

# NERVE SUPPLY OF FACE 5<sup>TH</sup> & 7<sup>TH</sup> CRANIAL NERVES

# L10

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تنويه: هذا العمل لا يعتبر مصدر رئيسي للمذاكرة وإنما للمرجعة فقط

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# OBJECTIVES

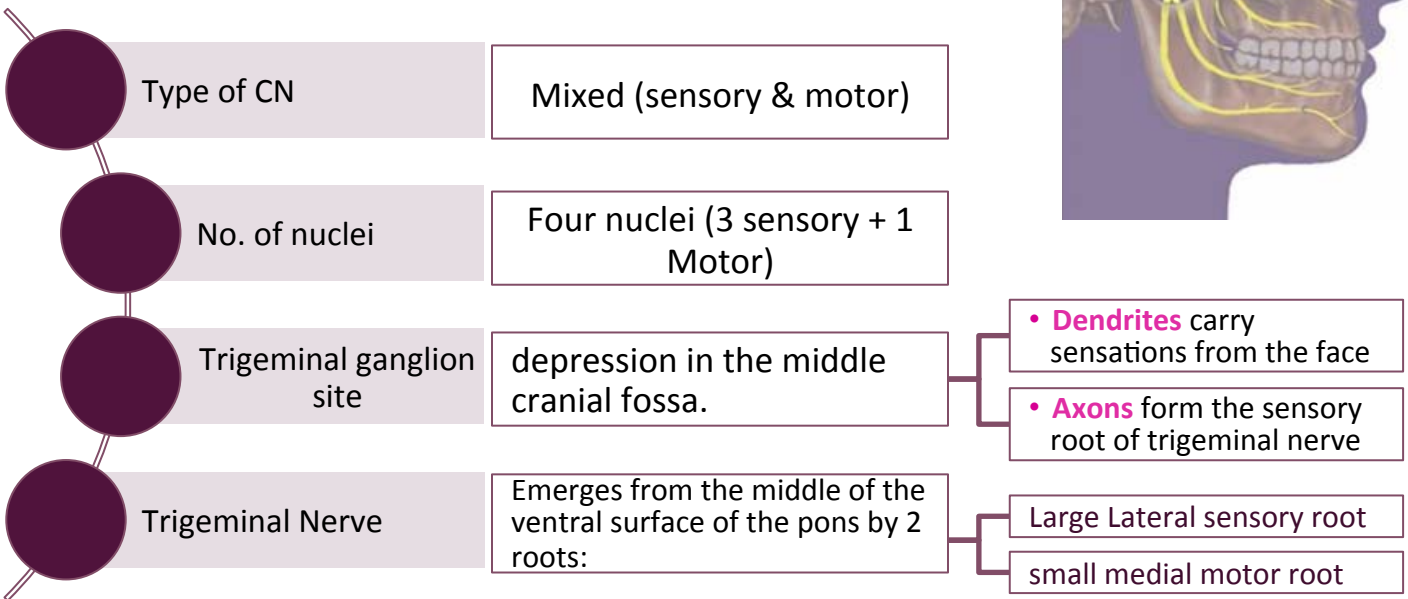
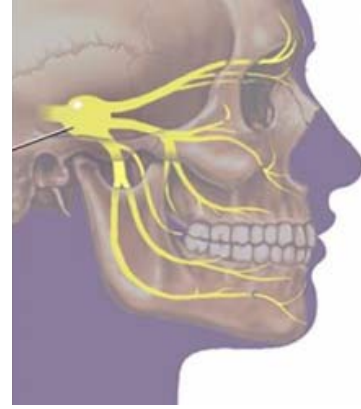
1. List the nuclei of the deep origin of the trigeminal and facial nerves in the brain stem.
2. Describe the type and site of each nucleus.
3. Describe the superficial attachment of trigeminal and facial nerves to the brain stem.
4. Describe the main course and distribution of trigeminal and facial nerves in the face.
5. Describe the main motor & sensory manifestation in case of lesion of the trigeminal & facial nerves.

## Abbreviations

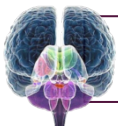
| Abbreviation | Meaning                  |
|--------------|--------------------------|
| TMJ          | Temporomandibular joints |



# TRIGEMINAL NERVE



| Type of fibers            | Nucleus          | Location of the Nucleus                                    | Receive fibers / innervate   |
|---------------------------|------------------|--|--|
| General somatic afferent  | Mesencephalic    | Midbrain & pons  | proprioceptive fibers from muscles of mastication                                  |
|                           | Principal (main) | Pons   | touch fibers from face & scalp   |
|                           | Spinal           | pons, medulla & upper 2-3 cervical segments of spinal cord | receives pain & temperature sensations from face & scalp.                          |
| Special visceral efferent | Motor nucleus    | pons   | Supplying muscles developed from the 1st pharyngeal arch, (8 muscles) <sup>1</sup> |



## Note

1

MAST MATT

MAST(Mastication muscles)

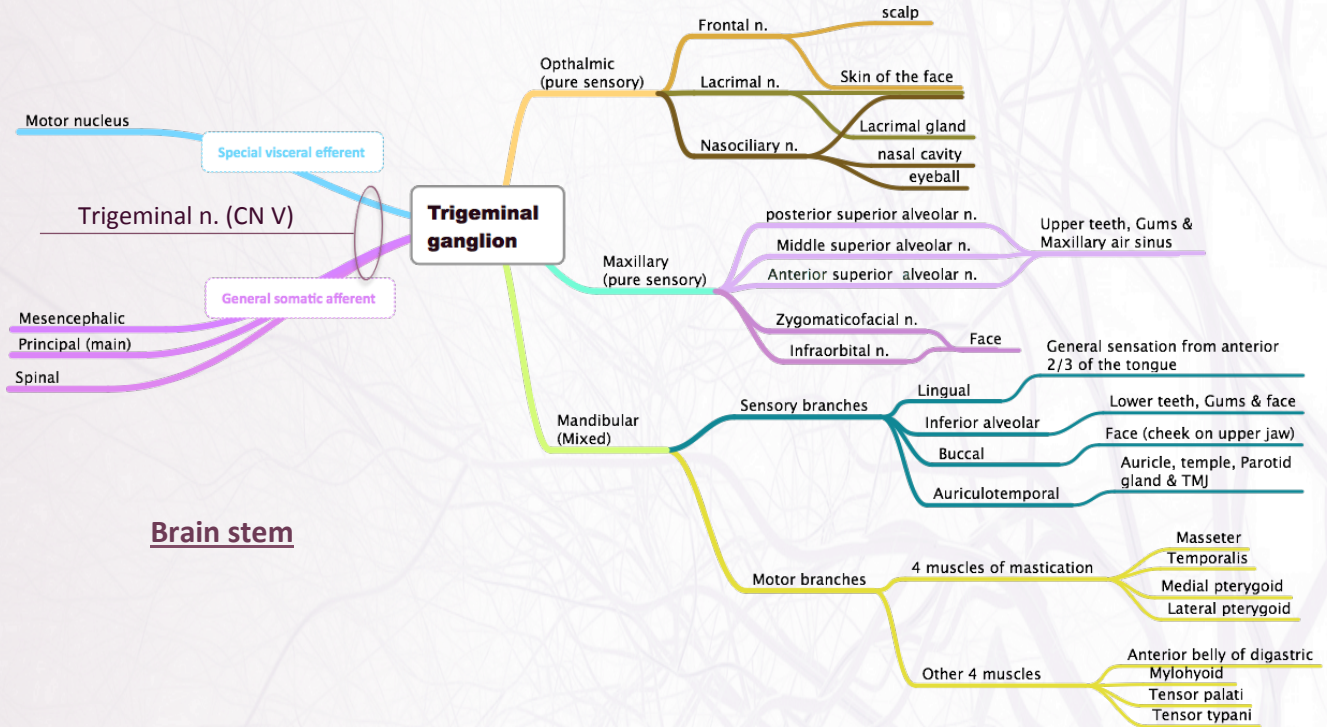
MATT (Other 4 muscles)

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

1. Mylohyoid
2. Anterior belly of digastric
3. Tensor palati
4. Tensor tympani

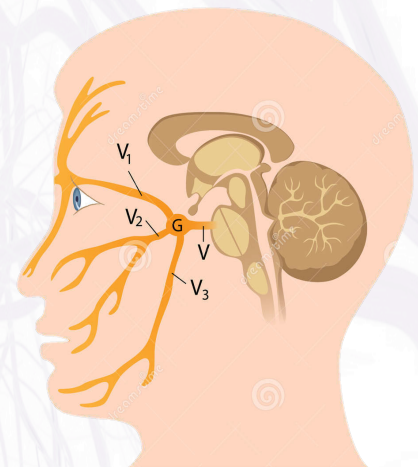
# TRIGEMINAL NERVE

## Branches and course of Trigeminal (Zoom in for better illustration)



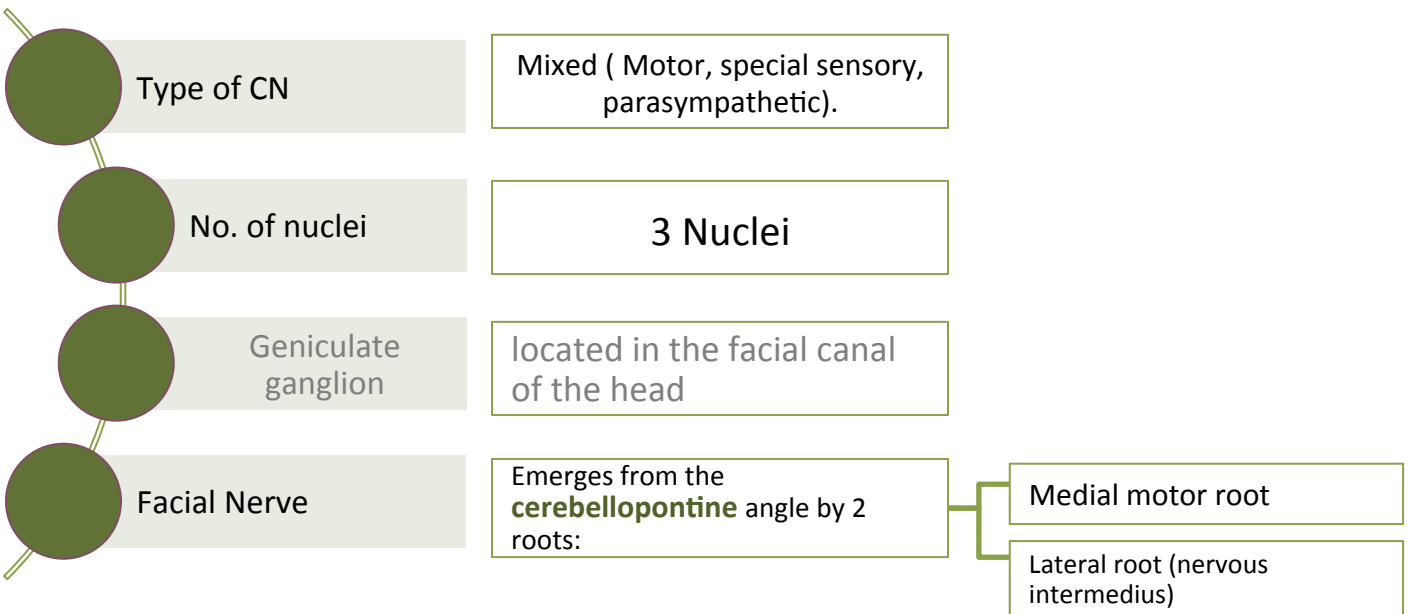
## Trigeminal Neuralgia

|                              |   |
|------------------------------|---|
| Cause                        | Compression, degeneration or inflammation of the 5th cranial nerve  |
| Other term for the condition | tic douloureux ( <u>tik doo-luh-roo</u> )                           |
| characterized by:            | recurring episodes of intense stabbing (excoriating pain )          |
| Usually involves             | maxillary & mandibular branches, rarely in the ophthalmic division. |

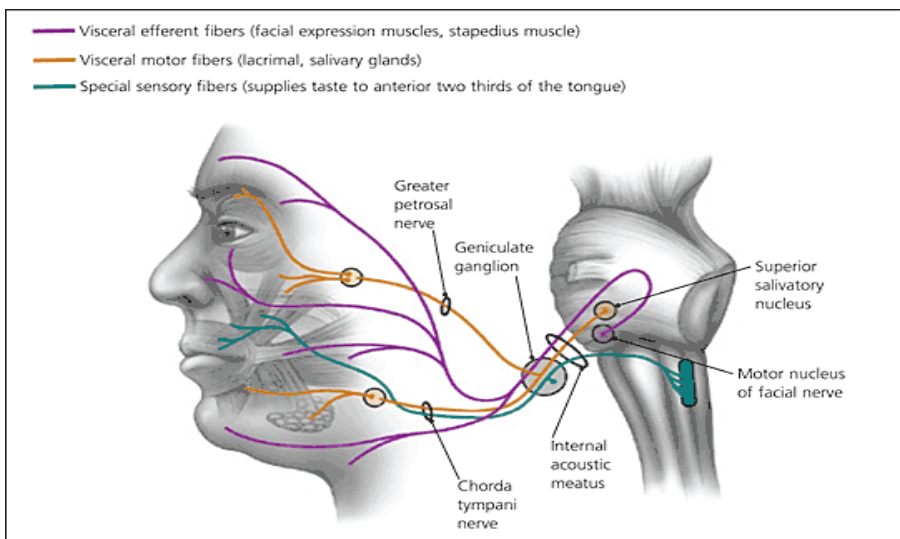




# FACIAL NERVE

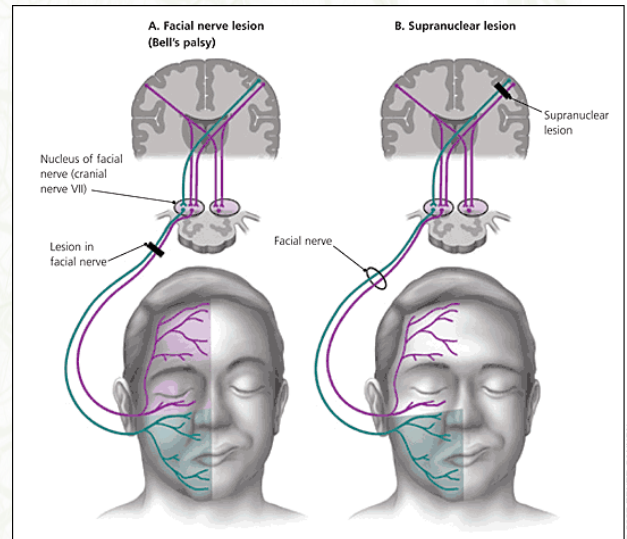
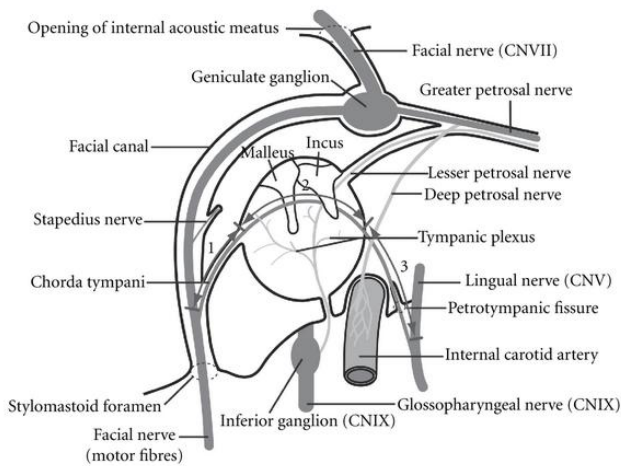
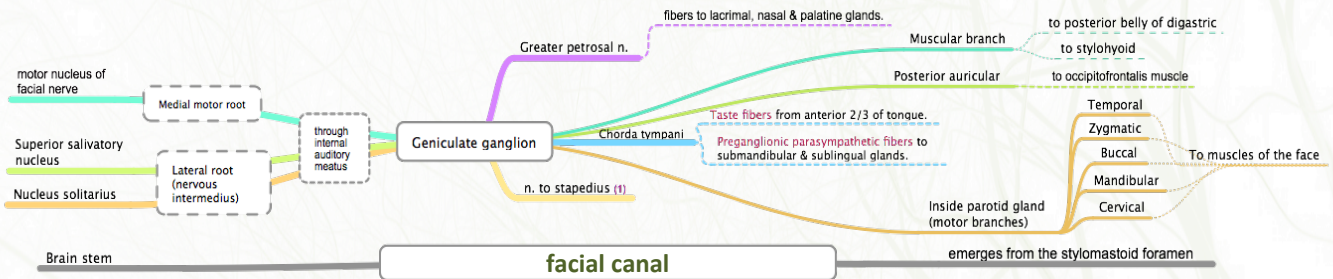


| Type of fibers            | Nucleus                       | Location of the Nucleus | Receive fibers / innervate   |
|---------------------------|-------------------------------|-------------------------|--|
| Special visceral afferent | nucleus solitarius            | medulla                 | carrying <b>taste</b> sensation from anterior 2/3 of the tongue                                  |
| Special visceral efferent | motor nucleus of facial nerve | Pons                    | supplying muscles developed from the 2nd pharyngeal arch   |
| General visceral efferent | superior salivatory nucleus   | Pons                    | parasympathetic secretory fibers to submandibular, sublingual, lacrimal, nasal & palatine glands |



# FACIAL NERVE

## COURSE OF FACIAL NERVE (Zoom in for better illustration)



## Bell's Palsy

Cause

Damage of the facial nerve

involves

- paralysis of muscles of facial expressions
- (Bell's) palsy; lower motor neuron lesion

characterized by:

Face is distorted:

Drooping of lower eyelid,

Sagging of mouth angle,

Dribbling of saliva,

Loss of facial expressions,

Loss of chewing,

Loss of blowing,

Loss of sucking,

Unable to show teeth or close the eye on that side.



# MCQs

|  |  |   |  |
|--|--|---|--|
| <b>Q1</b>  | <b>Trigeminal nerve is ?</b>   | <b>Q2</b>   | <b>which one of these is <u>NOT</u> a division of trigeminal nerve?</b>              |
| A. Sensory<br>B. Motor<br>C. Mixed   |  | A. Ophthalmic<br>B. Maxillary<br>C. Buccal  |  |
| <b>Q3</b>  | <b>Trigeminal nerve has two roots and they are ..</b>                            | <b>Q4</b>   | <b>frontal branch of ophthalmic is supplying :</b>                                   |
| A. Lateral sensory & medial motor<br>B. Lateral motor & medial sensory<br>C. Lateral motor & lateral sensory<br>D. Medial motor & medial sensory |  | A. Skin of face & scalp<br>B. Skin of face & lacrimal gland<br>C. Skin of face & nasal cavity<br>D. Non of the above                        |  |
| <b>Q5</b>  | <b>The motor branch of mandibular is supplying</b>                               | <b>Q6</b>   | <b>Trigeminal neuroglia is <u>rare</u> in which branch?</b>                          |
| A. Auricle, temple, parotid gland<br>B. General sensation of the tongue<br>C. Muscles of mastication & other 4 muscles                           |  | A. Mandibular<br>B. Ophthalmic<br>C. Maxillary  |  |
| <b>Q7</b>  | <b>Which of the following nuclei supply posterior belly of digastric?</b>        | <b>Q8</b>   | <b>Greater petrosal nerve carries preganglionic <u>parasympathetic</u> fibers to</b> |
| A. Nucleus solitaries<br>B. Motor nucleus of facial nerve<br>C. Superior salivatory nucleus  |  | A. lacrimal, nasal & sublingual glands<br>B. submandibular & palatine gland<br>C. non of them   |  |
| <b>Q9</b>  | <b>Which of the following nerves carry taste from the anterior 2/3 of tongue</b> | <b>Q10</b>  | <b>What are the muscles supplied by the special visceral efferent:</b>               |
| A. Lingule n.<br>B. Vagus n.<br>C. Special visceral afferent<br>D. General somatic afferent  |  | A. Mastication M.<br>B. M. developed from the 2 <sup>nd</sup> pharyngeal arch.<br>C. M. developed from the 1 <sup>st</sup> pharyngeal arch. |  |

ANSWERS:

|            |          |          |          |          |          |          |          |          |          |           |
|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| <b>Q</b>   | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> | <b>10</b> |
| <b>ANS</b> | C        | C        | A        | A        | C        | B        | B        | C        | C        | B&C       |