

# Head and Neck Muscles

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**Table 13-2** Muscles of the Head

Muscle	Origin	Insertion	Nerve Supply	Action
<b>Muscle of Scalp</b>				
Occipitofrontalis	Highest nuchal line of occipital bone	Epicranial aponeurosis	Facial nerve	Moves scalp on skull and raises eyebrows
Occipital belly				
Frontal belly	Skin and superficial fascia of eyebrows			
<b>Muscles of Facial Expression</b>				
Orbicularis oculi	Medial palpebral ligament	Lateral palpebral raphe	Facial nerve	Closes eyelids and dilates lacrimal sac
Palpebral part	Medial palpebral ligament and adjoining bone	Loops return to origin	Facial nerve	Throws skin around orbit into folds to protect eyeball
Orbital part	Superciliary arch	Skin of eyebrow	Facial nerve	Vertical wrinkles of forehead, as in frowning
Corrugator supercilii				
Compressor nasi	Frontal process of maxilla	Aponeurosis of bridge of nose	Facial nerve	Compresses mobile nasal cartilages
Dilator naris	Maxilla	Ala of nose	Facial nerve	Widens nasal aperture
Procerus	Nasal bone	Skin between eyebrows	Facial nerve	Wrinkles skin of nose
Orbicularis oris	Maxilla, mandible, and skin	Encircles oral orifice	Facial nerve	Compresses lips together
<b>Dilator Muscles of Lips</b>				
Levator labii superioris alaeque nasi	Arise from bones and fascia around oral aperture and insert into substance of lips	Facial nerve	Separate lips	
Levator labii superioris				
Zygomaticus minor				
Zygomaticus major				
Levator anguli oris				
Risorius				
Depressor labii inferioris				
Depressor anguli oris				
Mentalis	Outer surface of alveolar margins of maxilla and mandible and pterygomandibular ligament		Facial nerve	Compresses cheeks and lips against teeth
Buccinator	See Table 13-3			
Platysma				
<b>Muscles of Mastication</b>				
Masseter	Zygomatic arch	Lateral surface ramus of mandible	Mandibular division of trigeminal nerve	Elevates mandible to occlude teeth
Temporalis	Floor of temporal fossa	Coronoid process of mandible	Mandibular division of trigeminal nerve	Anterior and superior fibers elevate mandible; posterior fibers retract mandible

**Table 13-2** *(Continued)*

Muscle	Origin	Insertion	Nerve Supply	Action
Lateral pterygoid (two heads)	Greater wing of sphenoid and lateral pterygoid plate	Neck of mandible and articular disc	Mandibular division of trigeminal nerve	Pulls neck of mandible forward
Medial pterygoid (two heads)	Tuberosity of maxilla and lateral pterygoid plate	Medial surface of angle of mandible	Mandibular division of trigeminal nerve	Elevates mandible

<sup>a</sup>From Snell RS: Clinical Anatomy. 7th Ed. Philadelphia: Lippincott Williams & Wilkins, 2004, p. 772.

**Table 13-3** Muscles of the Neck

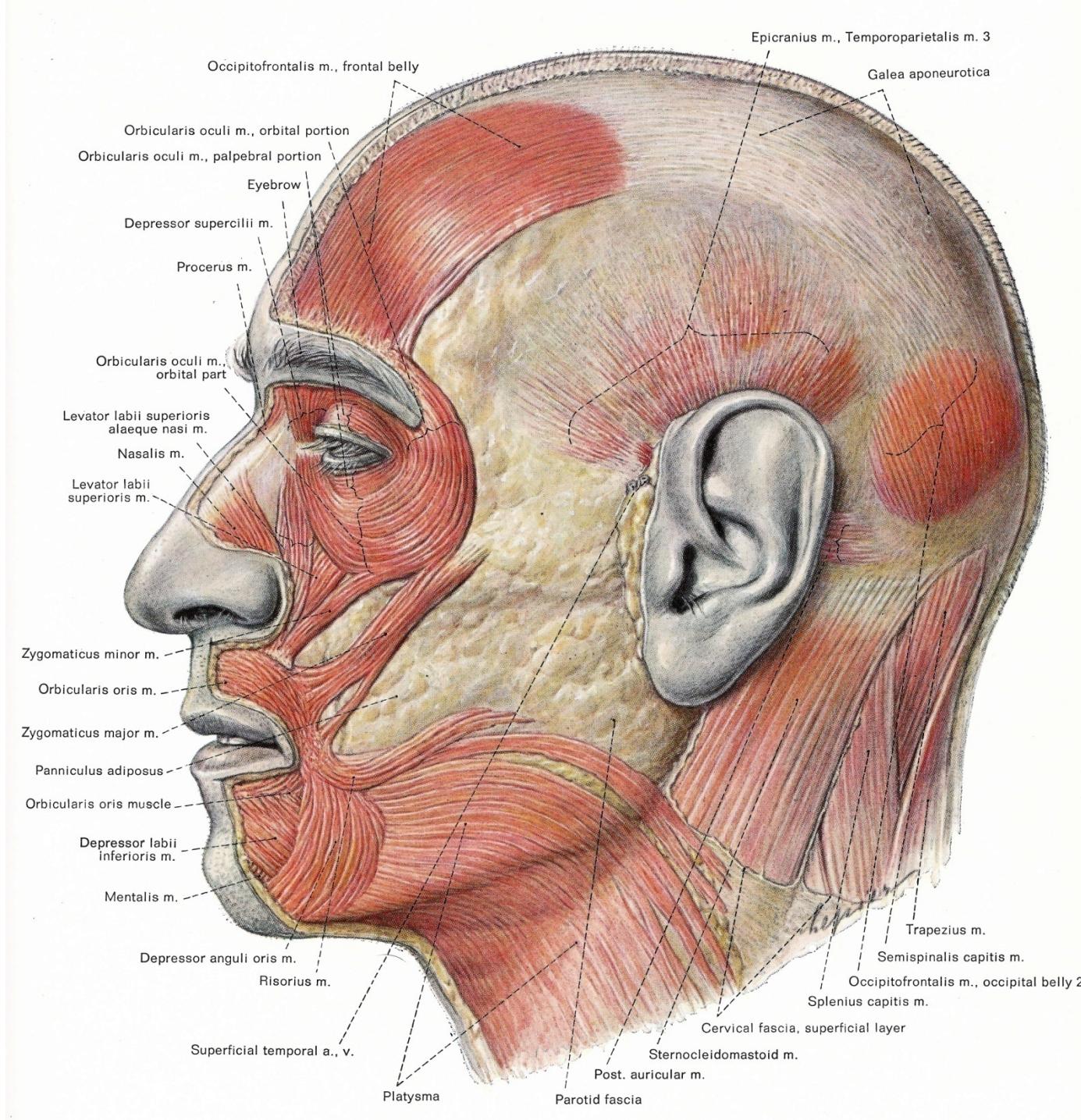
Muscle	Origin	Insertion	Nerve Supply	Action
Platysma	Deep fascia over pectoralis major and deltoid	Body of mandible and angle of mouth	Facial nerve, cervical branch	Depresses mandible and angle of mouth
Sternocleido-mastoid	Manubrium sterni and medial third of clavicle	Mastoid process of temporal bone and occipital bone	Spinal part of accessory nerve and C2 and 3	Two muscles acting together extend head and flex neck; one muscle rotates head to opposite side
Digastric Posterior belly	Mastoid process of temporal bone	Intermediate tendon is held to hyoid by fascial sling	Facial nerve	Depresses mandible or elevates hyoid bone
Anterior belly	Body of mandible		Nerve to mylohyoid	
Stylohyoid Mylohyoid	Styloid process Mylohyoid line of body of mandible	Body of hyoid bone Body of hyoid bone and fibrous raphe	Facial nerve Inferior alveolar nerve	Elevates hyoid bone Elevates floor of mouth and hyoid bone or depresses mandible
Geniohyoid	Inferior mental spine of mandible	Body of hyoid bone	First cervical nerve	Elevates hyoid bone or depresses mandible
Sternohyoid	Manubrium sterni and clavicle	Body of hyoid bone	Ansa cervicalis; C1, 2, and 3	Depresses hyoid bone
Sternothyroid	Manubrium sterni	Oblique line on lamina of thyroid cartilage	Ansa cervicalis; C1, 2, and 3	Depresses larynx
Thyrohyoid	Oblique line on lamina of thyroid cartilage	Lower border of body of hyoid bone	First cervical nerve	Depresses hyoid bone or elevates larynx
Omohyoid Inferior belly	Upper margin of scapula and suprascapular ligament	Intermediate tendon is held to clavicle and first rib by fascial sling	Ansa cervicalis; C1, 2, and 3	Depresses hyoid bone
Superior belly	Lower border of body of hyoid bone			
Scalenus anterior	Transverse processes of third, fourth, fifth, and sixth cervical vertebrae	First rib	C4, 5, and 6	Elevates first rib; laterally flexes and rotates cervical part of vertebral column
Scalenus medius	Transverse processes of upper six cervical vertebrae	First rib	Anterior rami of cervical nerves	Elevates first rib; laterally flexes and rotates cervical part of vertebral column
Scalenus posterior	Transverse processes of lower cervical vertebrae	Second rib	Anterior rami of cervical nerves	Elevates second rib; laterally flexes and rotates cervical part of vertebral column

(From Snell RS. Clinical Anatomy. 7<sup>th</sup> Ed. Philadelphia: Lippincott Williams & Wilkins, 2004, p. 754).

# Muscles of the scalp

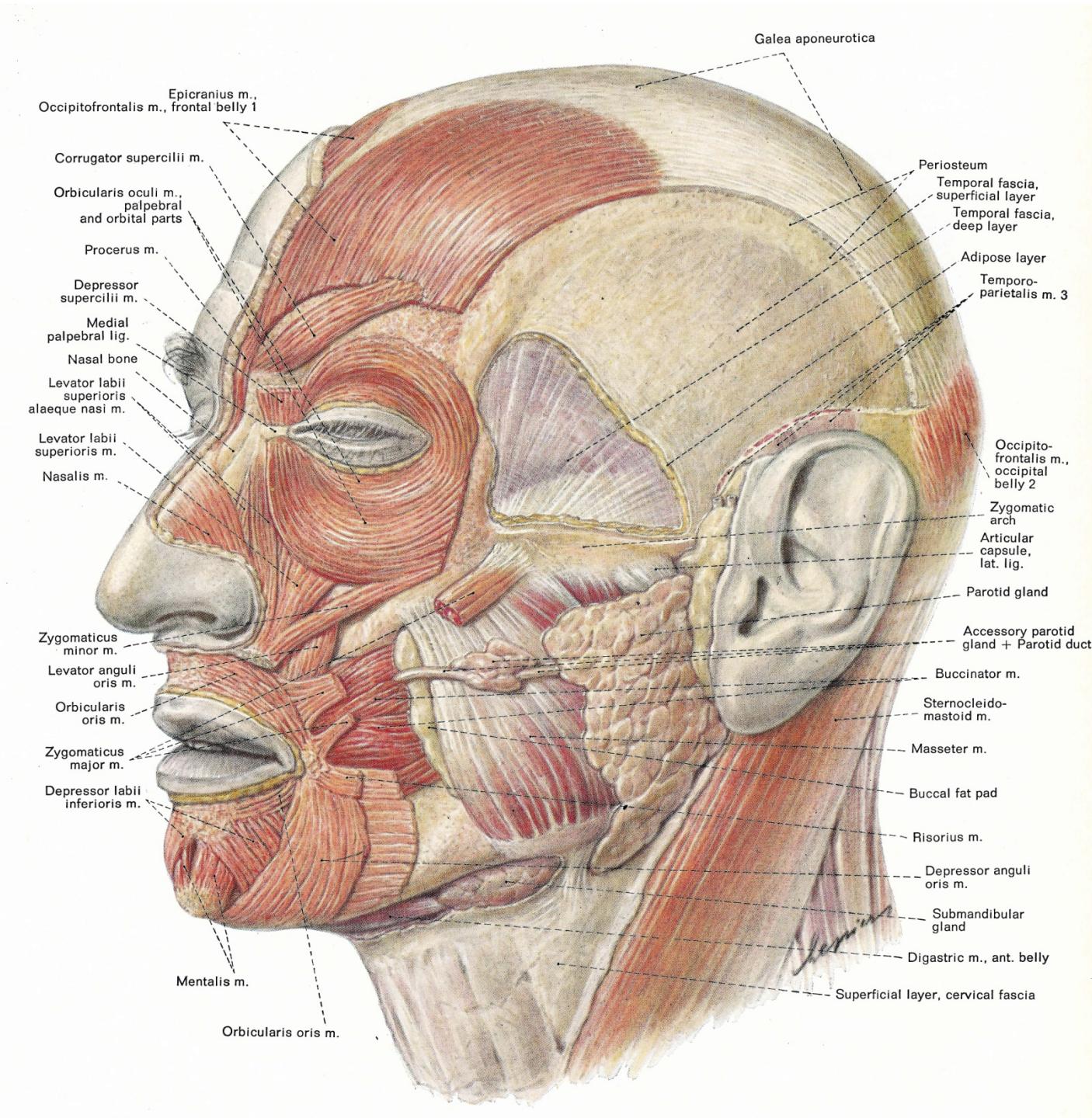
## Occipito-frontalis

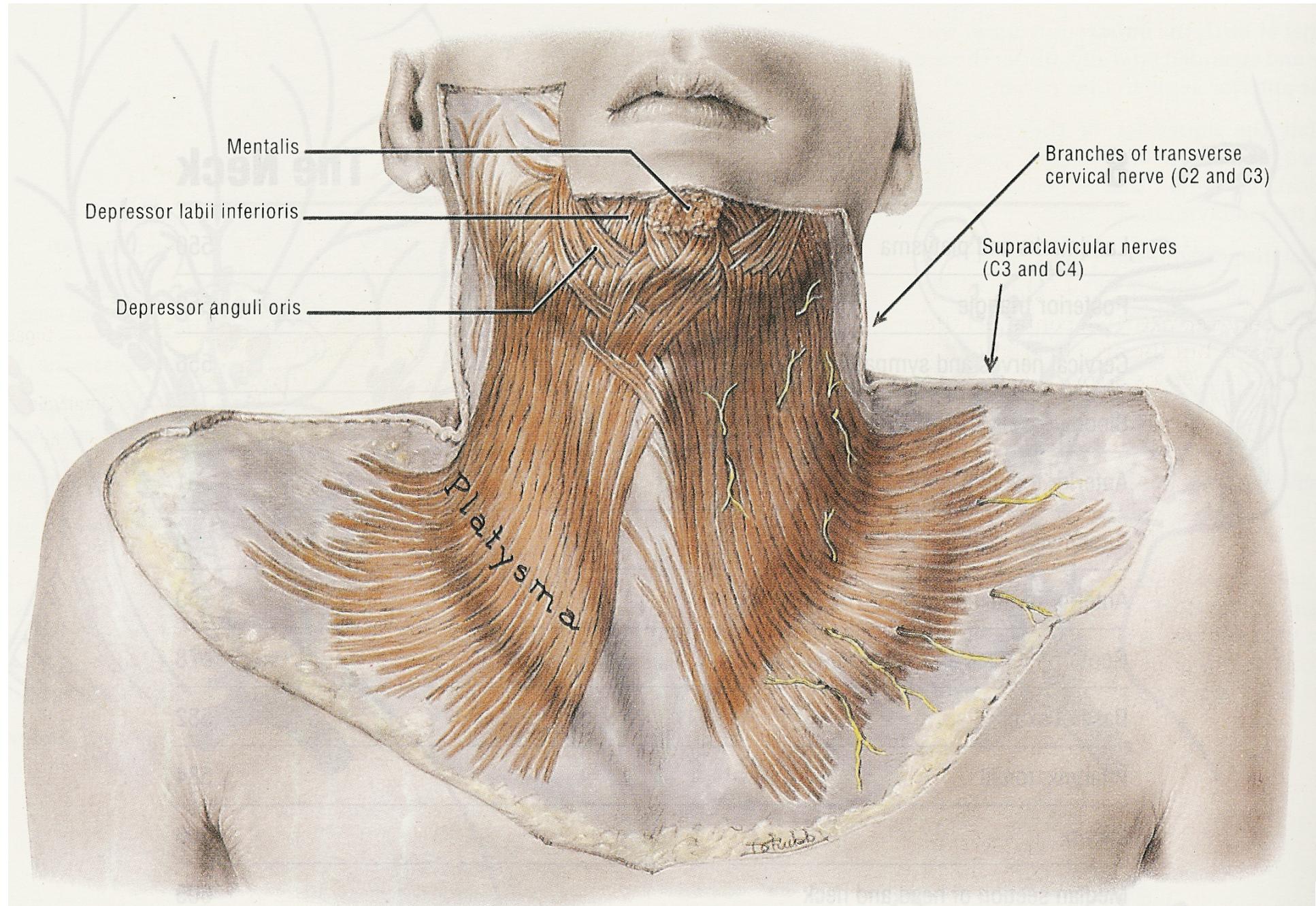
- Origin: occipital belly from the highest nuchal line. Frontal belly from the skin and superficial fascia of the eyebrows.
- Insertion: both bellies are inserted into the epicranial aponeurosis.
- Nerve supply: occipital belly from posterior auricular branch of facial nerve and frontal belly from temporal branch of facial nerve.
- Action: moves the superficial 3 layers together, and raises the eyebrows

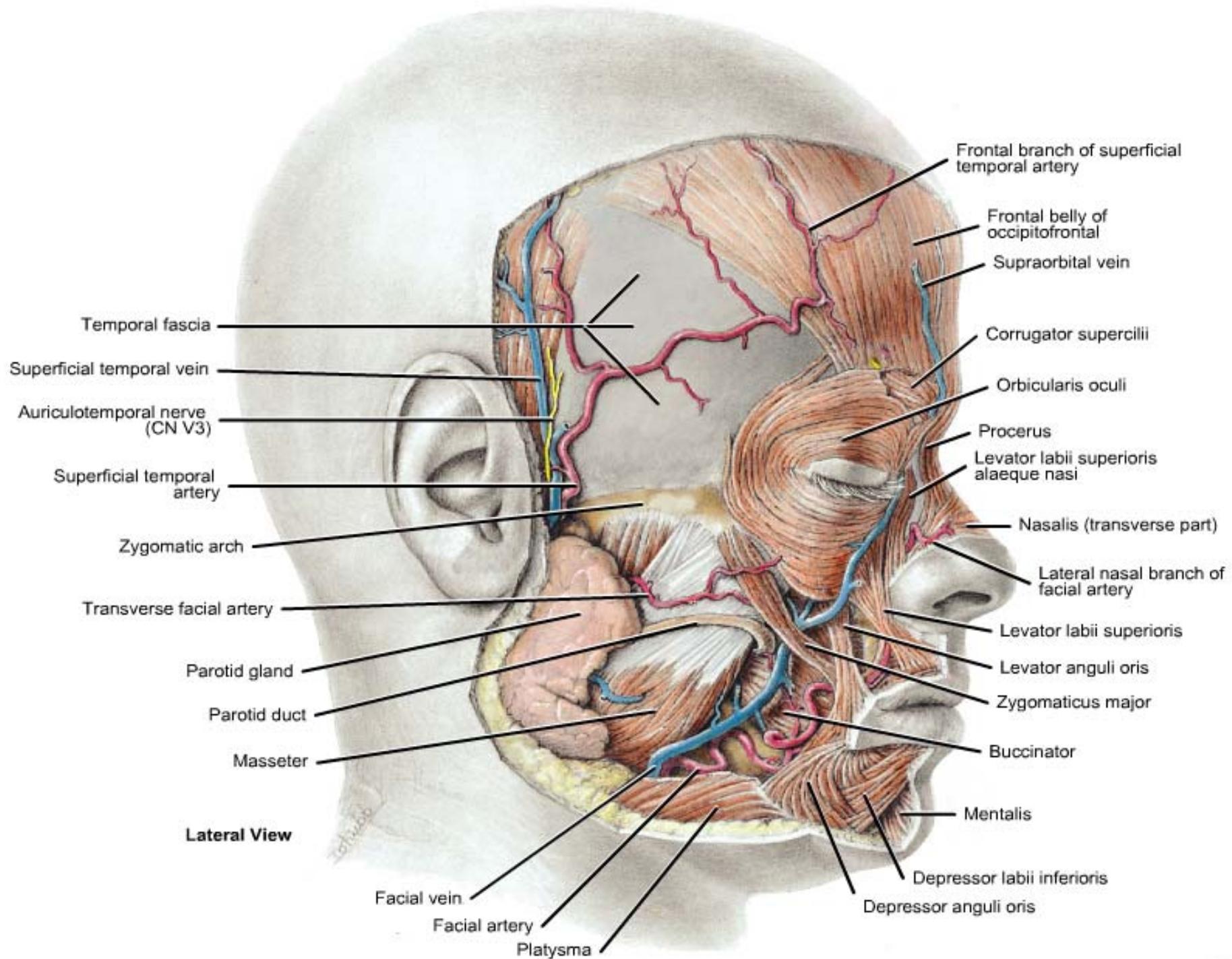


# **Muscles of facial expression**

- Present in the superficial fascia of the face.
- Inserted into the skin of the face.
- Related to the three main orifices of the face (either sphincters or dilator).
- Most important three are:
  1. Orbicularis oculi.
  2. Orbicularis oris.
  3. Buccinator.

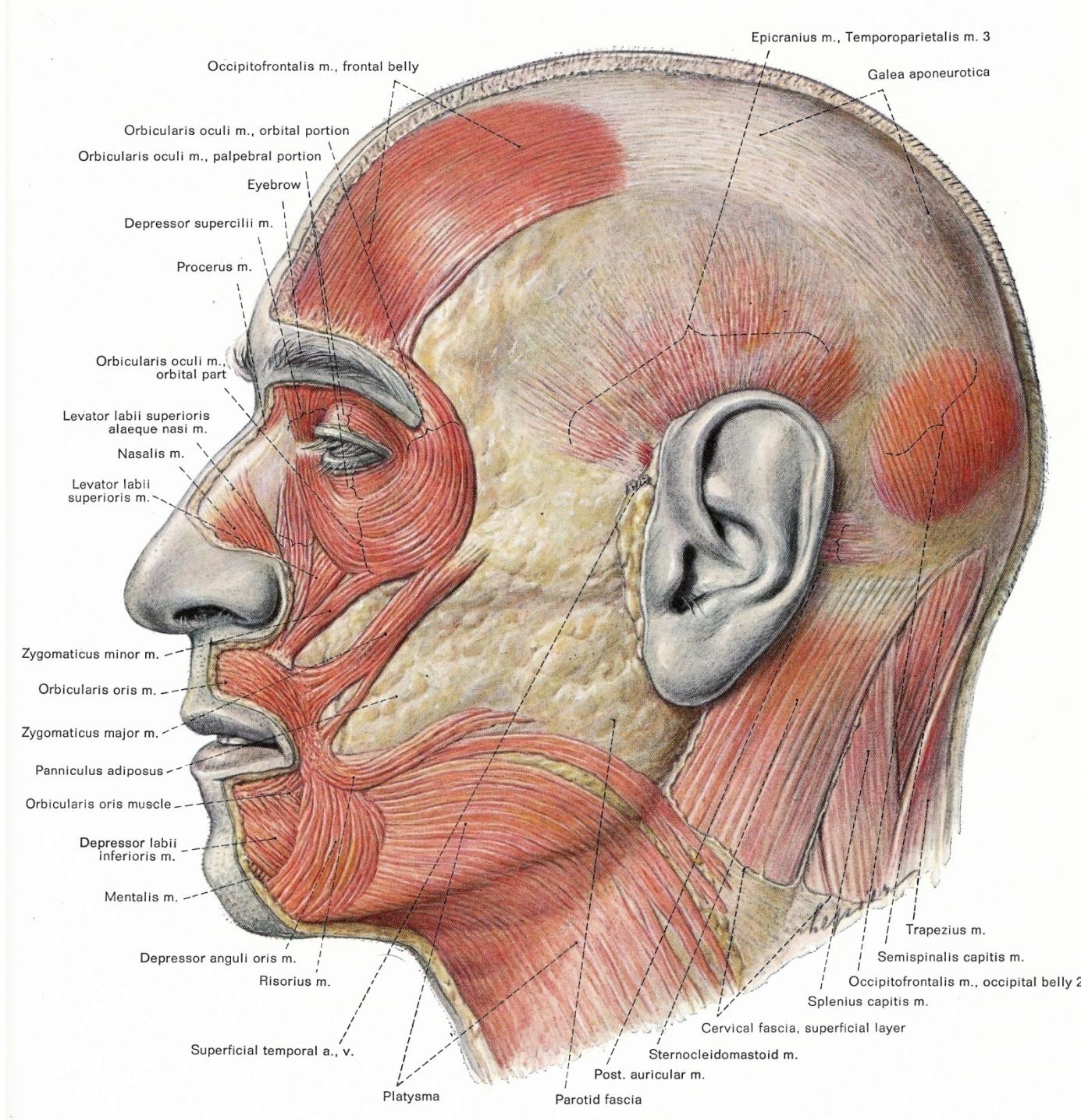






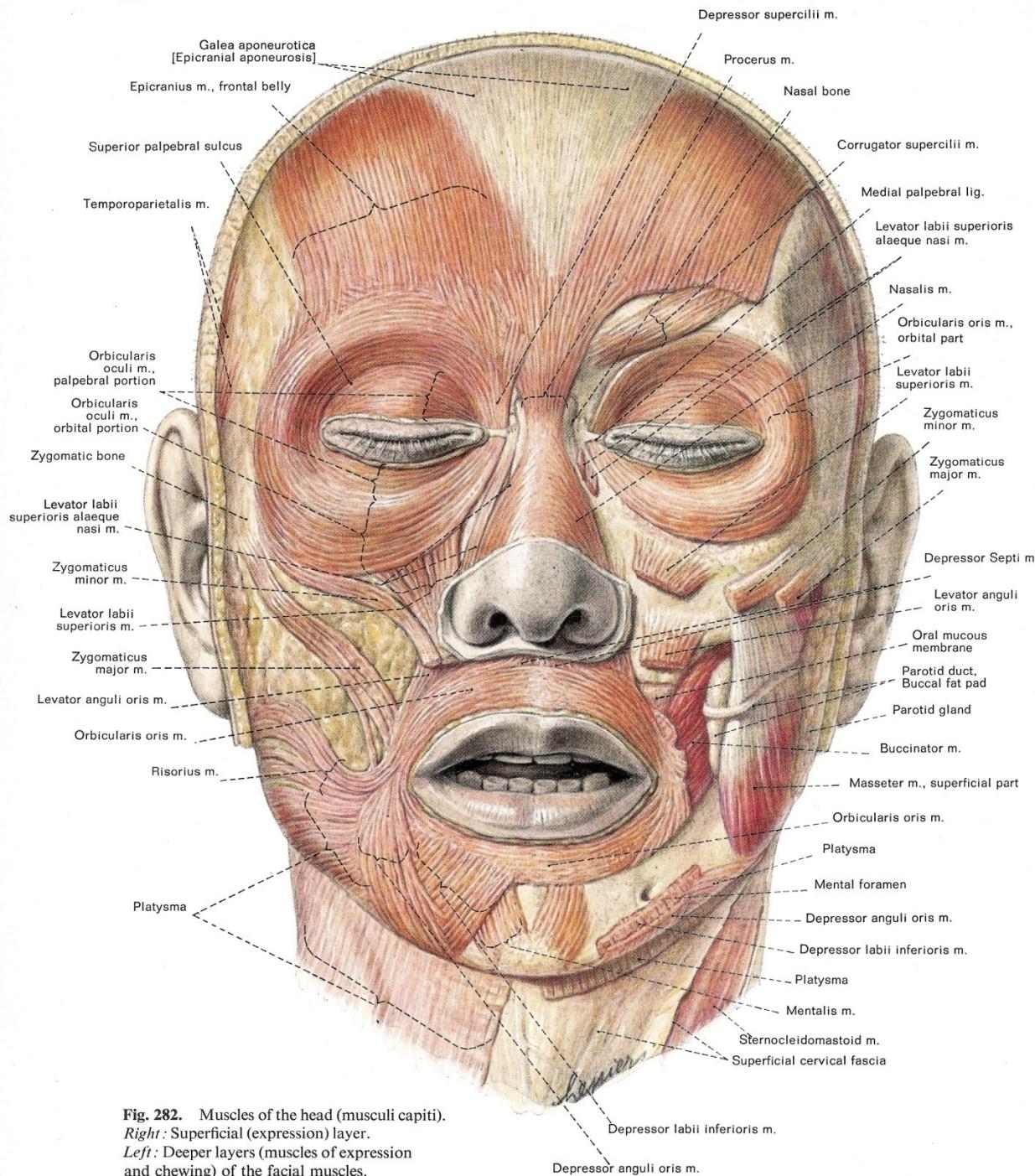
# Orbicularis oculi

- Has three parts: Orbital part, palpebral part and lacrimal part.
- Origin: Medial palpebral ligament and adjoining bones.
- Insertion:
  - orbital part makes a loop and returns to origin.
  - Palpebral part: lateral papebral raphe.
  - Lacrimal part: lacrimal sac.
- Nerve supply: facial nerve.
- Action:
  - orbital part: forced closure of the eyelids (protection).
  - Palpebral part: light closure of eyelids (blinking).
  - Lacrimal part: dilates the lacrimal sac (to drain tears).



# **Orbicularis oris**

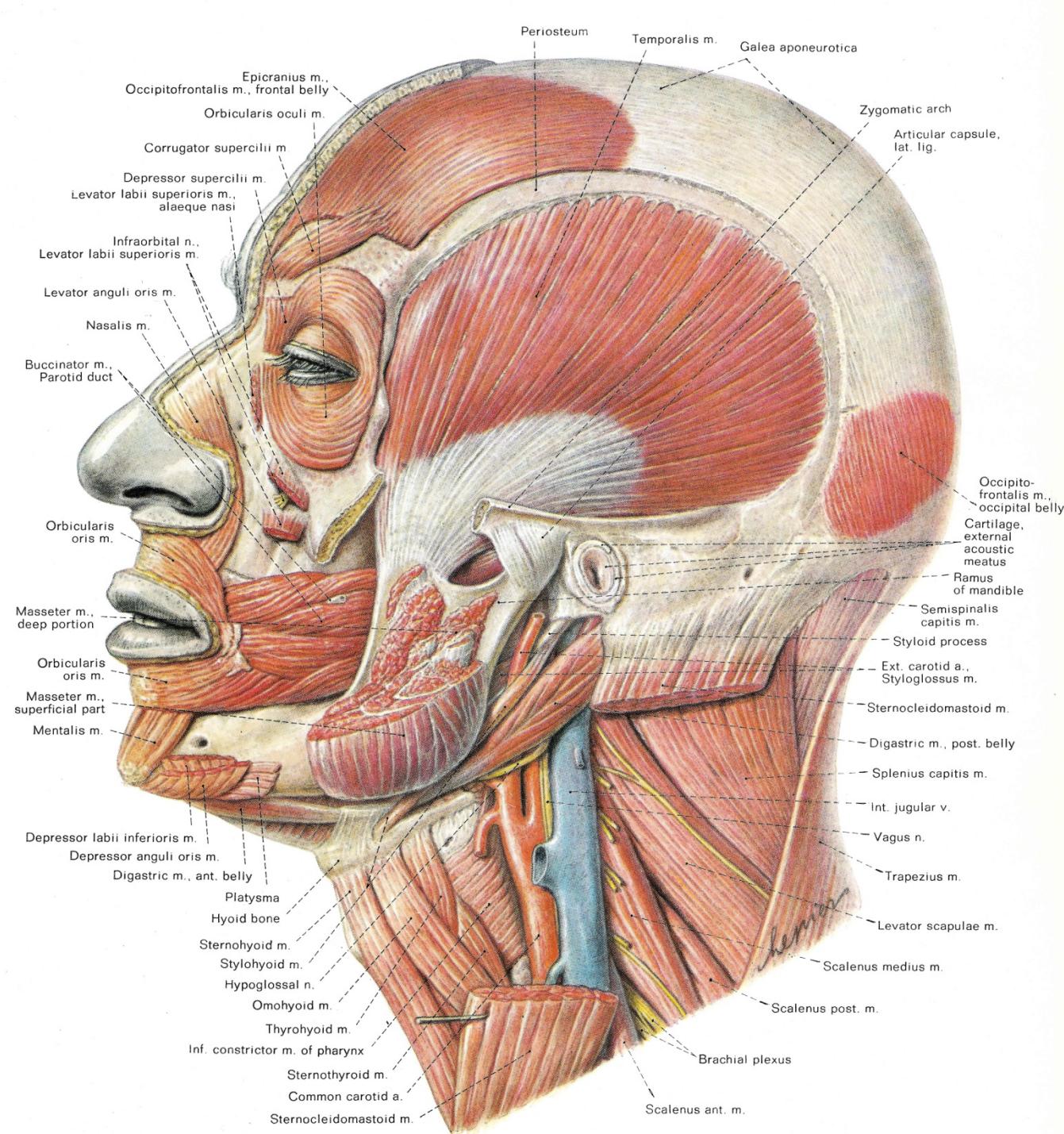
- **Encircles the oral orifice within the lips.**
- **Origin: Maxilla, mandible and skin.**
- **Insersion: encircles the oral orifice**
- **Nerve supply: buccal and mandibular branches of facial nerve.**
- **Action: Compresses the lips together (kissing, blowing and etc ....)**

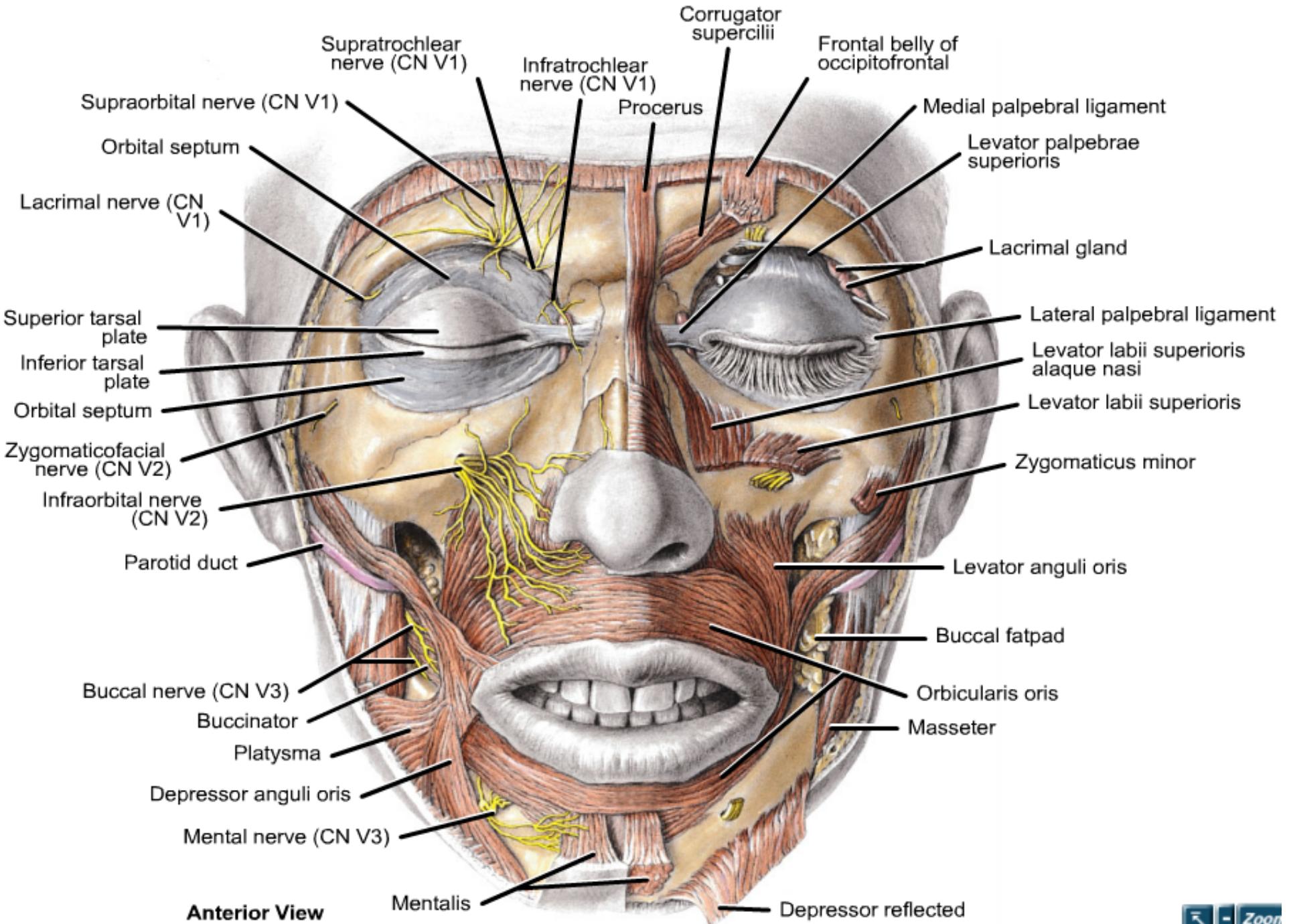


**Fig. 282.** Muscles of the head (musculi capiti).  
Right: Superficial (expression) layer.  
Left: Deeper layers (muscles of expression and chewing) of the facial muscles.

# Buccinator

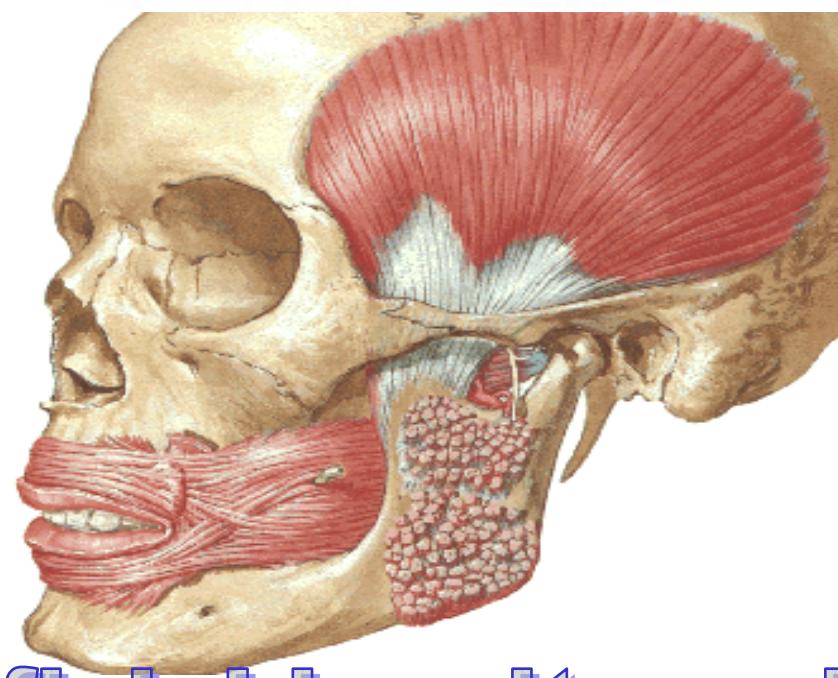
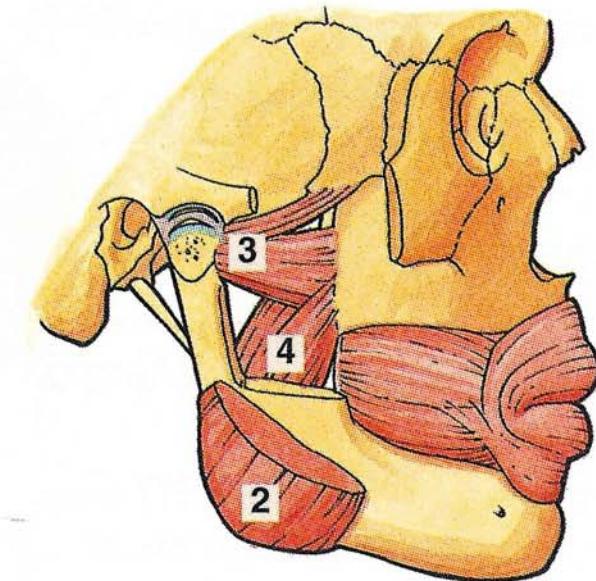
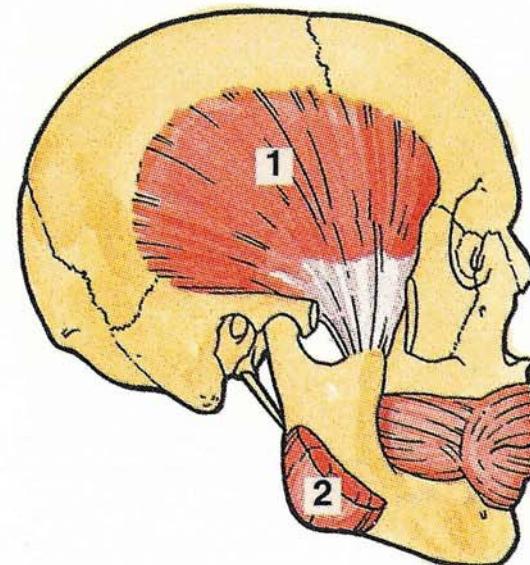
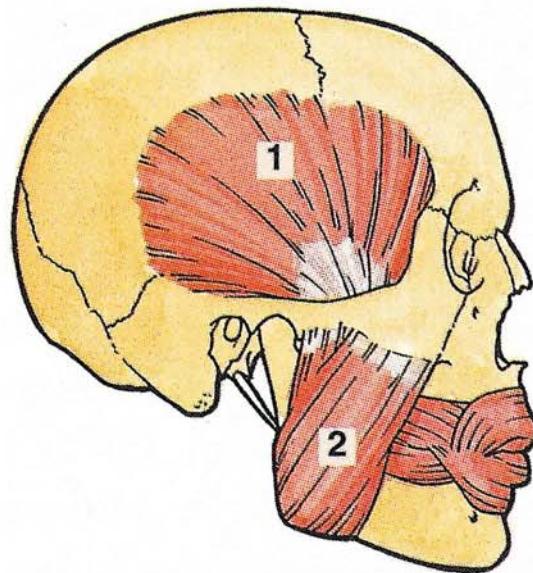
- Origin: outer surface of the alveolar margins of maxilla and mandible opposite the molar teeth and pterygomandibular raphe.
- Insersion:
- Upper fibers enter the upper lip to be attached to fibers of opposite side.
- Lower fibers enter the lower lip to be attached to fibers of opposite side.
- Middle fibers decussate at the angle of the mouth and form the orbicularis oris muscle.
- Nerve supply: buccal branch of facial nerve.
- Action: Compresses the cheeks lips against the teeth.
- This muscle is pierced by the duct of the parotid salivary gland.





# **Muscles of mastication**

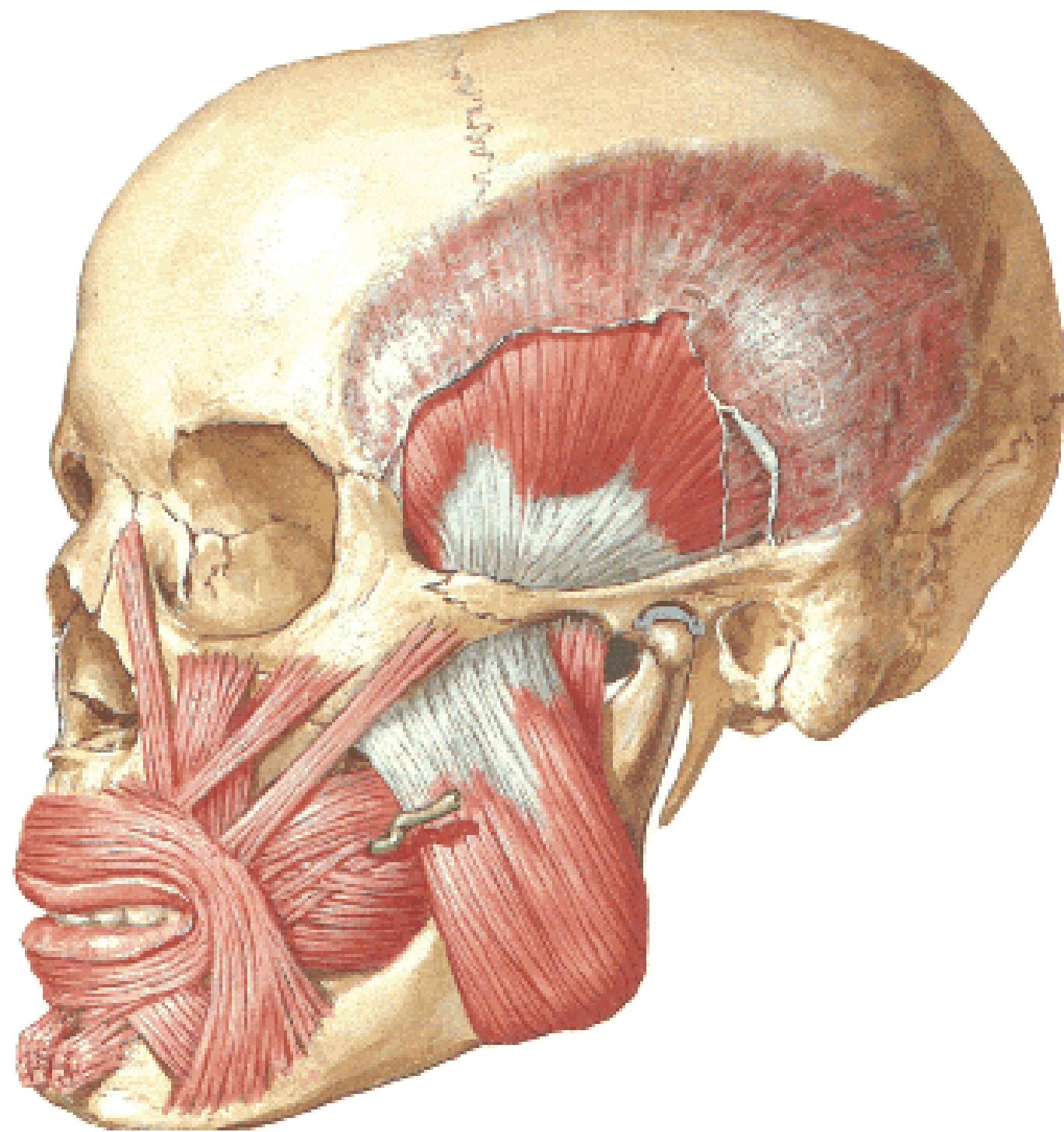
- 1. Temporalis.**
- 2. Masseter.**
- 3. Lateral pterygoid.**
- 4. Medial pterygoid.**



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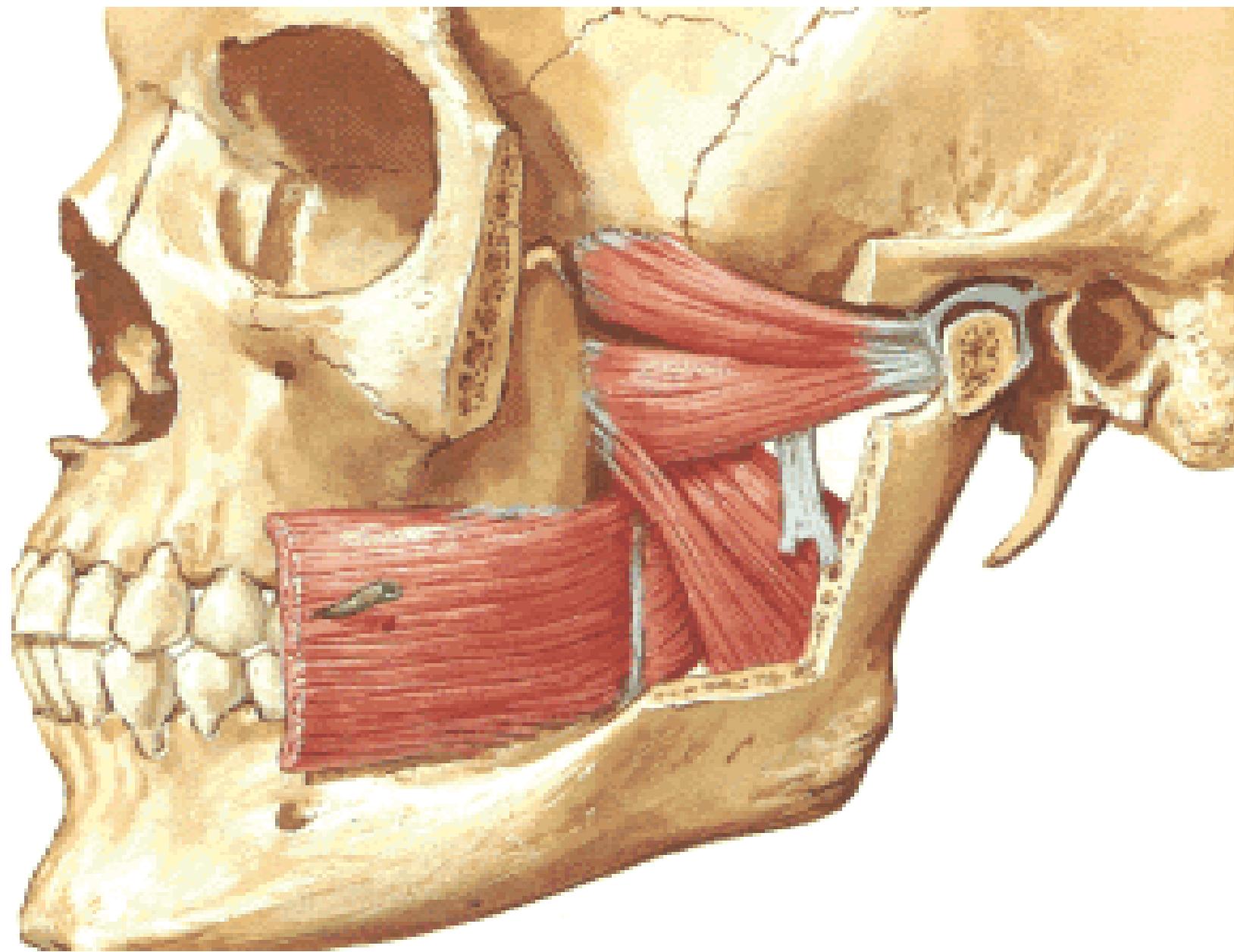
# Temporalis

- Origin: Floor of temporal fossa and deep surface of temporal fascia.
- Insertion: Coronoid process and anterior border of ramus of mandible.
- Nerve supply: Deep temporal nerves (from and the anterior division of mandibular nerve).
- Action: Elevation and retraction of the mandible.



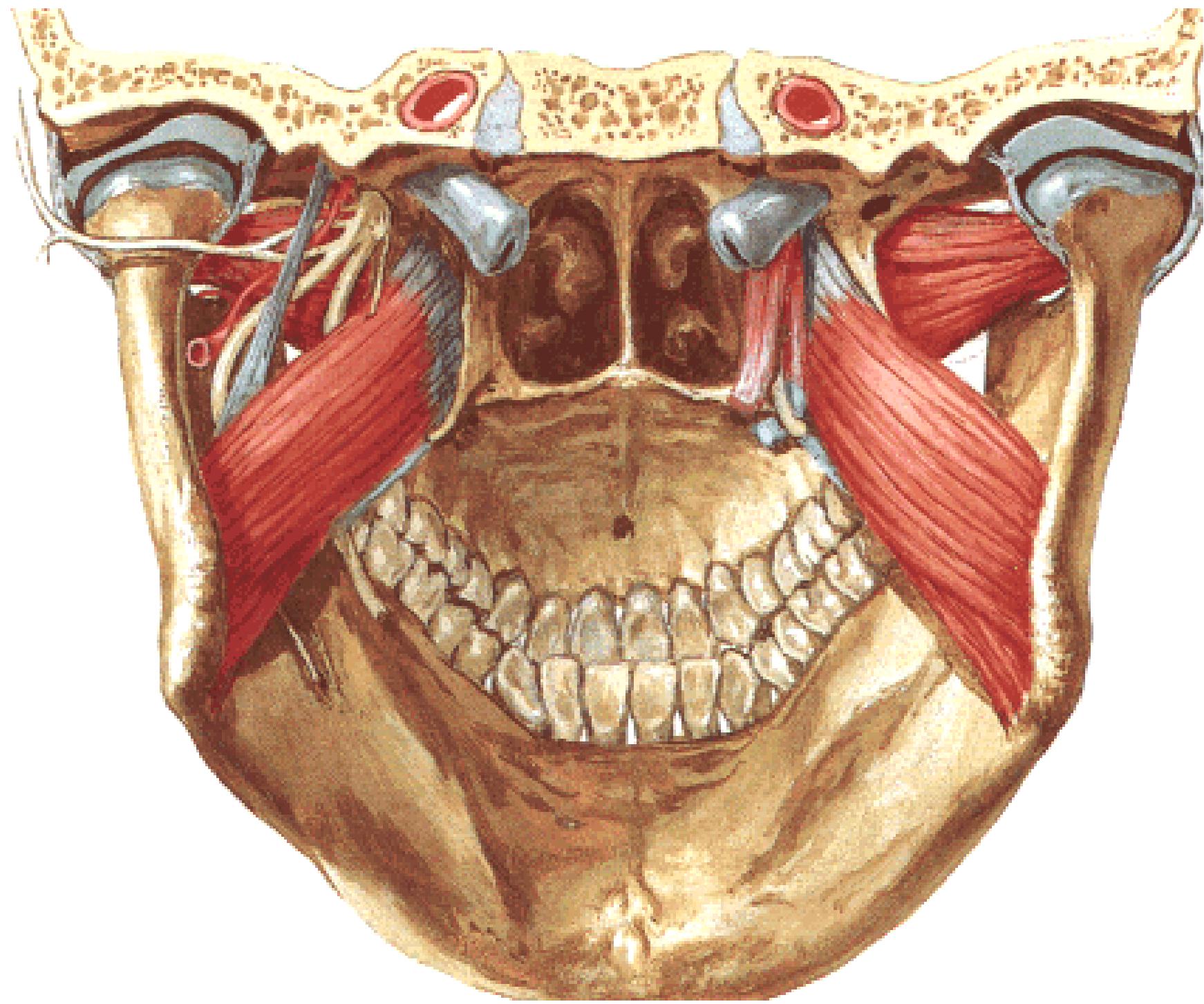
# Masseter

- Origin: Lower border and inner surface of the zygomatic arch.
- Insertion: Lateral aspect of the ramus of the mandible.
- Nerve supply: anterior division of the mandibular nerve.
- Action: Elevation and protraction of the mandible.



# Lateral pterygoid

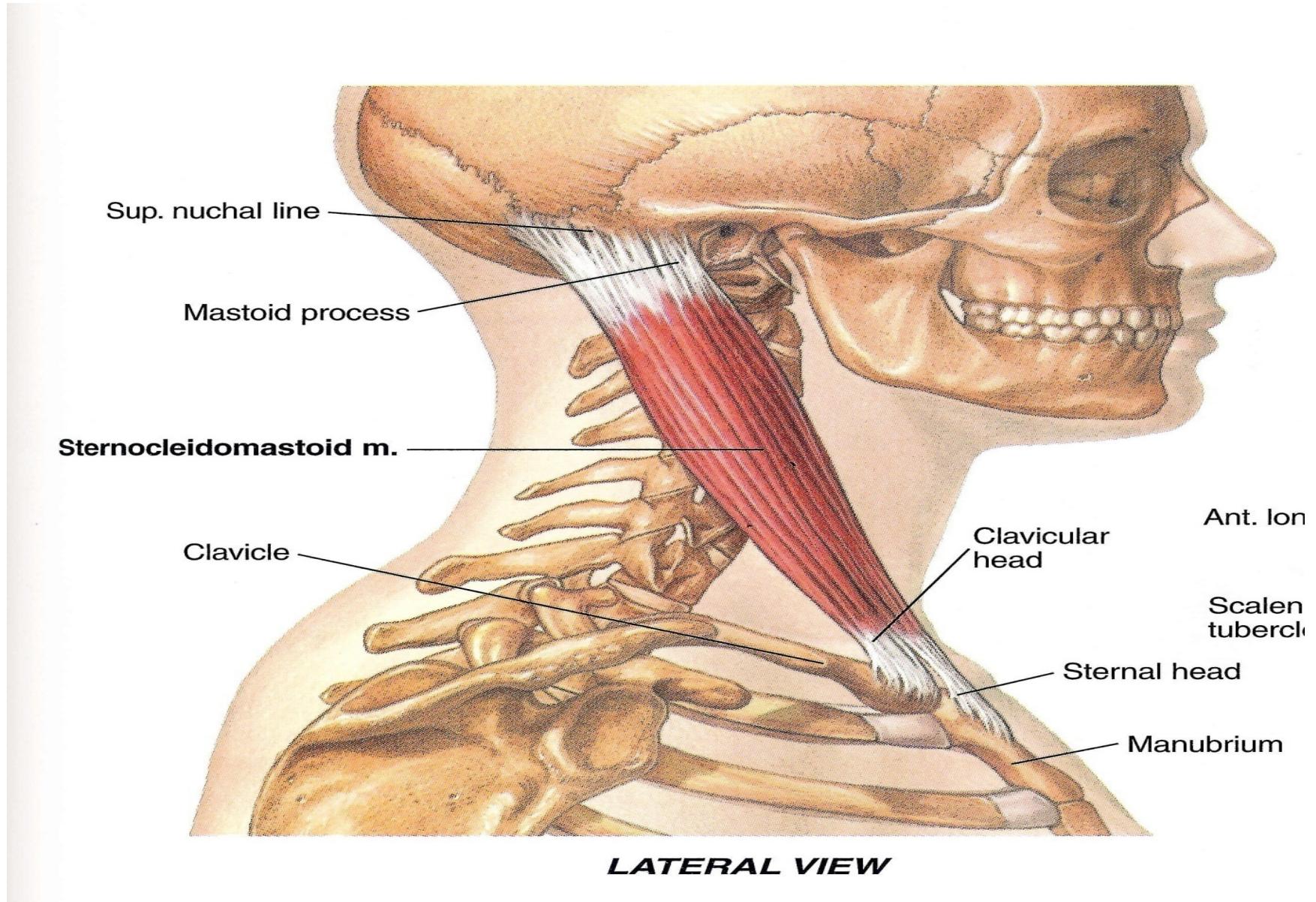
- Origin: Upper head: from the infratemporal surface of the greater wing of sphenoid bone.  
Lower head: from the lateral surface of the lateral pterygoid plate.
- Insertion: anterior aspect of the neck of the mandible and the articular disc of the temporo-mandibular joint.
- Nerve supply: anterior division of the mandibular nerve.
- Action: pulls the head of mandible forward during opening of the mouth (helps in depression of mandible), protracts the mandible and side to side moves it (chewing).



# Medial pterygoid

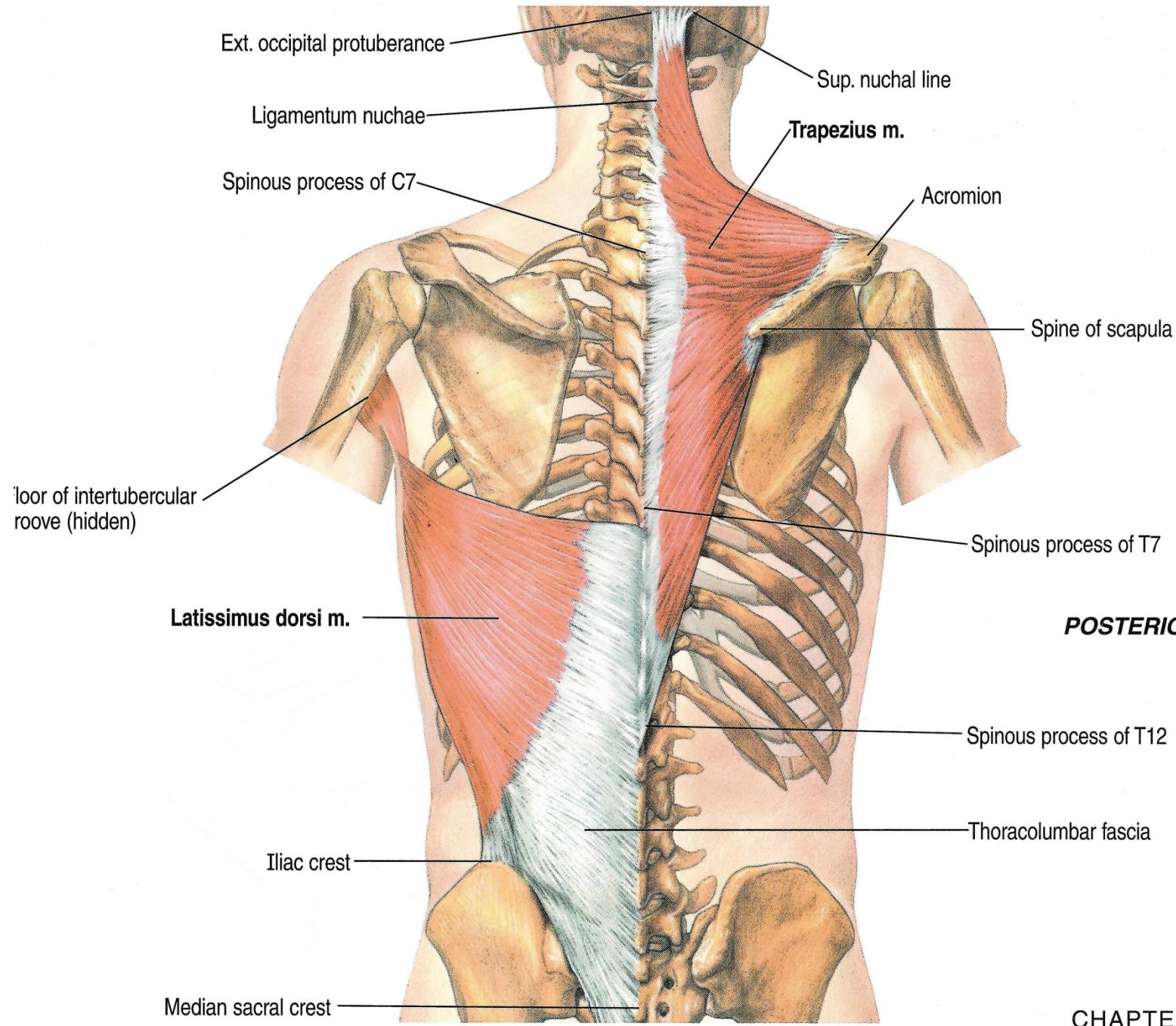
- Origin: Superficial head: from the maxillary tuberosity. Deep head: from the medial surface of the lateral pterygoid plate.
- Insertion: medial surface of the angle of the mandible.
- Nerve supply: Main trunk of the mandibular nerve.
- Action: helps in elevation of mandible, protraction of the mandible and side to side movement (chewing).

# Muscles of The Neck



# Sterno-cleidomastoid muscle

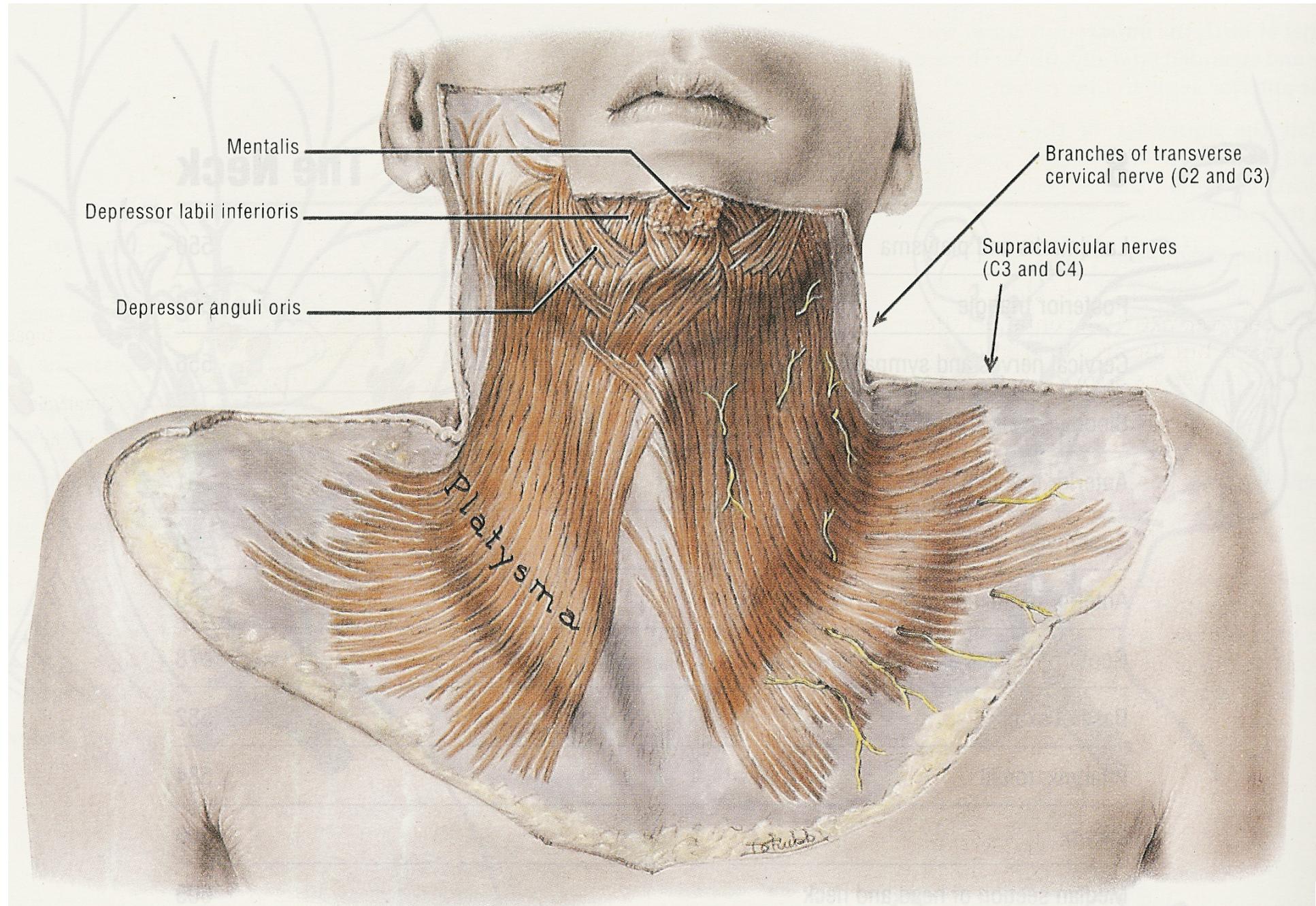
- Origin: upper border of manubrium sterni and medial third of upper surface of clavicle.
- Insertion: mastoid process and lateral third of superior nuchal line.
- Nerve supply: Spinal accessory nerve (motor) and C2,3 (proprioceptive).
- Action:
  1. Both muscles extend the atlanto-occipital joint and flex the other cervical intervertebral joints.
  2. One muscle turns the head to make the face looks upward and to the opposite side.
  3. On fixation of the insertion, the muscle act as accessory muscle of inspiration.



**POSTERIOR VIEW**

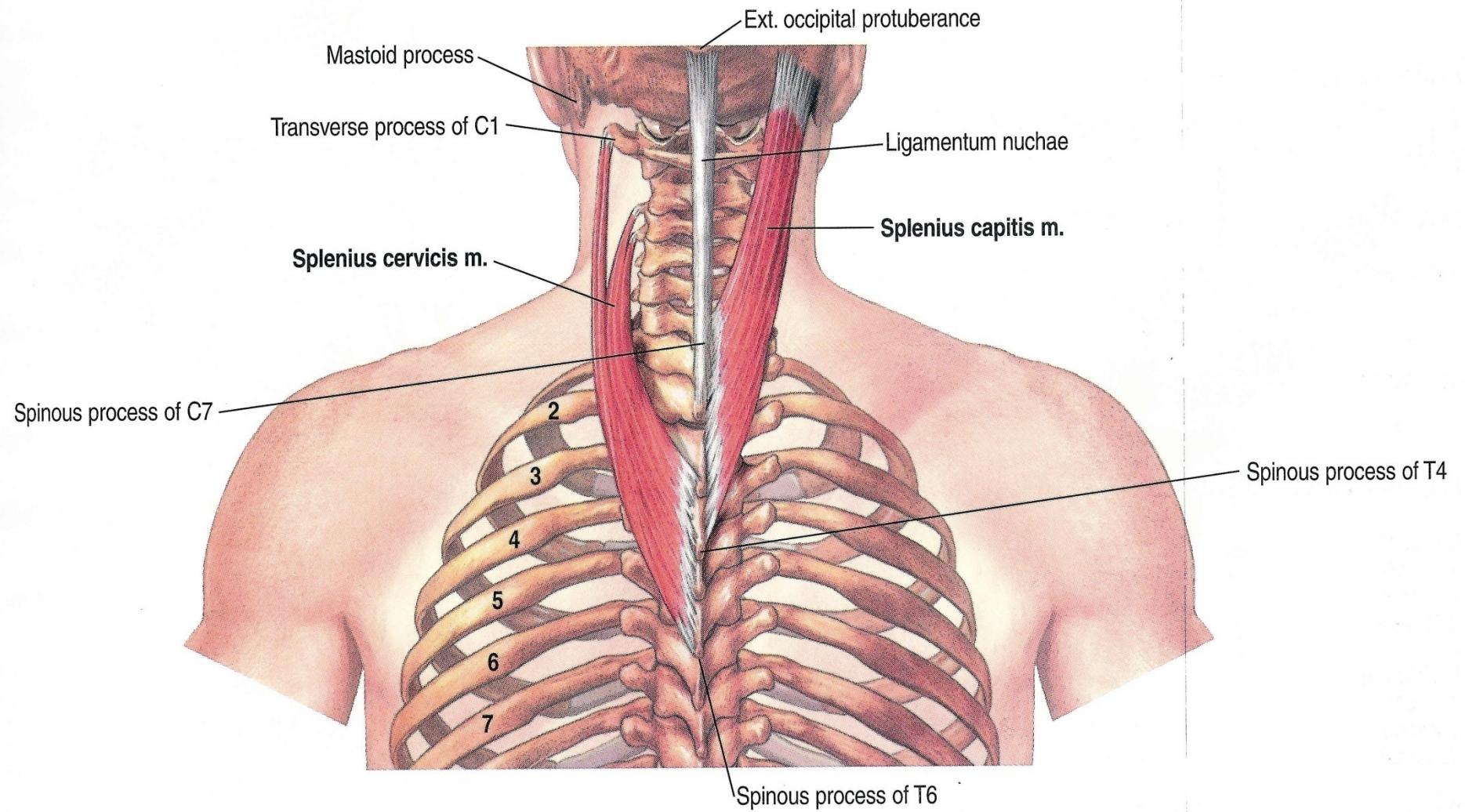
# Trapezius muscle

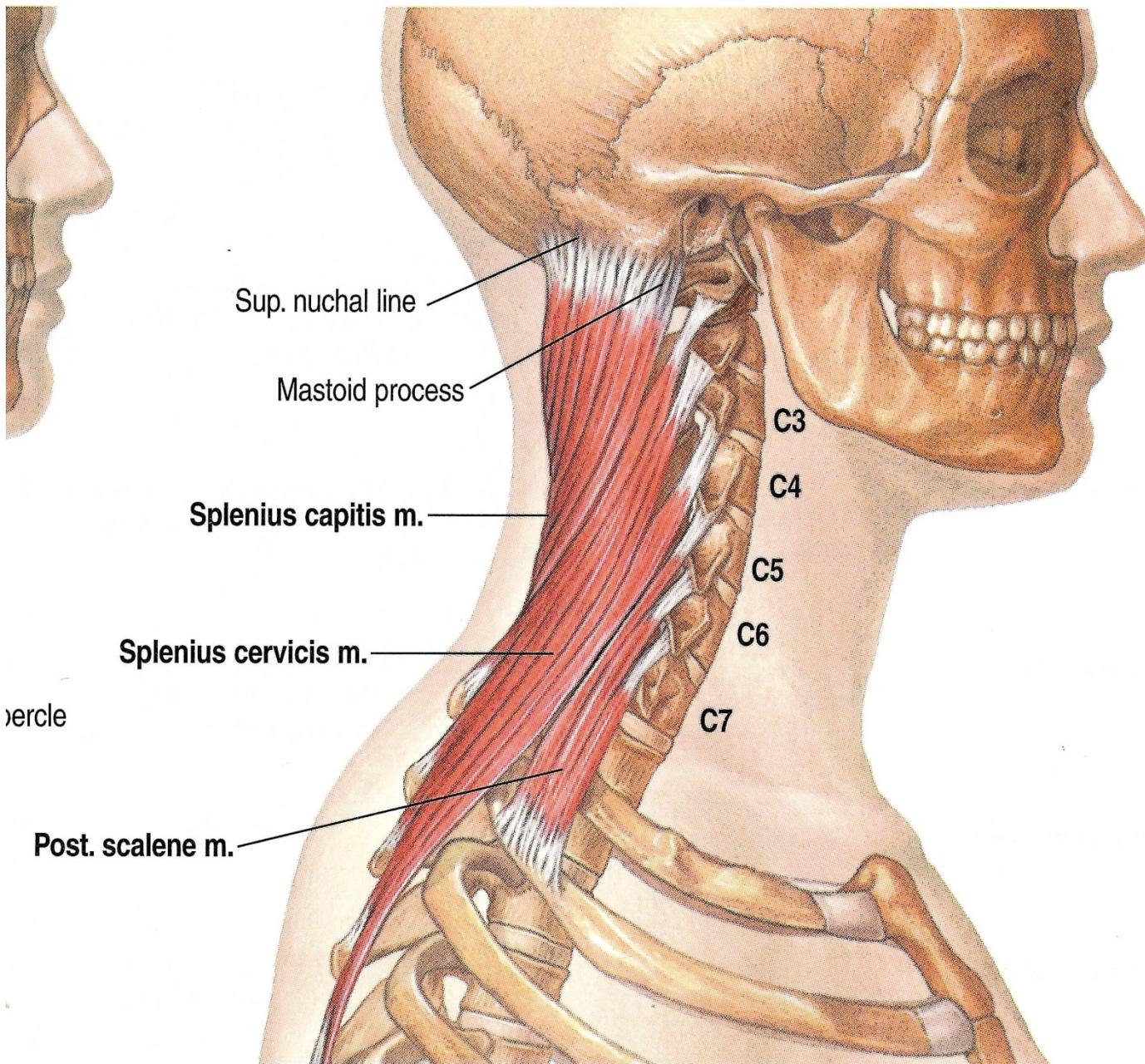
- Origin: Medial third of superior nuchal line, external occipital protuberance, ligamentum nuchae, 7<sup>th</sup> cervical spine all the thoracic spines.
- Insertion: Lateral third of clavicle, acromion process and spine of scapula.
- Nerve supply: Spinal accessory nerve (motor) and C3,4 (proprioceptive).
- Action:
  1. Both muscles extend the neck.
  2. Upper fibers of one side lateral flex the neck.
  3. Upper fibers elevate the shoulder.
  4. Middle fibers retract the shoulder.
  5. Lower fibers depress the shoulder.



# Platysma muscle

- Origin: deep fascia of the upper part of thorax (covering pectoralis major and deltoid).
- Insertion: lower border of the mandible.
- Nerve supply: Cervical branch of facial nerve.
- Action: Depression of the mandible.

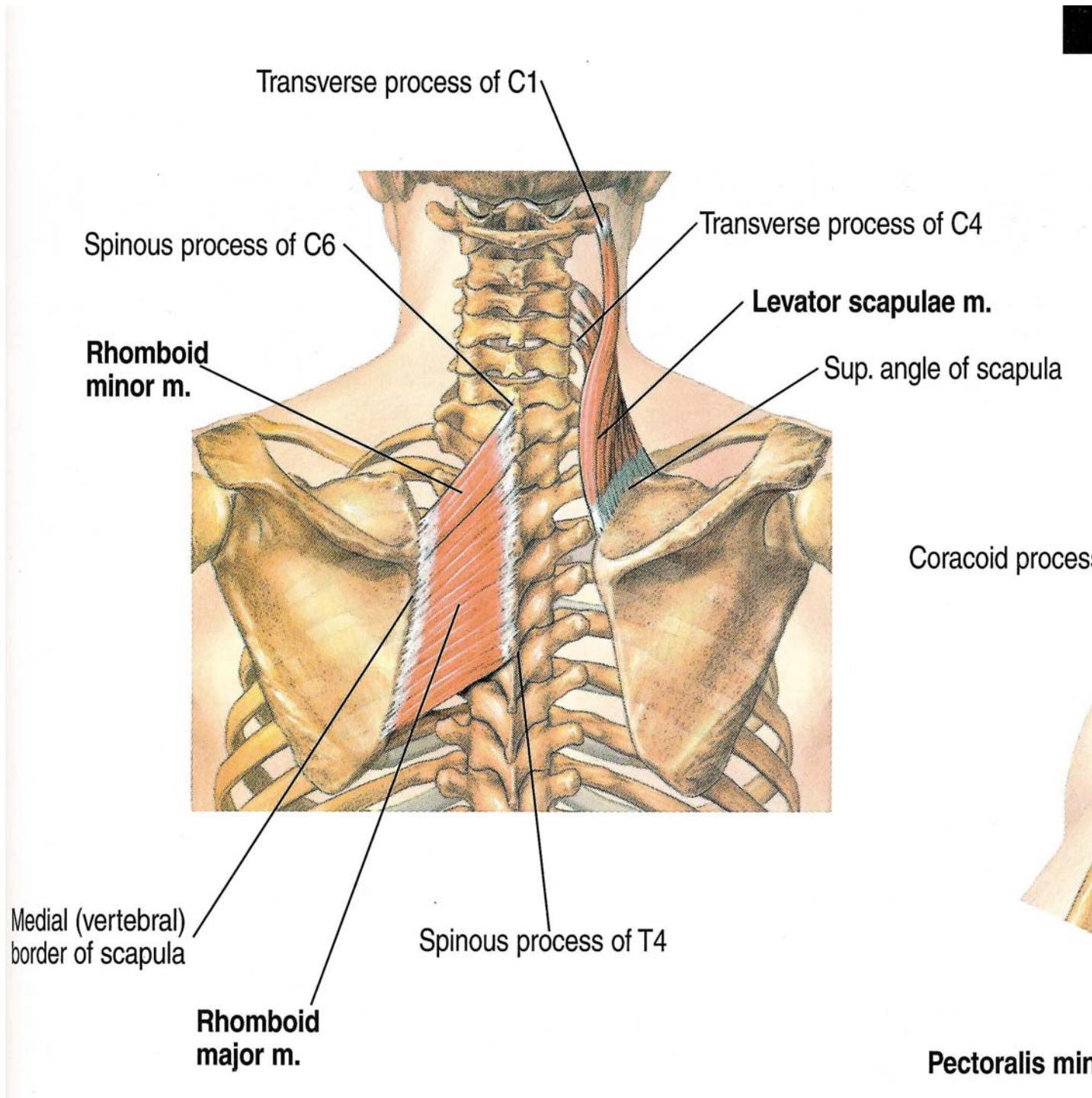




**LATERAL VIEW**

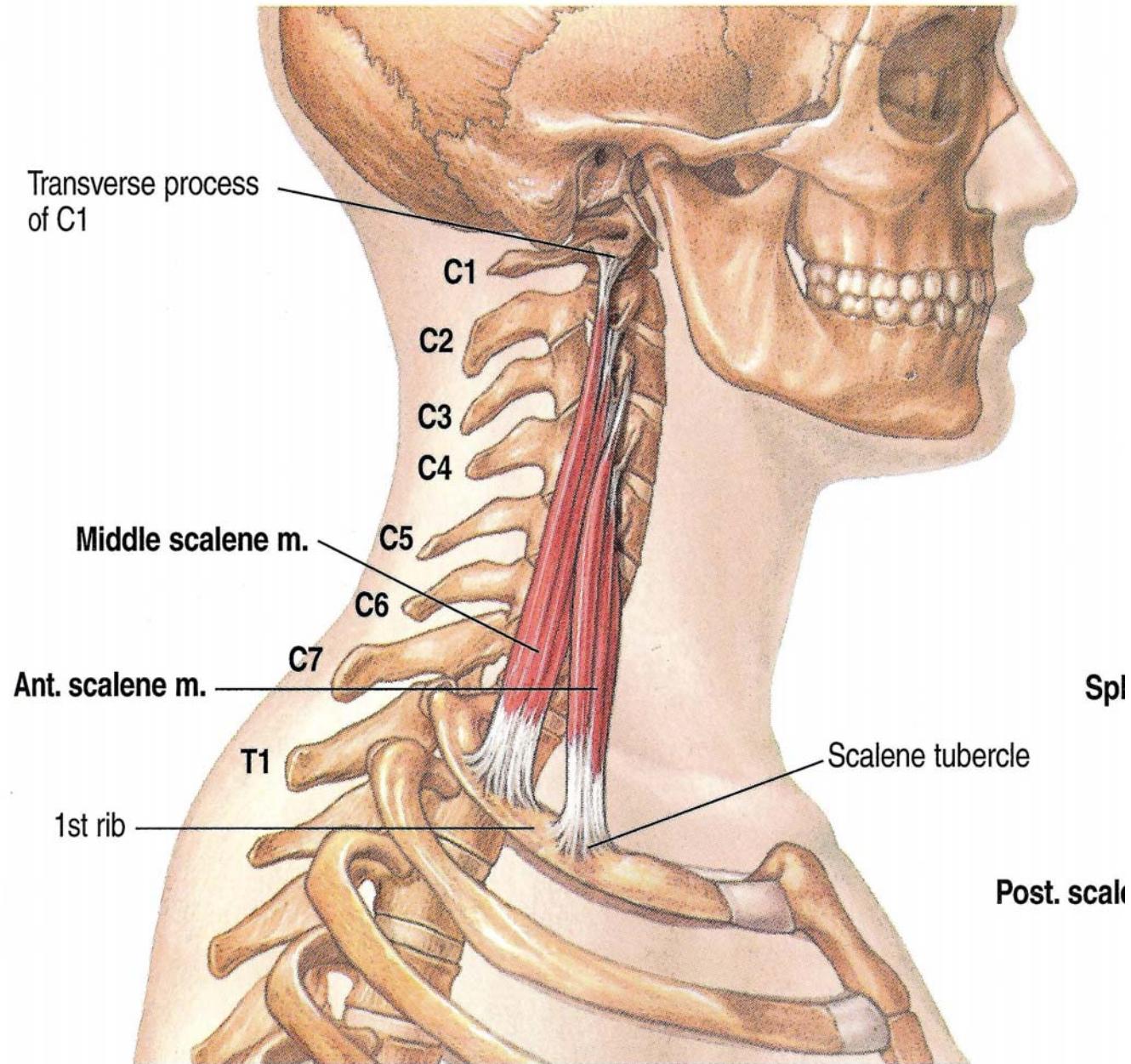
# Splenius capitis muscle

- Origin:
  1. Lower part of ligamentum nuchae.
  2. Upper four thoracic spines.
- Insertion: mastoid process and outer part of superior nuchal line.
- Nerve supply: segmental innervation from the dorsal rami of spinal nerves
- Action: Extension of the neck.



# Levator scapulae muscle

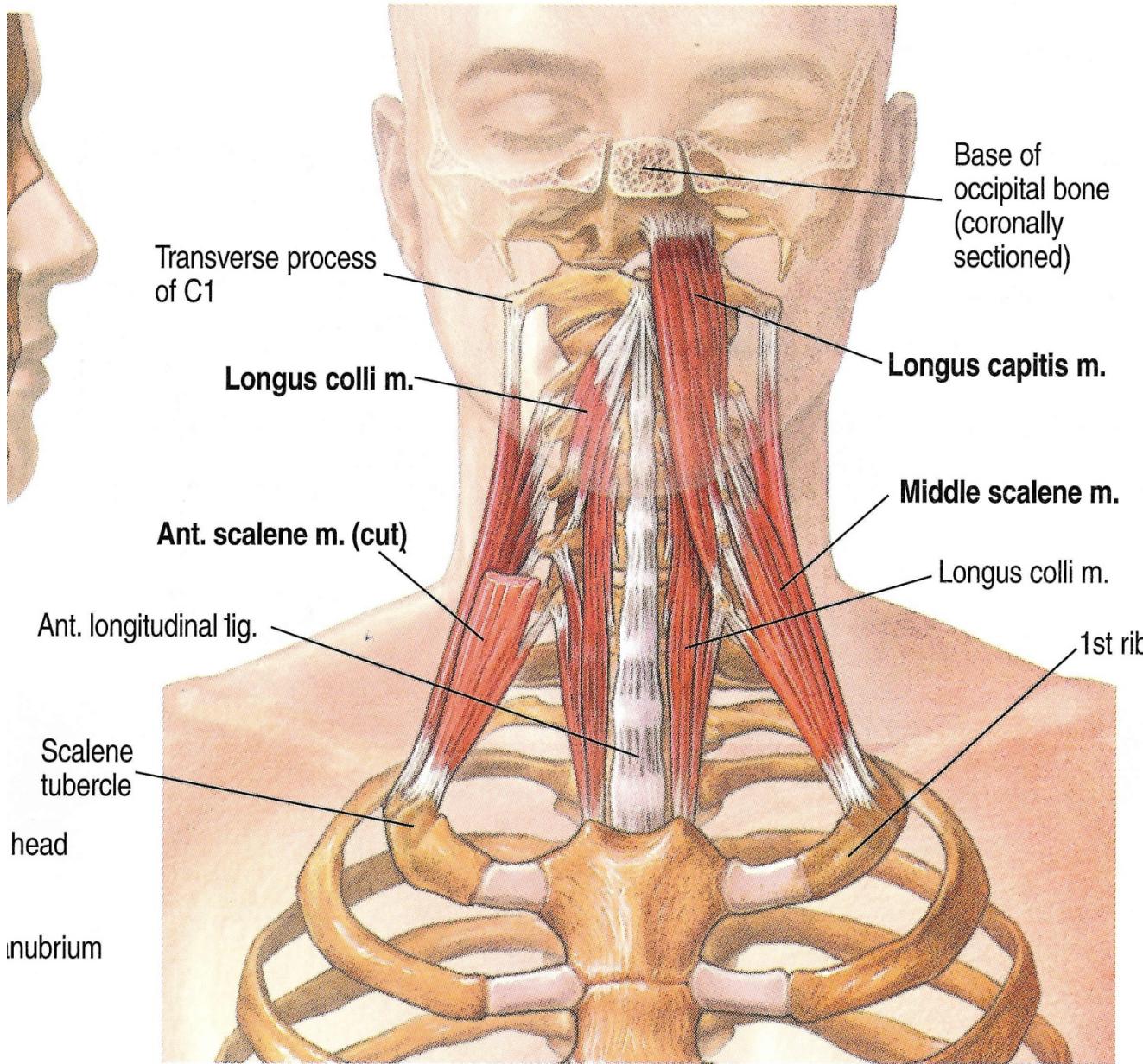
- Origin: Transverse processes of upper four cervical vertebrae.
- Insertion: Upper part of medial border of scapula.
- Nerve supply: C3,4 and dorsal scapular nerve (C5).
- Action: Elevation of scapula.



**LATERAL VIEW**

# Scalenus medius muscle

- Origin: Transverse processes of lower six cervical vertebrae (2-7).
- Insertion: Upper surface of the first rib.
- Nerve supply: Segmental from the ventral rami of cervical nerves.
- Action: Elevation of first rib and lateral flexion the neck.



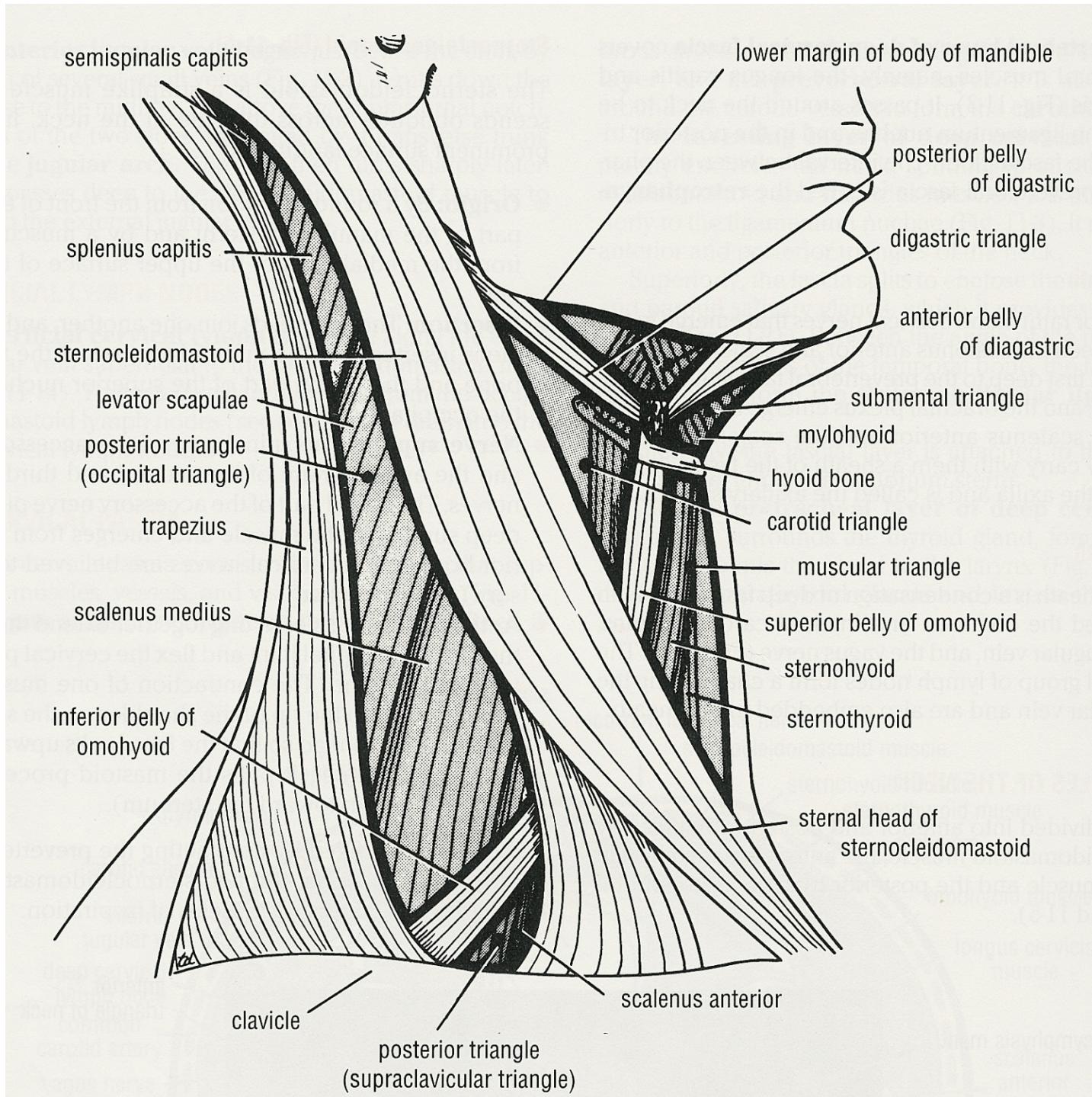
**ANTERIOR VIEW**

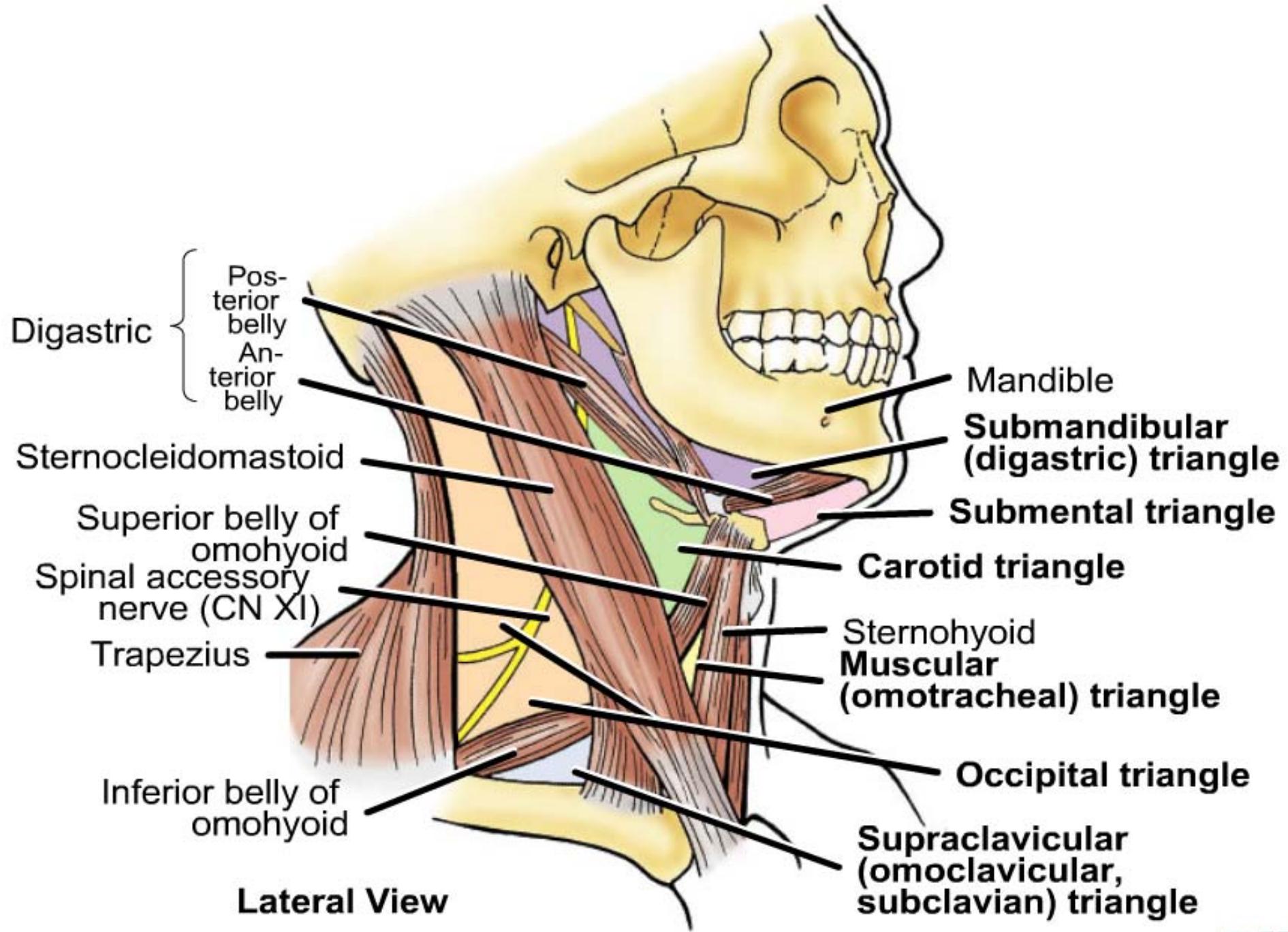
# Scalenus anterior muscle

- Origin: Transverse processes of typical cervical vertebrae (3-6).
- Insertion: Scalene tubercle of the first rib.
- Nerve supply: Segmental from the ventral rami of 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> cervical nerves.
- Action: Elevation of first rib and lateral flexion the neck.

# Omohyoid muscle

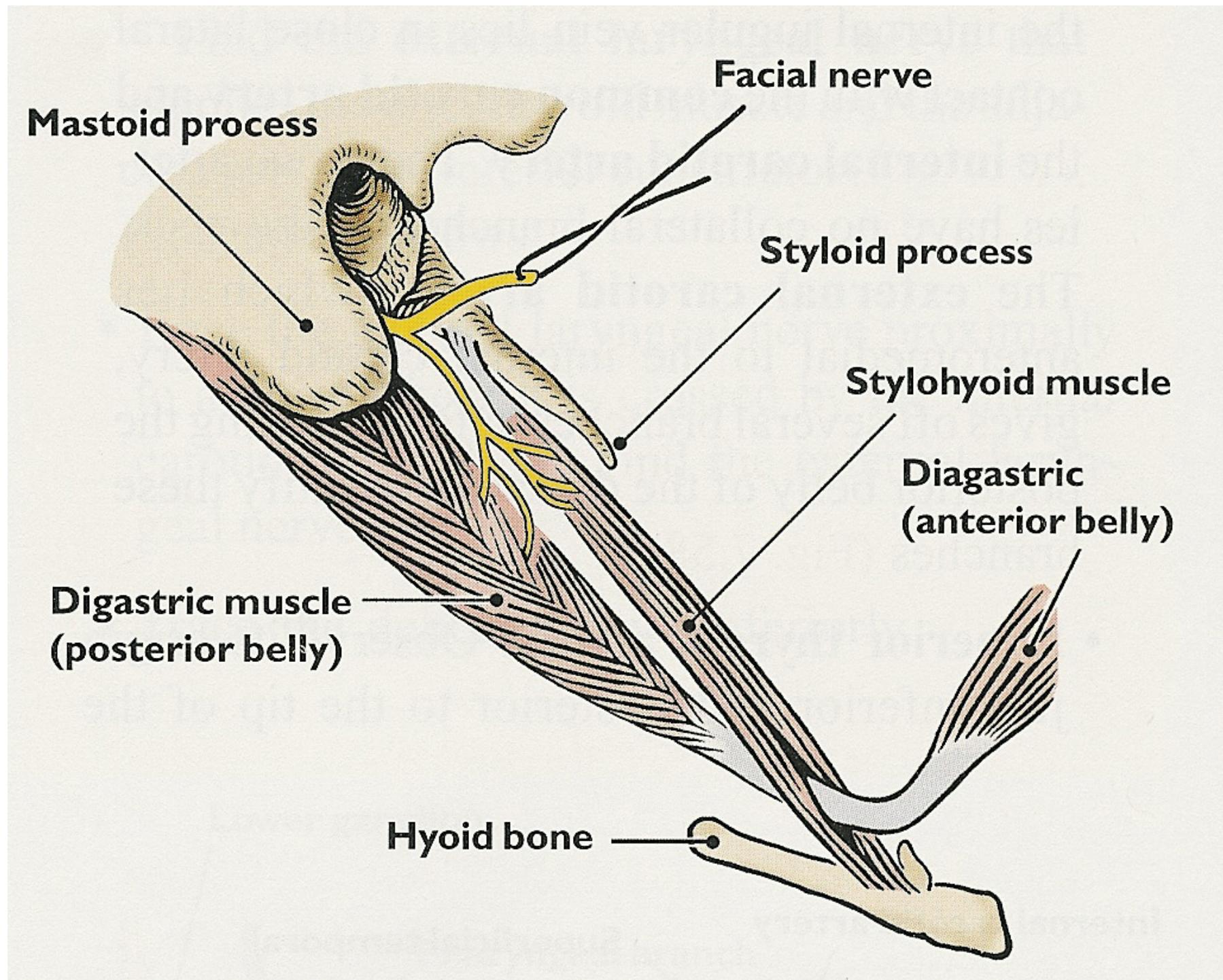
- Origin:
  1. Superior belly from the inferior border of body of hyoid bone.
  2. Inferior belly from upper border of scapula and suprascapular ligament.
- Insertion: to the intermediate tendon which is held in position by fibrous loop to the clavicle.
- Nerve supply: Ansa cervicalis (C1,2,3)
- Action: Depression of hyoid bone.

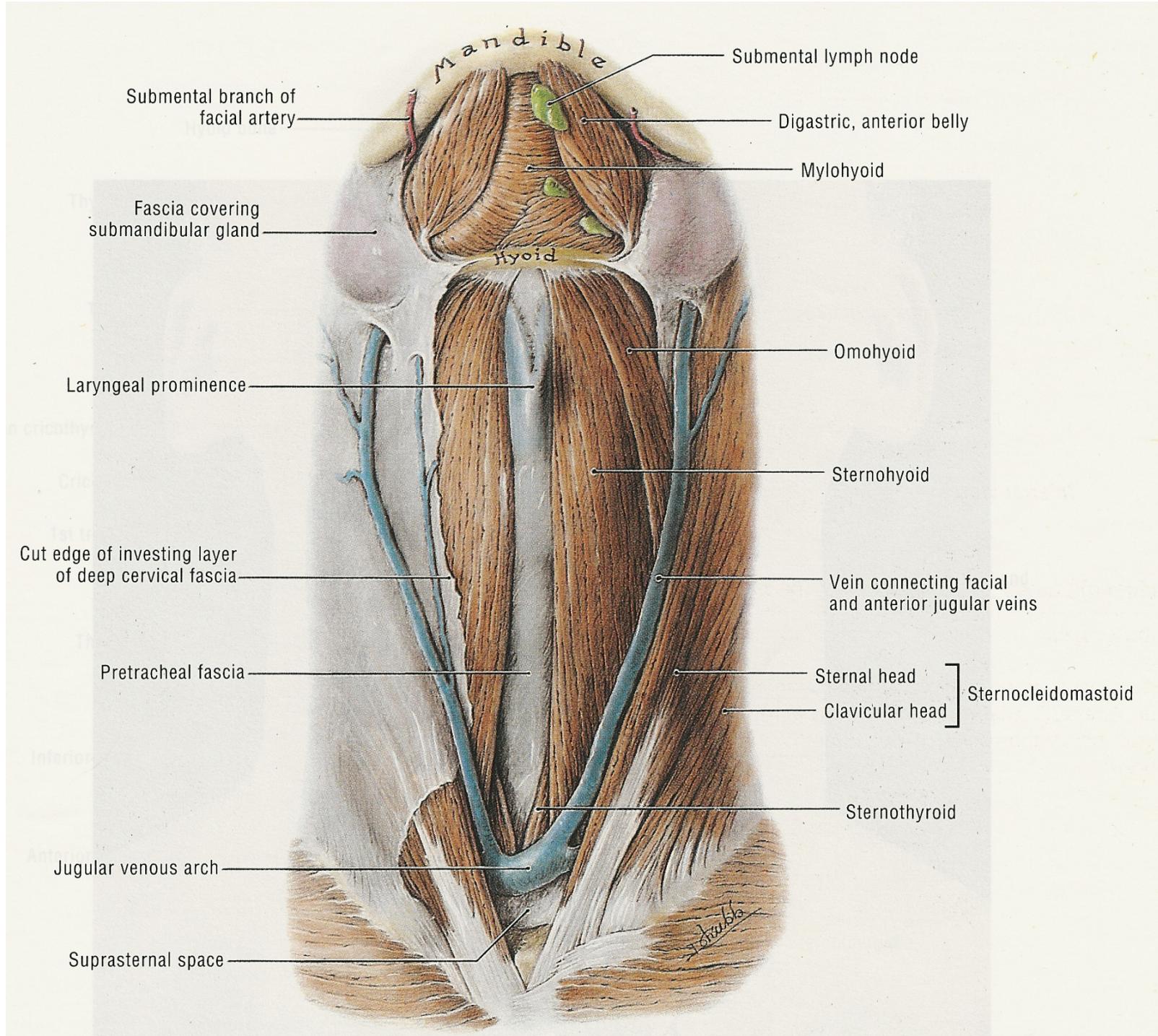




# Digastric muscle

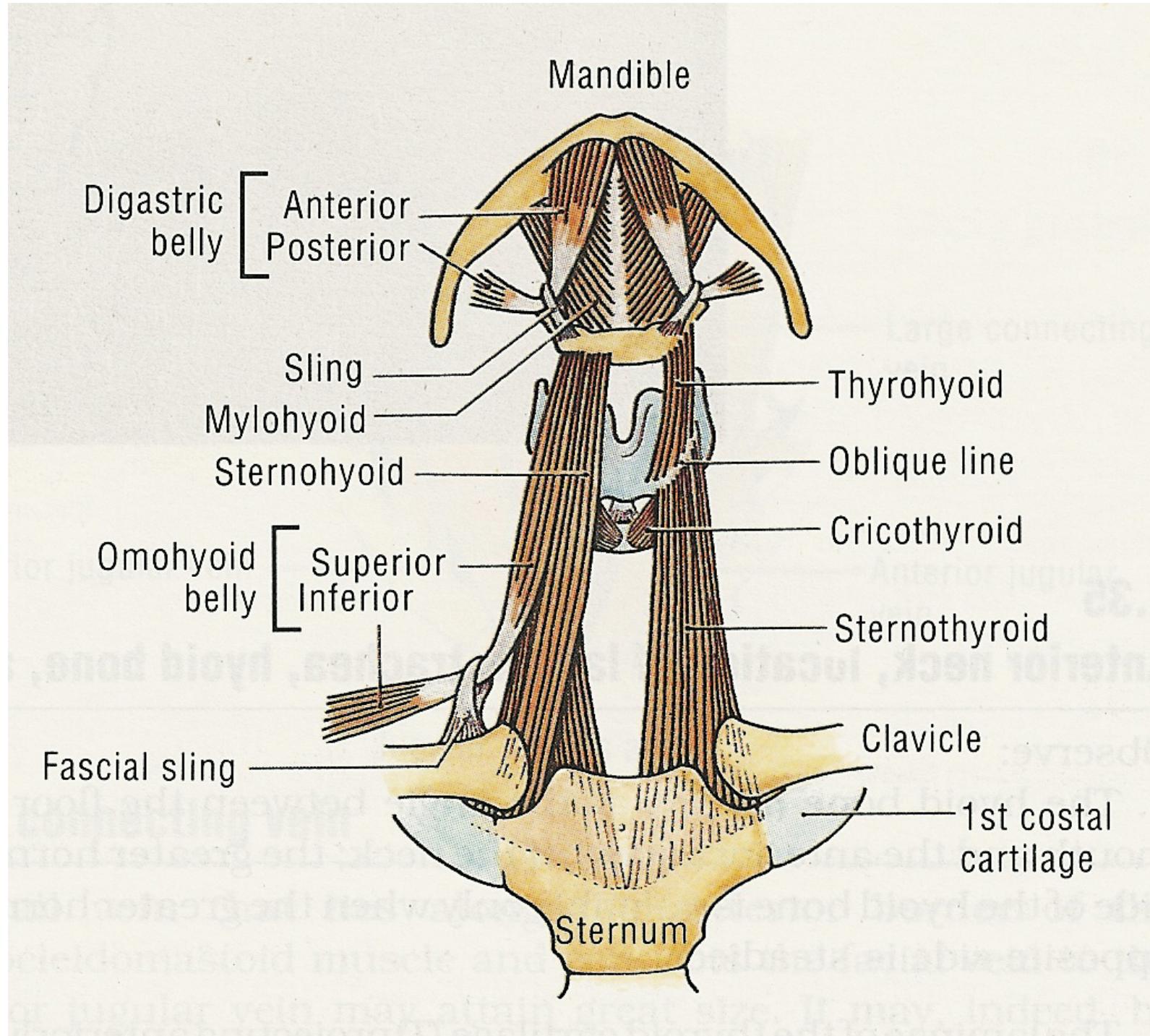
- Origin:
  1. Posterior belly from the medial surface of mastoid process (mastoid notch).
  2. Anterior belly from lower border of the body of the mandible (digastric fossa).
- Insertion: to the intermediate tendon which is held in position by fibrous loop to the hyoid bone, this tendon pierces the 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.





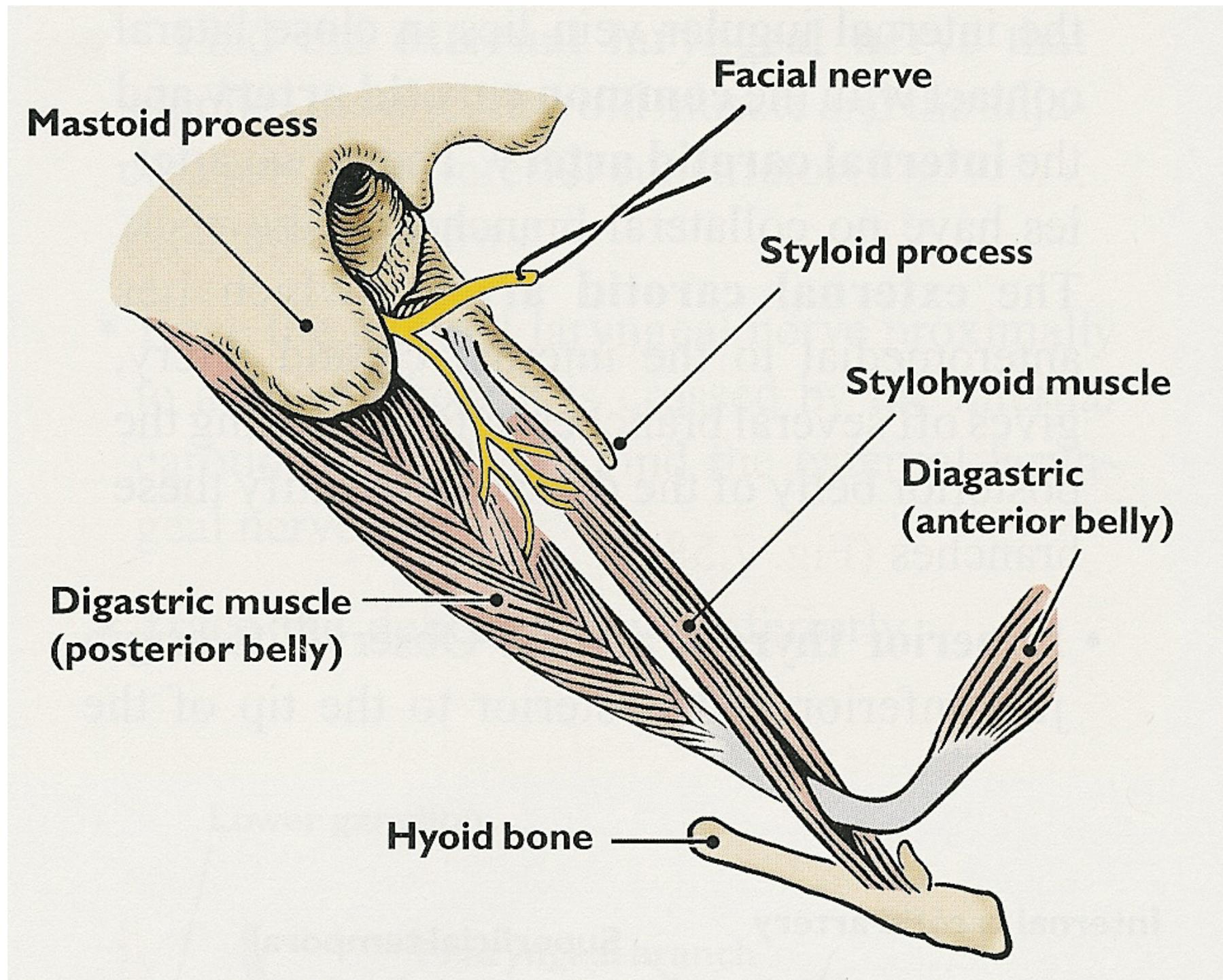
# Mylohyoid muscle

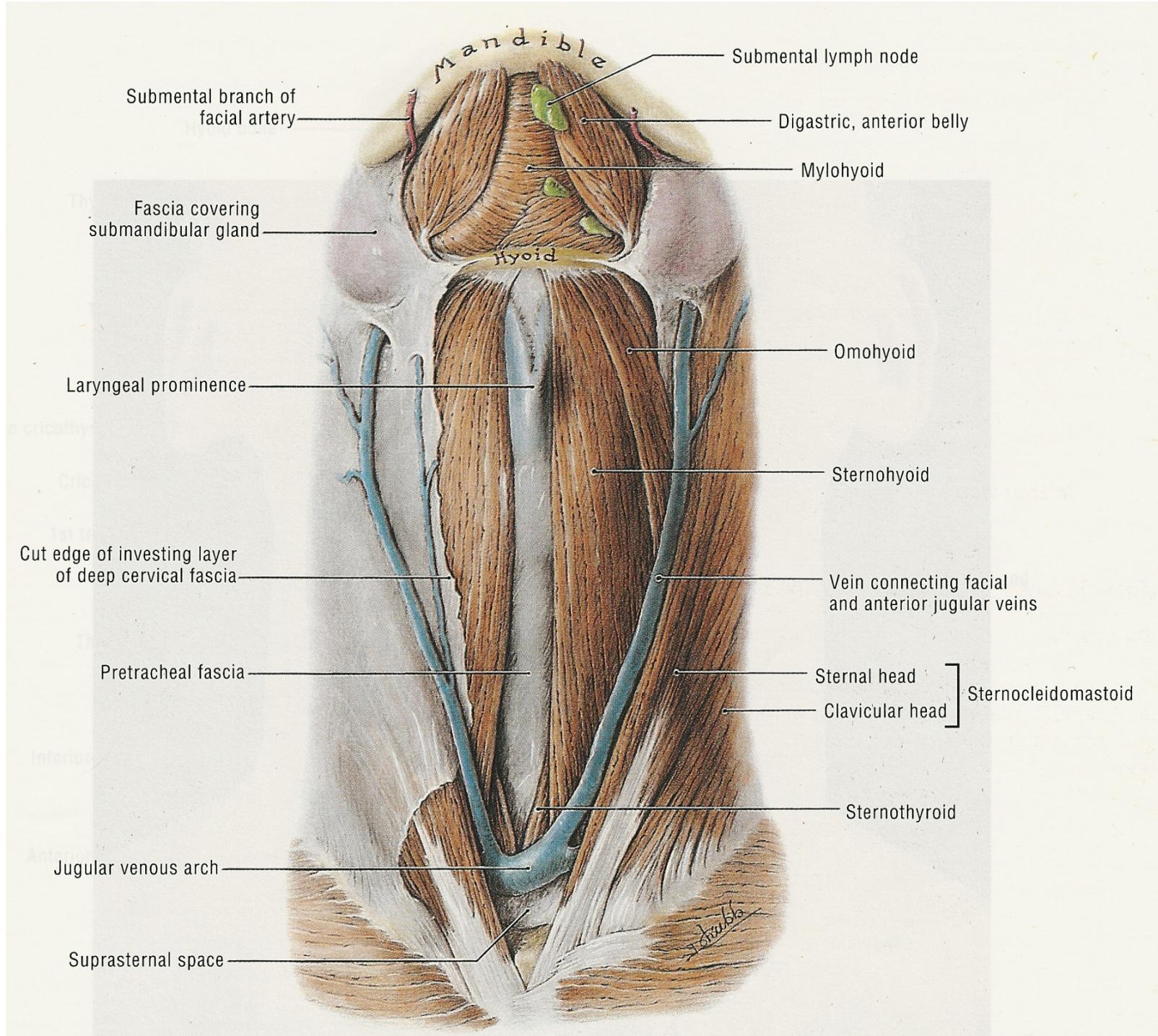
- Origin: Mylohyoid line of the inner surface of the mandible.
- Insertion: Upper surface of the body of the hyoid bone and in the mylohyoid raphe.
- Nerve supply: Nerve to mylohyoid from inferior alveolar nerve from posterior division of mandibular nerve.
- Action:
  1. Support tongue and floor of the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

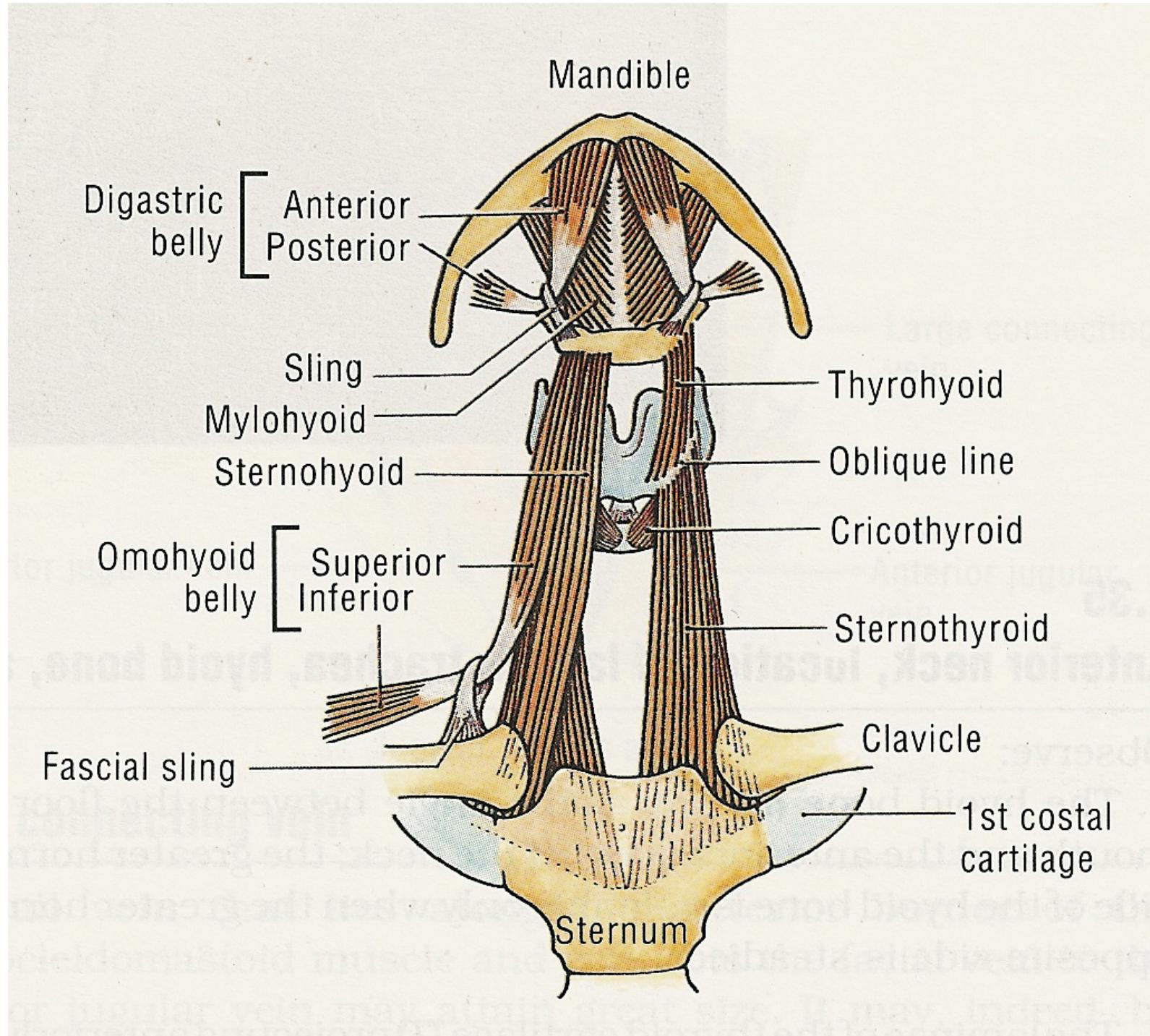


# Stylohyoid muscle

- 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.







# Sternohyoid muscle

- Origin: Posterior surface of upper part 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.

# Omohyoid muscle

- Origin:
  1. Superior belly from the inferior border of body of hyoid bone.
  2. 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.

# 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.

# Thyrohyoid muscle

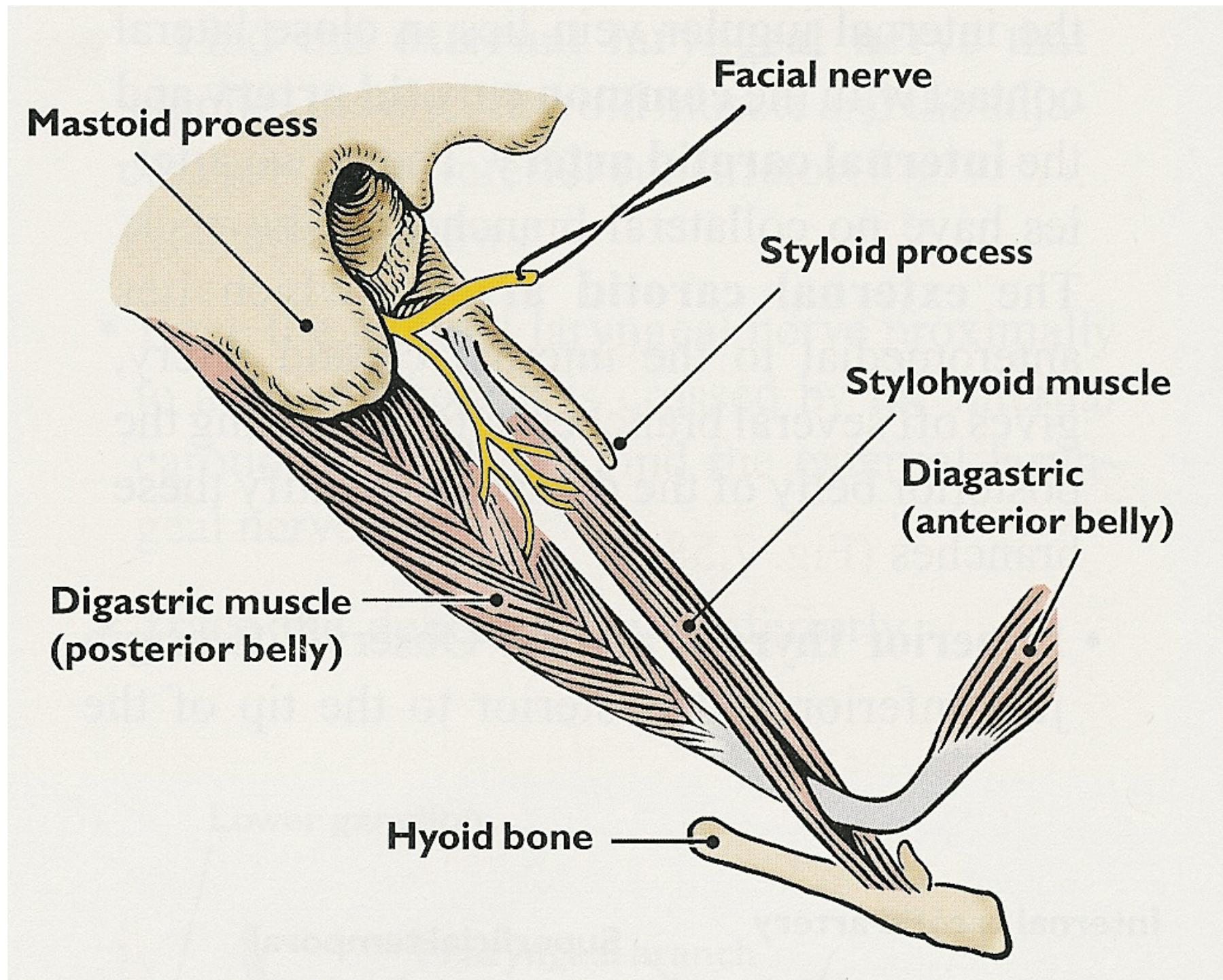
- Origin: oblique line of lamina of thyroid cartilage.
- Insertion: lower border of the body of hyoid bone.
- Nerve supply: First cervical nerve through the hypoglossal nerve.
- Action: Depression of the hyoid bone and elevation of thyroid cartilage and larynx.

# Digastric muscle

- Origin:
  1. Posterior belly from the medial surface of mastoid process (mastoid notch).
  2. 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.

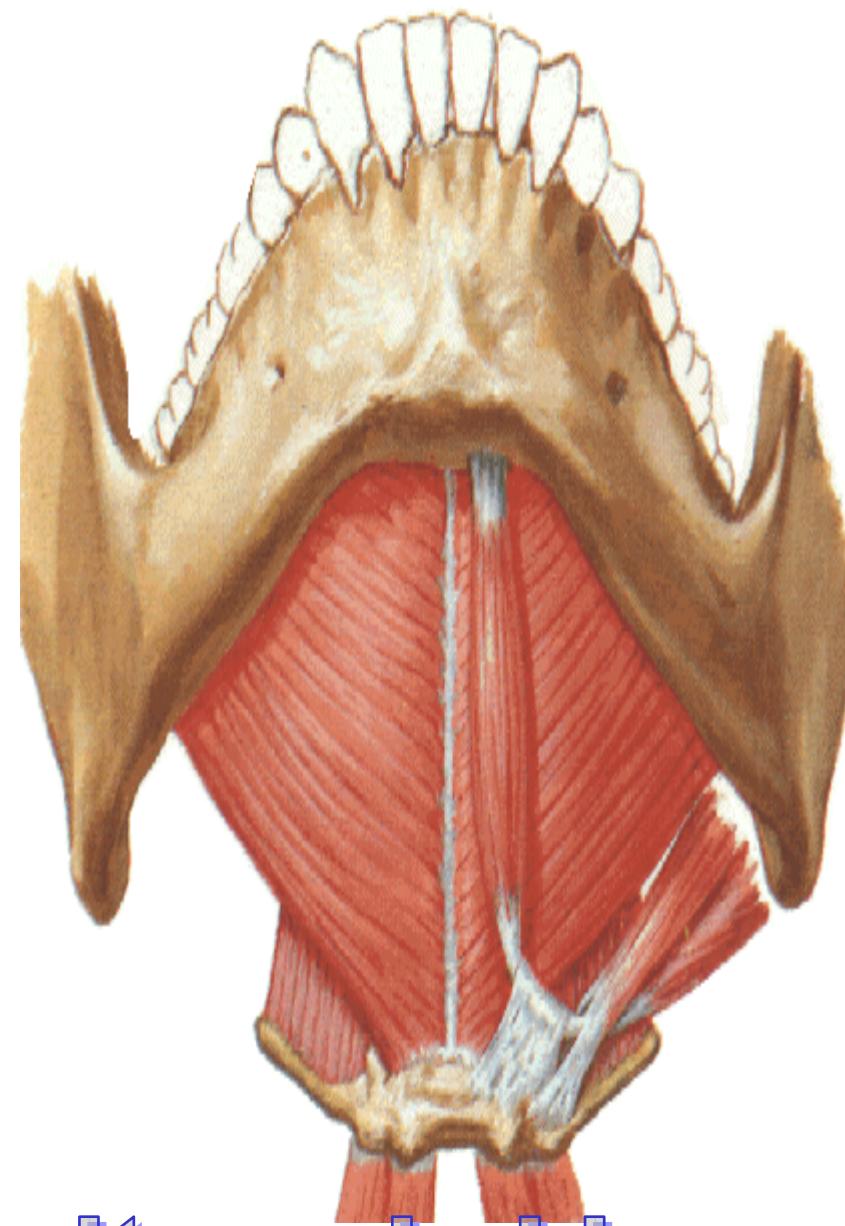
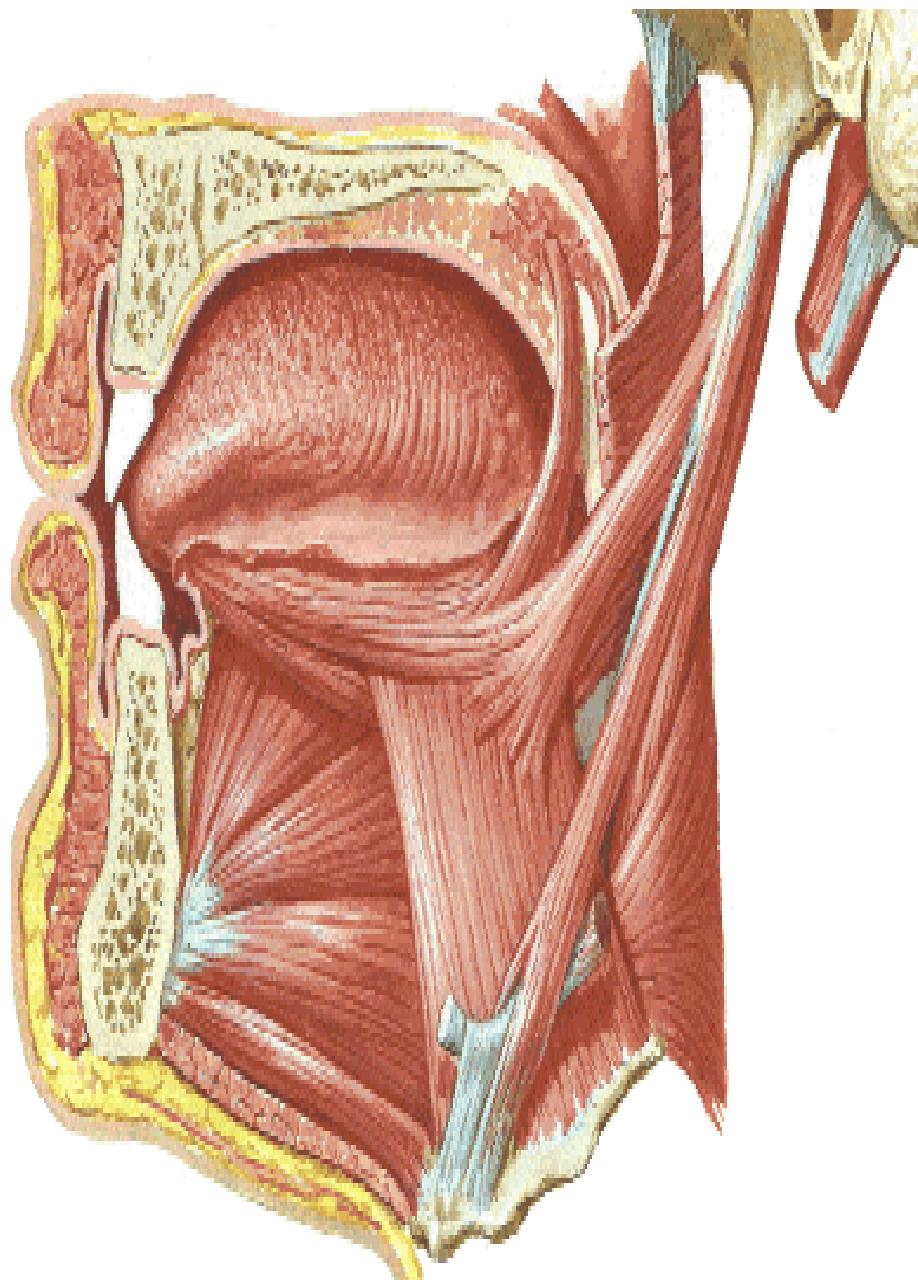
# **Stylohyoid muscle**

- 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:
  1. Support tongue and 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.



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# Geniohyoid muscle

- **Origin:** the inferior mental spine (genial tubercle) behind the symphysis menti of the mandible.
- **Insertion:** the anterior surface of the body of the hyoid bone.
- **Nerve supply:** from the first cervical nerve through the hypoglossal nerve.
- **Action:**
  1. Elevation and protraction of the hyoid bone.
  2. Depression of the mandible.

