



الجامعة الهاشمية
The Hashemite University



General Anatomy

Lecture 7: Muscles of Head & Neck

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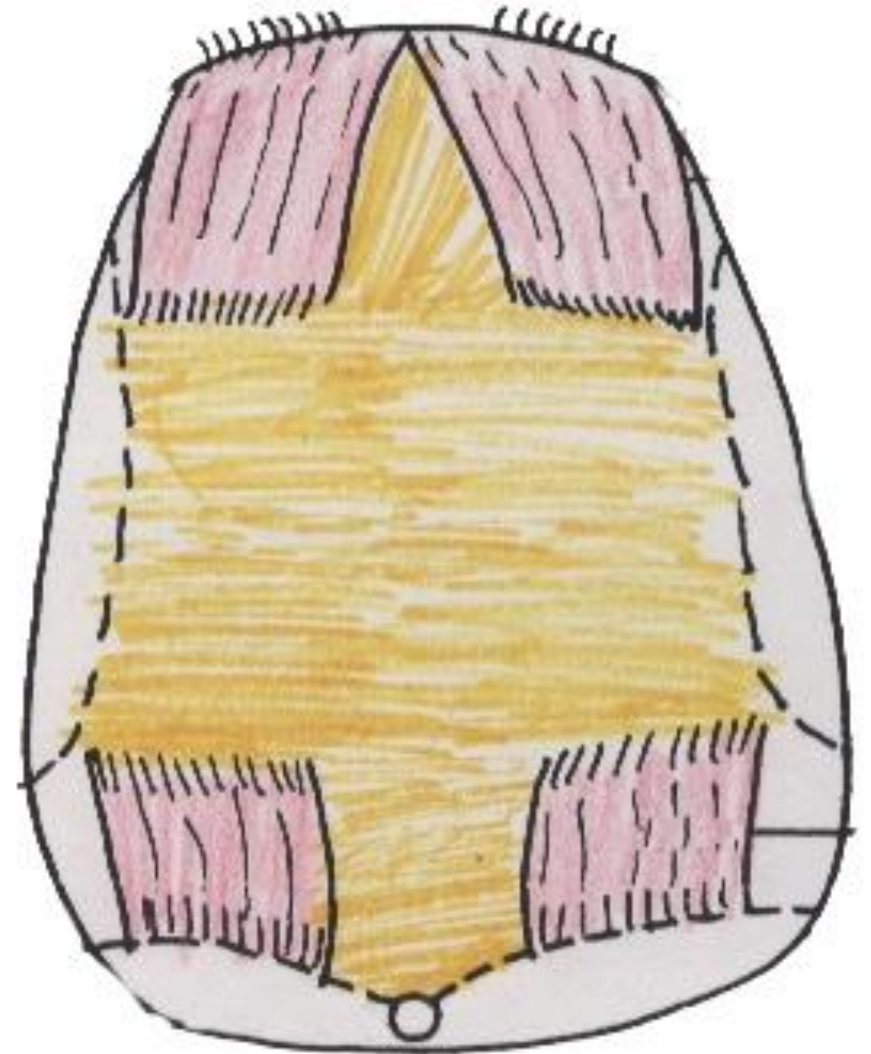
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Muscles of Scalp:

Occipito-frontalis Muscle

- * 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.

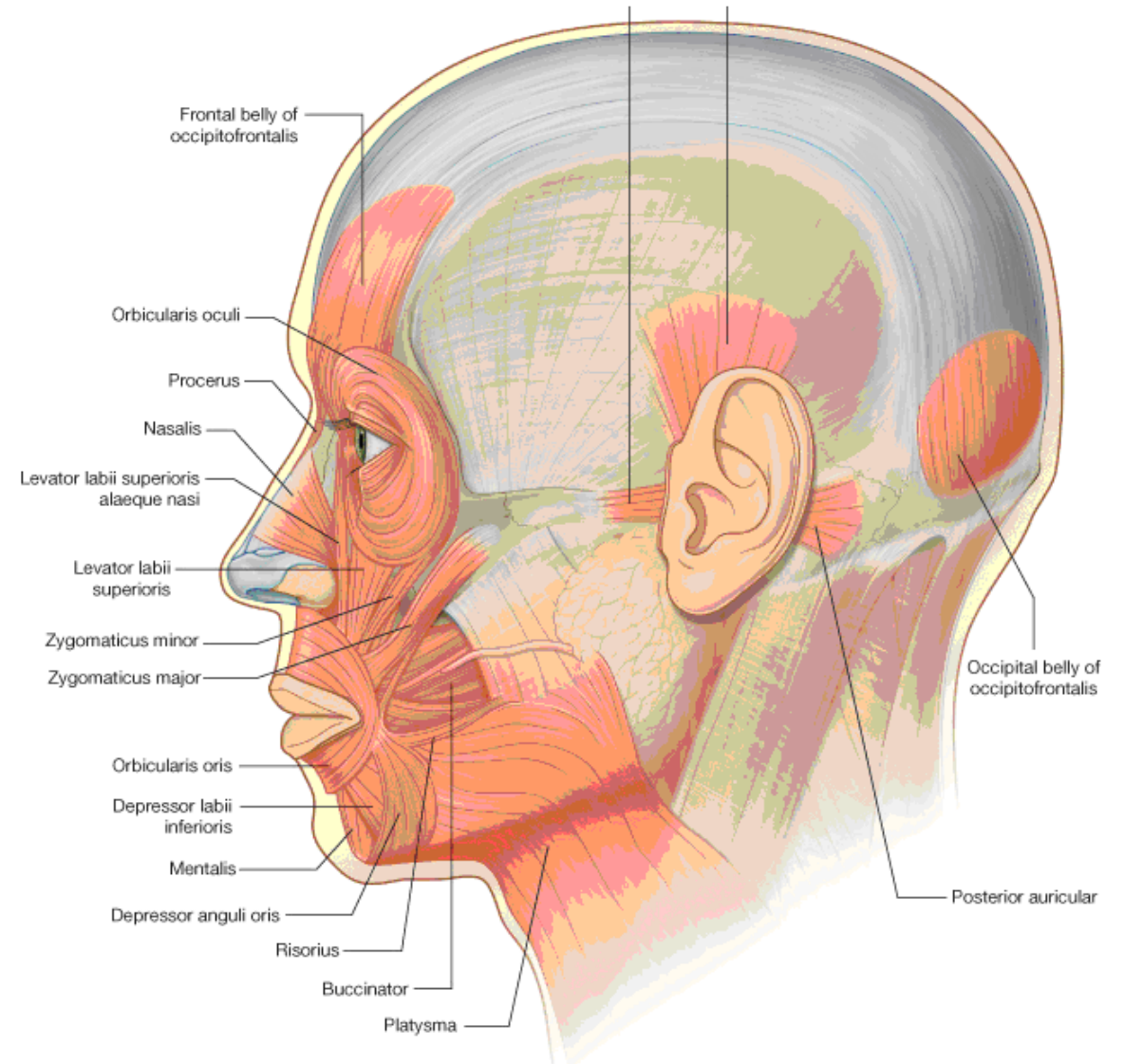


* **Frontal bellies** → take origin from eyebrows & are inserted in epicranial aponeurosis.

* **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.

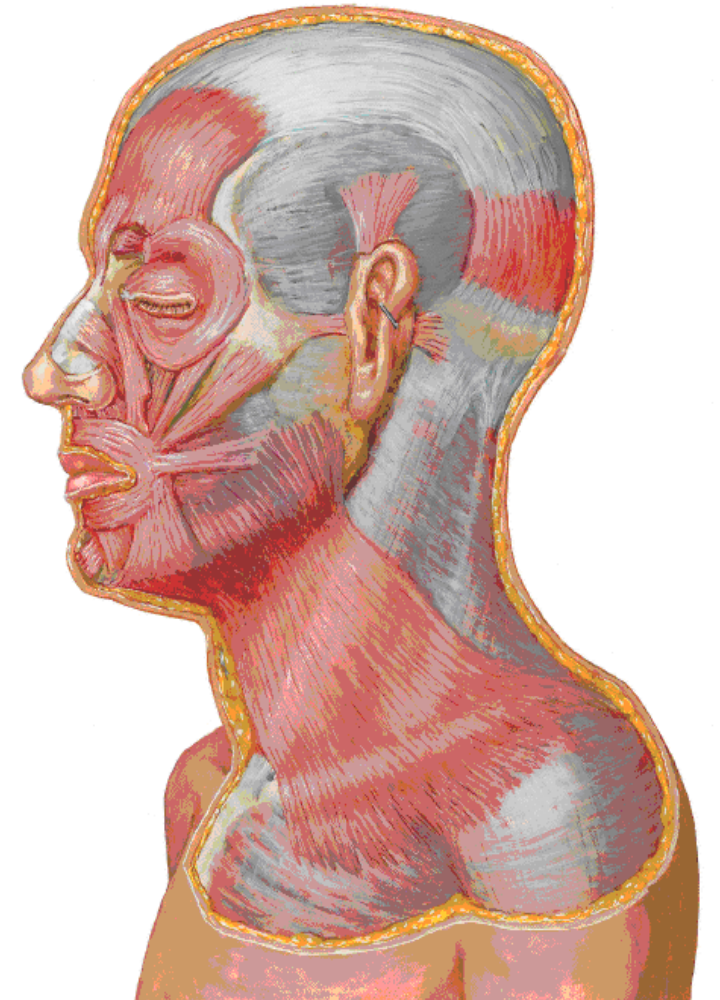


Muscles of Face

Muscles of Facial Expressions

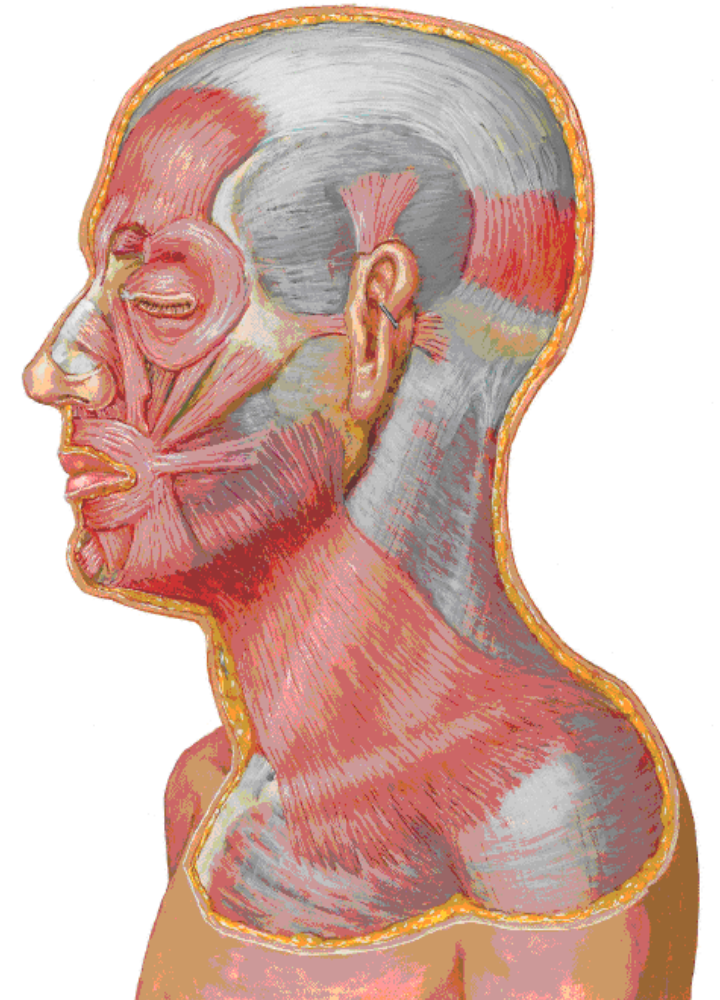
@ General characteristics :

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.



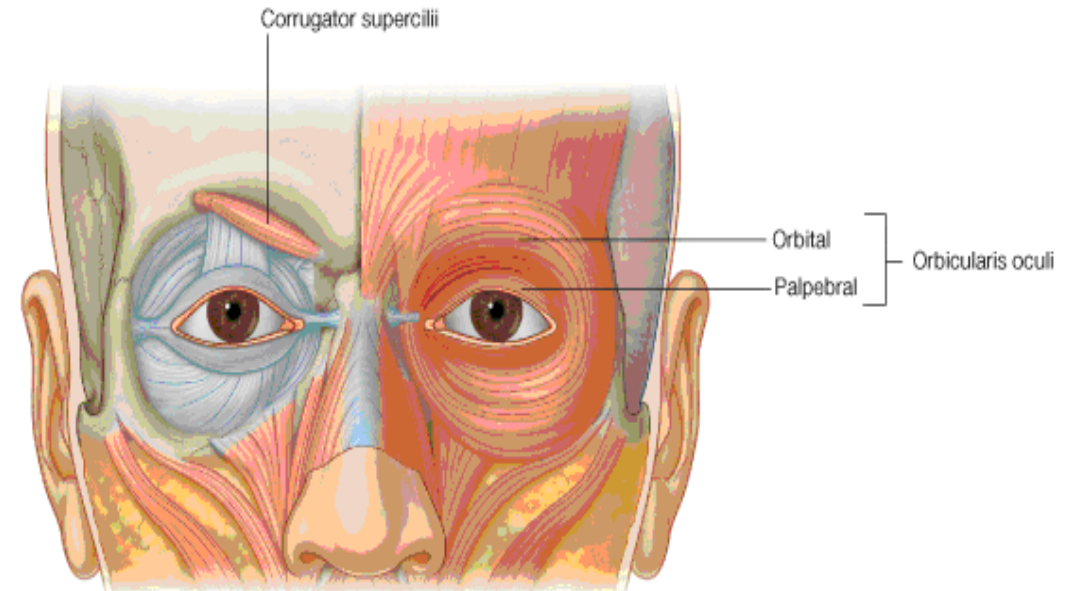
(A) Orbital Group (Muscles of Orbit & Eyelids)

Orbicularis Oculi

- * 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).



b. Orbital part:

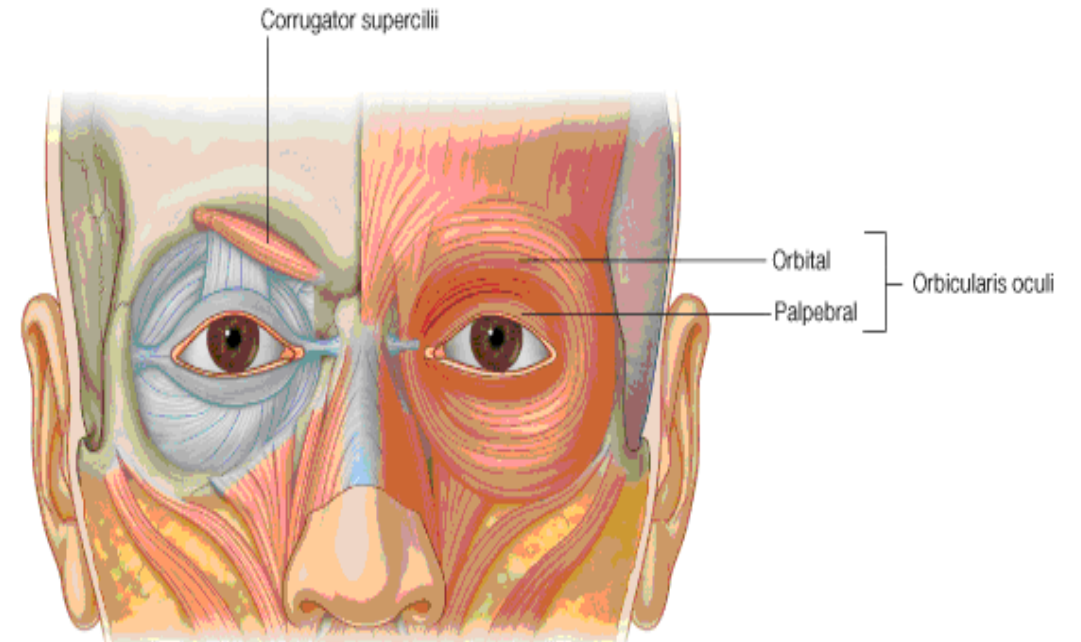
* Action : firm closure of eyelids (for protection from dust & light).

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.**

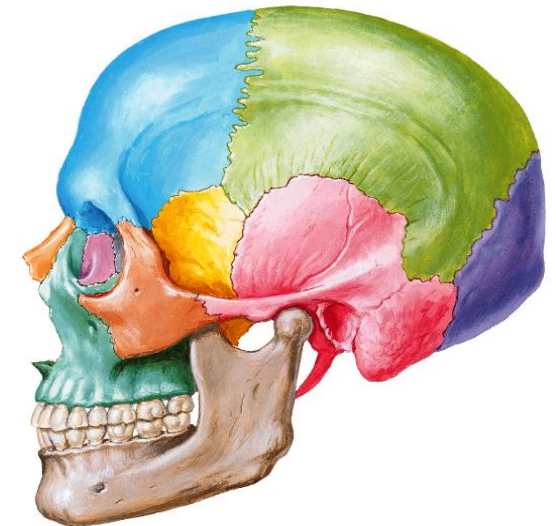
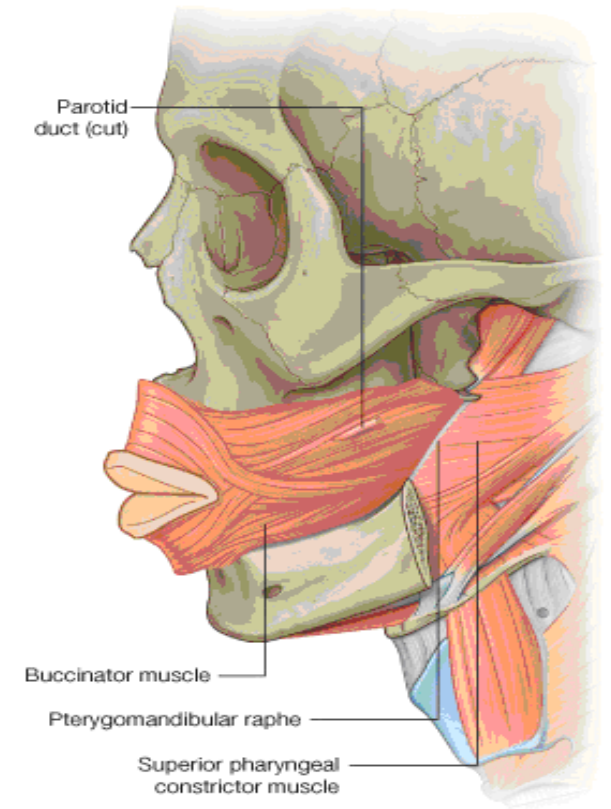


(B) Oral Group

(Muscles of Lips and Cheeks)

(1) Buccinator

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

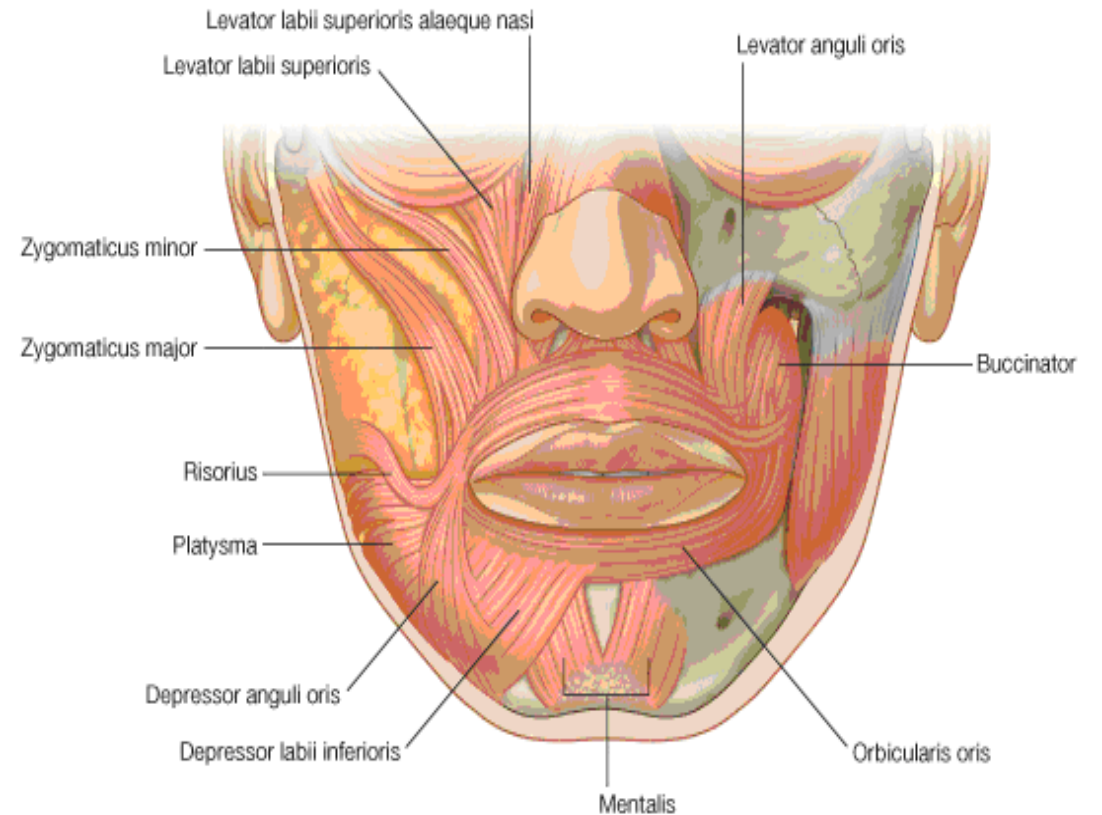


(2) Orbicularis Oris

* It is the sphincter muscle of the lips (approaches lips together & help in whistling & speech).

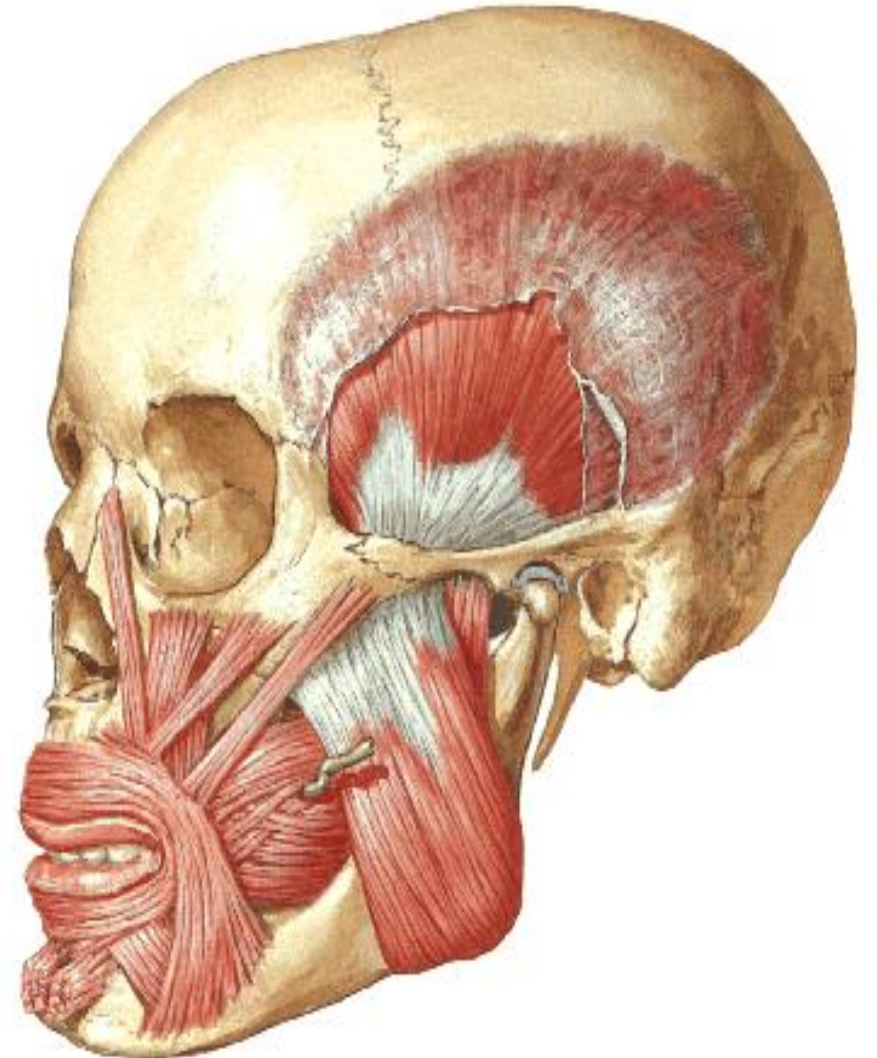
* It is a circular muscle around the mouth (forming ellipse around the mouth).

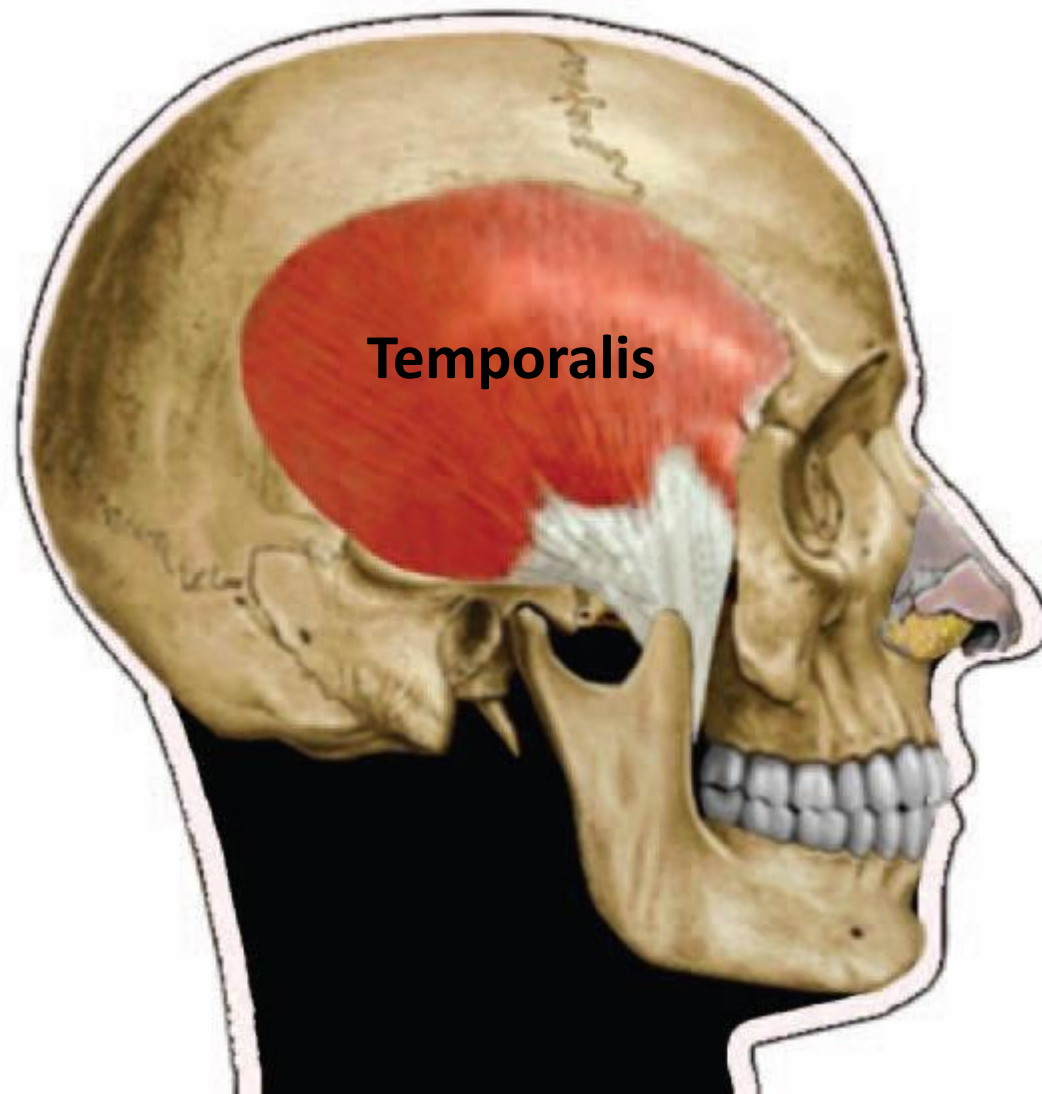
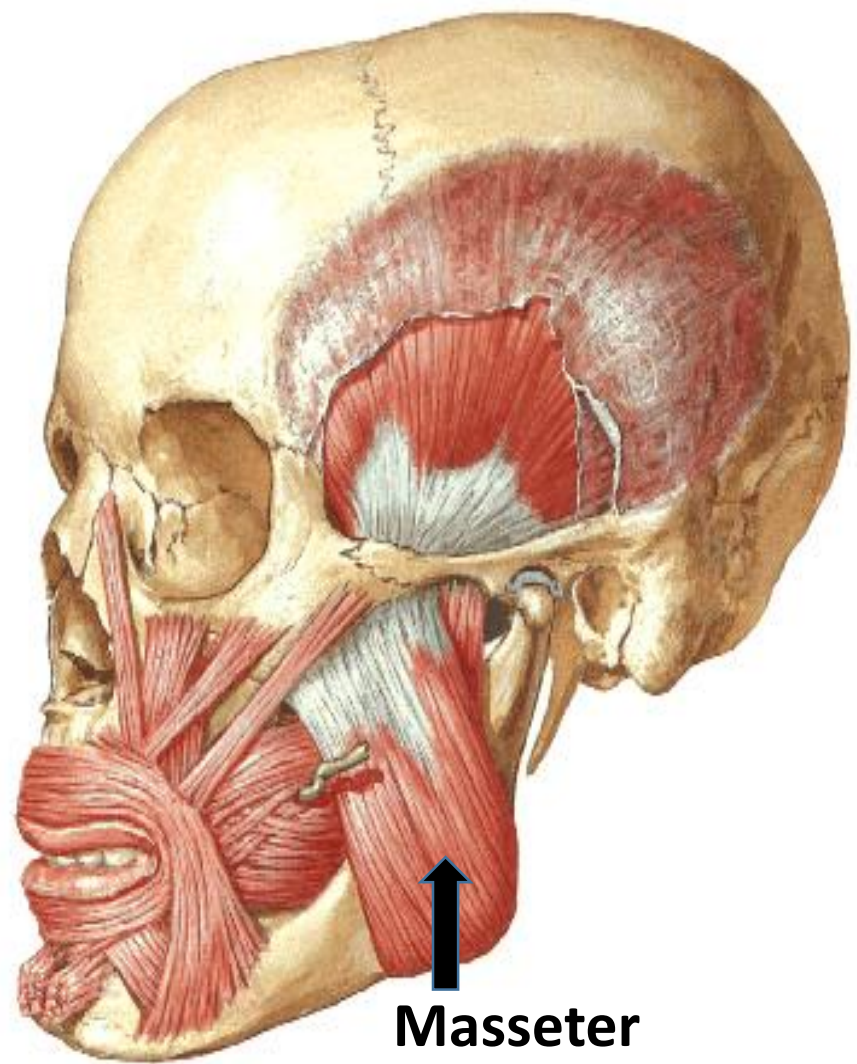
@ It is formed of 4 quadrants : upper right, lower right, upper left and lower left.

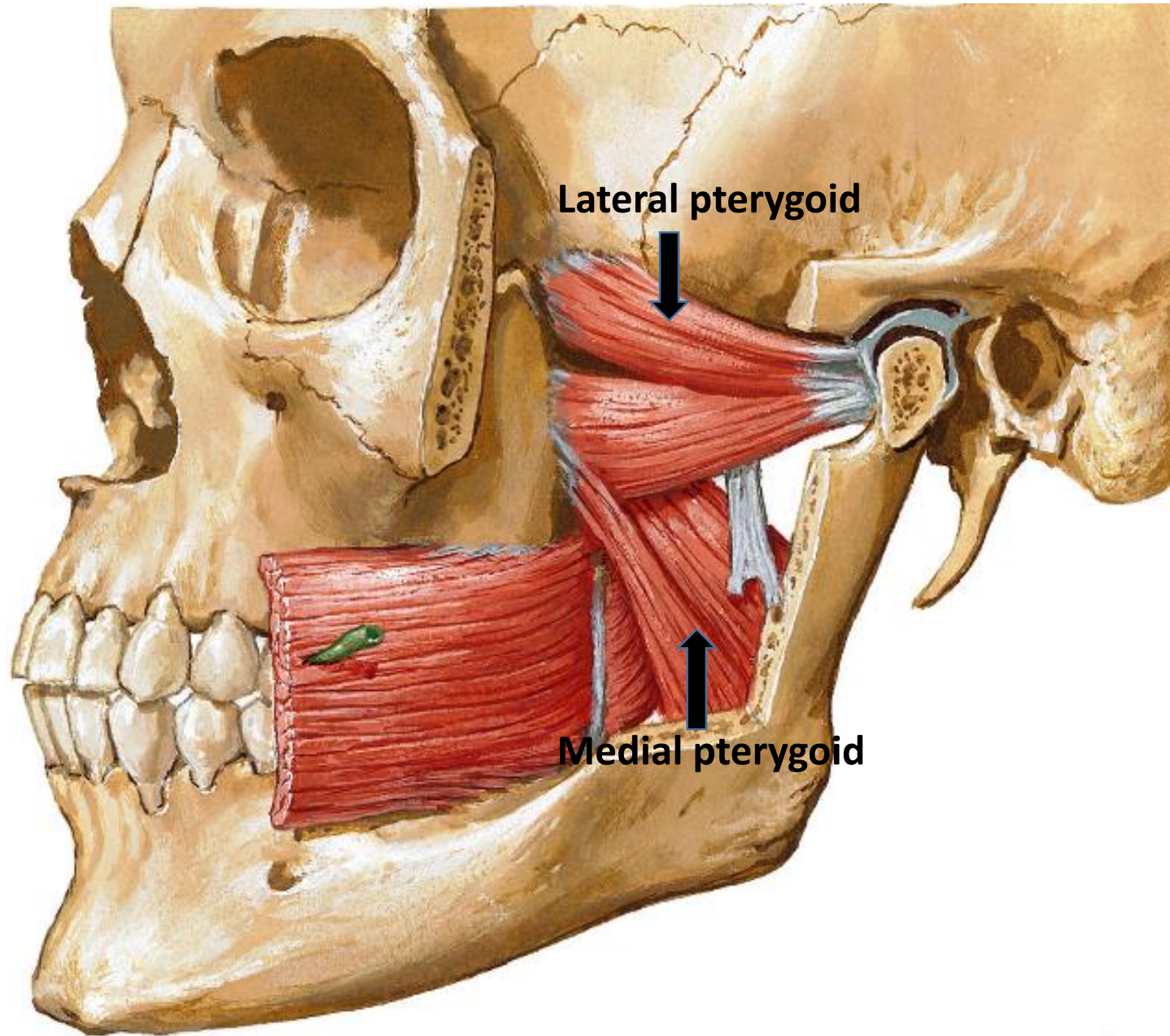


Muscles of Mastication

- * 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).







Lateral pterygoid

Medial pterygoid

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)

* We have 7 extraocular muscles:

- * They lie outside the eyeball.
- * They are responsible for the movements of the eyeball.
- * They include:

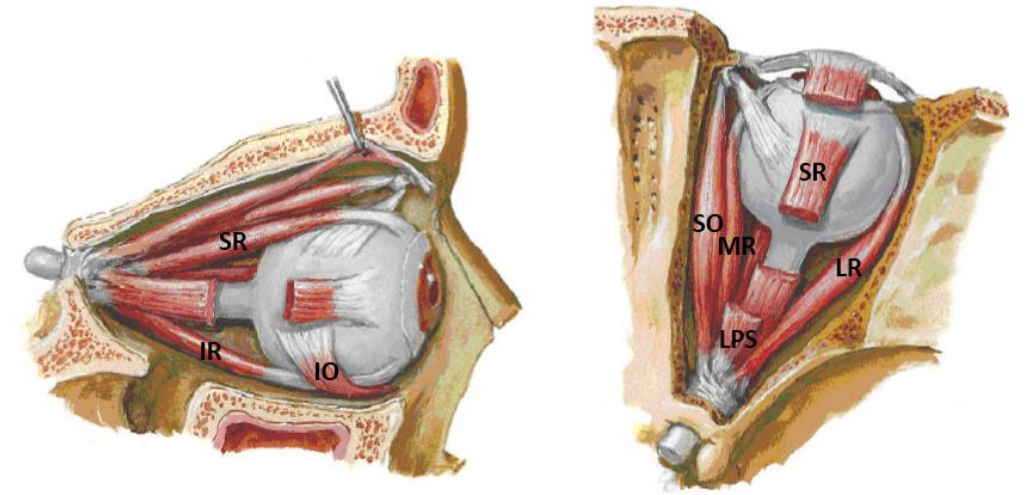
A. 4 recti muscles:

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.



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:

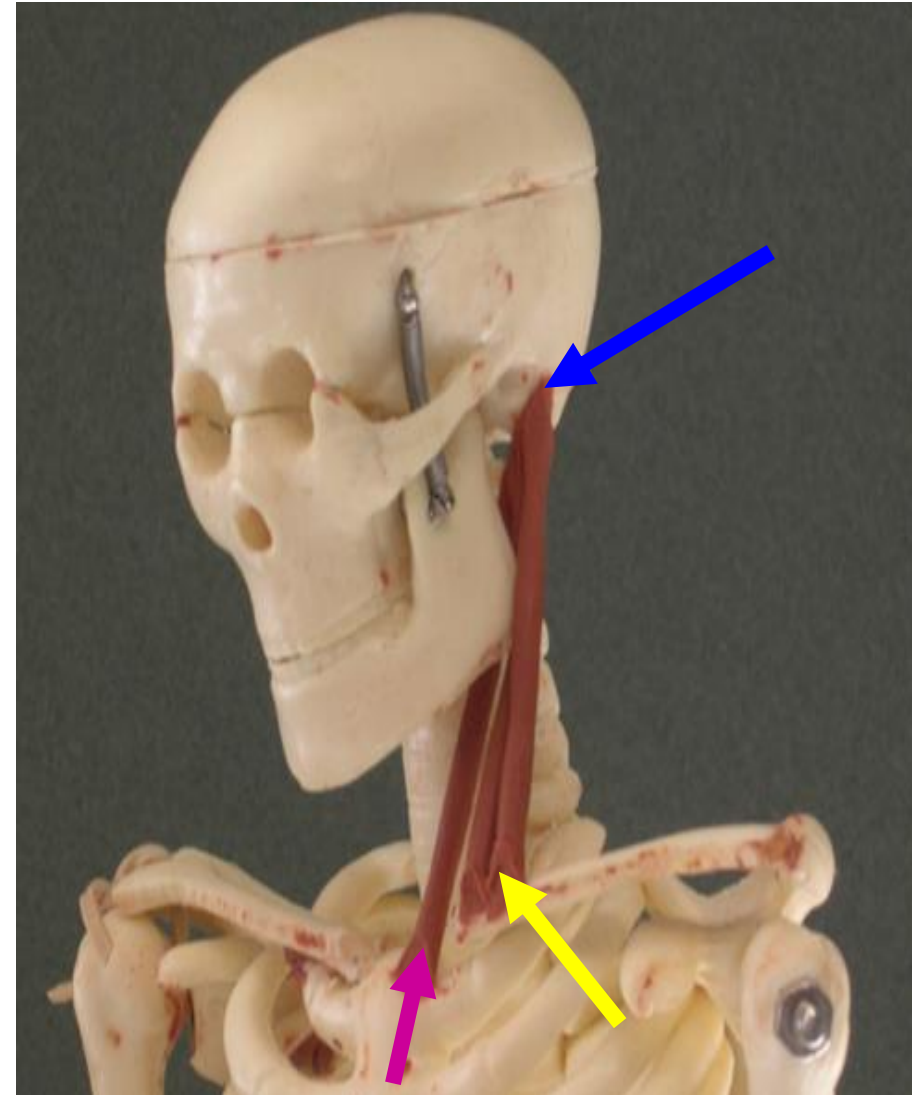
A. Sternomastoid muscle

* Origin :

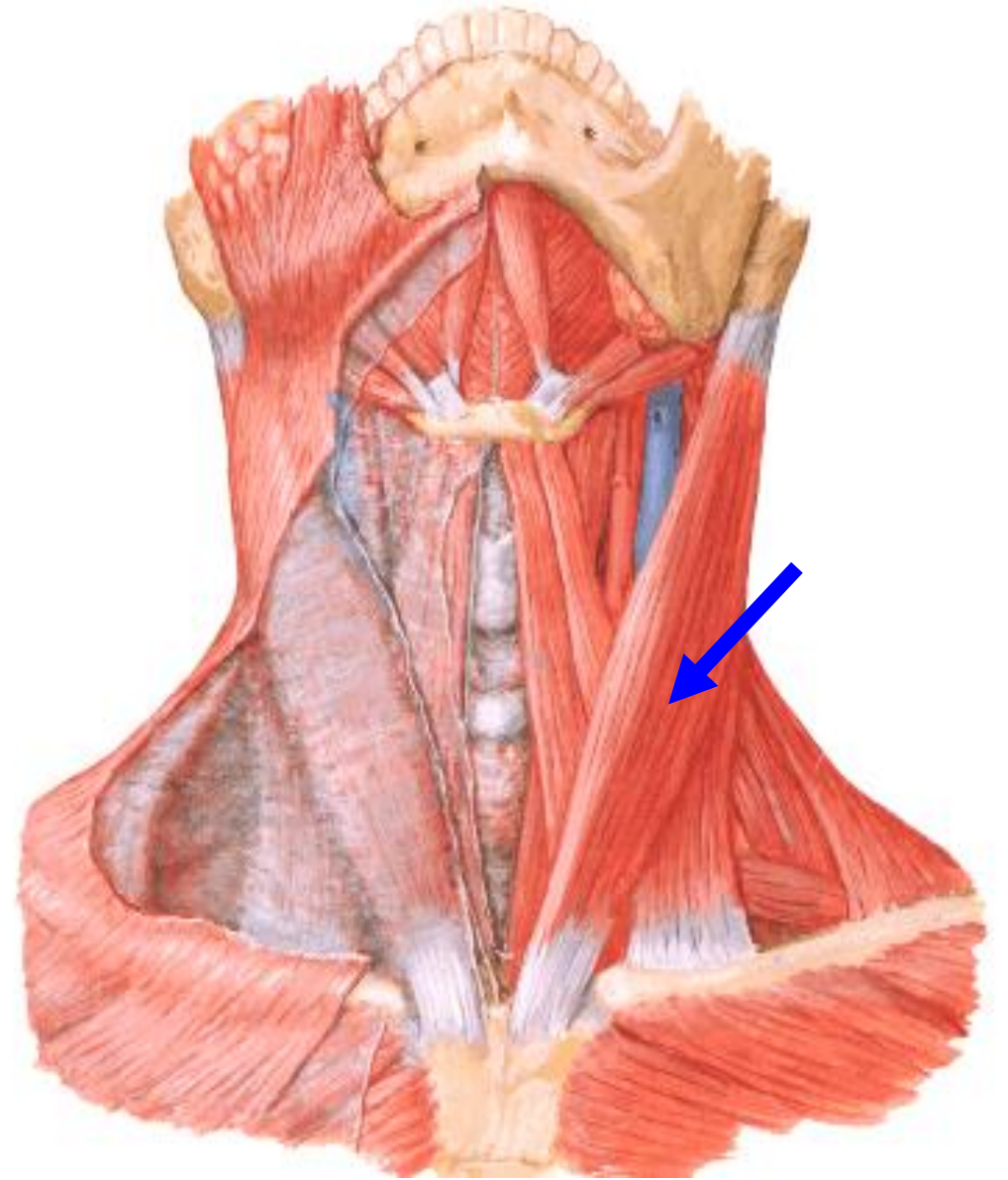
** Sternal head →
front of manubrium
sterni.

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

* Insertion : mastoid
process.



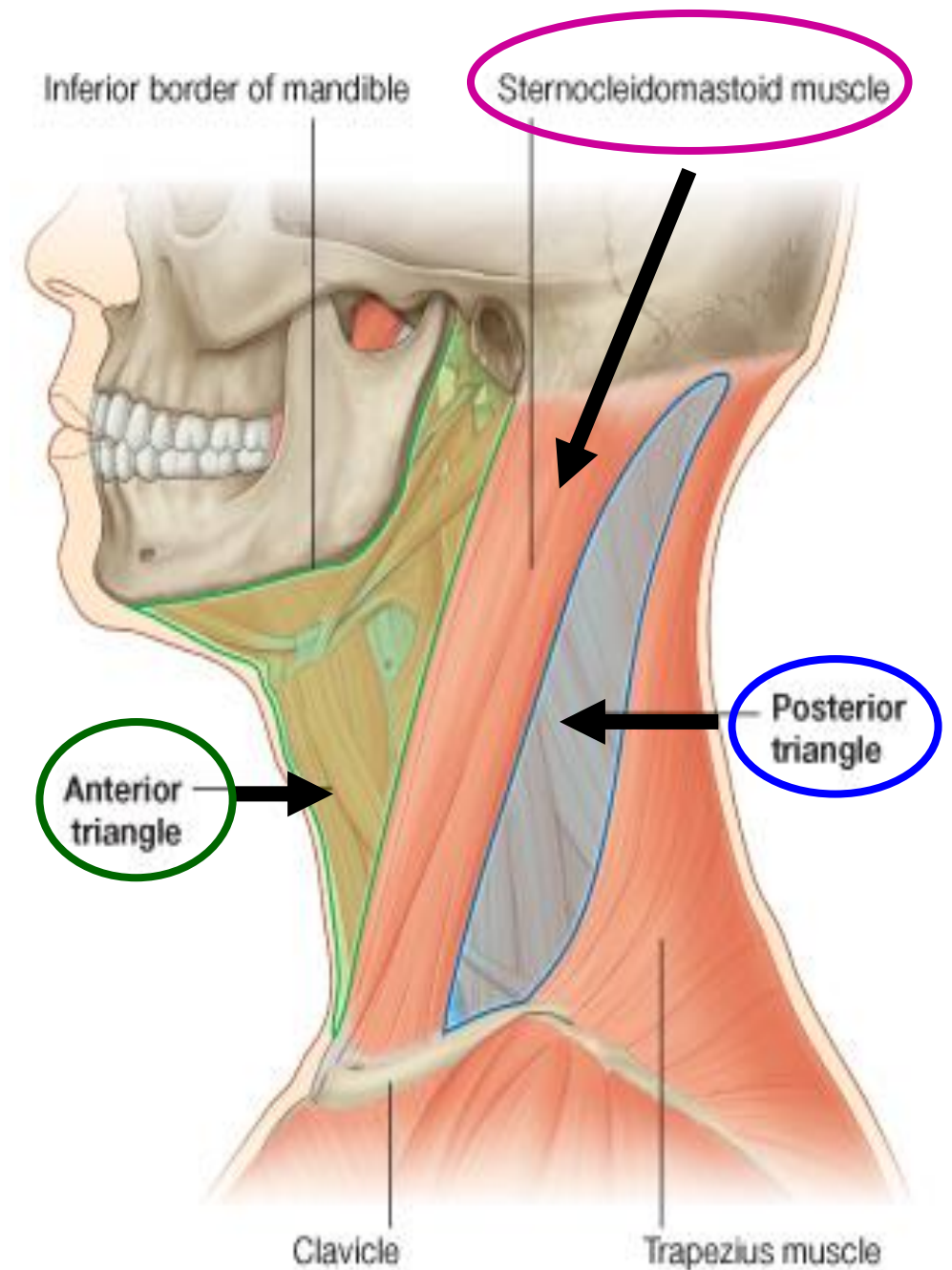
- * **Nerve supply: Spinal accessory N. (11th cranial nerve).**
- * **Action :**
- * **One muscle bends the head to its own side & turns the face to the opposite side.**
- * **Both muscles acting together pull the head forwards & flex the neck.**



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

1. **Anterior triangle**
→ **in front of the**
sternomastoid.

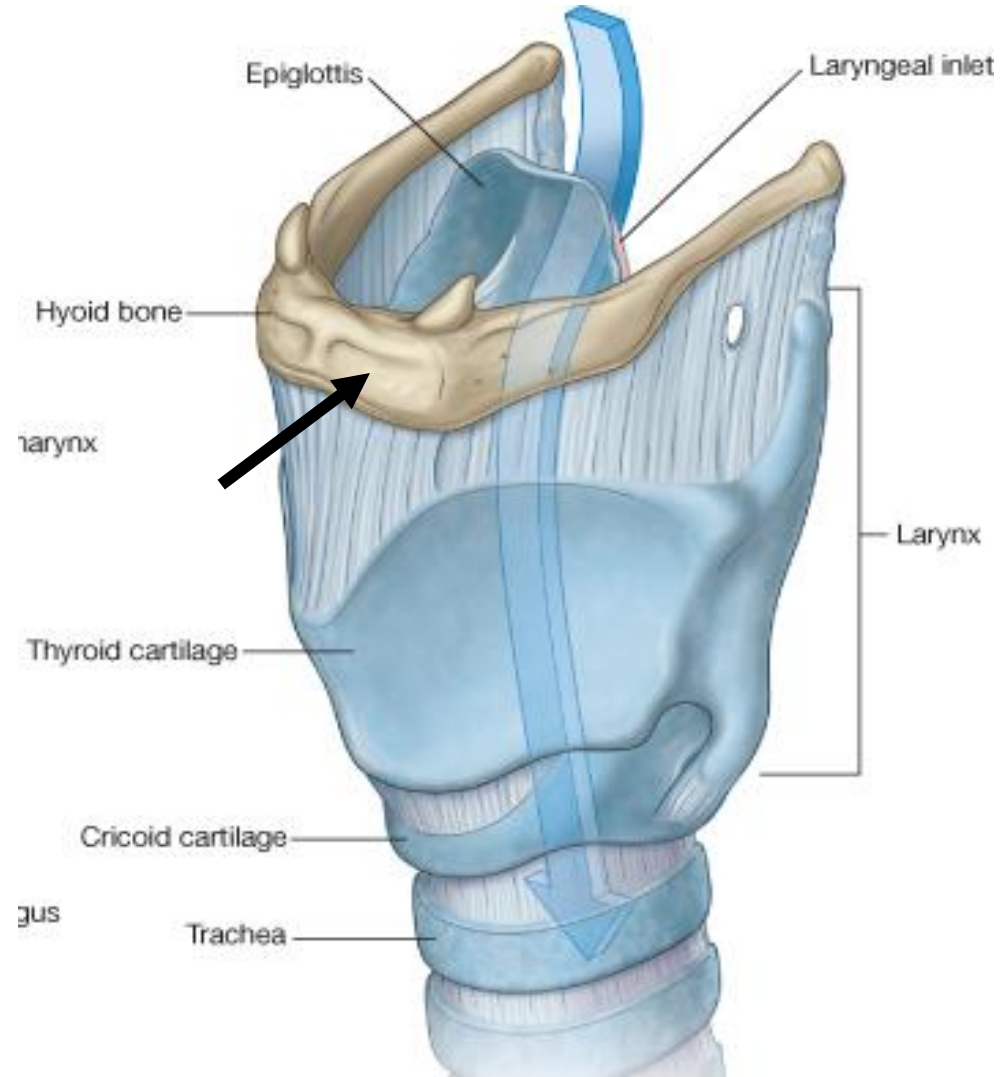
2. **Posterior triangle**
→ **behind the**
sternomastoid.



What is the Hyoid bone ?

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

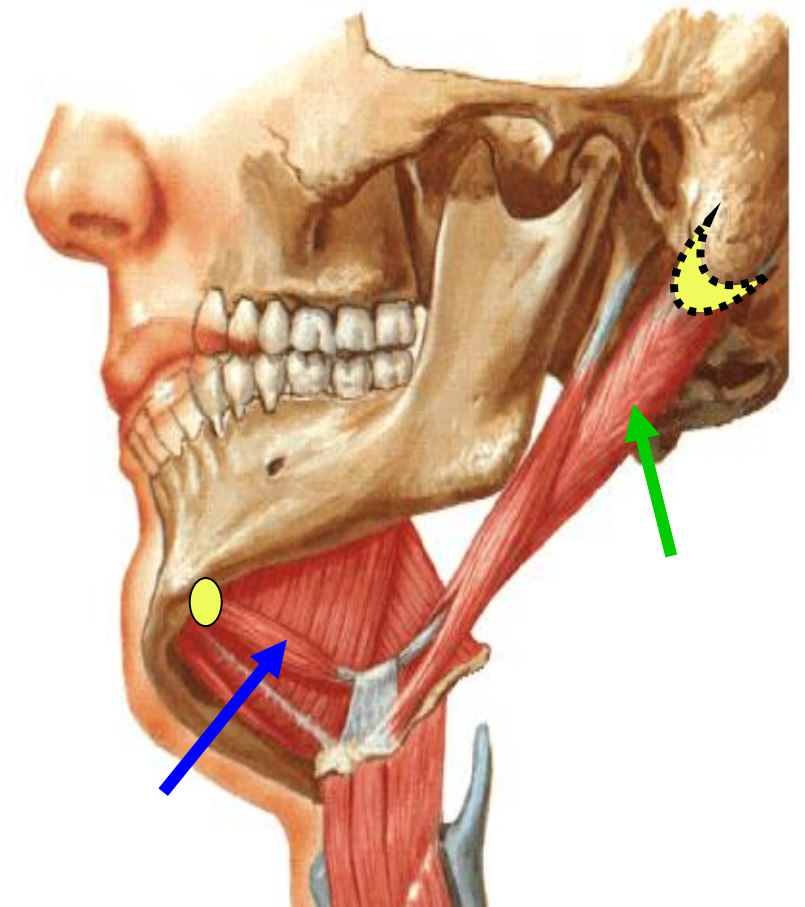
*** It does not articulate with any other bone but is suspended from the skull by stylohyoid ligament.**



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:

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

2. Mylohyoid Muscle

* **Origin :**

* **Mylohyoid line of mandible**

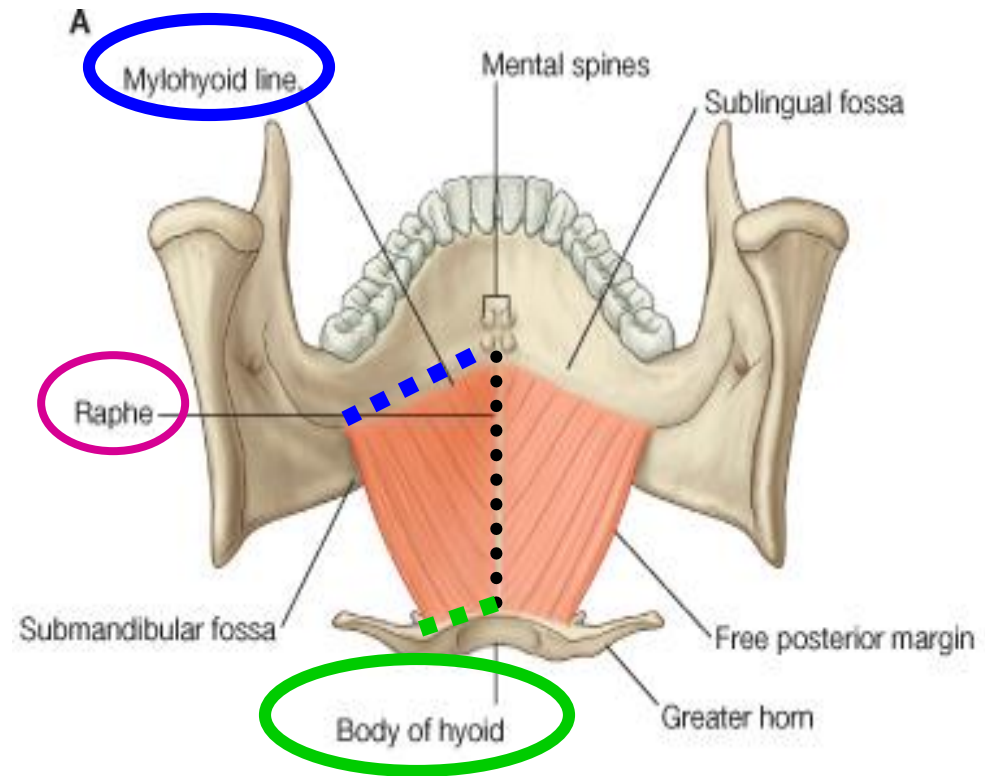
* **Insertion :**

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

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

* **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

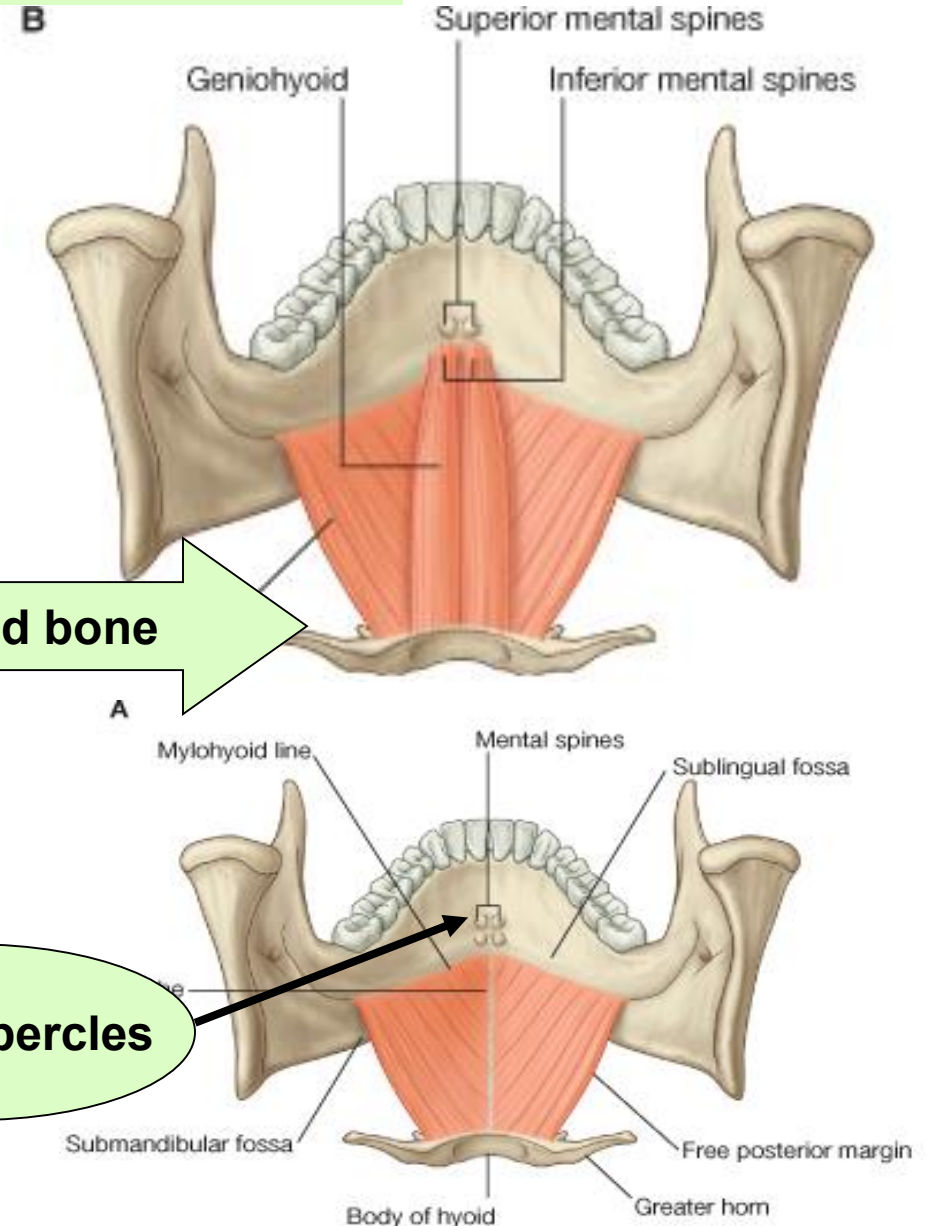
* **Nerve supply:**

* C1 fibers (1st spinal nerve) (through hypoglossal nerve)

* **Action :**

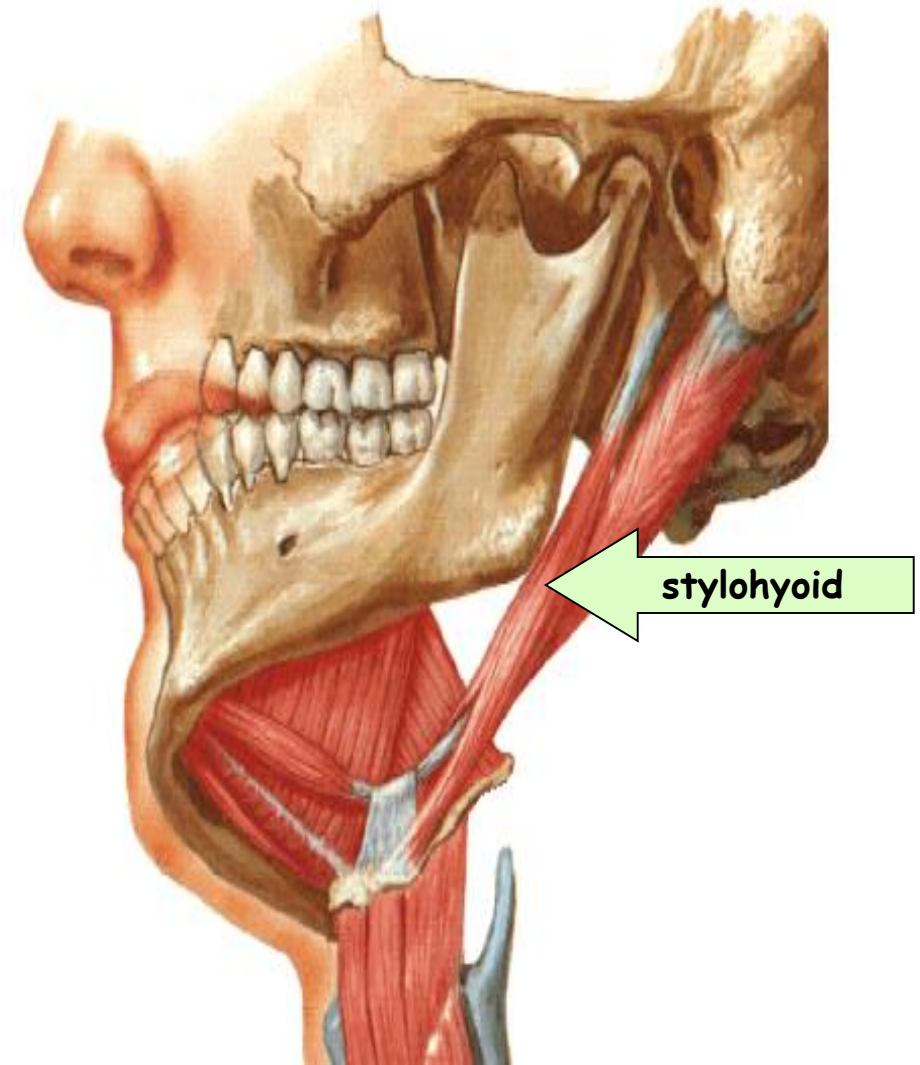
1. Elevates hyoid bone

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

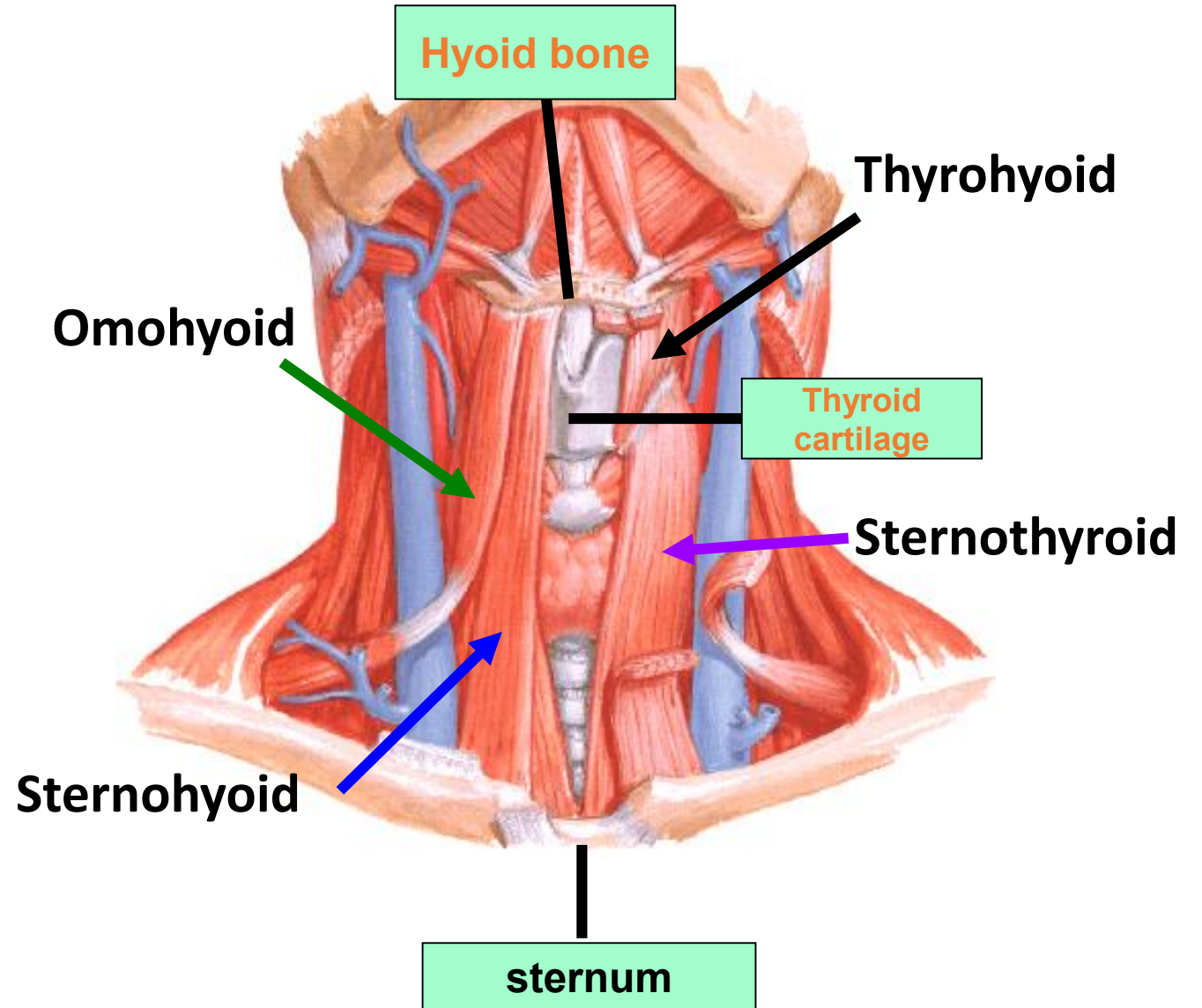


C. Infrahyoid Muscles

* 4 muscles that lie below the hyoid bone.

* Include:

1. **Sternohyoid.**
2. Omohyoid.
3. **Sternothyroid.**
4. **Thyrohyoid.**



C. Infrahyoid muscles (contd.)

- * All infrahyoid muscles are supplied by **Ansa Cervicalis** (C1,2,3) except Thyrohyoid which is supplied directly by C1 (through hypoglossal N.).**
- @ All infrahyoid muscles depress the hyoid bone.**



Thank You
Thank You
Thank You!!!!