



Al-Mustaqbal University

College of Engineering & Technology

Biomedical Engineering Department

Subject Name: Anatomy II

2nd Class, Second Semester

Subject Code: [UOMU011045]

Academic Year: 2024-2025

Lecturer: Dr.Ahmed ali.

Email: *ahmed.ali.shabaan@uomus.edu.iq.....*

Lecture No.: - 1

Lecture Title: [Head and Neck]



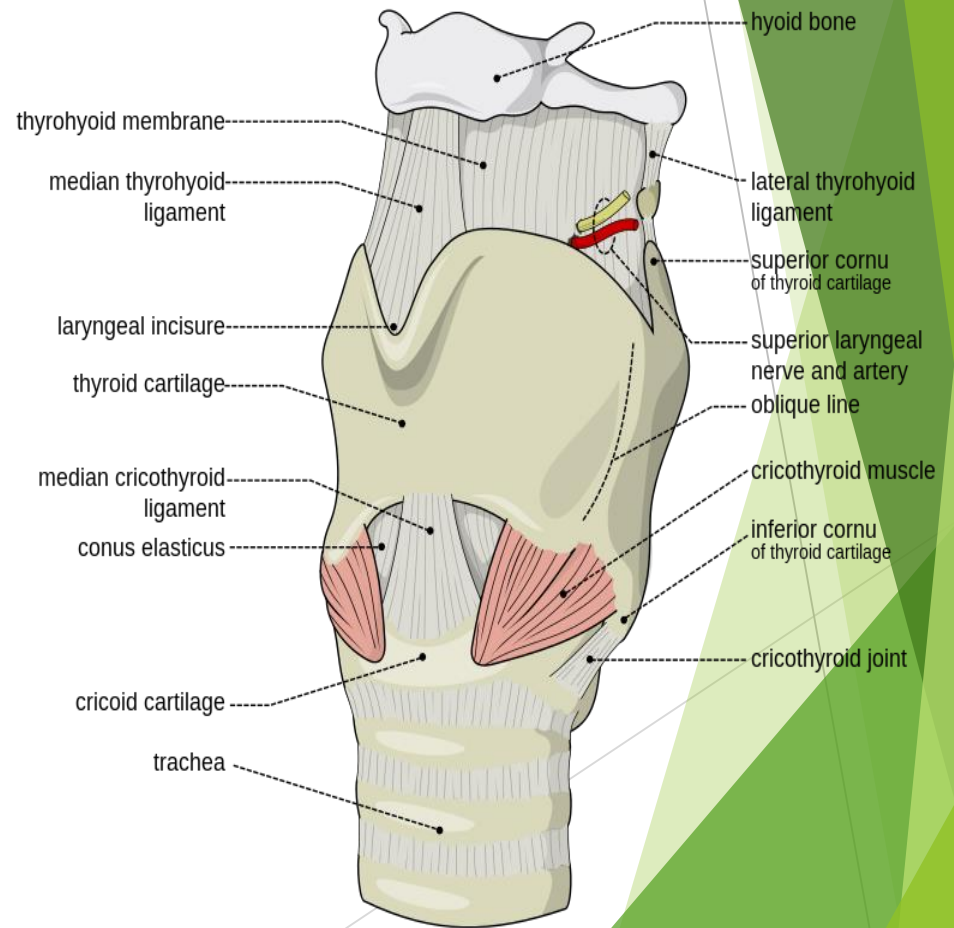
ANATOMY / 2nd Stage

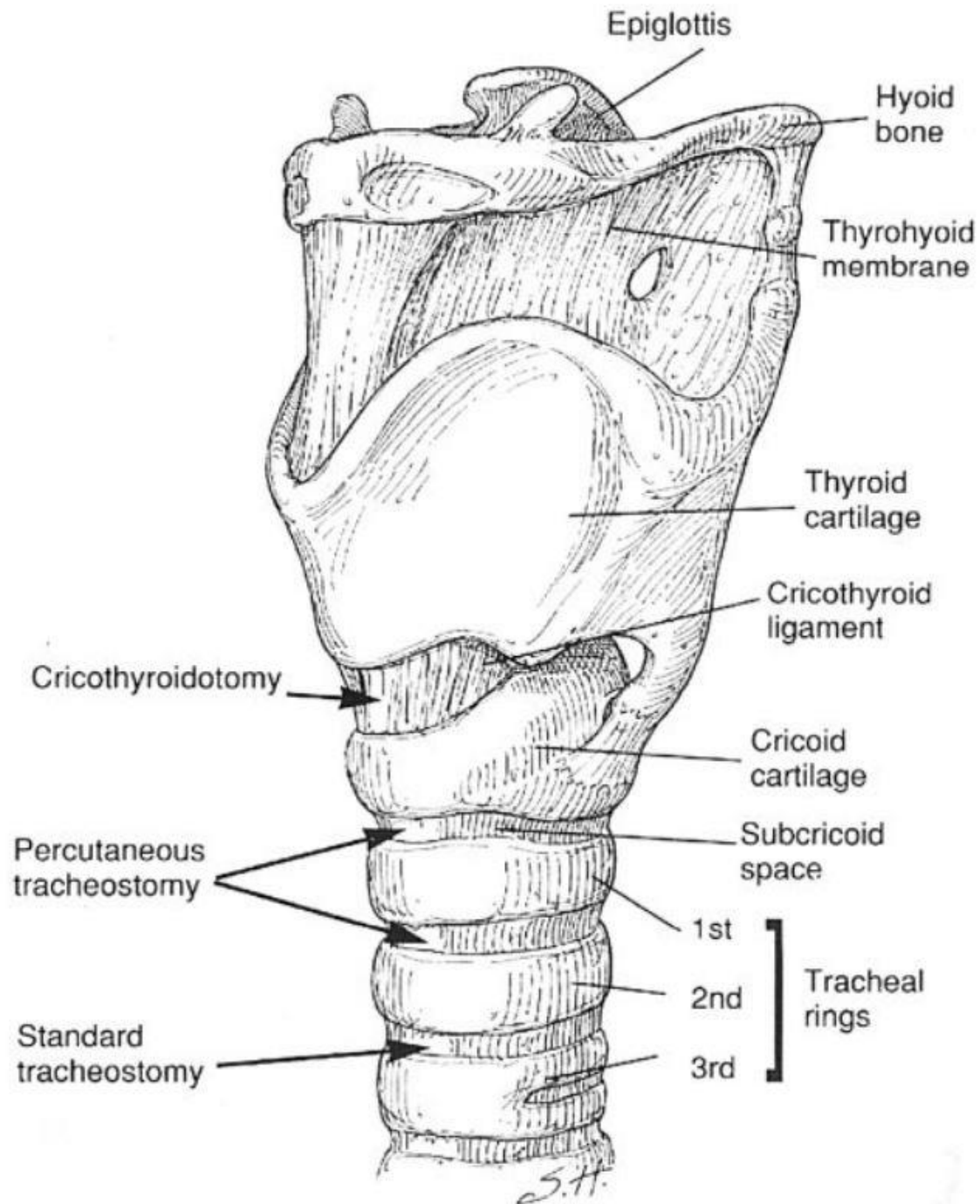
Head and Neck

Lec.1

NECK BONY AND CARTILAGE LANDMARKS

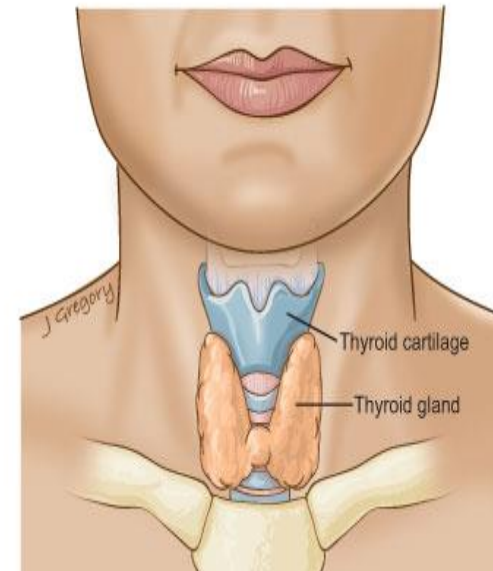
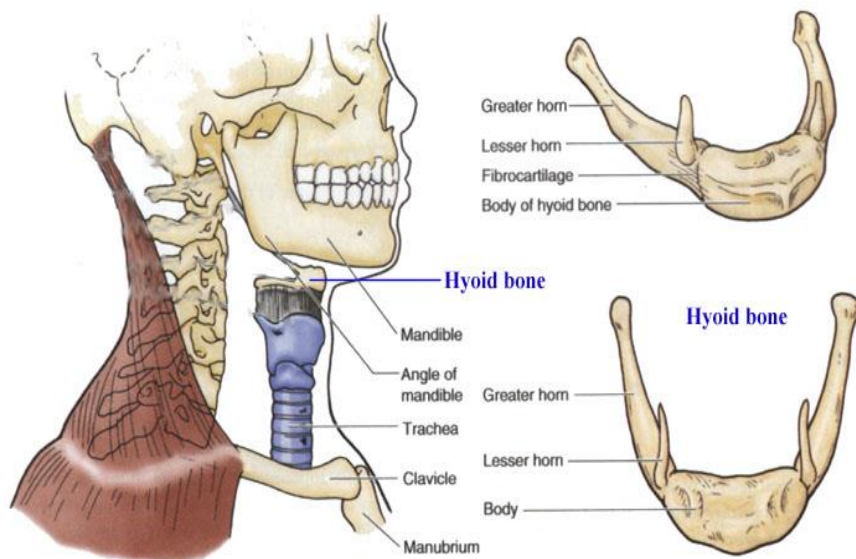
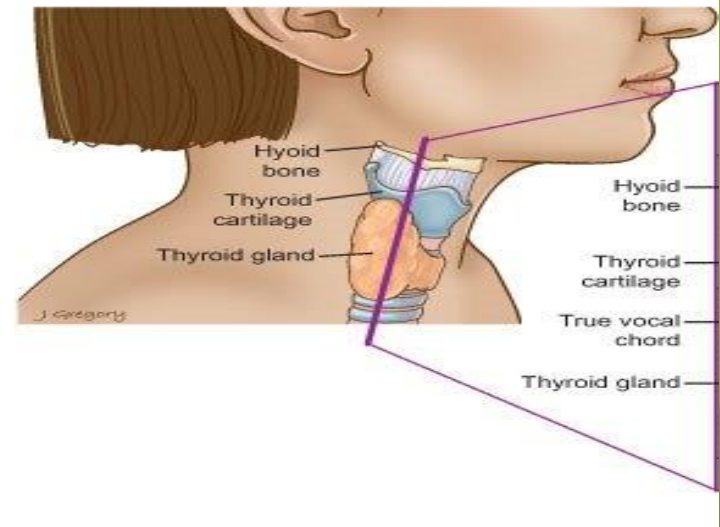
- 1- Hyoid Bone.
- 2- Thyroid cartilage.
- 3- Cricoid cartilage.
- 4- Tracheal rings.



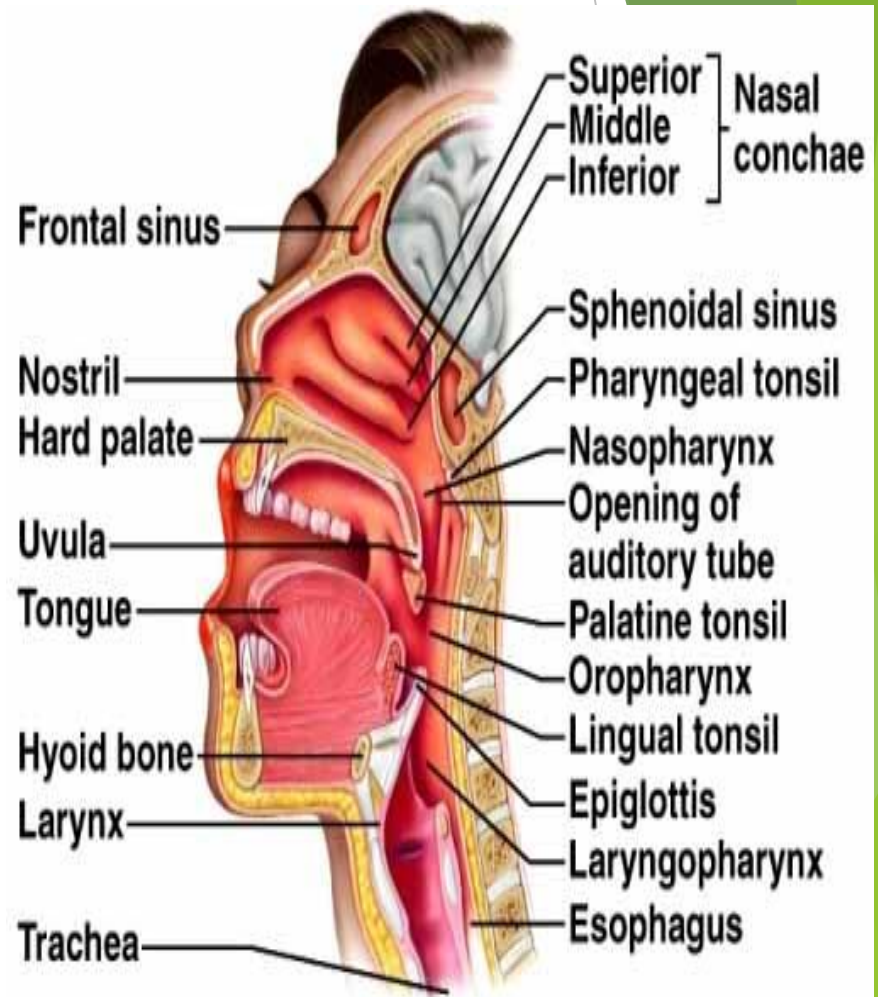


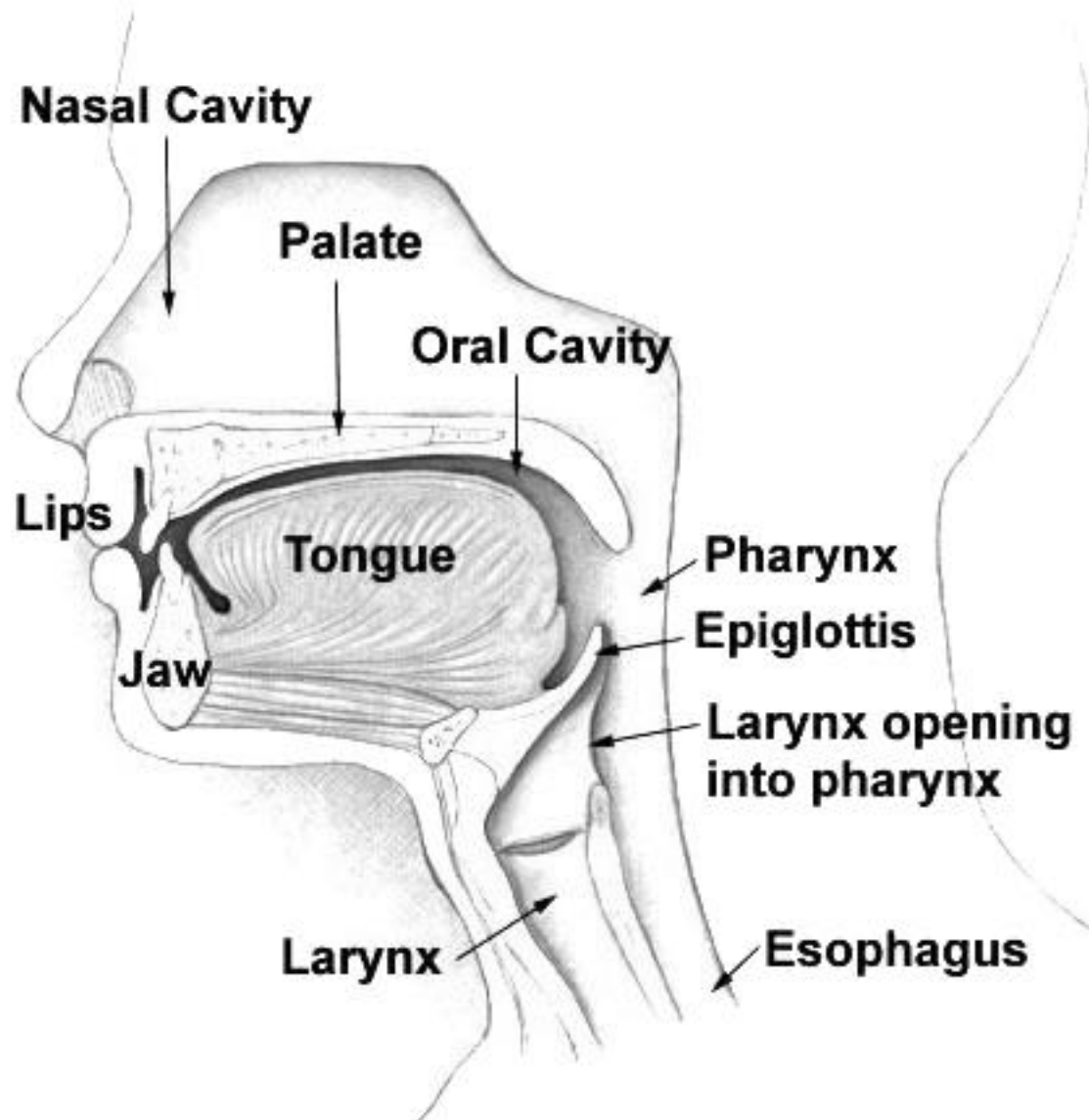
Hyoid Bone

Is a horseshoe-shaped bone situated in the anterior of the neck, between chin and thyroid cartilage, aids tongue movement and swallowing.



The hyoid bone is only distantly articulated to other bones by muscles or ligaments. It provides attachment to the muscles of the floor of the mouth and the tongue above, the larynx below, and the epiglottis and pharynx behind, aiding tongue movement and swallowing.

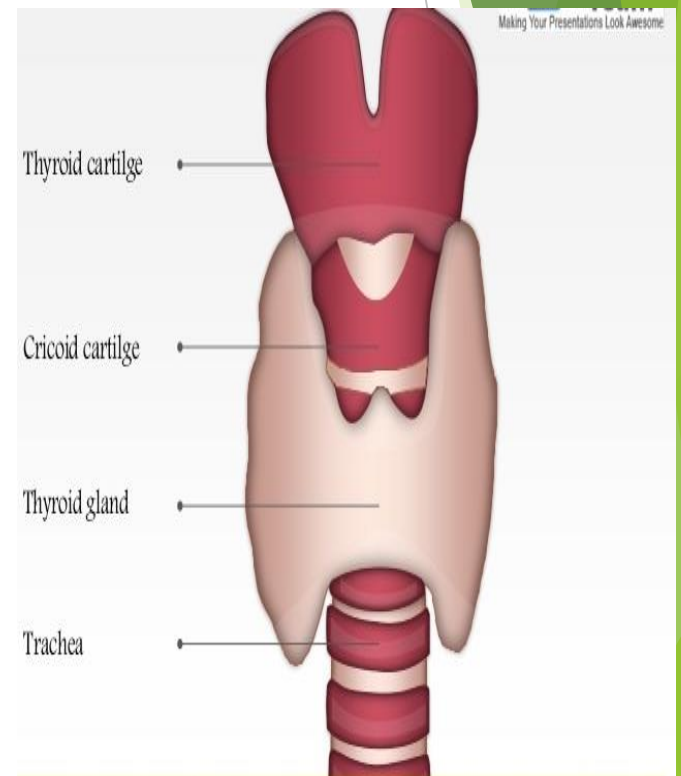


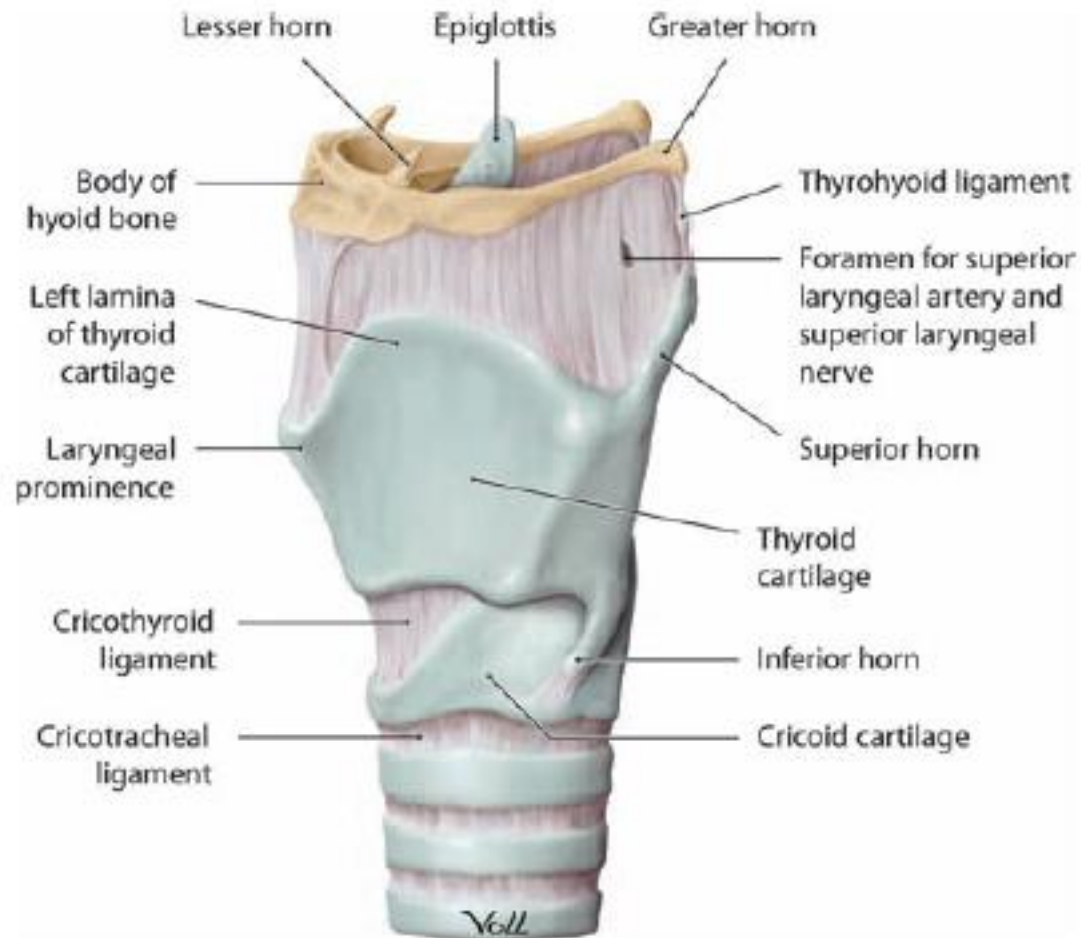


Thyroid Cartilage

Is a cartilage that sits in front of the larynx and above the thyroid gland. The cartilage is composed of two halves, which meet in the middle at a peak called the (laryngeal prominence) also called the Adam's apple.

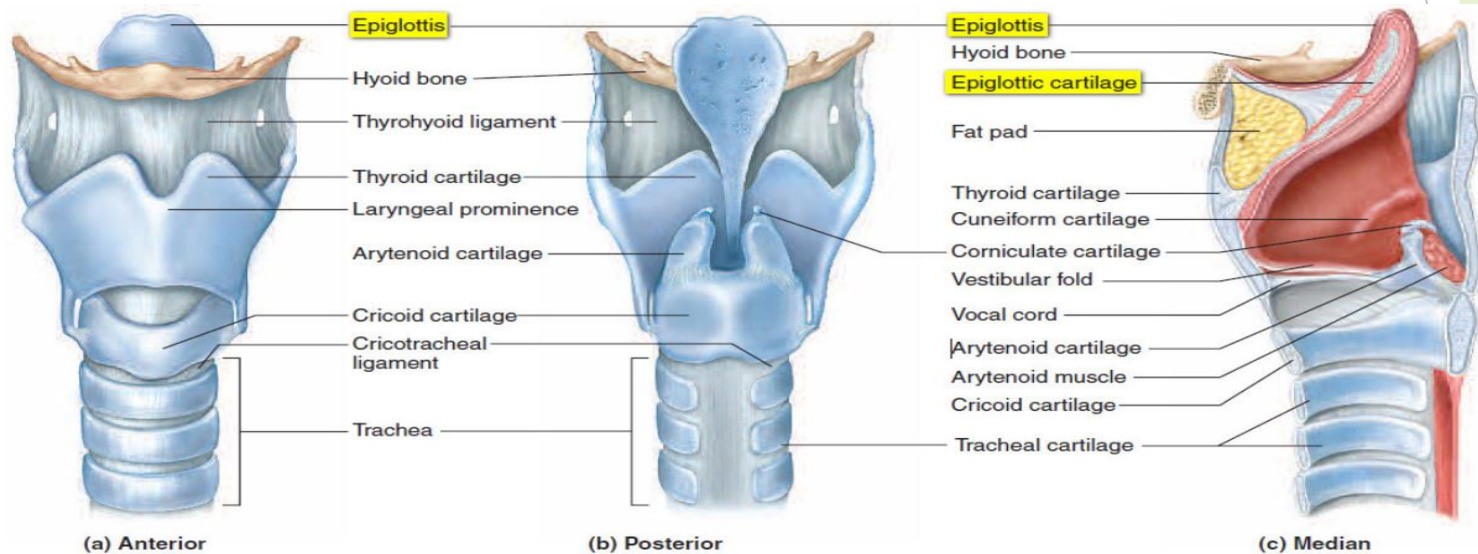
In the midline above the prominence is the superior thyroid notch. A counterpart notch at the bottom of the cartilage is called the inferior thyroid notch.





Function:

The thyroid cartilage forms the bulk of the front wall of the larynx. It protects ("vocal cords"), which are located directly behind it.



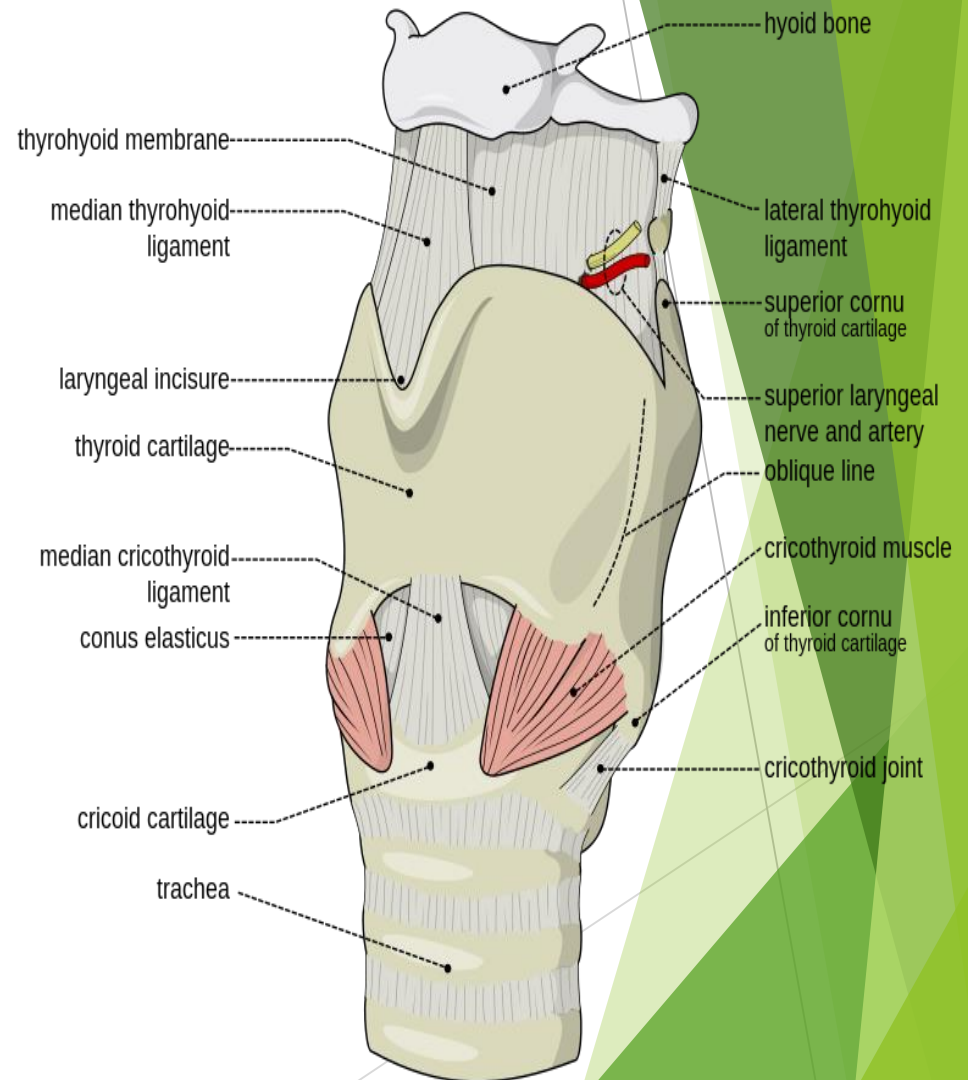
cricoid cartilage

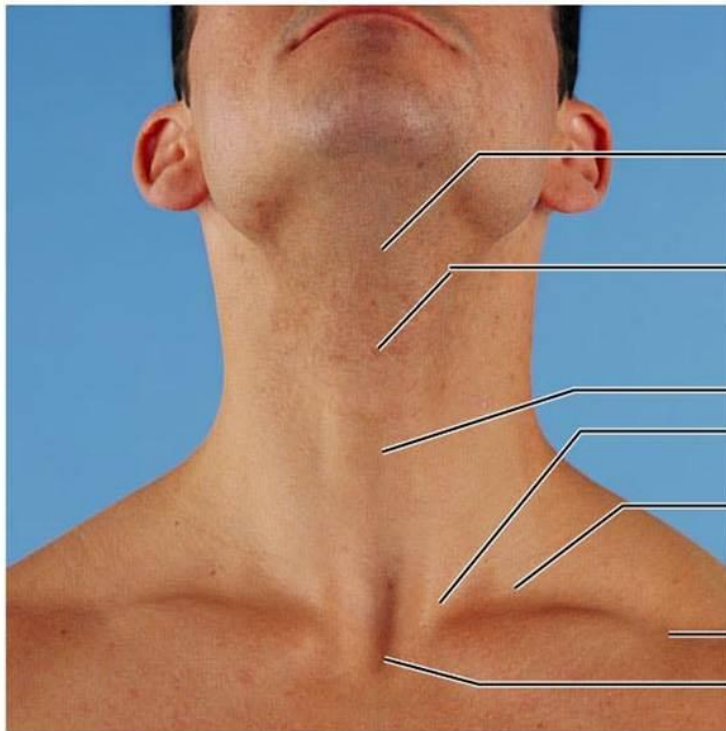
The cricoid cartilage sits just inferior to the thyroid cartilage in the neck, and it is joined:

1-medially by the median cricothyroid ligament

2- postero-laterally by the cricothyroid joints.

3-Inferiorly the cricoid is joined to the first tracheal ring by the cricotracheal ligament.





(a) Surface view

Body of hyoid bone

Thyroid cartilage

Laryngeal prominence
(Adam's apple)

Cricothyroid ligament

Cricoid cartilage

Sternal
head

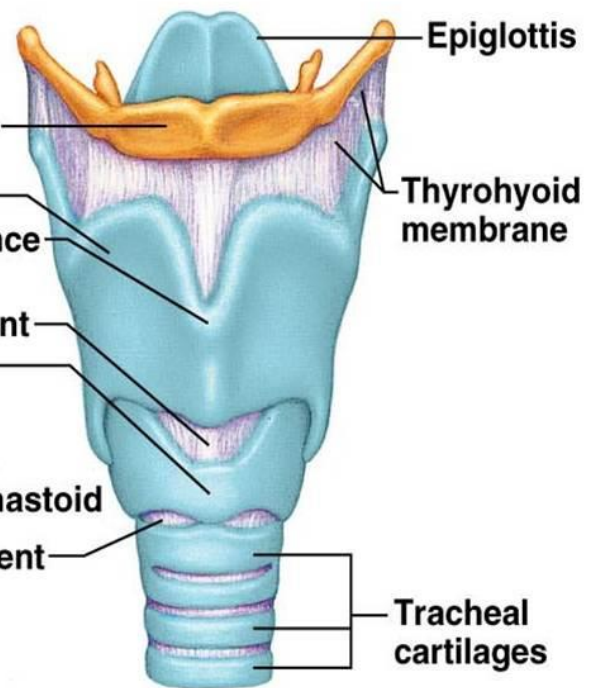
Clavicular
head

Sterno-
cleidomastoid

Cricotracheal ligament

Clavicle

Jugular notch



Epiglottis

Thyrohyoid
membrane

Tracheal
cartilages

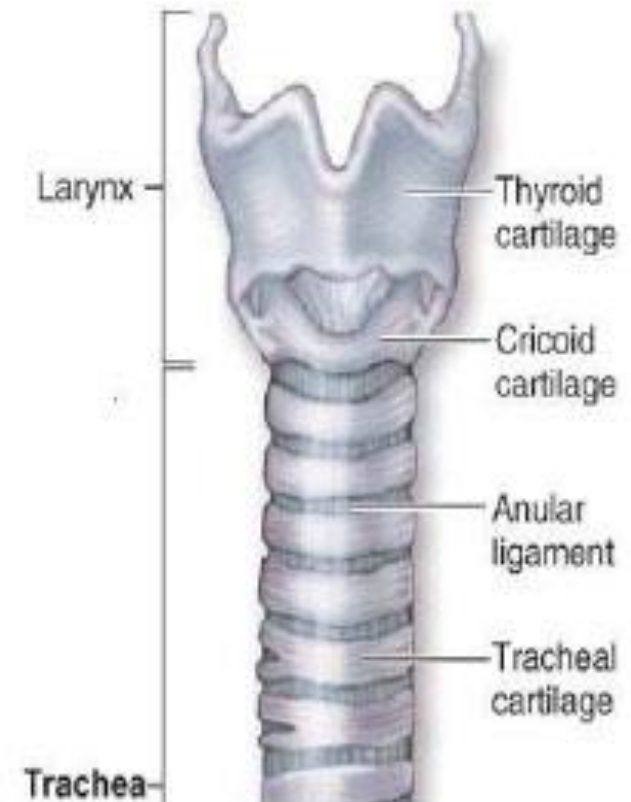
(b) Anterior view

Function:

The function of the cricoid cartilage is to provide attachments for the cricothyroid muscle, also muscles and ligaments involved in opening and closing the airway in speech production.

Tracheal Rings

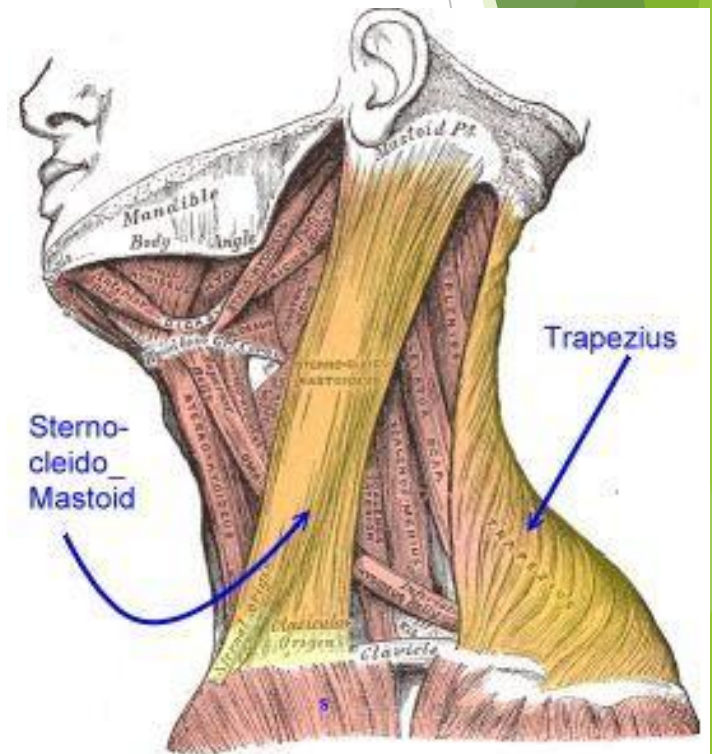
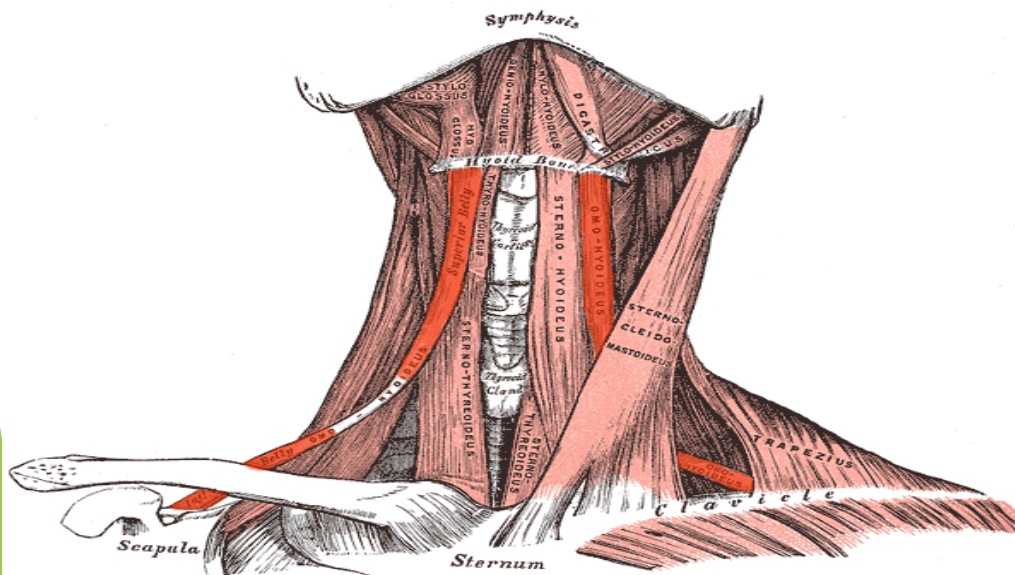
The tracheal rings, (tracheal cartilages or C-shaped cartilage rings) vary from sixteen to twenty in number. Each forms an incomplete ring of (hyaline cartilage), which occupies the anterior two-thirds .The posterior one-third of the trachea is completed by fibrous and smooth muscle tissue.



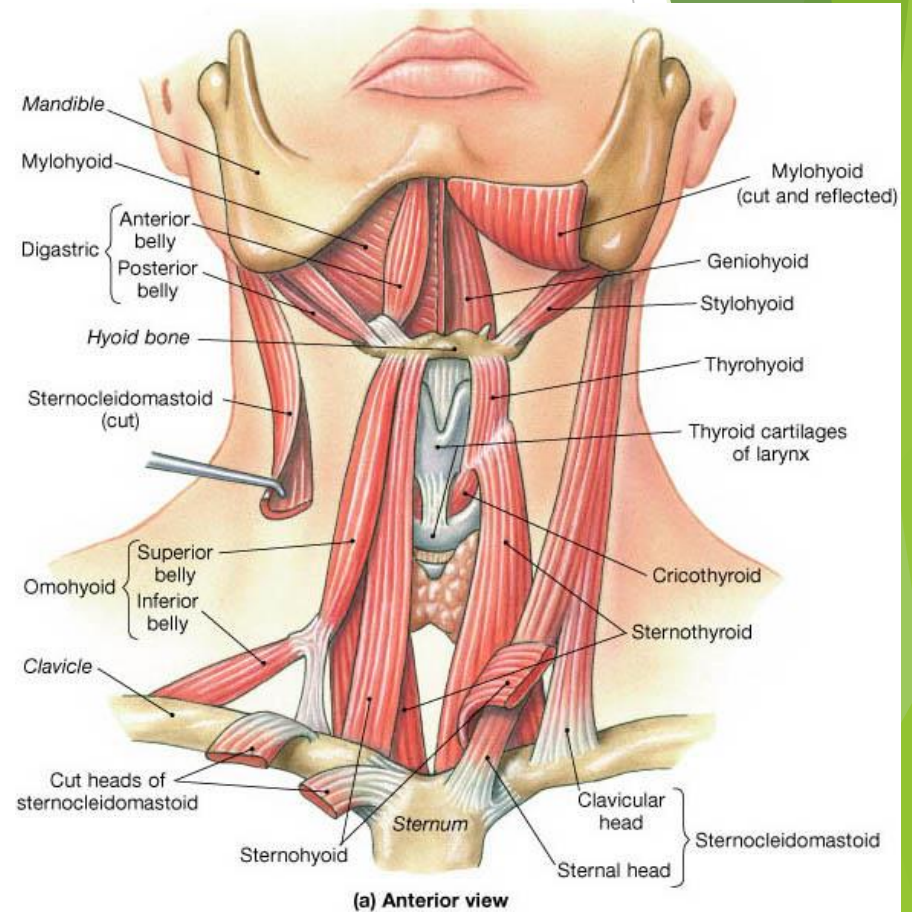
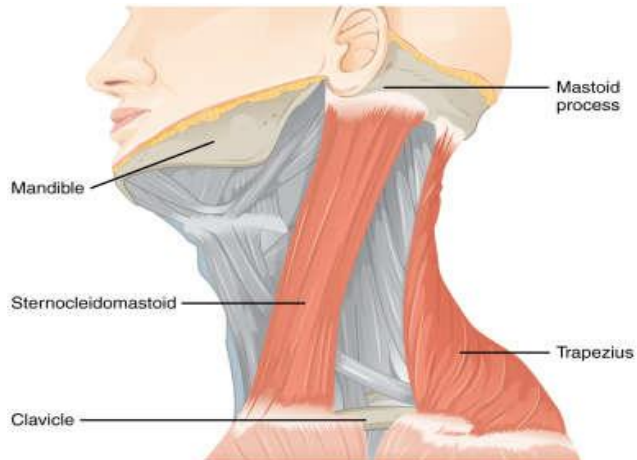
Surface Anatomy of the Neck

Muscular landmarks

Sternocleidomastoid Muscle.
Trapezius.
Omohyoid Muscle.

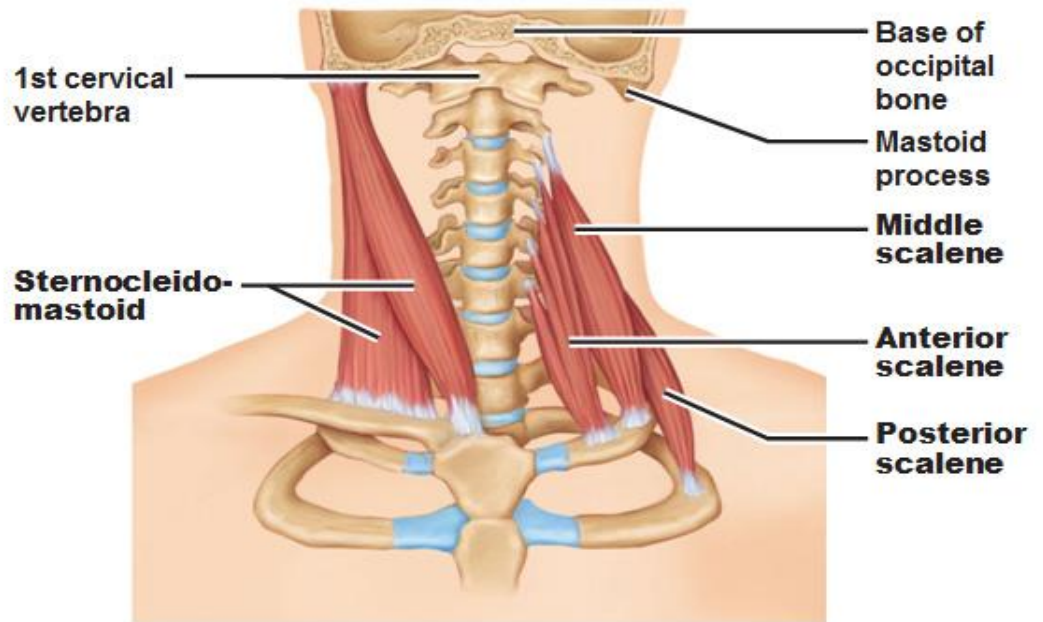
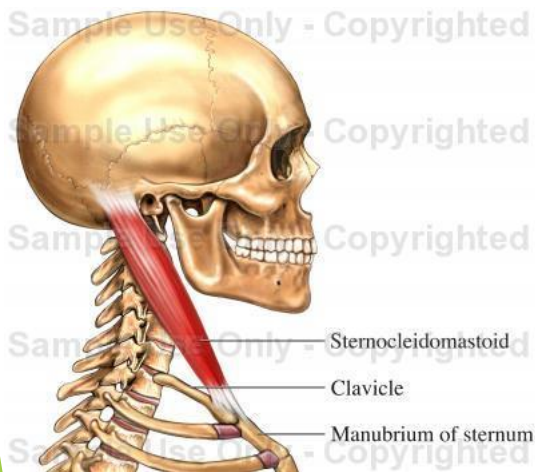


Sternocleidomastoid Muscle



Origin: it has 2 heads.

- 1- Sternal head: manubrium sterni.
- 2-Clavicular head: medial upper third of clavicle.



(a) Anterior

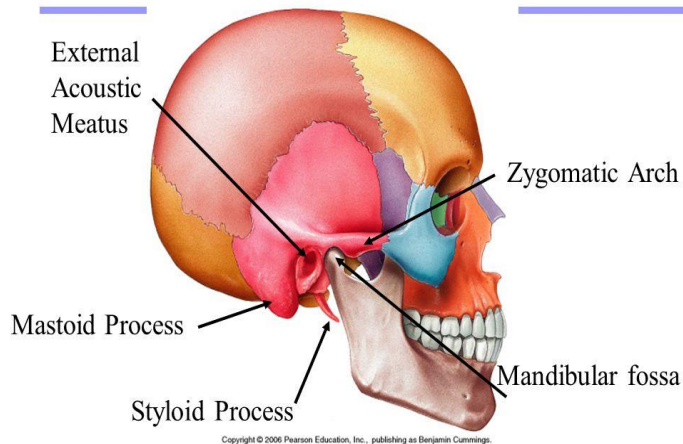
Insertion:

they insert into the mastoid process and superior nuchal line.

Nerve supply: spinal root of accessory nerve.

Action: Rotation of the head to the opposite side and flexion of the neck.

Temporal Bone



Posterior Aspects of the Skull

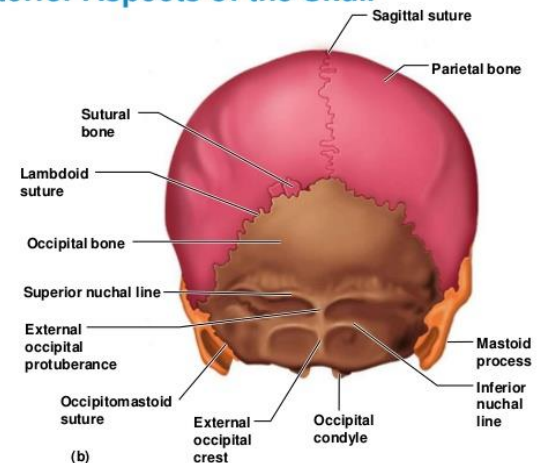
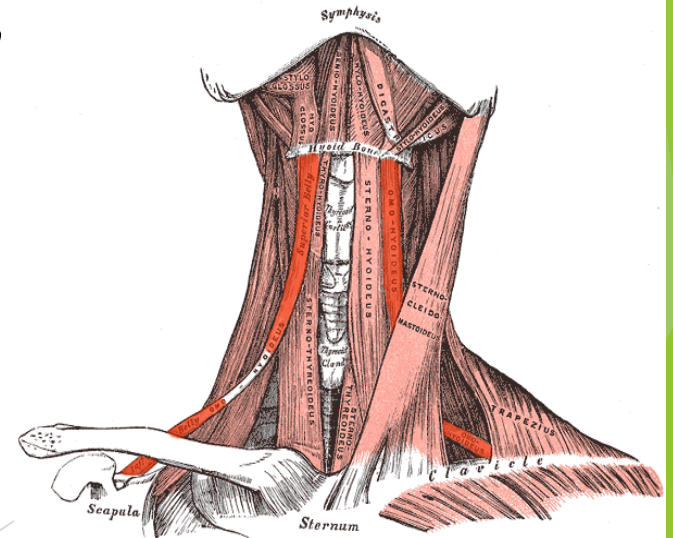
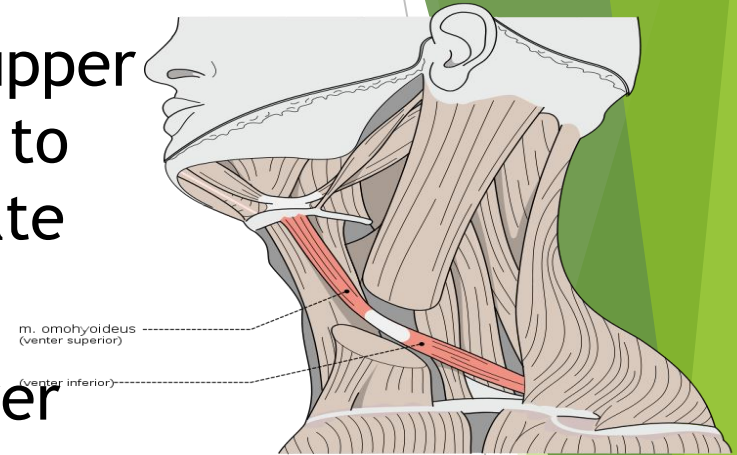


Figure 7.2b

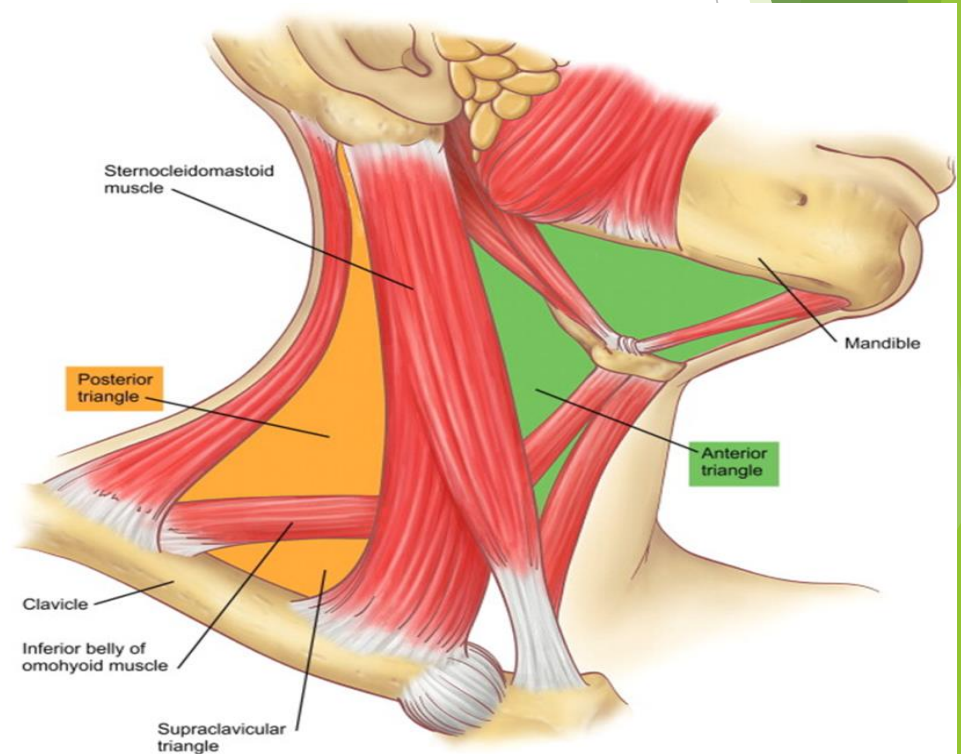
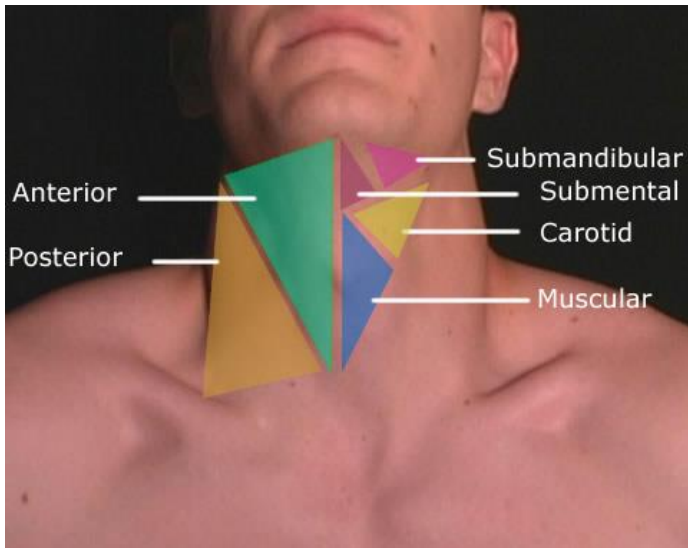
Omohyoid muscle

- ▶ Inferior belly: originates from the upper margin of the scapula, passes deep to the SCM and ends in the intermediate tendon.
- ▶ Superior belly: inserts into the lower border of the hyoid bone body.
- ▶ Nerve supply: Ansa cervicalis (C1, 2,
- ▶ Action: depresses the hyoid bone



The neck can be divided into: 2 major triangles , with multiple smaller triangles:

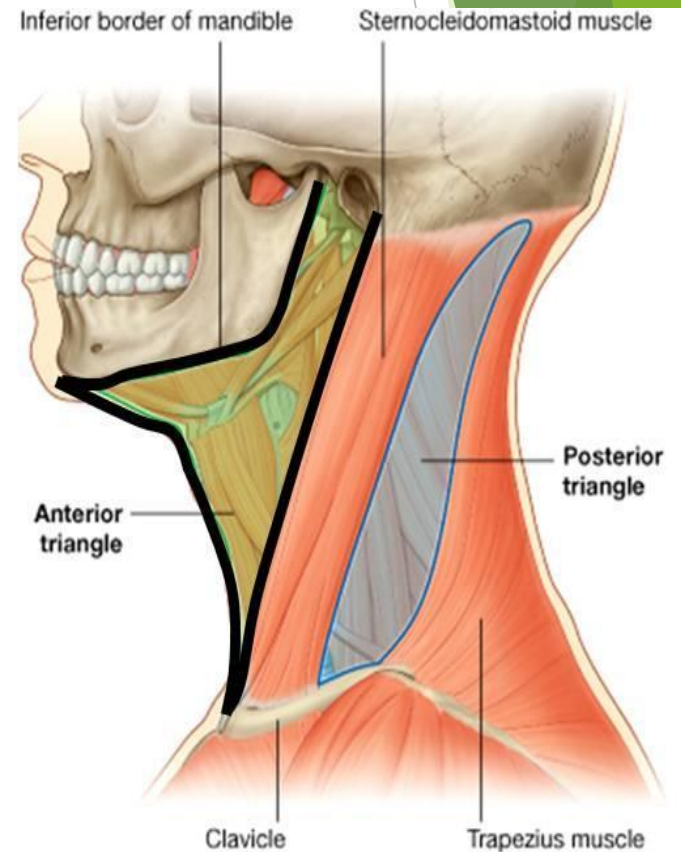
- a. Anterior triangle
- b. Posterior triangle



a. Anterior triangle

Major triangle bordered by the:

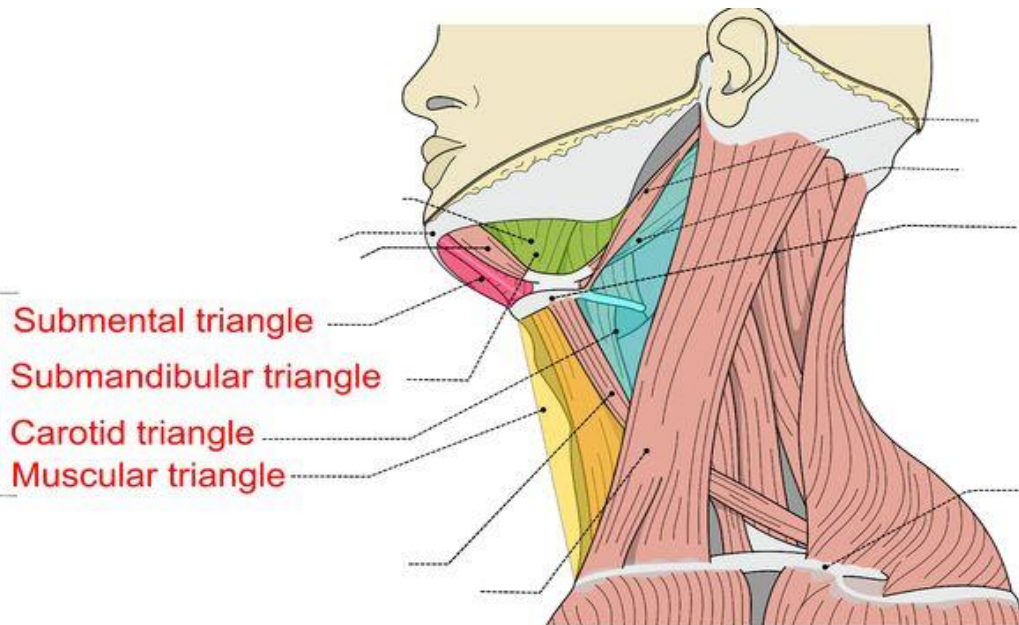
- ✓ anterior border of the SCM
- ✓ midline of the neck
- ✓ mandible



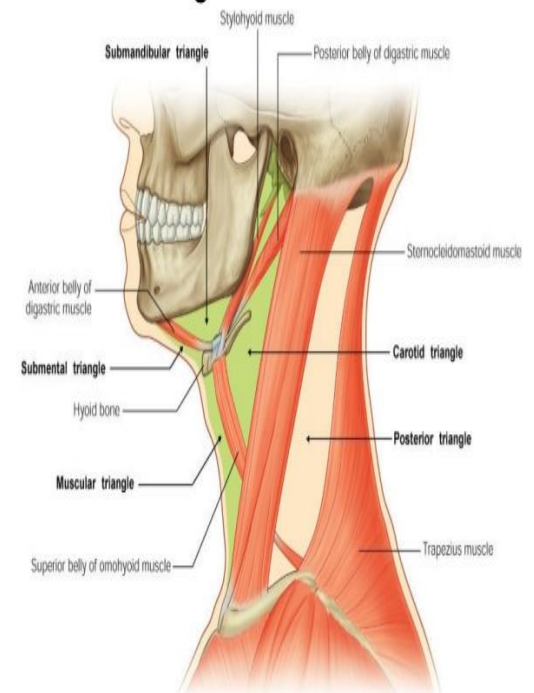
Major anterior triangle is subdivided into 4 triangles:

1. muscular triangle.
2. carotid triangle.
3. submental triangle.
4. submandibular triangle.

Anterior triangle



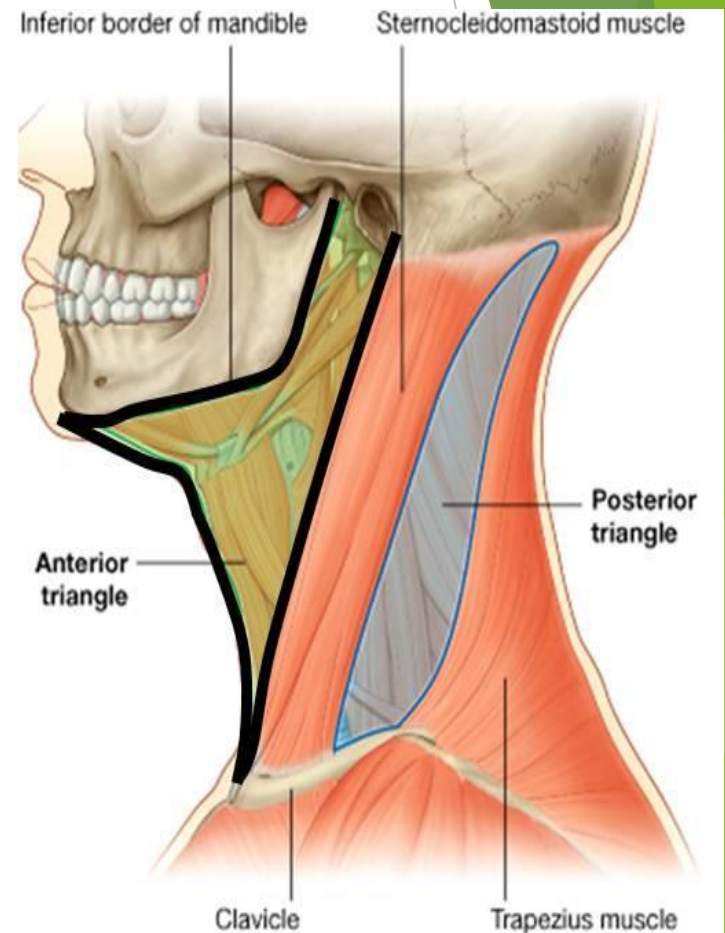
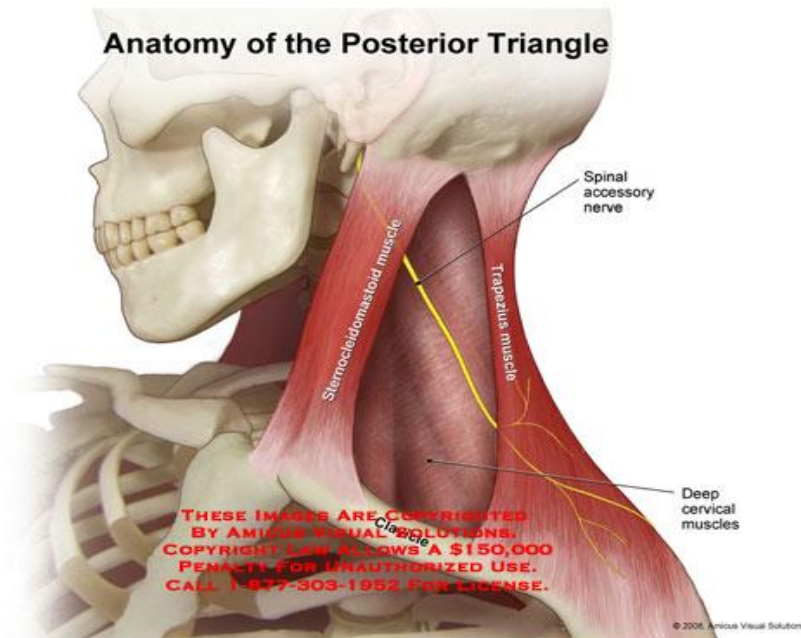
Triangles within the Anterior Triangle of the Neck



b. Posterior triangle

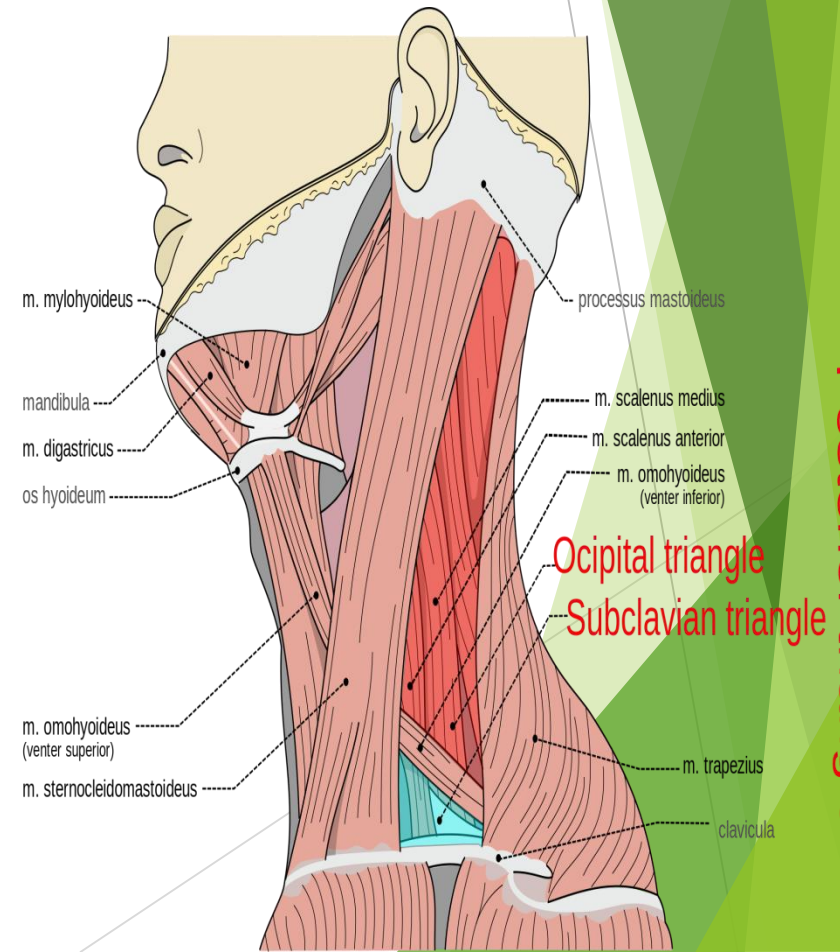
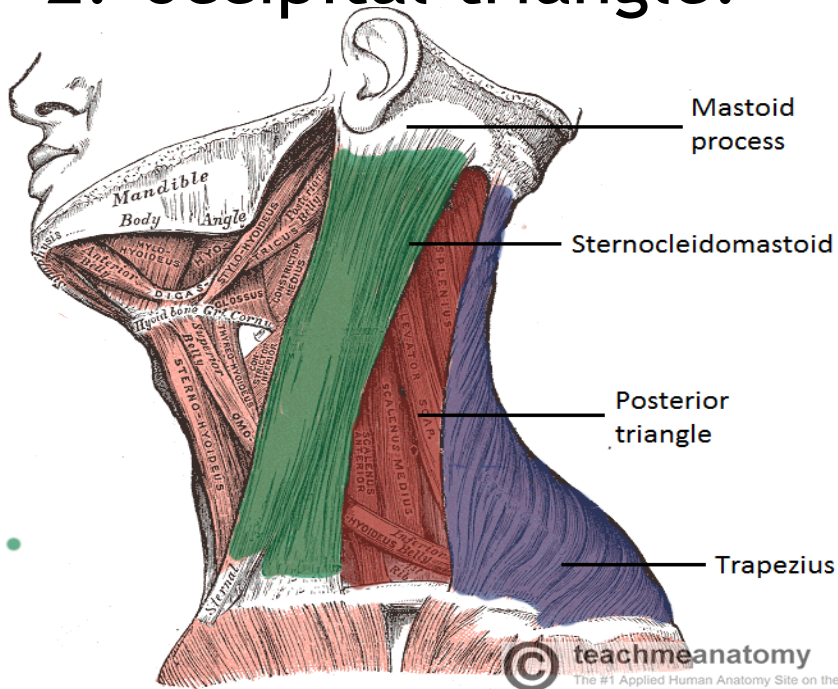
Major triangle bordered by the:

- ✓ posterior border of the SCM.
- ✓ trapezius
- ✓ clavicle



Major posterior triangle is subdivided by the inferior belly of omohyoid into:

1. subclavian triangle.
2. occipital triangle.



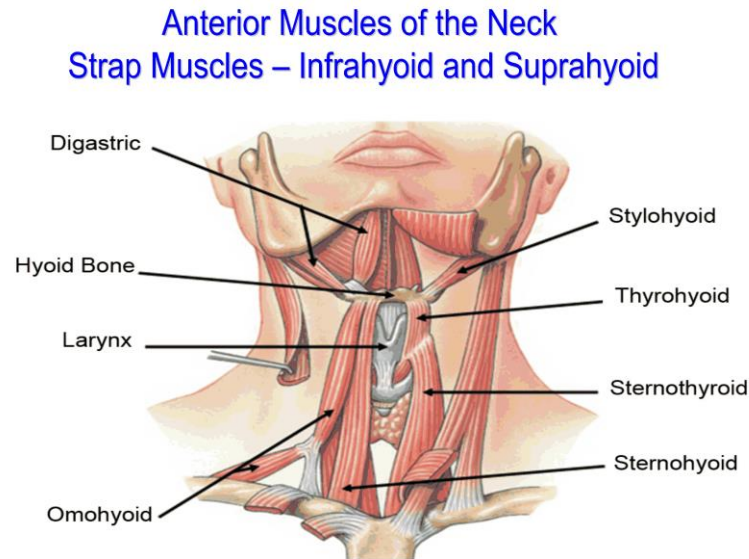
Strap muscles (Infrahyoid muscles)

1-Thyrohyoid

2-Sternothyroid

3-Sternohyoid

4-Omohyoid



The infrahyoid muscles Together with the suprahyoid muscles function to stabilize and depress the hyoid bone and larynx during swallowing and speech.

Muscle	Origin	Insertion	Innervation
sternothyroid	sternum	thyroid cartilage	ansa cervicalis
sternohyoid	sternum	hyoid bone	ansa cervicalis
thyrohyoid	thyroid cartilage	hyoid bone	C1 (via CN XII)
omohyoid (superior belly)	intermediate tendon	hyoid bone	superior root of ansa cervicalis
omohyoid (inferior belly)	superior border of scapula	intermediate tendon	ansa cervicalis