



ANTERIOR TRIANGLE

BY DR.DALIA BIRAM

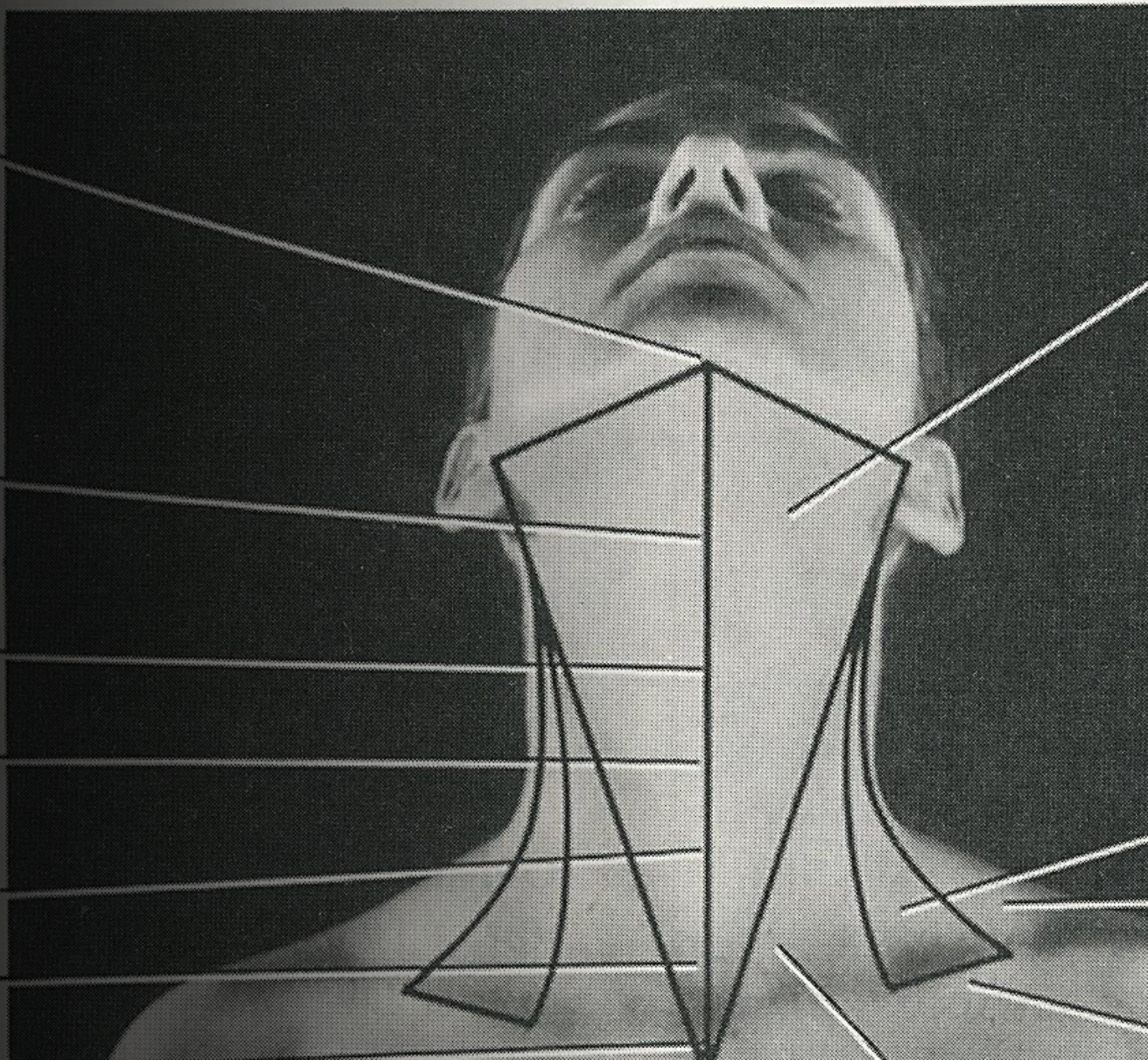
mentum

hyoid

cricoid

thyroid

trachea

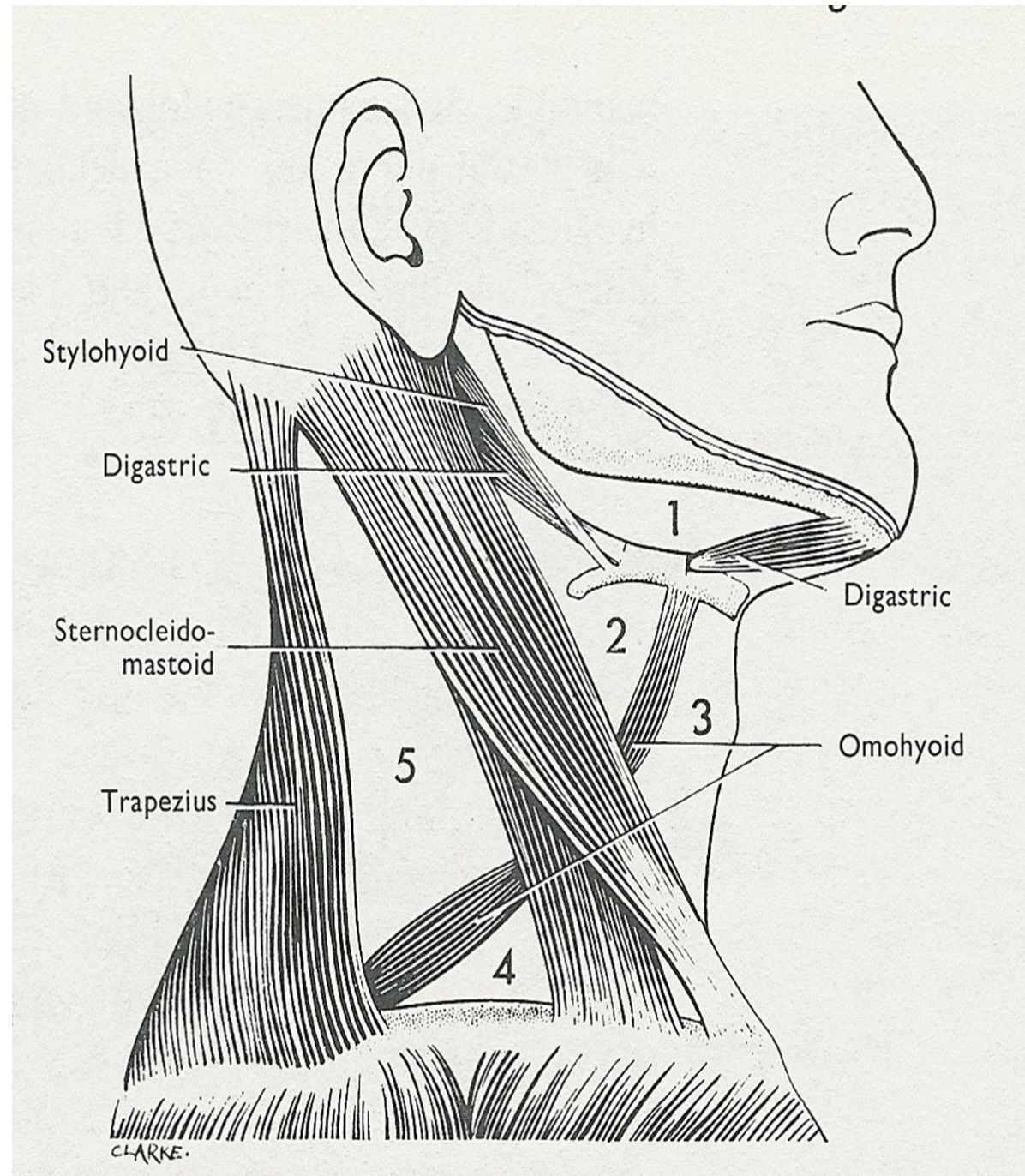


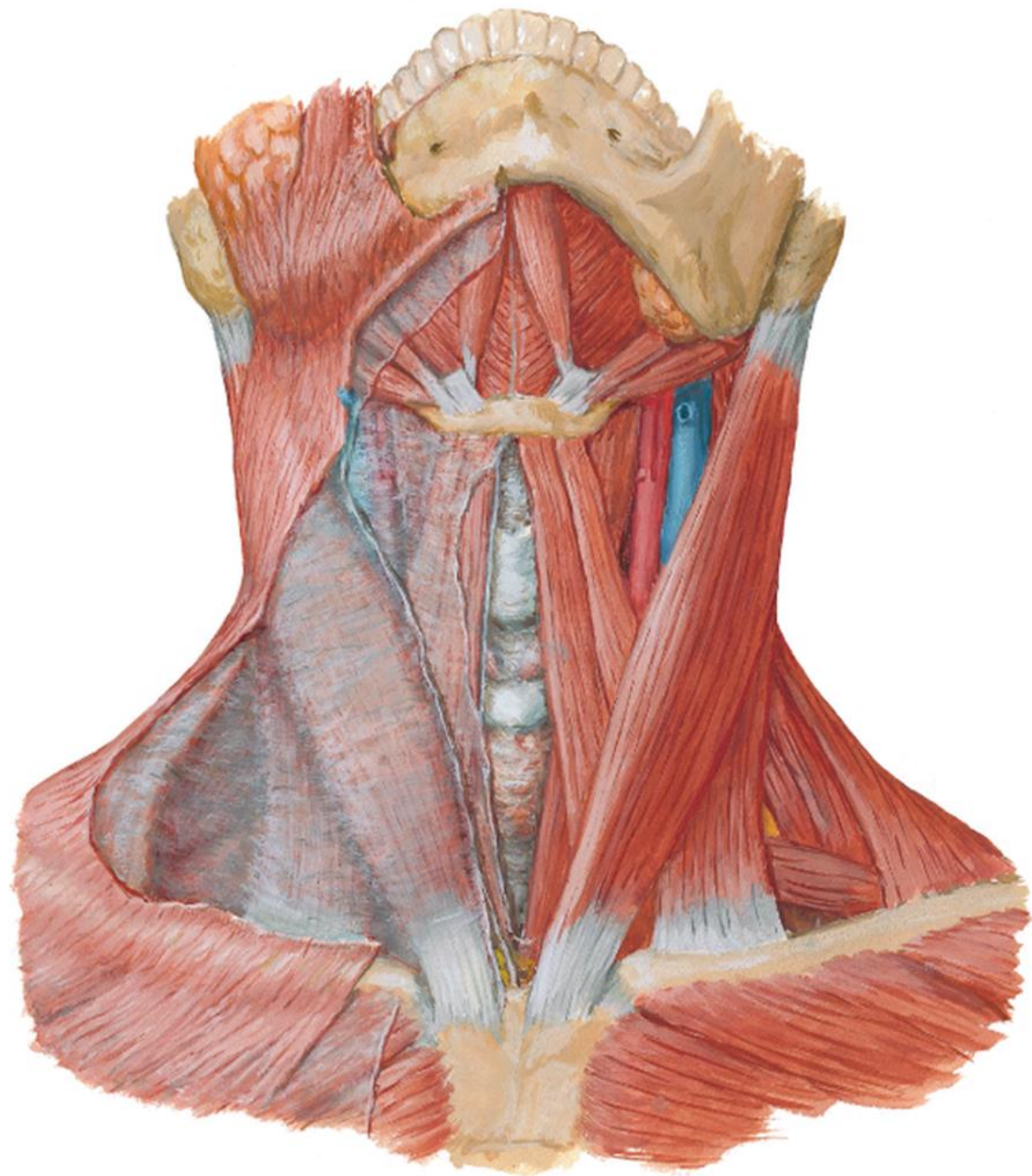
Boundaries

- Anteriorly: Midline of the neck.
- Posteriorly: Anterior border of sternocleidomastoid muscle.
- Superiorly: Lower border of body of mandible.

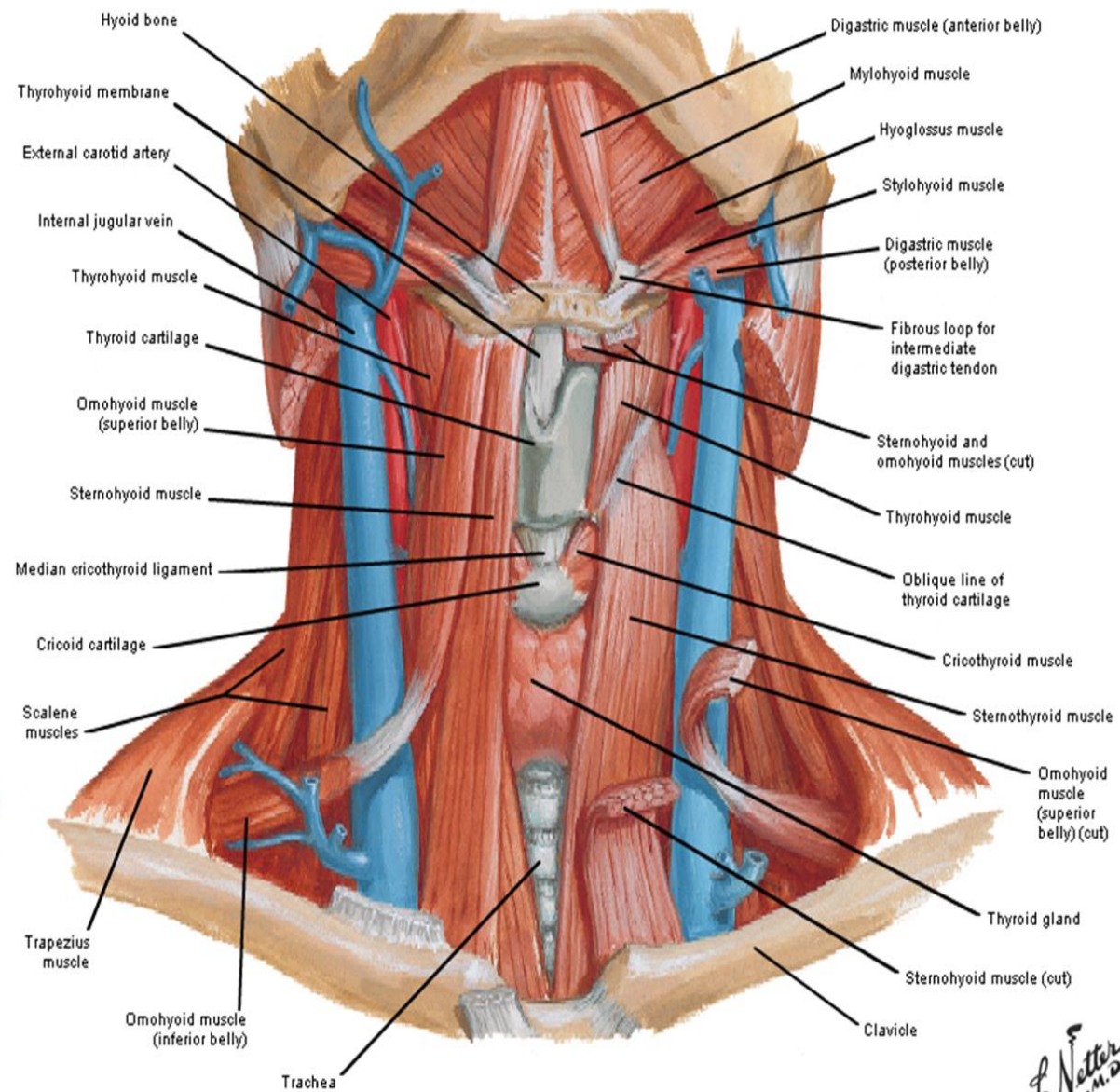
Apex: (below) meeting of anterior & posterior borders.

- Roof:
- Skin, superficial fascia containing platysma
- investing layer of deep fascia
- cervical branch of facial nerve
- transverse cervical nerve
- anterior jugular veins.





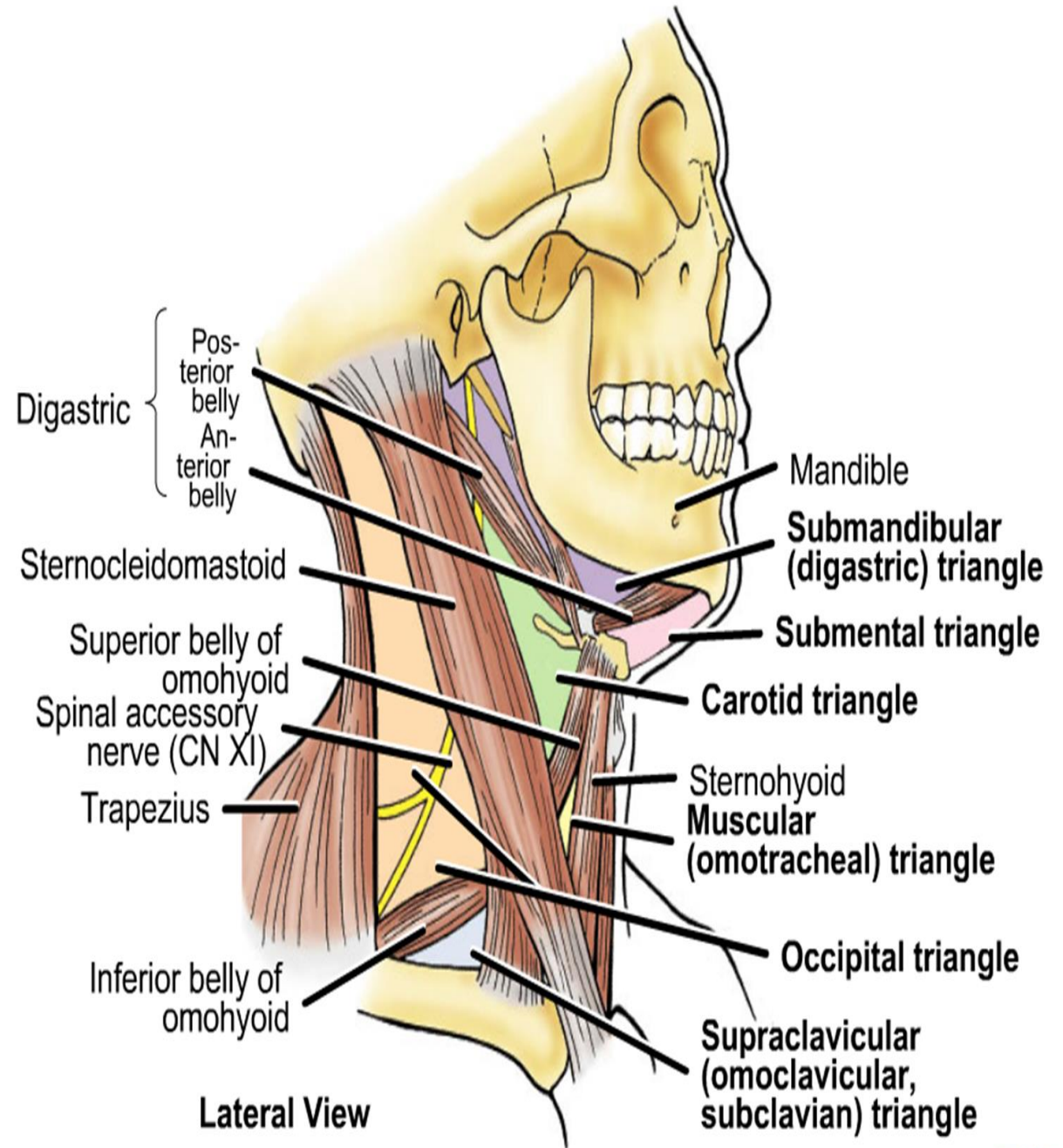
Infrahyoid and Suprahyoid Muscles



Division:

The anterior and posterior bellies of digastric and the superior belly of omohyoid muscles divide the triangle into:

1. Half of submental triangle.
2. Digastric triangle.
3. Carotid triangle.
4. Muscular triangle.



Submental Triangle

Boundaries:

Base: Body of the hyoid bone (forms its base).

On each side: Anterior belly of digastric.

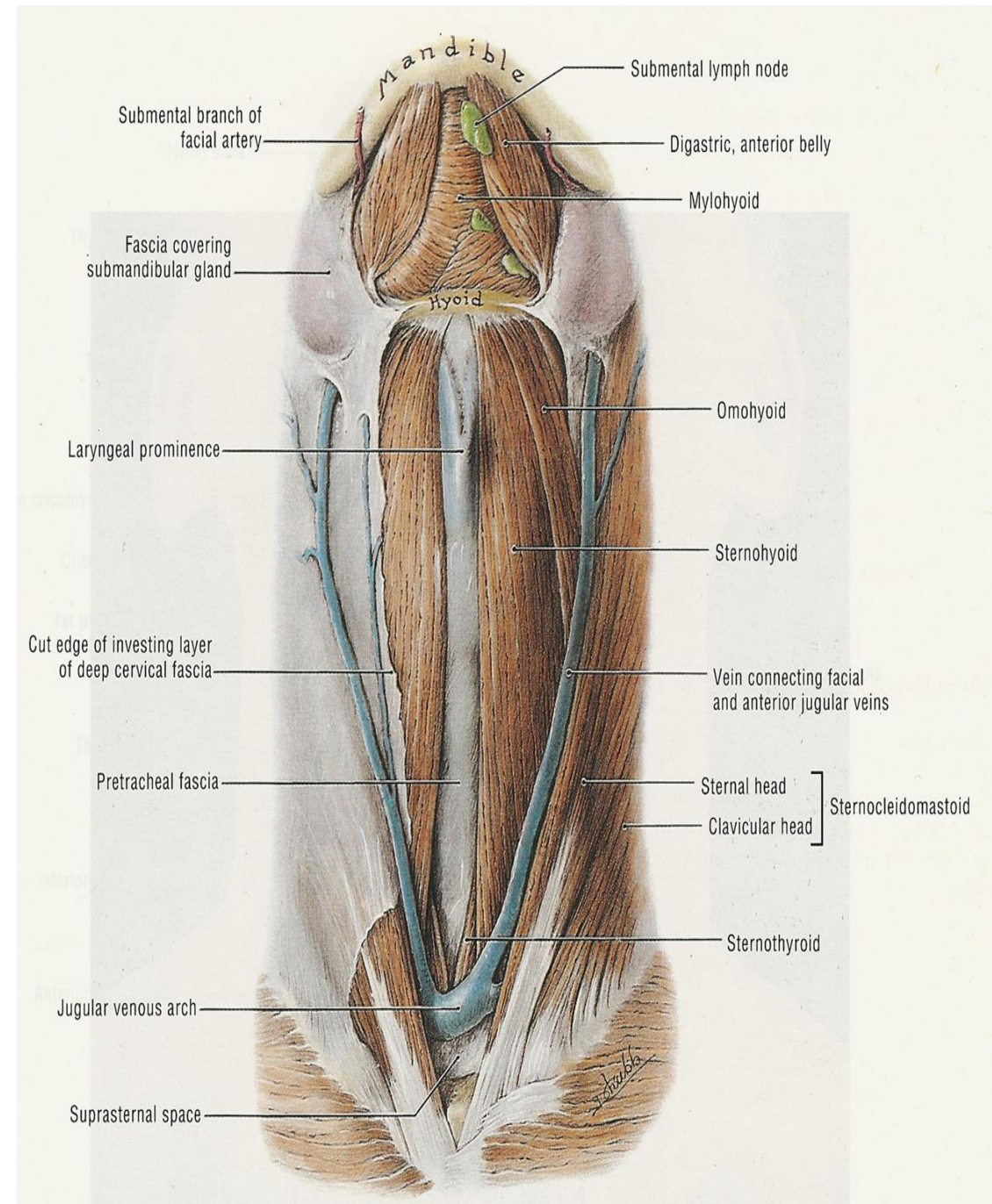
Apex : Symphysis menti.

Floor

Parts of both mylohyoid muscles as they meet each other in the median raphe.

Contents:

- 1. Submental lymph nodes.**
- 2. Submental vessels.**
- 3. nerve to mylohyoid.**



Digastric muscle

Origin:

Posterior belly from the medial surface of mastoid process (mastoid notch).

Anterior belly from lower border of the body of the mandible (digastric fossa).

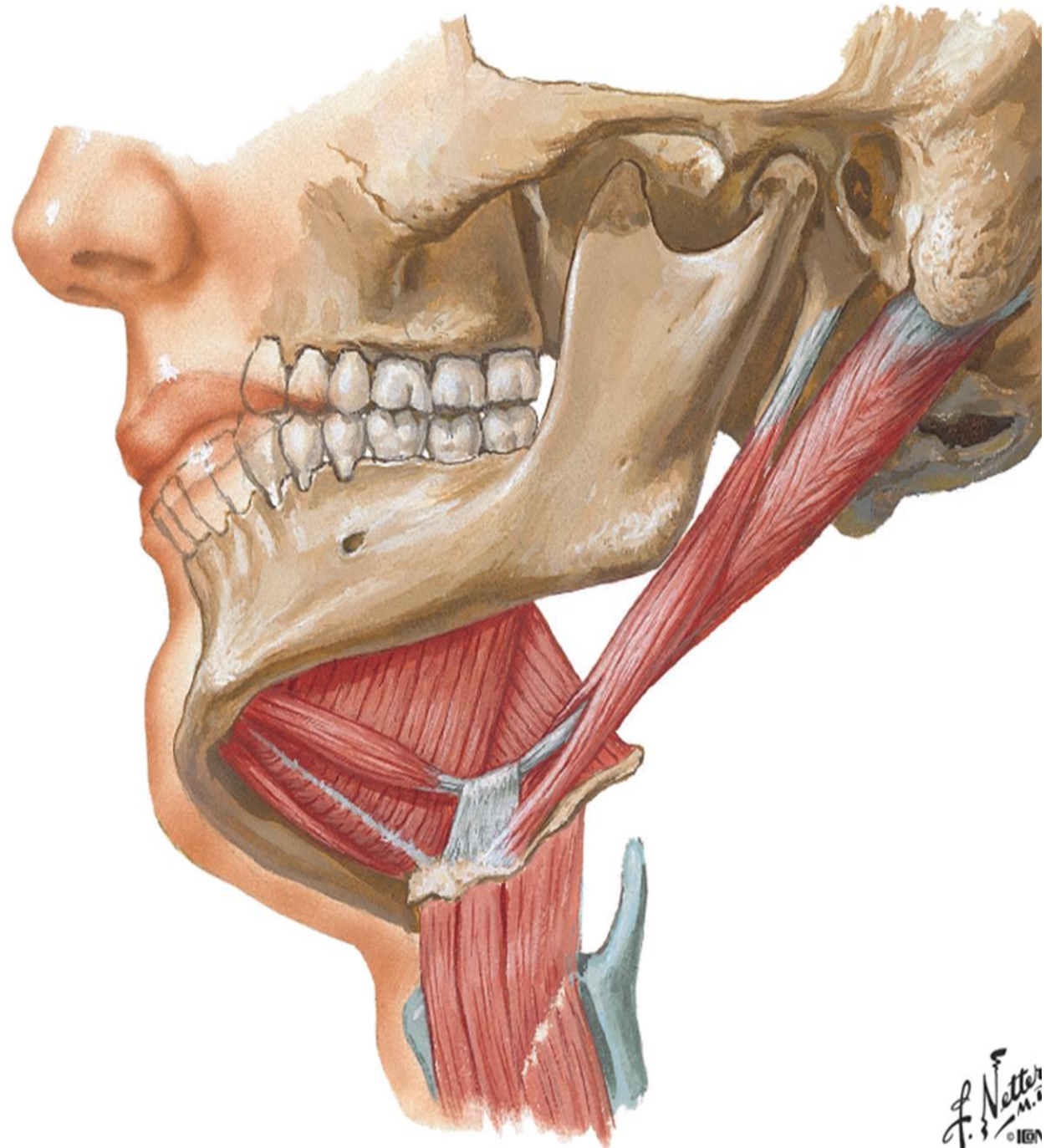
Insertion: to the intermediate tendon which is held in position by fibrous loop to the hyoid bone, this tendon pierces the stylohyoid muscle.

Nerve supply:

posterior belly from facial nerve (with stylohyoid),

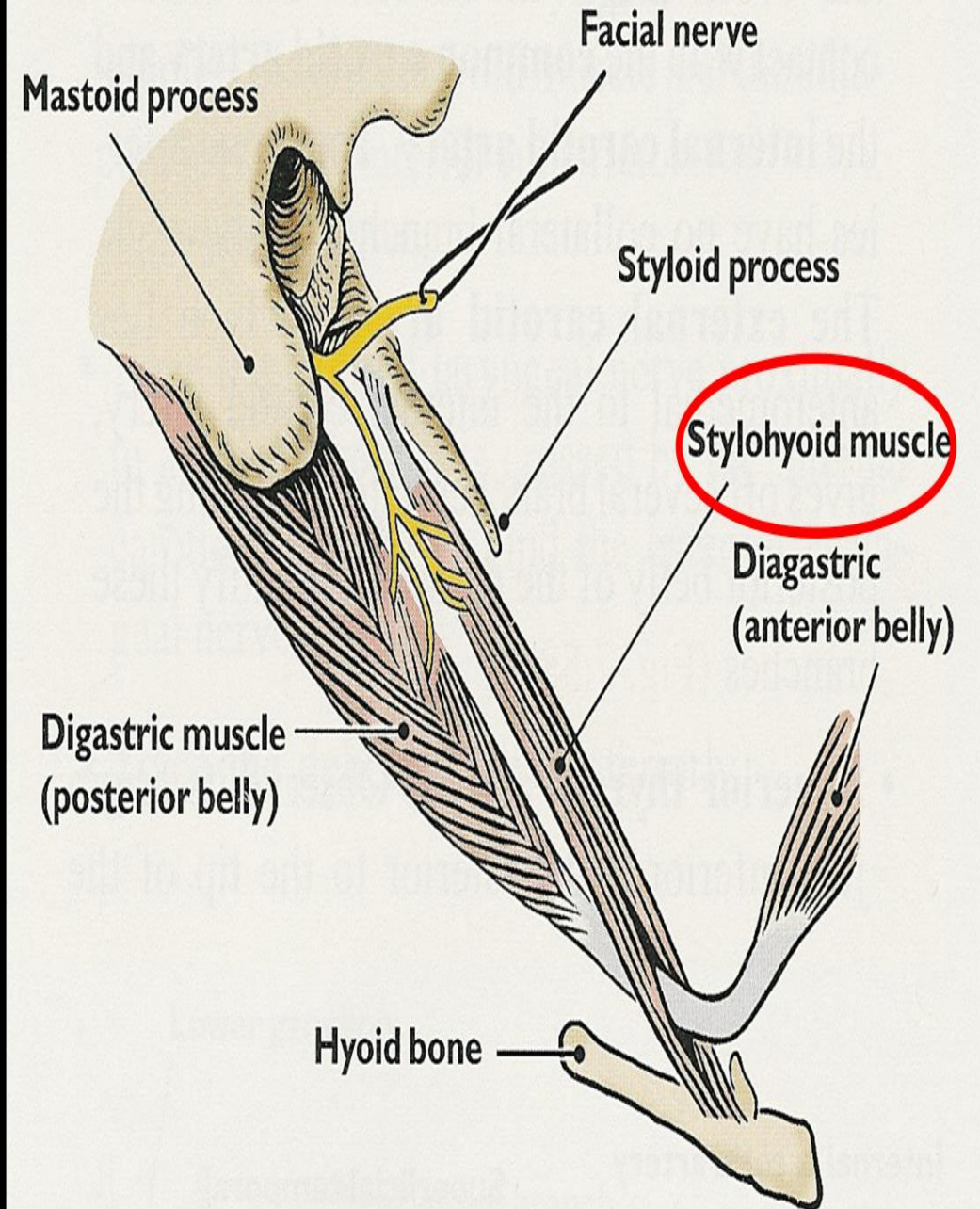
anterior belly from nerve to mylohyoid from mandibular (with mylohyoid)

Action: Depression of mandible and elevation of the hyoid bone.



Stylohyoid muscle

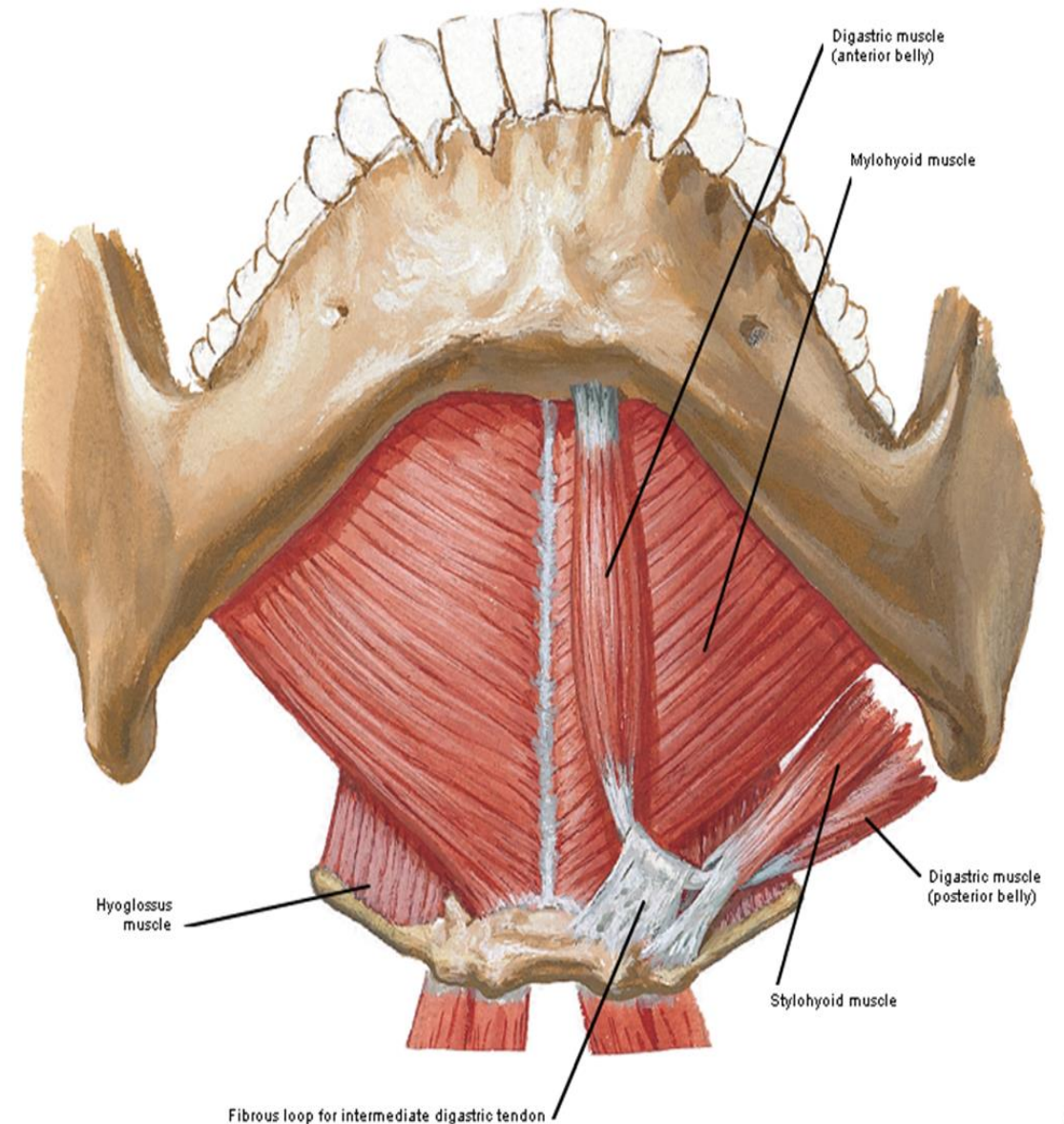
- **Origin:** Styloid process.
- **Insertion:** at junction between body and greater horn of hyoid bone, it is pierced by the intermediate tendon of digastric muscle.
- **Nerve supply:** Facial nerve.
- **Action:** Elevation of the hyoid bone.



Mylohyoid muscle

- └ **Origin:** Mylohyoid line of the inner surface of the mandible.
- └ **Insertion:** Upper surface of the body of the hyoid bone and in the mylohyoid raphe.
- └ **Nerve supply:** Nerve to mylohyoid from inferior alveolar nerve from posterior division of mandibular nerve.
- └ **Action:** the two muscles
 1. Support the floor of the mouth.
 2. Elevate the floor of the mouth and hyoid bone in first stage of swallowing.
 3. Depress the mandible and open the mouth.

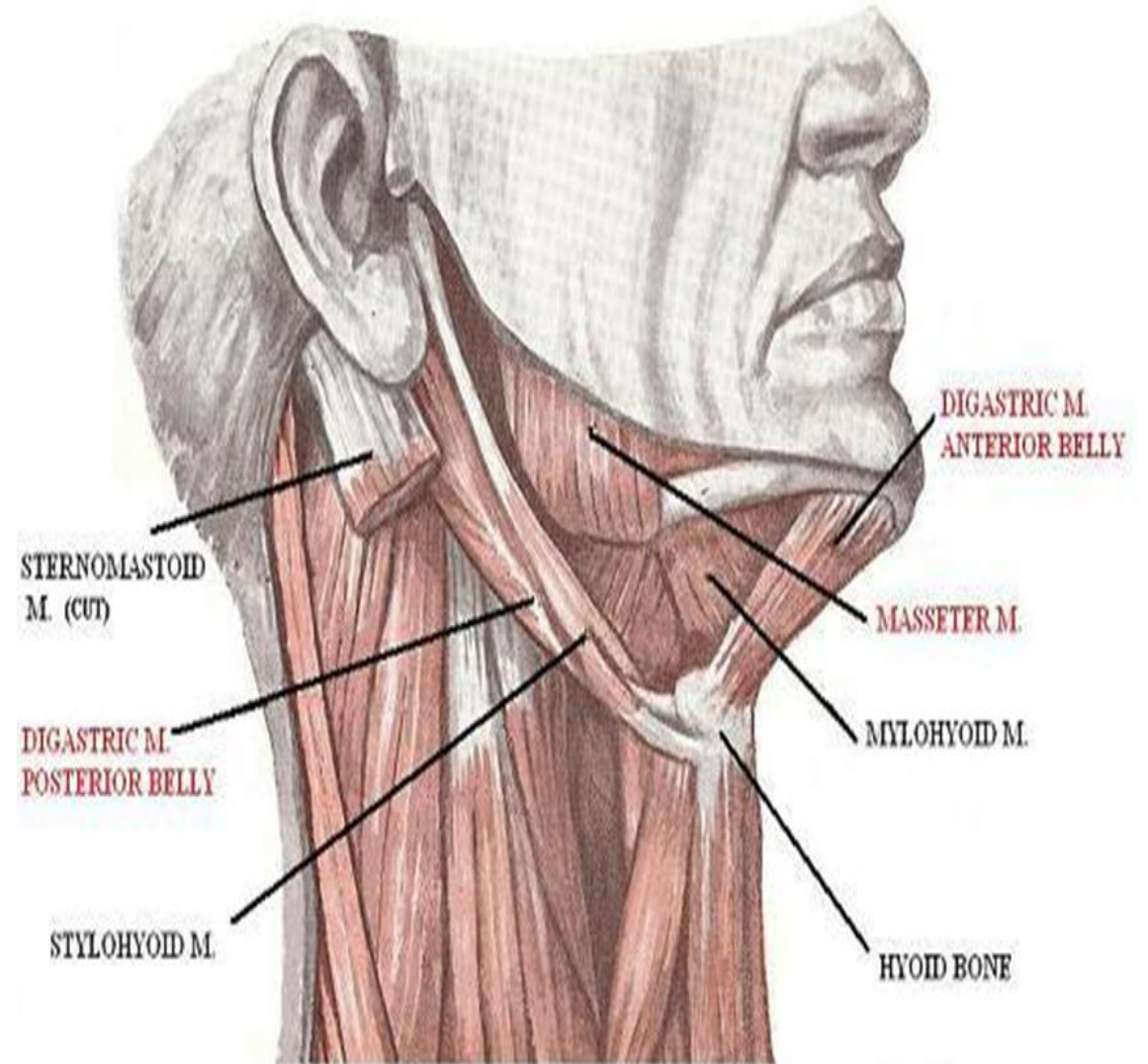
Floor of Mouth - Musculature
Anteroinferior View



Digastric Triangle

Boundaries:

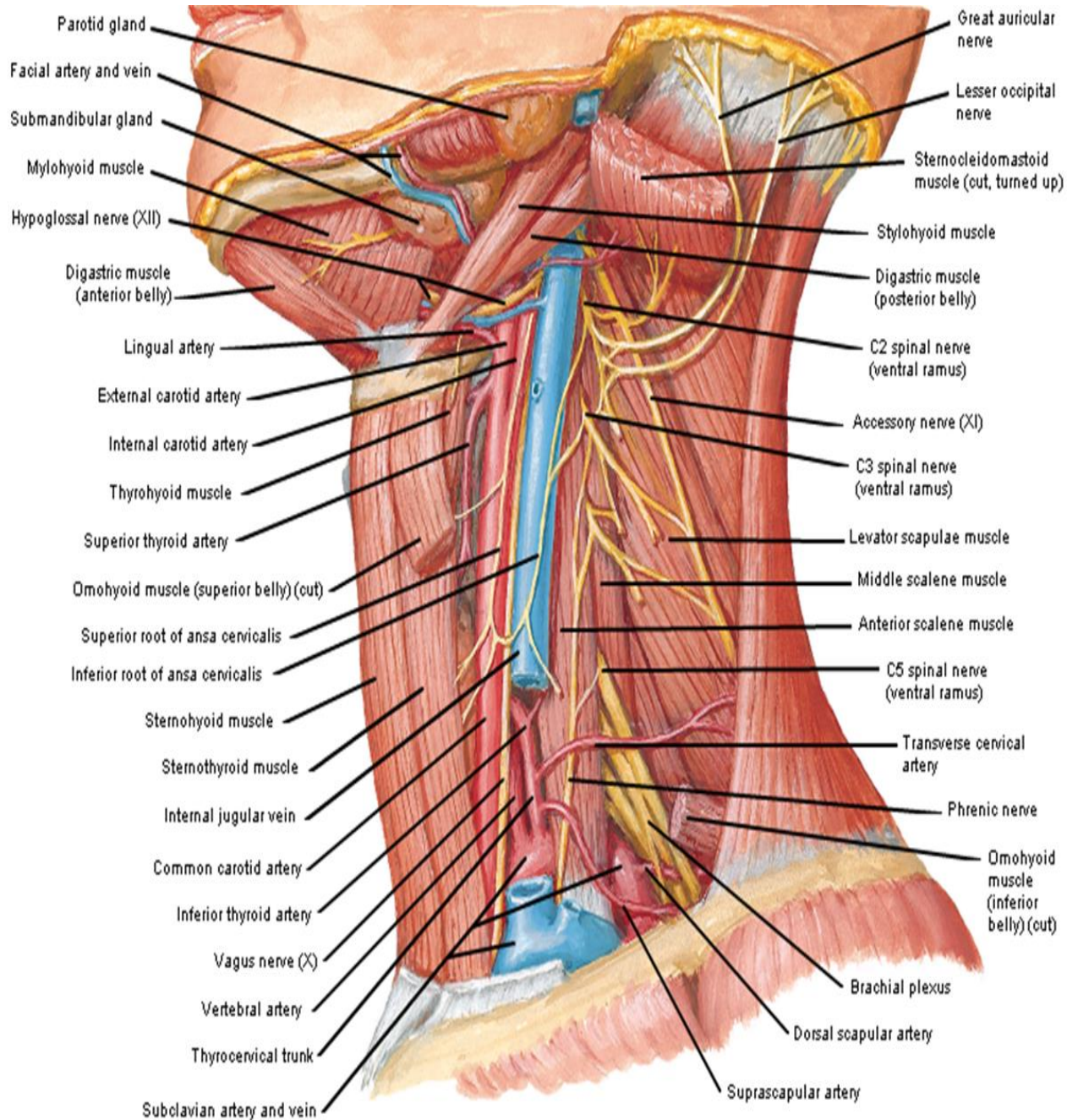
- **Anteriorly:** anterior belly of digastric.
- **Posteriorly:** posterior belly of digastric and stylohyoid.
- **Superiorly:** lower border of body of mandible.
- **Floor:** mylohyoid anteriorly and hyoglossus posteriorly.



Digastric Triangle

Contents:

1. Submandibular salivary gland.
2. Submandibular lymph nodes.
3. Facial artery and vein.
4. Hypoglossal nerve.
5. Nerve and vessels to mylohyoid.



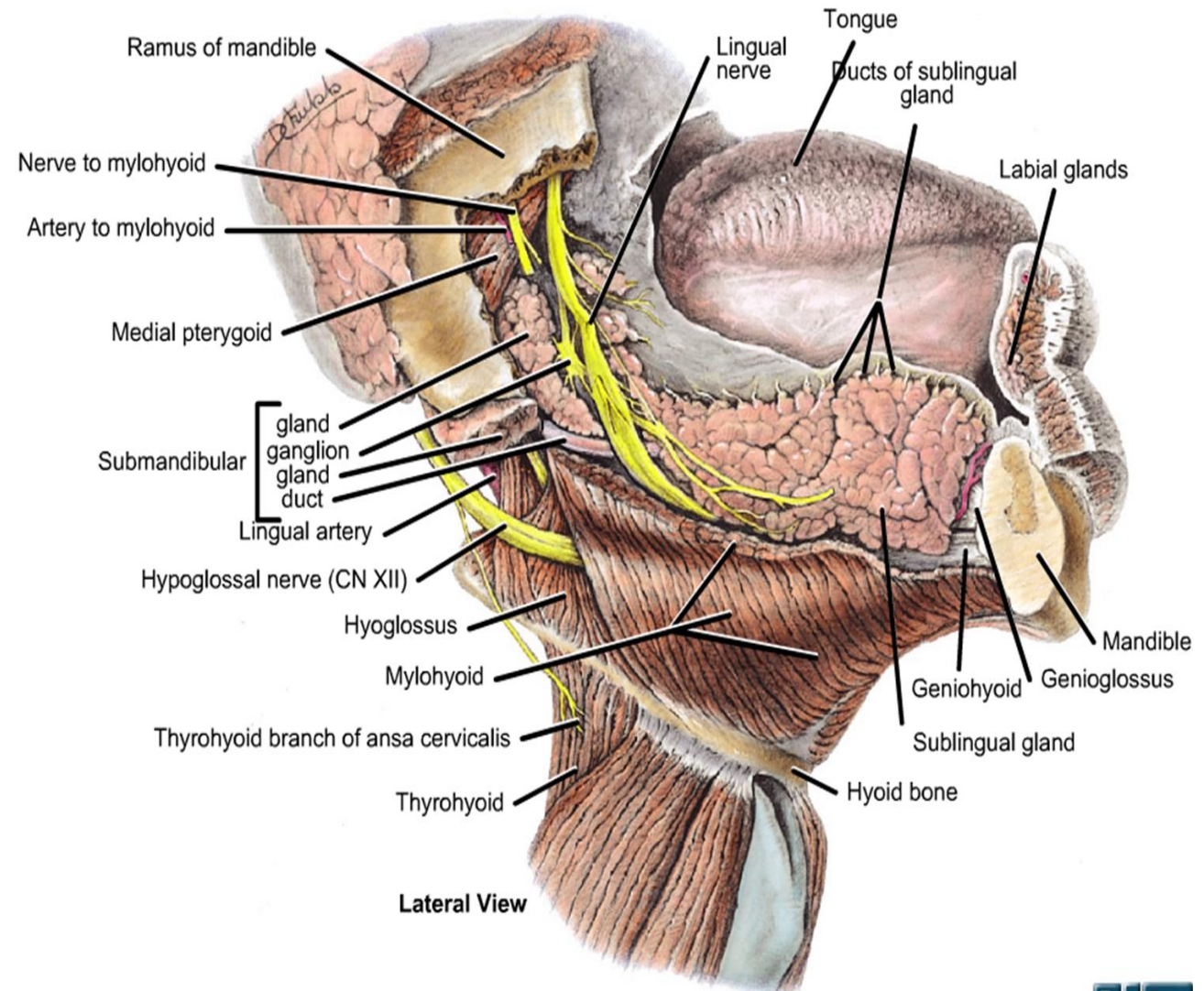
Hyoglossus muscle

ORIGIN: UPPER BORDER OF THE BODY AND GREATER HORN OF THE HYOID BONE.

INSERTION: AT THE SIDE OF THE TONGUE MIXING WITH OTHER LINGUAL MUSCLES.

NERVE SUPPLY: HYPOGLOSSAL NERVE.

ACTION: DEPRESSION OF THE TONGUE.



Carotid triangle

Boundaries:

posterior: Anterior border of sternomastoid muscle.

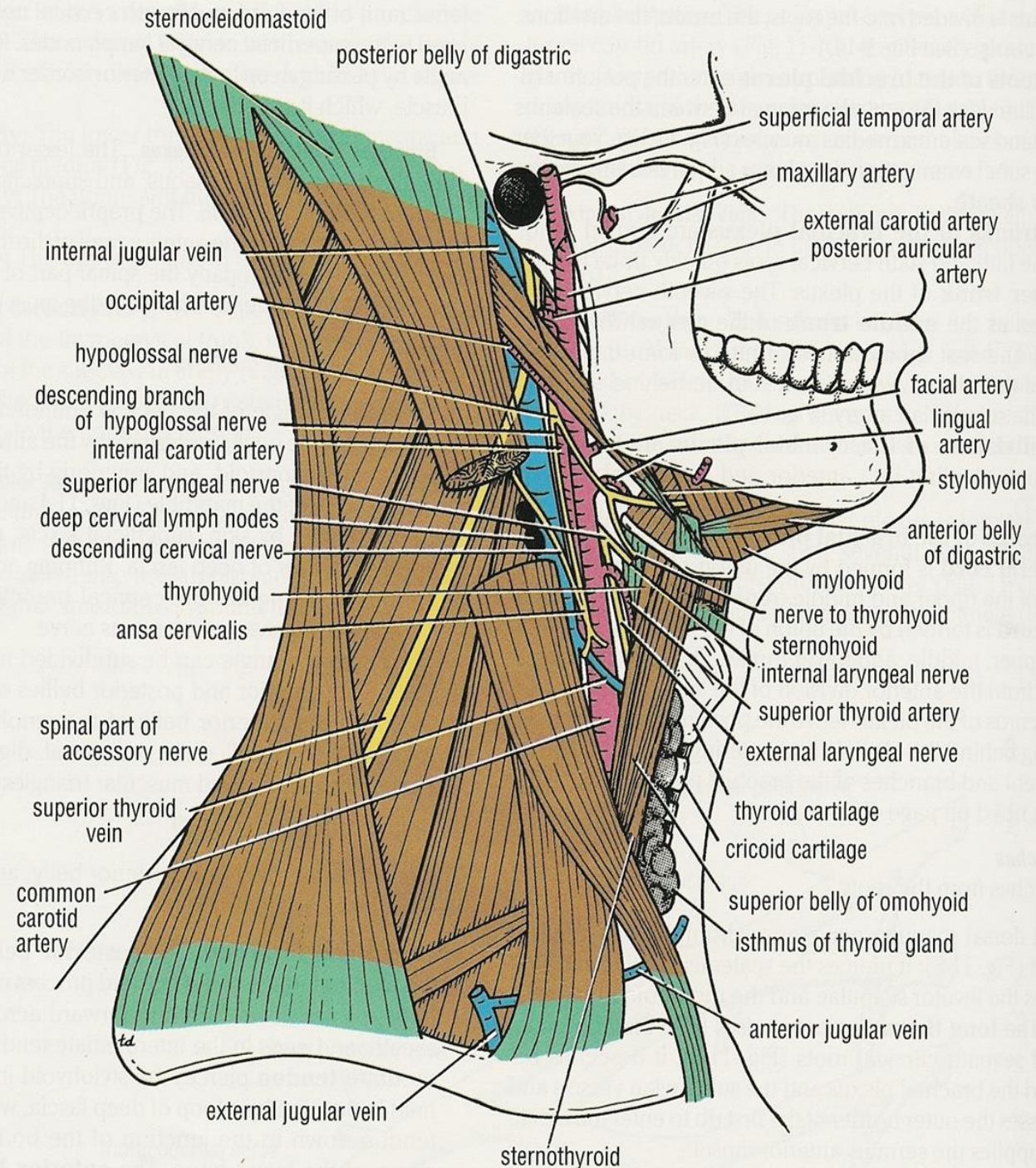
Above: Posterior belly of digastric and stylohyoid muscles.

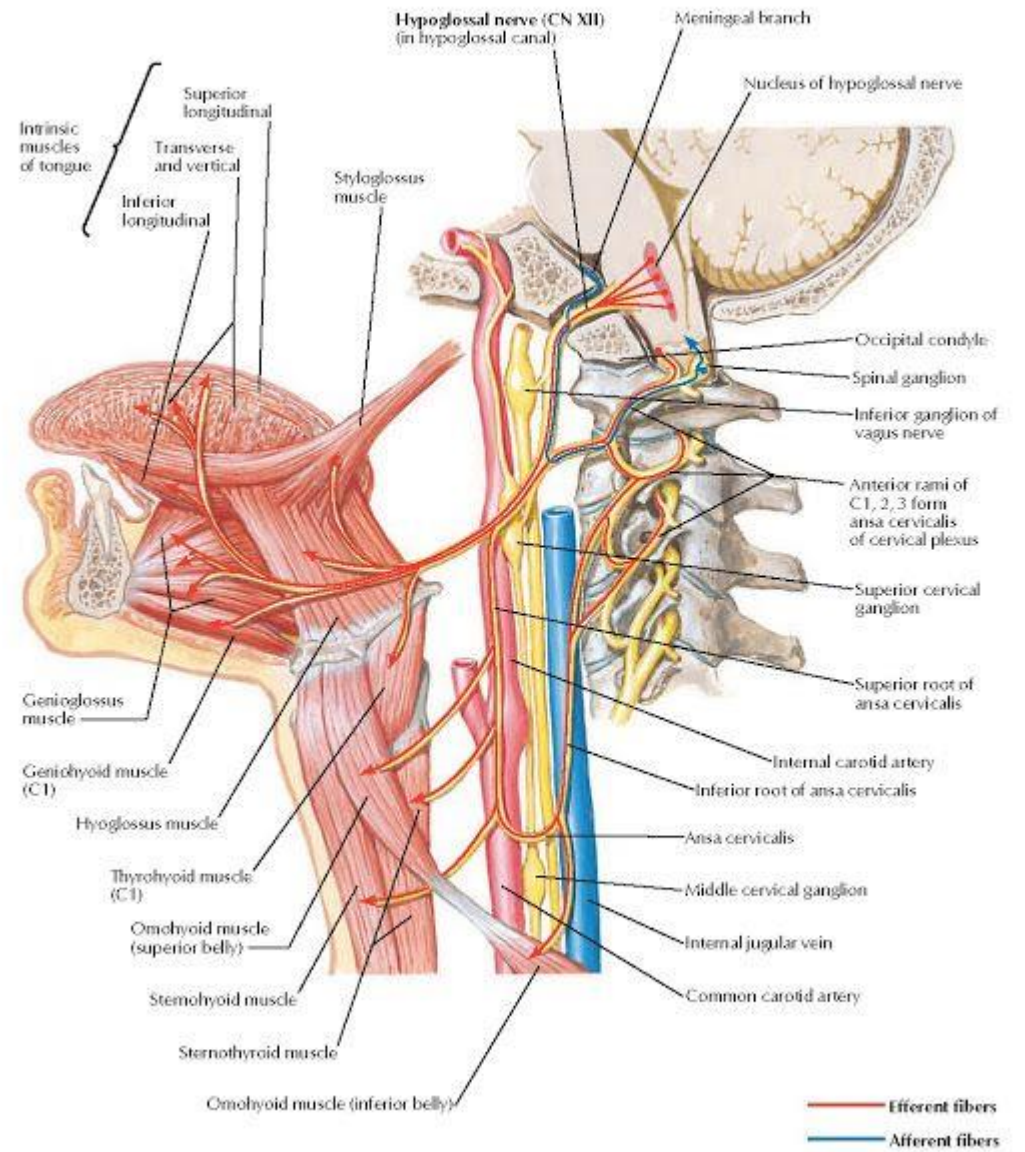
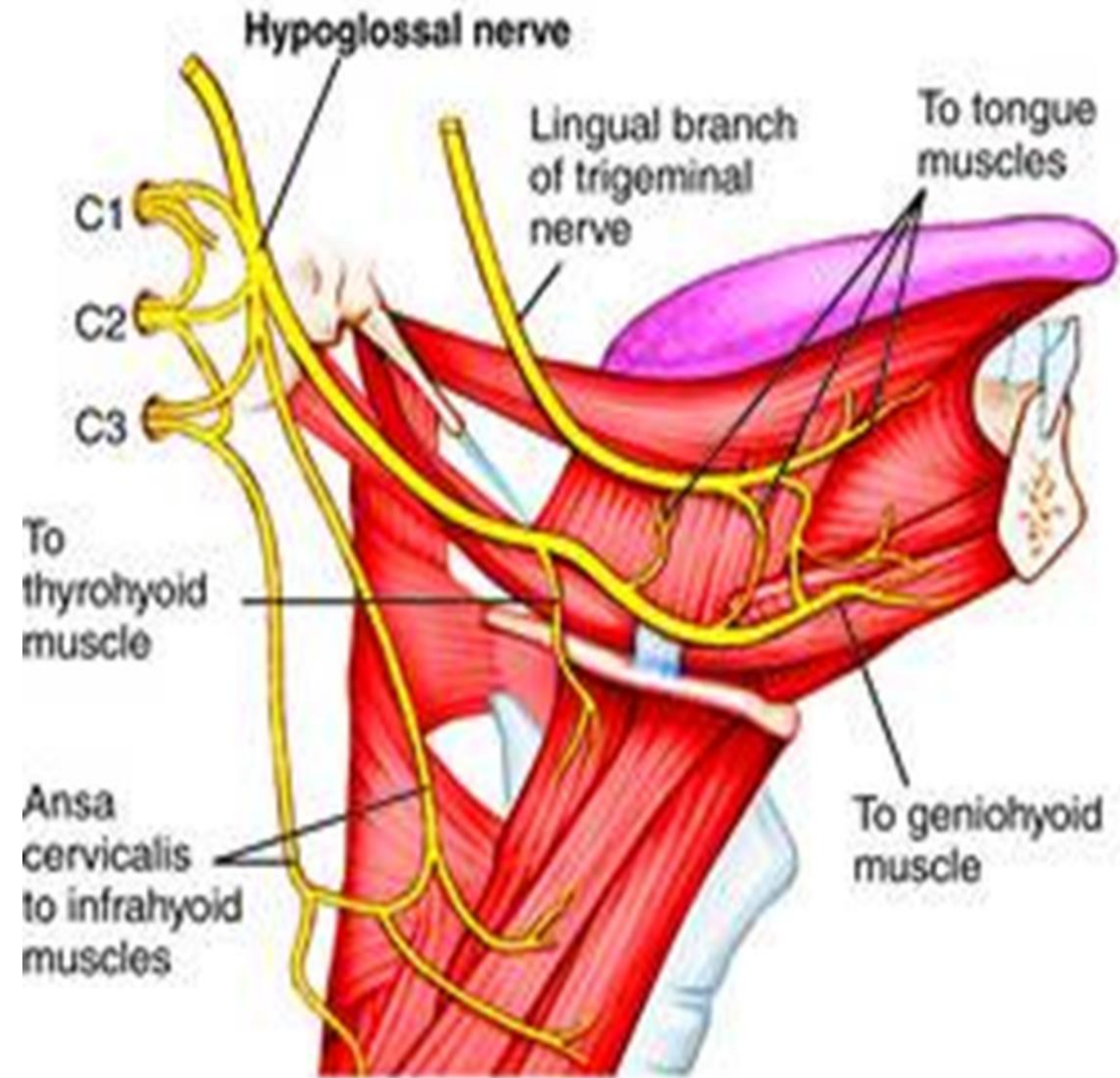
anterior: Superior belly of omohyoid muscle.

Floor:

Anterior: Thyrohyoid and hyoglossus.

Posterior: Middle and inferior constrictors of pharynx.





Contents:

A) Carotid sheath: It is a tube of deep fascia surrounding the common & internal carotid arteries medially, internal jugular vein laterally and vagus nerve in between.

B) Arteries: (3 carotid arteries)

1. Upper part of common carotid artery (CCA) divides opposite the upper border of thyroid cartilage into external and internal carotid arteries.

2. External carotid artery (ECA): It ascends anteromedial to internal carotid artery, outside the carotid sheath and gives 5 branches in the triangle:

a. Superior thyroid artery: It passes downwards and forwards.

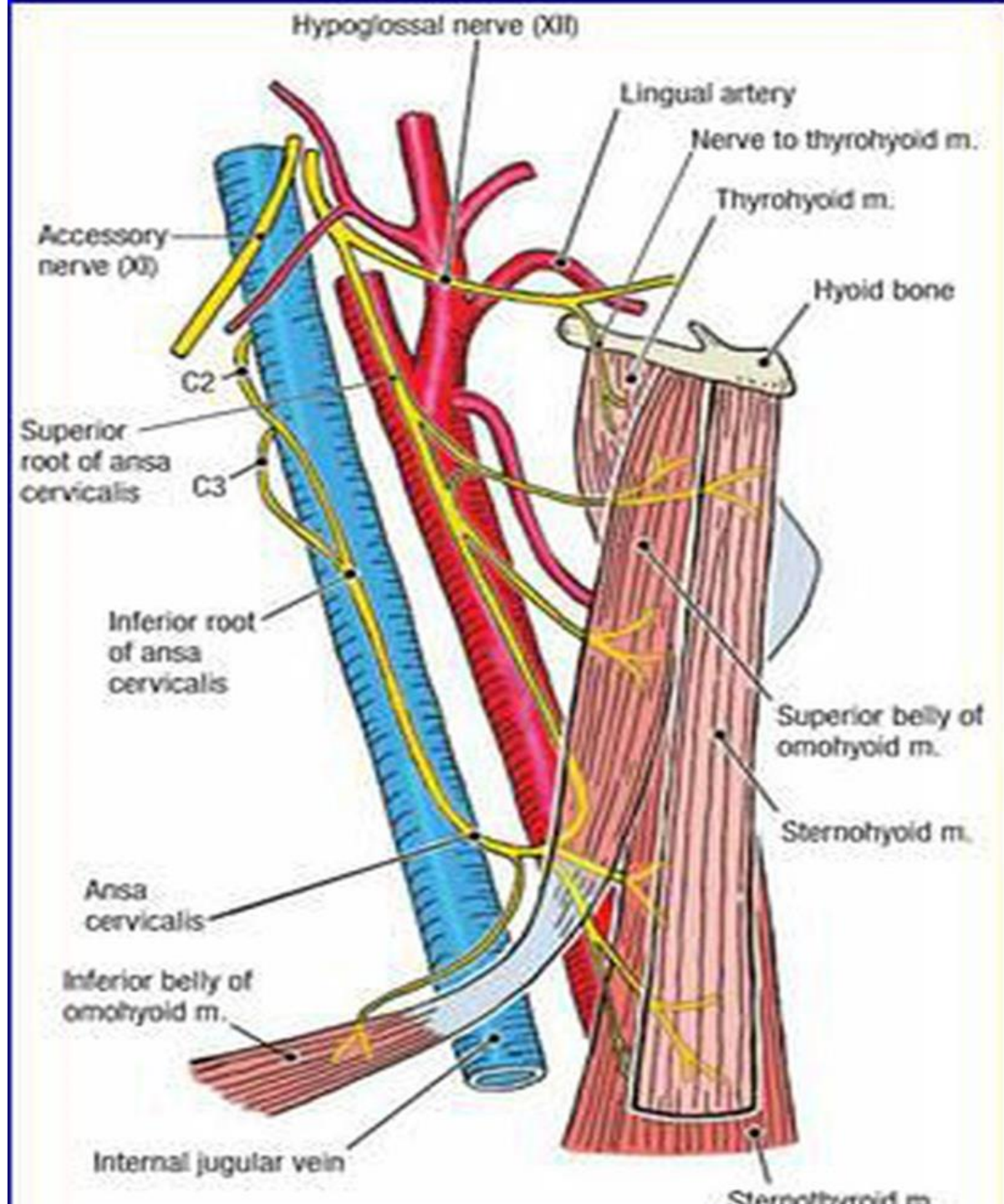
b. Lingual artery: It runs forwards with an upward loop opposite the tip of the greater horn of hyoid bone.

c. Facial artery: It runs forwards and upwards above the lingual artery.

d. Occipital artery: It passes upwards and backwards along the lower border of the posterior belly of digastric muscle.

e. Ascending pharyngeal artery: It is directed upwards on the medial side of external carotid artery.

3. Internal carotid artery (ICA): It lies posterolateral to external carotid artery and gives no branches in the neck.



c) Veins:

1- Internal jugular vein (IJV) descends in the carotid sheath lateral to internal and common carotid arteries and some of its tributaries.

d) Nerves:

1. Vagus nerve (10th cranial nerve) passes in the carotid sheath behind and between CCA and IJV .

2. Hypoglossal nerve (12th cranial nerve):

- **It crosses superficial to 3 arteries: internal carotid, external carotid and the loop of lingual artery.**

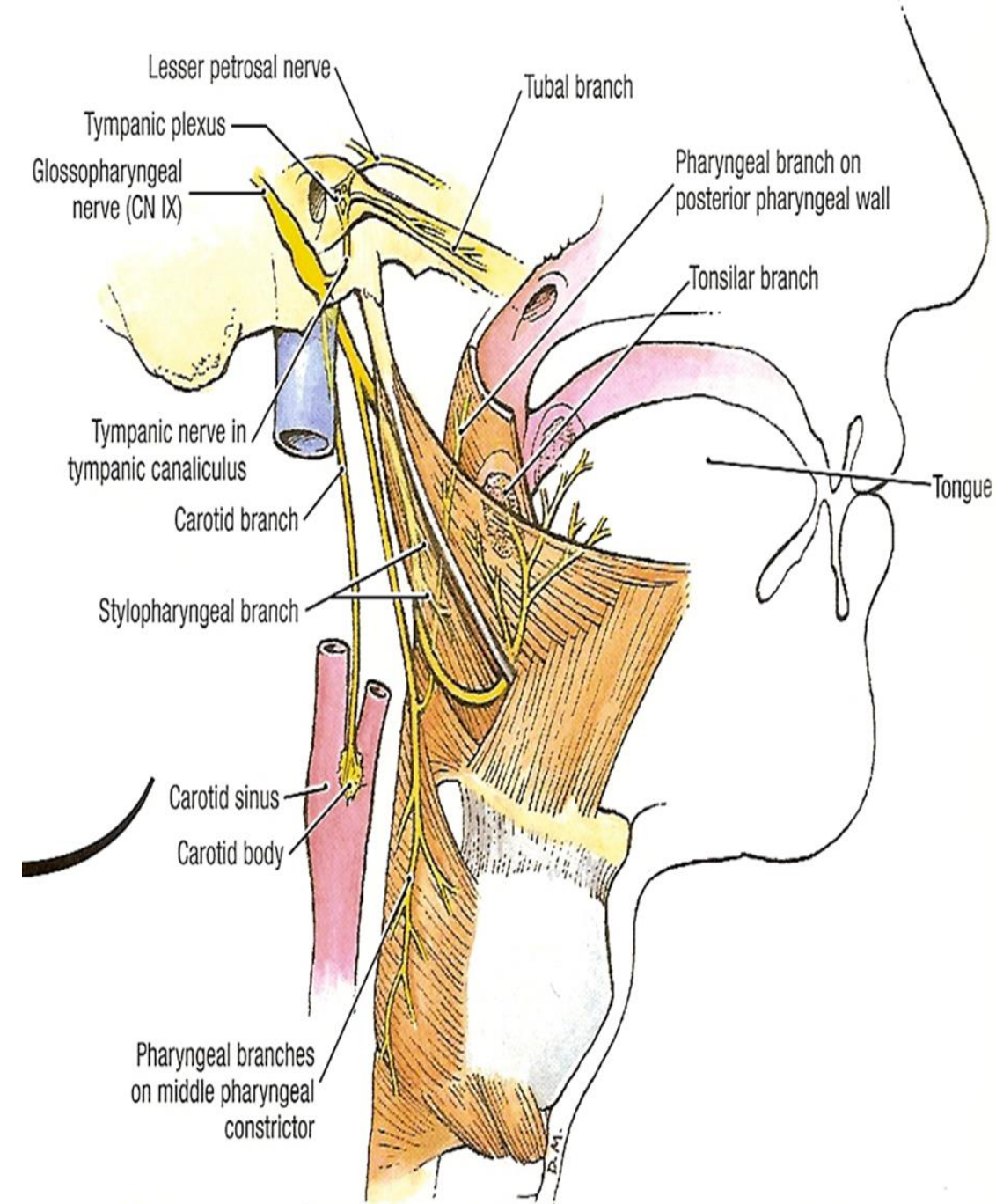
3-Ansa cervicalis is a nervous loop that descends in front of the carotid sheath and supply infra hyoid muscles.

4- Superior laryngeal nerve It lies deep to every artery.

5-spinal root of accessory nerve runs downwards and backwards in the upper angle of the triangle

6- sympathetic trunk embedded in the posterior wall of the carotid sheath.

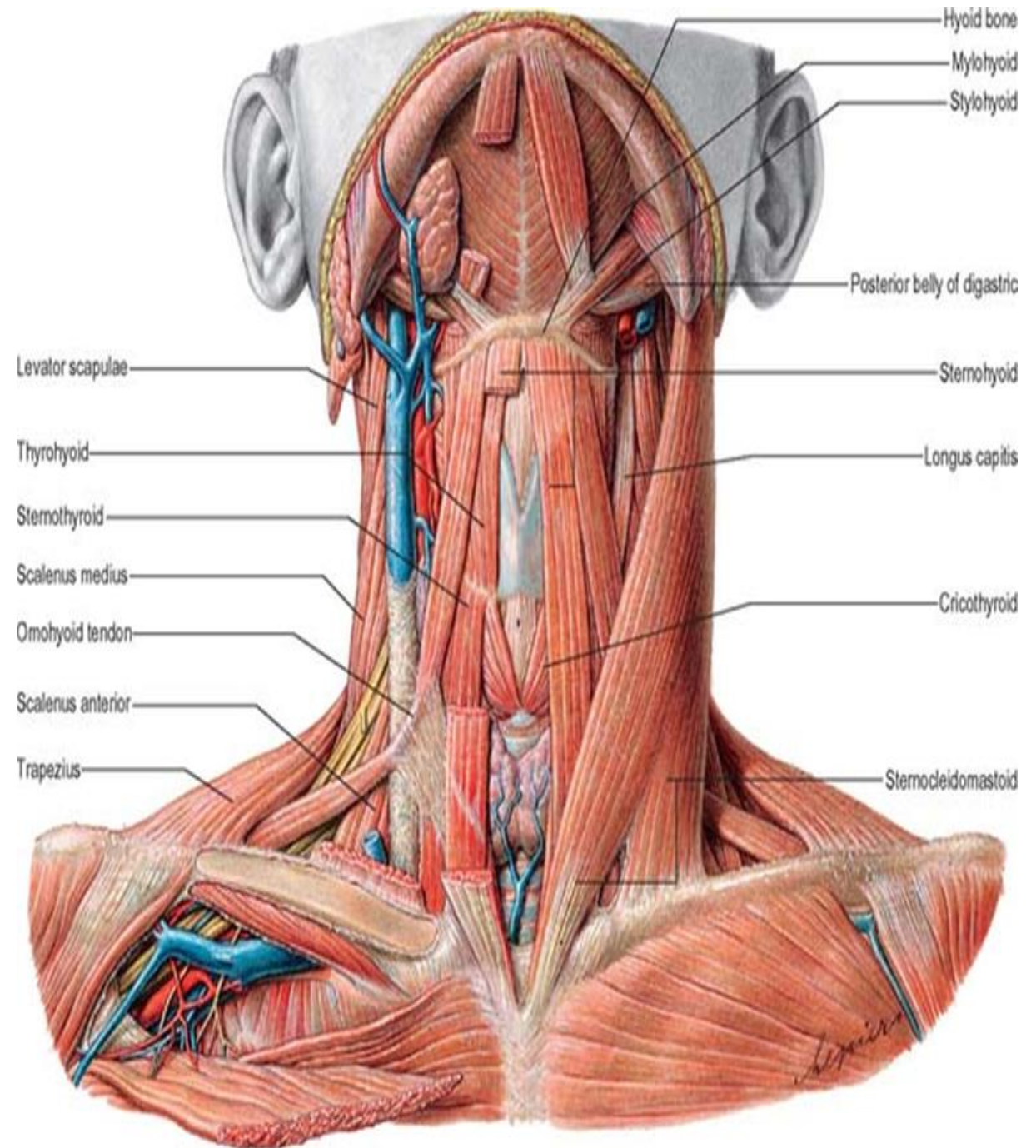
E)Deep cervical lymph nodes: Related to IJV.



Muscular triangle

Boundaries:

1. **Medially** Midline of the neck from the hyoid bone to the sternum.
2. **Above and lateral:** Superior belly of omohyoid.
3. **Below and lateral:** Anterior border of sternomastoid.
4. **Floor:** Thyroid cartilage, cricoid cartilage, thyrohyoid membrane.
5. **Roof:** Skin, platysma, anterior jugular vein and deep fascia.



• Contents

1. infrahyoid muscles: Sternohyoid, sternothyroid omohyoid and thyrohyoid.

2. Structures in the median region of the neck below the hyoid bone:

A. Thyrohyoid membrane

B. thyroid cartilage

C. cricoid cartilage

D. cricothyroid membrane

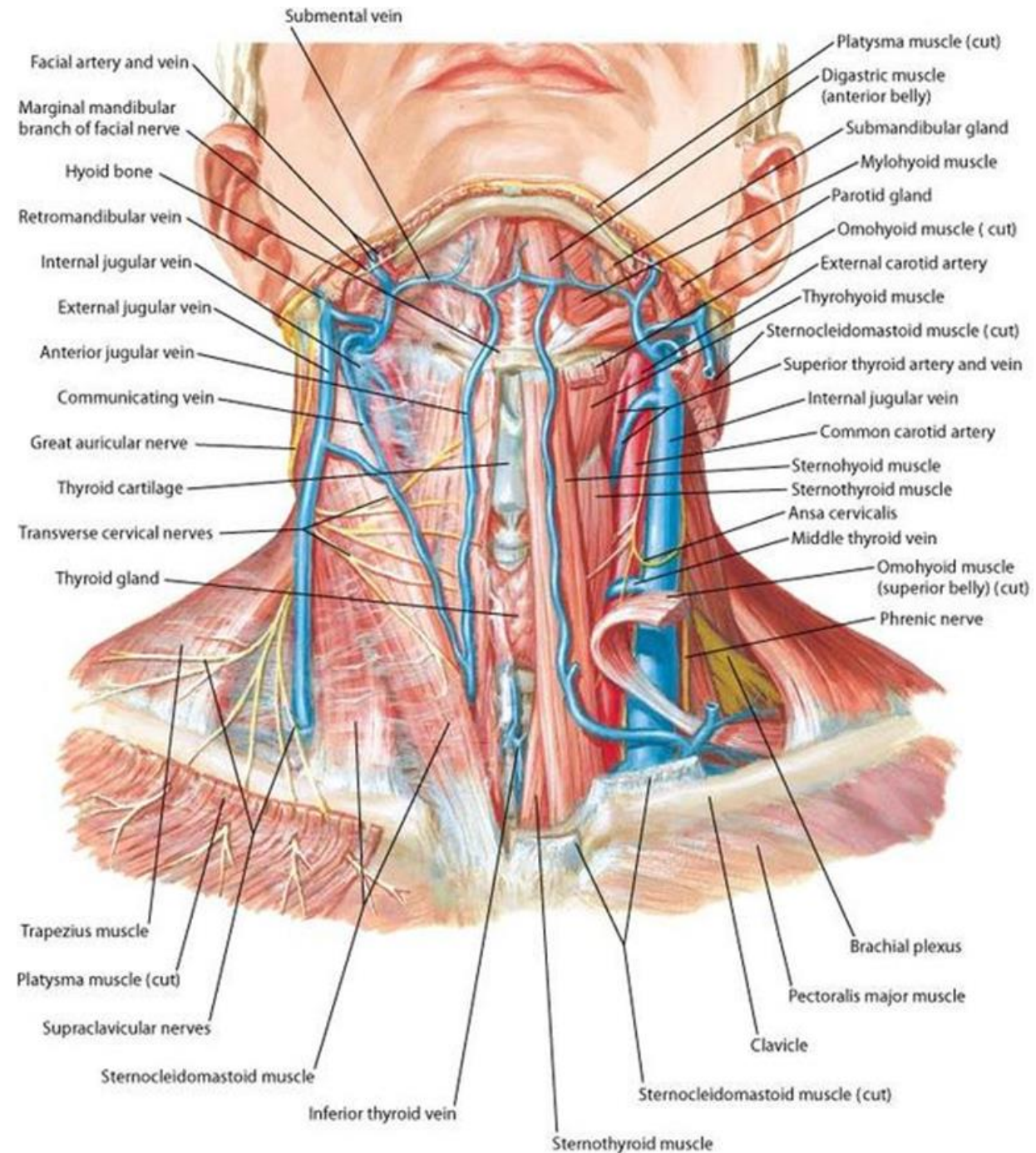
E. cricothyroid muscle

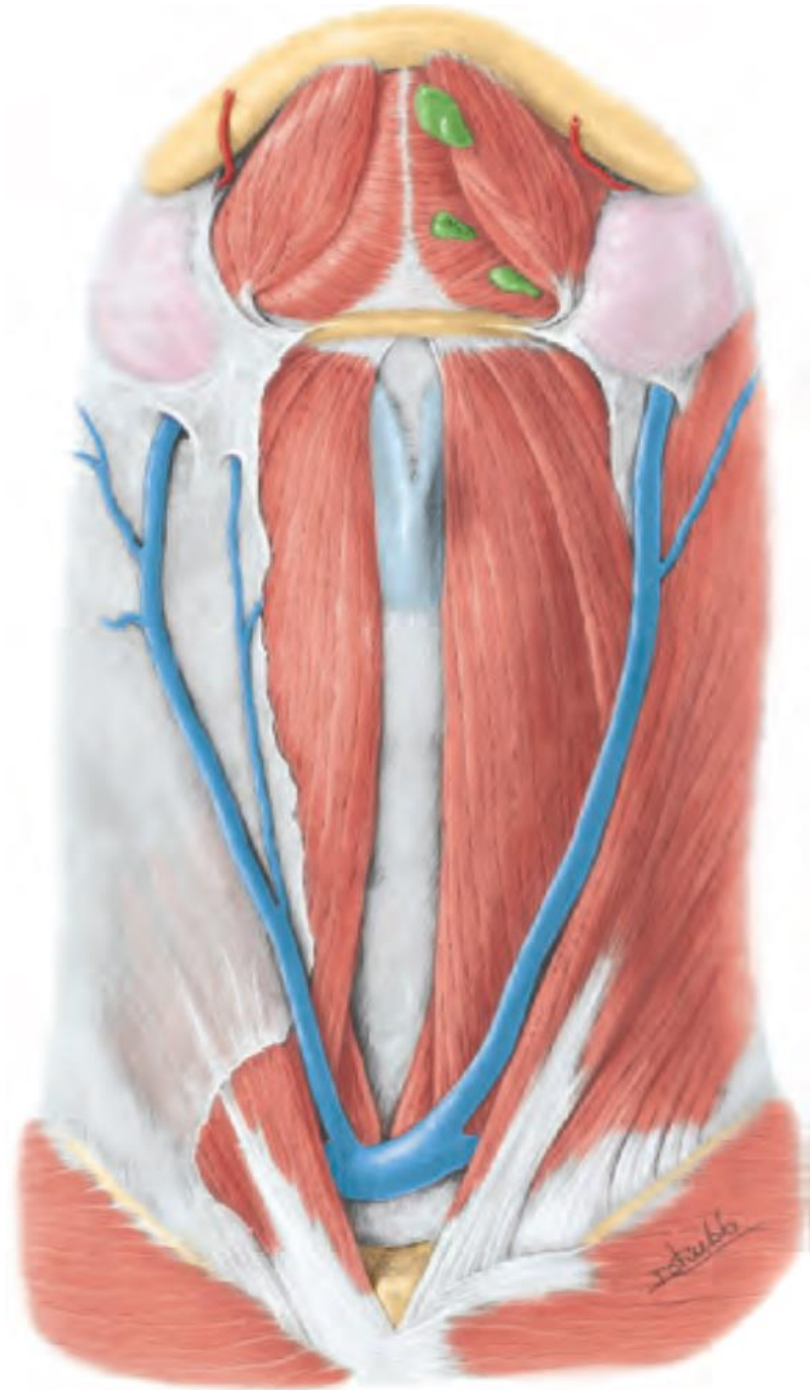
F. isthmus of thyroid gland

G. jugular arch

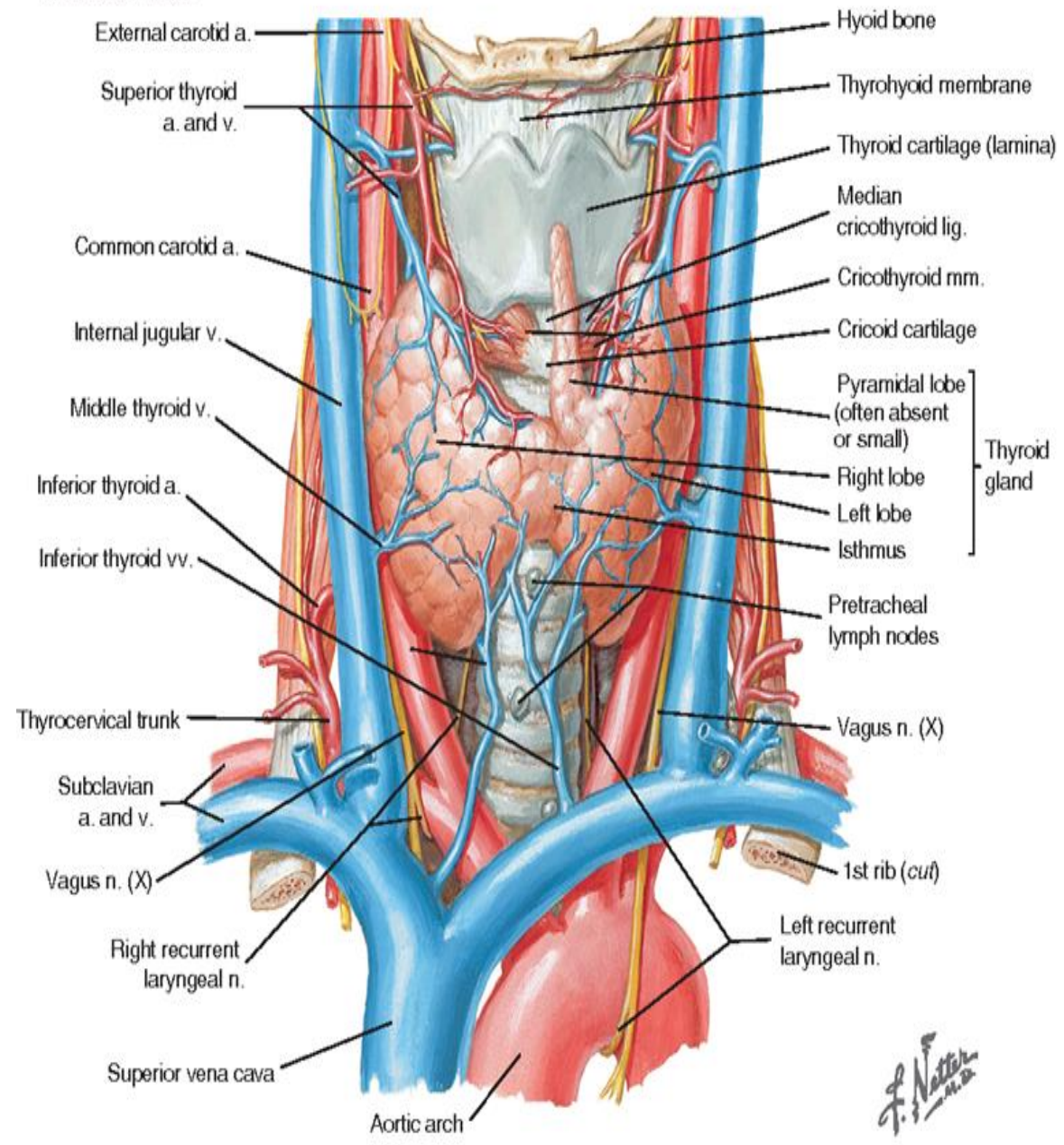
H. inferior thyroid veins.

3- Prelaryngeal and pretracheal lymph nodes.





Anterior view



Infrahyoid muscles

1-Sternohyoid muscle

Origin: Posterior surface of manubrium sterni and back of medial part of the clavicle.

Insertion: lower border of the body of hyoid bone.

Nerve supply: Ansa cervicalis.

Action: Depression of the hyoid bone.

2- Omohyoid muscle

Origin:

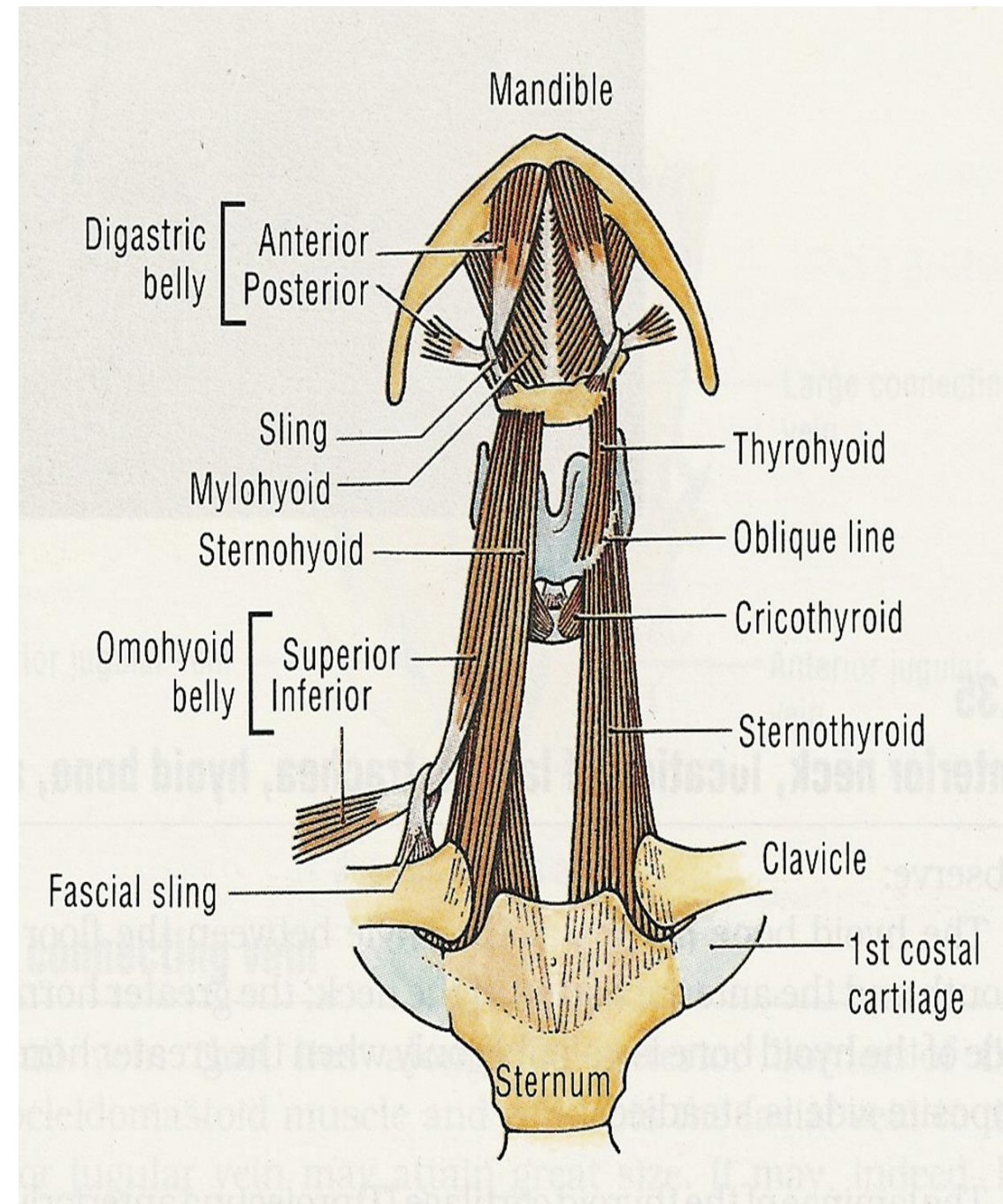
Superior belly from the inferior border of body of hyoid bone.

Inferior belly from upper border of scapula and suprascapular ligament.

Insertion: to the intermediate tendon which is held in position by fibrous loop to the clavicle.

Nerve supply: Ansa cervicalis (C1,2,3)

Action: Depression of hyoid bone.



3- Sternothyroid muscle

Origin: Posterior surface of upper part of manubrium sterni and back of medial part of the clavicle.

Insertion: oblique line of lamina of thyroid cartilage.

Nerve supply: Ansa cervicalis.

Action: Depression of the larynx and thyroid cartilage.

4-Thyrohyoid muscle

Origin: oblique line of lamina of thyroid cartilage.

Insertion: lower border of the body of hyoid bone.

Nerve supply: First cervical nerve through the hypoglossal nerve.

Action:

Depression of the hyoid bone
elevation of thyroid cartilage and larynx.

