tympanic plexus to the minor petrous nerve and through it to the **otic ganglion** and then passes through the *ramus communicans cum nervo auriculotemporalis* to the auriculotemporal nerve from the trigeminal nerve V3 and through it finally to the **parotid gland**.

N. tympanicus, after receiving the sympathetic and motor components, goes to the **otic ganglion** already as **lesser petrosal nerve**. Postganglionic fibers continue to the parotid gland via the mandibular nerve .

Iron

1. *Ramus communicans cum ramo auriculari nervi vagi*
2. *Ramus communicans cum trunco sympathico*
3. **Ramus musculi stylopharyngei** - motorically innervates the stylopharyngeus muscle
4. **Rami pharyngei** - motorically innervates the upper sphincter of the pharynx, the sensitive mucous membrane, and the parasympathetic nerve innervates small glands in the mucous membrane. Caudal from the constrictor pharyngis medius muscle, it supplies fibers of the X nerve and truncus sympathicus
5. **Ramus sinus carotici** - descending along the internal carotid artery to the **sinus caroticus and glomus caroticum**
6. **Rami tonsillares** - plexus tonsillaris in the vicinity of the palatine tonsil and the mucous membrane around it
7. **Rami linguales** - innervation of the back third of the tongue, taste fibers lead from the dorsal side and sensitive innervation

# Links

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