Lecture: 7

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General Anatomy

Lecture 7: Muscles of Head &Neck

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Muscles of Scalp:

Occipito-frontalis Muscle

→ insertion: Epicranial aponeurosis

→ pulls up the eyebrows

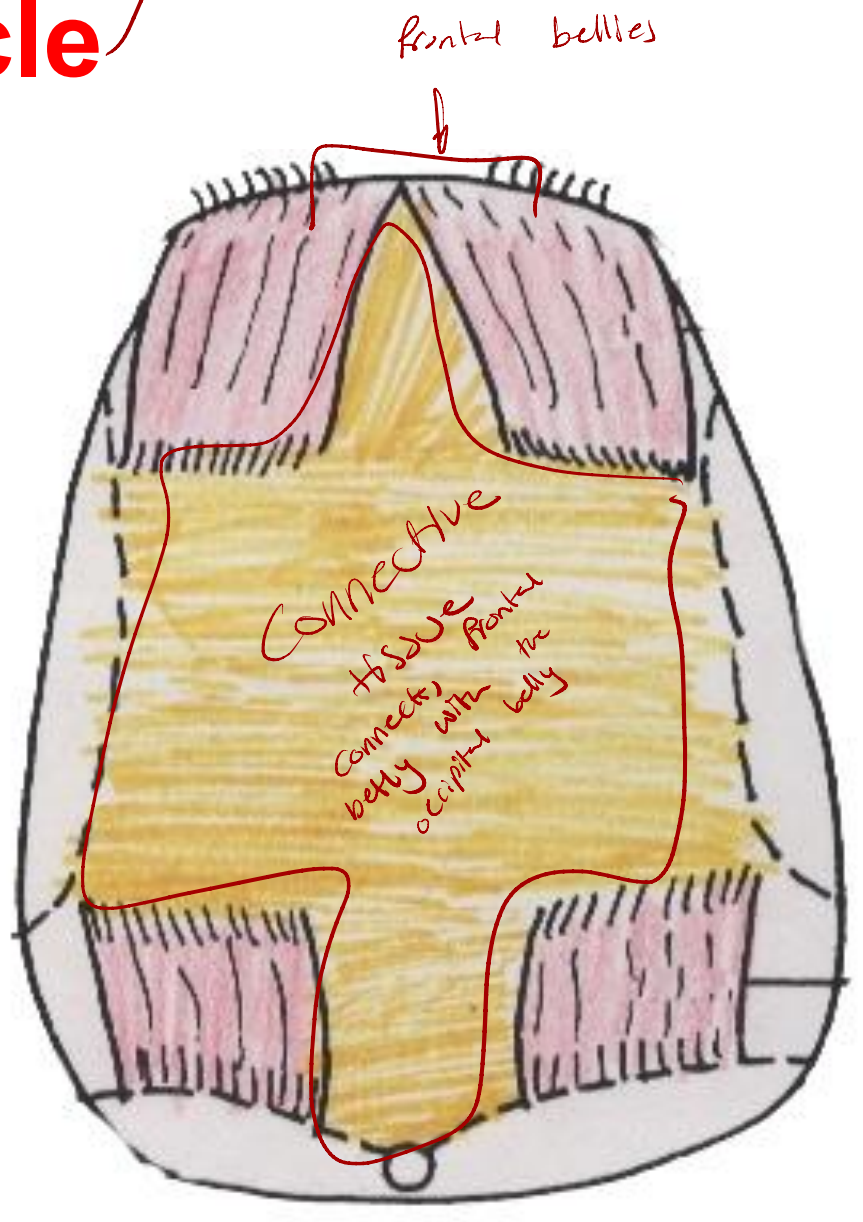
* Scalp has only ONE muscle which is the **occipito-frontalis muscle.**

* It is formed of **2 frontal bellies** and **2 occipital bellies** which are inserted in the epicranial aponeurosis.

* **Epicranial Aponeurosis:**

* A sheet of strong fibrous tissue on the skull cap.

* Receives the insertion of the frontal and occipital bellies.



Levator → للرفع
depressor → للتنزيل

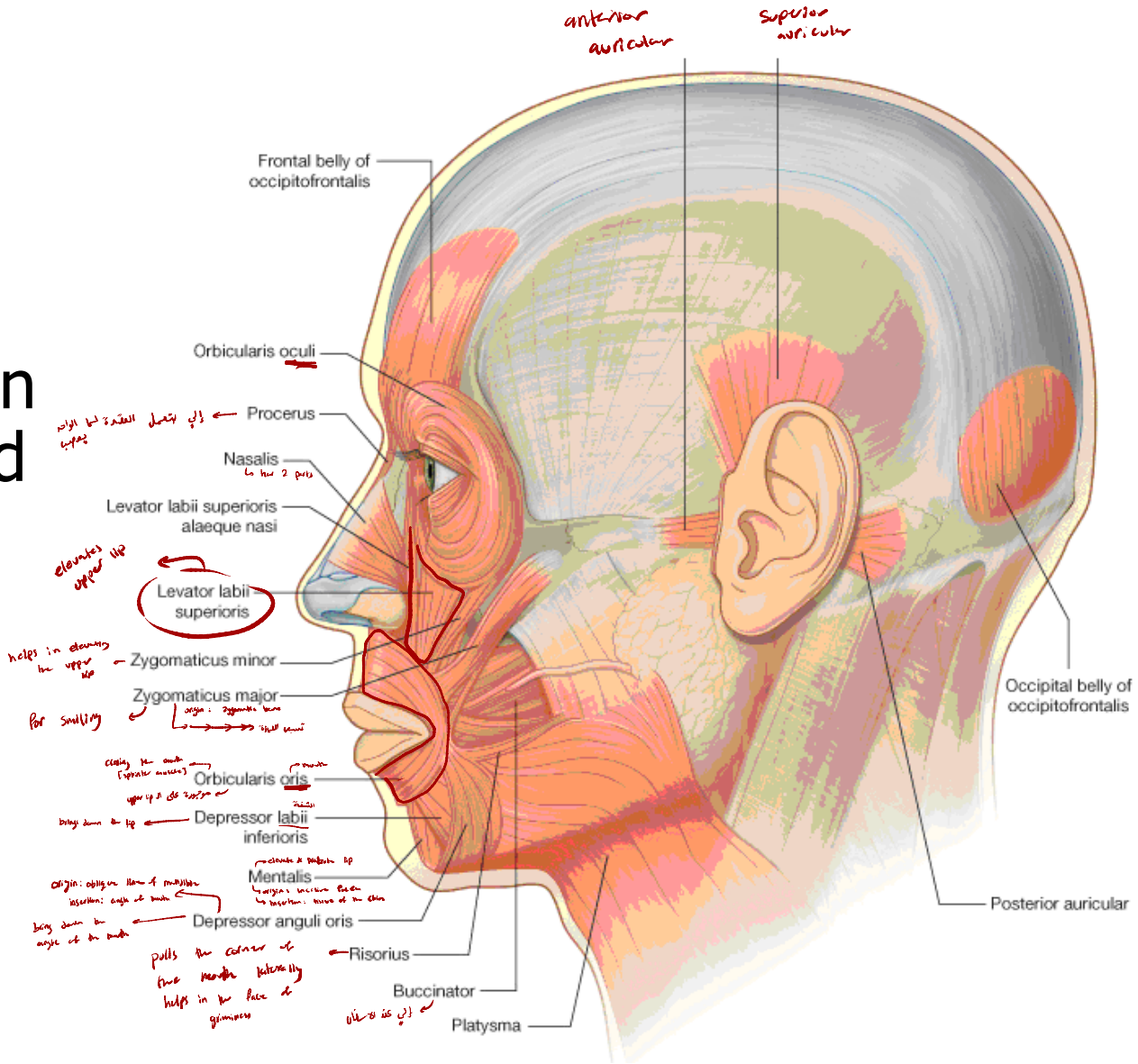
* **Frontal bellies** → take origin from eyebrows & are inserted in epicranial aponeurosis.

* **Occipital bellies** → take origin from occipital bone & are inserted in epicranial aponeurosis.

* **Action of muscle:** Pull the scalp backwards and raise the eyebrows thus causing the transverse wrinkles of forehead (giving expression of fear or surprise).

* **Nerve supply:** Facial nerve.

of occipitalis frontalis muscle



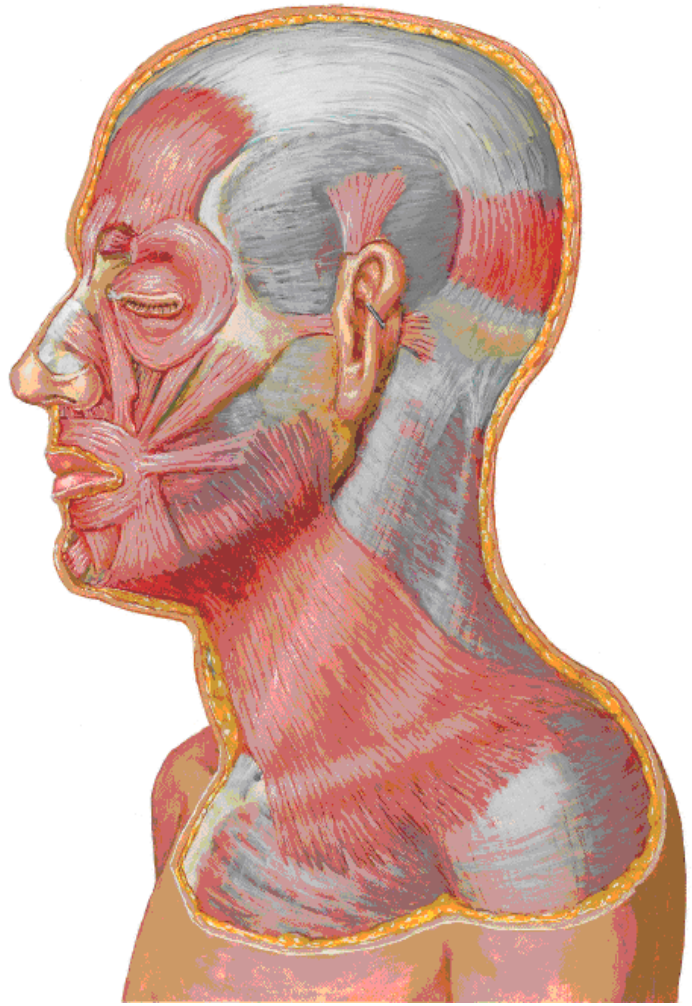
Muscles of Face
Muscles of Facial Expressions

@ General characteristics :

1. All the muscles : arise from the bones of the skull or subcutaneous tissue.
2. All the muscles : are inserted into the skin.
3. Action : they move the skin of face in the different facial expressions (therefore called **muscles of facial expressions**).
4. Nerve supply : all are supplied by the Facial Nerve.

Muscles of Face (contd)

5. Site : lie in the superficial fascia and there's no deep fascia in the face. (i.e. they lie subcutaneous).
6. They serve 2 main functions:
   a. They act as sphincters or dilators to the orifices in face which are :
      @ Orbit (guarded by eyelids).
      @ Nose (guarded by nostrils).
      @ Mouth (guarded by lips).
   b. Facial expressions and help in speaking & mastication.

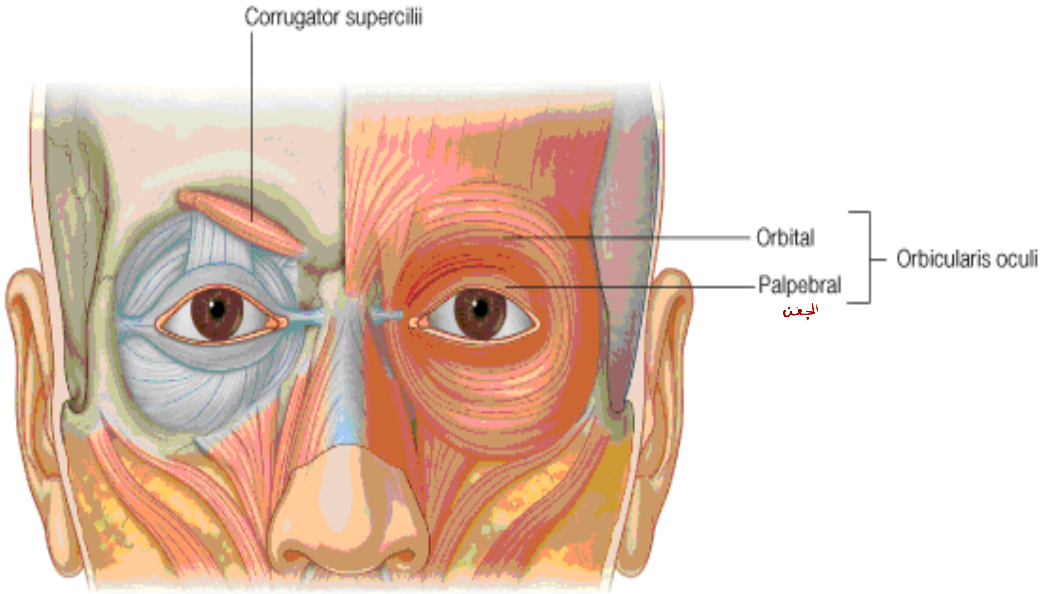


(A) Orbital Group
(Muscles of Orbit & Eyelids)

has (3) parts

Orbicularis Oculi (eye) → for squinting action & blinking

* This is the sphincter of the eyelids (i.e. closes the eyes).
* It encircles the orbital opening.
* It consists of 3 parts :



a. Palpebral part:

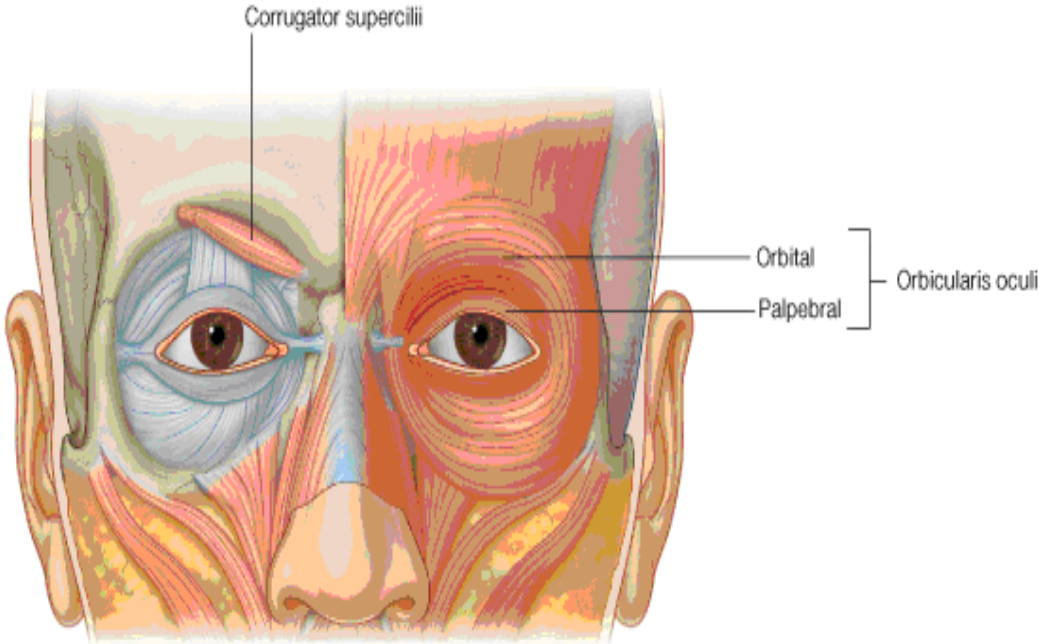
Action: gentle closure of eyelids (during sleeping & blinking → helps in flow of tears). & winking

b. Orbital part:

* Action : firm closure of eyelids (for protection from dust & light).

c. Lacrimal part:

* A small part which lies medially.
* Action: Dilates the lacrimal sac to help drainage of tears.



* Nerve supply of Orbicularis Oculi muscle: **Facial N.**

(B) Oral Group

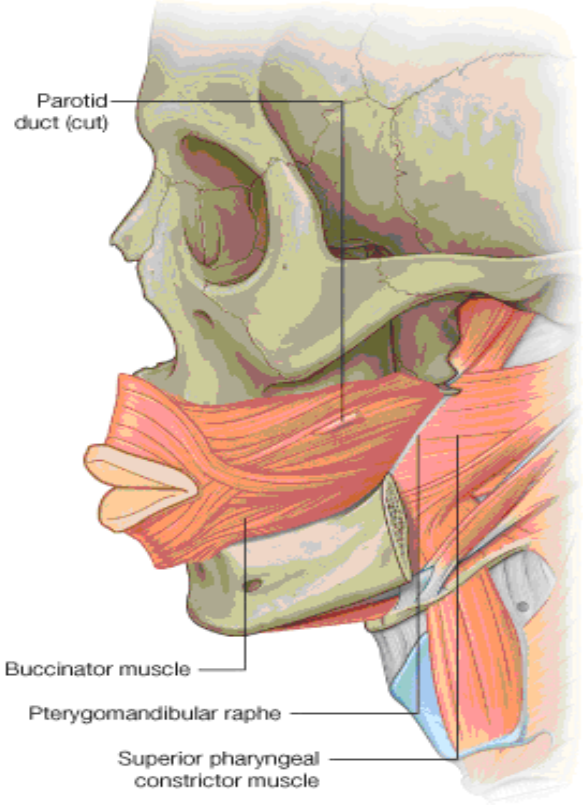
(Muscles of Lips and Cheeks)

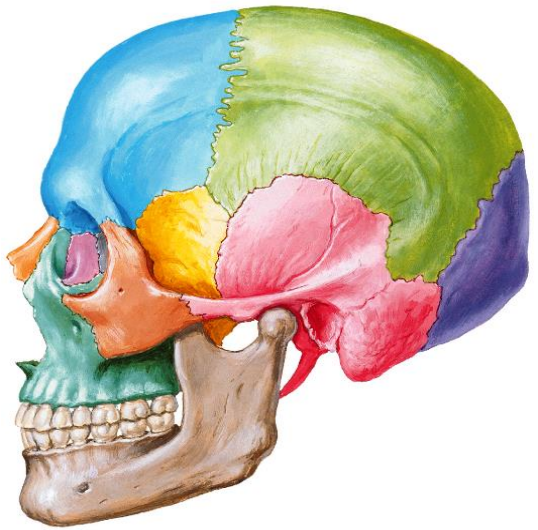
(1) Buccinator

* It is the muscle of he cheeks.
* **Origin : from maxilla & mandible.**
* **Insertion: in lips.**
* **N. supply** : Facial N.
* **Action :** 3 actions

1. Prevents the accumulation of the food in the vestibule of the mouth (by pressing cheeks against teeth).
2. Whistling (buccina = trumpet) and blowing of air.
3. Suckling (in babies).

لو المريض اشتكى
إنه مش عارف يبلع
الاكل دغري بشك
Buccinator انه المشكلة في
[مشكلة في ال facial nerve]

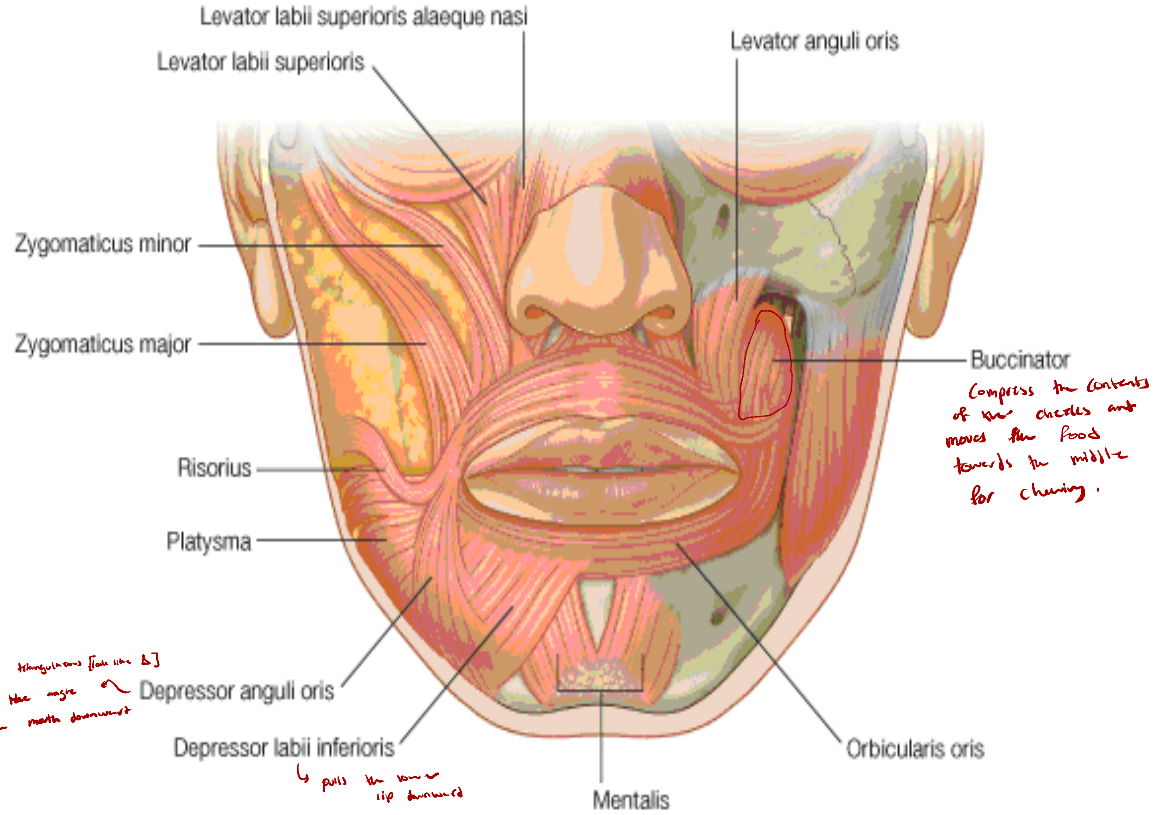




(2) Orbicularis Oris → also for wistling

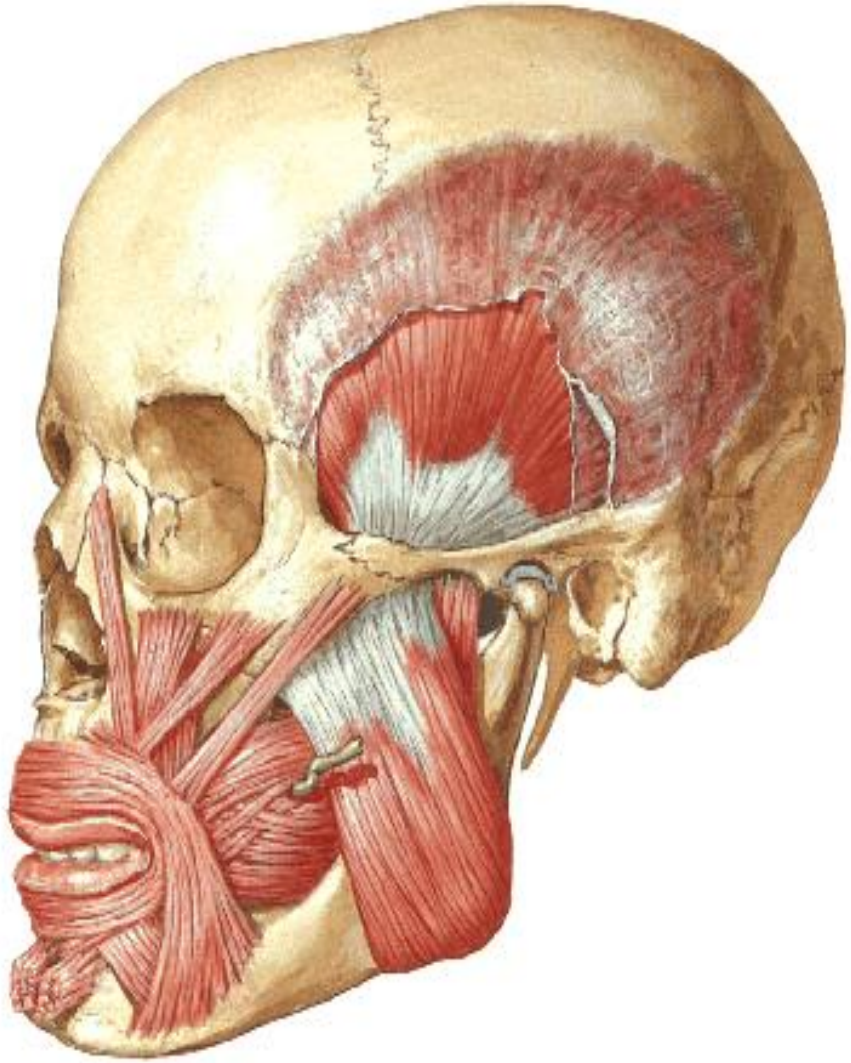
* It is the sphincter muscle of the lips (approaches lips together & help in whistling & speech).
* It is a circular muscle around the mouth (forming ellipse around the mouth).

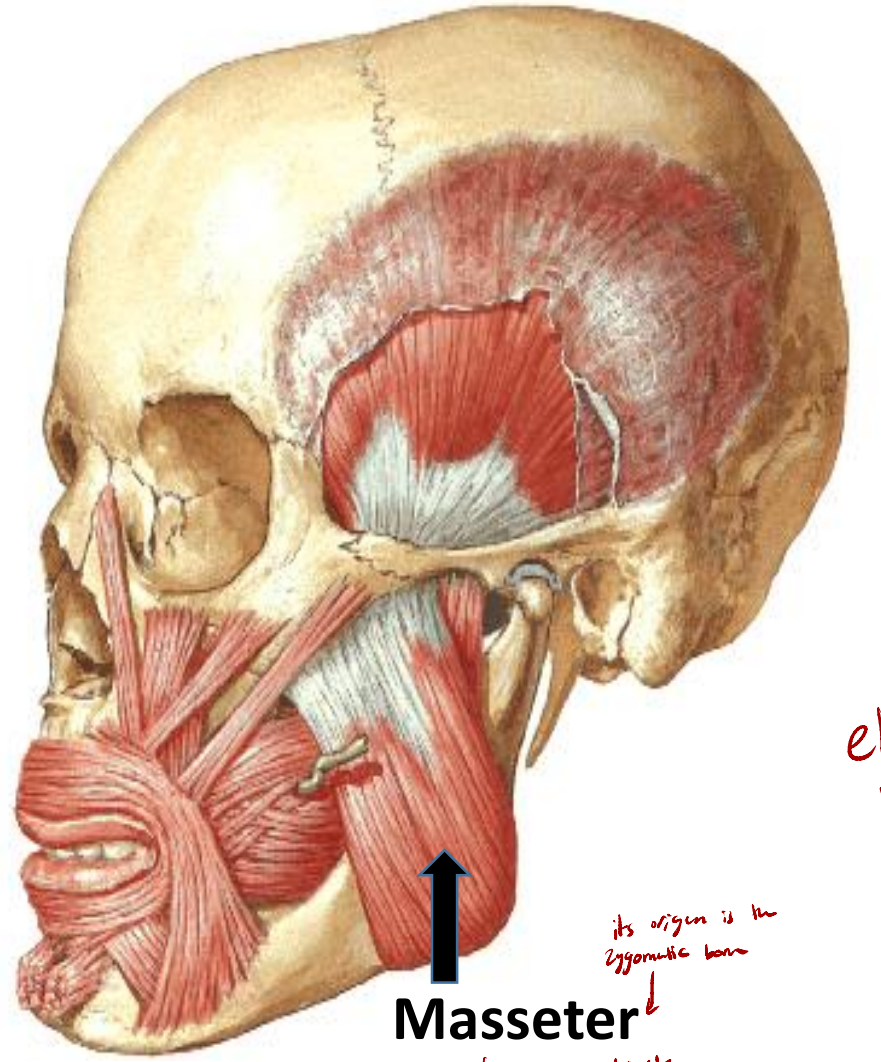
@ It is formed of 4 quadrants : upper right, lower right, upper left and lower left.



Muscles of Mastication

* These are 4 muscles which arise from the skull.
* All are inserted into the mandible.
* They are : Temporalis, Masseter, Medial pterygoid & Lateral pterygoid.
* They are all supplied by the mandibular nerve.
* All act on temporo-mandibular joint (TMJ).



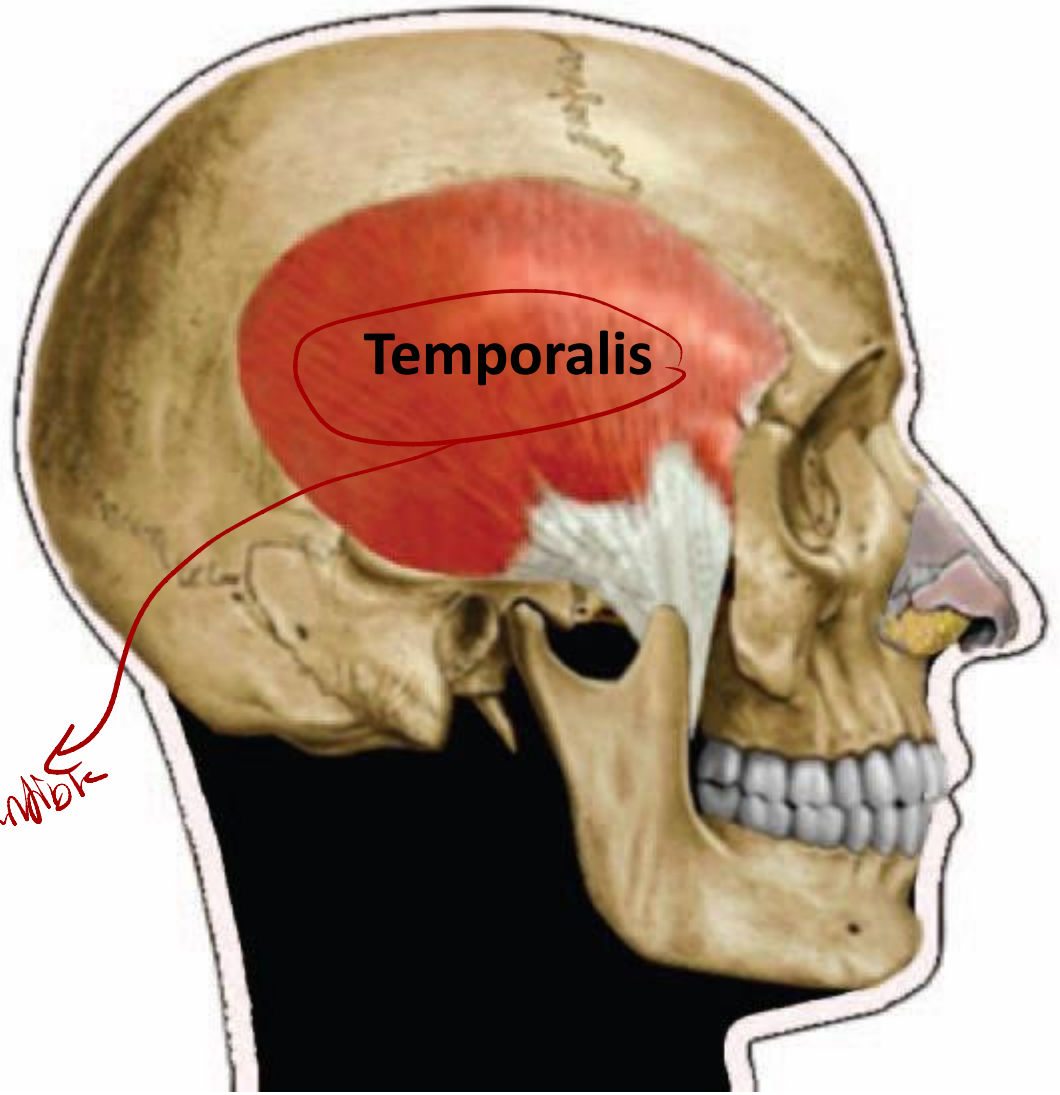


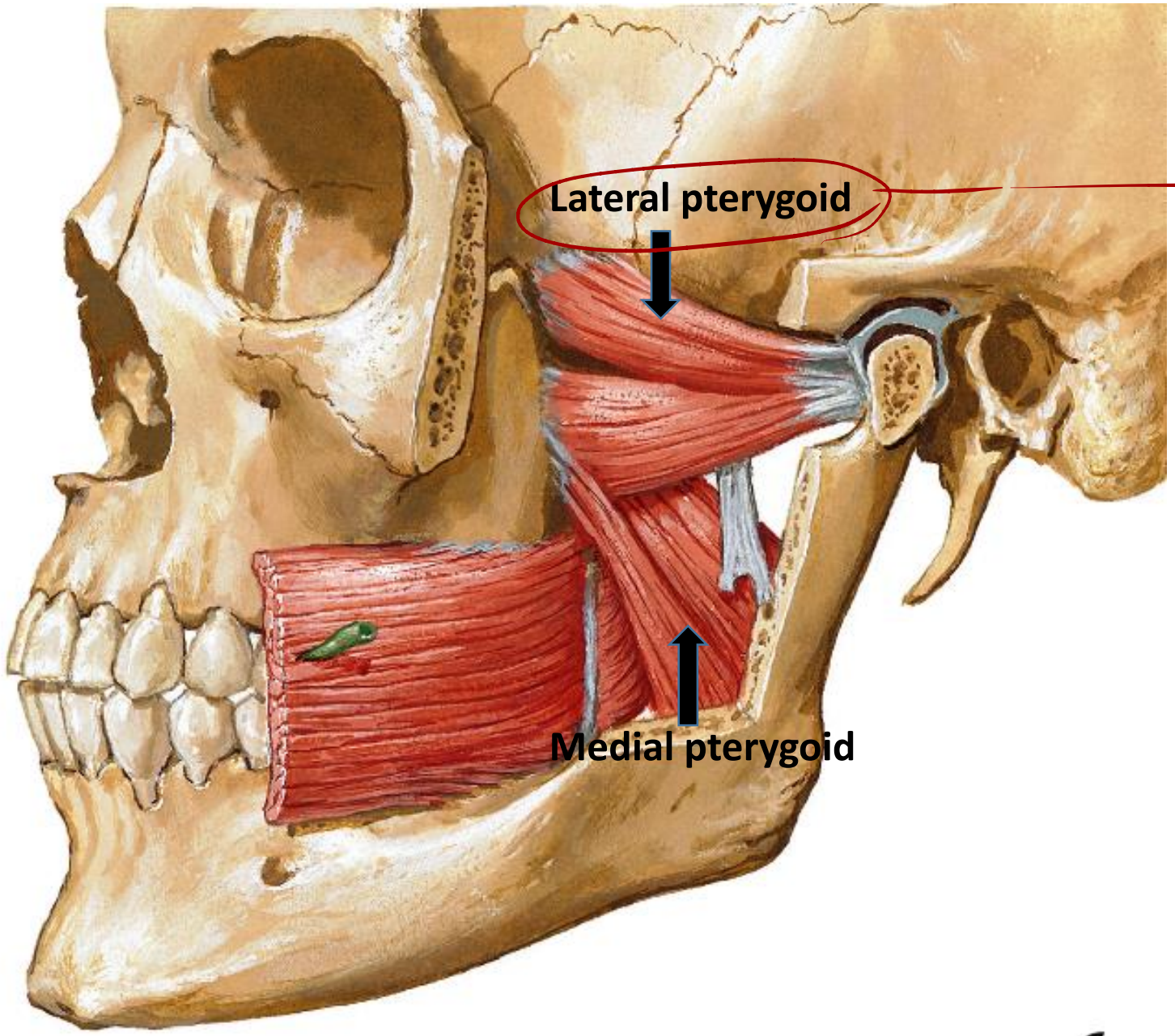
Masseter

its origin is the zygomatic bone

also helps elevate the mandible

elevates the mandible





The only muscle of mastication that doesn't elevate the mandible. Instead depresses the mandible to open the mouth

ACTION OF MUSCLES OF MASTICATION

- **ALL MUSCLES OF MASTICATION → ELEVATE THE MANDIBLE TO CLOSE THE MOUTH, EXCEPT LATERAL PTERYGOID WHICH DEPRESSES THE MANDIBLE TO OPEN THE MOUTH.**

- **ALL MUSCLES OF MASTICATION PROTRUDE THE MANDIBLE, EXCEPT TEMPORALIS WHICH RETRACTS THE PROTRUDED MANDIBLE.**

Extraocular Muscles(Muscles of eyeball)

3rd cranial nerve
except → lateral rectus
→ Superior oblique

* **We have 7 extraocular muscles:**
* They lie outside the eyeball.
* They are responsible for the movements of the eyeball.
* They include:

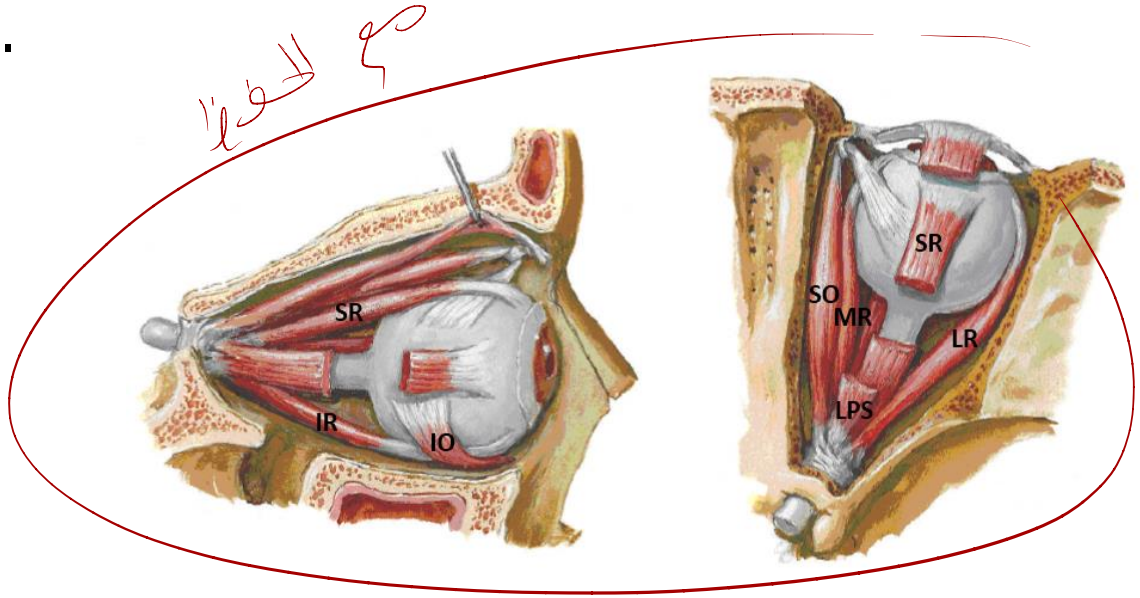
A. 4 recti muscles:

1. Superior rectus.
2. Inferior rectus.
3. Medial Rectus.
4. Lateral rectus.

B. 2 oblique muscles:

1. Superior oblique.
2. Inferior oblique.

C. Levator palpebrae superioris. → ترفع الجفن



N.B.: All the 7 extraocular muscles are supplied by the Oculomotor N. (3rd cranial nerve) EXCEPT:

1. Lateral rectus **(LR6)** : Abducent N. (6th cranial nerve).
2. Superior oblique **(SO4)**: Trochlear N. (4th cranial nerve).

Muscles of Neck:

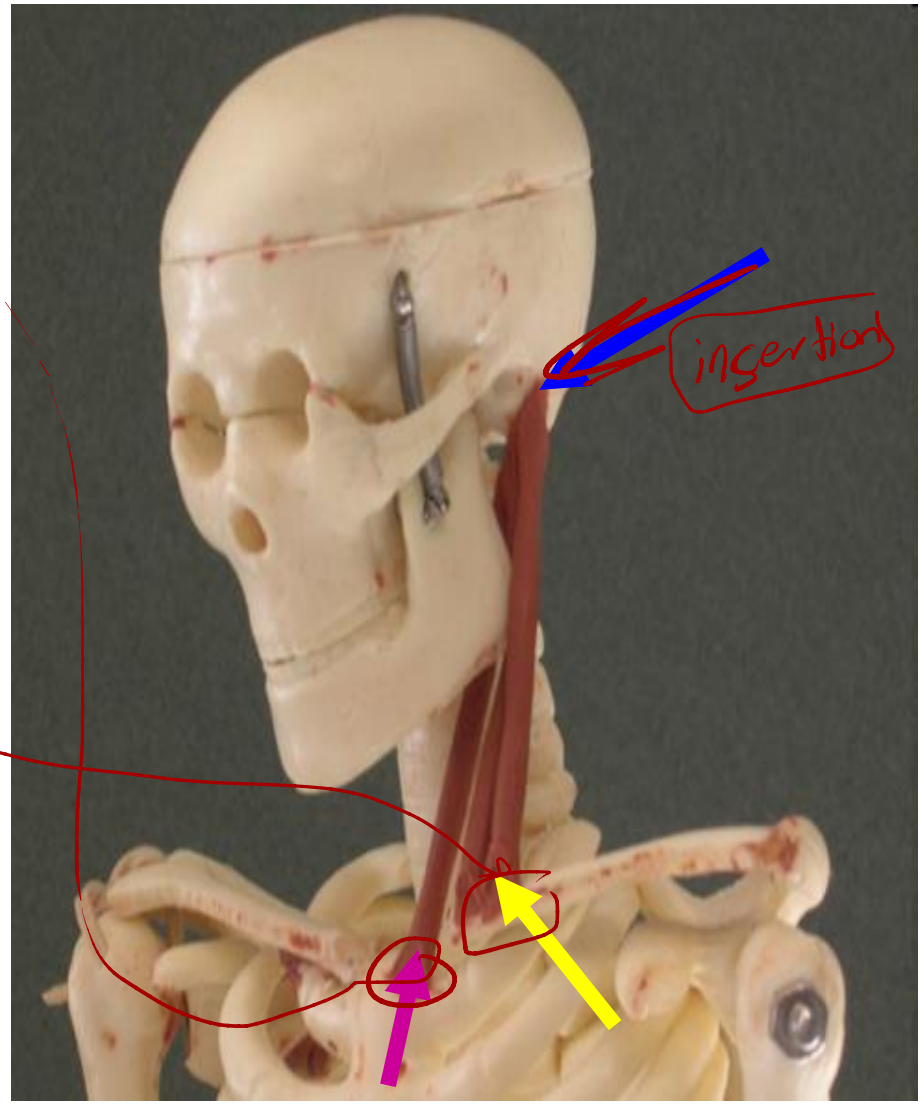
A. Sternomastoid muscle

* **Origin** :

**Sternal head → front of manubrium sterni.

**Clavicular head → medial 1/3 of clavicle.

* **Insertion** : mastoid process.



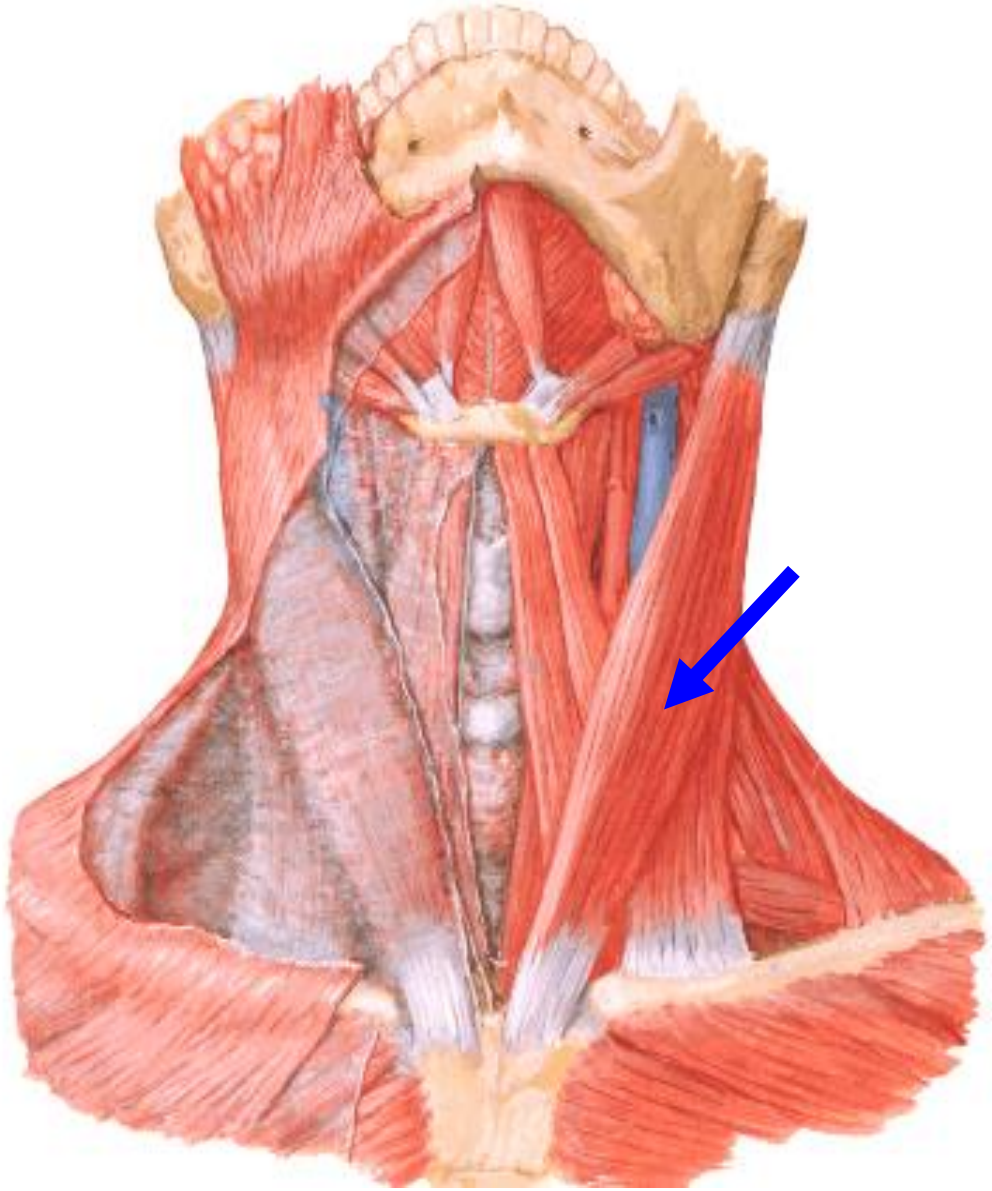
* **Nerve supply:** Spinal accessory N. (11th cranial nerve).

of Sternocleidomastoid muscle

* **Action :**

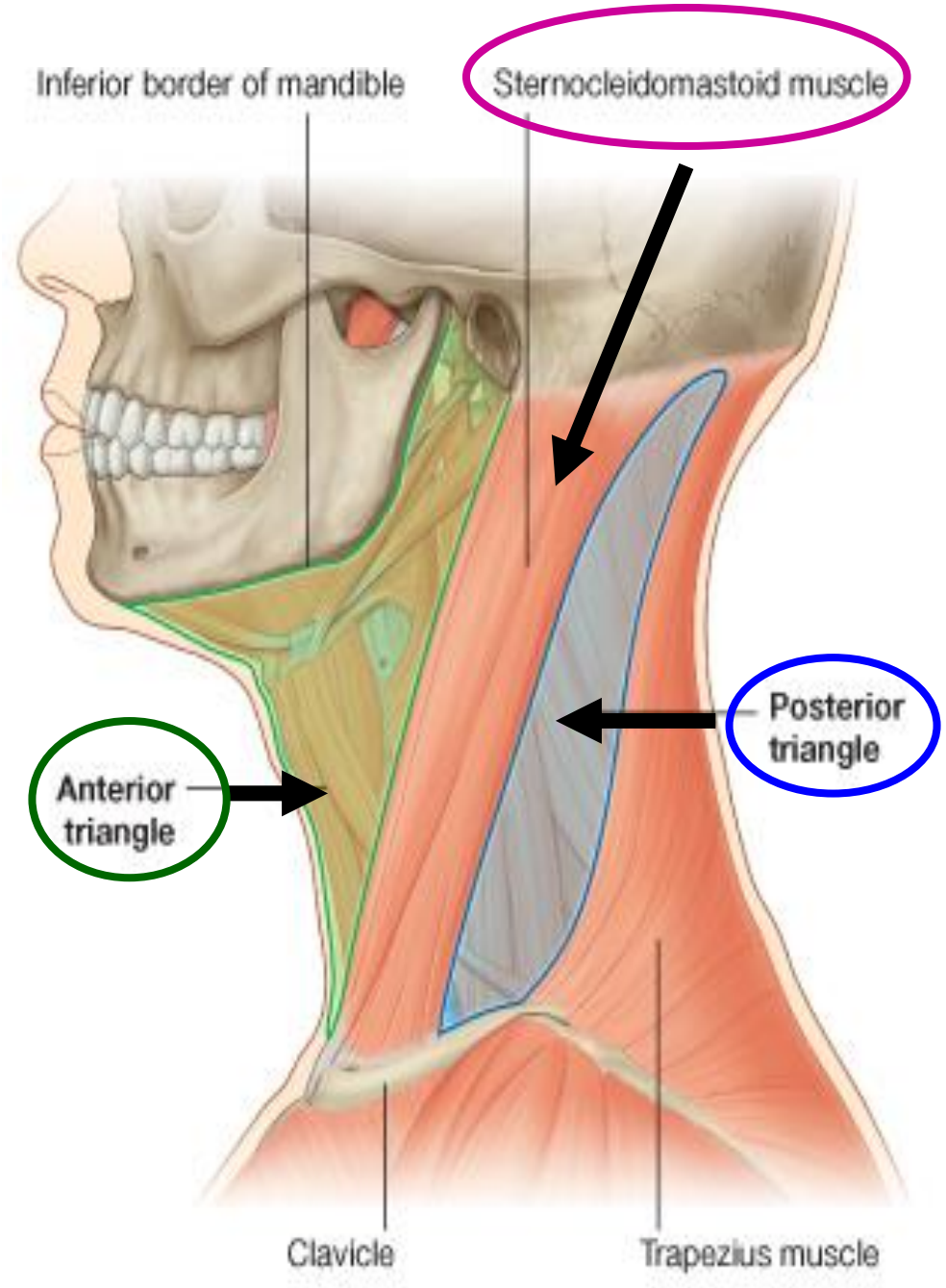
* One muscle bends the head to its own side & turns the face to the opposite side.

* Both muscles acting together pull the head forwards & flex the neck. [nodding]



* **Sternomastoid divides the side of the neck into 2 triangles:**

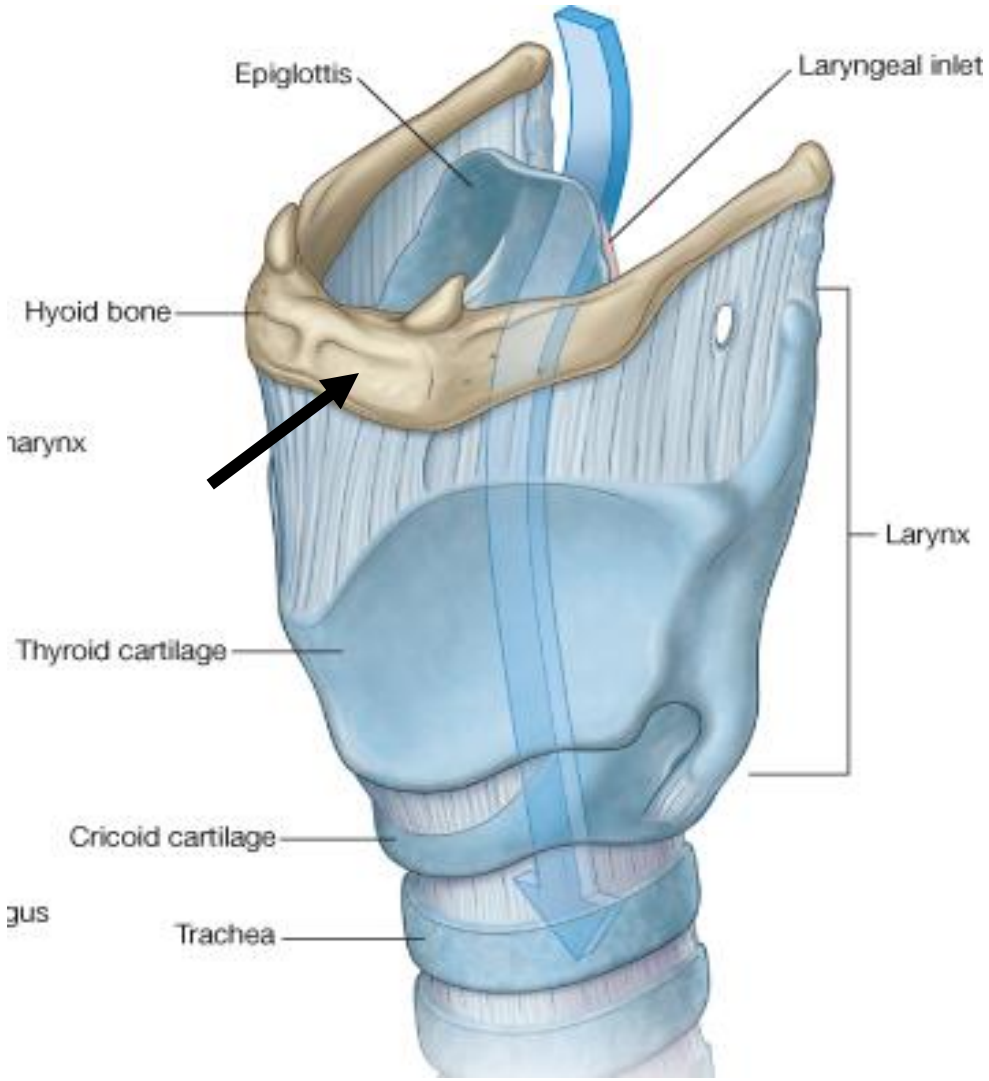
1. **Anterior triangle**
   → **infront of the sternomastoid.**
2. **Posterior triangle**
   → **behind the sternomastoid.**



What is the Hyoid bone ?

* A small U- shaped bone located just superior to the larynx.

* It does not articulate with any other bone but is suspended from the skull by stylohyoid ligament.



B. Suprahyoid Muscles

1. Digastric Muscle

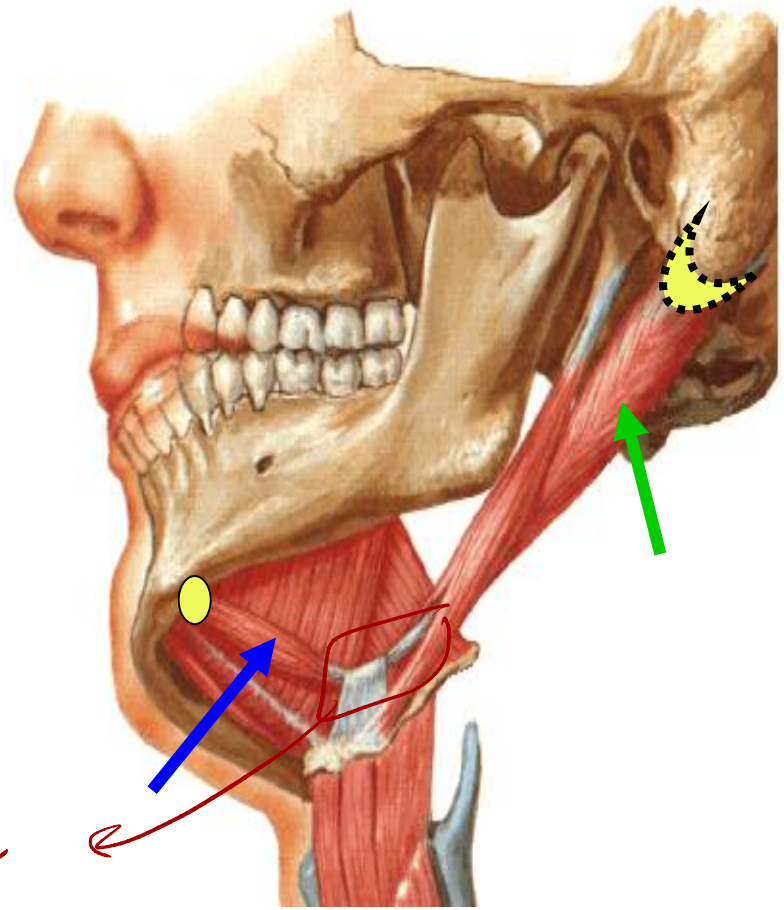
* Origin :

* Anterior belly → lower border of mandible.

* Posterior belly → medial surface of mastoid process.

* Insertion :

* Both bellies meet at an intermediate tendon attached to → Hyoid bone.



1. Digastric Muscle (contd.)

*** Action :**

1. Raises hyoid bone (during swallowing).
2. Depresses mandible (if the hyoid bone is fixed)

*** Nerve supply:** → of digastric muscle → (2)

- **Anterior belly → mylohyoid N.** (from mandibular N.).
- **Posterior belly → facial nerve.**

2. Mylohyoid Muscle

↳ also called diaphragma oris

*** Origin :**

*** Mylohyoid line of mandible**

*** Insertion :**

*** Mylohyoid raphe (between symphysis menti & hyoid bone)**

*** Nerve supply : Mylohyoid nerve (from mandibular nerve).**

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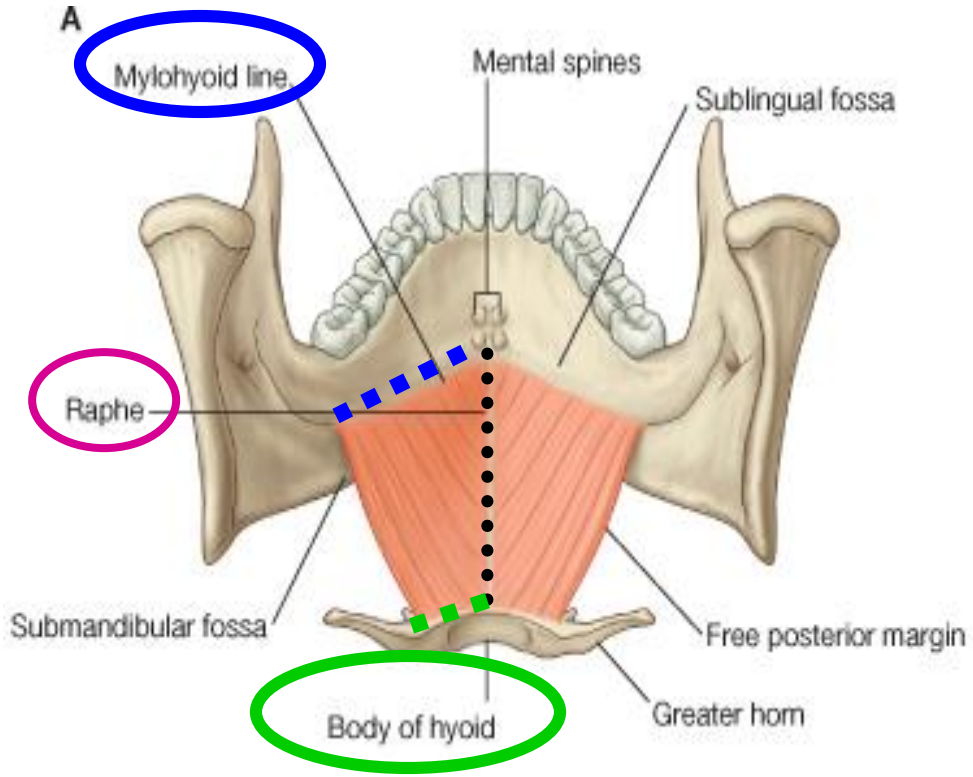
*** Action:**

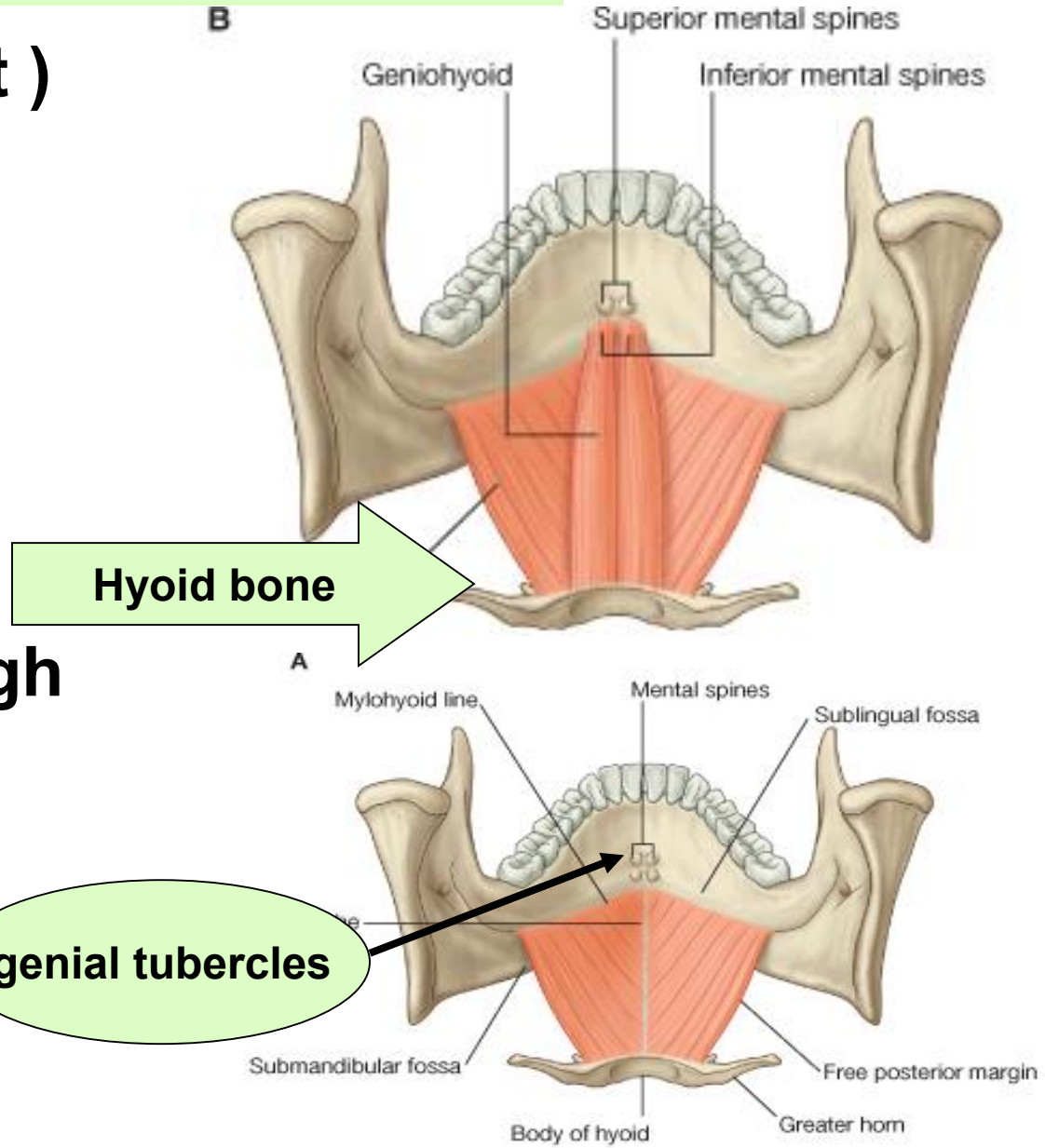
1. **Elevates hyoid bone during swallowing**
2. **Support the floor of the mouth**
3. **Depresses mandible**



3. Geniohyoid Muscle

* It lies deep to mylohyoid (above it)
* Origin :
* Genial tubercle of mandible
* Insertion:
* Body of Hyoid bone
* Nerve supply:
* C1 fibers (1st spinal nerve) (through hypoglossal nerve)
* Action :

1. Elevates hyoid bone
2. Depresses mandible



4. Stylohyoid Muscle

* A small muscle that lies along upper border of posterior belly of digastric
* Origin → styloid process
* Insertion → hyoid bone
* Nerve supply → facial nerve
* Action → elevates hyoid bone

during swallowing