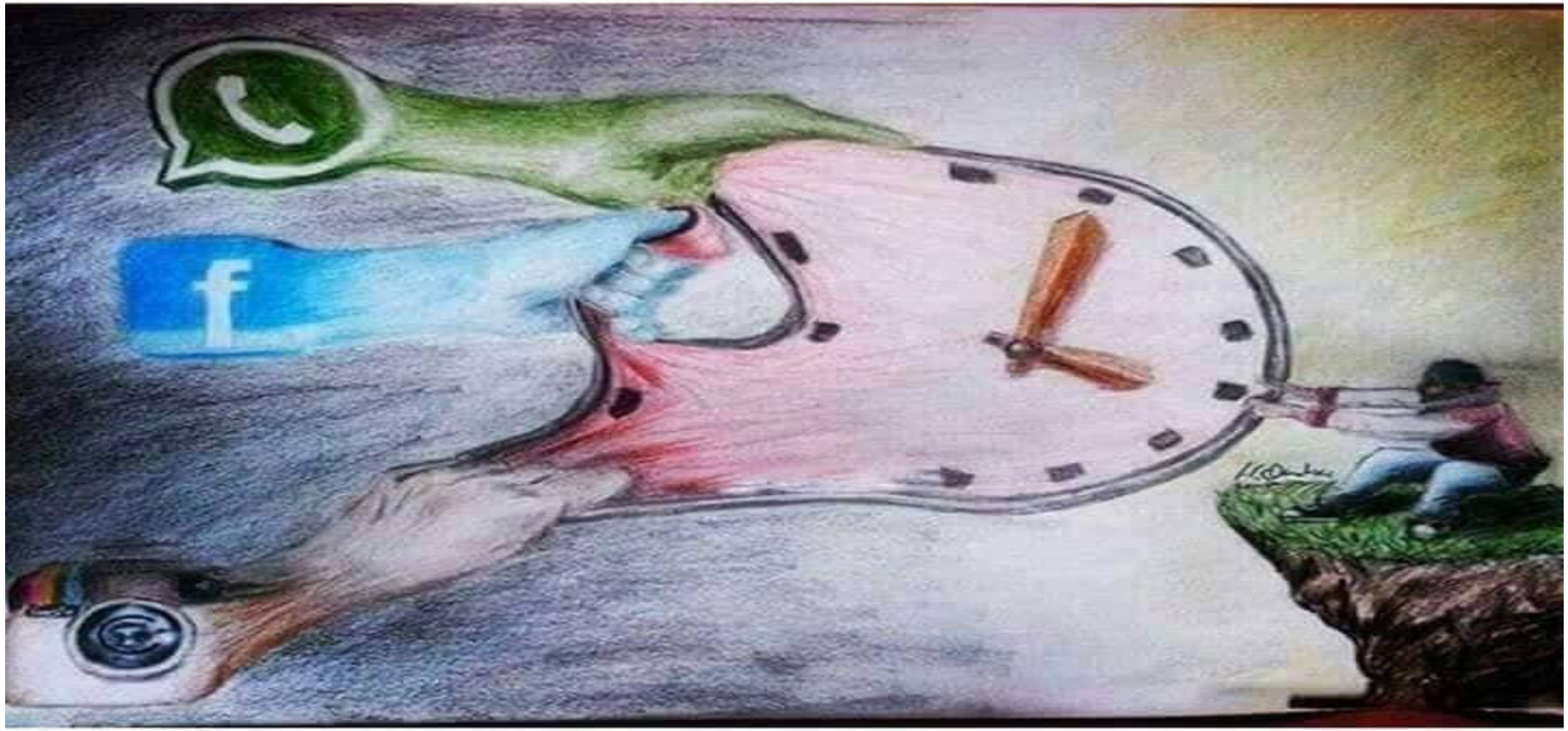
-
- أطعمكم الله من ثمار الجنه
  صباح الخير والهنا والسعادة
-

face

Don't let them take



Too much of your time Away. ☺

Face

- **The front of the human head is called the face. It includes several distinct areas, of which the main features are:**

- **The forehead, comprising the skin beneath the hairline, bordered laterally by the temples and inferiorly by eyebrows and ears.**
- **The eyes sitting in the orbit and protected by eyelids, and eyelashes.**

- **The distinctive human nose shape, nostrils, and nasal septum.**
- **The cheeks covering the maxilla and mandibula (or jaw), the extremity of which is the chin.**

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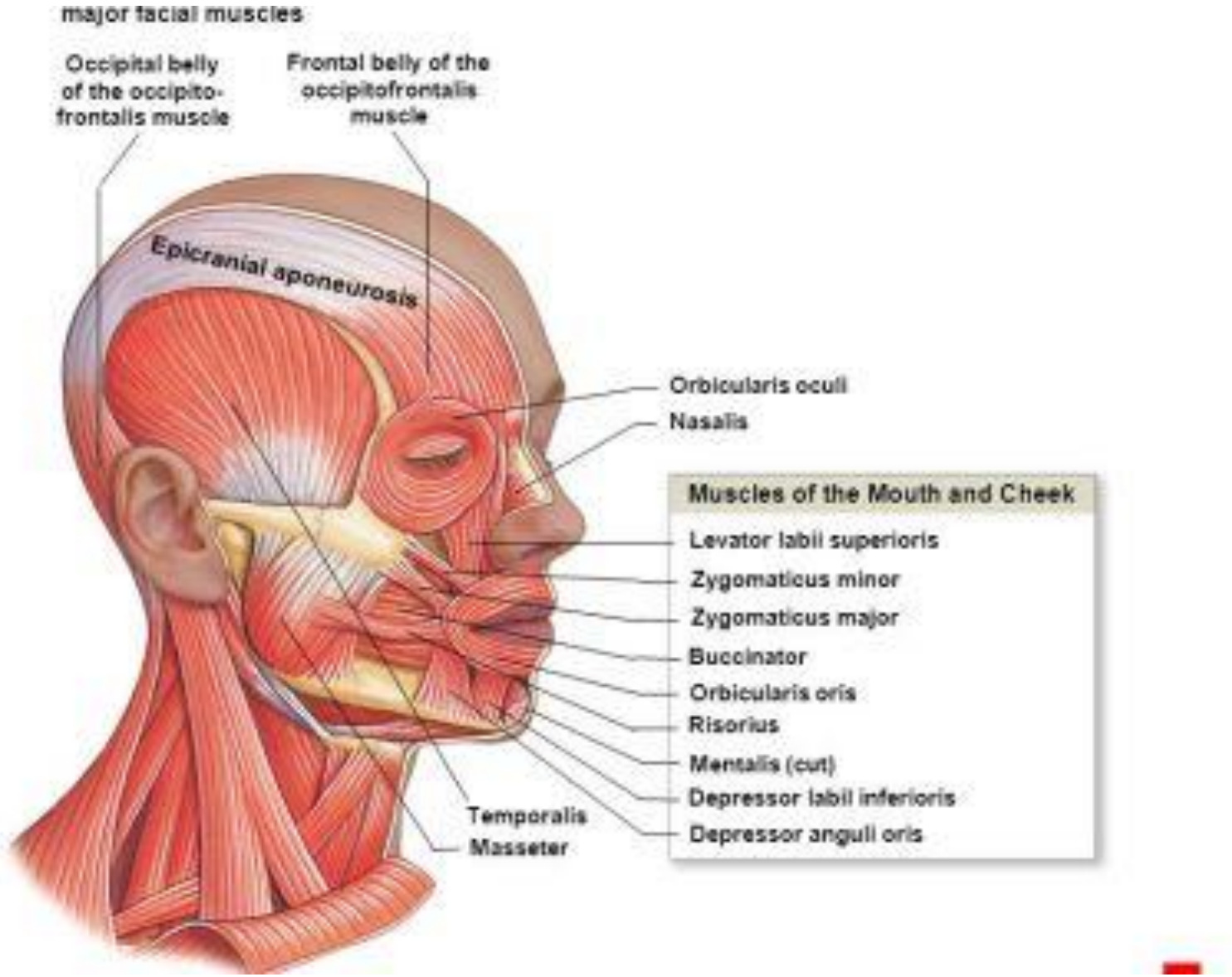
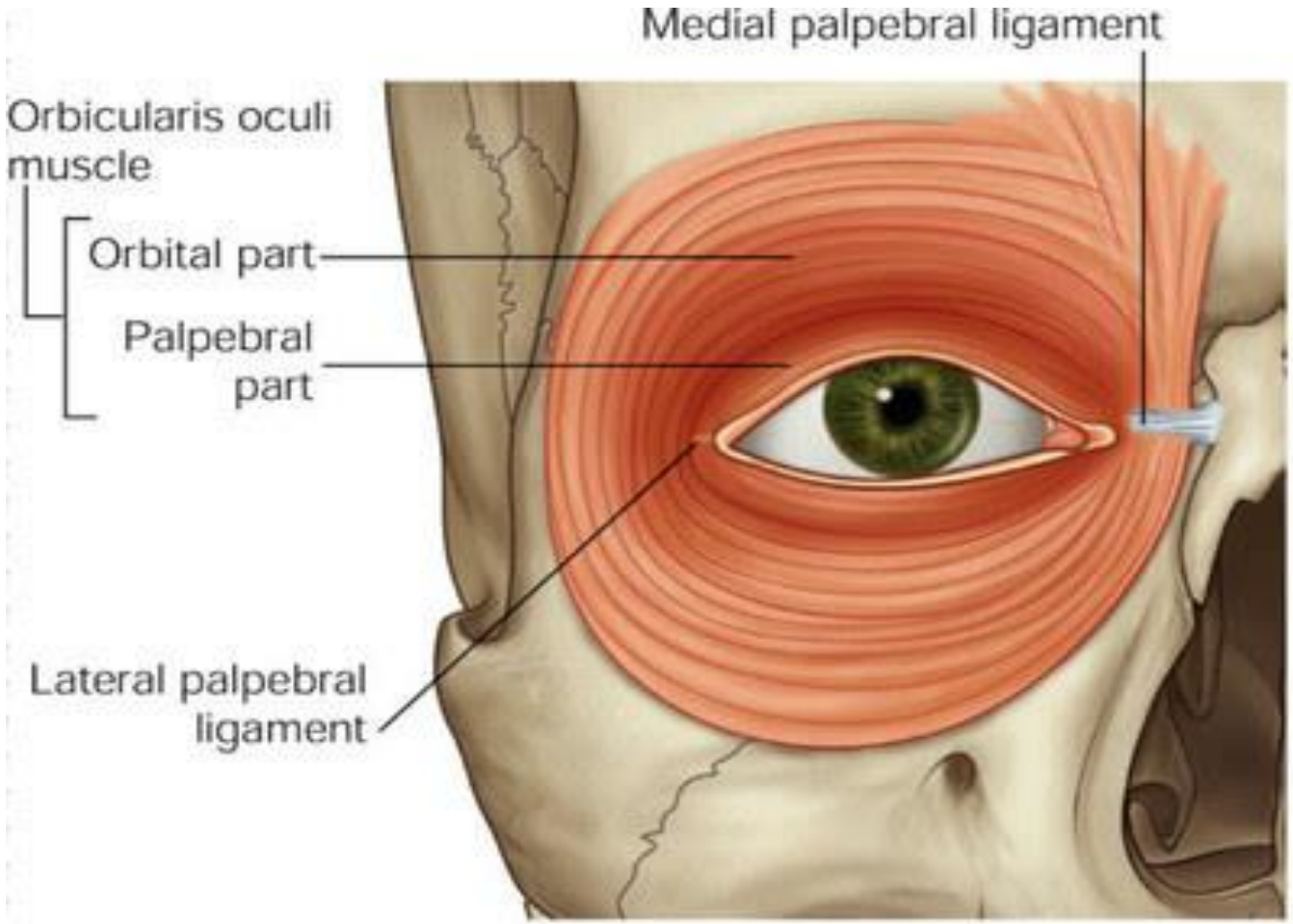
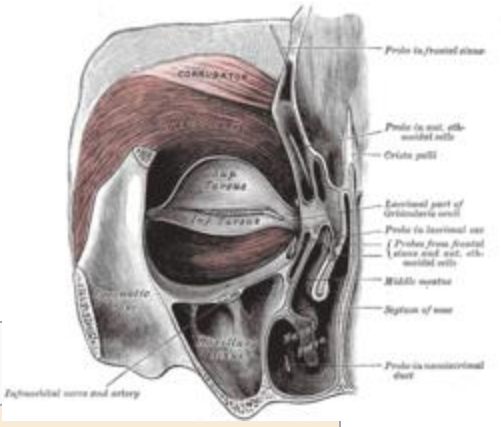


Orbicularis oculi muscle

-
- The **orbicularis oculi** is a muscle in the face **that closes the eyelids.**
- It arises from the nasal part of the frontal bone, from the frontal process of the maxilla in front of the lacrimal groove, and from the anterior surface and borders of a short fibrous band, the medial palpebral ligament.
- From this origin, the fibers are directed laterally, forming a broad and thin layer, which occupies the eyelids or palpebræ, surrounds the circumference of the orbit, and spreads over the temple, and downward on the cheek


Medial palpebral ligament
Orbicularis oculi muscle
Orbital part
Palpebral part
Lateral palpebral ligament



ORbicularis oculi muscle	
Details	
Origin	frontal bone; medial palpebral ligament; lacrimal bone
Insertion	lateral palpebral raphe
Artery	ophthalmic, zygomatico-orbital, angular
Nerve	Temporal (orbital, palpebral) & Zygomatic (lacrimal) branches of Facial Nerve
Actions	closes eyelids
Antagonist	levator palpebrae superioris

- there are at least 3 clearly defined sections of the orbicularis muscle. However, it is not clear whether the lacrimal section is a separate section, or whether it is just an extension of the Preseptal orbicularis and the Pretarsal orbicularis sections.

Orbital orbicularis

- The orbital portion is thicker and of a reddish color; its fibers form a complete ellipse without interruption at the lateral palpebral commissure; the upper fibers of this portion blend with the Frontalis and Corrugator.

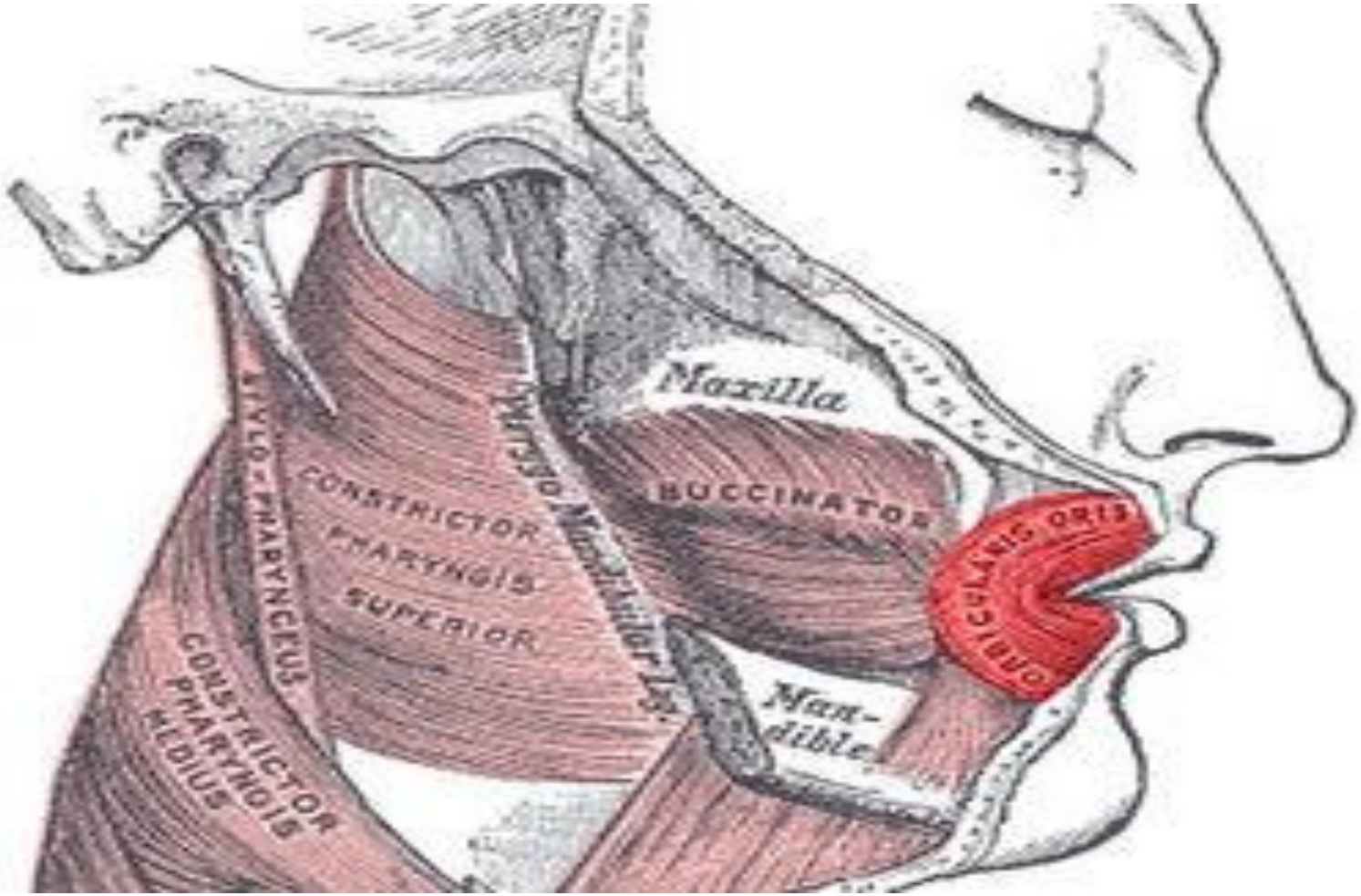
- **Palpebral orbicularis]**
- The palpebral portion of the muscle is thin and pale; it arises from the bifurcation of the medial palpebral ligament, forms a series of concentric curves, and is inserted into the lateral palpebral raphe at the outer canthus (corner) of eye.[3] The palpebral portion contains the Preseptal orbicularis and the Pretarsal orbicularis muscles. The Pretarsal orbicularis is thought to be responsible for the spontaneous blink

- **Lacrimal orbicularis[**
- The lacrimal part (tensor tarsi) is a small, thin muscle, about 6 mm in breadth and 12 mm in length, situated behind the medial palpebral ligament and lacrimal sac. It arises from the posterior crest and adjacent part of the orbital surface of the lacrimal bone, and passing behind the lacrimal sac, divides into two slips, upper and lower, which are inserted into the superior and inferior tarsi medial to the puncta lacrimalia; occasionally it is very indistinct. The lacrimal orbicularis facilitates the tear pump into the lacrimal sac.[4]
- Function

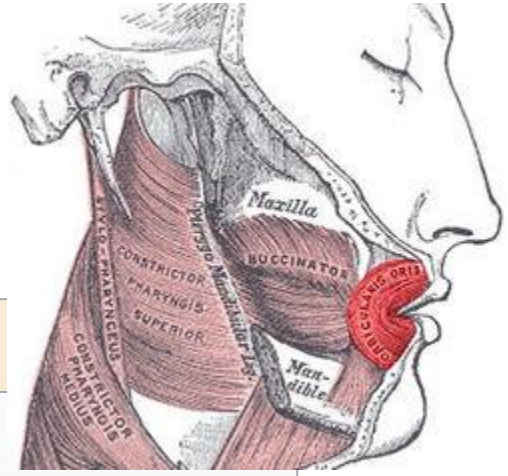
- The muscle acts to close the eye, and is the only muscle capable of doing so. Loss of function for any reason results in an inability to close the eye, necessitating eye drops at the minimum to surgical closure of the eye in extreme cases.
- The palpebral portion acts involuntarily, closing the lids gently, as in sleep or in blinking; the orbital portion is subject to conscious control. When the entire muscle is brought into action, the skin of the forehead, temple, and cheek is drawn toward the medial angle of the orbit, and the eyelids are firmly closed, as in photophobia. The skin thus drawn upon is thrown into folds, especially radiating from the lateral angle of the eyelids; these folds become permanent in senescence, and form the so-called “crow's feet.” The Levator palpebræ superioris is the direct antagonist of this muscle; it raises the upper eyelid and exposes the front of the bulb of the eye. In addition, the orbital and palpebral portions can work independent of each other, as in the furrowing of the brows by contraction of the orbital to reduce glare while keeping the eyes open by virtue of the relaxation of the palpebral.[3]

- Each time the eyelids are closed through the action of the Orbicularis, the medial palpebral ligament is tightened, the wall of the lacrimal sac is thus drawn lateralward and forward, so that a vacuum is made in it and the tears are sucked along the lacrimal canals into it. The lacrimal part of the Orbicularis oculi draws the eyelids and the ends of the lacrimal canals medialward and compresses them against the surface of the globe of the eye, thus placing them in the most favorable situation for receiving the tears; it also compresses the lacrimal sac. This part comprises two pieces: Horner's muscle and the muscle of Riolan, the latter helps hold the eyelids together to keep the lacrimal passage waterproof.[3]
- Associated pathology, such as a lesion of the facial nerve seen in Bell's palsy results in the inability to blink or close the ipsilateral eyelid. Subsequent lack of irrigation increases the risk of corneal inflammation and ulcers.[*cit*

Orbicularis oris muscle

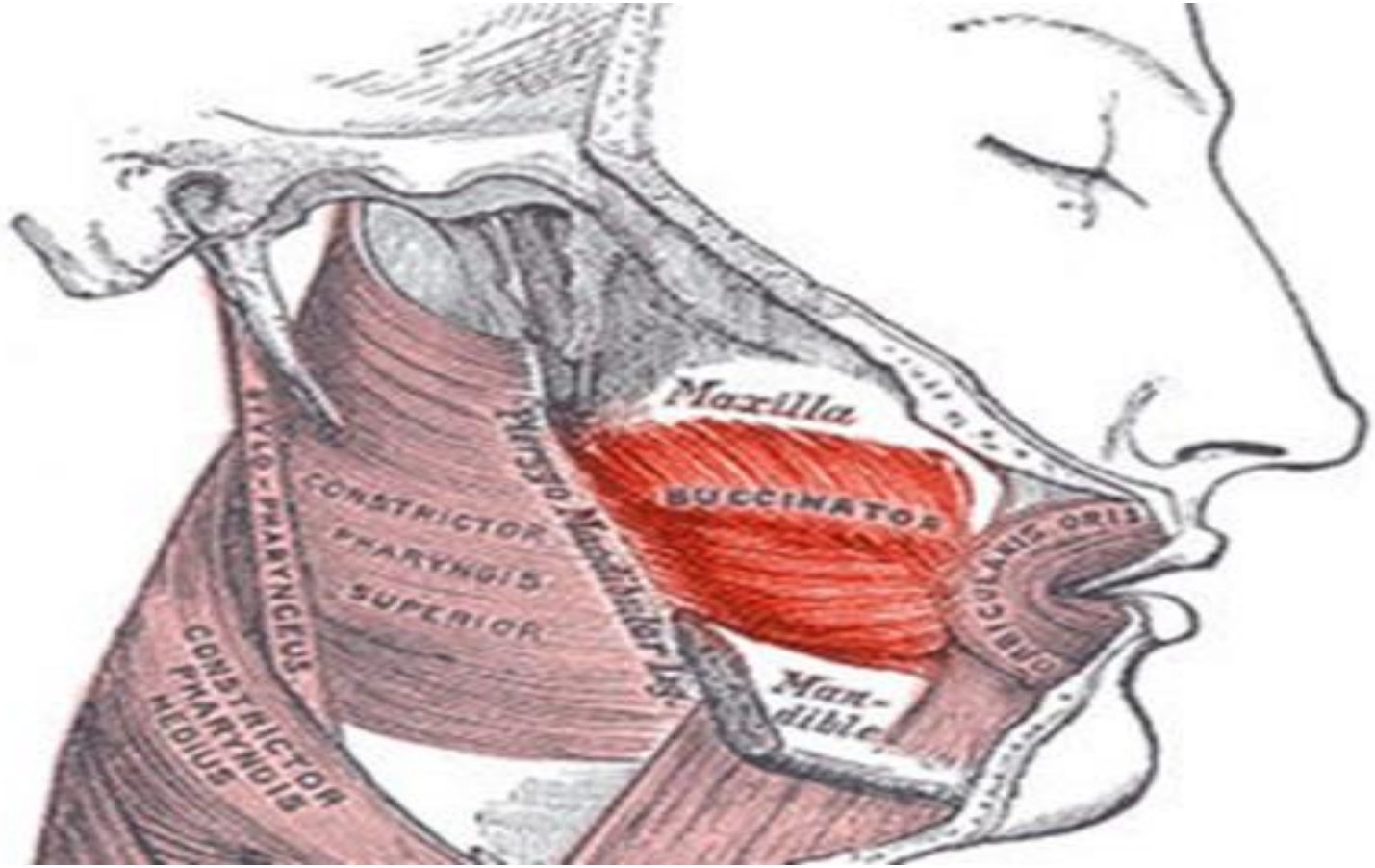


- In human anatomy, the **orbicularis oris muscle** is a complex of muscles in the lips that encircles the mouth. Until recently, it was misinterpreted as a sphincter, or circular muscle, but it is actually composed of four independent quadrants that interlace and give only an appearance of circularity.[3]
- It is also one of the muscles used in the playing of all brass instruments and some woodwind instruments. This muscle closes the mouth and puckers the lips when it contracts.

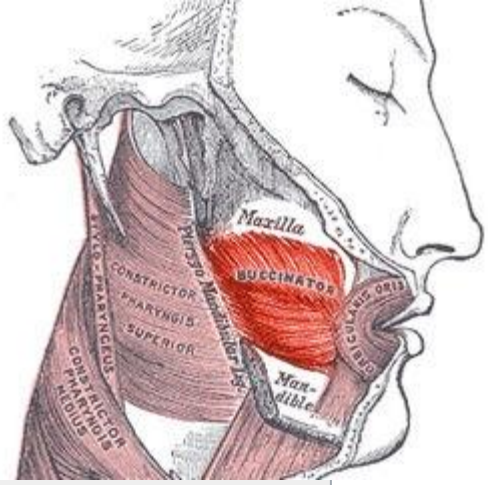


Orbicularis oris	
Details	
Origin	Maxilla and mandible
Insertion	Skin around the lips
Artery	Inferior labial artery and superior labial artery.
Nerve	cranial nerve VII, buccal branch
Actions	It is sometimes known as the *kissing muscle* because it is used to pucker the lips.

Buccinator muscle

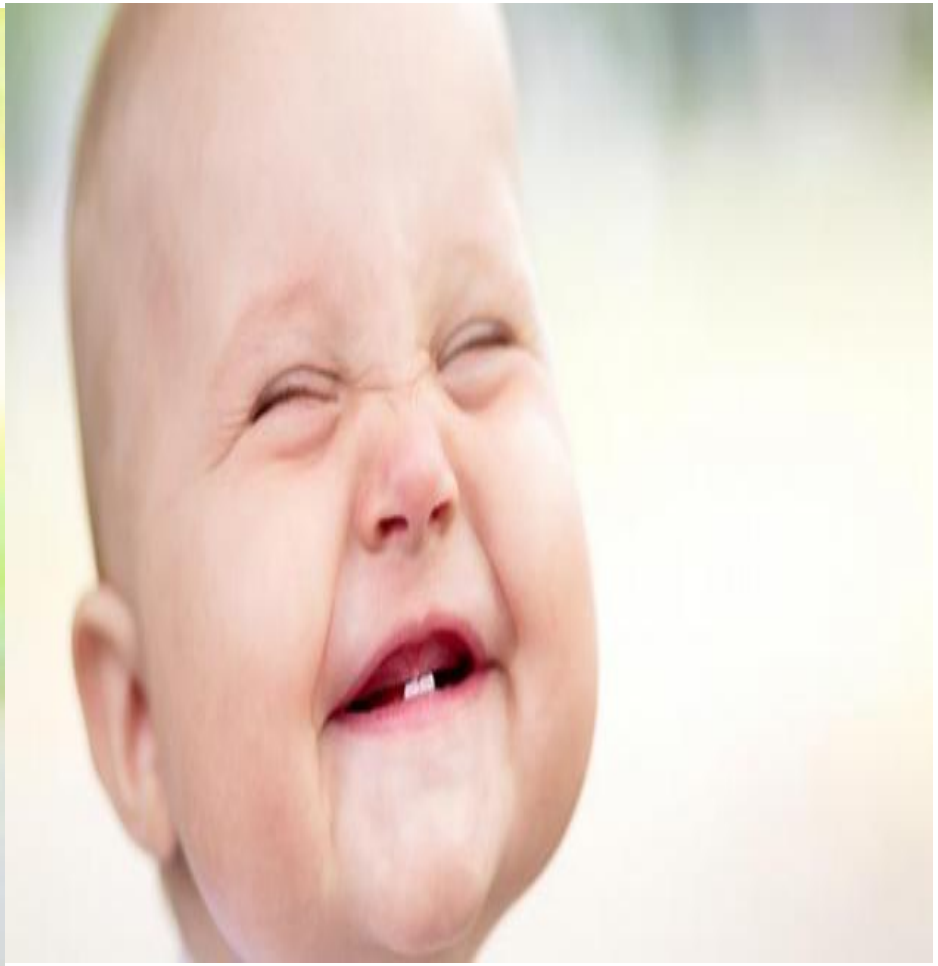


Buccinator muscle



Buccinator muscle	
Buccinator outlined in red.	
Details	
Origin	from the alveolar processes of maxilla and mandible, and temporomandibular joint
Insertion	in the fibers of the orbicularis oris
Artery	buccal artery
Nerve	buccal branch of the facial nerve(VII cranial nerve)
Actions	The buccinator compresses the cheeks against the teeth and is used in acts such as blowing. It is an assistant muscle of mastication (chewing) and in neonates it is used to suckle.

child close eye lids



Teaching Kids How to Whistle whistling!

Yikes! Blowing out birthday candles

Little Girl Blowing Soap Bubbles

- Superficial Nerves of the Face and Scalp
- The superficial nerves of the face and scalp are derived from three primary nerves:

- Cranial nerve 7 / the facial nerve (which provides motor innervation to the muscles of the face)
- Cranial nerve 5 / the trigeminal nerve (which provides sensory innervation to the face)

The cervical plexus (which provides innervation to the scalp)

- Contents

INNERVATION OF THE FACE

- **Sensory**

Trigeminal Nerve

- The sensory innervation to the face comes from the trigeminal nerve which is the only cranial nerve that arises directly from the pons. Its three branches are the Ophthalmic (V1), Maxillary (V2) and Mandibular (V3). Each of those branches supplies the corresponding region on the face. The trigeminal also supplies the muscles of mastication (medial and lateral pterygoids, temporalis and masseter).

Ophthalmic Division (V1) nerves

- The supraorbital nerve is a terminal branch of the frontal nerve. It travels through the supraorbital foramen, and provides palpebral branches to the upper eyelid. It also supplies the conjunctiva of the eye (the transparent covering over the inside of the eyelids and the white part of the eyeball), the skin of the forehead as far back as the middle of the scalp, and the frontal sinus.
-

- The supratrochlear nerve is one of the branches of the frontal nerve, which is a branch of the ophthalmic division of the trigeminal nerve (5th cranial nerve). The nerve travels superior to the pulley of the superior oblique muscle and then gives off a fine descending filament that joins the infratrochlear branch of the nasociliary nerve. The supratrochlear nerve has a complex course and initially travels between the supraorbital foramen and the pulley of the superior oblique. Then, it takes a gradually curving path up the forehead and passes in between two muscles of the head and face - the frontalis and the corrugator supercili. At that point, it pierces these muscles and also splits into branches that supply the skin of the upper eyelid, the skin of the forehead, near the midline (the glabella region) and also the conjunctiva.

- The external nasal branches are the terminal branches of the anterior ethmoidal nerves (from the ophthalmic division of the trigeminal nerve i.e. cranial nerve 5) and function to provide sensation to the skin over the cartilaginous nasal septum and also the lower half of the nose.

- The infratrochlear nerve is the terminal branch of the nasociliary nerve, which is a branch of the ophthalmic division of the trigeminal nerve. The infratrochlear nerve arises after the anterior ethmoidal nerve enters the anterior ethmoidal foramen. The nerve runs anteriorly along the superior border of the medial rectus muscle and is usually joined by a small filament of the supratrochlear nerve near the pulley of the superior oblique muscle. The nerve then travels medially to supply the skin of the bridge of the external nose and the superior eyelids, caruncle and lacrimal sac.
-

Maxillary Division (V2) Branches

- The zygomaticofacial nerve is a branch of the maxillary nerve which is a branch of the 5th cranial nerve (trigeminal nerve). The zygomaticofacial nerve supplies the skin which lies over both the temporal bone and zygomatic bone. It achieves that by entering the orbit. This nerve is very easily confused with the zygomatic branch of the facial nerve which is a motor nerve, not a sensory nerve.
-

- The zygomaticotemporal nerve is a small branch of the V2 (maxillary) branch of the trigeminal nerve. The nerve travels along the lateral most wall of the orbital socket, specifically in a groove in the zygomatic bone. The nerve combines with a small branch of the lacrimal nerve. It enters the temporal fossa by passing through the zygomaticotemporal foramen in the zygomatic bone. From that location, the nerve progresses in the space between the temporal bone and the temporalis muscle. It goes on to pierce the temporal fascia superior to the zygomatic arch, where it divides and goes to supply sensory innervation to the skin at the side of the forehead. As the nerve pierces the fascia, it travels between the two layers of the fascia to eventually enter at the lateral angle of the orbit. This nerve also communicates with the facial nerve and the auriculotemporal branch of the mandibular nerve.

- The infraorbital nerve is a branch of the maxillary nerve as it enters the infraorbital canal. It is responsible for providing sensory innervation to the lower eyelid, upper lip, infraorbital foramen of the maxilla and the nasal vestibule.

Mandibular Division (V3) Branches

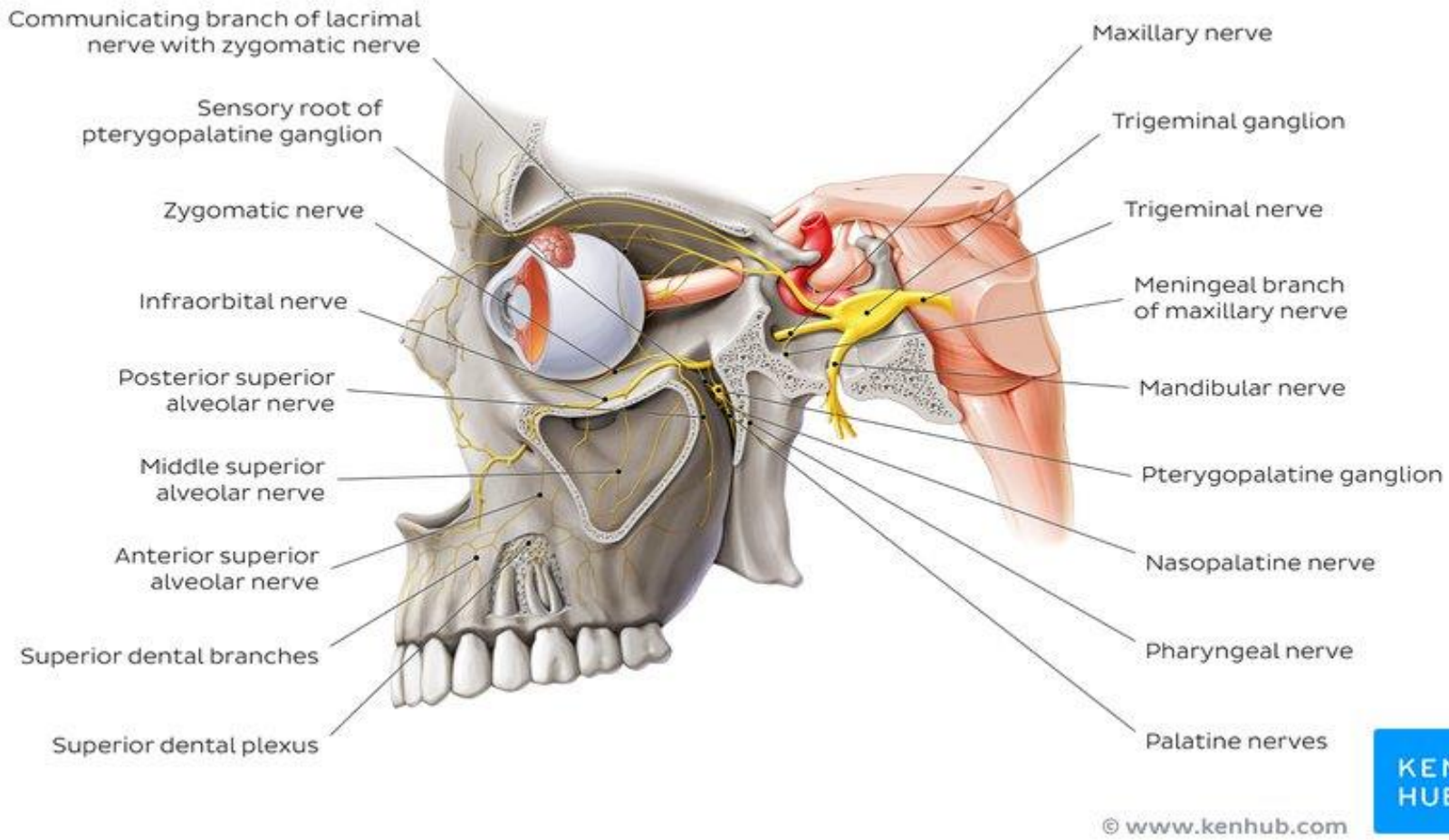
- The mandibular division (V3) of the fifth cranial nerve i.e. the trigeminal nerve gives off a branch known as the auriculotemporal nerve. Its course is similar to both the superficial temporal artery (the terminal branch of the external carotid artery) and vein. The function of the nerve is to provide sensory innervation to the areas of skin on the side of the head.
-

- The buccal nerve is another branch of the mandibular nerve and is responsible for supplying sensory innervation to the skin over the buccal membrane (internal surface) of the cheek. It is important to distinguish this nerve from the buccal branch of the facial nerve which functions to provide motor innervation to the buccinator muscle on the cheek. Sensory innervation to the external skin of the face is also done via the trigeminal nerve. The mental nerve is the terminal branch of the inferior alveolar nerve (a branch of the mandibular division of the trigeminal nerve). It exits the mandible via the mental foramen to provide sensation over the chin area.

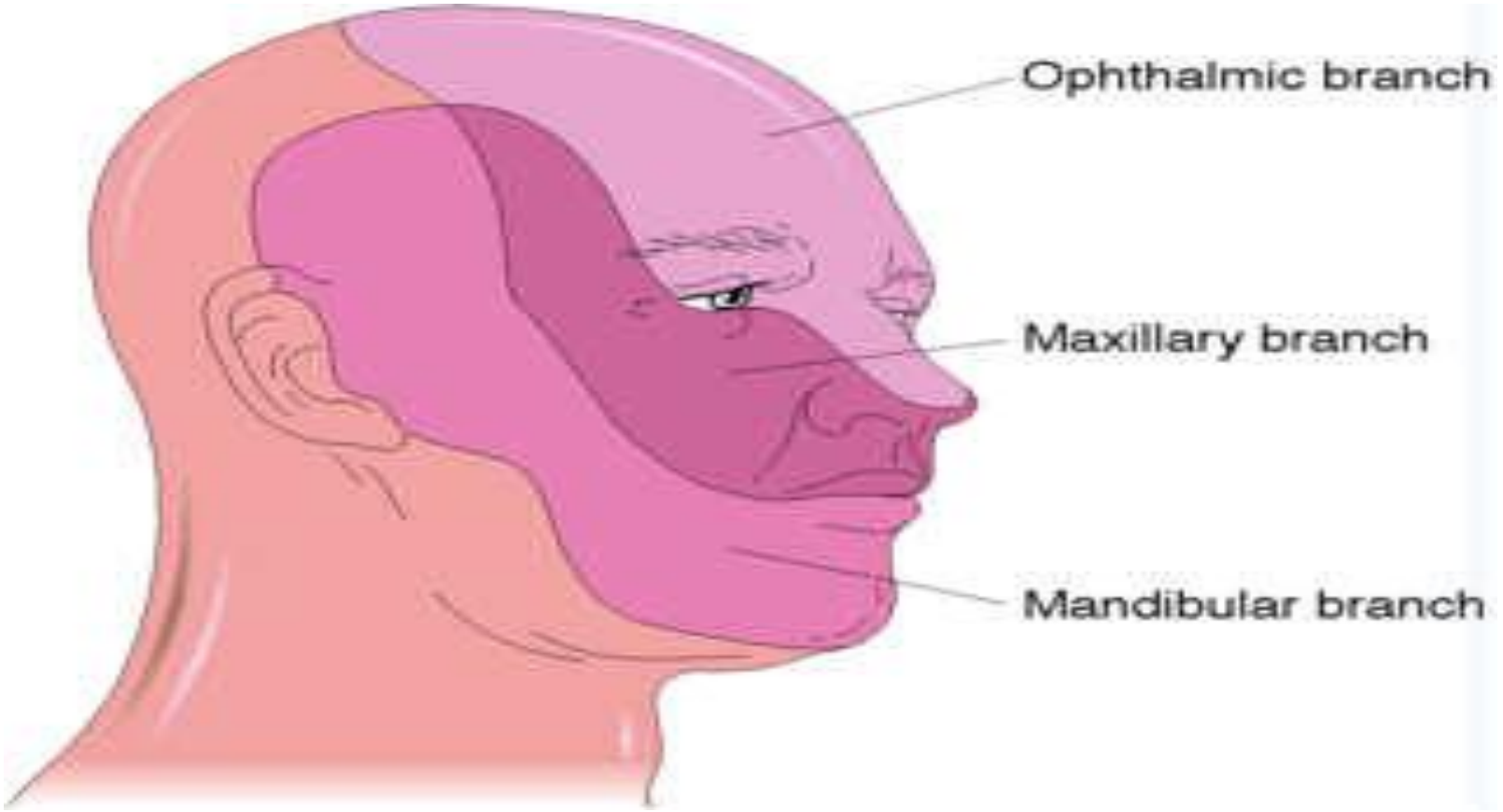
- ## Nerve of the Cervical Plexus

- The **great auricular nerve** is a branch of the cervical plexus and has nerve roots C2 and C3. Its functional role is to supply sensory innervation on the skin over the mastoid process, outer ear and parotid gland regions.

Trigeminal Nerve



Trigeminal N



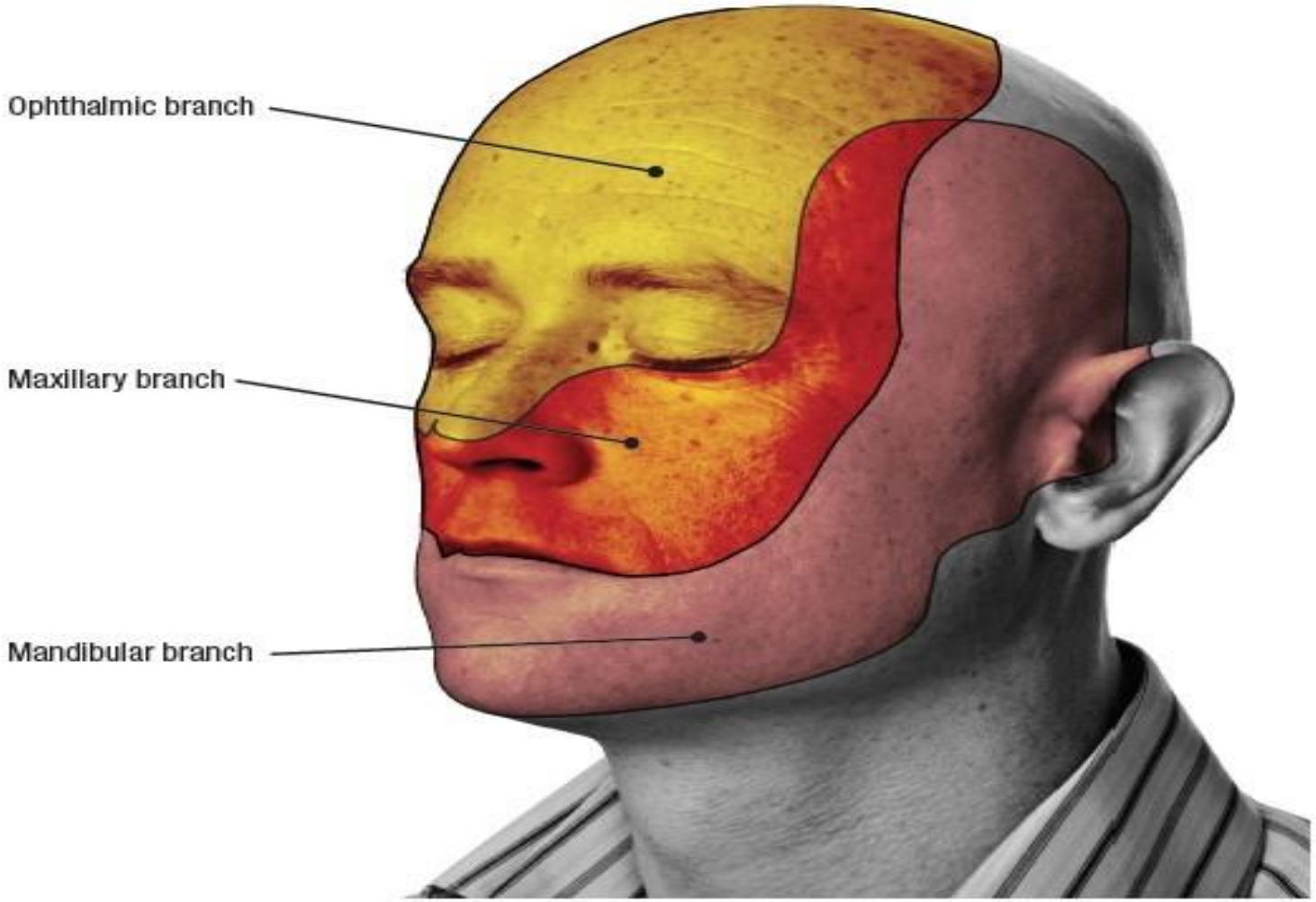
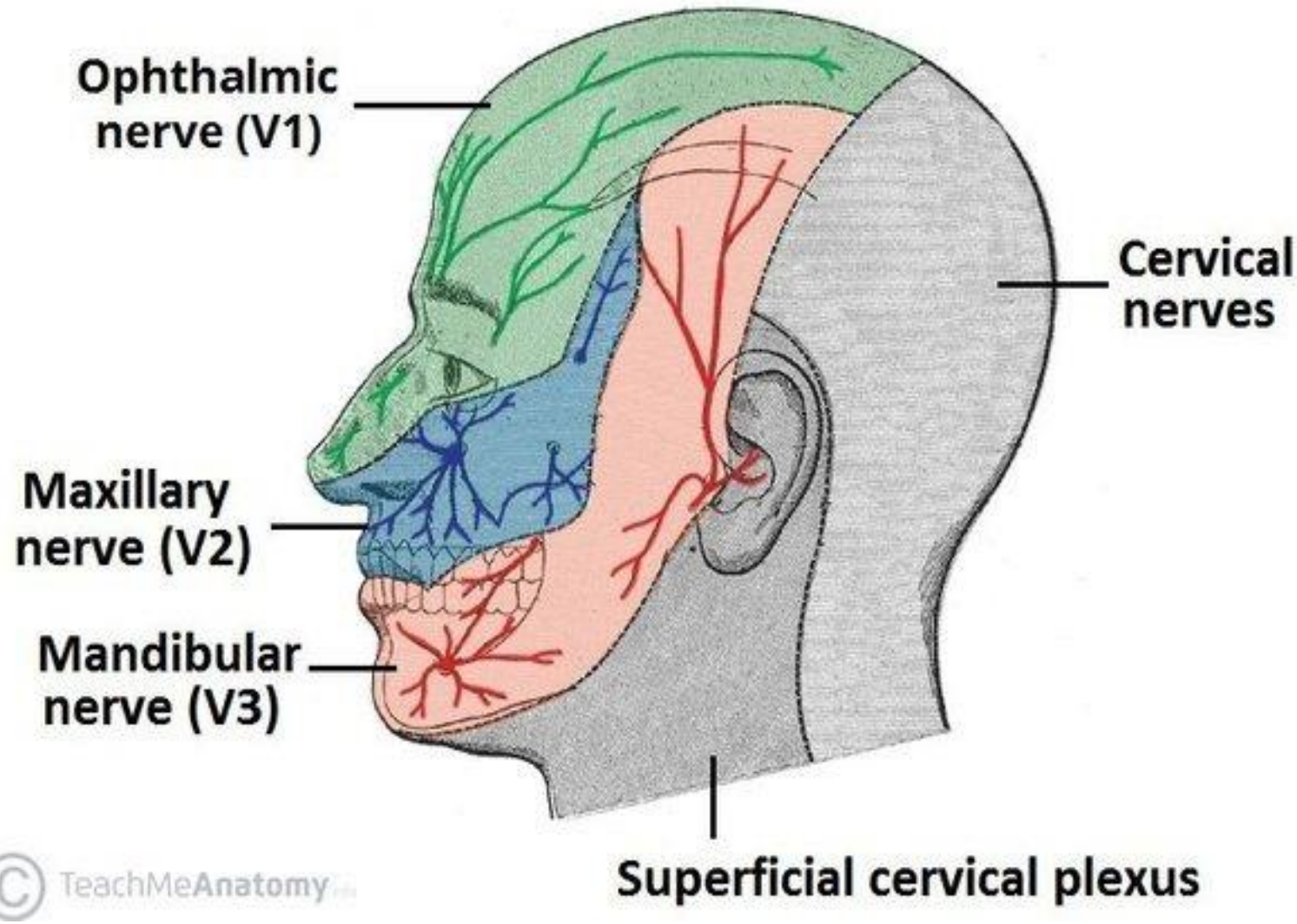
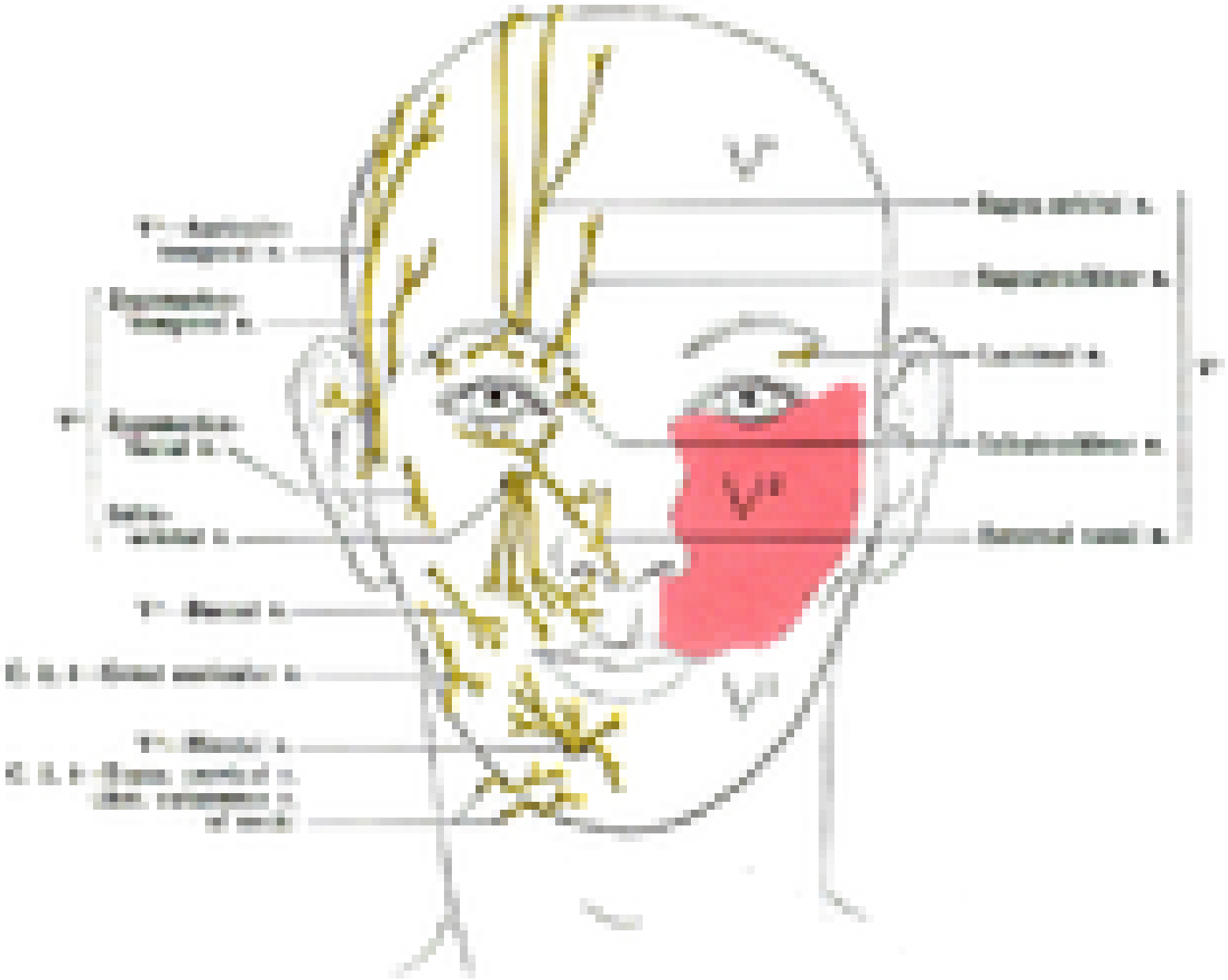
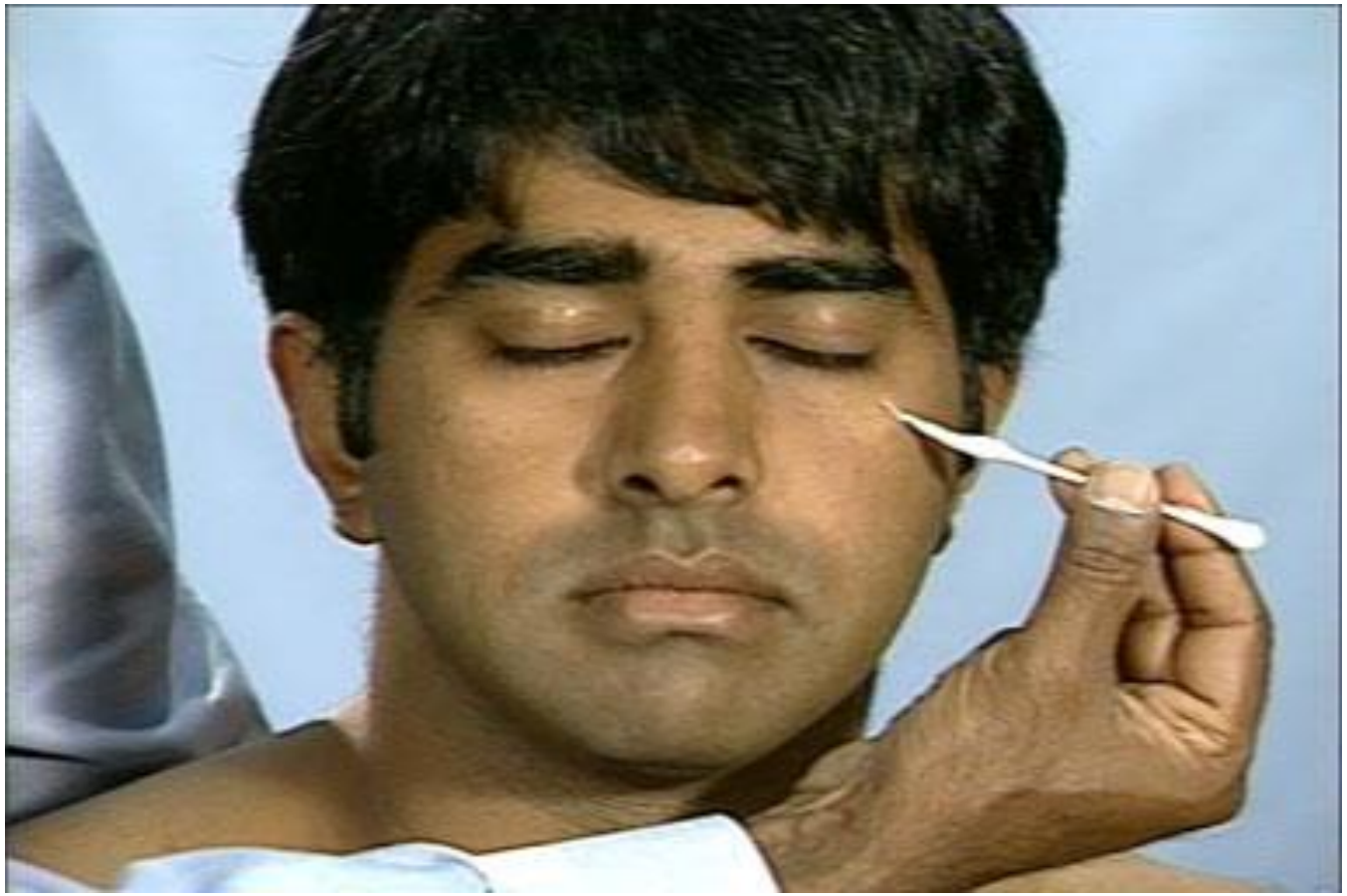


Figure 1. Distribution of the cranial nerve V: the ophthalmic nerve (V_1), the maxillary nerve (V_2), and the mandibular nerve (V_3).




V
V¹
V²
V³

Light Touch of Face



Trigeminal nerve (CN) V

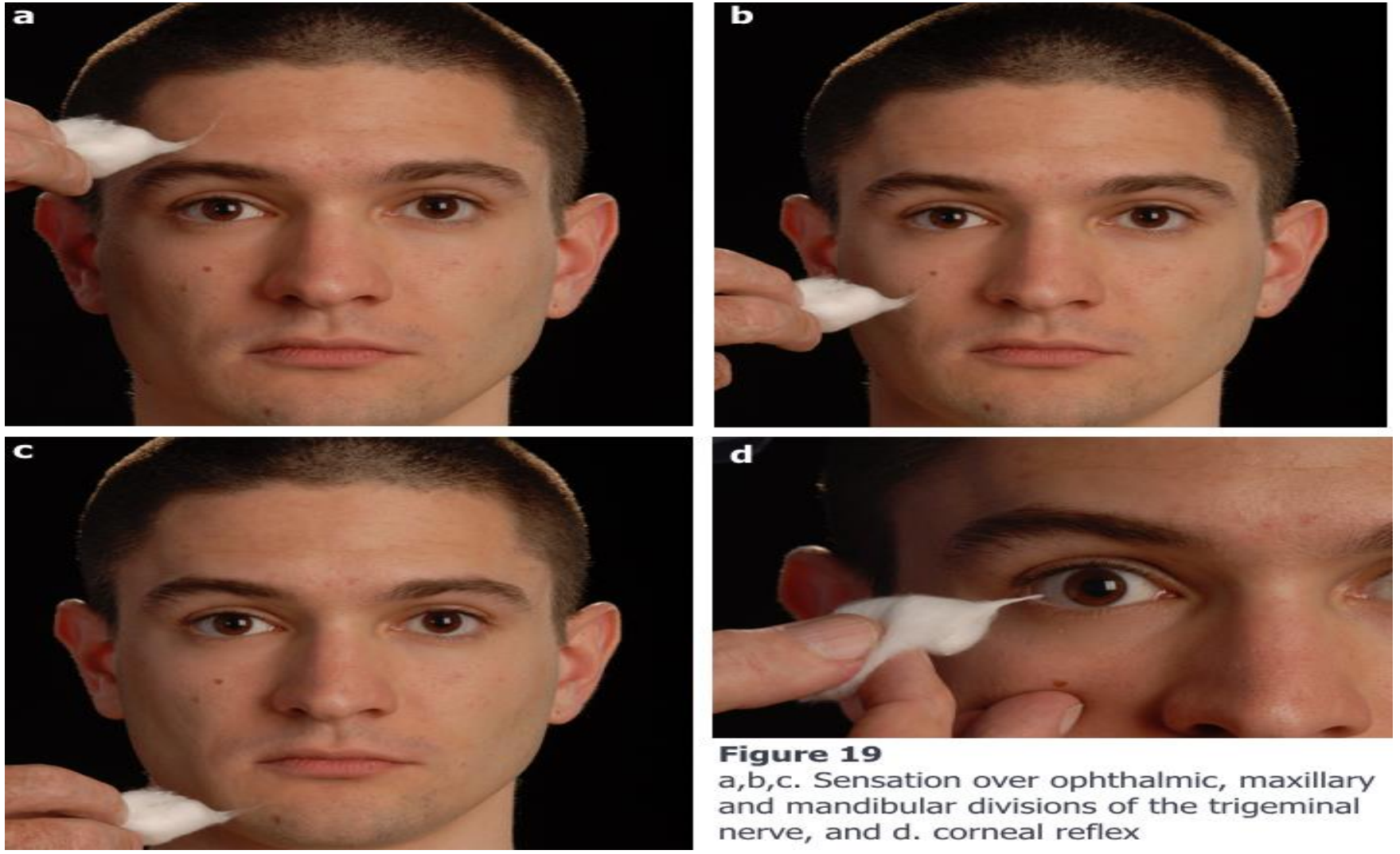
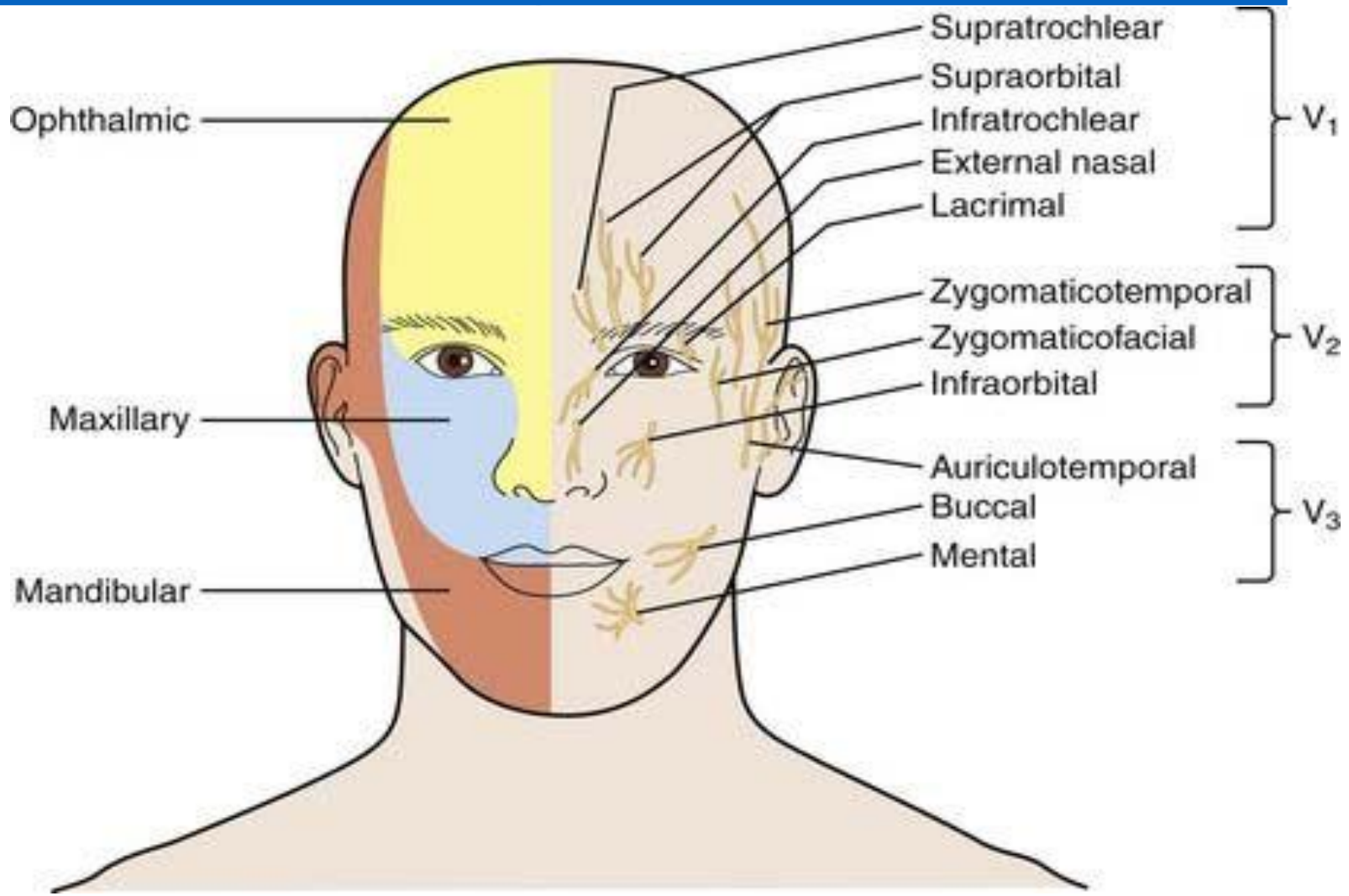
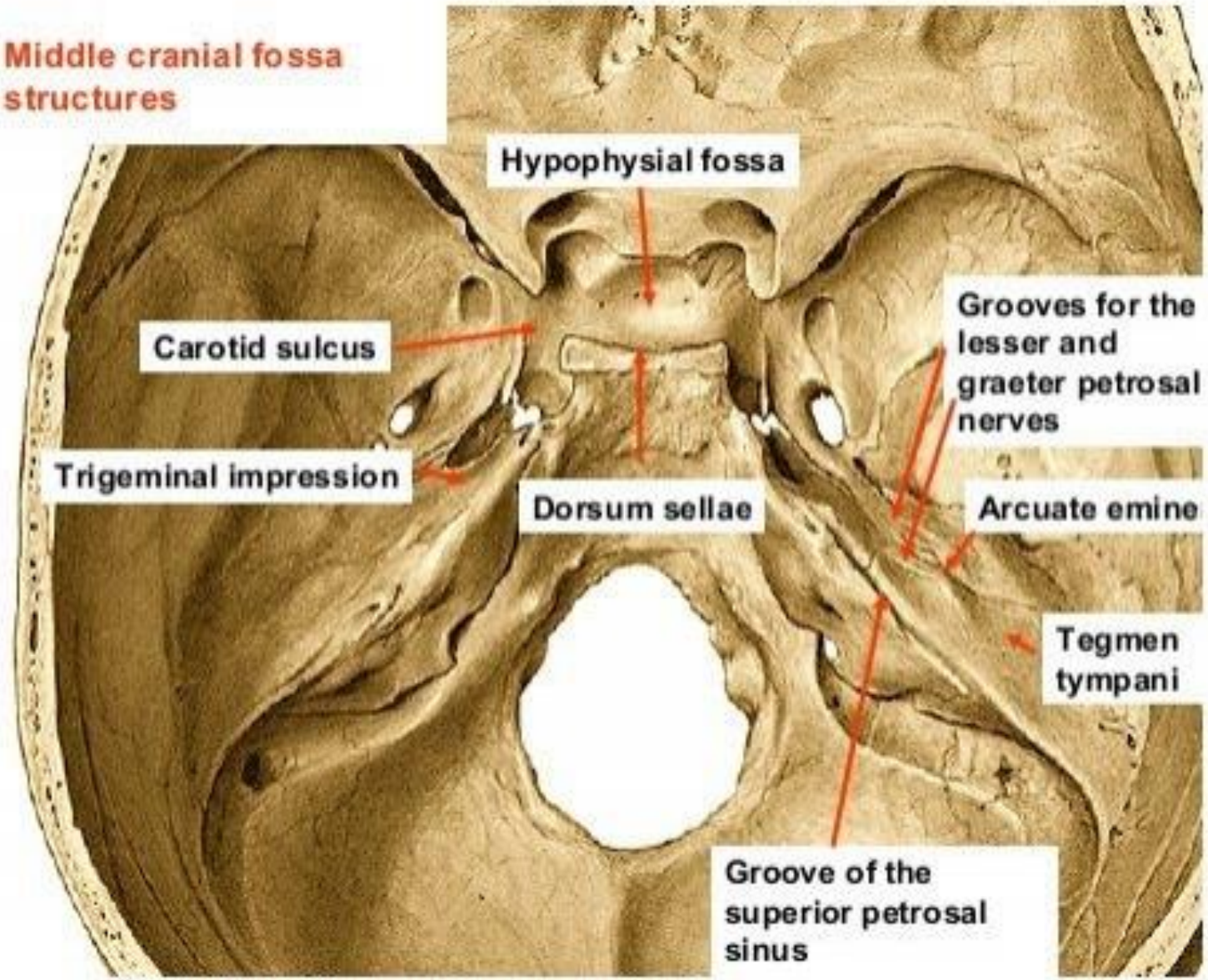


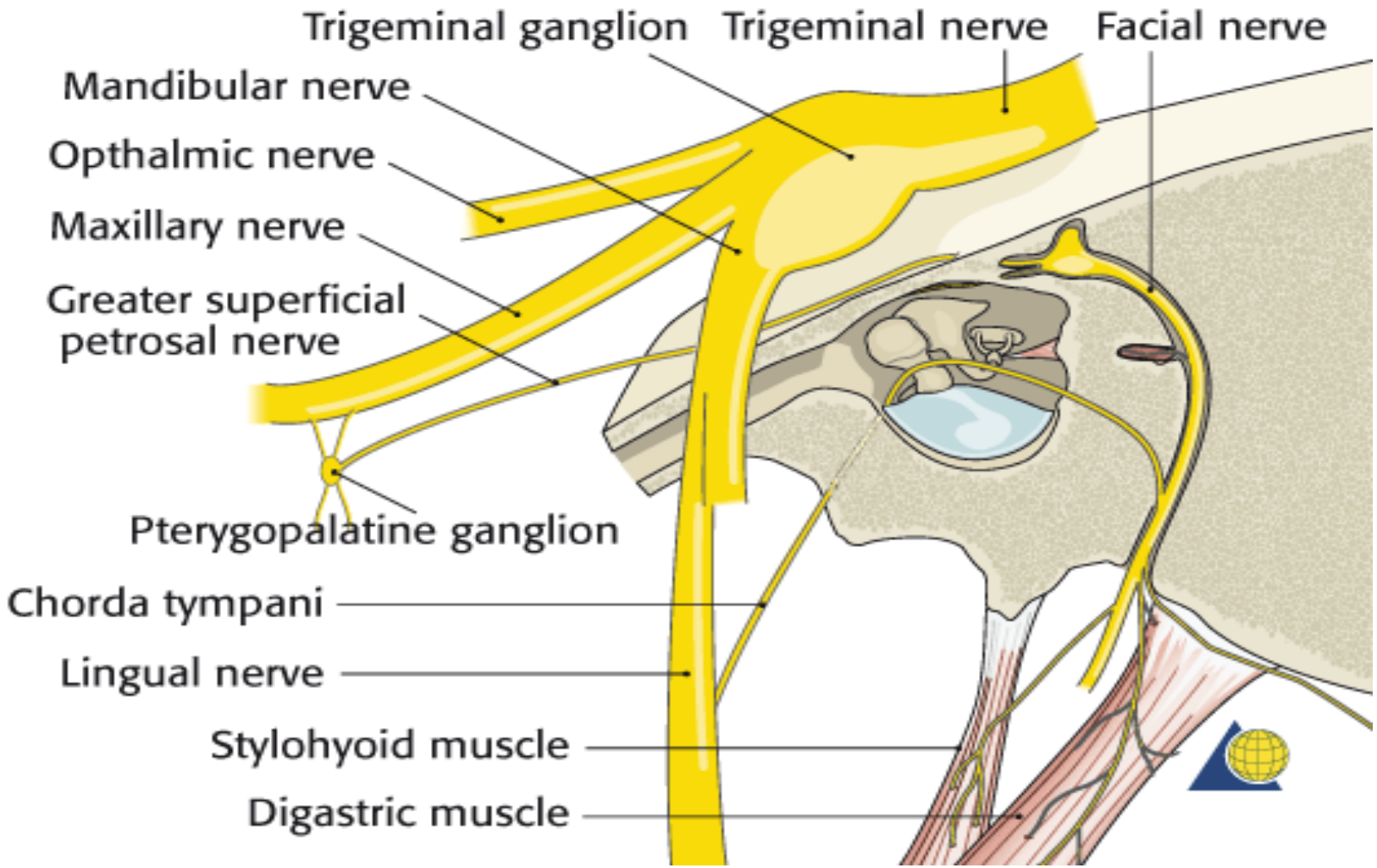
Figure 19
a,b,c. Sensation over ophthalmic, maxillary and mandibular divisions of the trigeminal nerve, and d. corneal reflex

Image result for trigeminal nerve distr



Middle cranial fossa structures




Trigeminal ganglion
Trigeminal nerve
Facial nerve
Mandibular nerve
Opthalmic nerve
Maxillary nerve
Greater superficial petrosal nerve
Pterygopalatine ganglion
Chorda tympani
Lingual nerve
Stylohyoid muscle
Digastric muscle

Facial Nerve

Facial Nerve

- In gross terms, the **muscles of facial expression** get their motor supply from the facial nerve.

- That is cranial nerve 7 and arises from the pontomedullary junction, between the abducent nerve (cranial nerve 6) and vestibulocochlear nerve (cranial nerve 8).
-

- The facial nerve has **5 primary divisions**, which are: Temporal, Zygomatic, Buccal, Mandibular and Cervical.
- Study tip:
- These branches can be remembered with the mnemonic:
- **To Zanzibar By Motor Car**
- If you spread your fingers and place them on the side of your face and neck, your fingers roughly correspond to the position of the branches.

Branches of the Facial Nerve

- The **temporal branches** of the facial nerve are also known as the frontal branches of the facial nerve. They cross the zygomatic arch in order to reach the temporal region. There they supply the auricularis anterior and form a connection with the auriculotemporal branch of the mandibular nerve and also the zygomaticotemporal branch of the maxillary nerve. The corrugator supercili, frontalis, orbicularis oris gain supply from the more anterior branches of this nerve, and the temporal branches serve as an efferent limb of the corneal reflex (also known as the blink reflex).

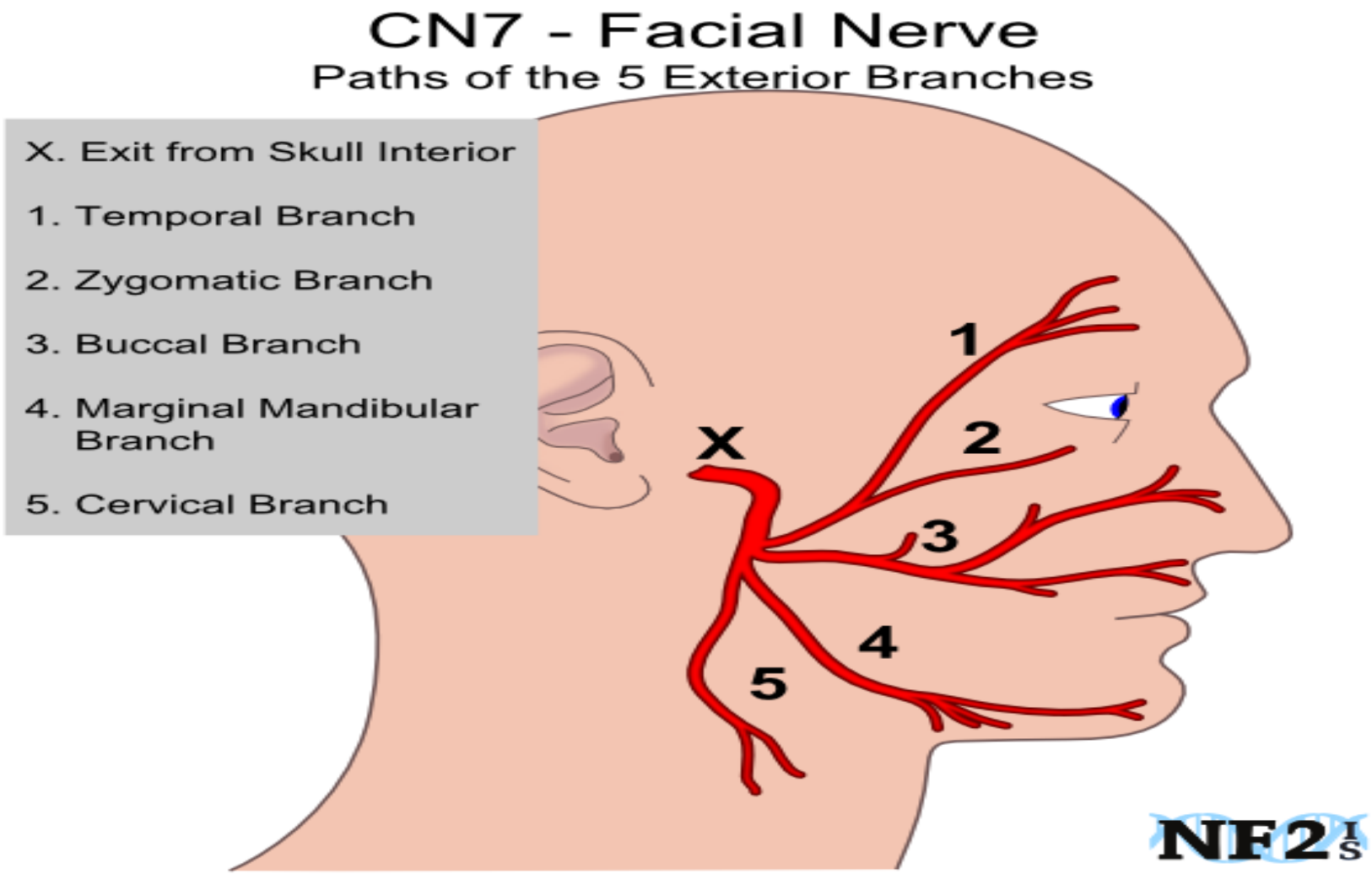
- The zygomatic branches of the facial nerve are also known as the malar branches and they traverse the zygomatic bone in order to reach the lateral angle of the orbit. There the orbicularis oculi is supplied and the nerve joins some filaments of the lacrimal nerve

- The facial nerve gives **branches to the buccal area**, which can be described as the area of the cheek, around the mouth and below the eyes. The most superficial branches of this nerve run beneath the skin and on the surface of the superficial muscles of the face. This nerve supplies these muscles including procerus and it also joins the medial angle with the infratrochlear and nasociliary branches of the ophthalmic nerve (V1 branch of the trigeminal nerve, discussed below). The deeper branches of the nerve supply the small nasal muscles. They travel beneath and supply both the quadratus labii superioris and zygomaticus, and go on to form an infraorbital plexus in association with the infraorbital branch of the maxillary nerve. The buccinators and orbicularis oris also get supply from the lowest of these deep branches.

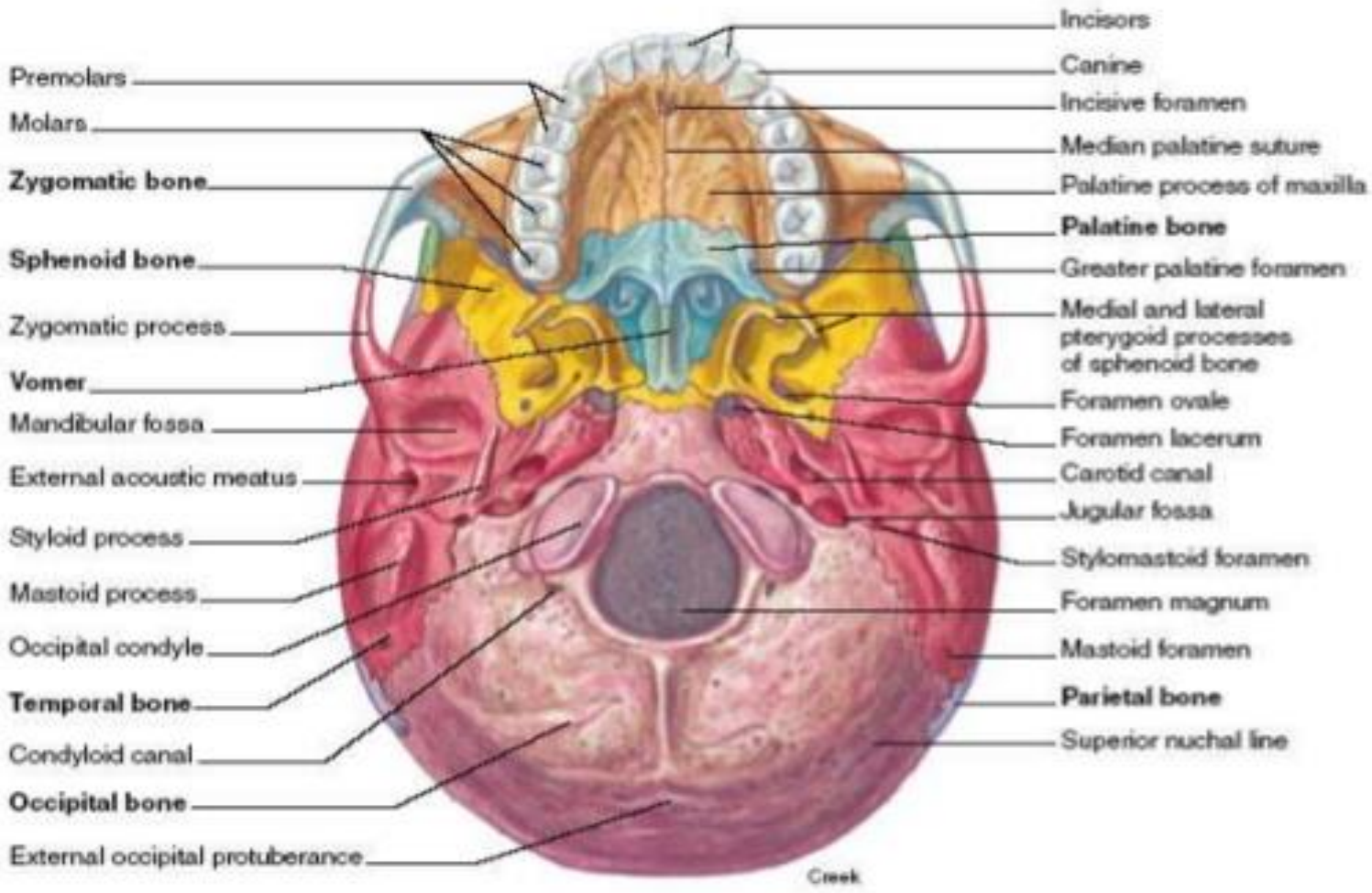
- The marginal mandibular branch of the facial nerve travels forward underneath the platysma and anguli oris, and then supplies the chin, lower lip and continues to communicate with the mental branch of the inferior alveolar nerve.

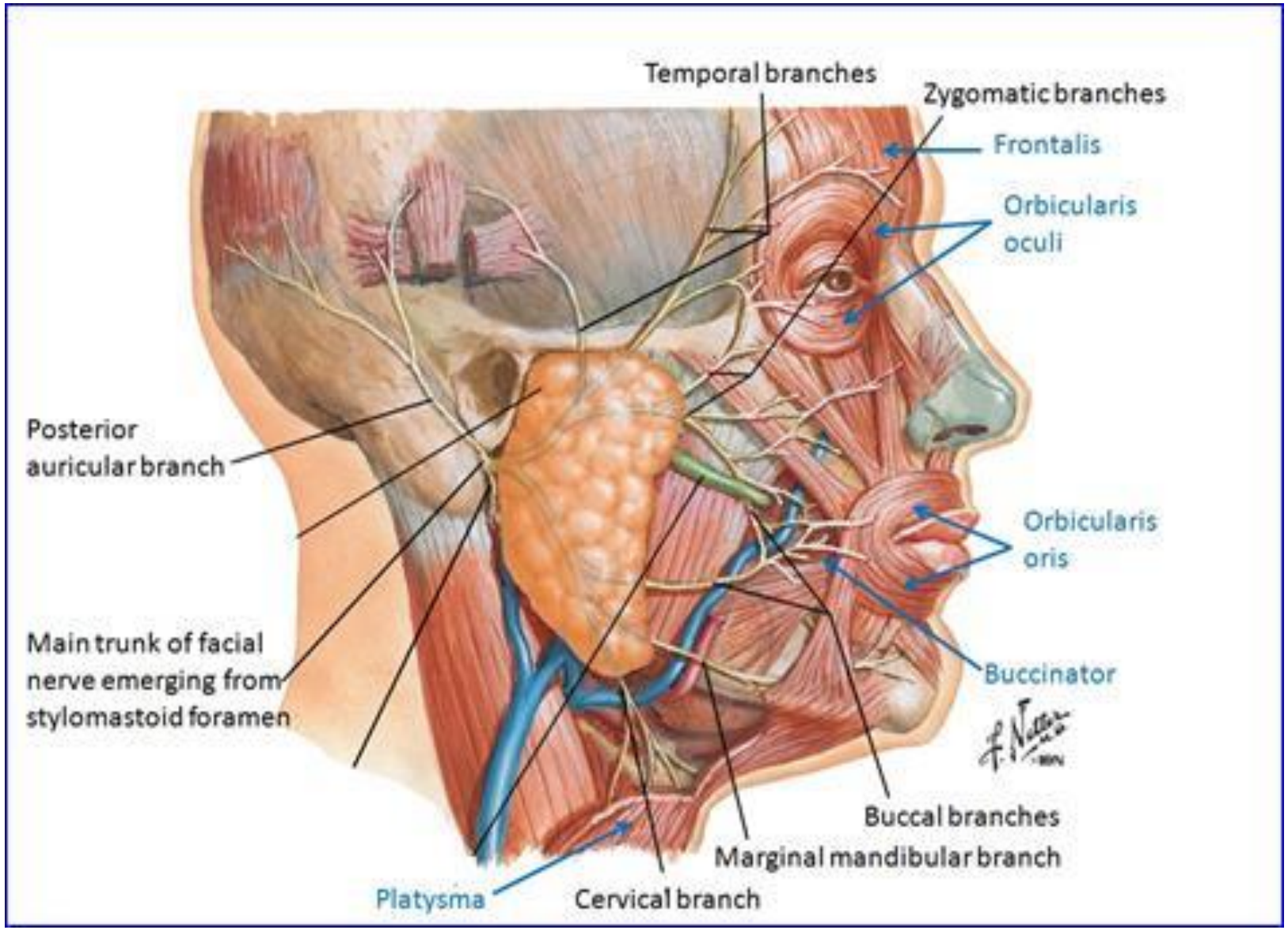
- The **cervical branch of the facial nerve** is the lowest branch of the nerve and courses underneath, or deep to the platysma muscle. The nerve forms a distinctive series of arches as it progresses through the suprahyoid region and across the neck itself. Some branches of the nerve supply the platysma and also the depressor anguli oris. A specific branch also joins the cervical plexus branch (the cervical cutaneous nerve).
-

CN7 Facial Nerve Damage



NBE


Premolars
Molars
Zygomatic bone
Sphenoid bone
Zygomatic process
Vomer
Mandibular fossa
External acoustic meatus
Styloid process
Mastoid process
Occipital condyle
Temporal bone
Condyloid canal
Occipital bone
External occipital protuberance
Incisors
Canine
Incisive foramen
Median palatine suture
Palatine process of maxilla
Palatine bone
Greater palatine foramen
Medial and lateral pterygoid processes of sphenoid bone
Foramen ovale
Foramen lacerum
Carotid canal
Jugular fossa
Stylomastoid foramen
Foramen magnum
Mastoid foramen
Parietal bone
Superior nuchal line
Creek


Temporal branches
Zygomatic branches
Frontalis
Orbicularis oculi
Posterior auricular branch
Orbicularis oris
Main trunk of facial nerve emerging from stylomastoid foramen
Buccinator
Buccal branches
Marginal mandibular branch
Platysma
Cervical branch