

Facial Nerve

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Facial nerve has motor ,sensory and parasympathetic roots

Course of Facial nerve

Intracranial :

It passes through internal acoustic meatus.

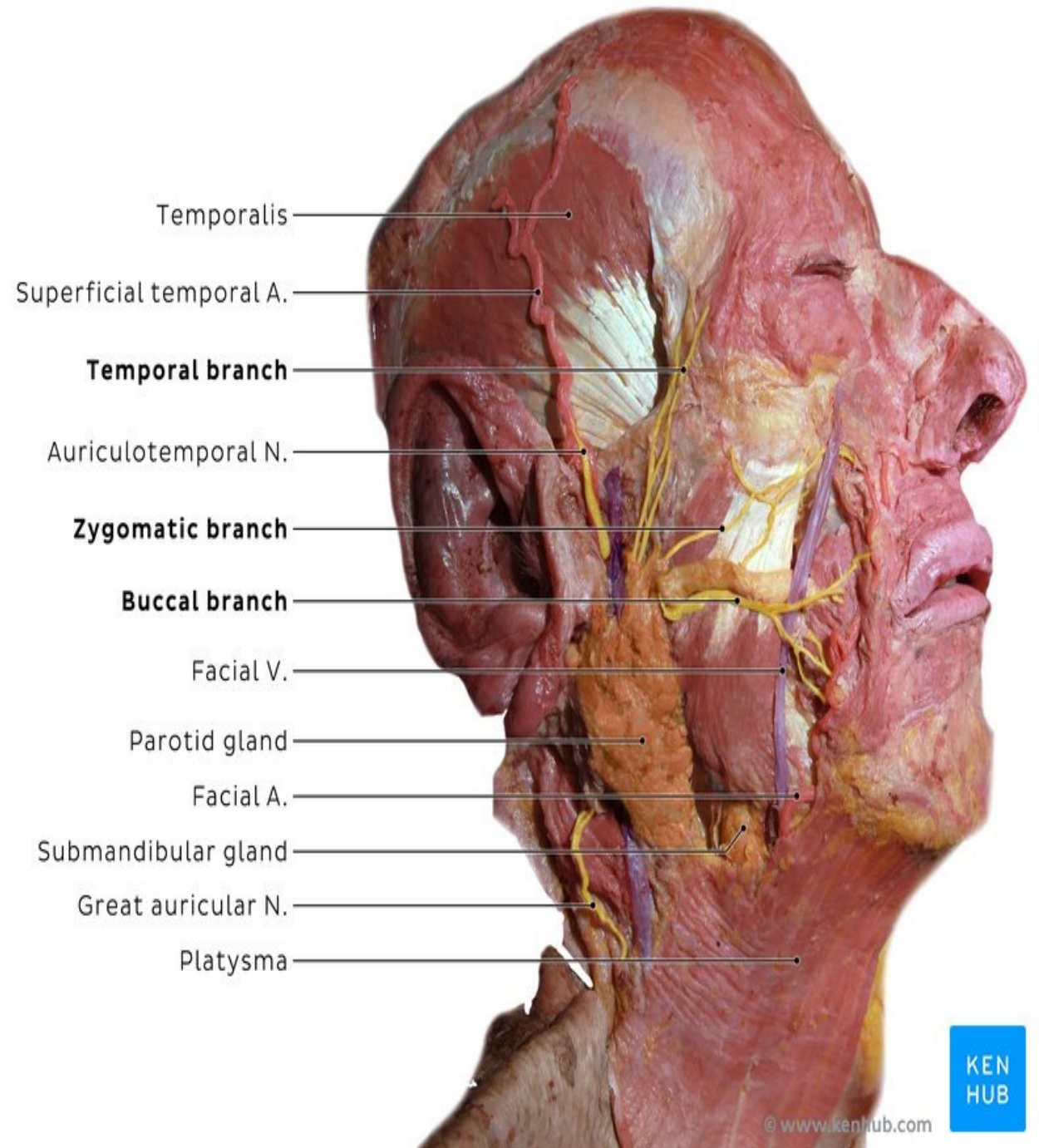
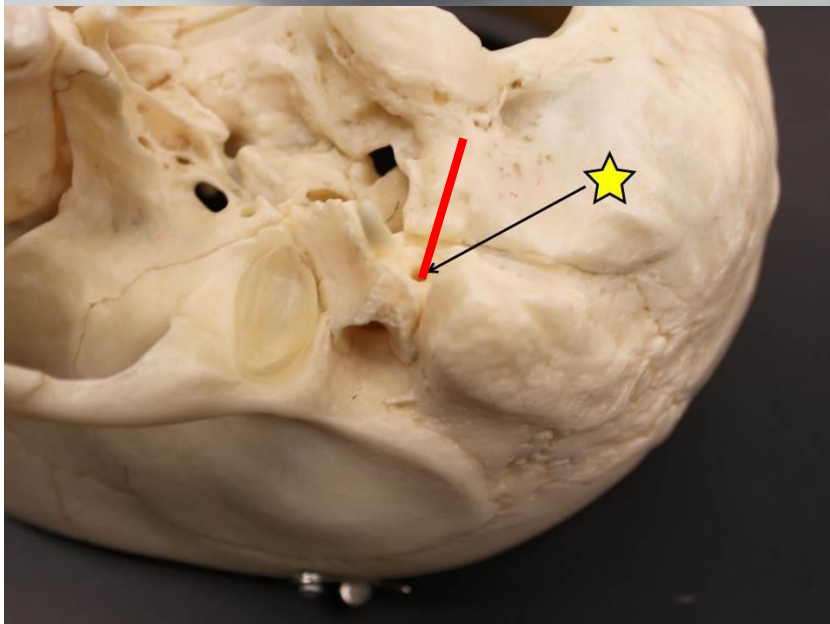
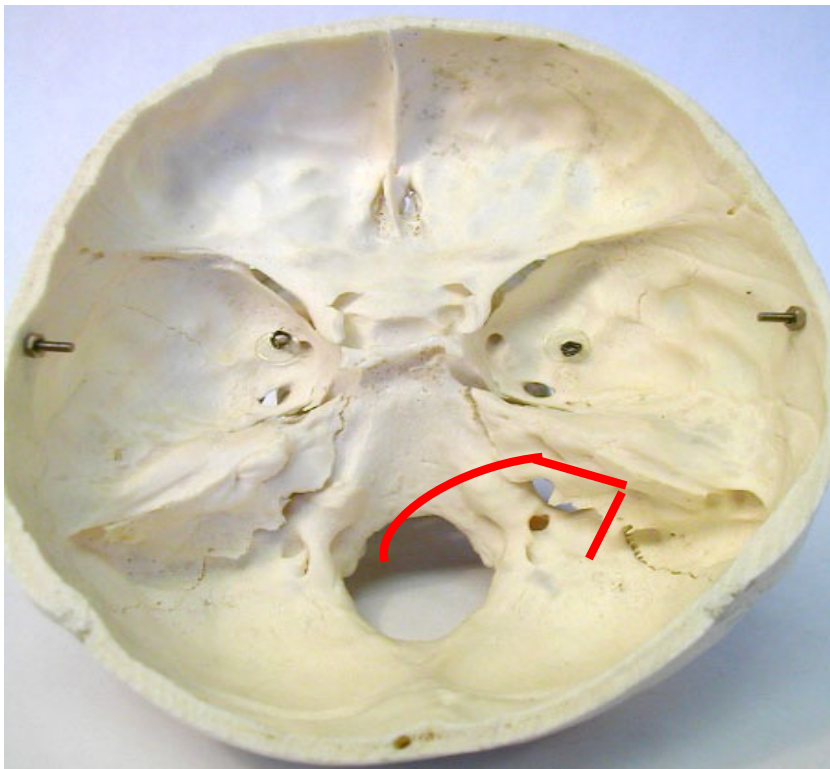
Then passes in the facial canal in medial wall of the tympanic cavity (Middle ear) where it forms sensory geniculate ganglion .

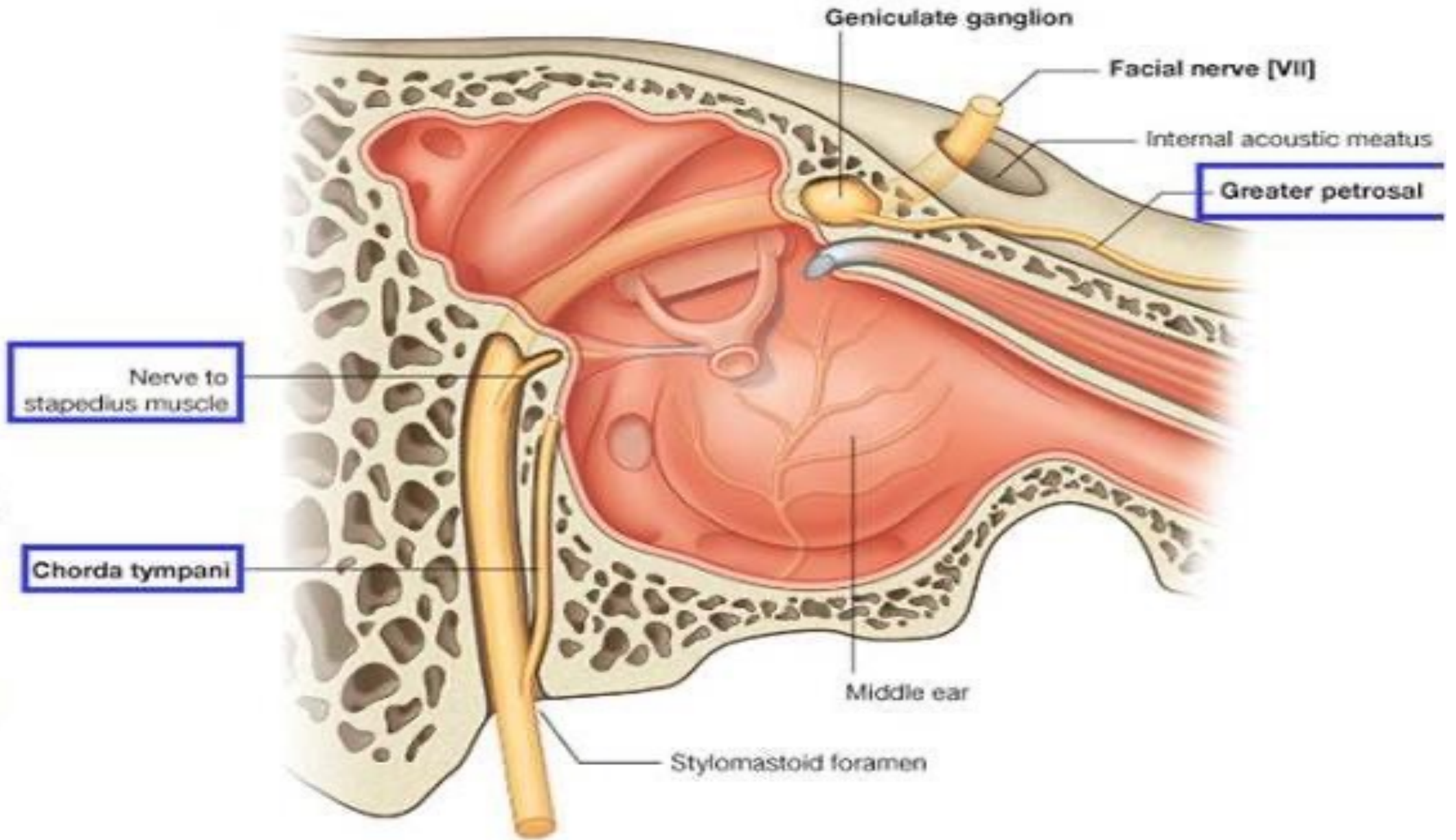
Exit from skull:

Stylomastoid foramen

Extra cranial course :

It enters the parotid gland; and gives rise to five terminal motor branches.





Branches of the Facial Nerve

Within petrous bone	Below stylomastoid Foramen	Within the parotid gland
<ol style="list-style-type: none">1. Greater petrosal2. Nerve to stapedius muscle3. Chorda tympani	<ol style="list-style-type: none">1. Posterior auricular2. Digastric3. Stylohyoid	<ol style="list-style-type: none">1. Temporal2. zygomatic3. Buccal4. Mandibular5. Cervical

N.B

1. All the sensory and parasympathetic nerve fibers leave the facial N. **within** the petrous bone, so that at the stylomastoid foramen, the facial N. is **a purely** motor nerve.

2. Along its course, the facial nerve has **two parasympathetic ganglia;** **pterygopalatine and submandibular ganglia**

Branches Within petrous bone

1. Greater petrosal Nerve:

This nerve contains mainly preganglionic parasympathetic fibers relay in the pterygopalatine ganglion and sensory taste afferents from the soft palate.

2. Nerve to stapedius :

supplies stapedius muscle of the middle ear.

3. Chorda tympani :

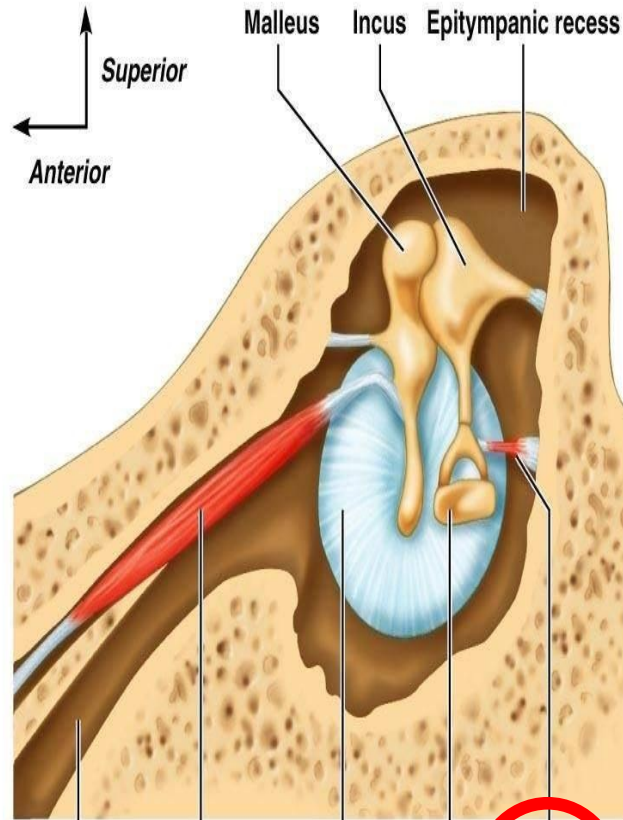
This nerve contains preganglionic parasympathetic fibers to submandibular and sublingual glands and sensory taste afferents from the anterior 2/3 of the tongue.



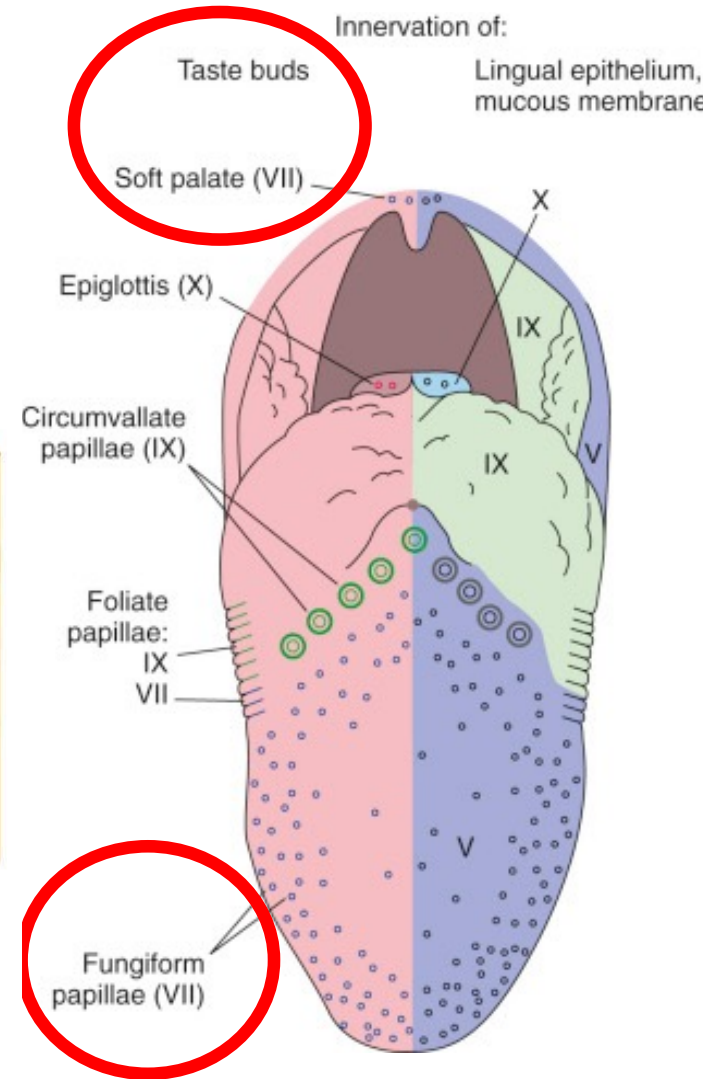
Greater petrosal



Nerve to stapedius



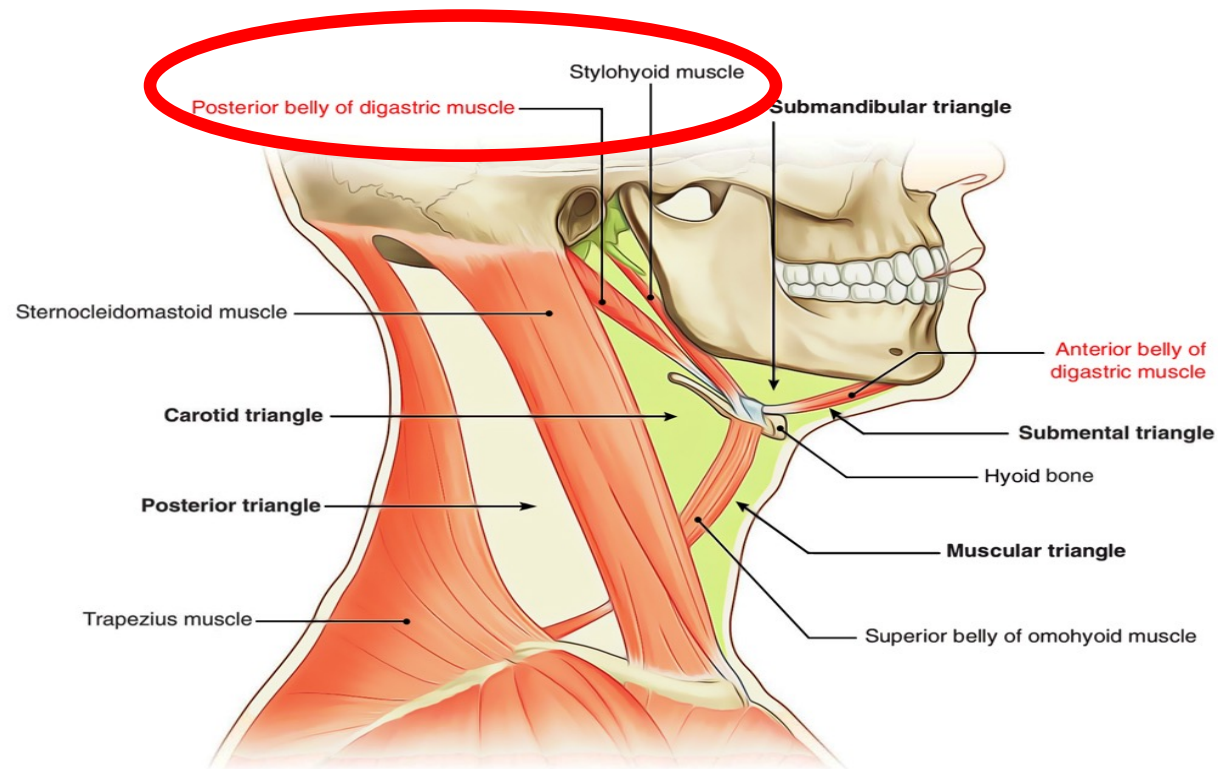
Stapedius muscle as it's attached to the posterior wall of the tympanic cavity



Chorda tympani

Branches Below stylomastoid Foramen

- 1. Posterior auricular :** supplies occipital belly of the occipitofrontalis muscle.
- 2. Digastric :** supplies posterior belly of the digastric muscle.
- 3. Stylohyoid :** supplies stylohyoid muscle.



Branches Within the parotid gland

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

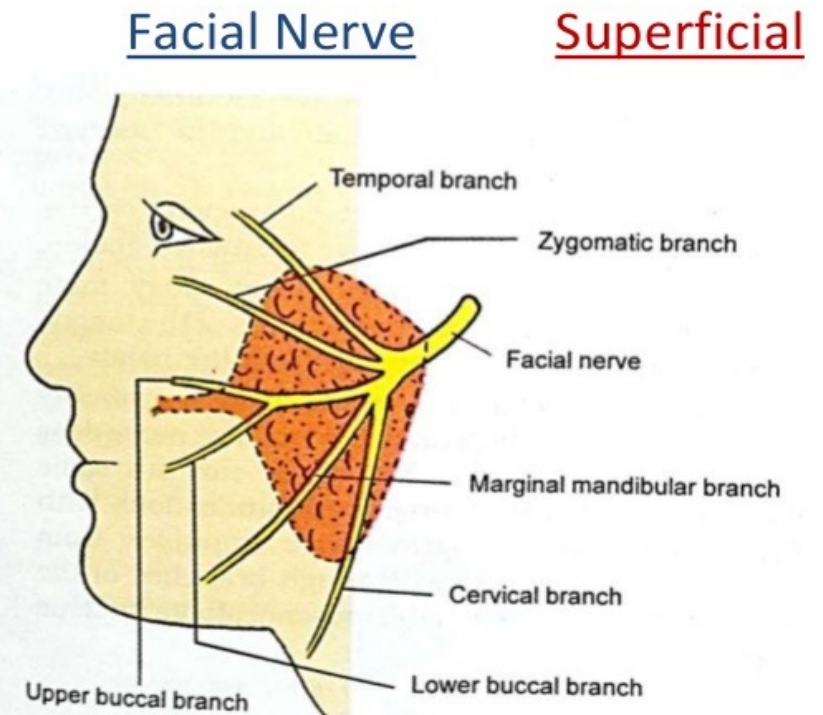
1-Temporal

2-Zygomatic

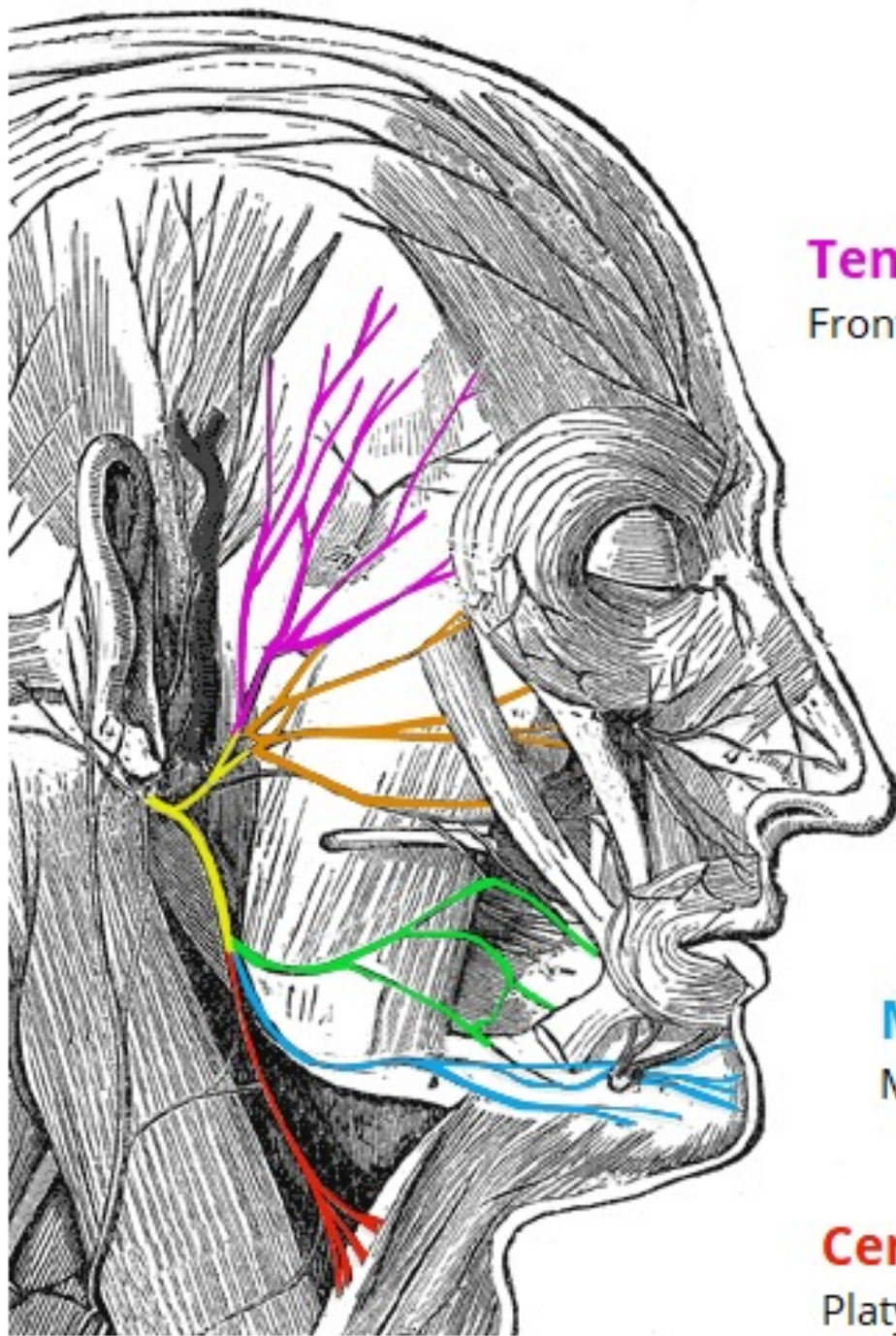
3-Buccal

4- Marginal mandibular

5-Cervical



- 1. Temporal : Supplies** frontal belly of occipitofrontalis and orbicularis oculi.
- 2. Zygomatic : Supplies** orbicularis oculi.
- 3. Buccal : Supplies** orbicularis oris, buccinator and elevators of the upper lip.
- 4. Marginal Mandibular : Supplies** muscles of the lower lip.
- 5. Cervical : Supplies** platysma muscle



Temporal branches

Frontalis, orbicularis oculi, corrugator supercilii

Zygomatic branches

Orbicularis oculi

Buccal branches

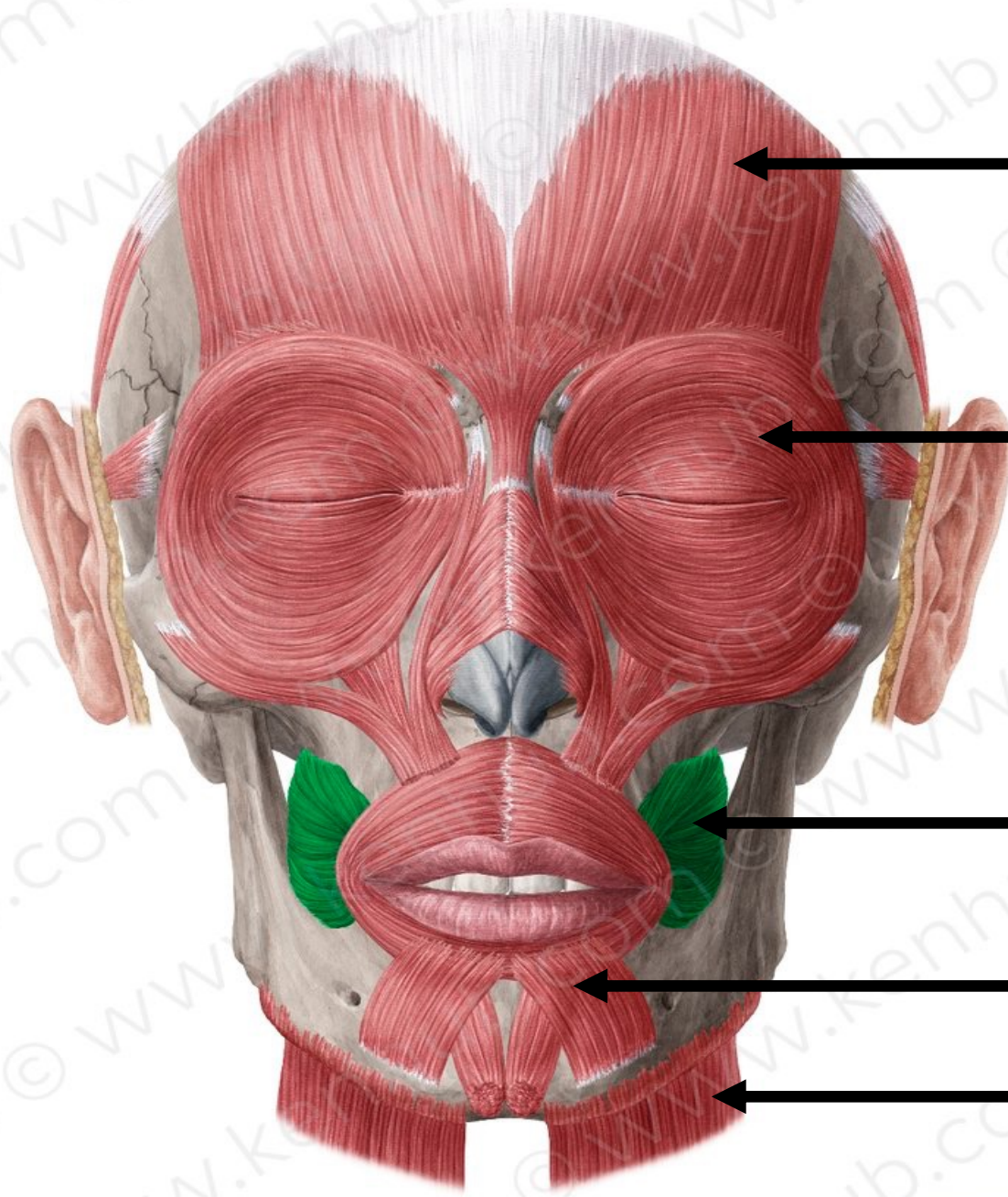
Orbicularis oris, buccinator, zygomaticus

Marginal mandibular branches

Mentalis, depressor labii inferioris, depressor anguli oris

Cervical branches

Platysma



Temporal

Temporal & Zygomatic

Buccal

Mandibular

Cervical



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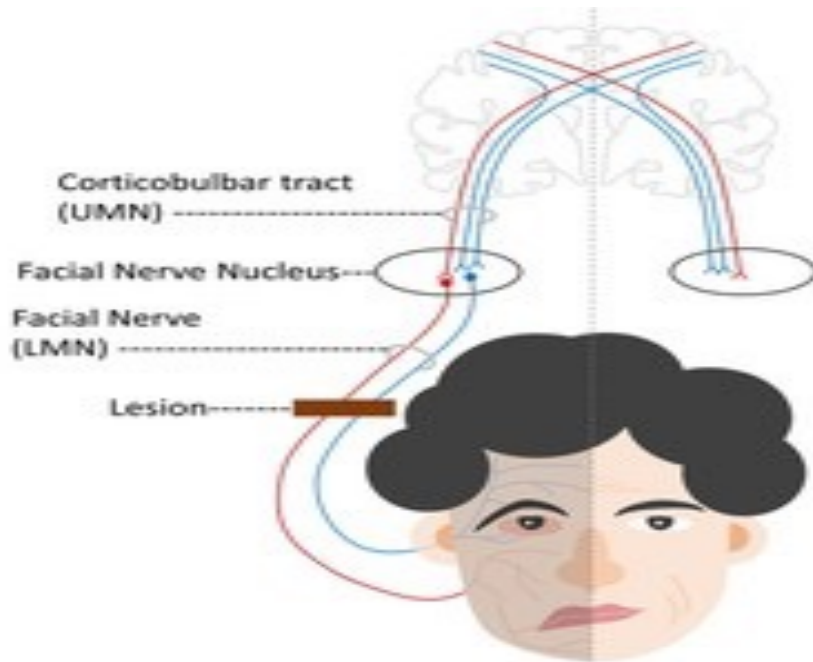
Clinical anatomy :

Upper motor and lower motor neuron type of facial nerve palsy

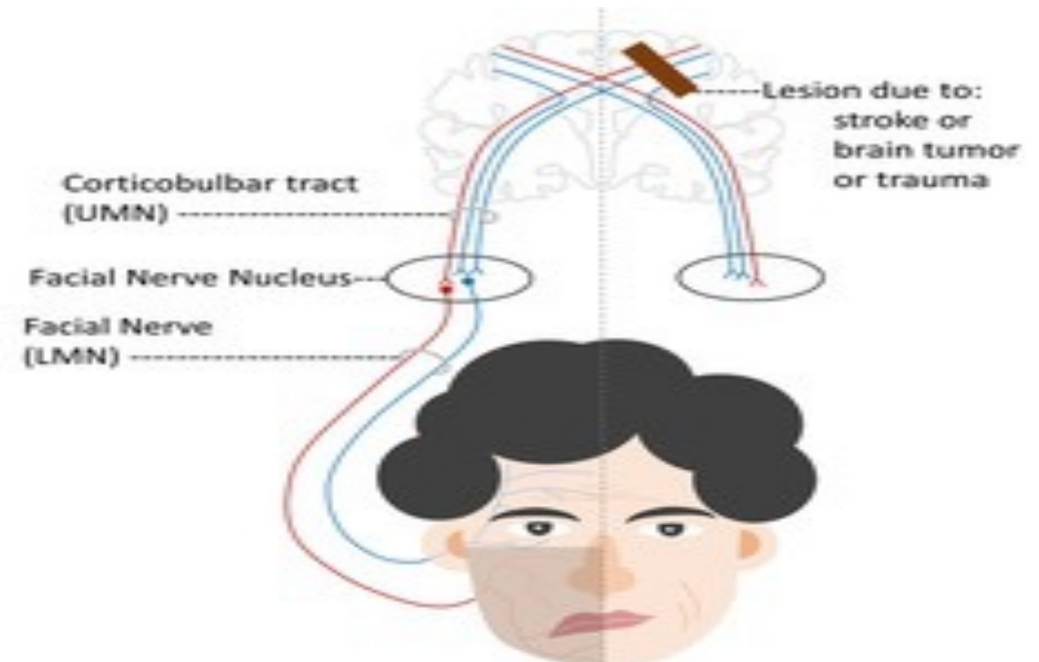
Upper motor neuron lesion	Lower motor neuron lesion
Site of lesion: above the facial nucleus (in the brain)	Site of lesion: in the nucleus or distal to the nucleus
Lower part of face is involved	Both upper and lower part of face are involved
Affects contralateral side of the face	Affects ipsilateral side of the face
Taste is not affected	Lose of taste sensation from anterior 2/3 of the tongue .
No Dry Eye	Dry Eye

Why ???

- ❑ Because the part of nucleus that supplies the muscles of the upper part of the face receives cortico-nuclear fibers from both cerebral hemisphere.
- ❑ The part of the nucleus that supplies the muscles of the lower part of the face receives only the cortico-nuclear fibers from the opposite cerebral hemisphere

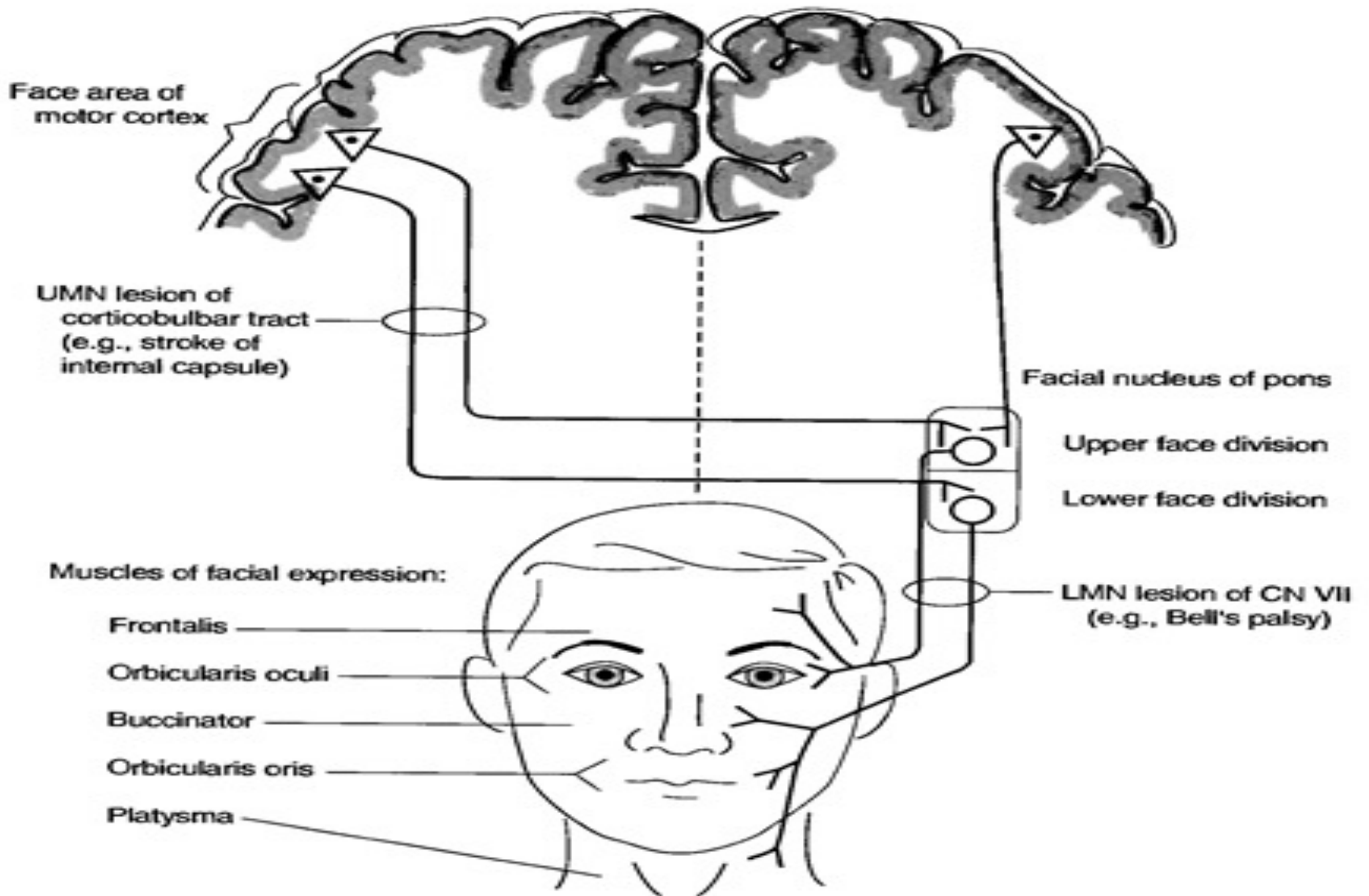


Bell's (LMN) Palsy
(Complete half of the same side is affected)

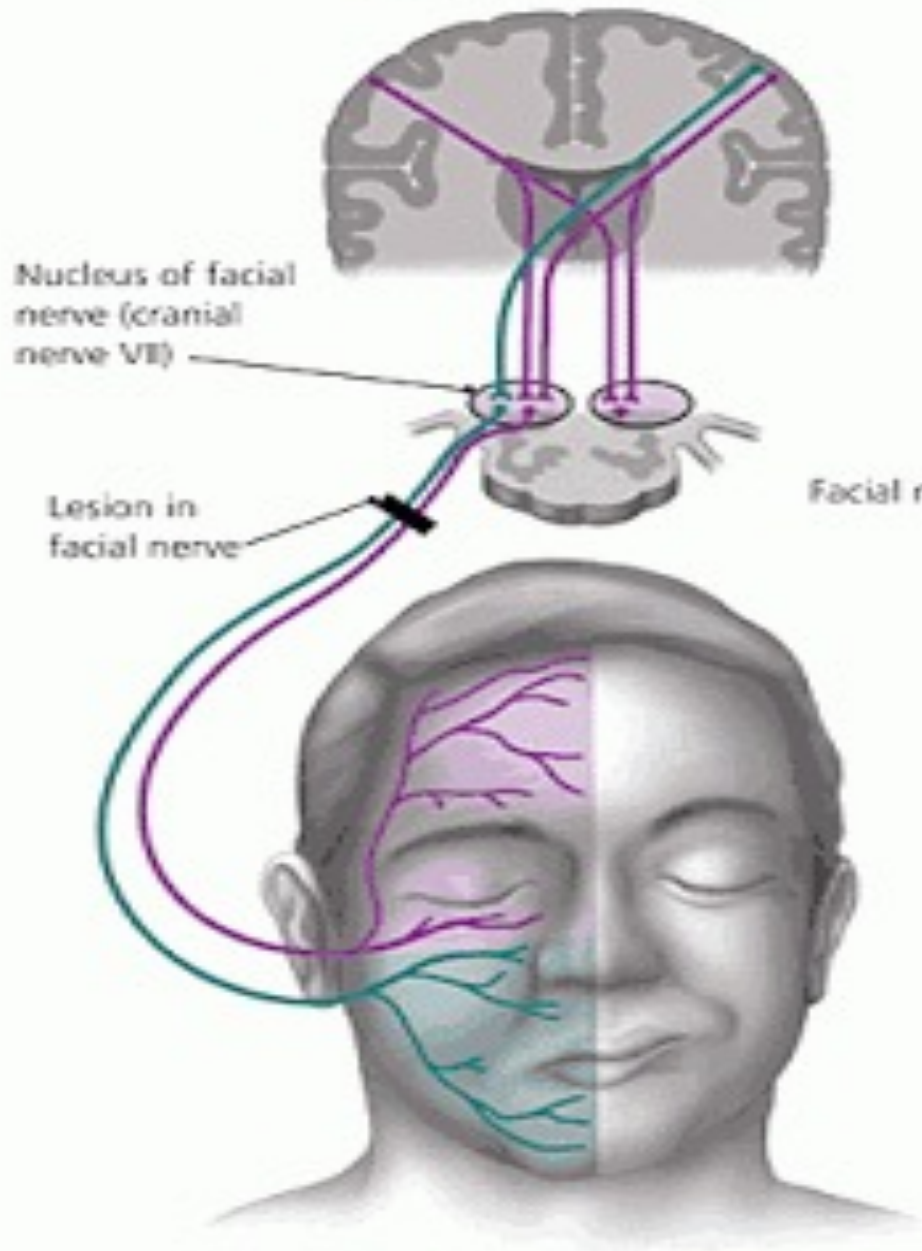


UMN Palsy
(Lower half of the opposite side is affected)

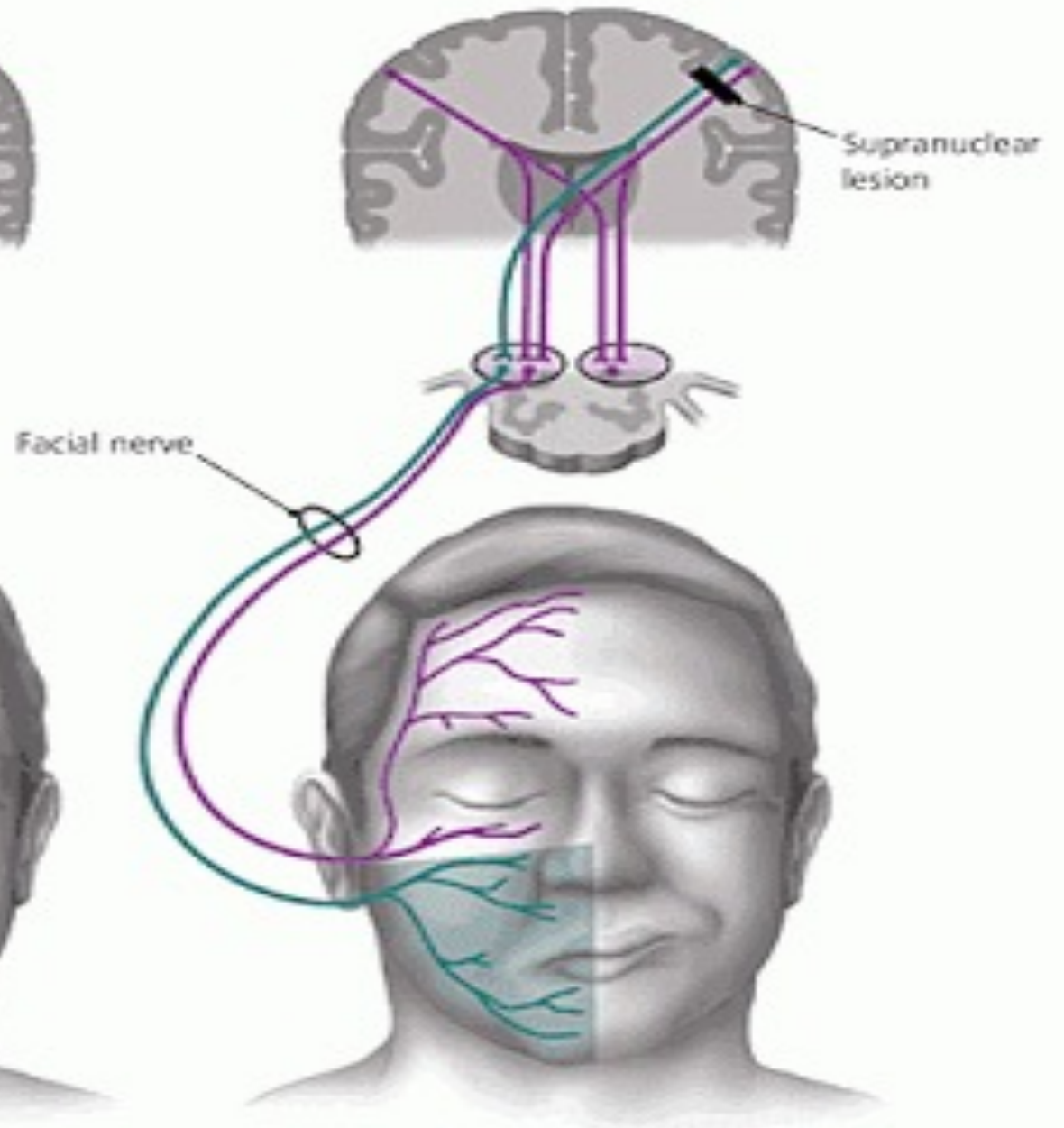
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**A. Facial nerve lesion
(Bell's palsy)**



B. Supranuclear lesion



Bell's palsy

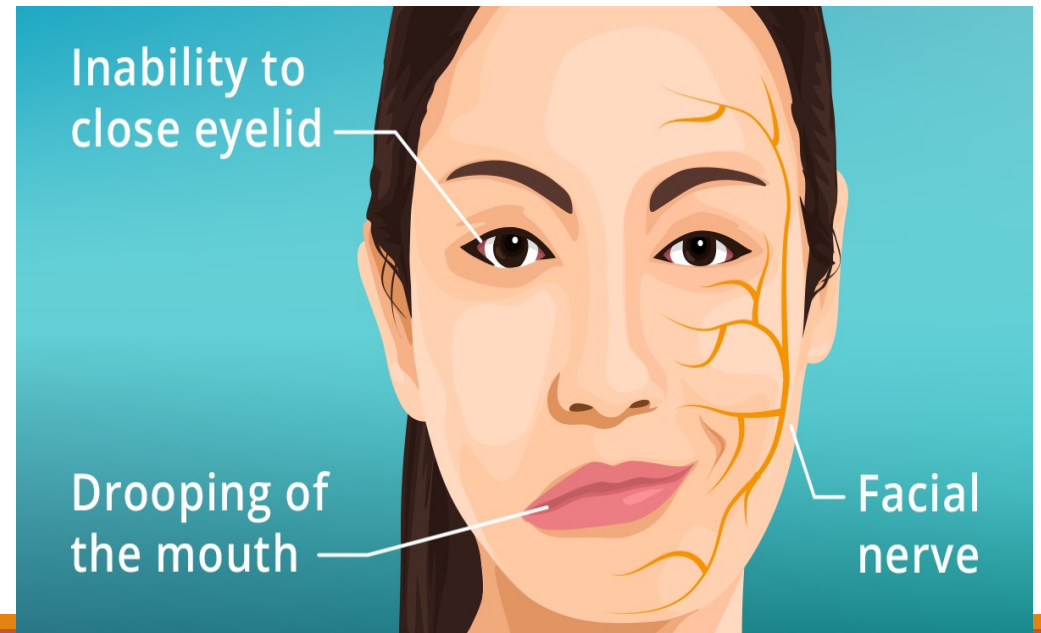
Lower motor neuron of facial nerve

Cause : Damage to the facial nerve in

- 1- The internal acoustic meatus (e.g.by a tumor)
- 2-The middle ear (e.g. by infection or operation),
- 3-The facial nerve canal (perineuritis) or edema
- 4- The parotid gland (e.g.by a tumor)
- 5- Lacerations of the face

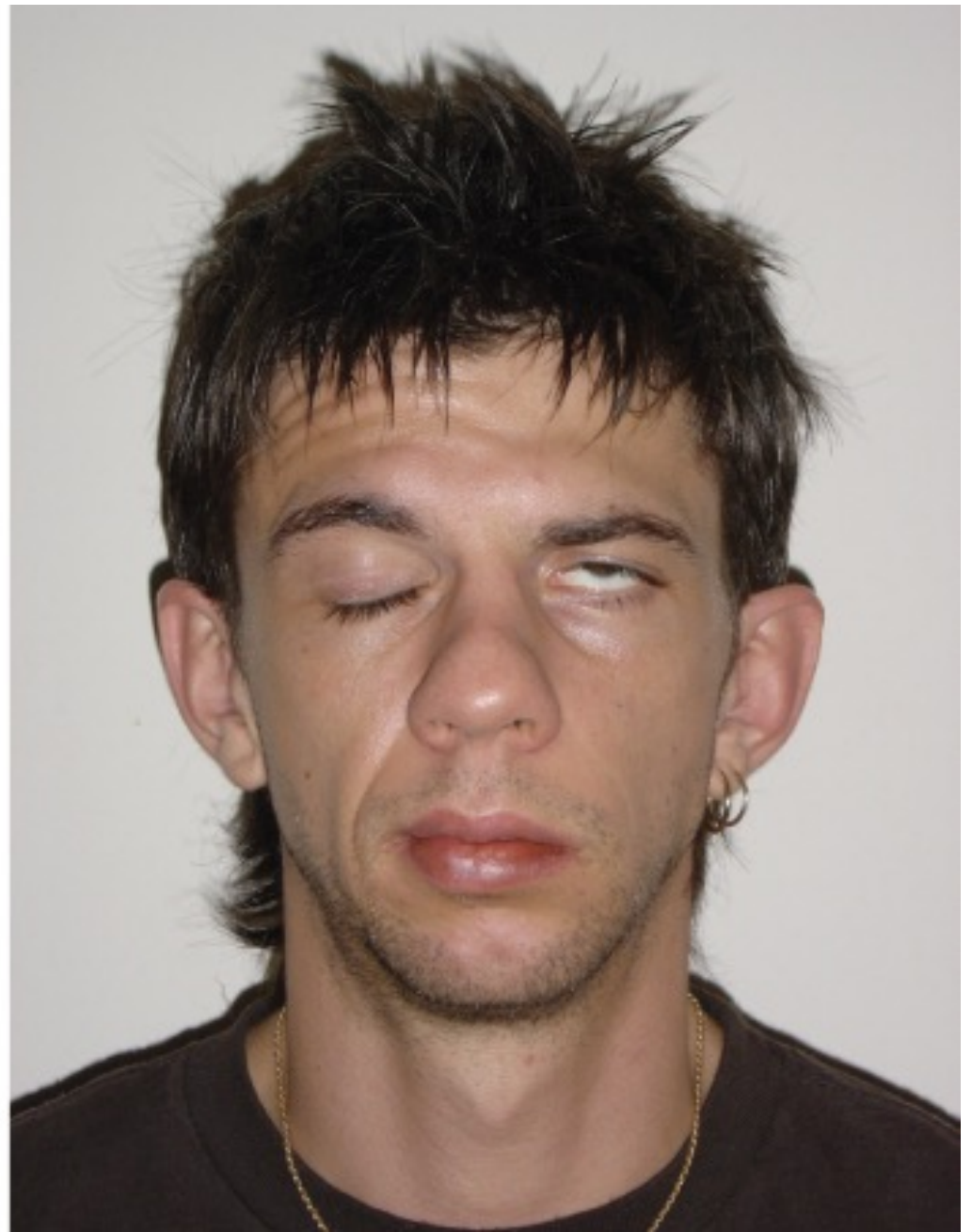
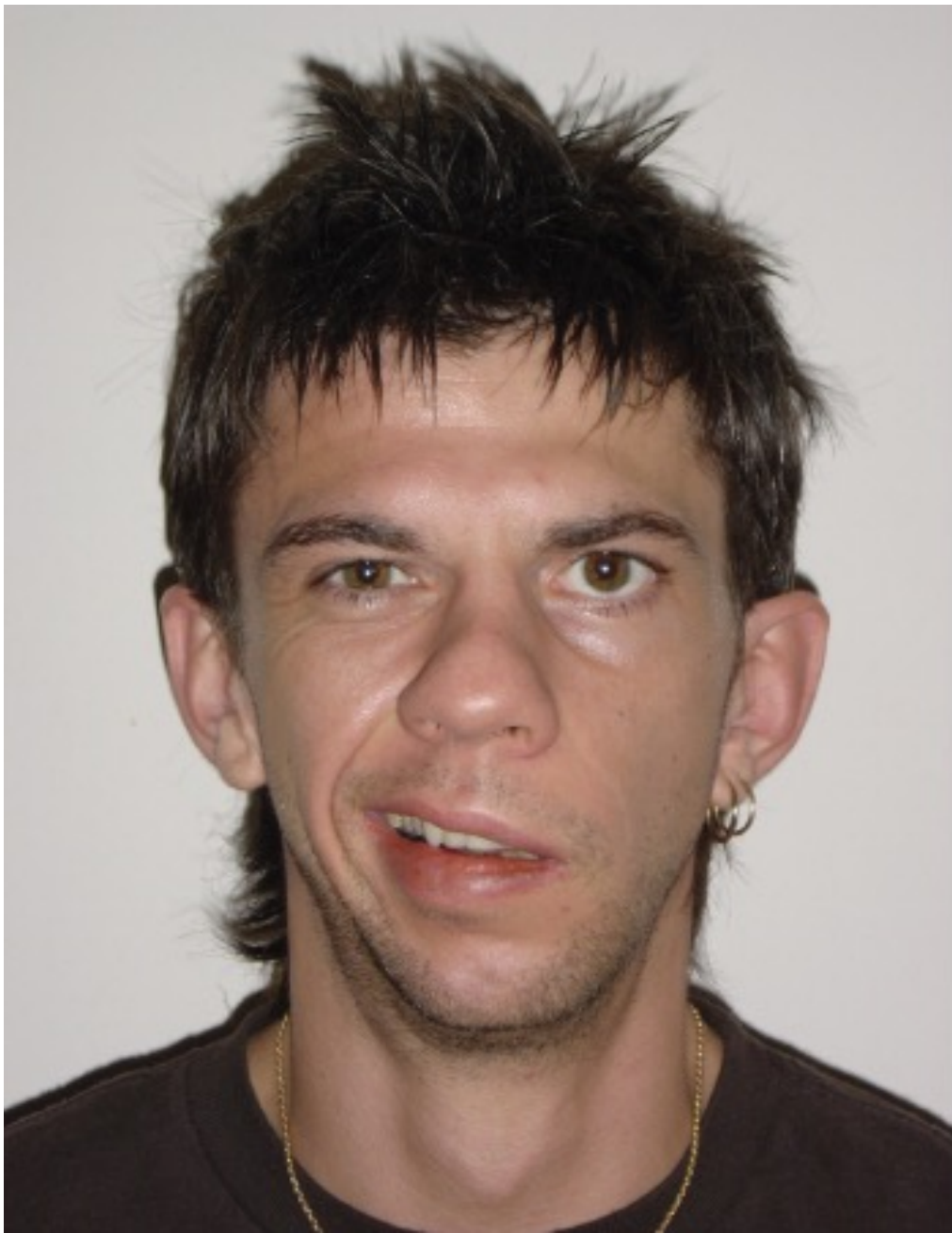
Symptoms :

- Inability to close the eye
- Inability to puff cheeks
- Lose of forehead wrinkles
- The angle of the mouth will sag on the affected side.





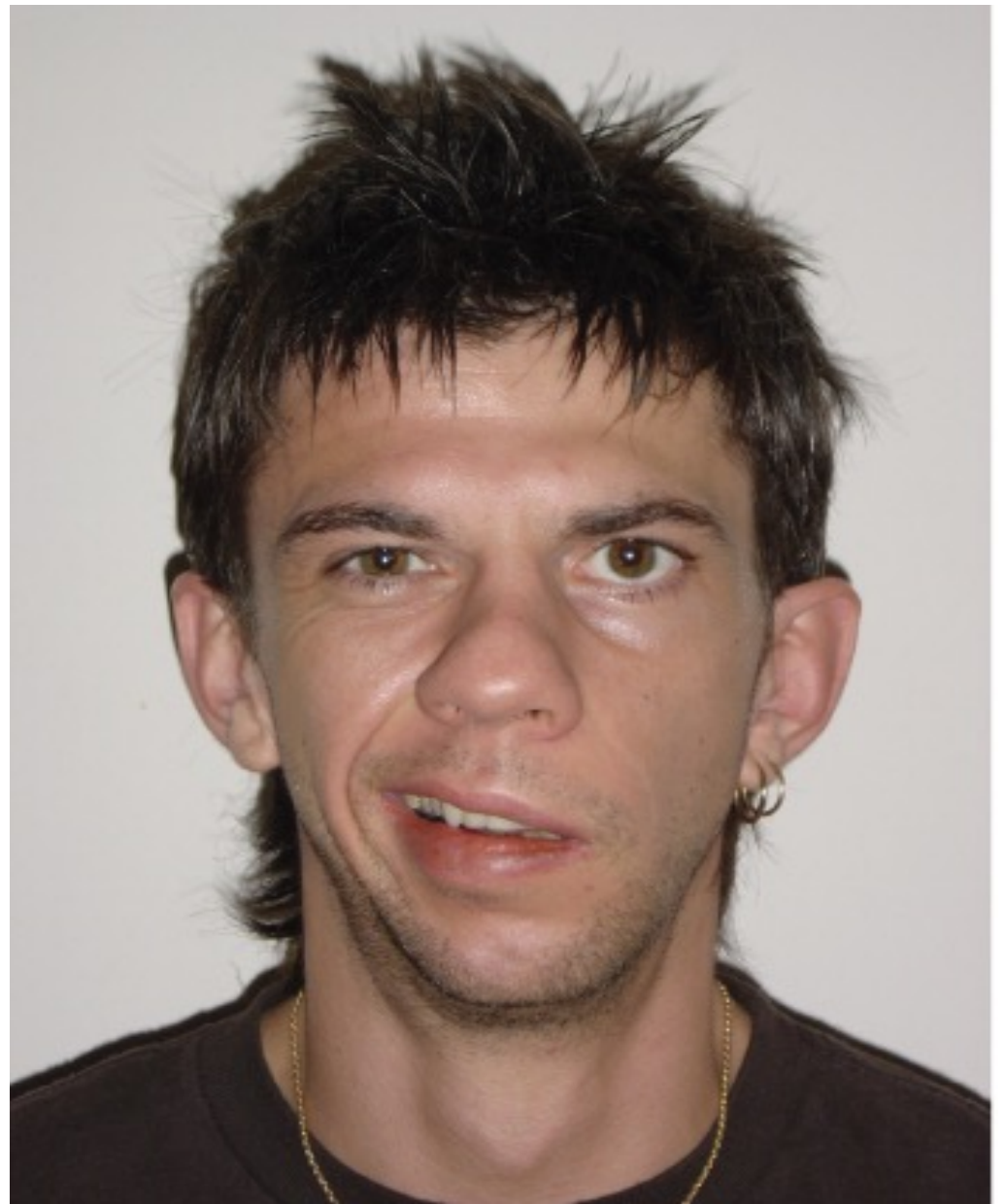
Rt. side Bell's palsy



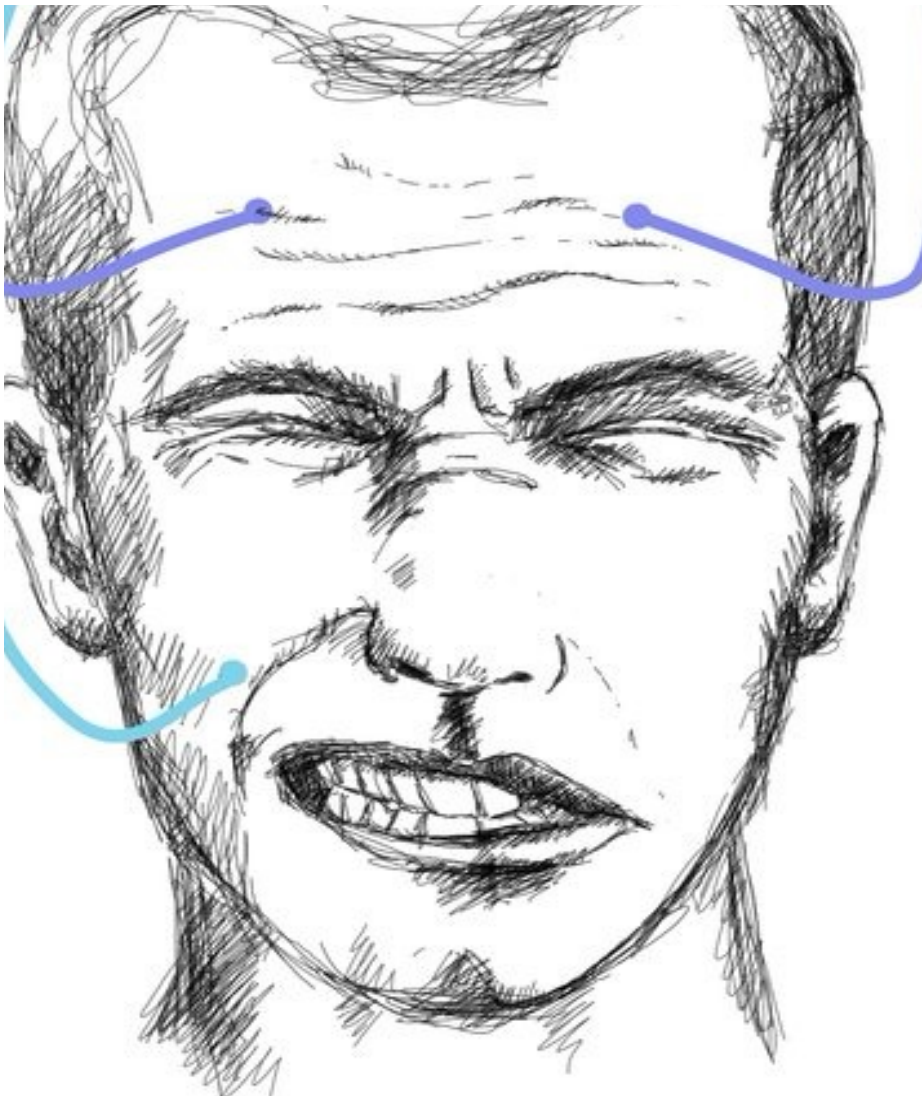
Lt. side Bell's palsy



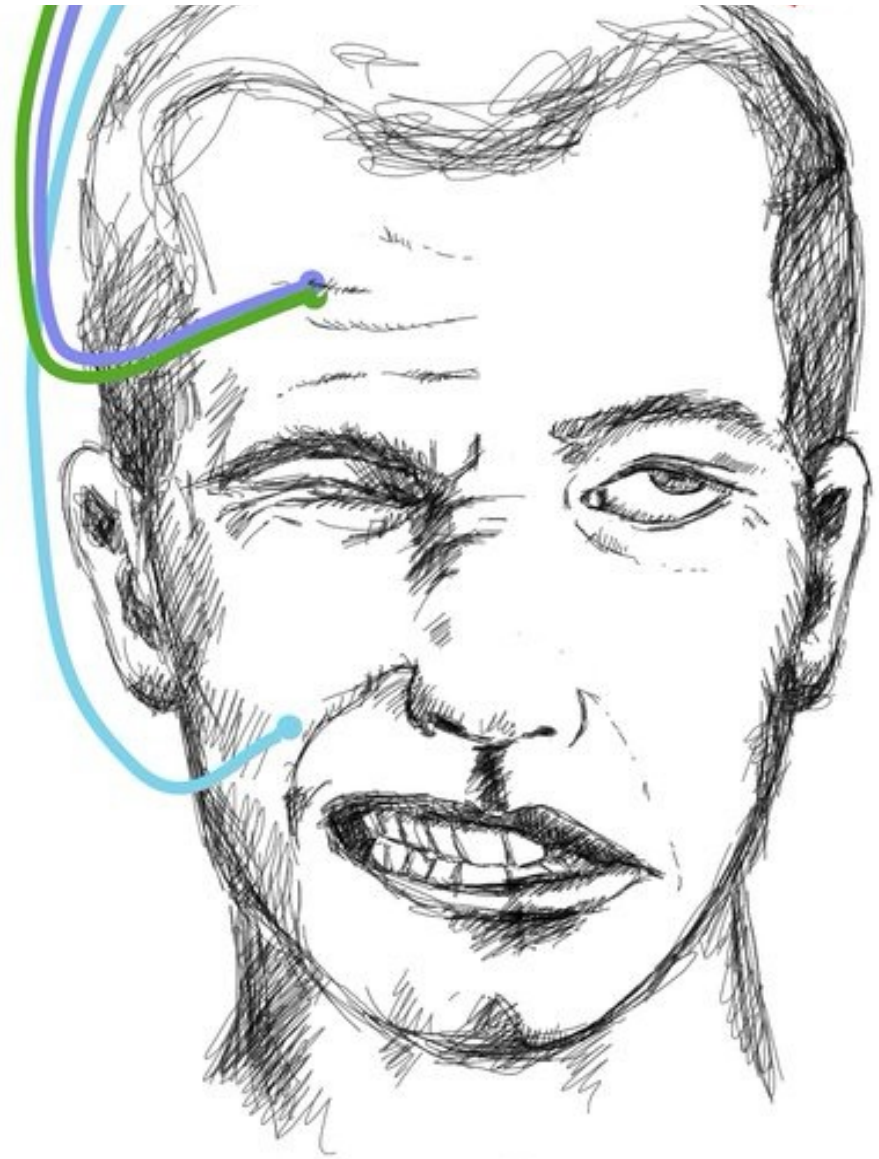
Rt. side Bell's palsy



Lt. side Bell's palsy



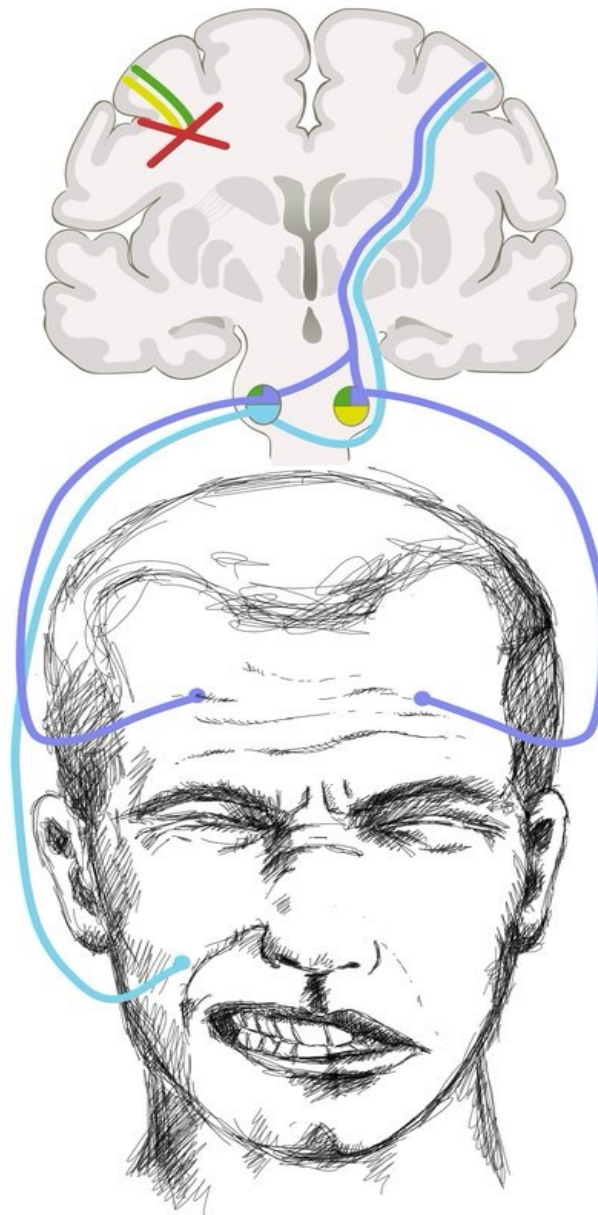
Rt. Upper motor NL



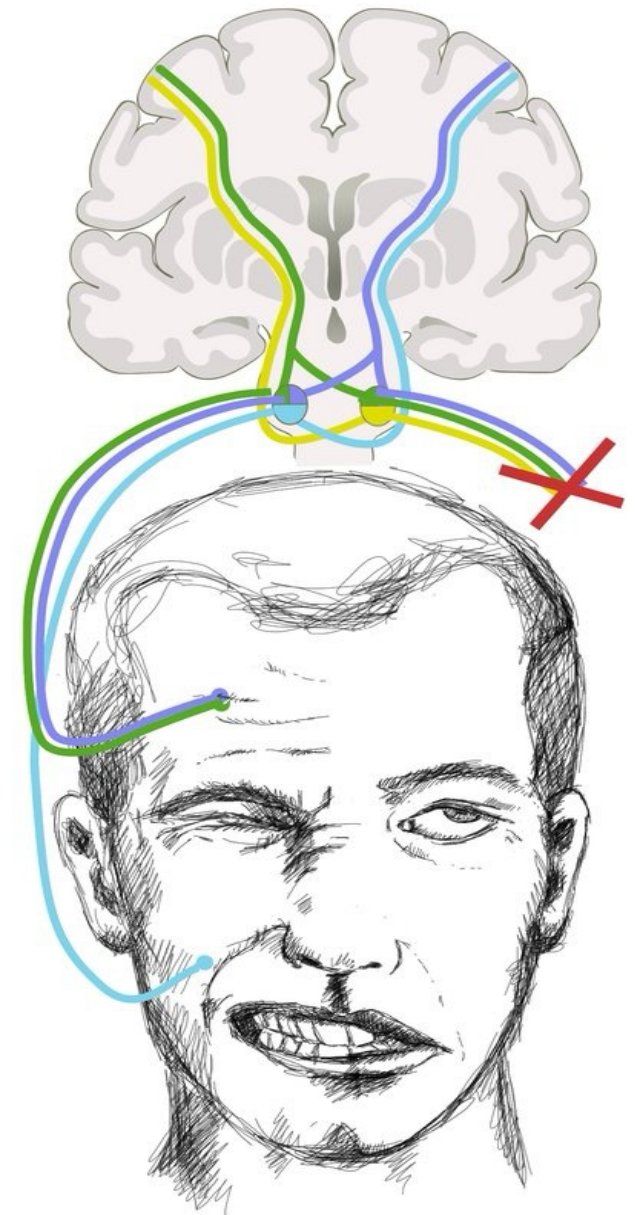
Lt. Lower motor NL



Normal



**Central facial palsy
(supranuclear lesion)**



Peripheral facial palsy



Rt. side Bell's palsy

A doctor in a white lab coat and stethoscope is writing the words "Thank you!" in blue marker on a white background. The doctor is wearing a white lab coat over a light blue shirt and a grey patterned tie. The text "Thank you!" is written in a large, blue, sans-serif font. The doctor's right hand is holding a blue marker, and the stethoscope is visible around his neck. The background is plain white.

Thank you!