

The submandibular region is the area between the mandible and the hyoid bone. It is essentially the "floor of the mouth" and contains vital salivary glands, muscles, and neurovascular structures.

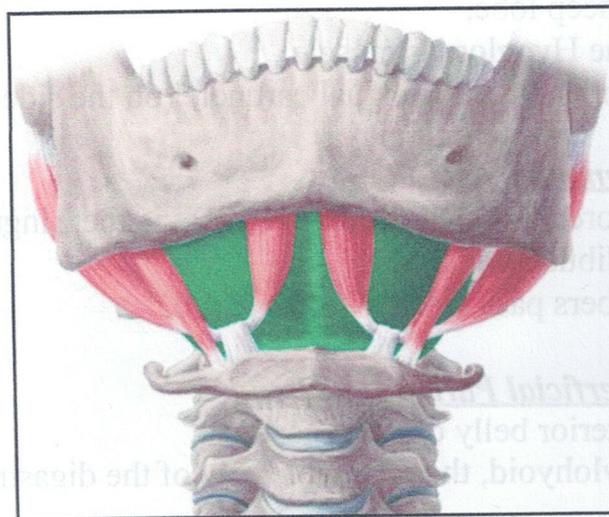
**1. Muscles of the Submandibular Region**

The muscles in this region are primarily Suprahyoid muscles. Their collective functions are to elevate the hyoid bone (during swallowing) or depress the mandible (opening the mouth).

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Muscle	Origin	Insertion	Innervation
Mylohyoid	Mylohyoid line of mandible	Hyoid body & Median raphe	Nerve to Mylohyoid (CN V3)
Geniohyoid	Inferior mental spine	Body of Hyoid	C1 via Hypoglossal (CN XII)
Digastric (Ant. Belly)	Digastric fossa of mandible	Intermediate tendon	Nerve to Mylohyoid (CN V3)
Digastric (Post. Belly)	Mastoid notch of temporal bone	Intermediate tendon	Facial Nerve (CN VII)
Stylohyoid	Styloid process	Hyoid bone	Facial Nerve (CN VII)
Hyoglossus	Greater horn of hyoid	Side of Tongue	Hypoglossal Nerve (CN XII)

The Mylohyoid is considered the "diaphragm of the mouth" as it forms the physical floor of the oral cavity, separating the sublingual space from the submandibular space.

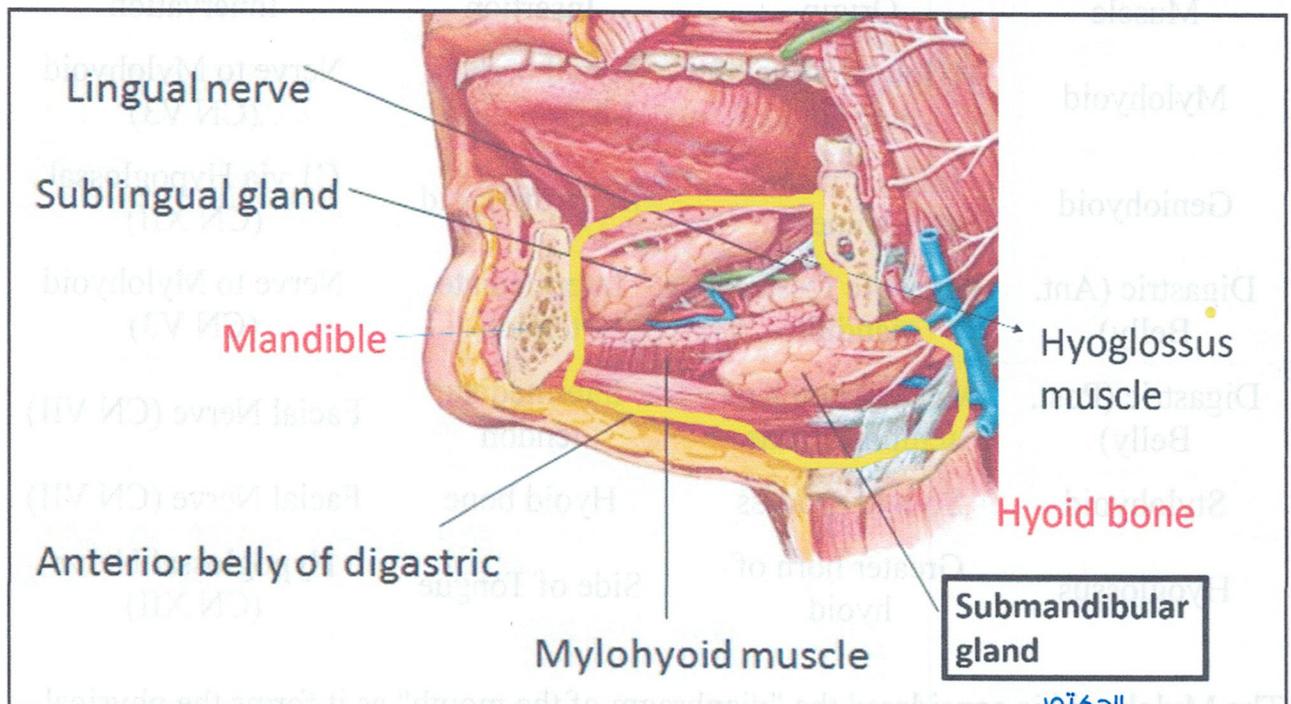


**Mylohyoid**

## 2. The Submandibular Gland

The submandibular gland is a large salivary gland that produces approximately 70% of the daily saliva volume. It is a mixed gland (both serous and mucous).

**Structure:** It is J-shaped, consisting of a large superficial lobe and a smaller deep lobe that wrap around the posterior border of the Mylohyoid muscle.



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### Submandibular (Wharton's) Duct:

- Emerges from the deep lobe.
- Runs forward on the Hyoglossus muscle.
- Opens into the mouth at the sublingual caruncle (on the side of the lingual frenulum).

### Innervation (Parasympathetic):

- Preganglionic:** Chorda tympani (from CN VII) via the Lingual nerve.
- Synapse:** Submandibular ganglion.
- Postganglionic:** Fibers pass directly to the gland.

### Relations of the Superficial Part of the Gland

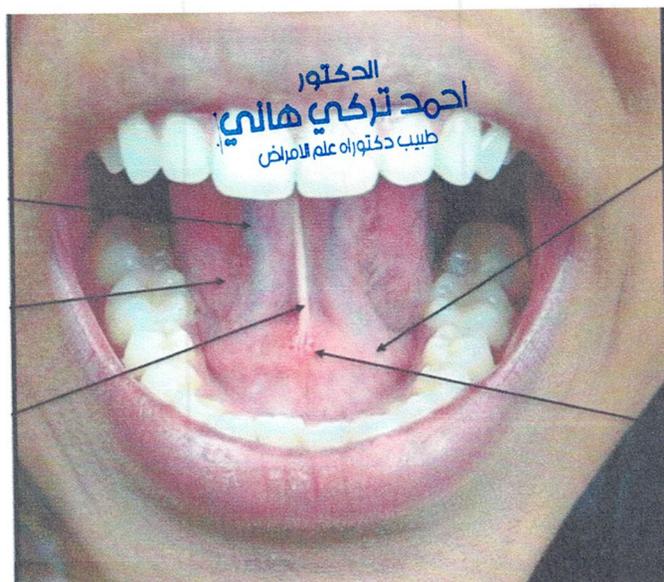
- **Anteriorly:** The anterior belly of the digastrics
- **Posteriorly:** The stylohyoid, the posterior belly of the digastric, and the parotid gland.
- **Medially:** The mylohyoid, the hyoglossus, and the lingual and hypoglossal nerves.

- **Laterally:** The gland lies in contact with the submandibular fossa in the medial surface of the mandible.

- **Inferolaterally,** it is covered by the investing layer of deep cervical fascia , the platysma muscle, and skin. It is crossed by the cervical branch of the facial nerve and facial vein. The submandibular lymph nodes also lie lateral to it.

**Relations of the Deep Part of the Gland**

- **Anteriorly:** The sublingual gland.
- **Posteriorly:** The stylohyoid, the posterior belly of the digastric, and the parotid gland.
- **Medially:** The hyoglossus and styloglossus.
- **Laterally:** The mylohyoid muscle and the superficial part of the gland.
- **Superiorly:** It is related superiorly to the lingual nerve and the submandibular ganglion; it is covered by the mucous membrane of the floor of the mouth.
- **Inferiorly:** The hypoglossal nerve.

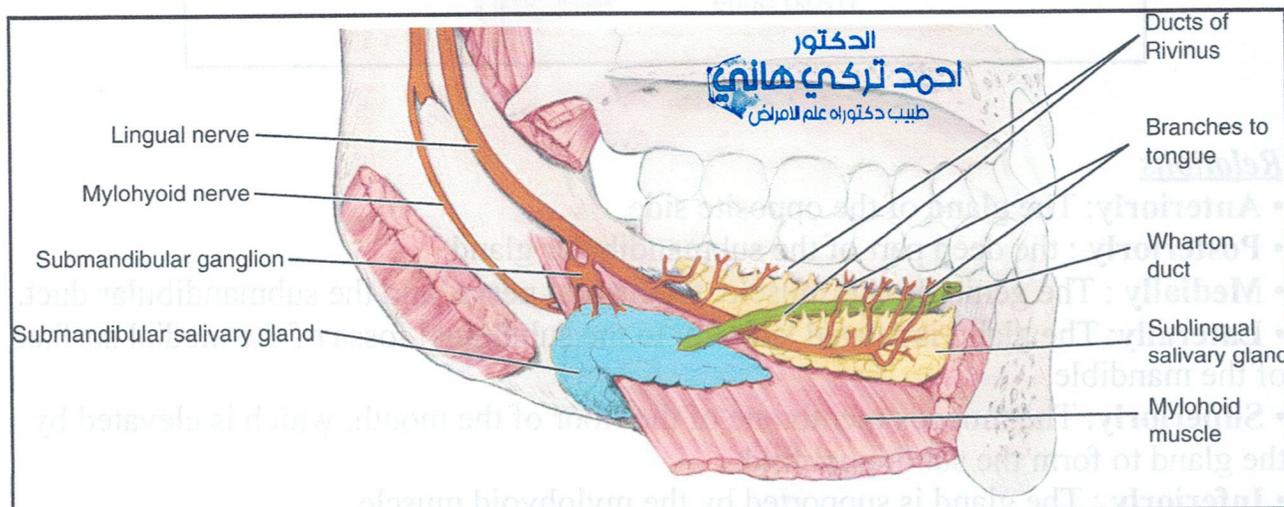


**Sublingual folds**

- Sublingual gland
- Submandibular (Wharton's) duct

**Sublingual caruncle**

- Opening of submandibular (Wharton's) duct



Lingual nerve

Mylohyoid nerve

Submandibular ganglion

Submandibular salivary gland

Ducts of Rivinus

Branches to tongue

Wharton duct

Sublingual salivary gland

Mylohyoid muscle

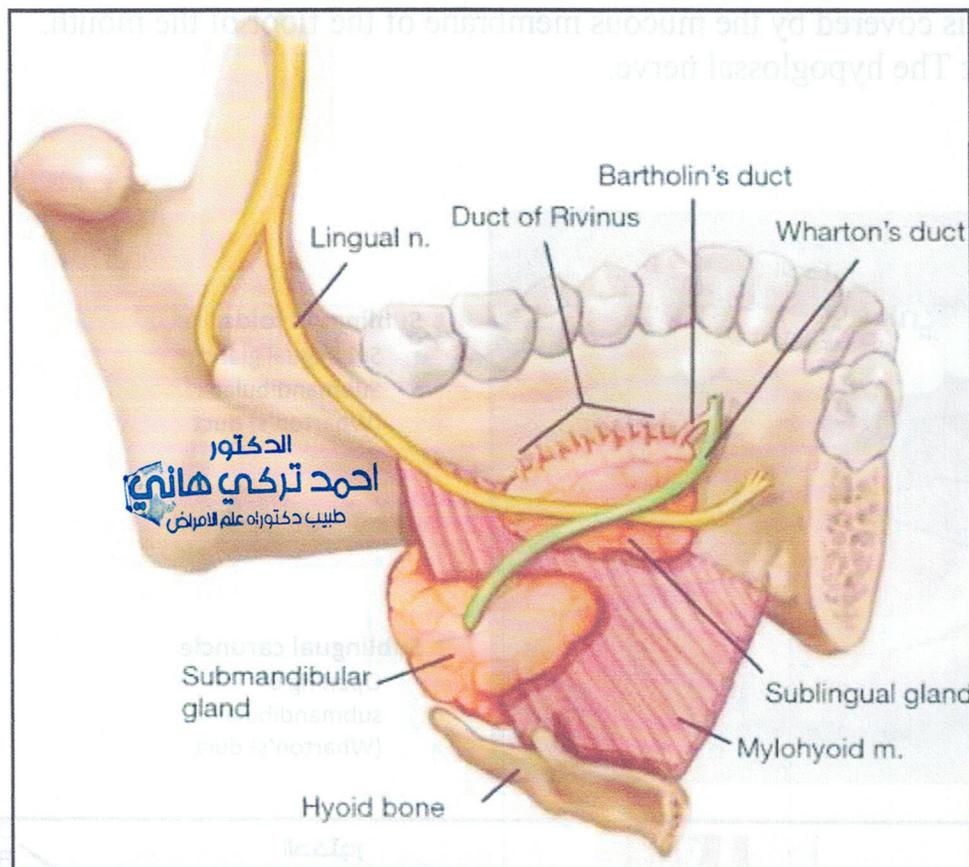
### 3. The Sublingual Gland

The sublingual gland is the smallest of the three major salivary glands. It is primarily mucous-secreting.

**Location:** Situated in the sublingual fossa of the mandible, superior to the Mylohyoid and deep to the oral mucosa (creating the sublingual fold).

**Ducts:** Unlike the other glands, it has multiple small ducts (Ducts of Rivinus) that open along the sublingual fold. Some may join to form the Bartholin duct, which joins the submandibular duct.

**Innervation:** Same parasympathetic pathway as the submandibular gland (Chorda tympani — Lingual nerve — Submandibular ganglion).



#### Relations

- **Anteriorly:** The gland of the opposite side.
- **Posteriorly :** the deep part of the submandibular gland.
- **Medially :** The genioglossus muscle, the lingual nerve, and the submandibular duct.
- **Laterally:** The gland is related laterally to the sublingual fossa of the medial surface of the mandible.
- **Superiorly:** The mucous membrane of the floor of the mouth, which is elevated by the gland to form the sublingual fold.
- **Inferiorly :** The gland is supported by the mylohyoid muscle.

#### 4. Key Neurovascular Relationships

**Lingual Nerve:** Crosses under the submandibular duct ("The nurse under the bridge"). It provides general sensation to the anterior 2/3 of the tongue.

**Hypoglossal Nerve (CN XII):** Runs deep to the submandibular gland on the surface of the Hyoglossus muscle. It provides motor supply to the tongue muscles.

**Facial Artery:** Grooves the posterior aspect of the submandibular gland before crossing the mandible to reach the face.

#### 5. Clinical Notes

**Salivary gland cysts** can develop due to injuries, tumours, infections or salivary stones that can block the flow of saliva. Since it cannot escape into the ducts it remains within the tissues which start to swell as the saliva builds up. This condition is usually painless but can cause problems when eating or speaking.

