☆ د.أحمد جمال نبه اللي سألوه على الواتس إن الباور للإطلاع فقط واحنا مطالبين بالكتاب في المحاضرة دي

VII. Facial nerve

- **Type**: it is a mixed nerve.
- **Roots**: it has two roots:
  - **A. Motor root:** large and medial and is the facial nerve proper.
  - **B. Sensory root:** small and lateral. It is called nervus intermedius. It contains both sensory & parasympathetic fibers.
- **Deep origin**: it has 4 nuclei: SAQ مهم جدا!!! : Enumerate nuclei of facial nerve ?

A. Motor nucleus:

- ☒ lies in the lower part of the pons. It supplies muscles of the 2nd pharyngeal arch. The upper half of the nucleus receives bilateral corticobulbar fibers.
- ☒ The lower half of the nucleus receives corticobulbar fibers from the opposite side only.

B. Parasympathetic nucleus (superior salivatory nucleus): it innervates:

- ☒ Submandibular & sublingual salivary glands through the chorda tympani nerve.
- ☒ Lacrimal, nasal & palatine glands through the greater superficial petrosal nerve.

C. Two sensory nuclei:

بالنسبة للGreater superfacial petrosal nerve الدكتور قال نضيف جمبه "عصب دور البرد" وبيتسمى كدا لأن لما بيحصل irritation بتظهر أعراض دور البرد

- ☒ **Nucleus solitarius:** receives taste fibers from the anterior two-thirds of the tongue through the chorda tympani nerve.
- ☒ **Spinal trigeminal nucleus:** receives somatic sensory fibers from the external ear via the posterior auricular nerve and small branches that join the tympanic plexus.

- **lesions of the facial nerve** MCQ & SAQ مهمة جدا!!!

A. Upper motor neuron lesion: lesion in the corticobulbar tract

- ☒ It causes paralysis of the lower half of the opposite facial nucleus and paralysis of the muscles of the lower half of the opposite side of the face.

SAQ : Enumerate 2 or 3 effect of facial nerve lesion ?
MCQ: Loss of sensation from anterior ⅔ of tongue& decrease salivation due to: Paralysis of chorda tympni

B. Lower motor neuron lesion: lesion in the facial nerve or the facial nucleus

☒ It causes flaccid paralysis of all muscles of facial expression on the same side of the face. The lesion may be located at any level:

1. In the facial colliculus, where it is accompanied by abducent nuclear lesion.
2. In the basis pontis: accompanied by hemiplegia (paralysis of one 1/2 of the body).
3. At the cerebellopontine angle, where it is accompanied by VIII lesion.
4. At the facial canal or the stylomastoid foramen (Bell's palsy).

☒ Signs of the Lower Motor Neuron Lesion of Facial Nerve:

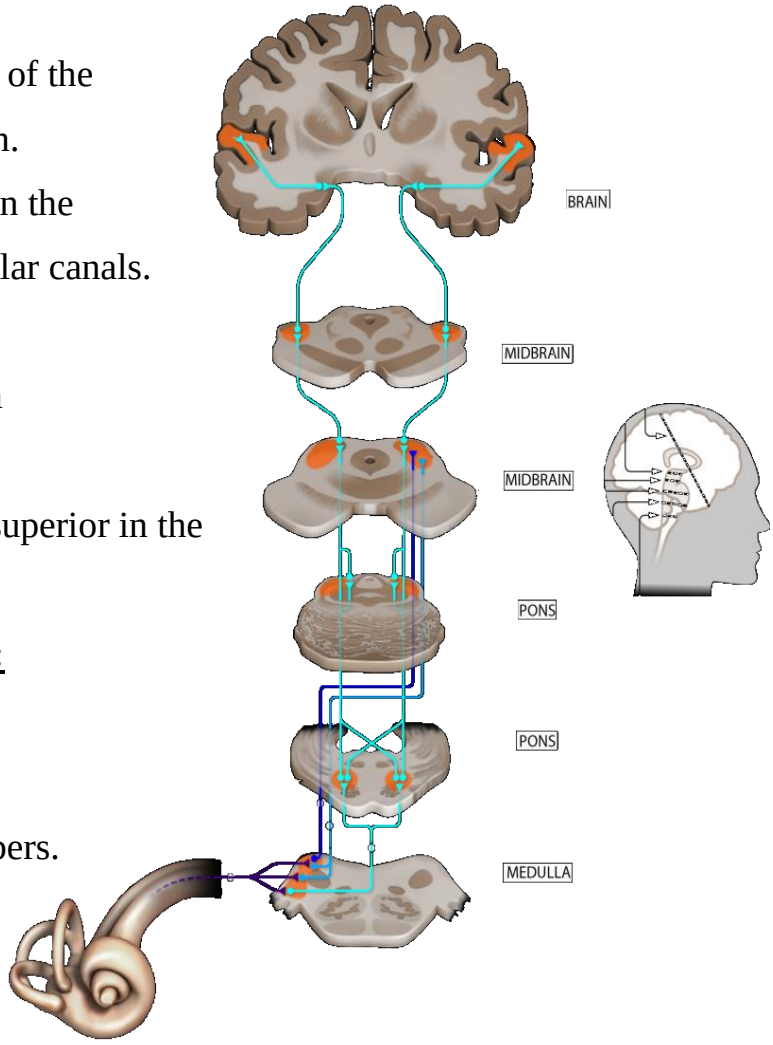
The signs are present on the **same** side of the face:

1. **Paralysis of the frontalis:** inability to raise the eyebrow.
2. **Paralysis of the orbicularis oculi:** inability to close the eye, which remains open and loss of the corneal reflex.
3. **Paralysis of the orbicularis oris:** inability to whistle.
4. **Paralysis of the levators of the angle of the mouth:** drooping of the angle of the mouth.
5. **Paralysis of the buccinator:** accumulation of food in vestibule of the mouth.
6. **Paralysis of the stapedius:** hyperacusis (hypersensitivity to sounds).
7. **Paralysis of the chorda tympani:** loss of taste sensation from the anterior two-thirds of the tongue and decreased salivation.
8. **Paralysis of the greater superficial petrosal nerve:** loss of lacrimation.

VIII. Vestibulocochlear nerve

Vestibular nerve

- **Type**: It is a pure sensory nerve concerned with equilibrium.
- **Origin**:
  - ☒ It is formed by the central processes of the bipolar cells of the Scarpa's ganglion.
  - ☒ The peripheral processes terminate in the vestibular receptors in the semicircular canals.



- **Termination:**
  - **A. Cerebellum:** in the archicerebellum (flocculonodular lobe).
  - **B. The 4 vestibular nuclei:** lateral & superior in the pons. Medial & inferior in medulla.
- **Connections of the vestibular nuclei:**
  - **A. Input: from the:**
    - ☒ Vestibular nerve
    - ☒ Cerebellum: cerebellovestibular fibers.
  - **B. Output: they send fibers to:**
    1. Cerebellum (archicerebellum): through the inferior cerebellar peduncle.
    2. Spinal cord: via the lateral and medial vestibulospinal tracts.
    3. Nuclei that move the extraocular muscles: of the two sides (III, IV, VI) via the MLF to coordinate movements of the two eyes.
    4. Thalamus (VPMN) and cerebral cortex: (vestibular area) for conscious awareness of the position of the head in space.

Cochlear Nerve

- **Type:** It is a pure sensory nerve concerned with hearing.
- **Origin**:
  - It is formed by the central processes (axons) of the bipolar cells of the spiral ganglion (cochlear ganglion).
  - The peripheral processes terminate in the organ of Corti in the cochlea.
- **Termination:** in the dorsal and ventral cochlear nuclei at the pontomedullary junction.
- **Auditory Pathway:**
  - Organ of Corti → spiral ganglion cochlear nerve → dorsal & ventral cochlear nuclei → trapezoid body → lateral lemniscus inferior colliculus→ medial geniculate body →auditory radiation →primary auditory area (41 & 42) →auditory association area (22).
- **Lesions of the auditory pathway**
  - Lesion in the cochlea, cochlear nerve or cochlear nuclei: complete ipsilateral deafness.
  - Lesion in the lateral lemniscus MGB or auditory area: partial deafness on the 2 sides mainly on the opposite side (bilateral diminution of hearing).

بناءًا على أخر كلام من الدكتور :

* جزئية الEar اللي في الباور للفهم بس

* جزئية الCourse of facial nerve اللي في الباور مش معانا