

Nerve and blood supply of the face

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Nerve supply of the face

➤ Sensory nerve supply

The skin of the face is supplied by trigeminal nerve (5th Cranial nerve)

The **Trigeminal nerve** (5th cranial nerve) is divided into 3 divisions

1- Ophthalmic (V1)

2- Maxillary (V2)

3- Mandibular (V3)

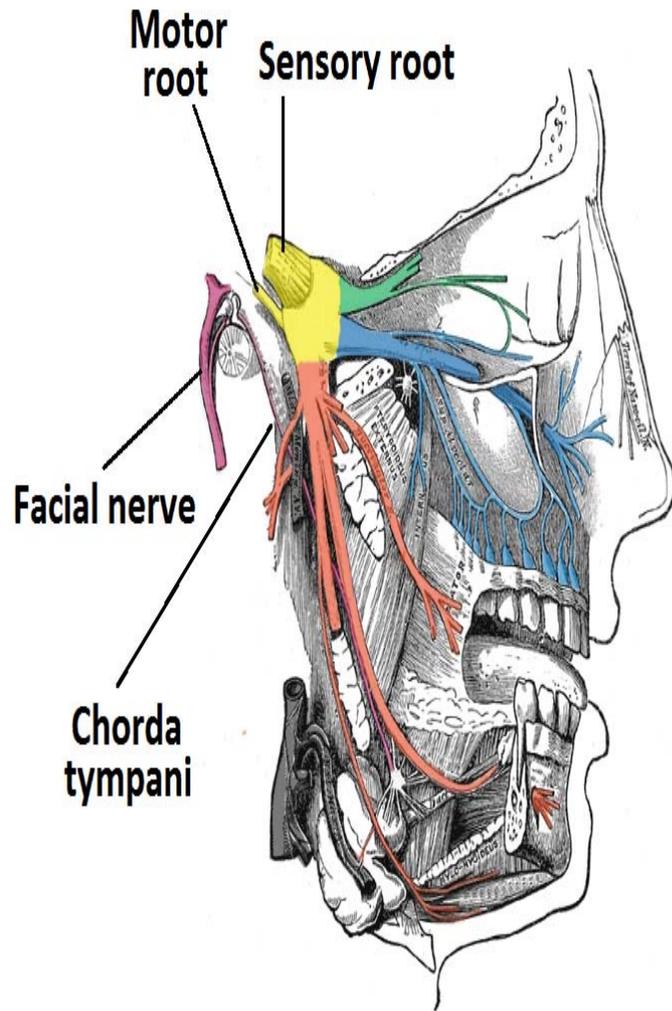
The skin of the face is divided into *3 main* zones

(Upper middle, lower) which are supplied by V1, V2, V3 divisions of the trigeminal N.

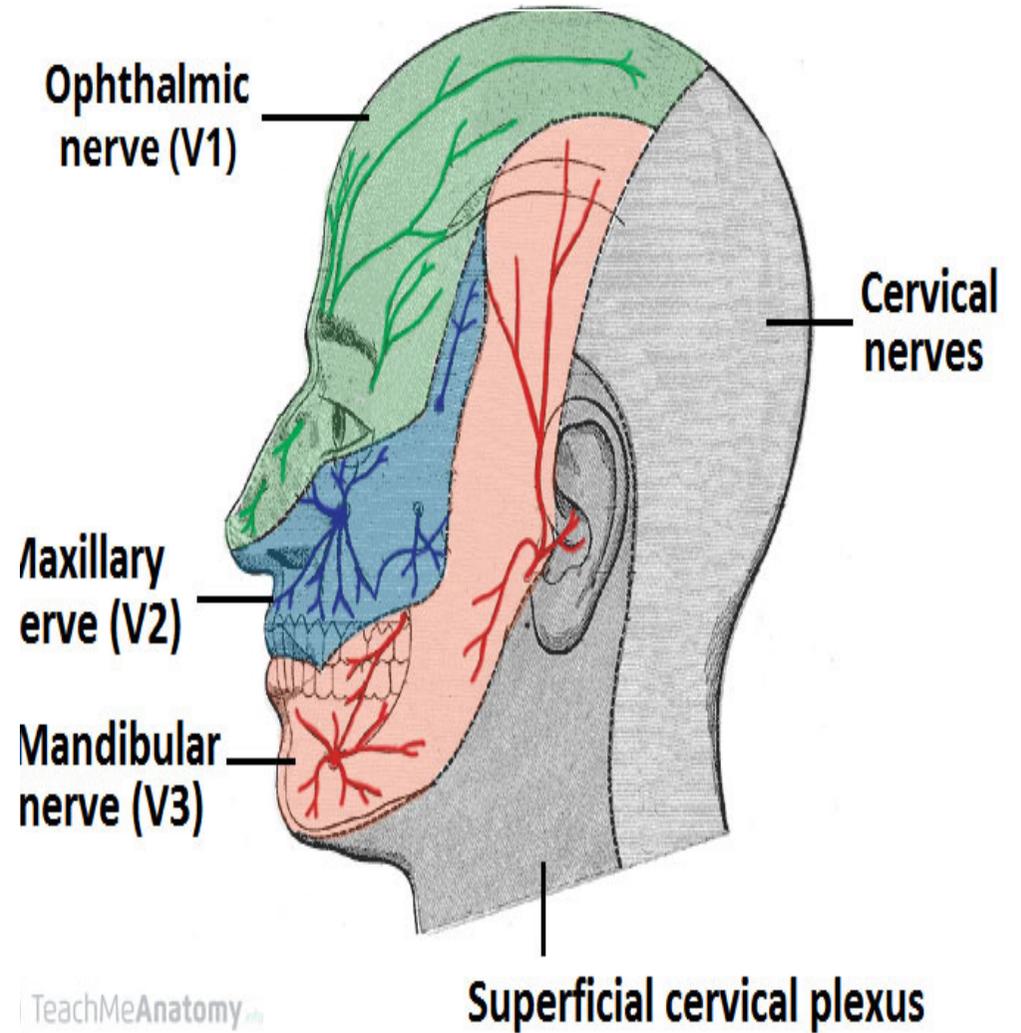
➤ The motor nerve supply

The muscles of the face are supplied by **Facial nerve** (7th cranial nerve)

Sensory nerve supply of the face



-  Ophthalmic (V1)
-  Maxillary (V2)
-  Mandibular (V3)



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Sensory nerve supply of the face

Trigeminal nerve

I. Ophthalmic division :

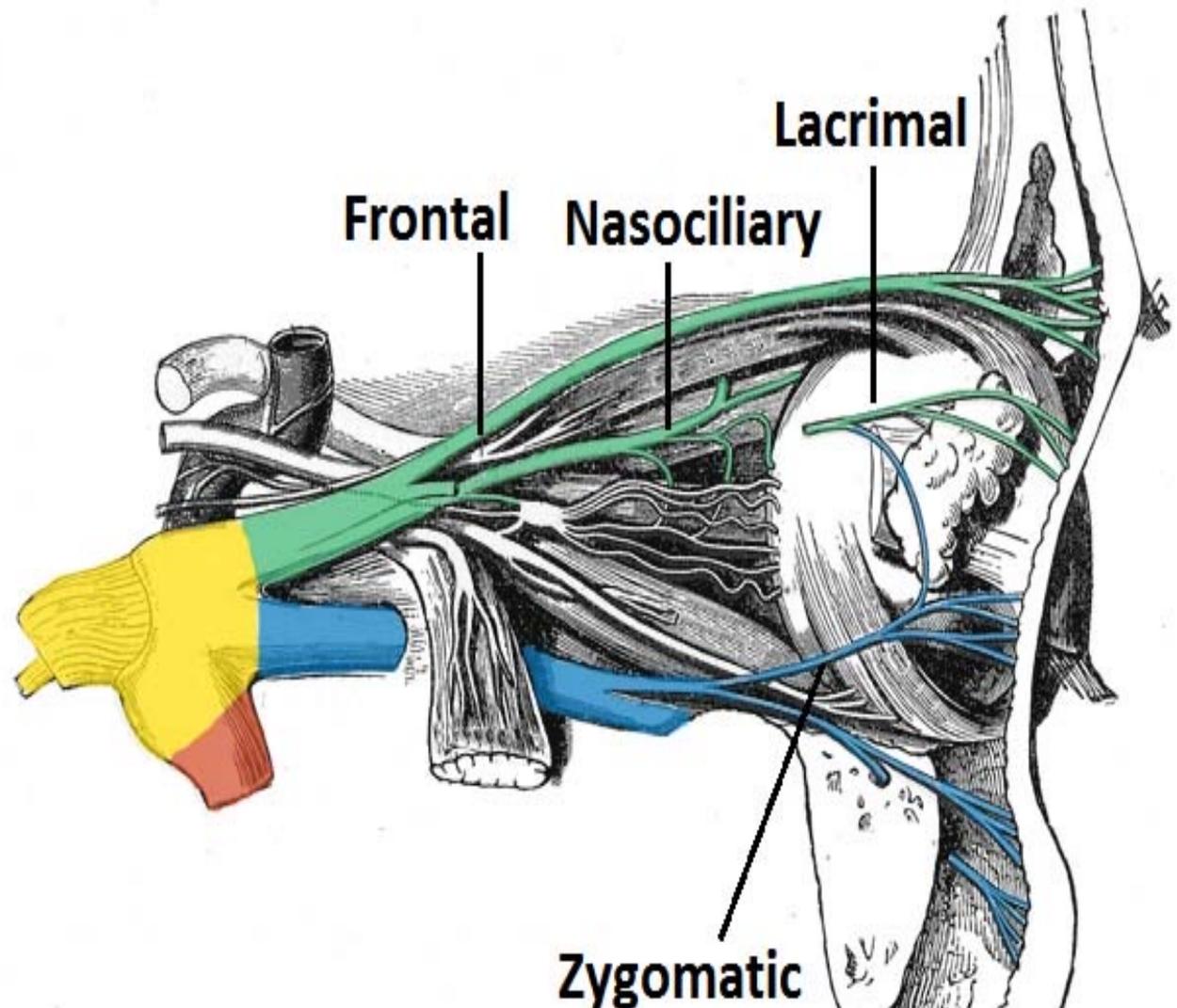
A- Frontal which gives :

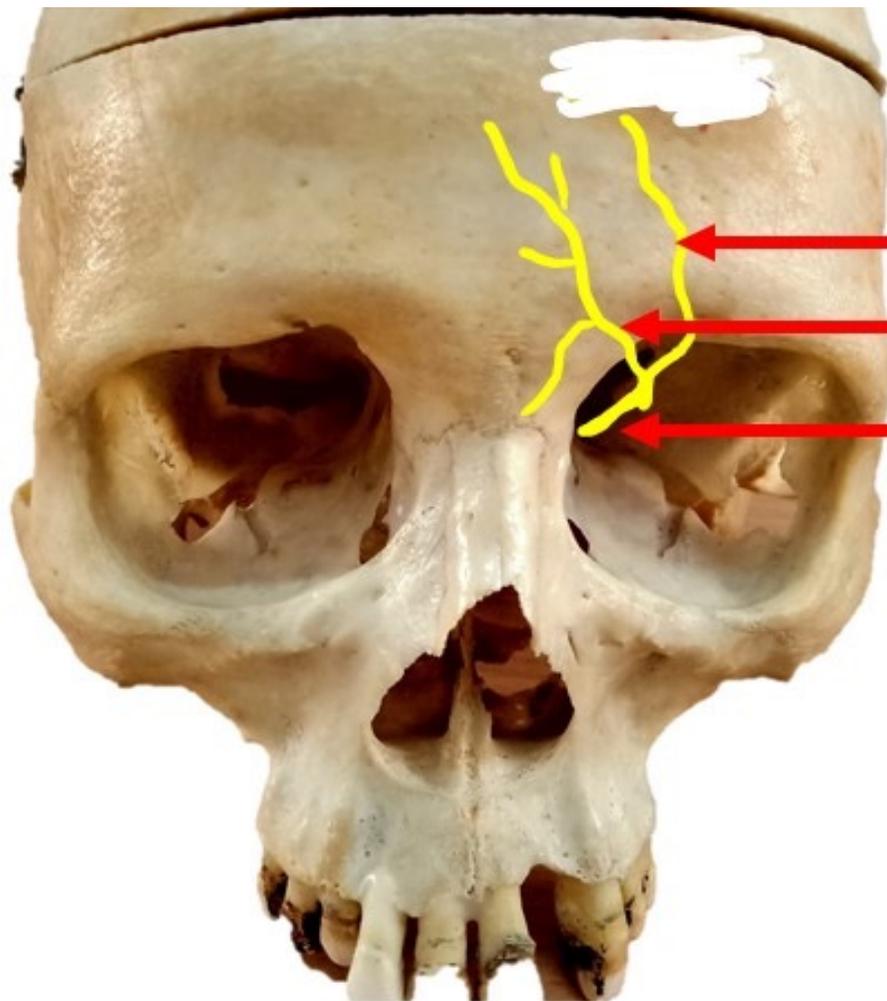
- 1-Supratrochlear nerve
- 2-Supraorbital nerve

B. The lacrimal nerve

C. Nasociliary nerve

- 1-Infratrochlear nerve
- 2-External nasal nerve





SUPRAORBITAL NERVE

SUPRATROCHLERA NERVE

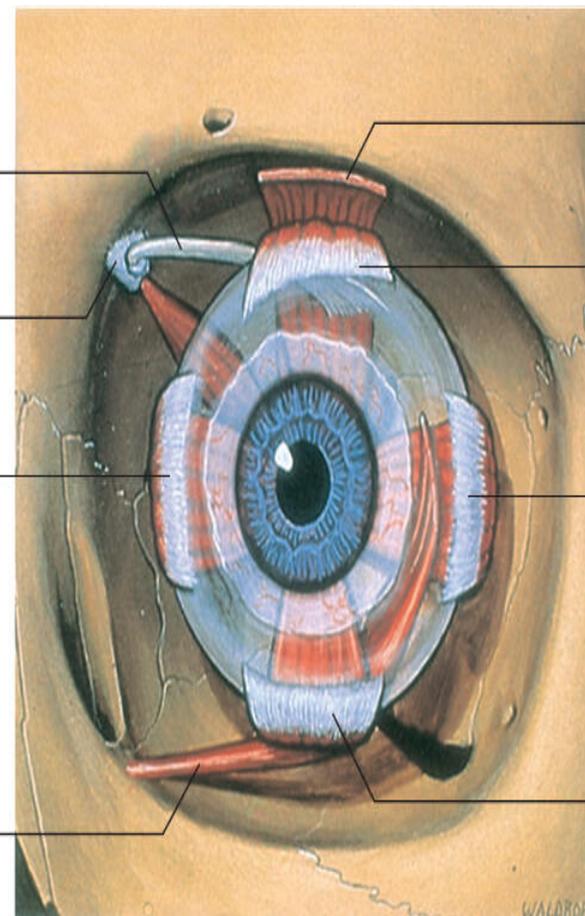
FRONTAL NERVE

Superior oblique tendon

Trochlea

Medial rectus tendon

Inferior oblique muscle



Levator palpebrae superioris muscle

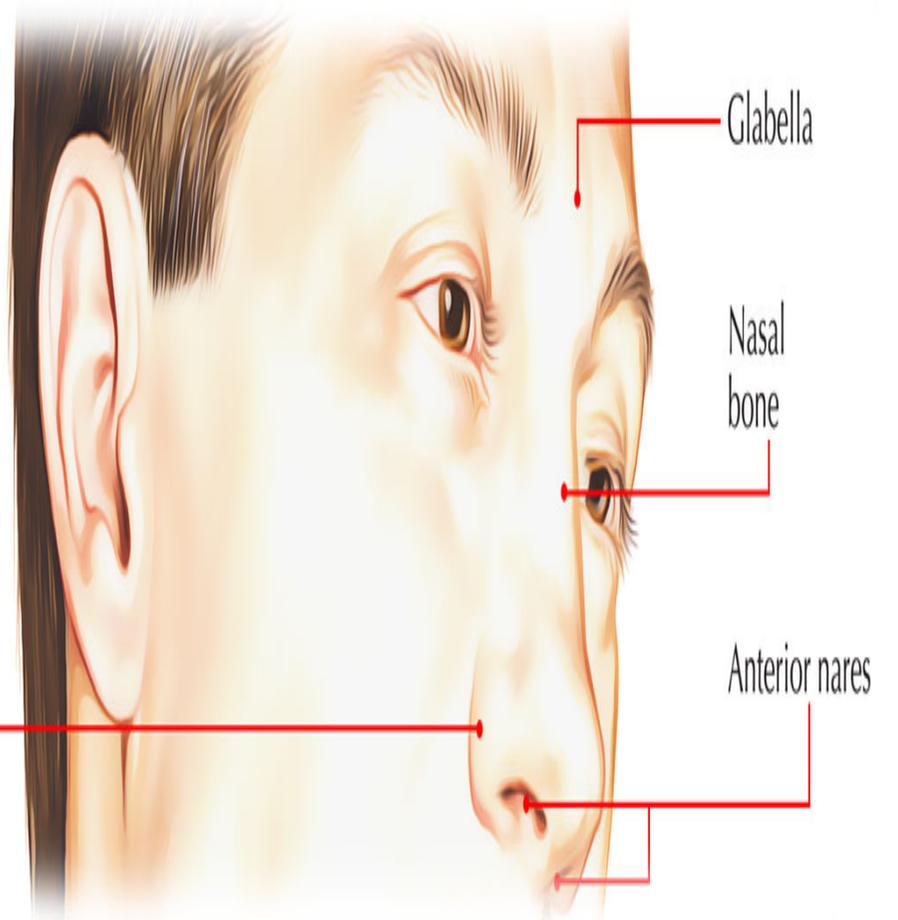
Superior rectus tendon

Lateral rectus tendon

Inferior rectus tendon

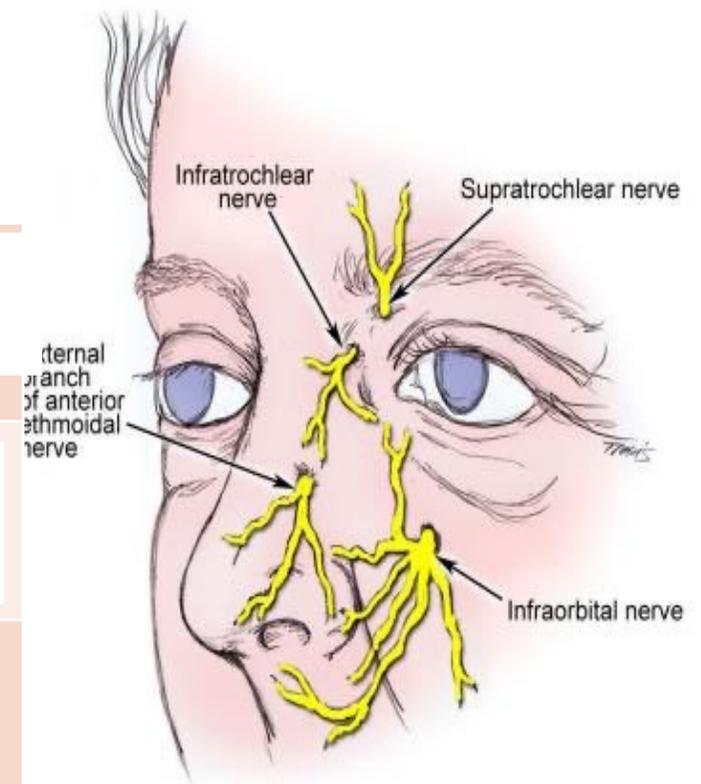


Ala of nose



Branch	Area supplied
1- S upratrochlear	
2- S upraorbital	
3- L acrimal	
4- I nfratrochlear	
5- External N asal	

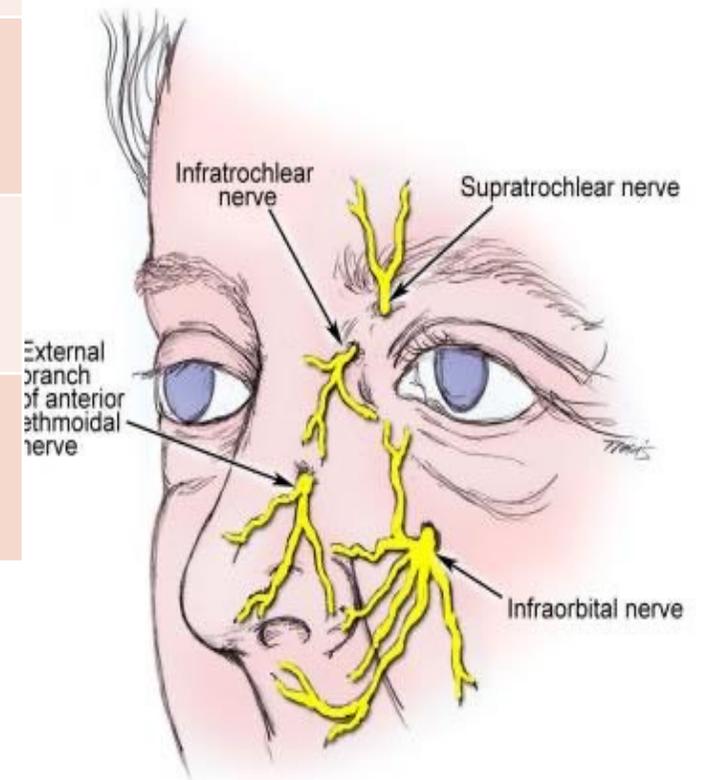
V1 Ophthalmic nerve



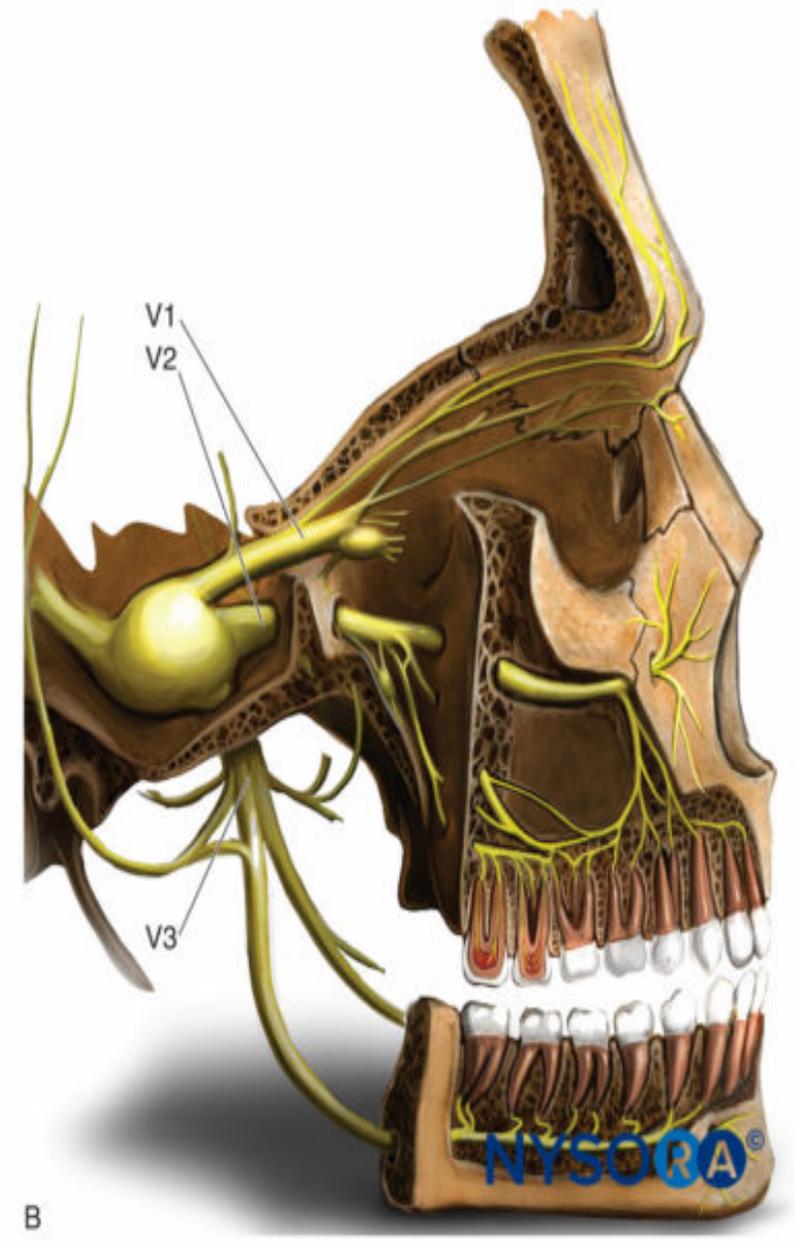
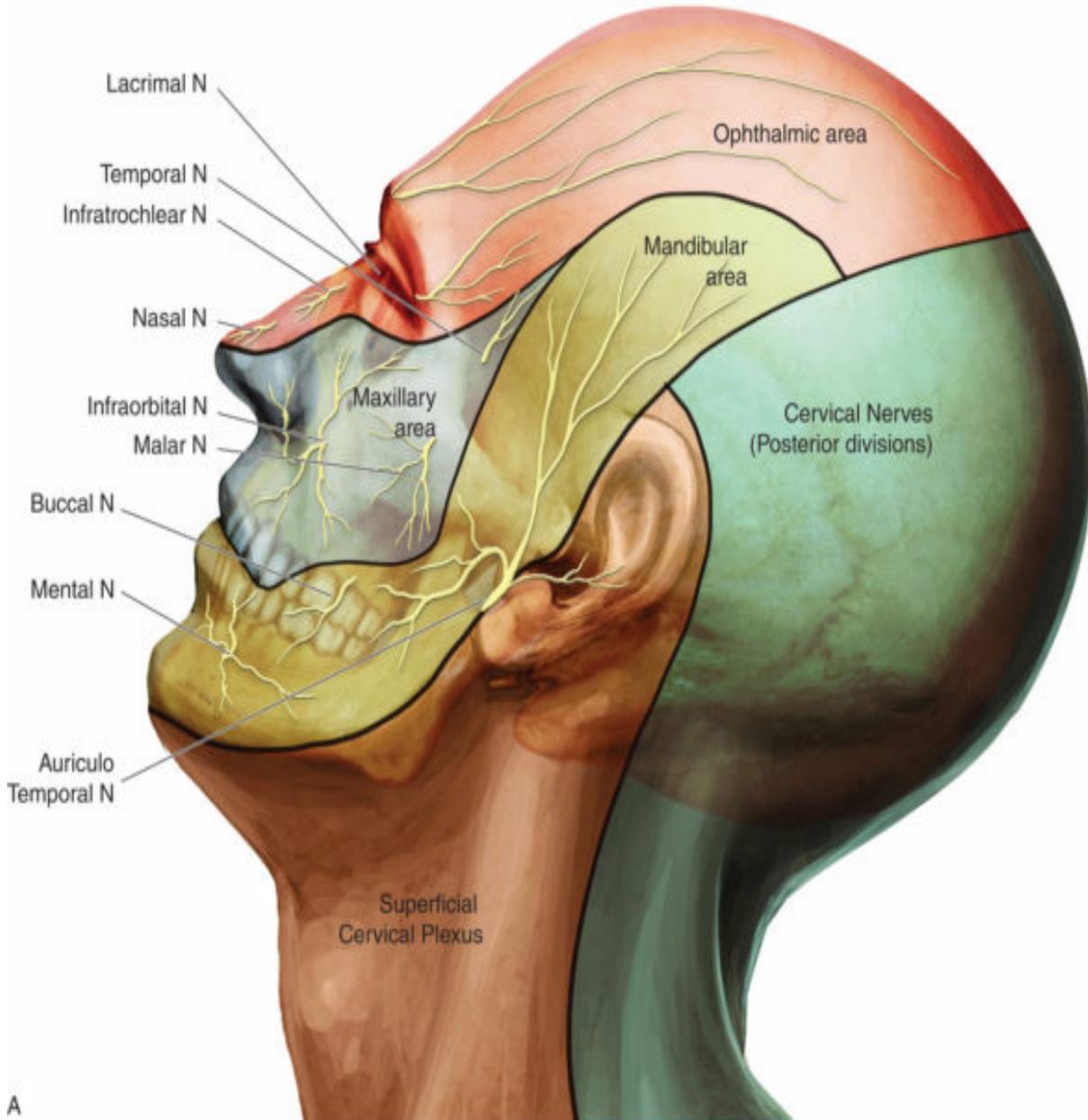
SSLIN

Branch	Area supplied
1- S upratrochlear	-Skin of the forehead up to the hair line -Skin and conjunctiva of medial part of upper eyelid
2- S upraorbital	-Skin of the forehead and skin of the scalp up to its vertex -Skin and conjunctiva middle part of upper eye lid
3- L acrimal	Skin and conjunctiva of the lateral part of upper eyelid
4- I nfratrochlear	Skin and conjunctiva of the medial part upper eyelid and adjoining part of nose
5- External N asal	Skin over dorsum of the nose down to its tip.

V1 Ophthalmic nerve



SSLIN

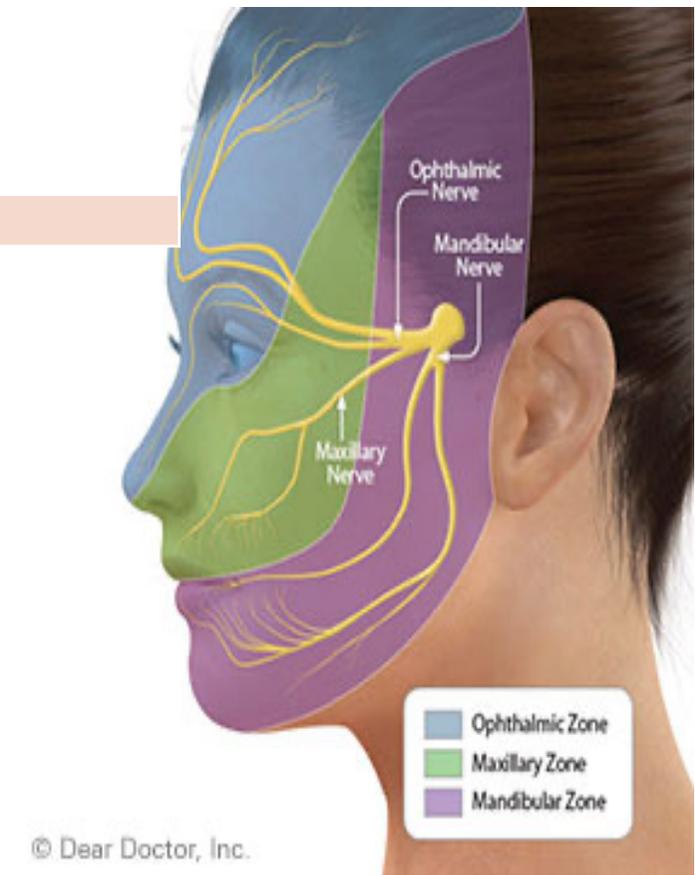
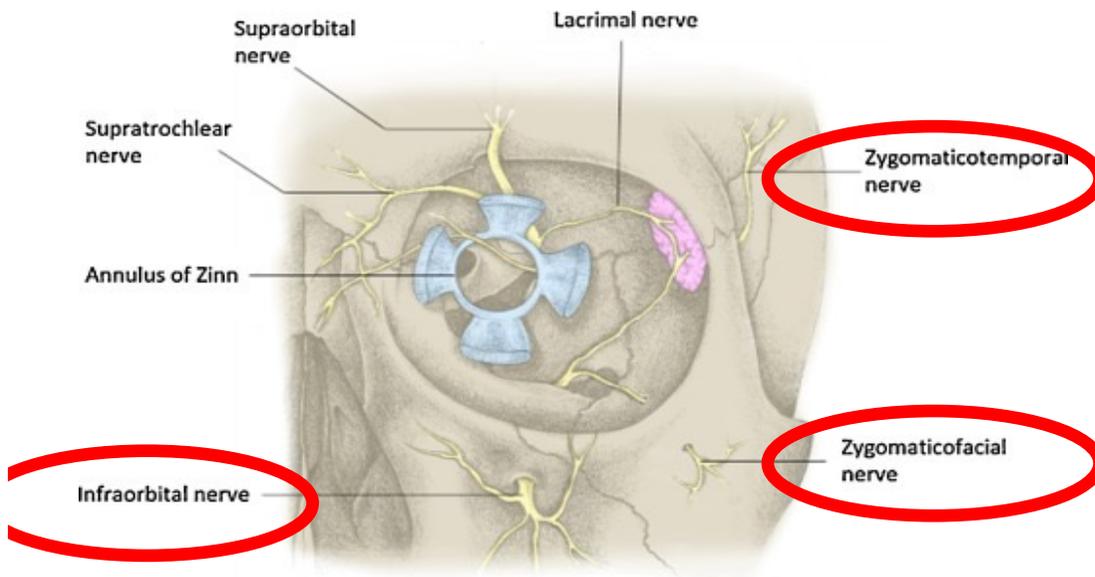


A

B

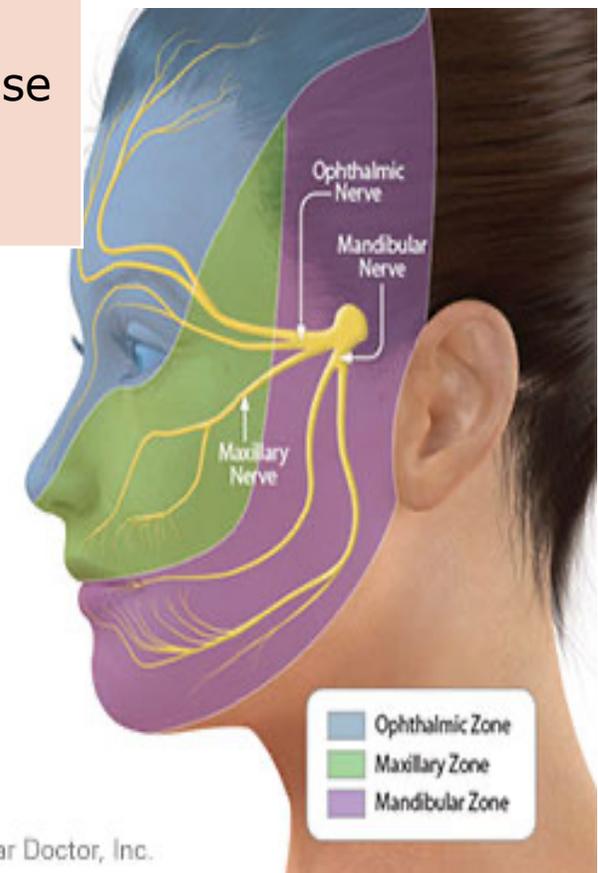
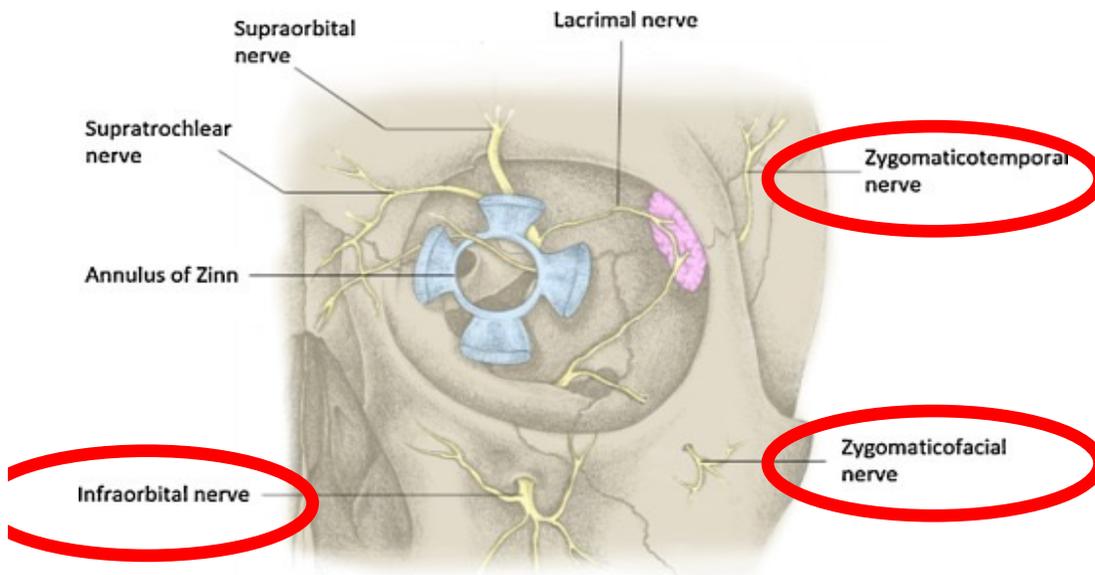
Branch	Area supplied
1.Zygomaticofacial	
2.Zygomaticotemporal	
3- Infraorbital(Gives 3 branches in the face)	

V2 Maxillary



Branch	Area supplied
1.Zygomaticofacial	Skin over the zygomatic bone
2.Zygomaticotemporal	Non hairy area of the temple
3- Infraorbital(Gives 3 branches in the face)	a. Palpebral branch → skin and conjunctiva lower eyelid. b. Nasal branch →side and ala of the nose c. Superior labial branch → upper lip

V2 Maxillary

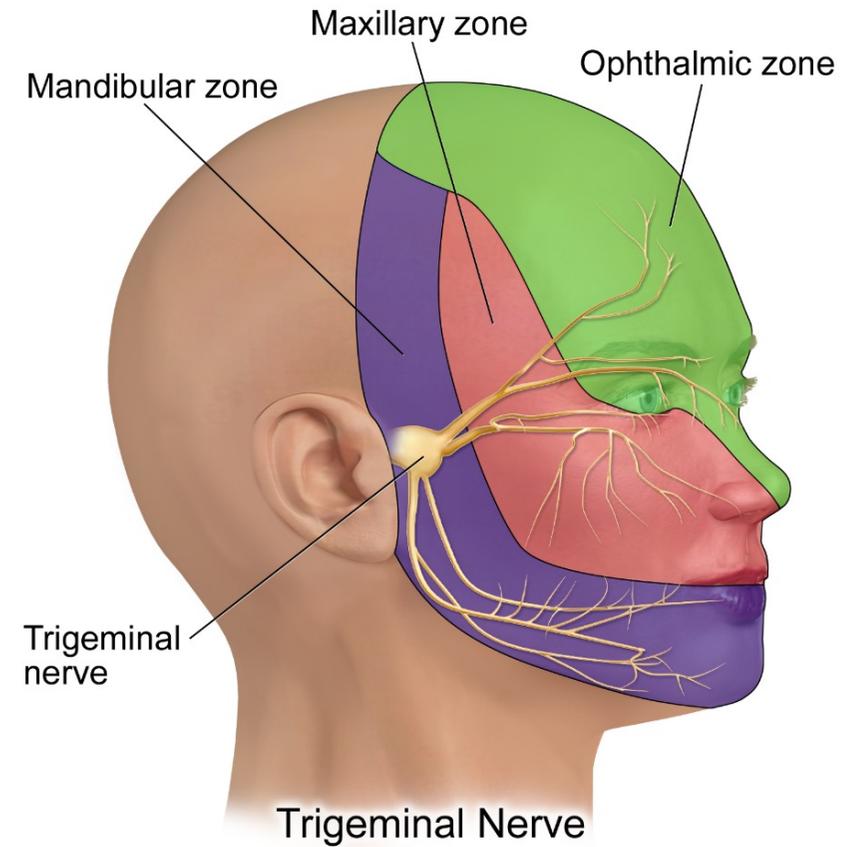
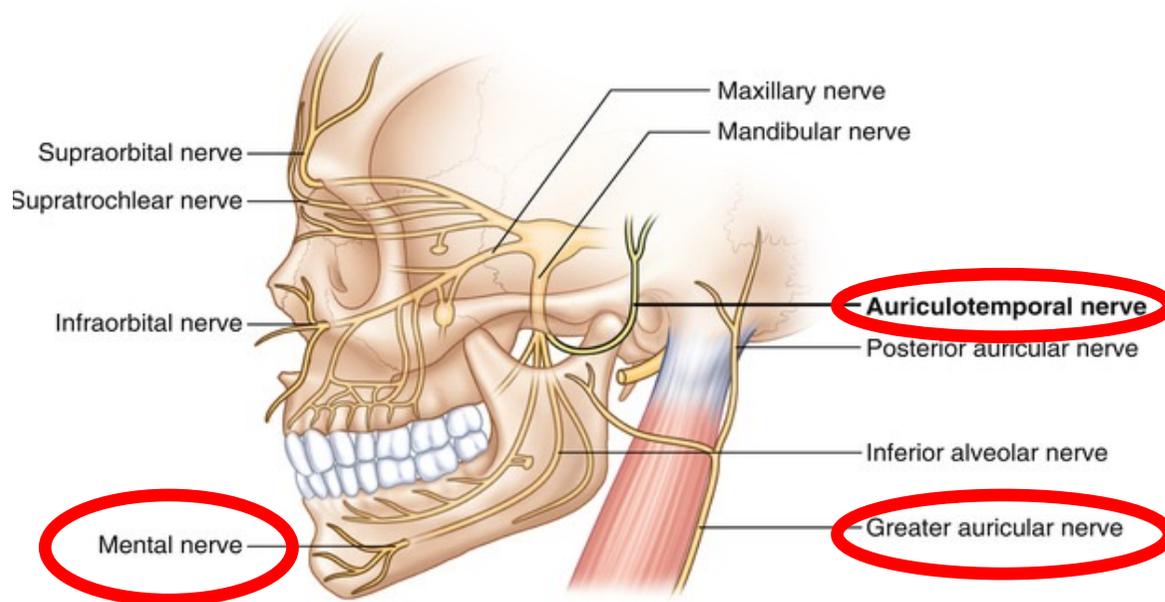


Branch	Area supplied
Auriculotemporal	
Buccal	
Mental	

V3 Mandibular

Branches from cervical plexus

Great auricular N : skin over the angle of the mandible and capsule of parotid gland

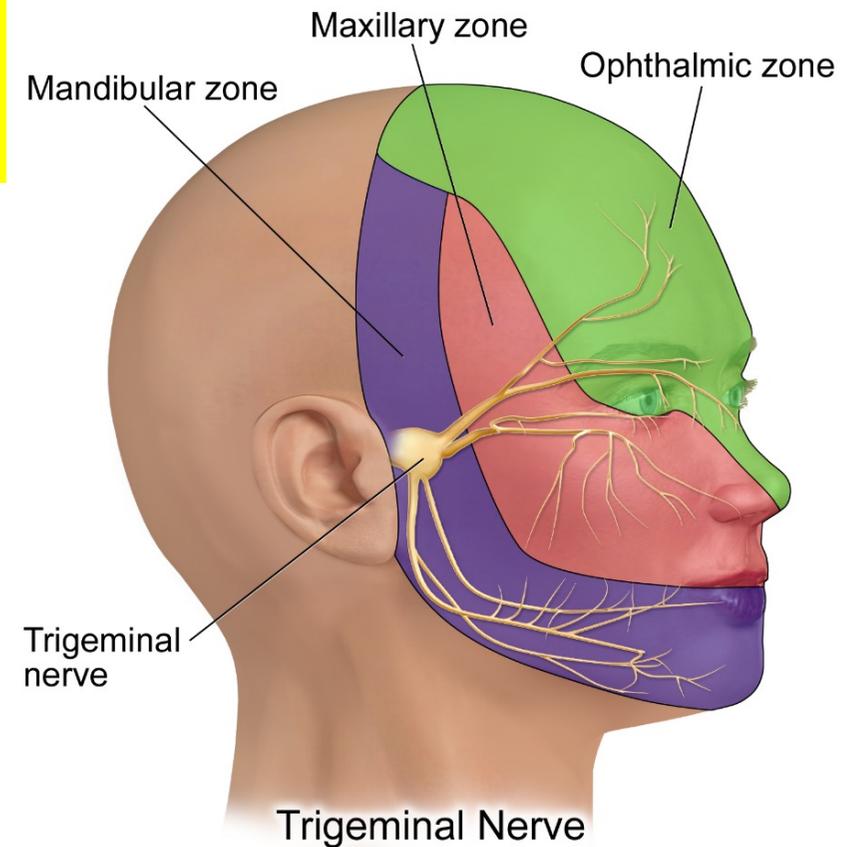
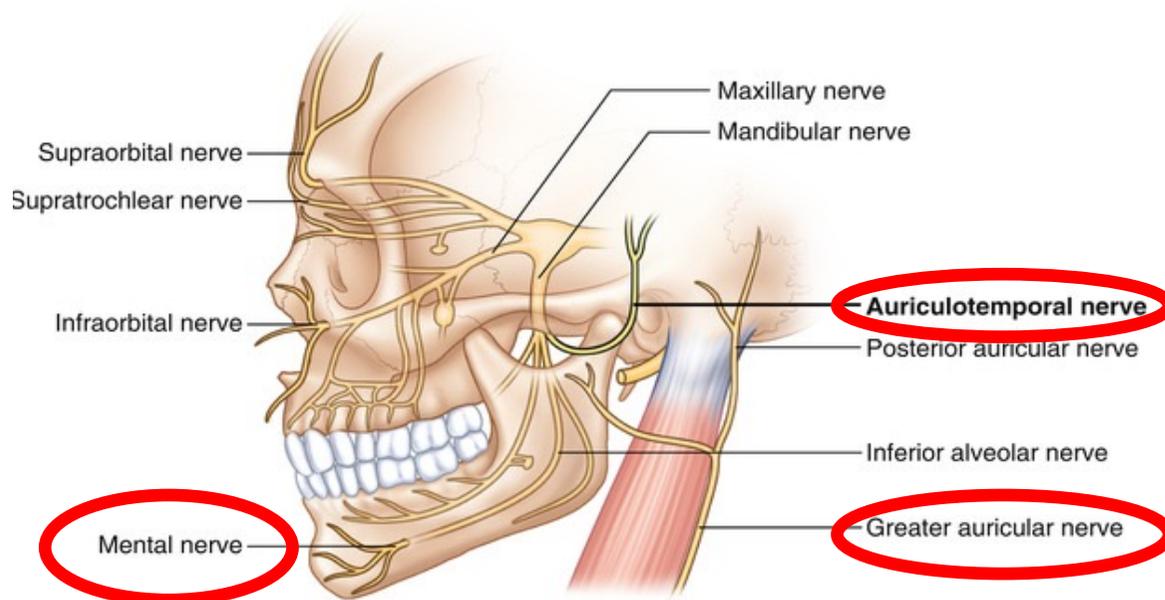


Branch	Area supplied
Auriculotemporal	hairy area of the temple.
Buccal	skin of the cheek, below the zygomatic arch
Mental	Skin of the chin, lower lip.

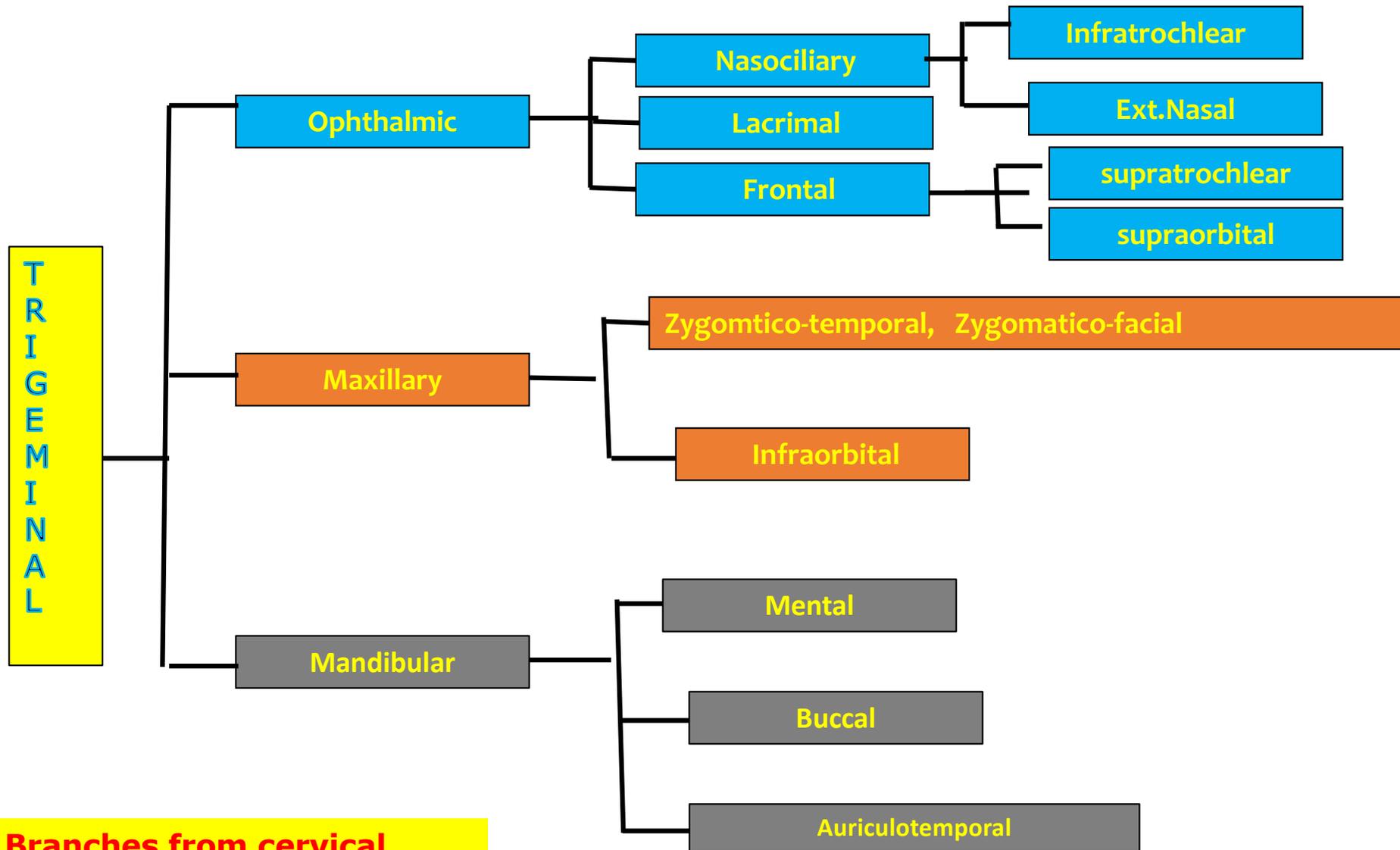
V3 Mandibular

Branches from cervical plexus

Great auricular N : skin over the angle of the mandible and capsule of parotid gland



Sensory nerve supply of the face

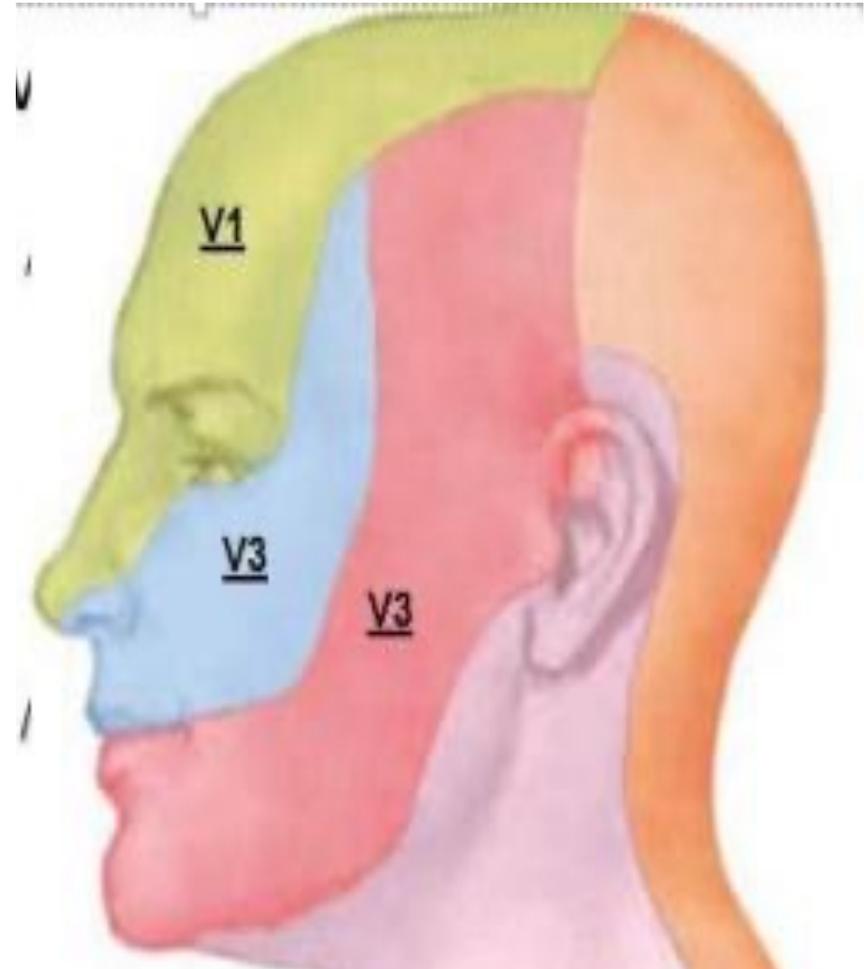


Branches from cervical plexus

Great auricular N : skin over the angle of the mandible and capsule of parotid gland

Mention areas are supplied by the following nerves?

1. Infraorbital
2. Supratrochlear
3. Auriculotemporal
4. The infratrochlear
5. Zygomatico-temporal
6. External nasal
7. Buccal
8. Lacrimal
9. Zygomatico-facial



Blood supply of the face

The face is *mainly* supplied by

1-Facial Artery

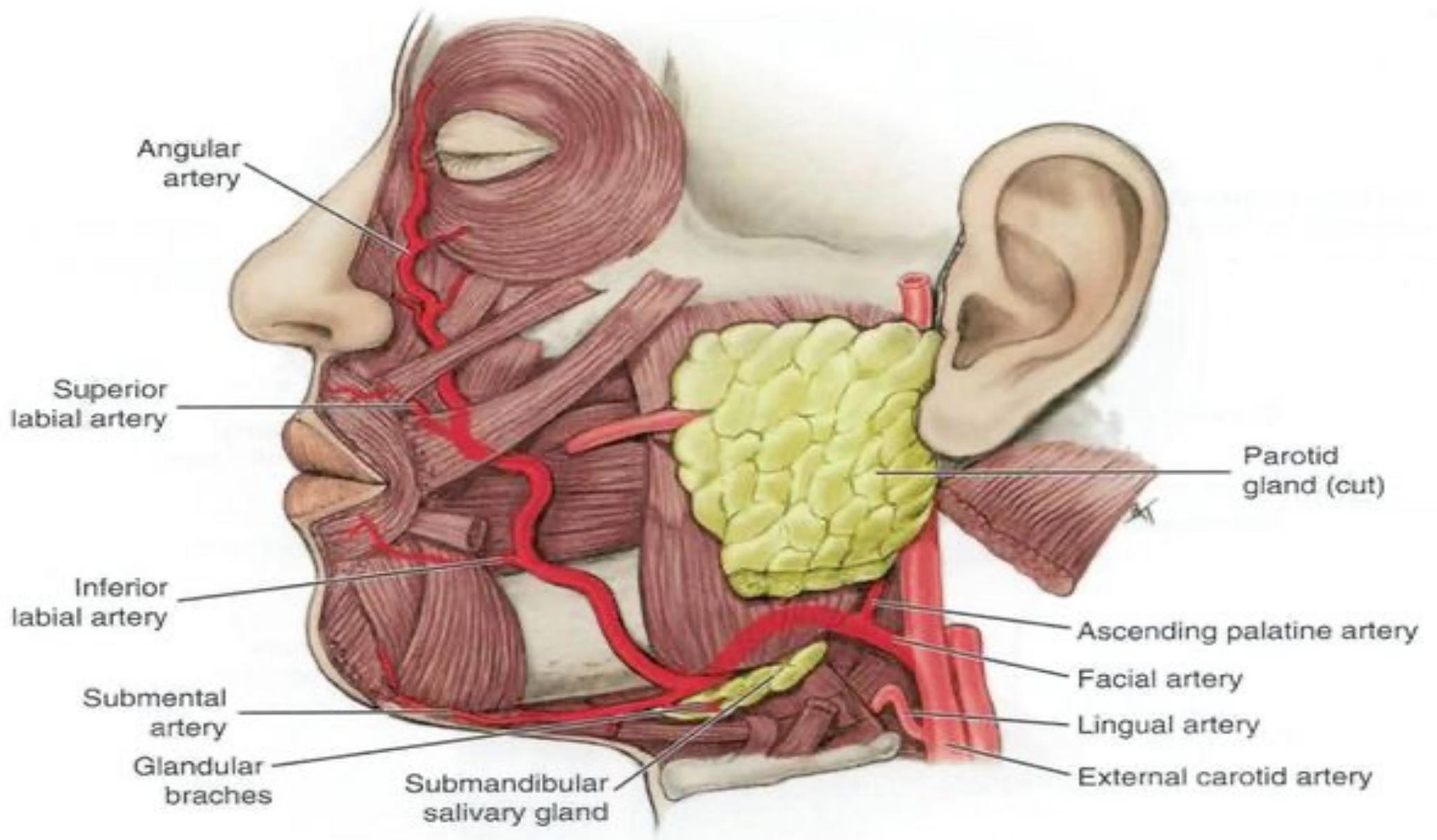
2-Superficial temporal artery

Both arteries are branches of external carotid artery



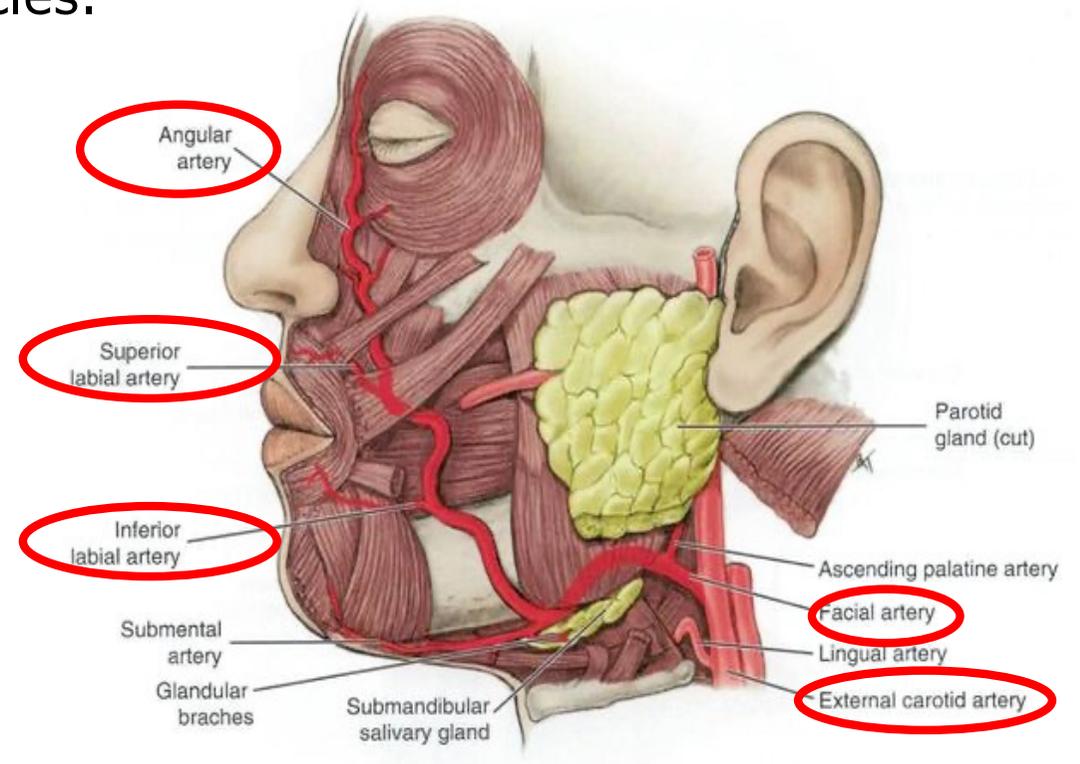
1-Facial Artery

- ❖ It enters the face by crossing round the base of the mandible at the **antero-inferior angle** of the masseter muscle.
- ❖ It runs upwards 1/2 inch lateral to the angle of the mouth.
- ❖ Then, it ascends close to the side of the nose up to the medial angle of the eye where it is named angular A.
- ❖ It ends by anastomosing with the dorsal nasal branch of the ophthalmic A
- ❖ The facial A. runs a tortuous course to allow free movements of the mandible, cheeks and lips.



Branches of facial artery in the Face :

1. Inferior labial → lower lip.
2. Superior labial → upper lip.
3. Lateral nasal → ala and dorsum of the nose.
4. Terminal angular → lacrimal sac.
5. Muscular branches → adjacent muscles.



2-Superficial temporal artery

It is a branch of external carotid artery

It emerges from upper border of parotid gland

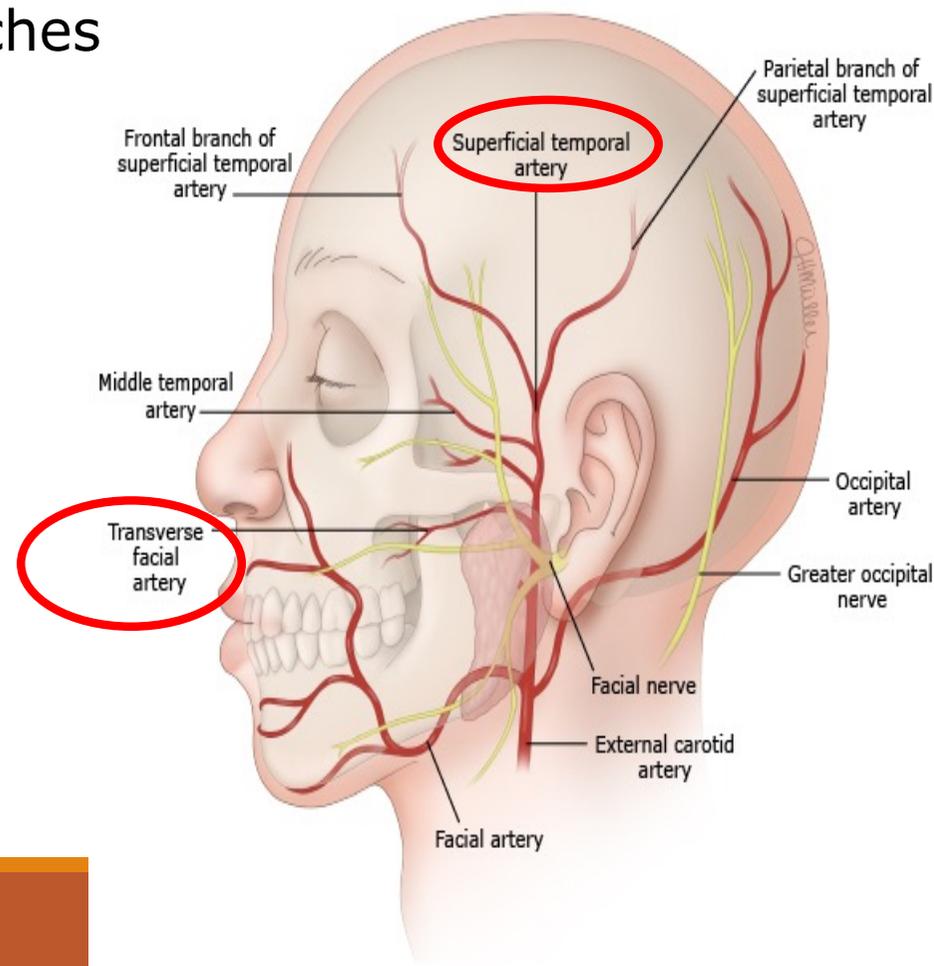
It ascends over the zygomatic arch

Termination:

It divided into frontal and parietal branches

Branches

1. Parotid branch
2. Transverse facial artery
3. Anterior auricular branches
4. Zygomatico-orbital artery
5. Middle temporal artery
6. Frontal branch
7. Parietal branch

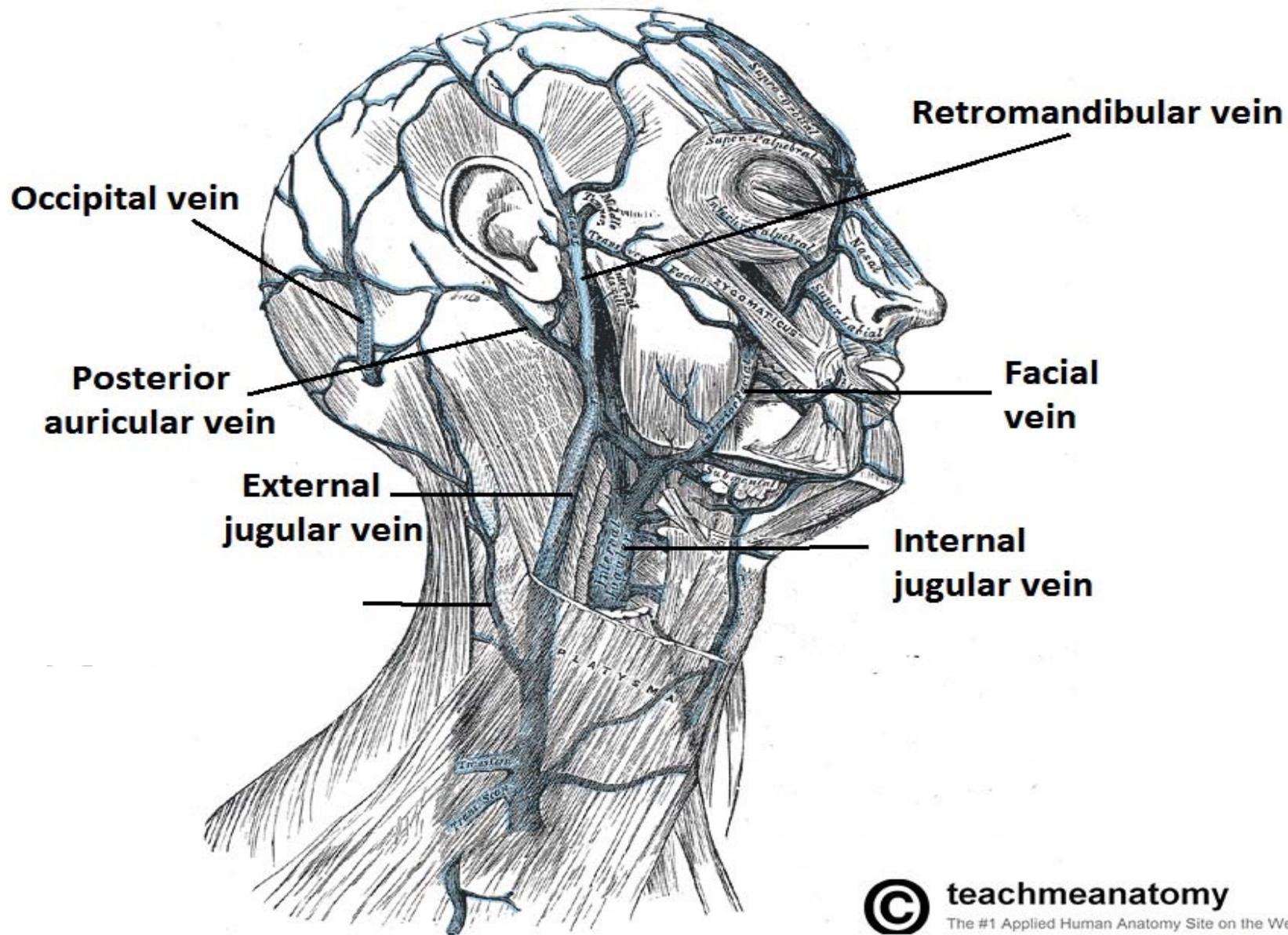


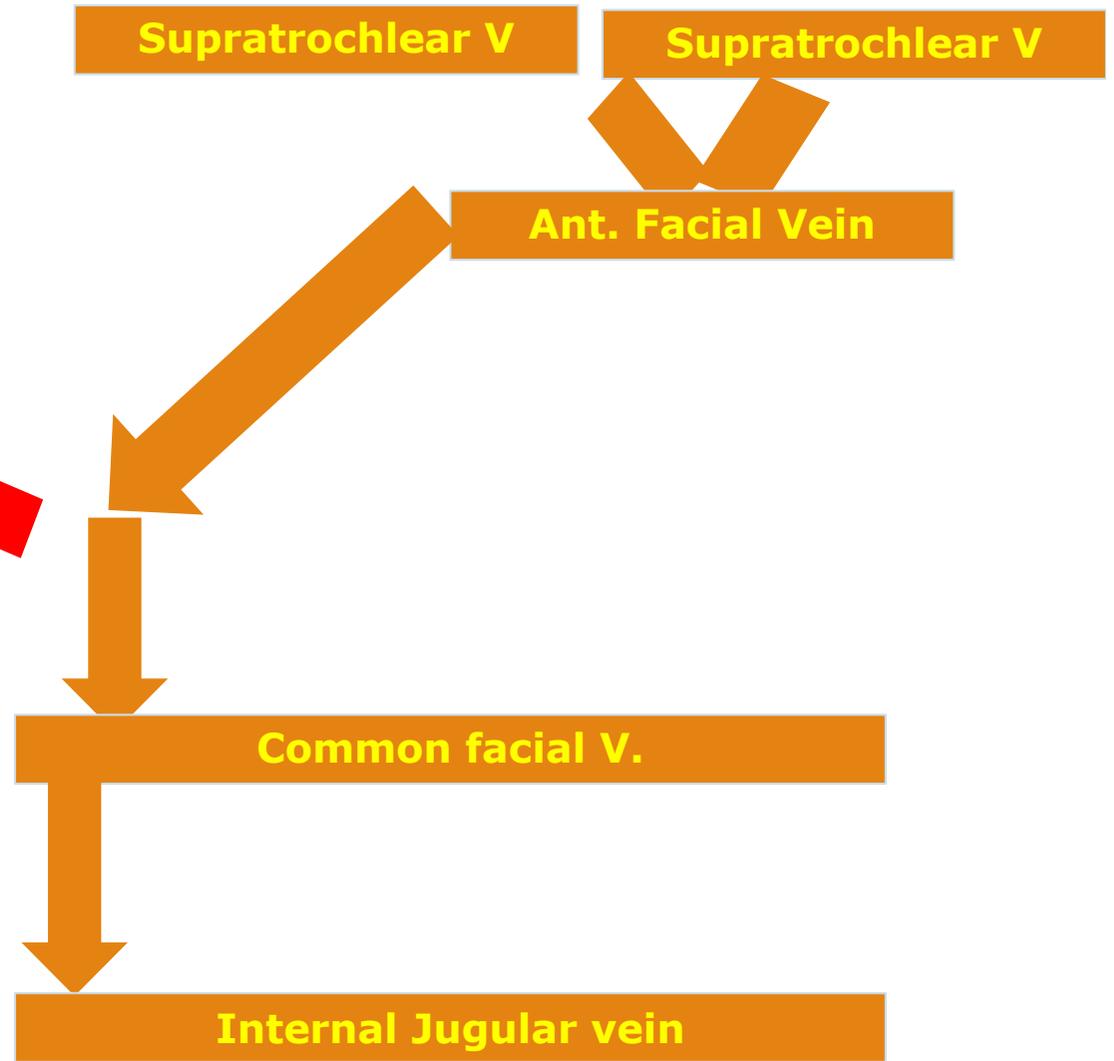
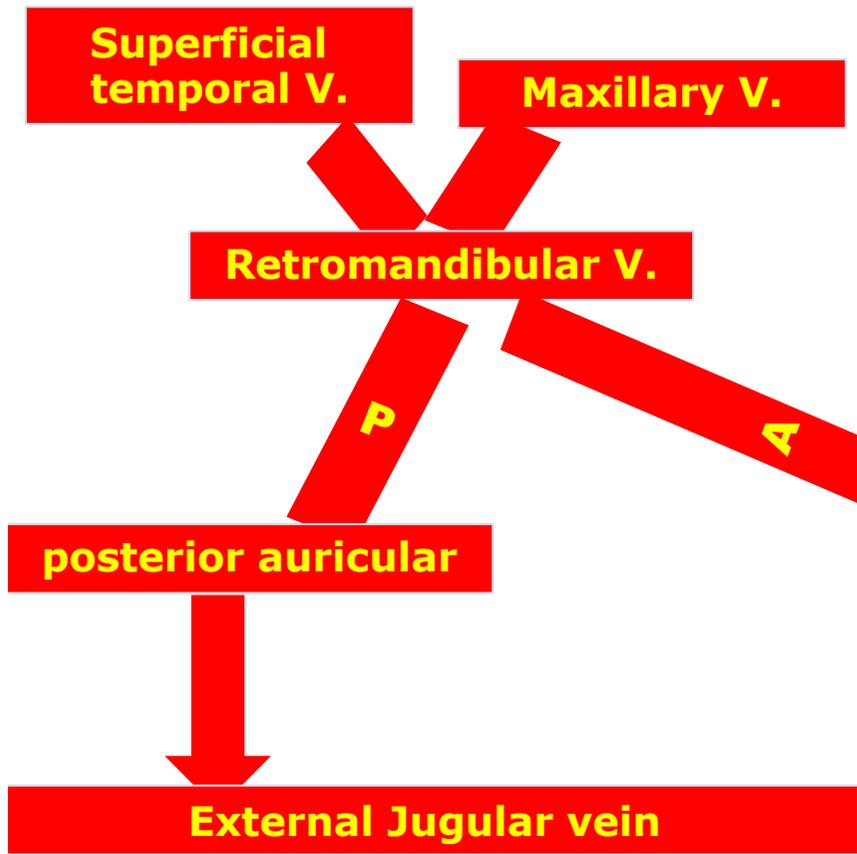
Venous drainage of face and scalp

Supratrochlear and supraorbital veins unite at the medial angle of the eye → **Ant. Facial Vein** .

Superficial temporal V. unites with the **maxillary V.** within parotid gland to form → **retromandibular V. (post. Facial V.)** which divides into 2 branches; anterior and posterior.

- The **anterior branch of retromandibular vein** unites with the **anterior facial vein** → **common facial V.** which drained into **internal Jugular vein**
- The **posterior branch of retromandibular V.** unites with **posterior auricular V.,** to form **external jugular V.** which descends to join the **subclavian vein.**

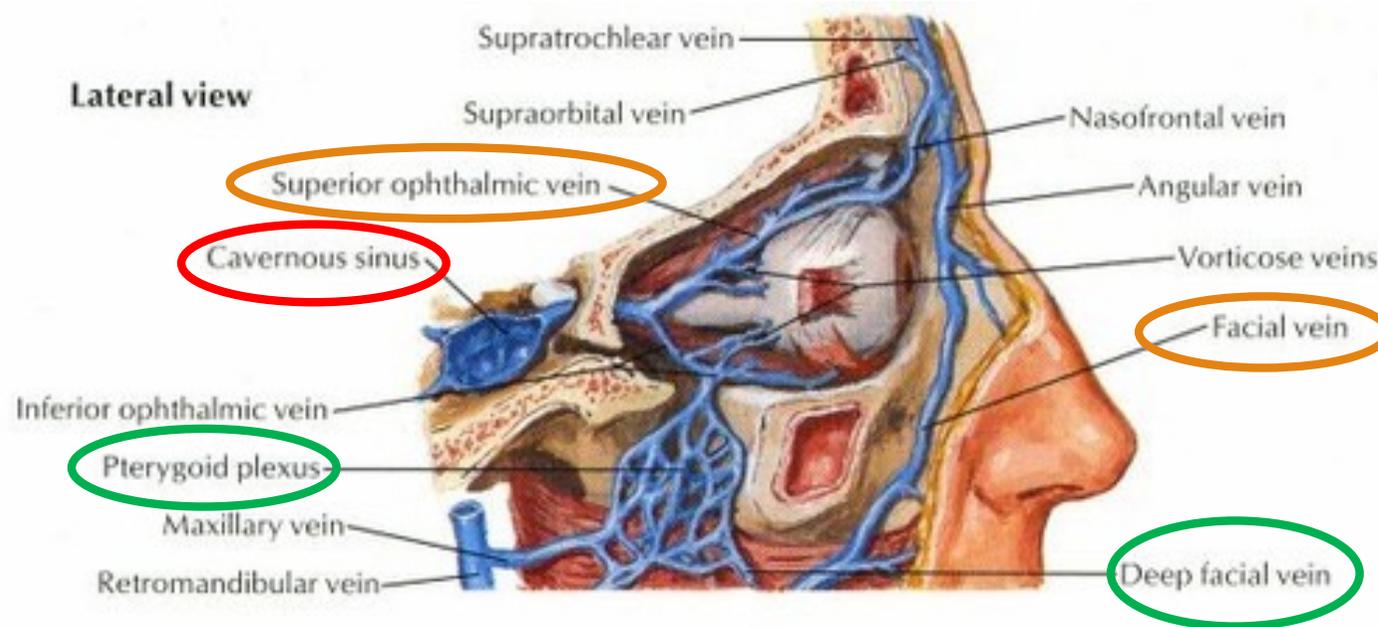




The veins of face are connected to the cavernous sinus through 2 routes :

Direct route : a communication between facial vein and superior ophthalmic vein which drains to cavernous sinus.

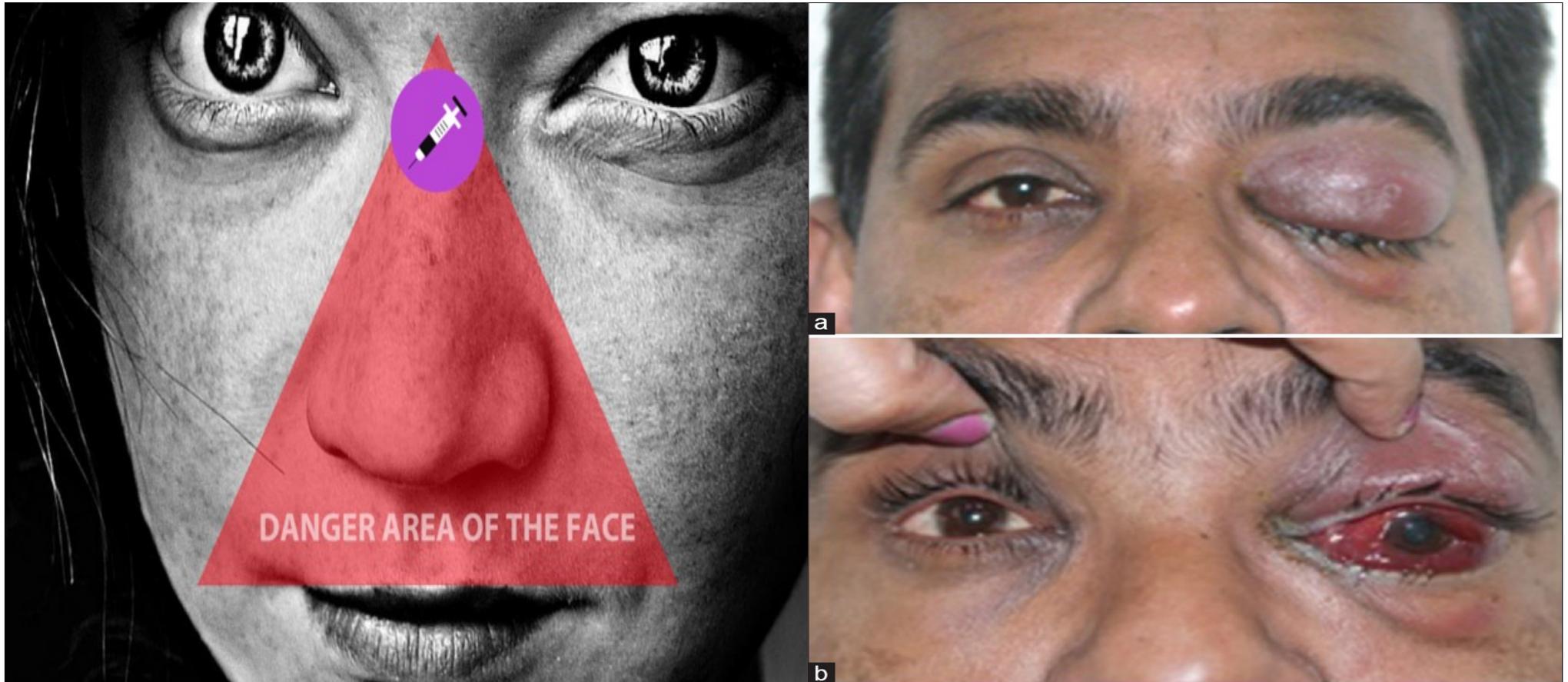
Indirect route : facial vein is connected to pterygoid venous plexus by *deep* facial vein. The pterygoid venous plexus is connected to cavernous sinus by emissary veins.



Dangerous area of the face :

It is a triangular area includes nose and upper lip.

Infections in this triangular area will lead to cavernous sinus thrombosis.





**Cavernous sinus
thrombosis**





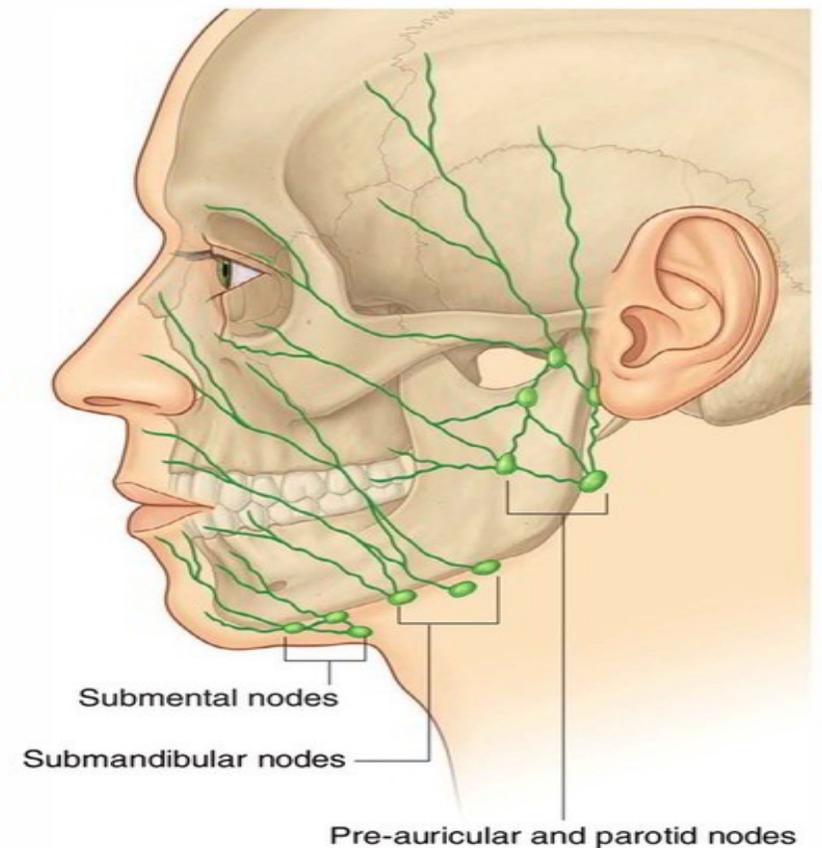
External jugular vein cannulation



Central Venous Pressure canula

Lymph Drainage of the Face

- The area of the face **lateral** to the facial vessels is drained to the **parotid lymph nodes**.
- The area **medial** to the facial vessels is drained to the **submandibular lymph nodes** **EXCEPT** the **central parts** of the lower lip and the chin, which drain to the **submental lymph nodes**

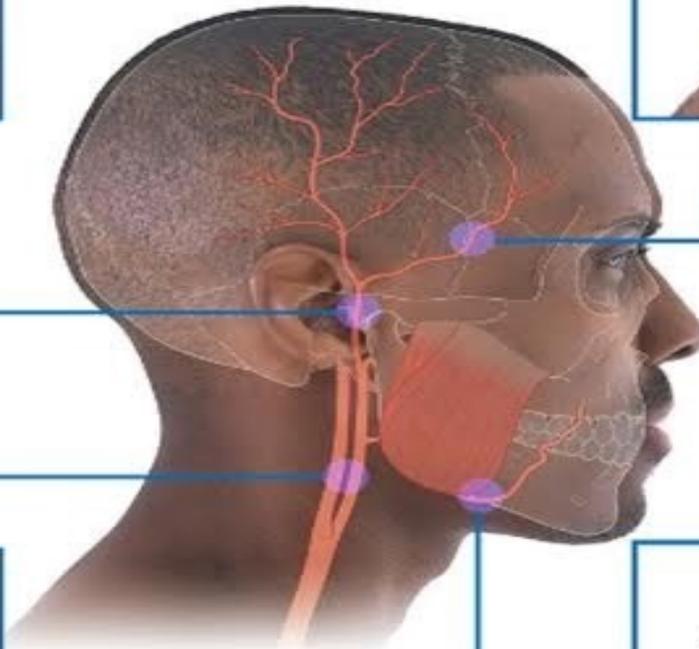




Superficial temporal artery Pulse



Temporal pulse
(anterior branch of
superficial temporal artery)



External carotid artery Pulse



Facial artery Pulse

How to feel pulse in face arteries

A doctor in a white lab coat and stethoscope is writing the words "Thank you!" in blue marker on a glass surface. The doctor is holding a blue marker in their right hand. The background is white with faint, repeating watermarks of a camera icon and the text "123RF".

Thank you!