

# **ANATOMY OF**

## **parasympathetic ganglion**

By

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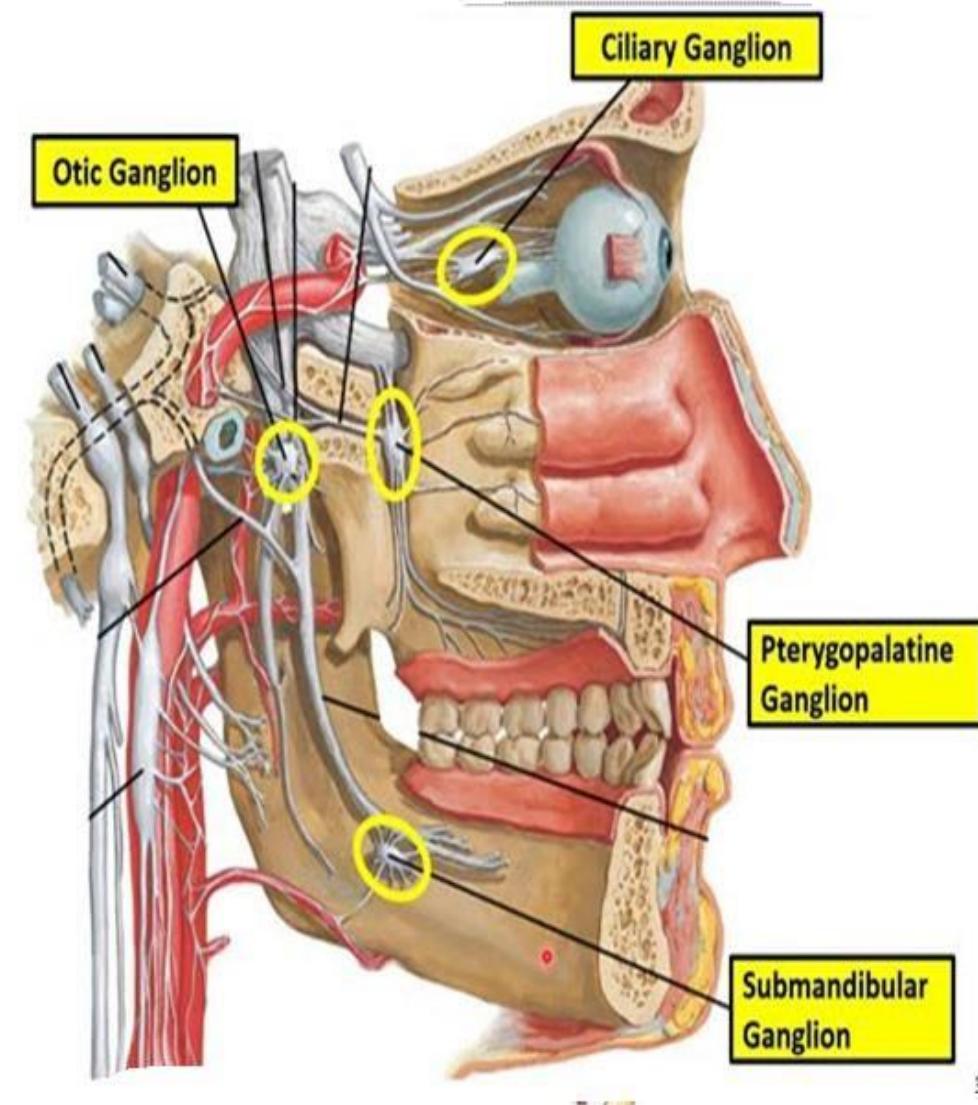
There are 4 parasympathetic ganglion

1 Otic Ganglion.

2 Submandibular Ganglion.

3 Sphenopalatine ganglion.

4 Ciliary Ganglion



# Otic Ganglion

- **Type:** Parasympathetic Ganglion
- **Site:** Infratemporal fossa connected to the mandibular division of trigeminal nerve but **functionally** related to glossopharyngeal nerve.

- **Size:** Pinhead (2–3 mm in size).

## ➤ Roots or Connections

1. **Parasympathetic motor (secretomotor):** From lesser petrosal nerve.

2. **Sympathetic:** From sympathetic plexus around the middle meningeal artery

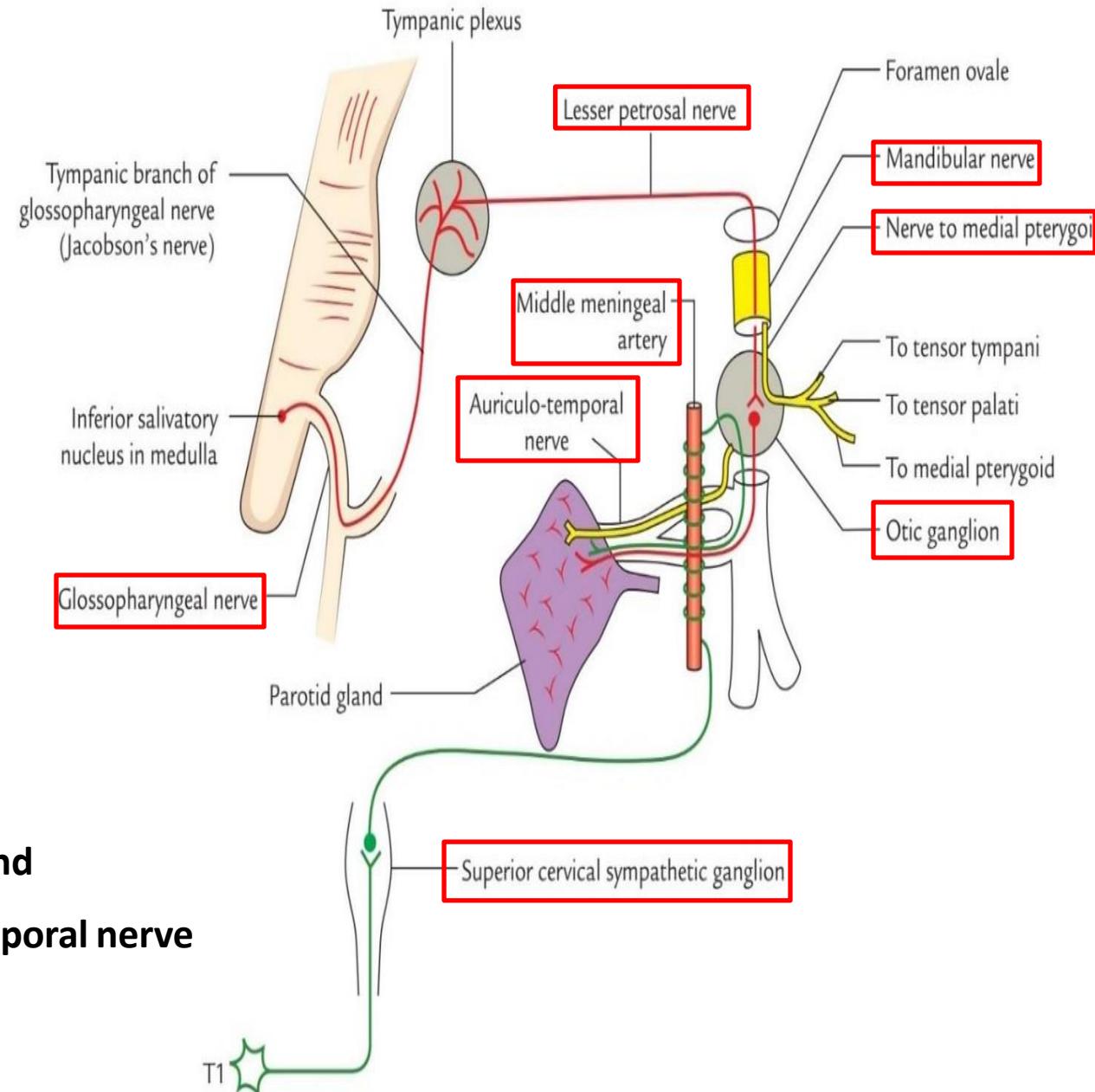
3. **Sensory:** From auriculotemporal nerve (with 2 roots).

4. **motor:** Nerve to medial pterygoid

## ➤ Branches

1. Postganglionic parasympathetic
2. Postganglionic sympathetic
3. Sensory

} **All supply parotid gland through auriculotemporal nerve**



Otic ganglion and its connections.

# Submandibular Ganglion

➤ **Type:** Parasympathetic Ganglion

➤ **Site:** outer surface of the hyoglossus muscle. connected to the lingual nerve by two roots but **functionally** related to the facial nerve

➤ **Size:** the size of a pinhead

## ➤ Roots

□ **Parasympathetic root:** derived from facial nerve (chorda tympani)

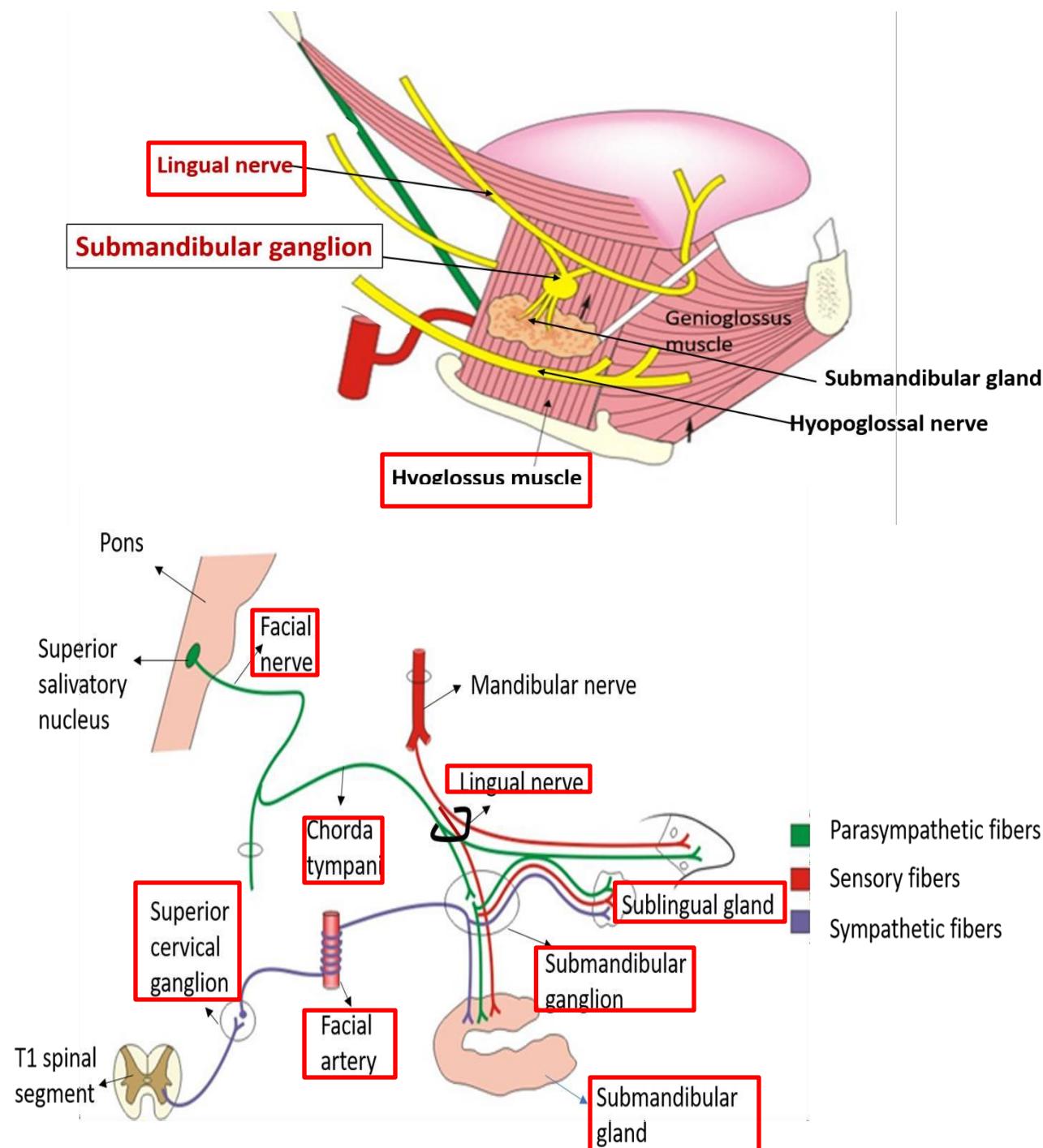
□ **Sympathetic root:** It is derived from sympathetic plexus around the facial artery (T1).

□ **Sensory root:** It is derived from lingual nerve.

## ➤ Branches

The branches of the submandibular ganglion are:

1. Five to six branches, which supply the submandibular gland.
2. Other fibers join the lingual nerve to supply the sublingual gland.



# Sphenopalatine ganglion = Pterygopalatine ganglion

Type: Parasympathetic Ganglion

Site: Pterygopalatine fossa suspended from maxillary n. by 2 roots but functionally related to facial n.

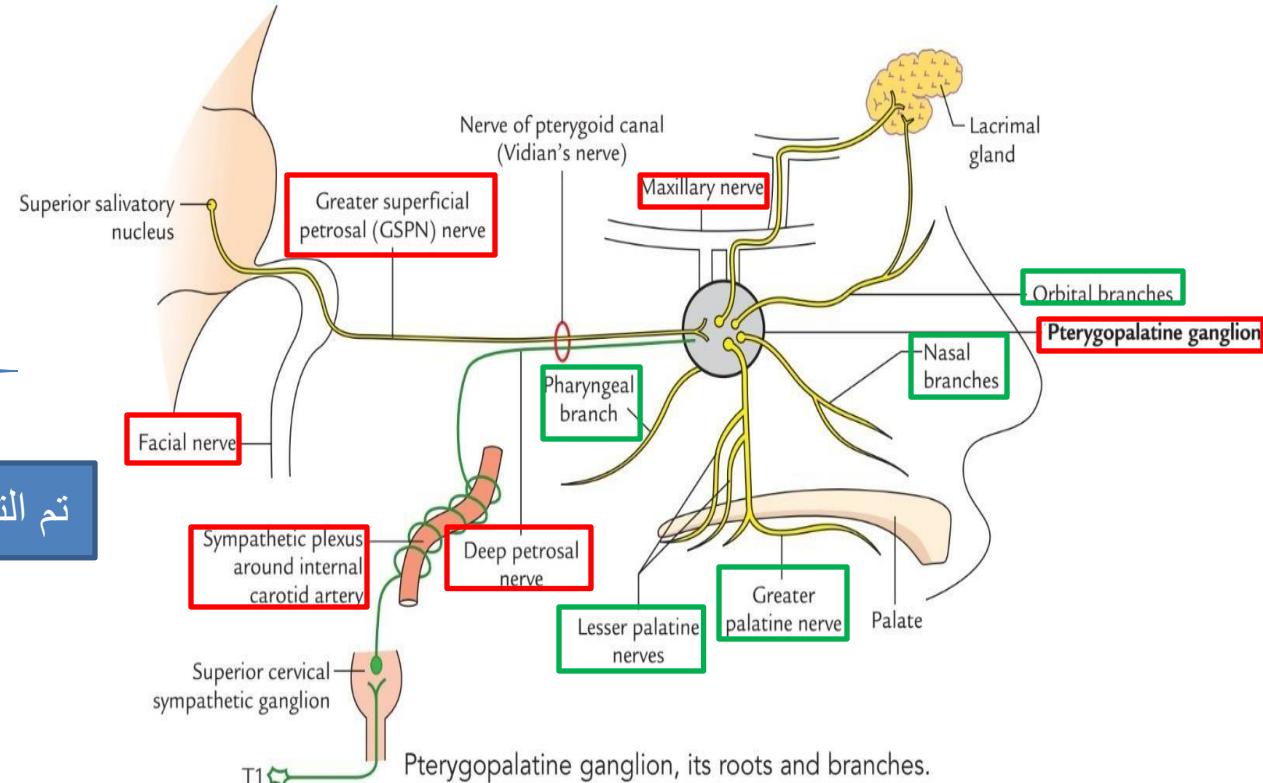
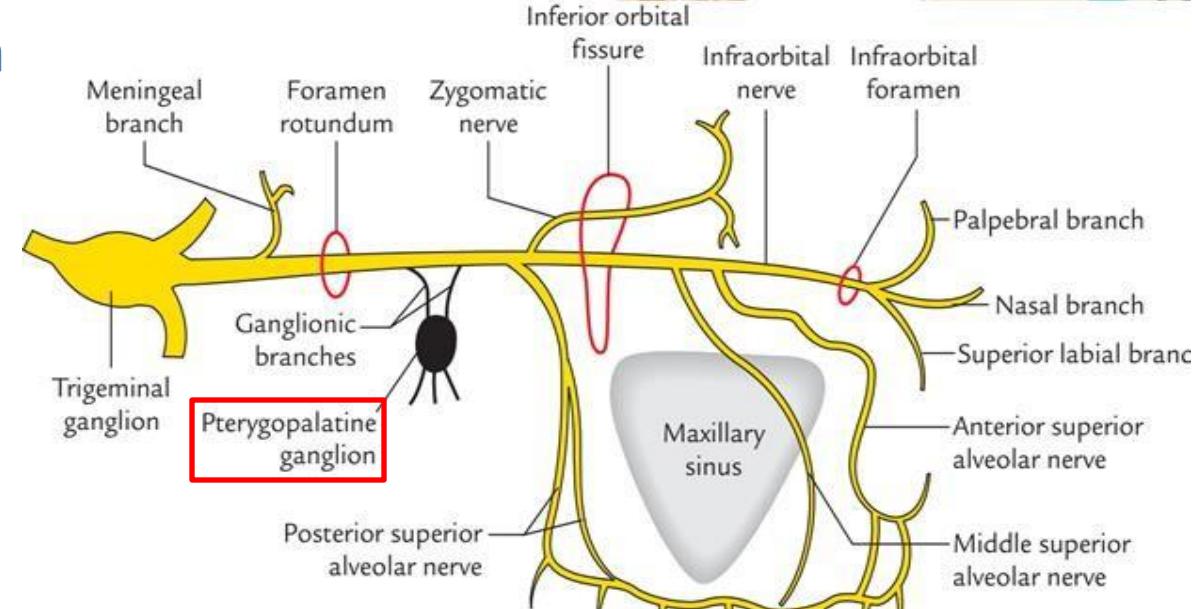
Roots entering the ganglion:

- Parasympathetic:** greater superficial petrosal n. (from facial n.) (relay)
- Sympathetic:** deep petrosal n. from plexus around I.C.A. (without relay)
- Sensory:** 2 sensory branches from maxillary n.

Branches from ganglion:

- 1 **Orbital branches:** Supply the orbit & sphenoidal air sinus
- 2 **Pharyngeal branches:** supply nasopharynx & eustachian tube
- 3 **Greater palatine n.:** gives sensations to the posterior 2/3 of the hard palate.
- 4 **Lesser palatine n.:** gives sensations to the soft palate.
- 5 **Lateral Posterior superior nasal. :** to lateral wall of nose
- 6 **Medial Posterior superior nasal n.:** nasal septum
- 7 **Nasopalatine ns:** nasal septum (postero-inferior part)

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## Ciliary Ganglion:

- **Type:** a parasympathetic ganglion.
- **Site:** It lies between the optic nerve and the lateral rectus.
- **Roots:**
  - **Sensory:** Branch from nasociliary nerve (it passes without relay).
  - **Sympathetic root:** branch from the sympathetic plexus in the wall of the cavernous sinus
  - **Parasympathetic :** Branch from the nerve to the inferior oblique

### ➤ Branches (post-ganglionic fibers):

They carry the following fibers:

1. Sensory fibers to the cornea, sclera, iris, ciliary body, and choroid.
2. Sympathetic vaso-constrictor fibers to the ciliary vessels.
3. Parasympathetic fibers to the ciliary and constrictor pupillae muscles.

