The Face

1-Skin of the Face

The skin of the face is:

- Elastic
- Vascular (bleed profusely however heal rapidly)
- Rich in sweat and sebaceous glands
  (can cause acne in adults)
- It is connected to the underlying bones by loose connective tissue, in which are embedded the muscles of facial expression

2-Superficial fascia of the face

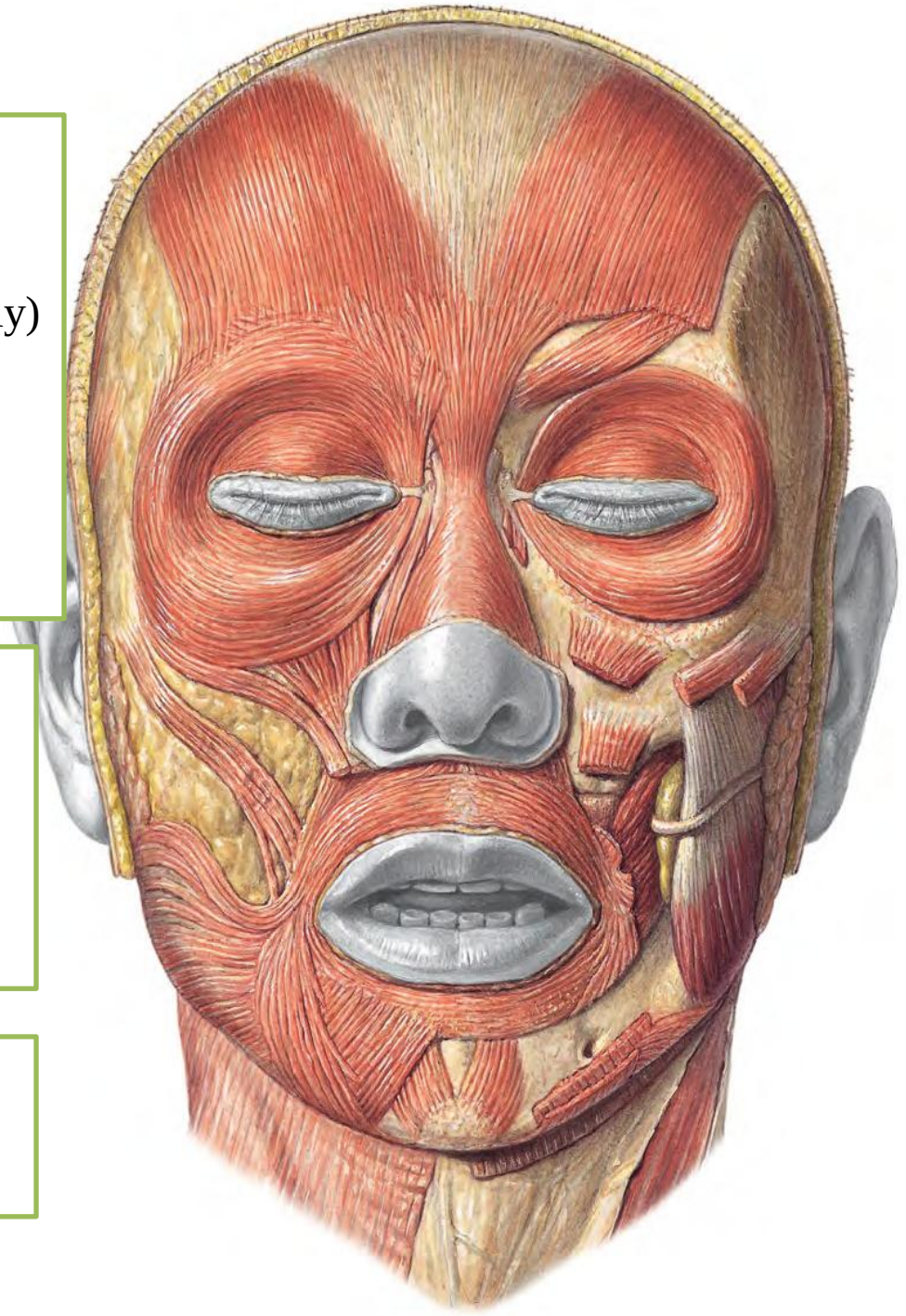
Contains:

a-facial muscles

b-vessels & nerves

c-fat tissue (absent in the eye lids but it is well developed in the cheeks)

3-Deep fascia: is absent (except over the parotid gland & buccopharngeal fascia covering the buccinator muscle)



relaxed skin tension lines

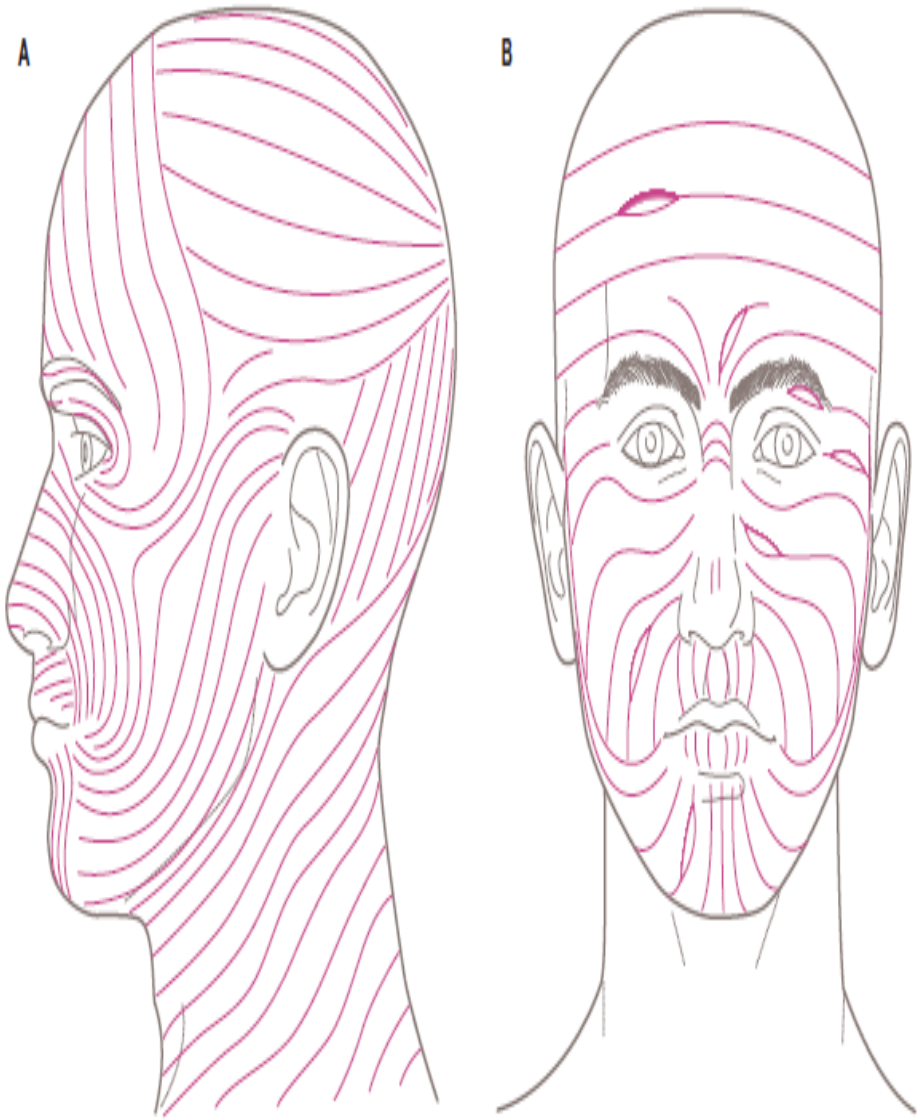


Fig. 29.1 A, Distribution of relaxed skin tension lines (Kraissl's lines) lateral view. B, Anterior view.

Skin tension lines which follow the furrows (a line or wrinkle on a person's face) formed when the skin is relaxed are known as **'relaxed skin tension lines'** (Borges & Alexander 1962). In the living face, these lines frequently (but not always) coincide with wrinkle lines and can therefore act as a guide in planning elective incisions.

When lesions on the face such as ***scars, pigmented lesions and skin cancers*** are excised,
the dimensions of these lesions often require excision as **an ellipse**, so that the resulting defect can be closed as a straight line.

To get the best results

it is important
to make the long axis of the **ellipse**
parallel to the natural relaxed skin
tension lines, so that the scar will look like
a natural skin crease

Muscles of the face: muscles of the facial expression

General features

1-They lie within the superficial fascia

2-They take their origin from the facial bones

3-They are inserted into the skin

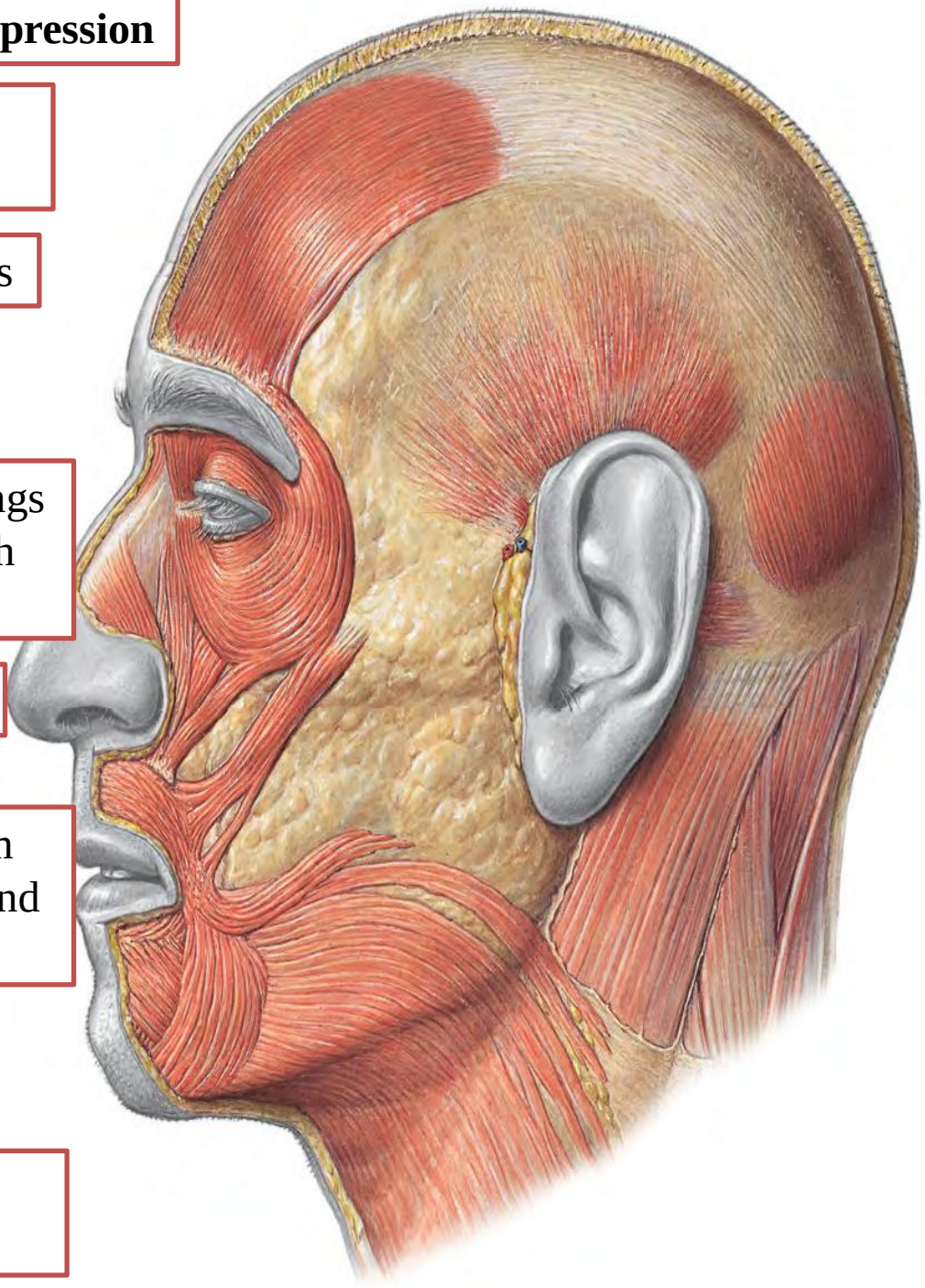
4- They are arranged around the three openings of the face namely, the orbit, nose, and mouth either as sphincters or dilators

5- They are supplied by the facial nerve

6- Embryologically, they are originating from the mesoderm of the second branchial arch and therefore are supplied by the facial nerve

7- Can be divided into two groups

1- Three large muscles
2- Many small muscles



1- Three large muscles

1-Buccinator muscle
2- Orbicularis oris muscle
3- Orbicularis occuli muscle

2-Many small muscles such as:

Levator labii superioris alaeque nasi

Levator labii superioris

Zygomaticus minor

Zygomaticus major

Levator anguli oris

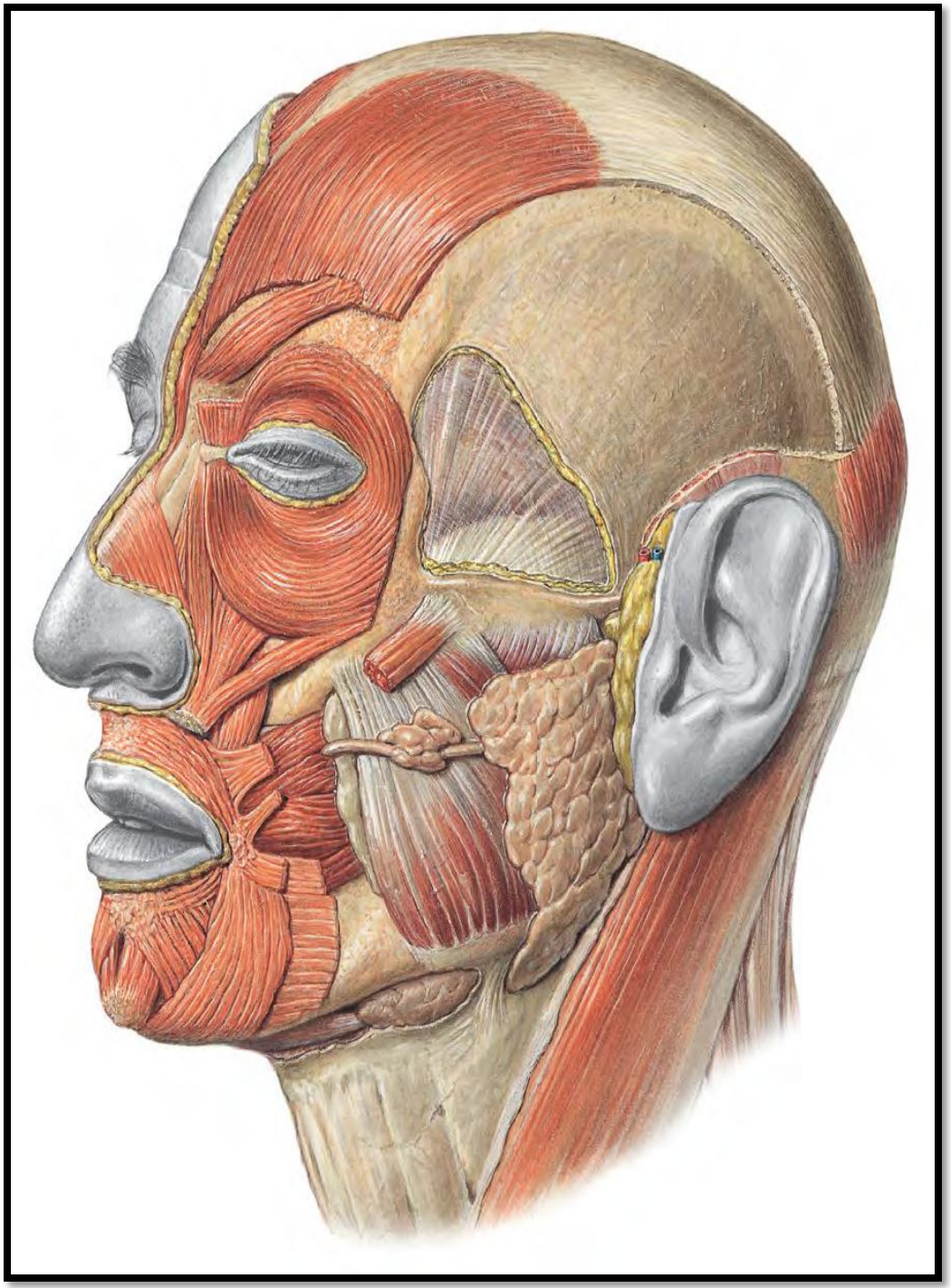
Risorius

Depressor anguli oris

Depressor labii inferioris

Mentalis

Platysma



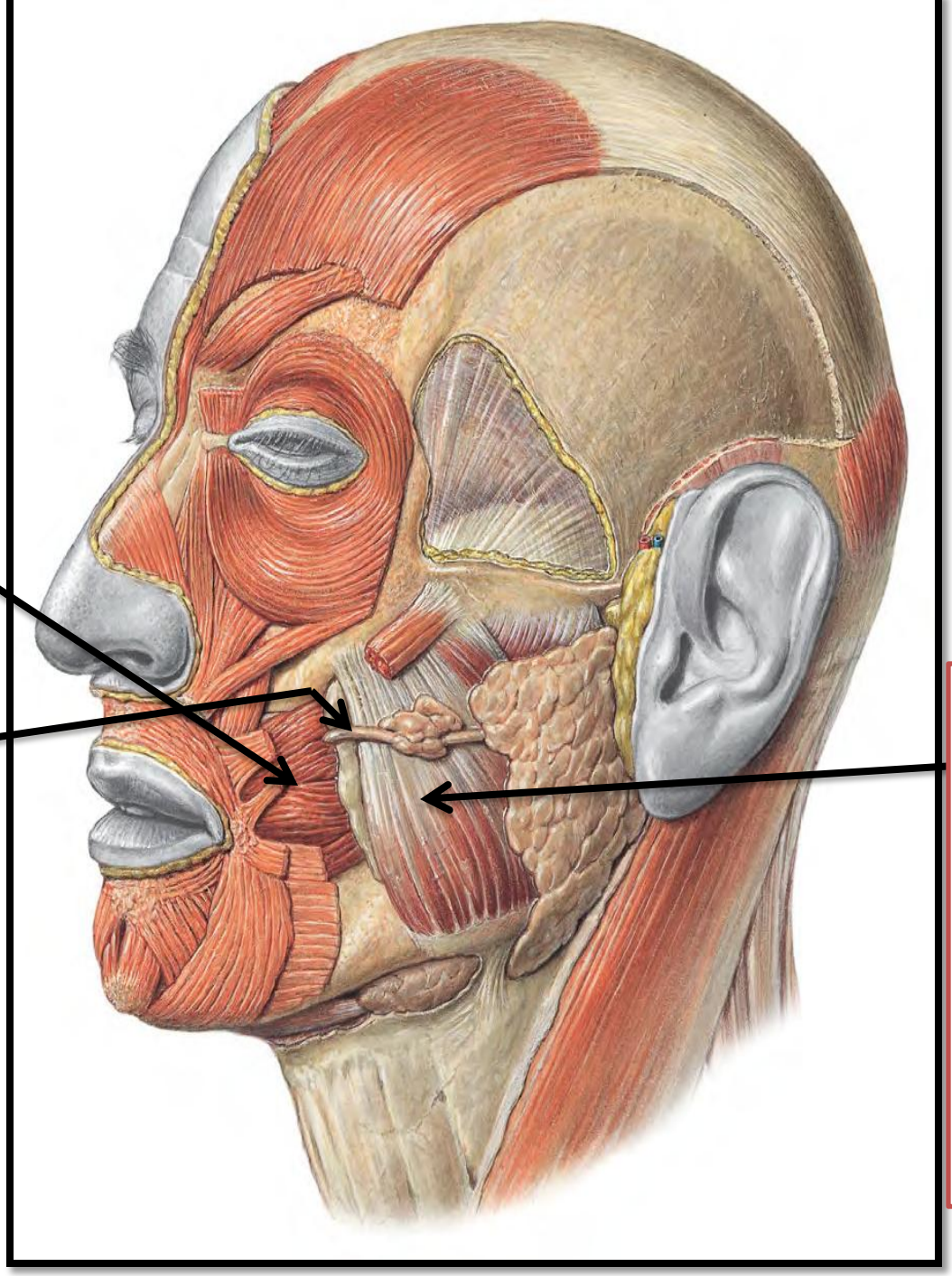
Muscle of the Cheek

Buccinator

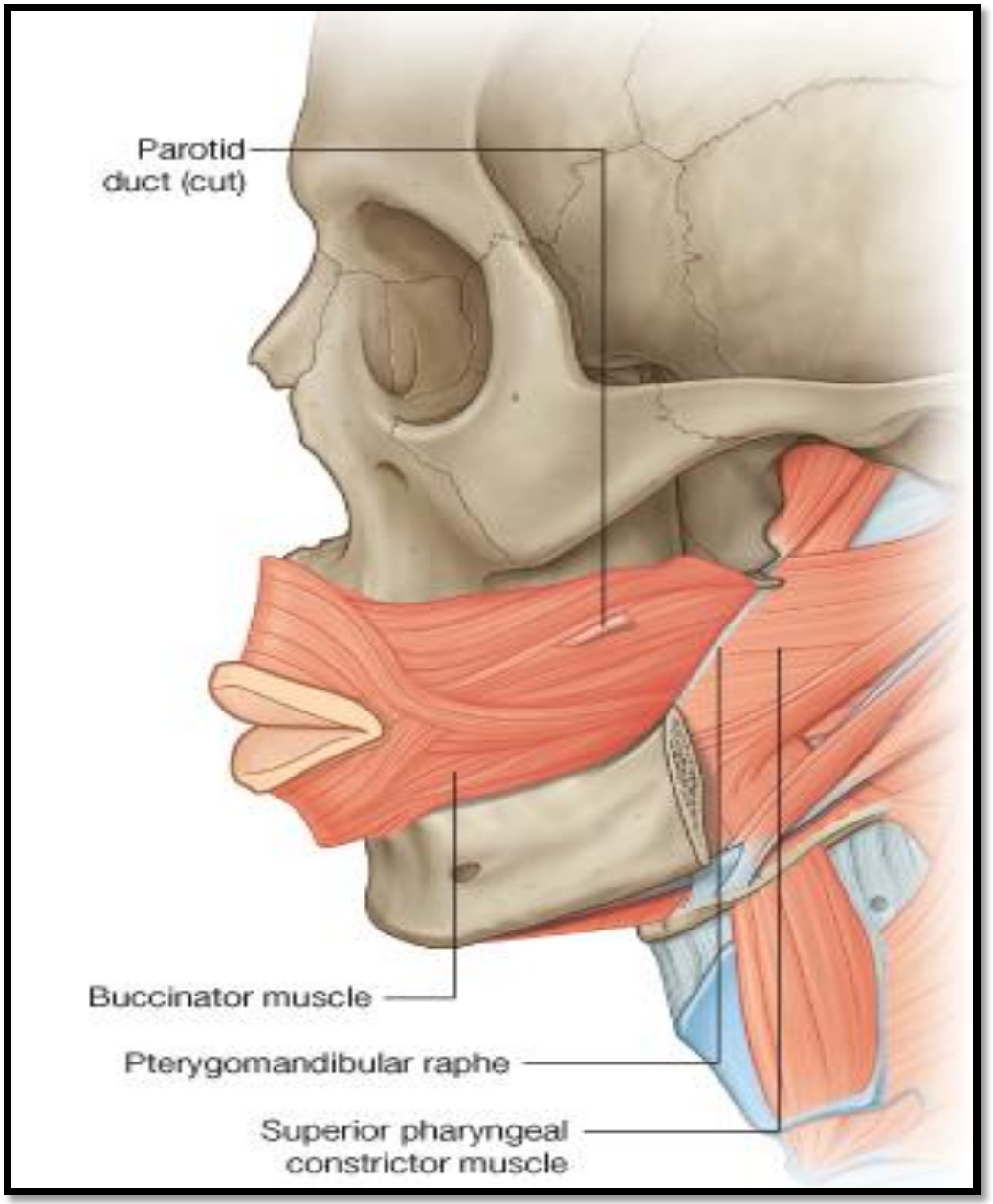
- **is pierced by *the parotid duct.***
- **Nerve supply**

facial nerve

Action: Compresses the cheeks and lips against the teeth (<u>prevents accumulation of food in the vestibule of the mouth</u>)



Masseter muscle, one of the muscles of mastication and its not one of the muscles of the facial expression

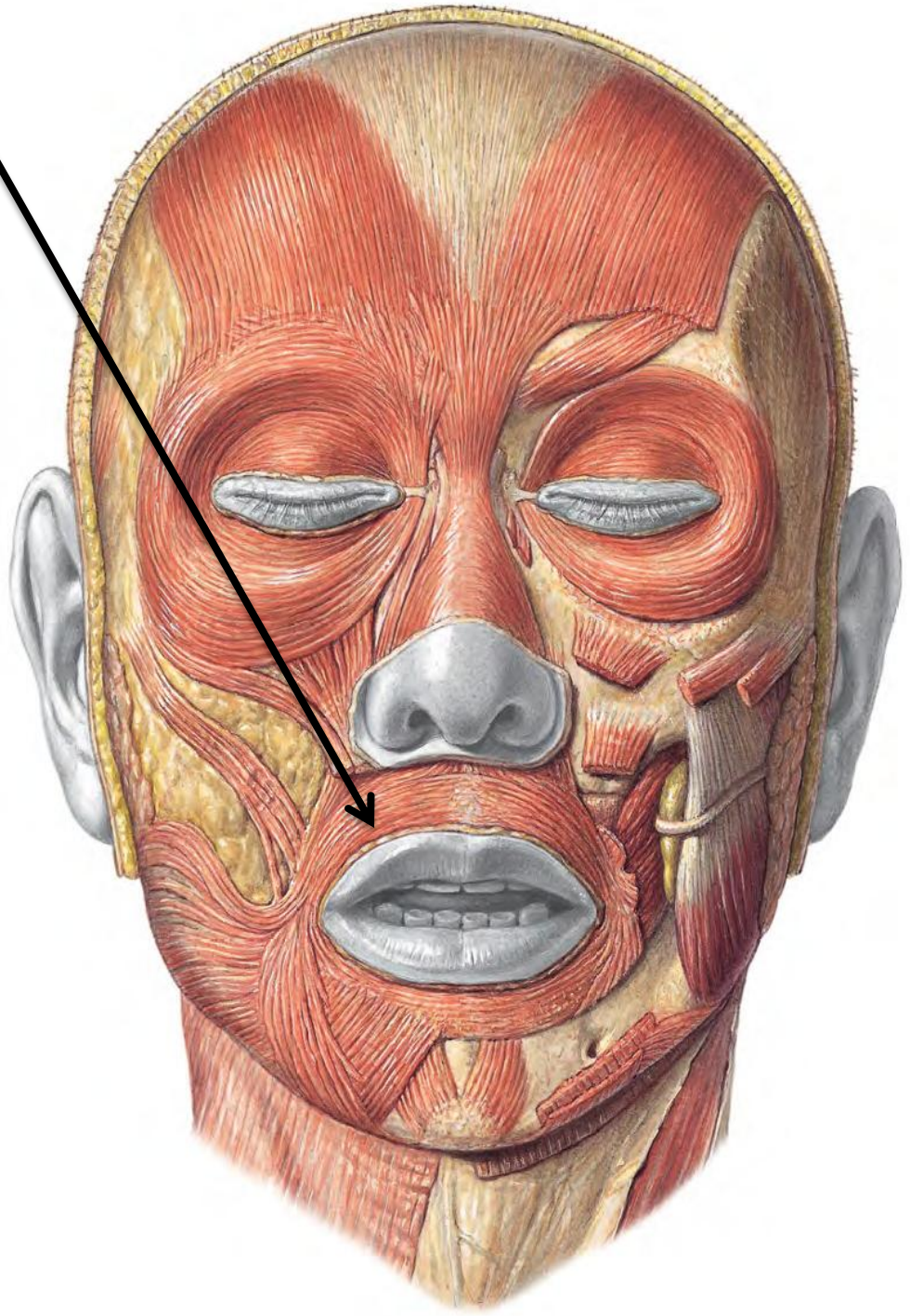

Parotid duct (cut)
Buccinator muscle
Pterygomandibular raphe
Superior pharyngeal constrictor muscle

Orbicularis Oris

Nerve supply: branches of ***the facial nerve***

Action: ***Compresses the lips together (closes the vestibule of the mouth)?!***

How you should test it?



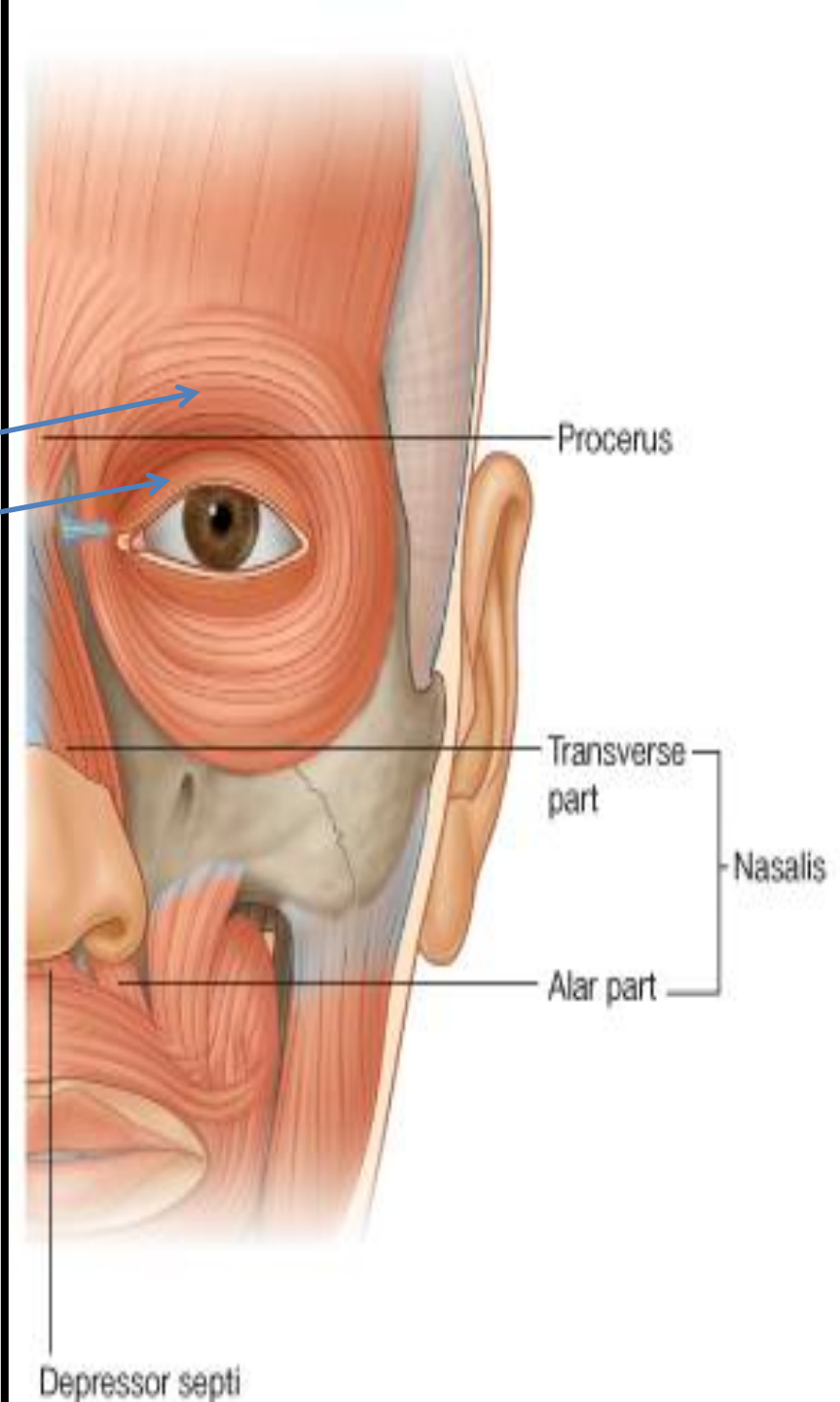
Orbicularis oculi

The **orbicularis oculi** is a large muscle that completely surrounds each orbital orifice and extends into each eyelid
It has two major parts:

1-The outer orbital part
2-The inner palpebral part

Action:

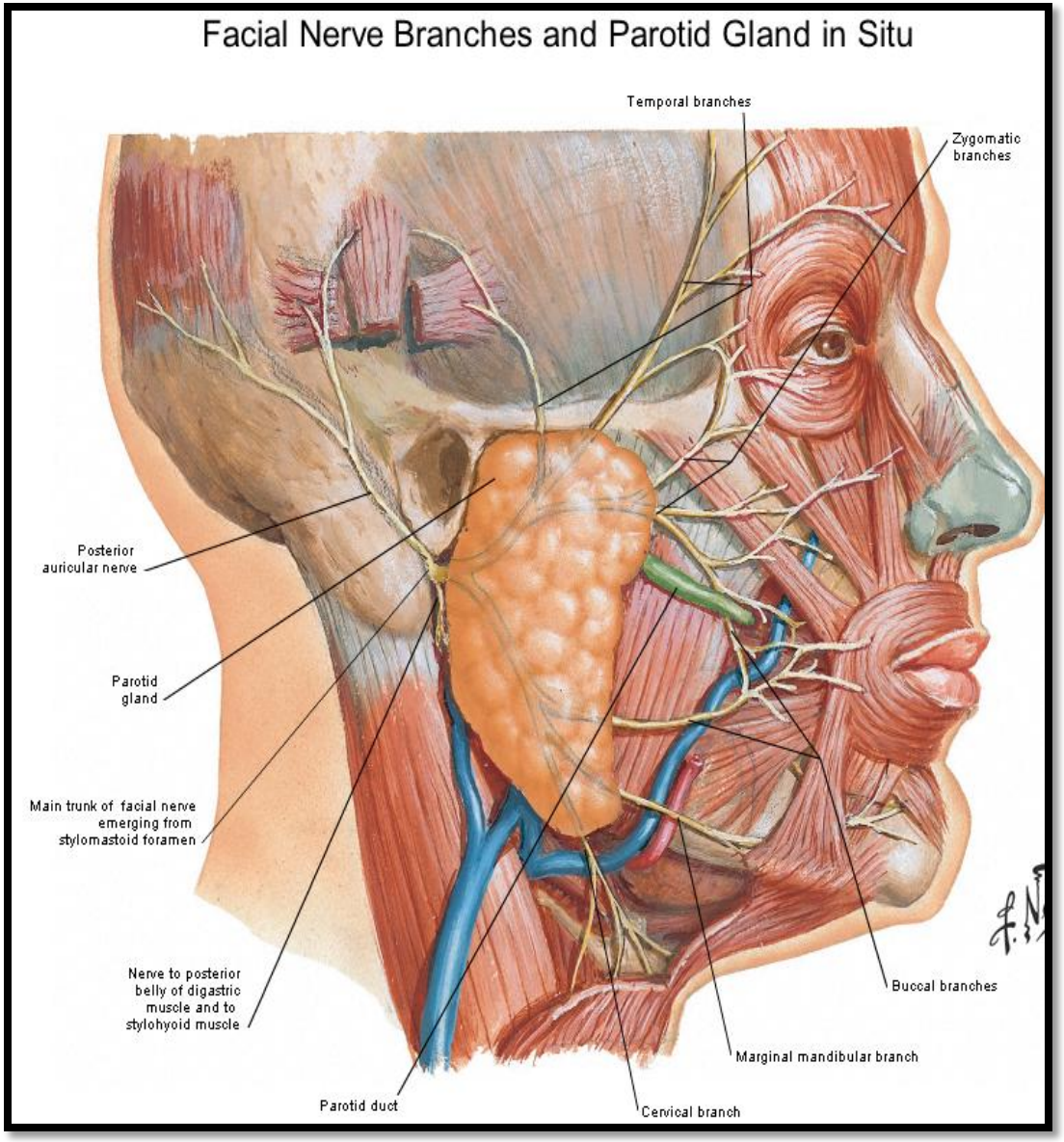
The orbital and palpebral parts have specific roles to play during eyelid closure.
The palpebral part closes the eye **gently** whereas
The orbital part closes the eye **more forcefully** and produces some wrinkling on the forehead



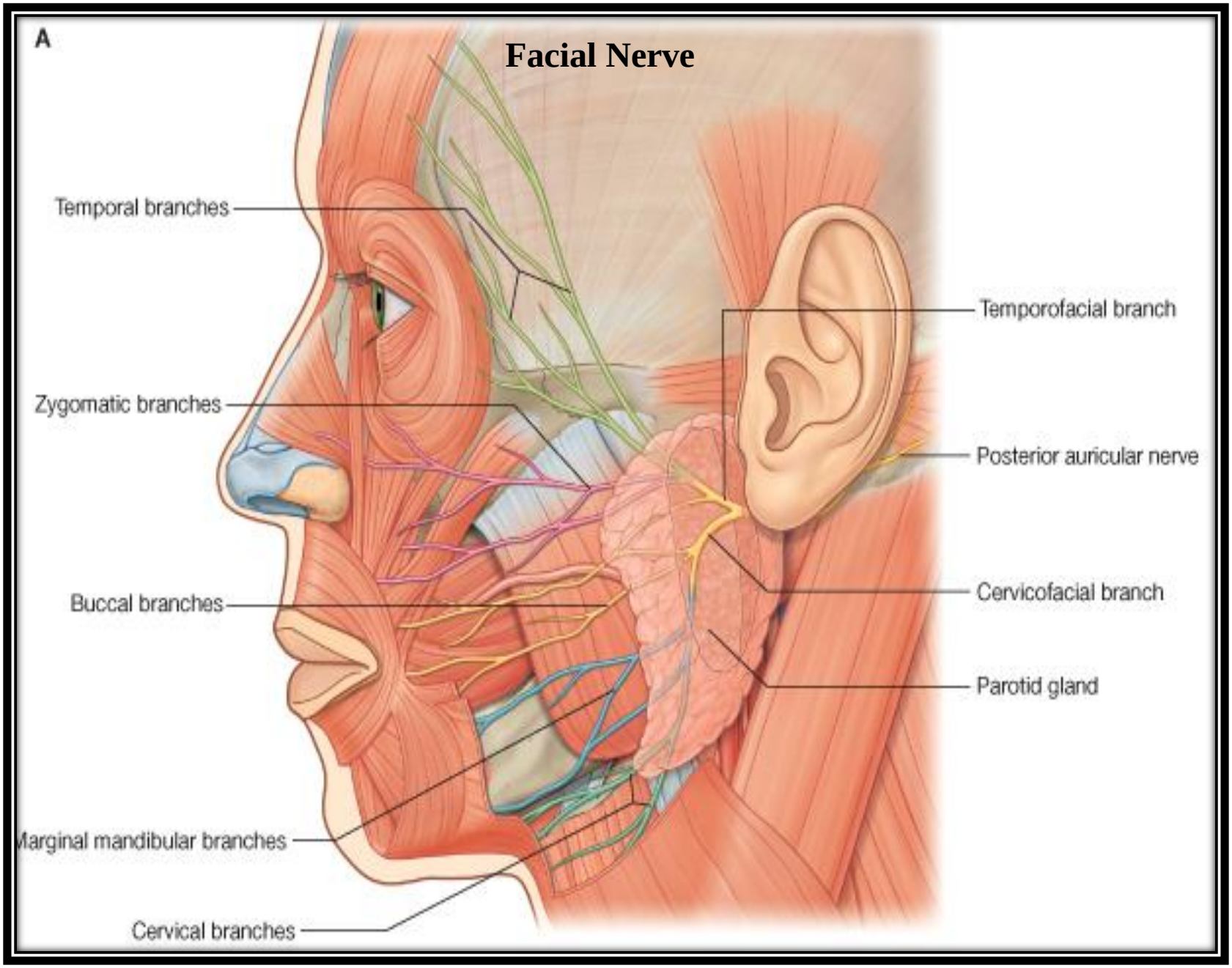
Facial Nerve

As the facial nerve runs forward within the substance of the parotid salivary gland it divides into its five terminal branches

1-The temporal
2-The zygomatic
3-The buccal
4-The mandibular
5-The cervical



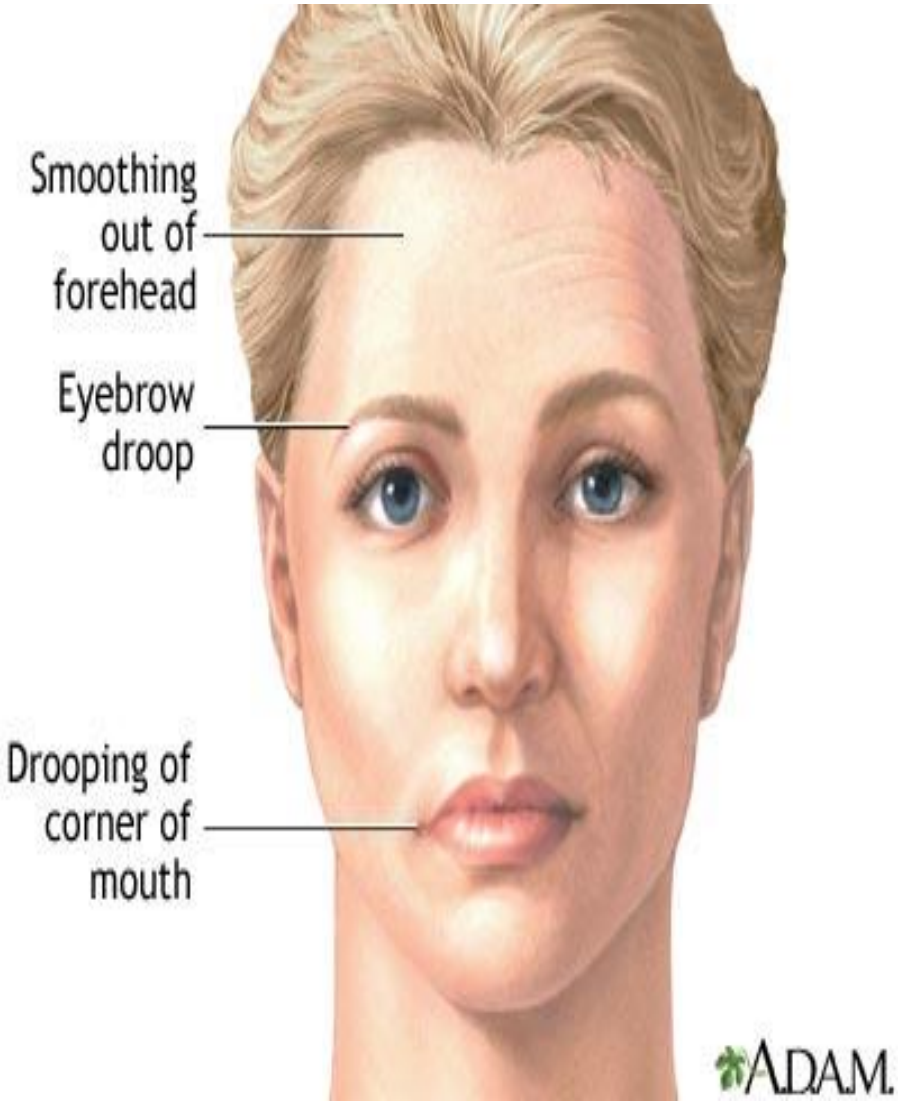
Facial Nerve

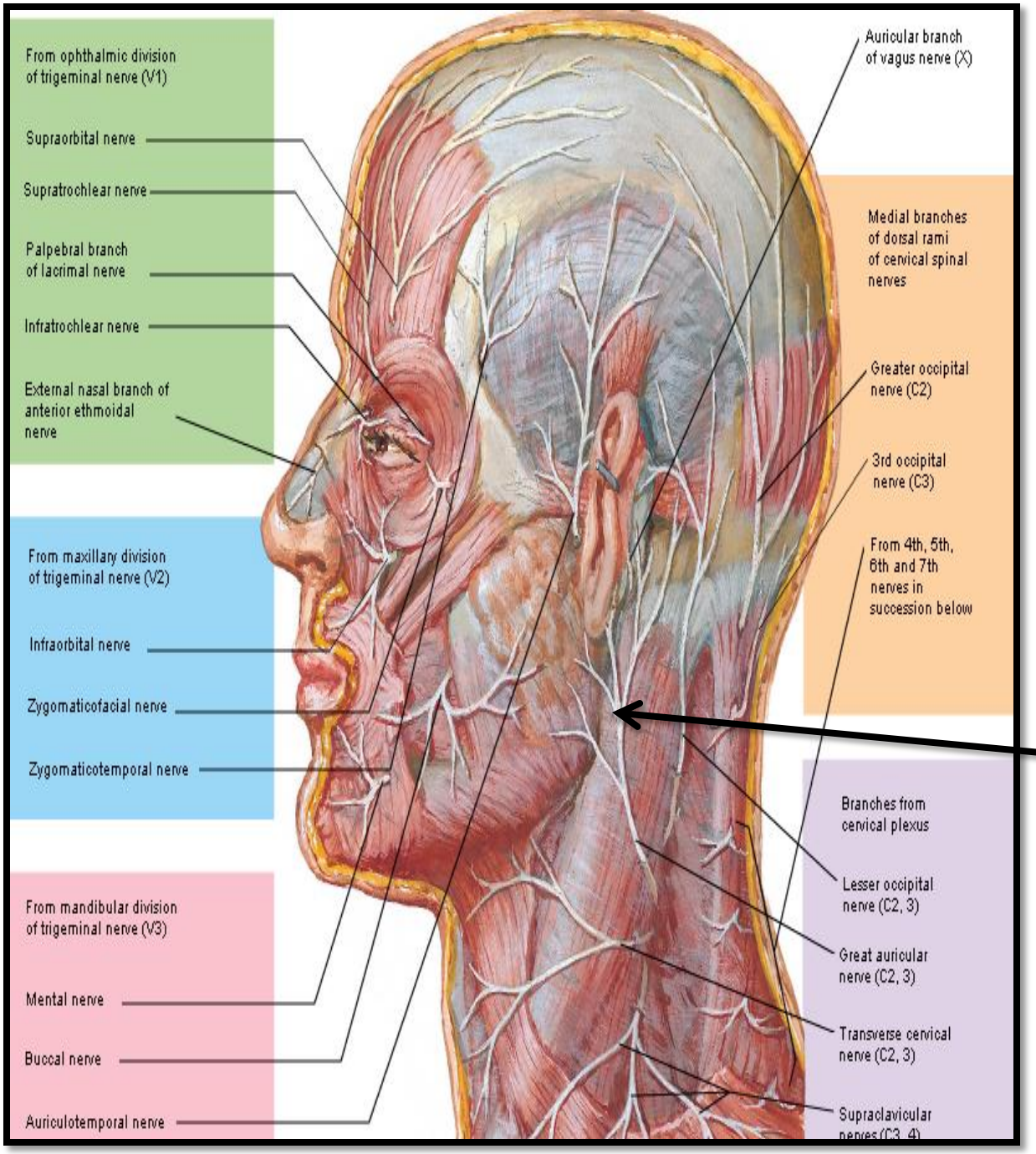


- Sir Charles Bell, Scottish Surgeon
- First described in early 1800s based on trauma to facial nerves

Bell's palsy

Facial Muscle Paralysis
Damage to the facial nerve in
1- The internal acoustic meatus (by a tumor)
2-The middle ear (by infection or operation),
3-The facial nerve canal (perineuritis,
4- The parotid gland (by a tumor)
5- Lacerations of the face
will cause distortion of the face
drooping of the lower eyelid, Inability to close the eye on the affected side and the angle of the mouth will sag on the affected side.





Sensory Nerves of the Face

The skin of the face is supplied by branches of:

<u>the three divisions of the trigeminal nerve</u>

except for **the small area over the angle of the mandible** and **the parotid gland** which is supplied by ***the great auricular nerve (C2 and 3).***

Ophthalmic Nerve

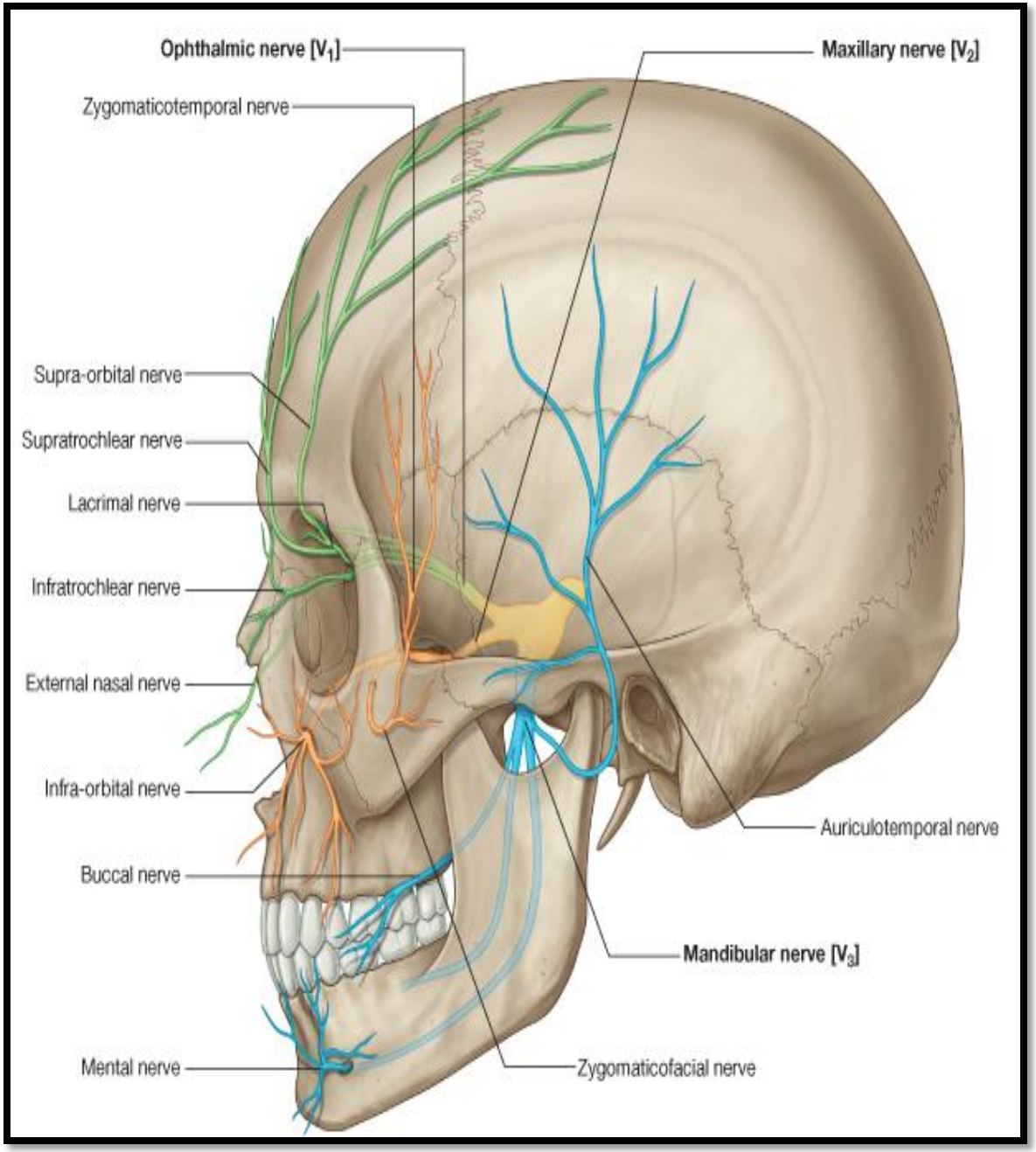
A-Frontal nerve:

1-The supratrochlear nerve

supplies the skin and conjunctiva on the medial part of the upper eyelid and the skin over the lower part of the forehead, close to the median plane.

2-The supraorbital nerve

supplies the skin and conjunctiva on the central part of the upper eyelid; it also supplies the skin of the forehead

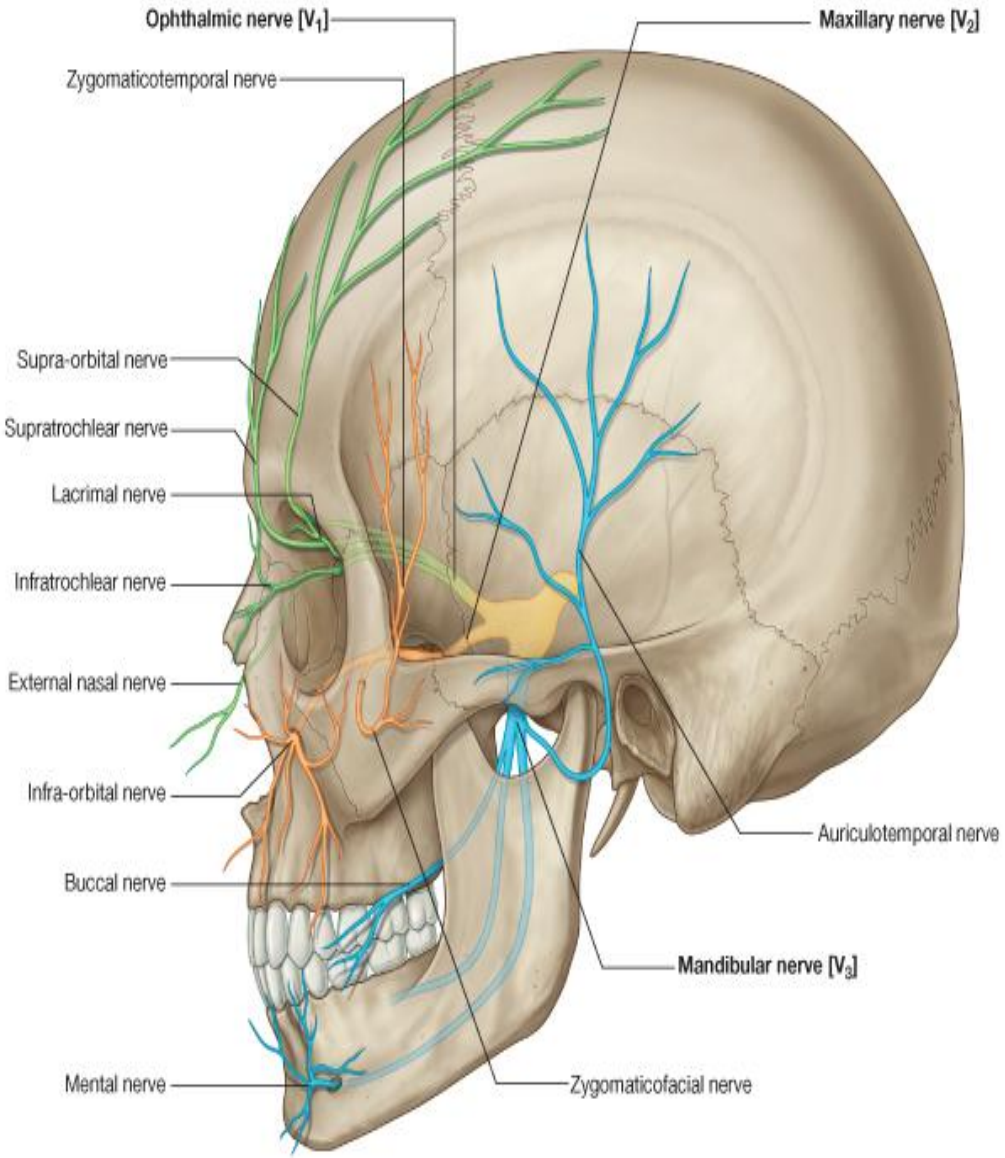


B-The lacrimal nerve supplies the skin and conjunctiva of the lateral part of the upper eyelid

C- Nasociliary nerve

1-The infratrochlear nerve
It supplies the skin and conjunctiva on the medial part of the upper eyelid and the adjoining part of the side of the nose

2-The external nasal nerve It supplies the skin on the side of the nose down as far as the tip

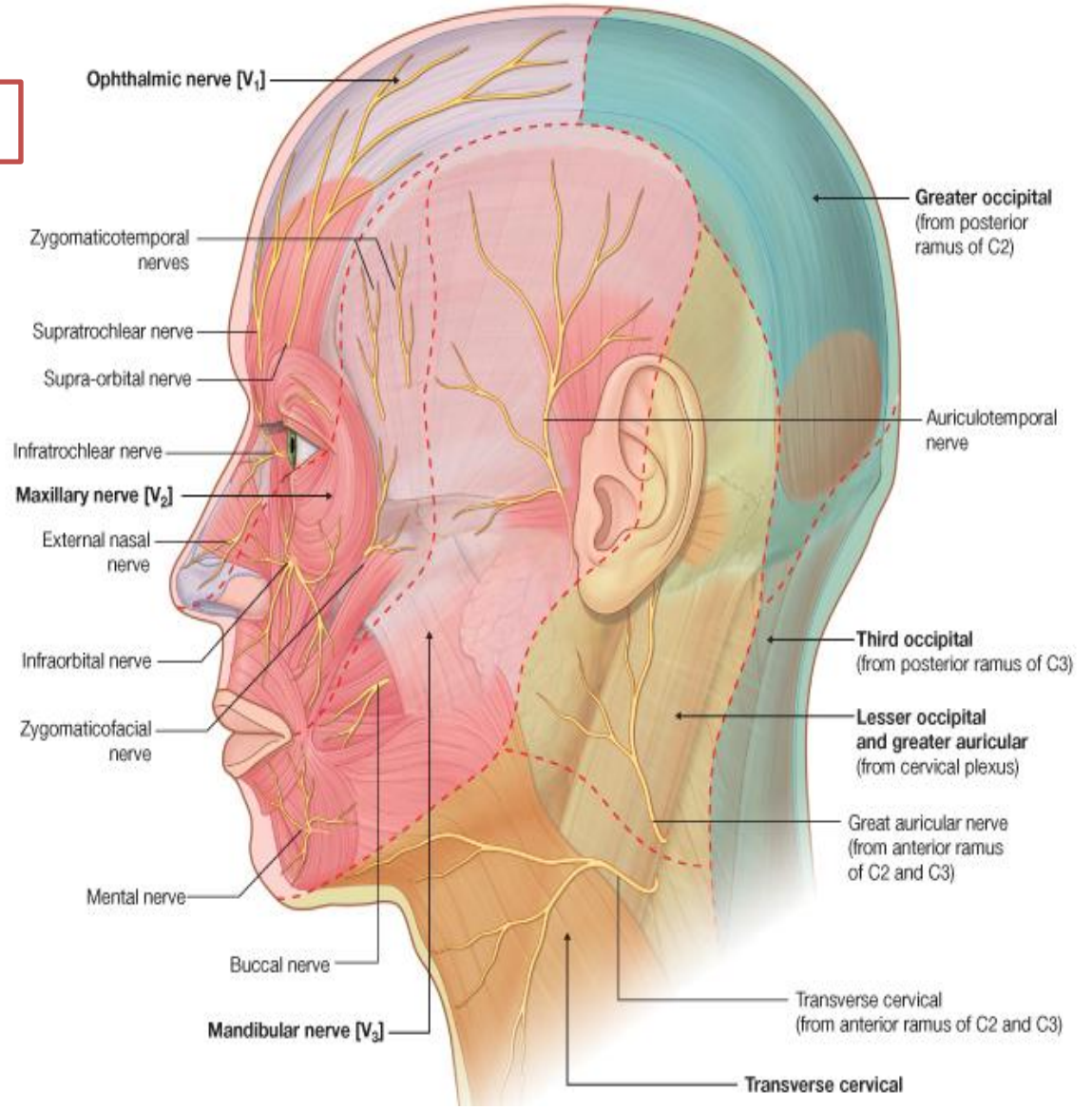


Maxillary Nerve

Three branches of the nerve pass to the skin.

1-The infraorbital nerve

is a direct continuation of the maxillary nerve. It enters the orbit and appears on the face through the infraorbital foramen.
It immediately divides into numerous small branches, which radiate out from the foramen and supply the skin of the lower eyelid and
cheek, the side of the nose, and the upper lip

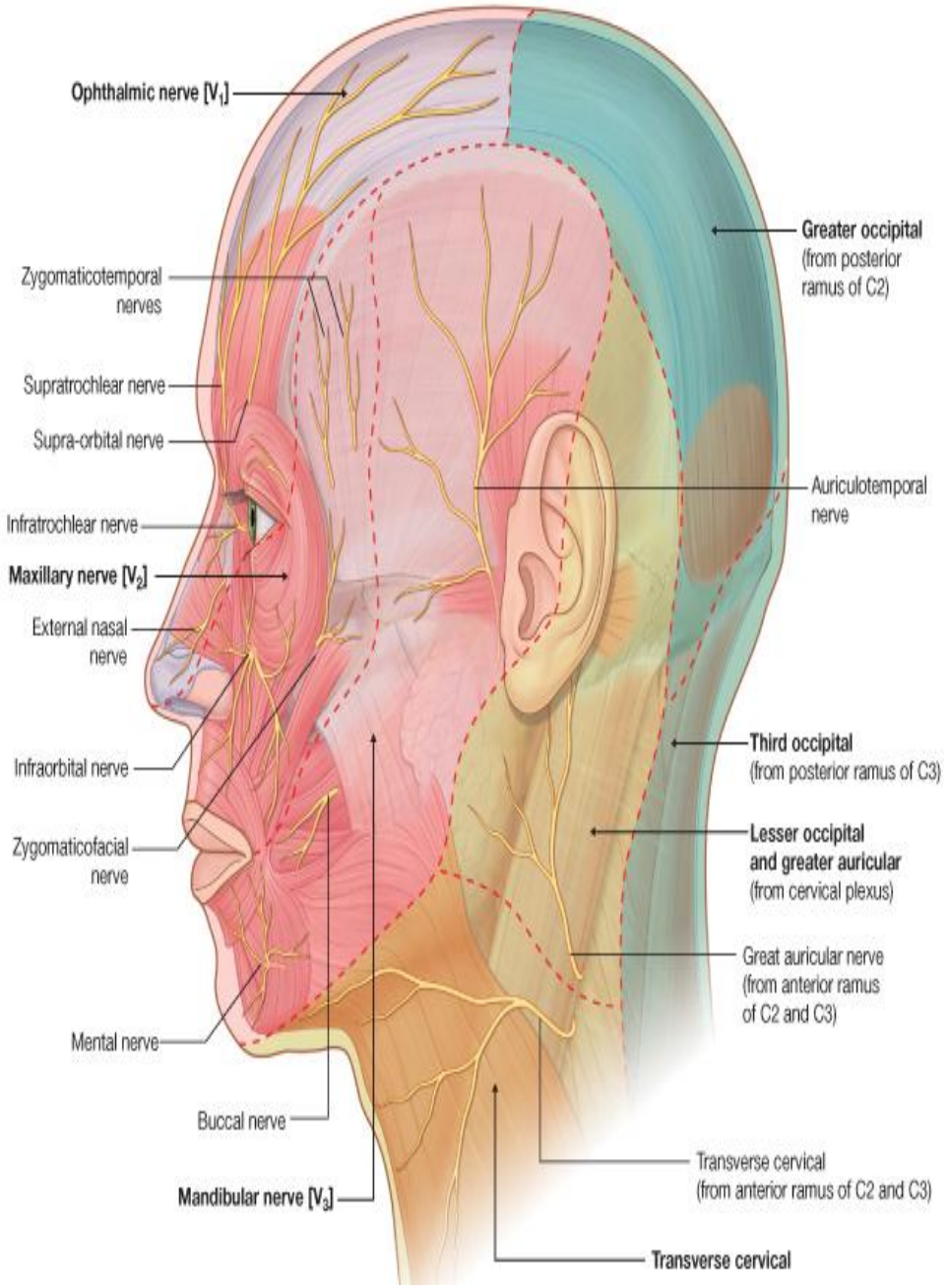


2-The zygomaticofacial nerve

passes onto the face through a small foramen on the lateral side of the zygomatic bone.
It supplies the skin over the prominence of the cheek

3-The zygomaticotemporal nerve

emerges in the temporal fossa through a small foramen on the posterior surface of the zygomatic bone. It esupplies the skin over the templ

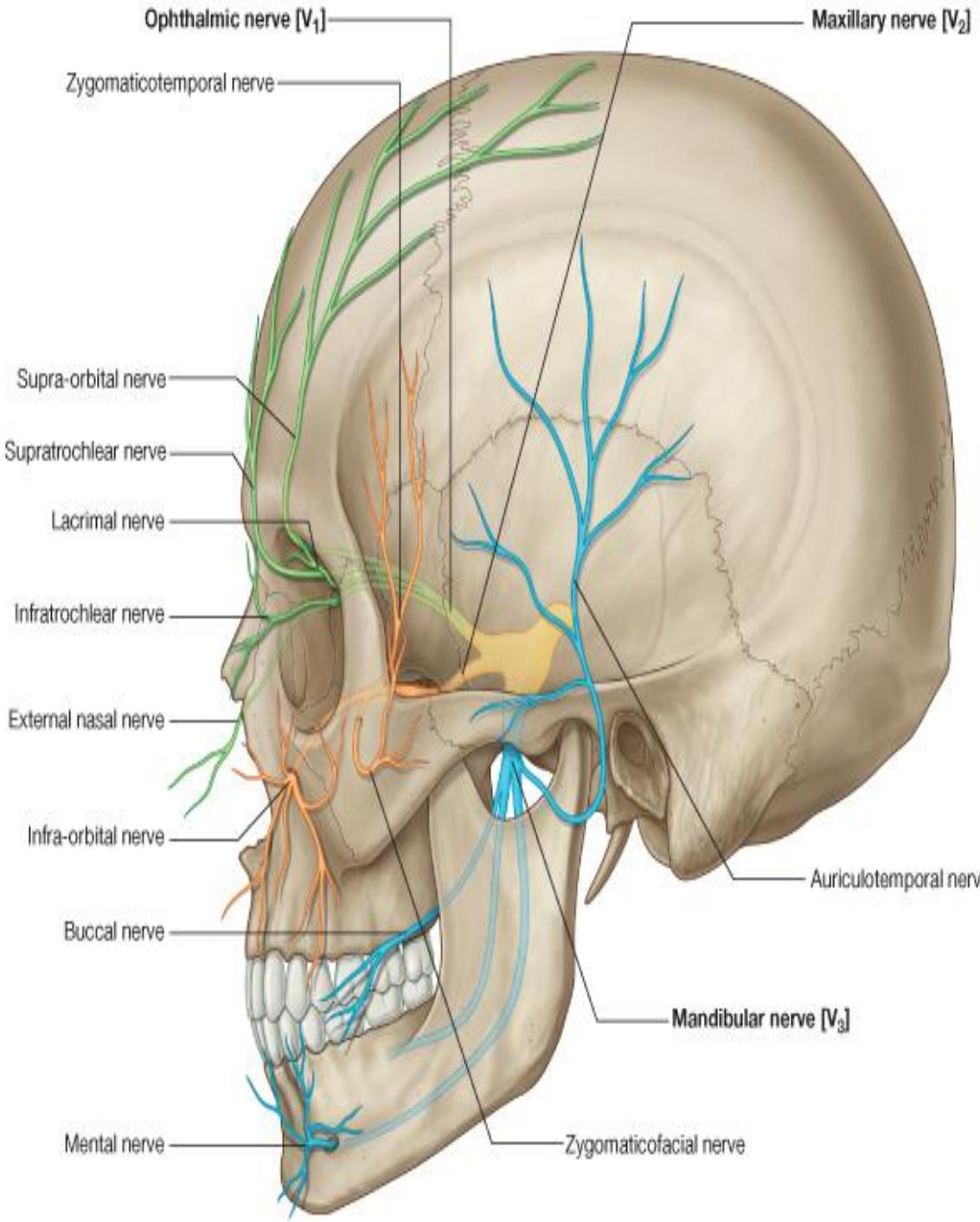


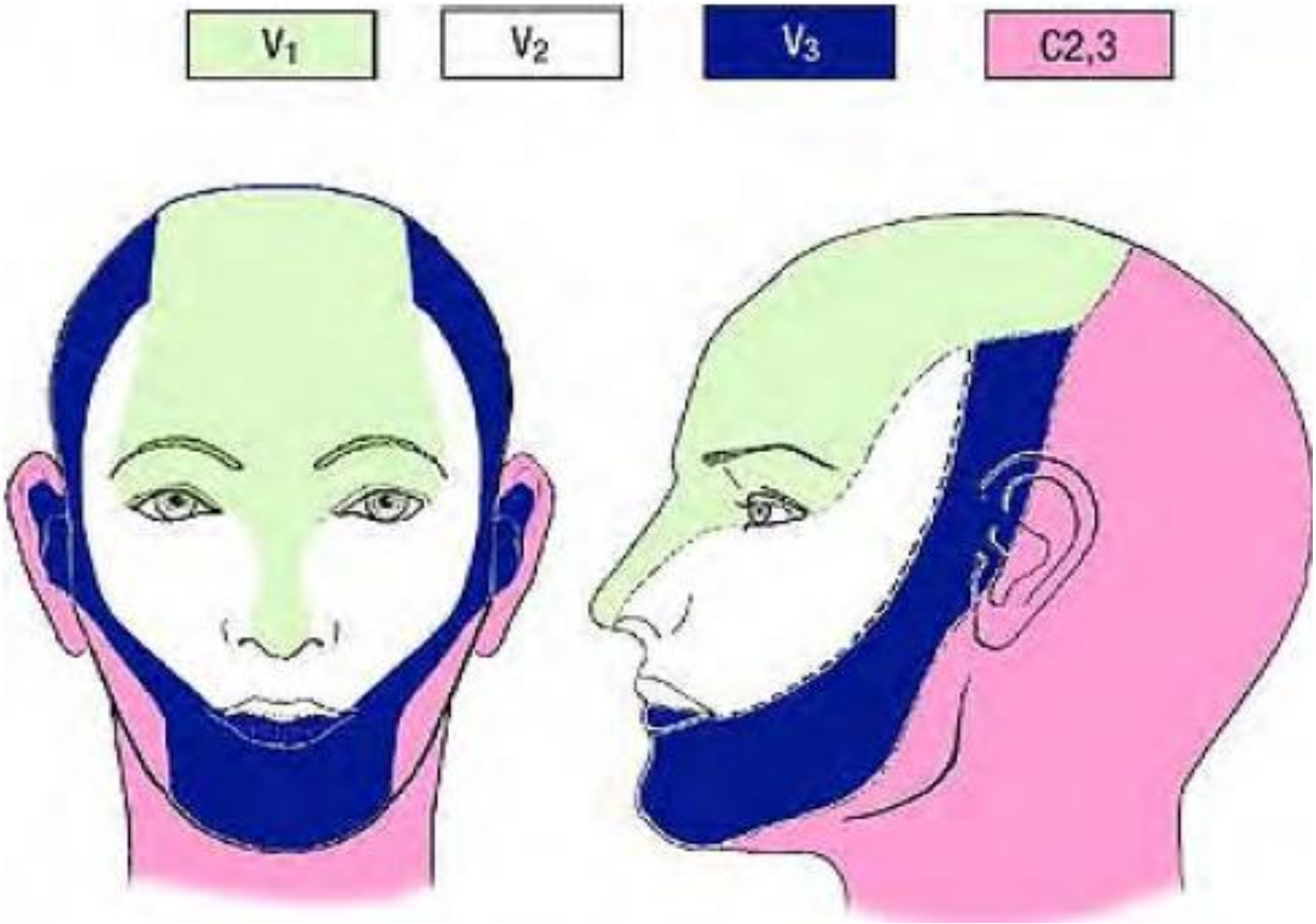
Mandibular Nerve

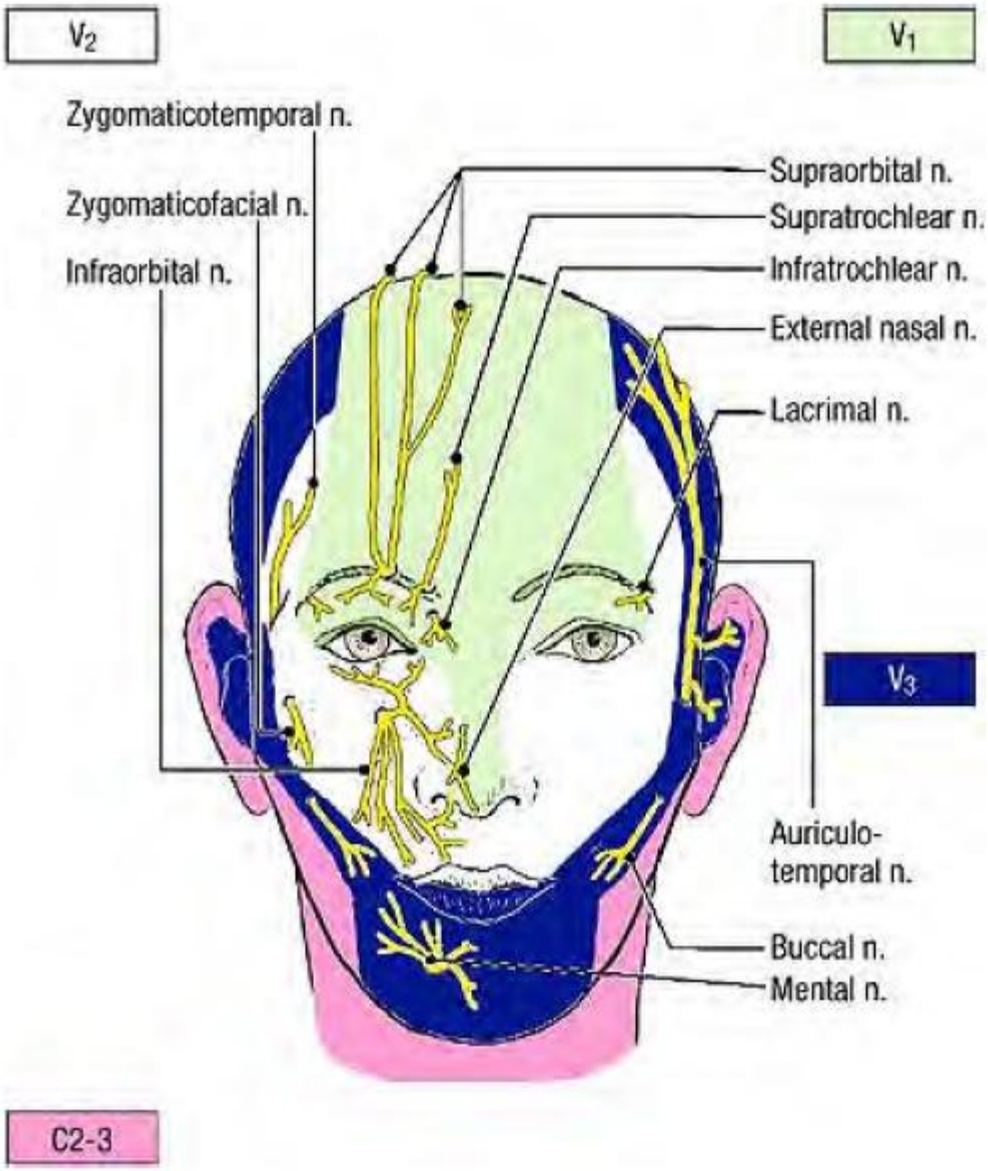
The mandibular nerve supplies the skin of the lower lip, the lower part of the face, the temporal region, and part of the auricle

1-The mental nerve emerges from the mental foramen of the mandible
2-The buccal nerve
3-The auriculotemporal nerve

It supplies the skin of the auricle, the external auditory meatus, the outer surface of the tympanic membrane, and the skin of the scalp above the auricle



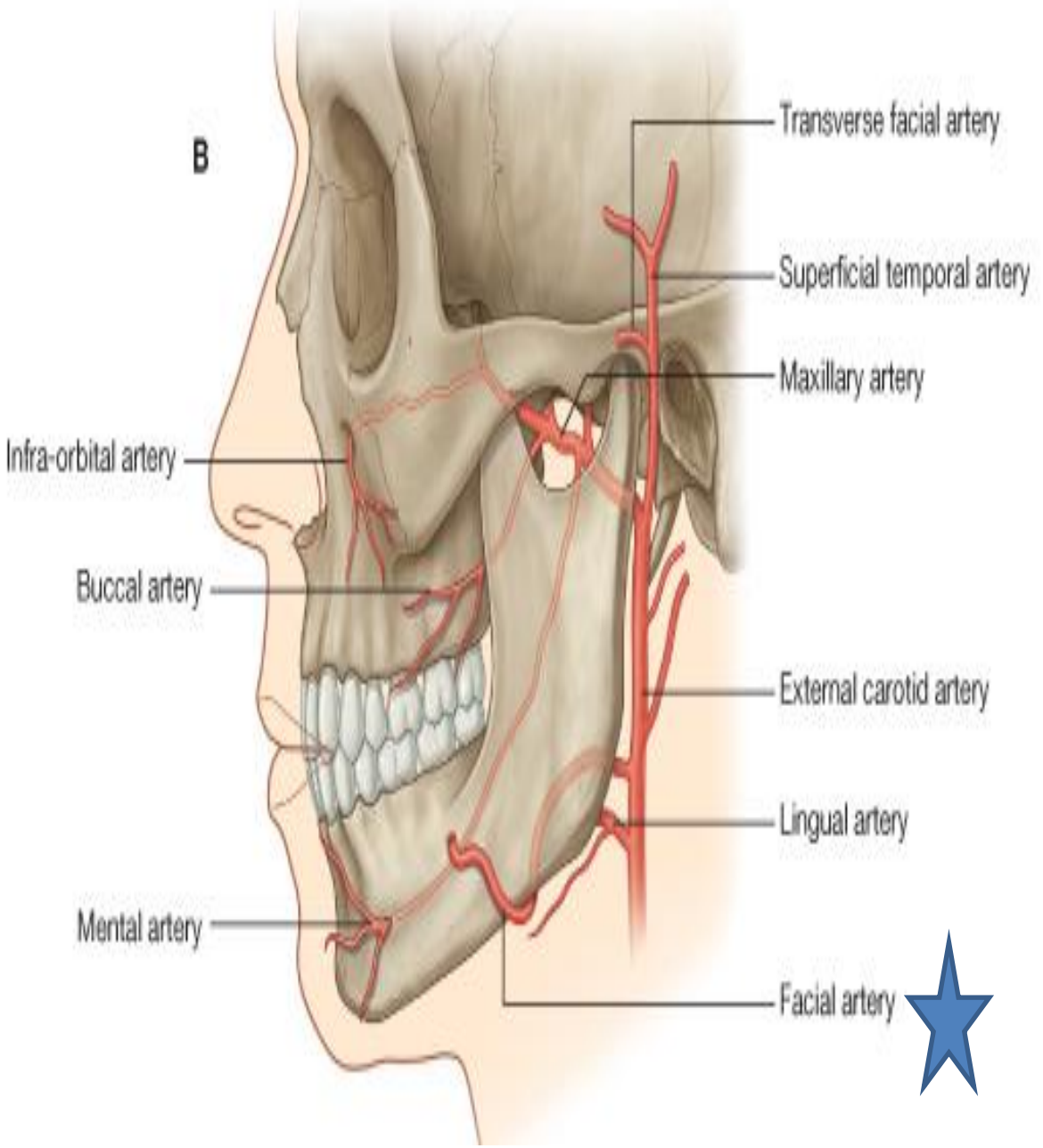

V1
V2
V3
C2,3


V2
V1
Zygomaticotemporal n.
Zygomaticofacial n.
Infraorbital n.
Supraorbital n.
Supratrochlear n.
Infratrochlear n.
External nasal n.
Lacrimal n.
V3
Auriculo-
temporal n.
Buccal n.
Mental n.
C2-3

Arterial Supply of the Face

The face receives a rich blood supply from two main vessels:

1-The facial artery
2-Superficial temporal artery



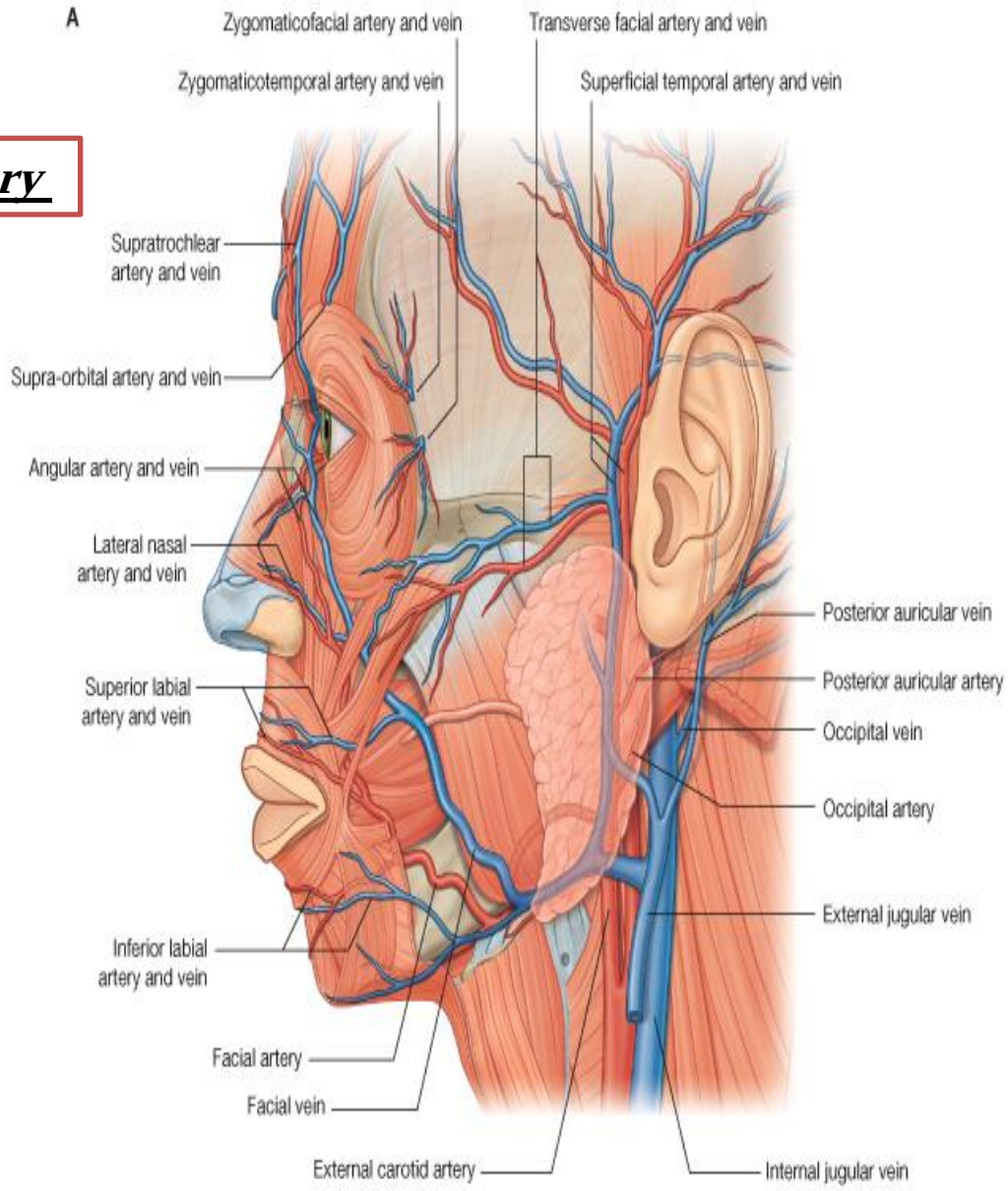
The facial artery

- Arises from ***the external carotid artery***

Ascends ***over the submandibular salivary gland***

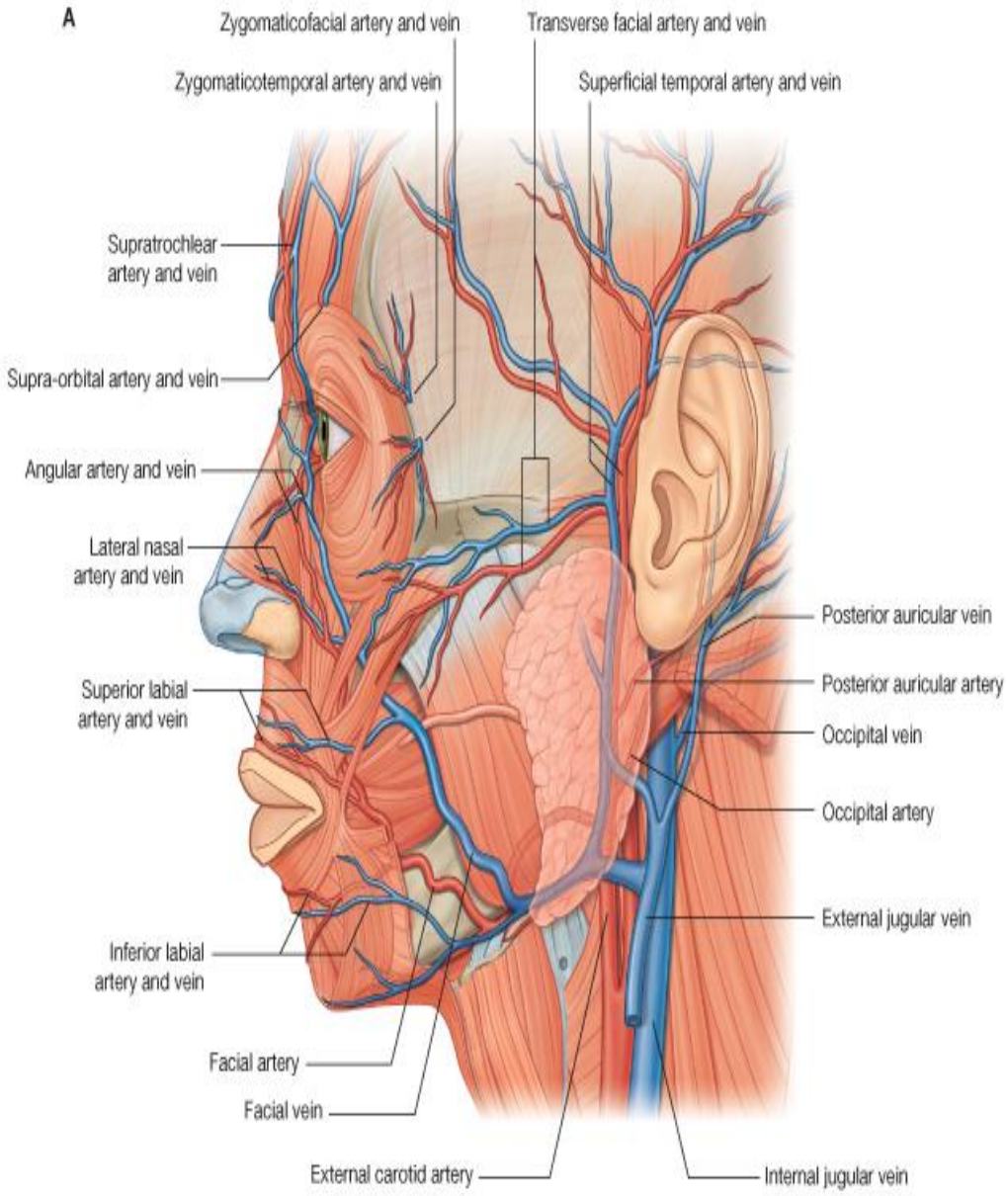
- It curves around the inferior margin of the body of **the mandible**

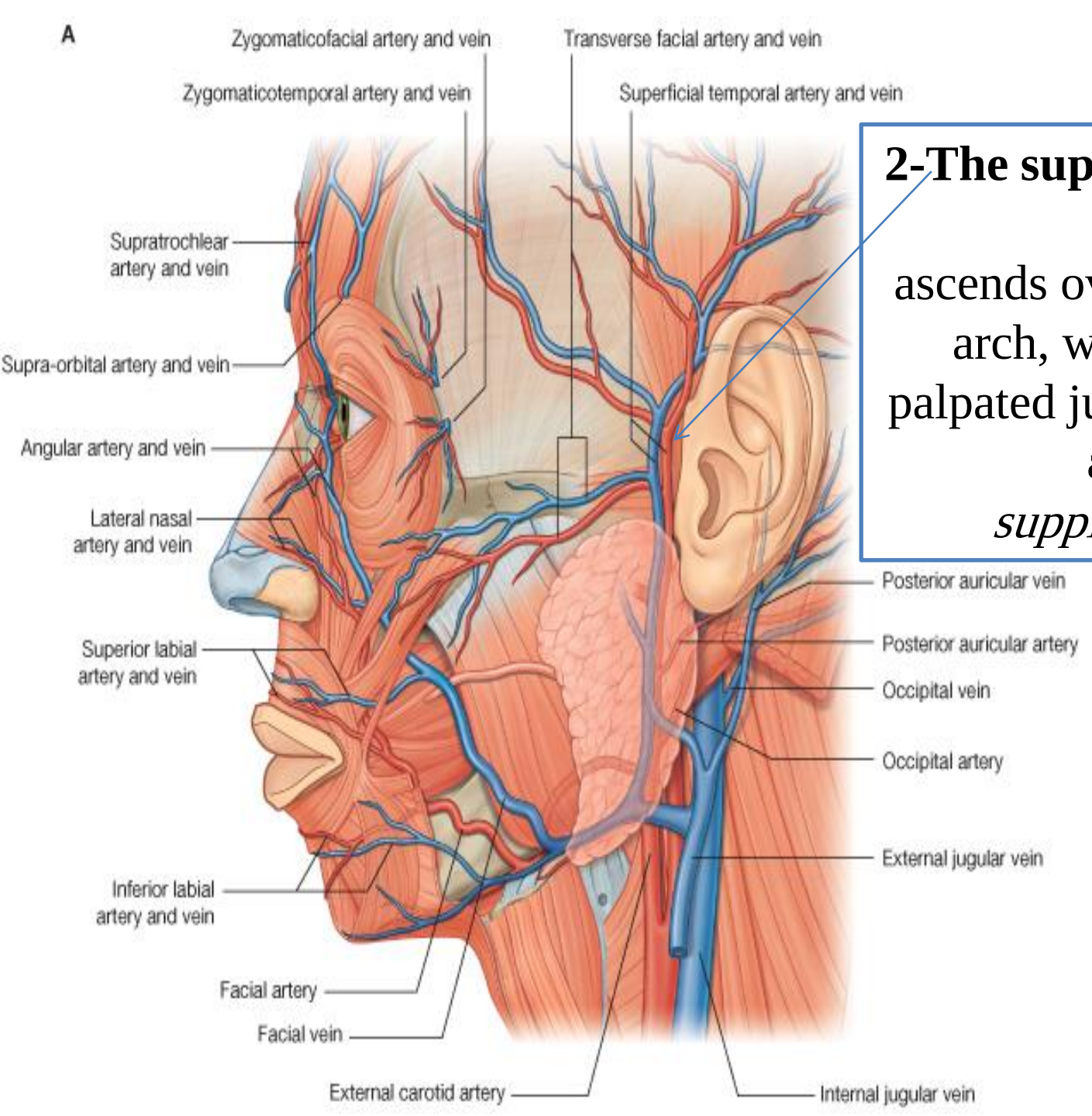
- Passes on and in front of the anterior border of the masseter muscle (pulse)|



➢It runs upward **in a tortuous** course toward the angle of the mouth

➢It then ascends deep to the zygomaticus muscles and runs along ***the side of the nose to the medial angle of the eye,*** where it anastomoses with the terminal branches of ***the ophthalmic artery***

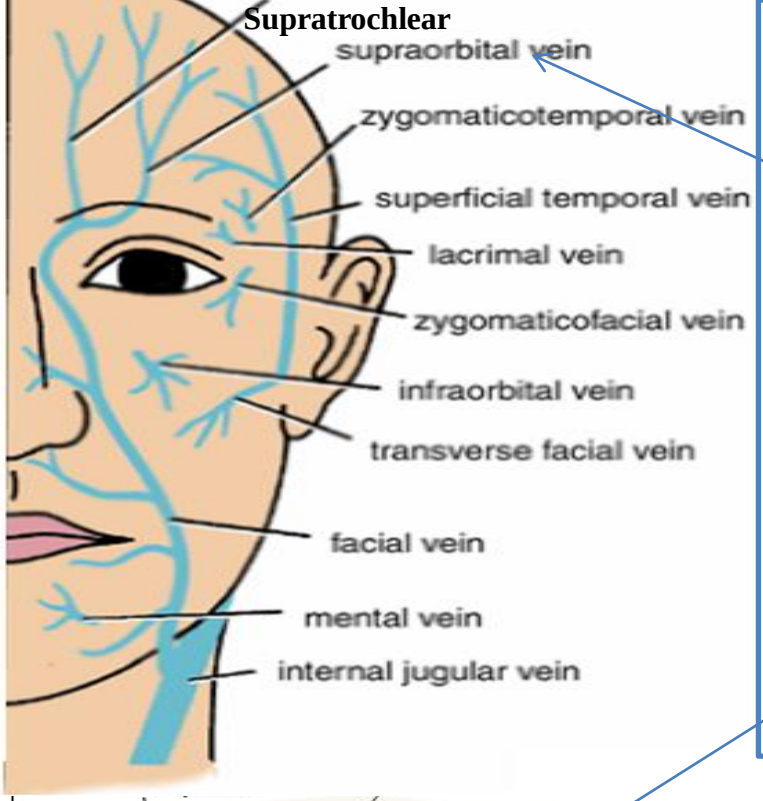




2-The superficial temporal artery

ascends over the zygomatic arch, where it may be palpated just **in front of the auricle,**

supplies the scalp



Venous Drainage of the Face

The facial vein is formed at the medial angle of the eye by the union of

The Supraorbital and Supratrochlear veins

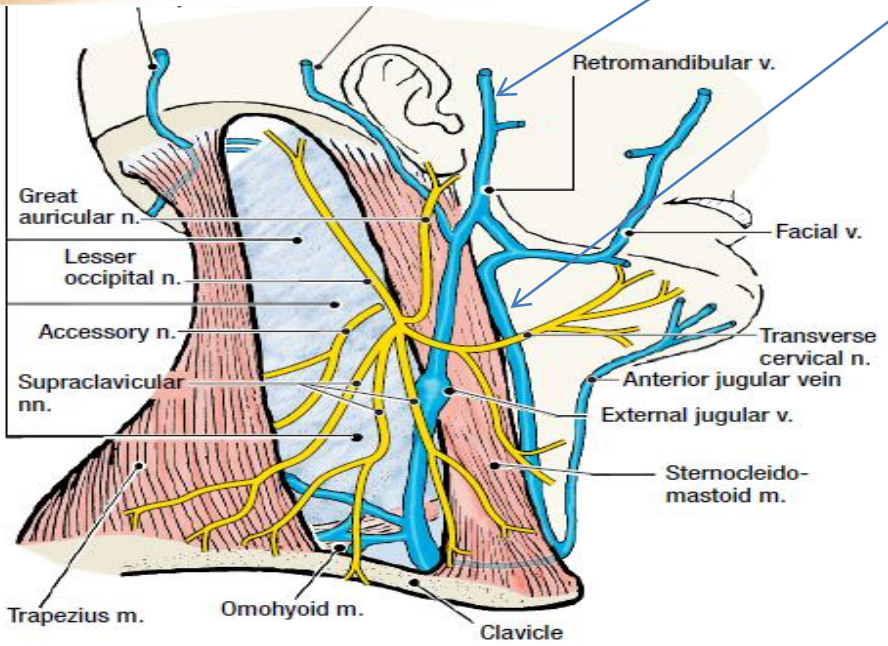
The facial vein descends behind the facial artery to the **lower margin of the body of the mandible**

It crosses superficial to the submandibular gland and is joined by the *anterior division of*

The retromandibular vein.

The facial vein ends by draining into

The internal jugular vein.



Important communications

It communicates with the pterygoid venous plexus **by the deep facial vein**

It communicates with the cavernous sinus by the **superior ophthalmic vein**

It is connected to ***the superior ophthalmic vein*** directly through the supraorbital vein. By means *of the superior ophthalmic vein,* the facial vein is connected to

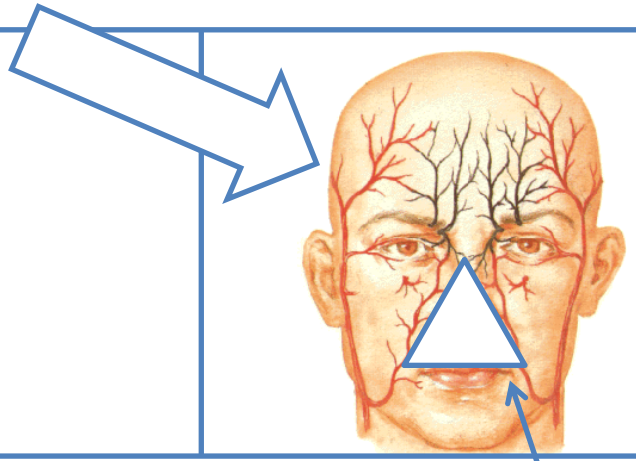
The cavernous sinus

this connection is of a great clinical importance because it provides

a pathway for the spread of infection from DANGEROUS AREA OF THE FACE

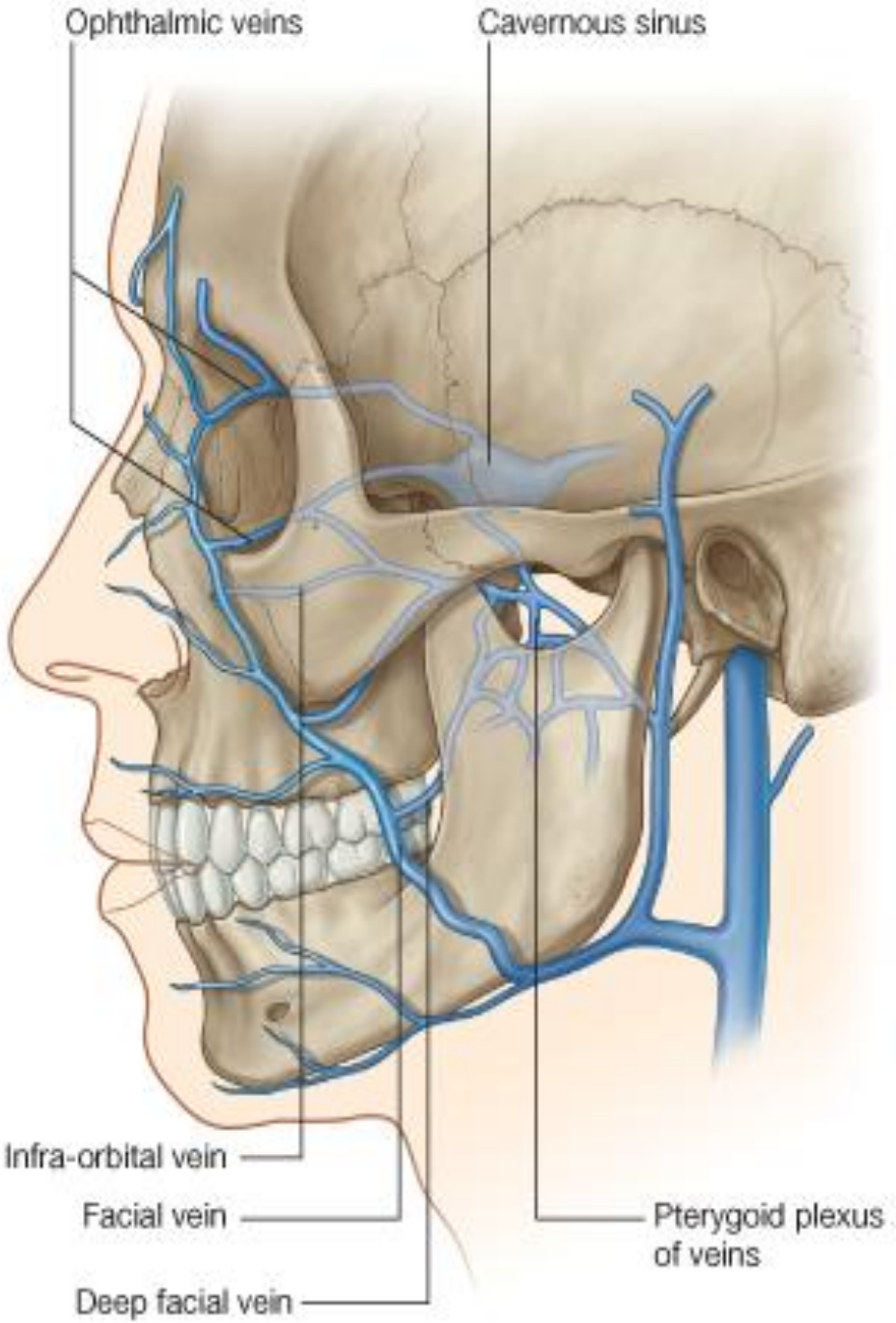
(THE LOWER PART OF THE NOSE AND THE UPPER LIP**)**

to the cavernous sinus



Infection from the triangular area can cause

Thrombosis of the cavernous sinus



Arterial Supply of the Scalp

The arteries lie in the superficial fascia.

A-Branches of the ophthalmic artery

1-The supratrochlear

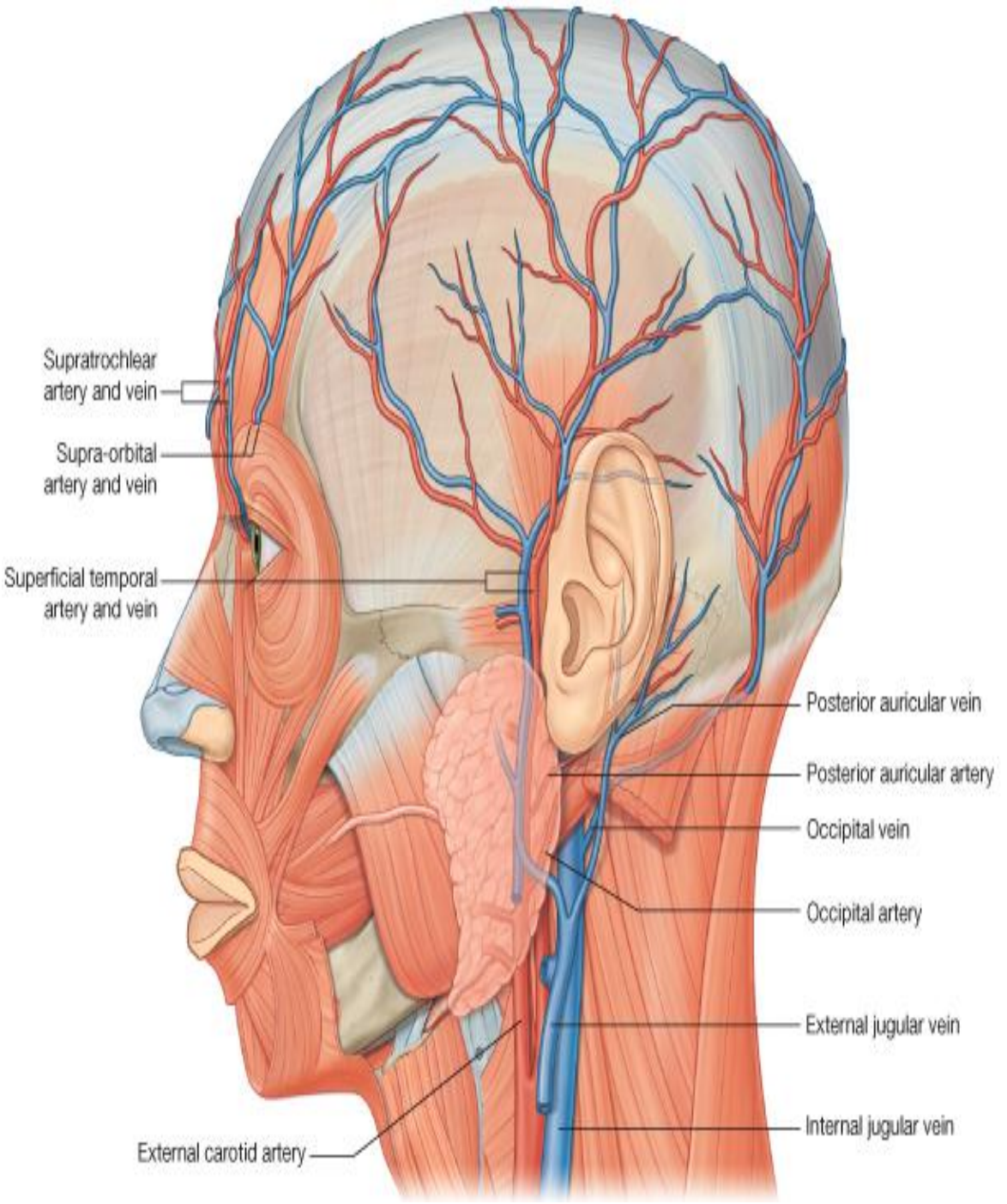
2-The supraorbital

B-Branch of the external carotid artery

The superficial temporal artery

The posterior auricular artery

The occipital artery



Anatomically, it is useful to remember in an emergency that

all the superficial arteries supplying the scalp

ascend from the face and the neck.

Thus, in an emergency situation, **encircle the head just above the ears and eyebrows** with a tie, shoelaces, or even a piece of string and tie it tight. Then insert a pen, pencil, or stick into the loop and rotate it so that the tourniquet exerts pressure on the arteries