**Mandibular Nerve**

*Type:* mixed has 2 roots:

1. **Motor root (small):** from the motor nucleus of the trigeminal nerve in the Pons.

2. **Sensory root (large):** from the trigeminal ganglion.

* The motor root passes below the trigeminal ganglia.

*Course:*

- It is the largest division of the trigeminal nerve
- The 2 roots leave the cranial cavity through **foramen ovale.**
- Below the foramen the 2 roots unite to form the trunk of the mandibular nerve, between tensor palati muscle which is medial, and lateral pterygoid laterally, with otic ganglion also lies deep to the nerve.

*Termination:* it terminates by dividing into, anterior and posterior divisions.

*Branches*

A. **From the trunk:** motor & sensory nerves

   **Nerve to the medial pterygoid muscle:** supplies 3 muscles

   - Medial pterygoid
   - Tensor palati
   - Tensor tympani.

   **Nervous spinosus:** sensory

   - Passes through the foramen spinosum to the dura mater of the middle cranial fossa..
B. From the anterior division: 3 motor & 1 sensory

**Buccal nerve (sensory):**

- It supplies the skin over the buccinator and the buccal mucous membrane, together with the posterior part of the buccal gingivae, adjacent to the 2nd and 3rd molar teeth.
- It passes between the two heads of the lateral pterygoid muscle, then below the tendon of the temporalis muscle, and then under the masseter muscle to reach the buccinator.
- The BN could be compressed, if LPt muscle spasm occurs, or hyperactive temporalis muscle and this compression results in cheek numbness or pain.

**Motor branches**

1. **(2) deep temporal nerves:** to the temporalis muscle

2. **Masseteric nerve:**
   1) It crosses the mandibular notch with the masseteric artery,
   2) Enters the deep surface of masseter muscle
   3) It may be compressed in tmj anterior dislocation

3. **Pterygoid branch:** to the lateral pterygoid muscle.
A. From the posterior division:
   1. The auriculotemporal nerve
   2. The lingual nerve
   3. The inferior alveolar nerve

The Auriculotemporal Nerve:

- Arises by two roots surrounding the *middle meningeal artery*.
- Passes medial to *neck of the mandible*.
- Enters the *parotid gland* & emerges from its upper end.
- Passes in front of the auricle with *the superficial temporal vessels* to reach the lateral side of the scalp...

*It contains 4 types of fibers:*

a. *Sensory fibers:* to
   - Parenchyma of the parotid gland
   - TMJ
   - Lateral side of the scalp
   - Upper part of the auricle
   - External auditory meatus
   - Outer surface of tympanic membrane

b. *Postganglionic parasympathetic fibers:* from the otic ganglion to the parotid gland.

c. *Postganglionic sympathetic fibers:* from the plexus around the middle meningeal artery to the parotid gland.
The lingual nerve:

- Lies in front of the inferior alveolar nerve.
- Passes below and medial the last lower molar tooth (dangerous position)
- Hook around the submandibular duct to ends in anterior 2/3 of the tongue (2nd dangerous position).

Communication:
- It is joined by the chorda tympani nerve deep to lateral pterygoid muscle.

Distribution and branches:

1) Fibers of lingual nerve: carry general sensation from the anterior two-thirds of the tongue, the floor of the mouth and the inner surface of the gum.

2) Fibers of chorda tympani:
   * Taste fibers from the anterior two-thirds of the tongue.
   * Parasympathetic fibers to the submandibular and sublingual salivary glands.
The inferior alveolar nerve:

- Passes through the mandibular foramen to enter the mandibular canal.
- Supplies the lower molar and premolar teeth and then divides into incisive and mental branches.

It gives 3 branches:

a. Mylohyoid nerve:
   - Runs in the mylohyoid groove.
   - It supplies the mylohyoid muscle and the anterior belly of the digastric.

b. Incisive nerve:
   - Supplies the lower canine and incisor teeth.

c. Mental nerve:
   - Passes through the mental foramen.
   - Supplies the skin of the chin and the mucous membrane of the lower lip.