Accessory nerve

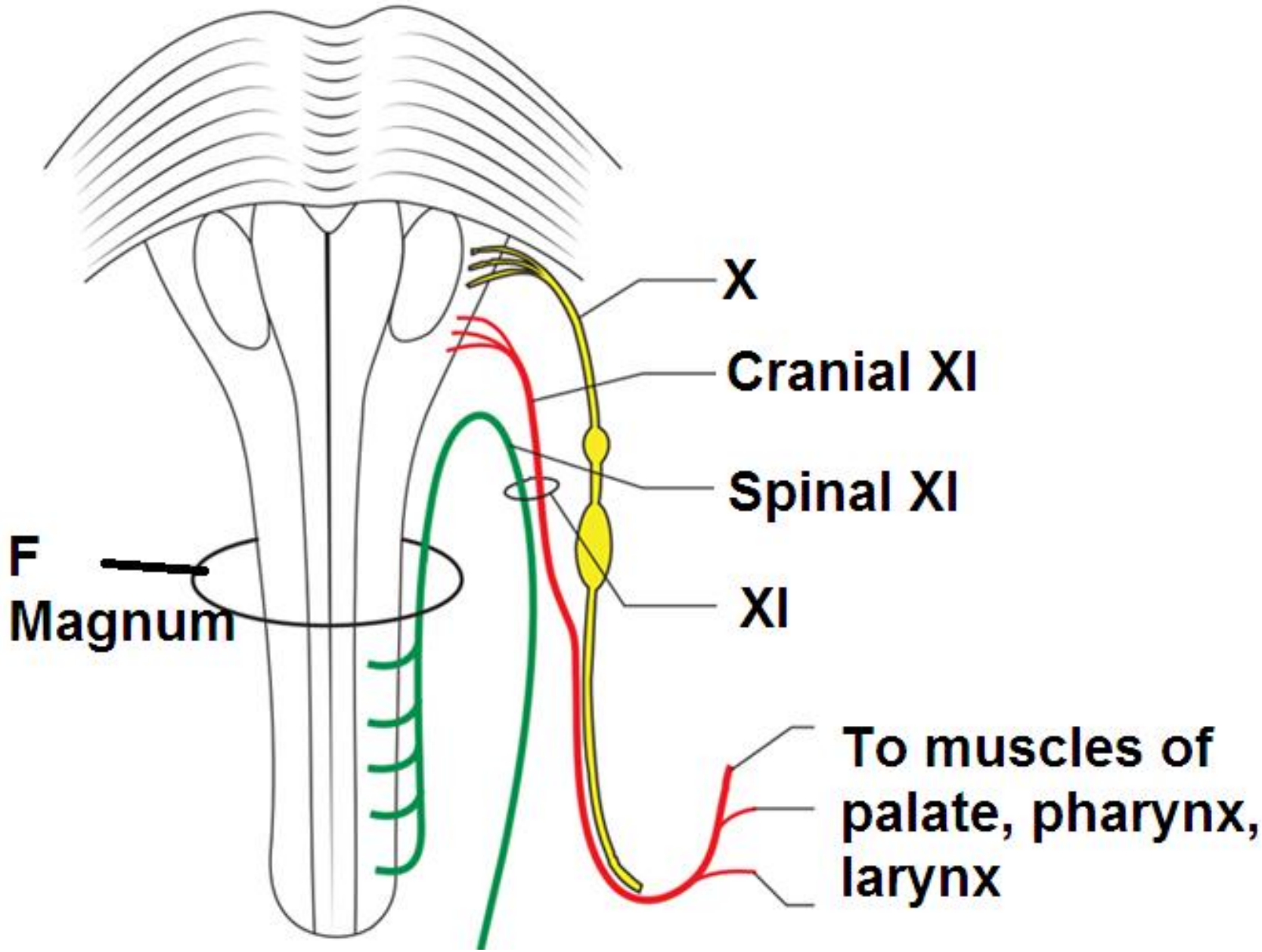
- Accessory nerve is formed by the union of its **cranial and spinal components**
- These 2 components are associated with each other for a short distance only

- The cranial part of the accessory nerve joins the vagus and is given off in the neck as the pharyngeal branch of the vagus nerve
- It is thus branchial efferent

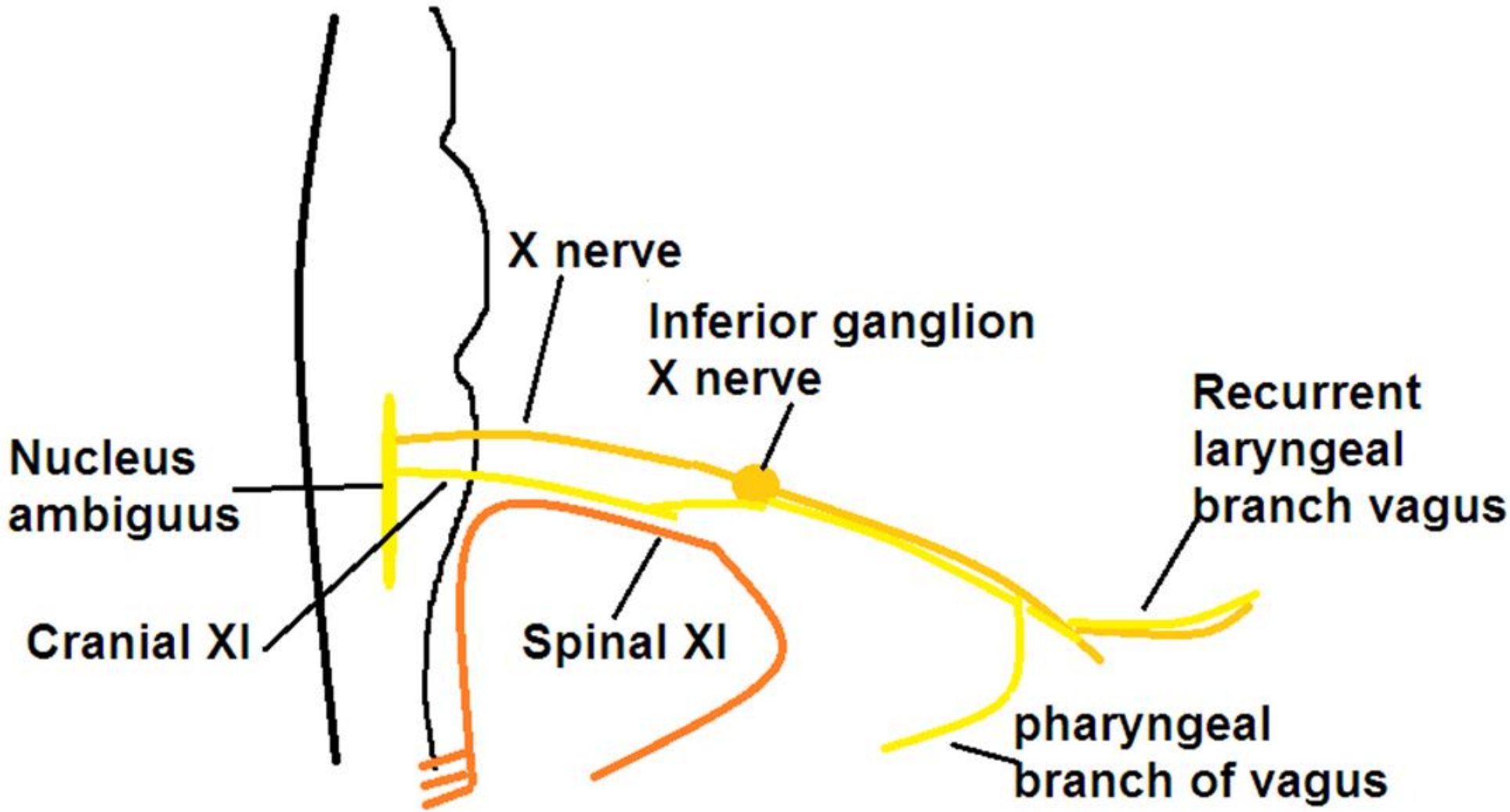
- The spinal accessory nerve may be considered to be somatic efferent as it supplies the sternocleidomastoid and trapezius muscles

Nucleus of the spinal accessory nerve

- Lies in the spinal cord
- Extends from C1 to C5/6


X
Cranial XI
Spinal XI
XI
F
Magnum
To muscles of
palate, pharynx,
larynx

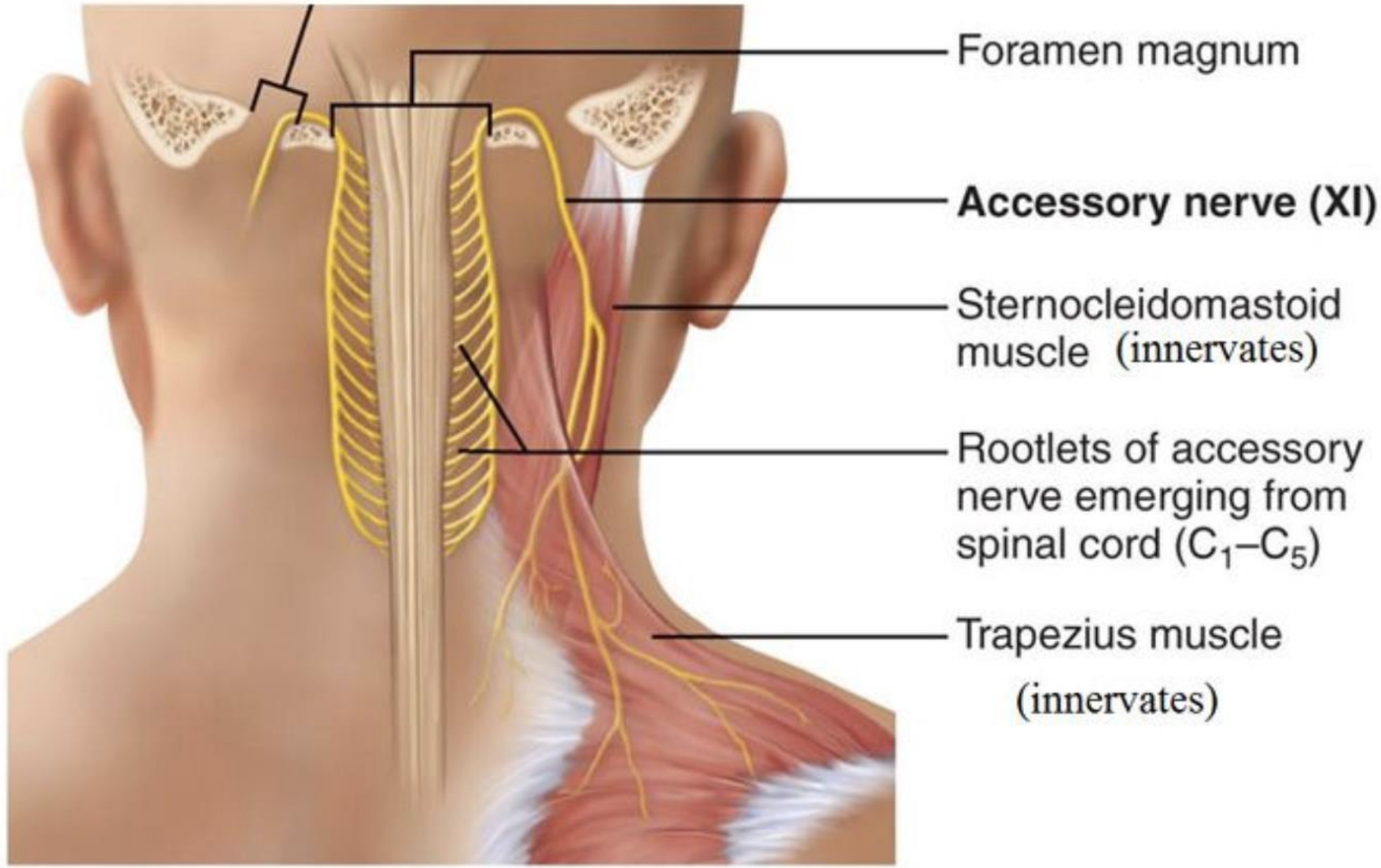
XI nerve-cranial

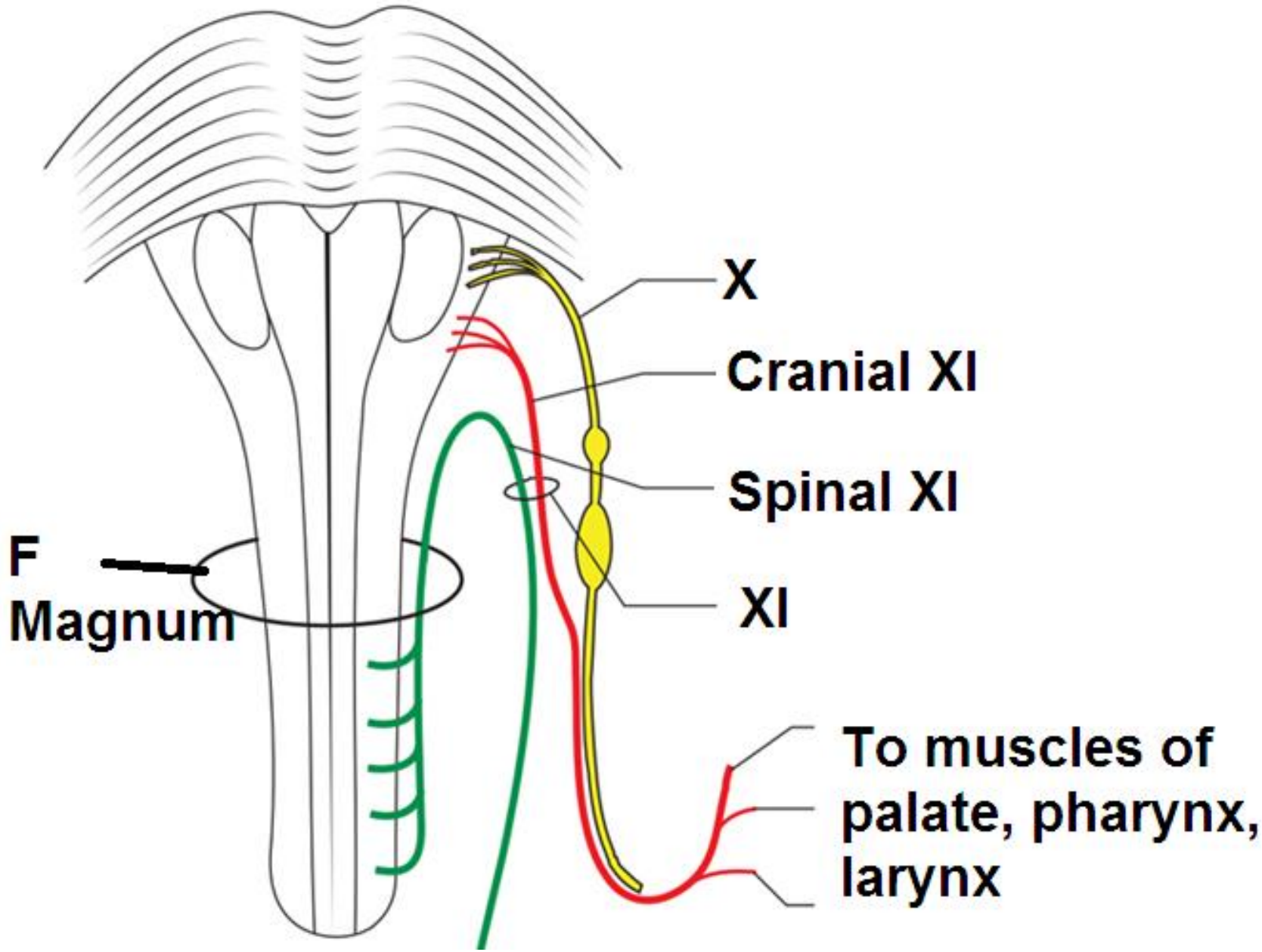


Course of the spinal accessory nerve

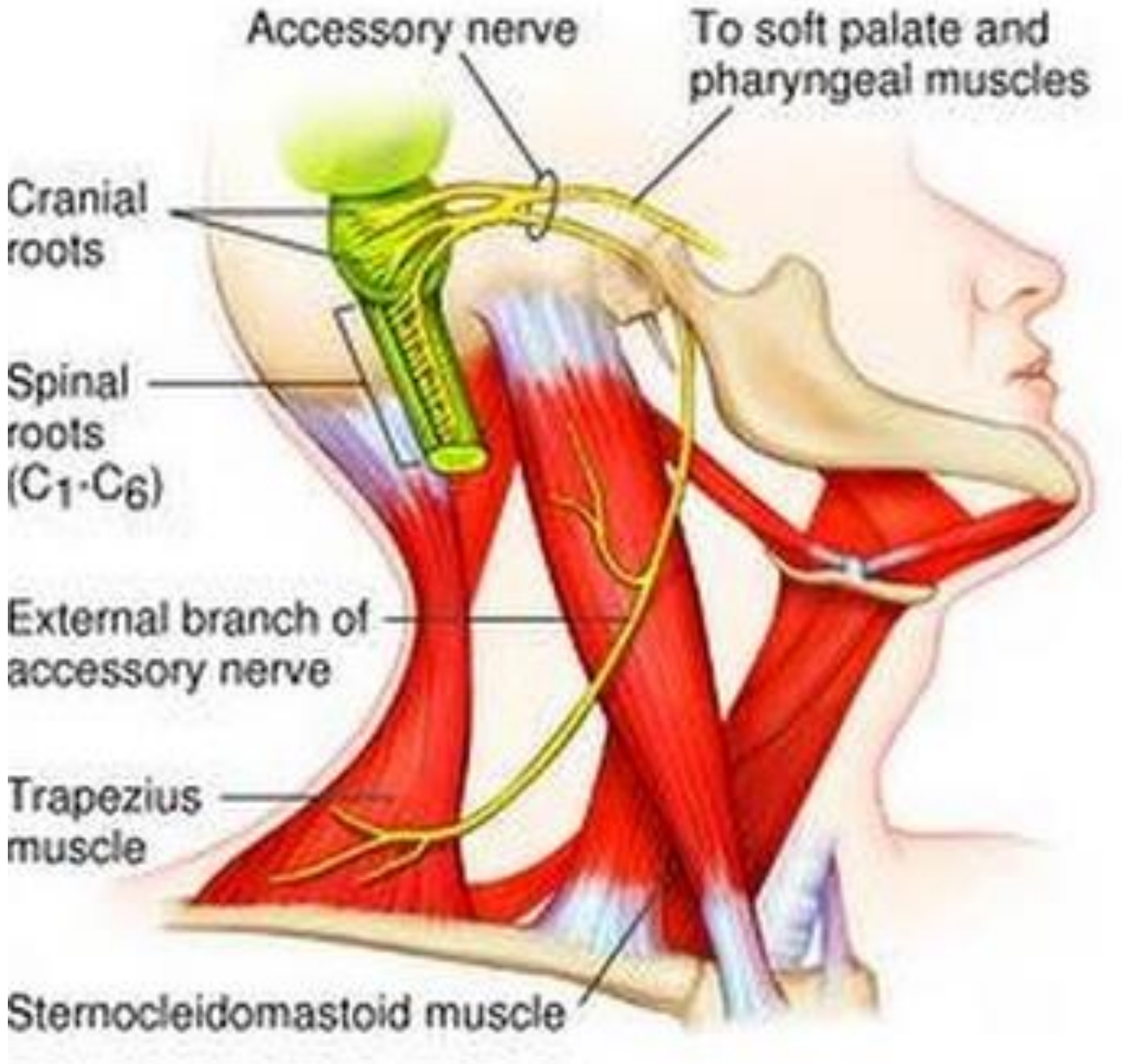
- The fibers emerge mid way between the ventral and dorsal roots of the cervical nerves
- These unite to form a single trunk
- This ascends to enter the skull trough the foramen magnum
- Turns upwards and laterally towards the jugular foramen
- May unite in the foramen with the cranial accessory for a short distance

The Accessory Nerves – XI – unique origin from spinal cord




X
Cranial XI
Spinal XI
XI
F
Magnum
To muscles of
palate, pharynx,
larynx

- After emerging from the jugular foramen, the nerve passes laterally, deep or superficial to the internal jugular vein
- It enters the deep surface of the upper part of the sternocleidomastoid accompanied by sternocleidomastoid branch of the occipital artery (which may be used as a guide to the nerve)
- It emerges a little above the middle of the posterior border of the muscle


Accessory nerve
To soft palate and pharyngeal muscles
Cranial roots
Spinal roots (C_1-C_6)
External branch of accessory nerve
Trapezius muscle
Sternocleidomastoid muscle

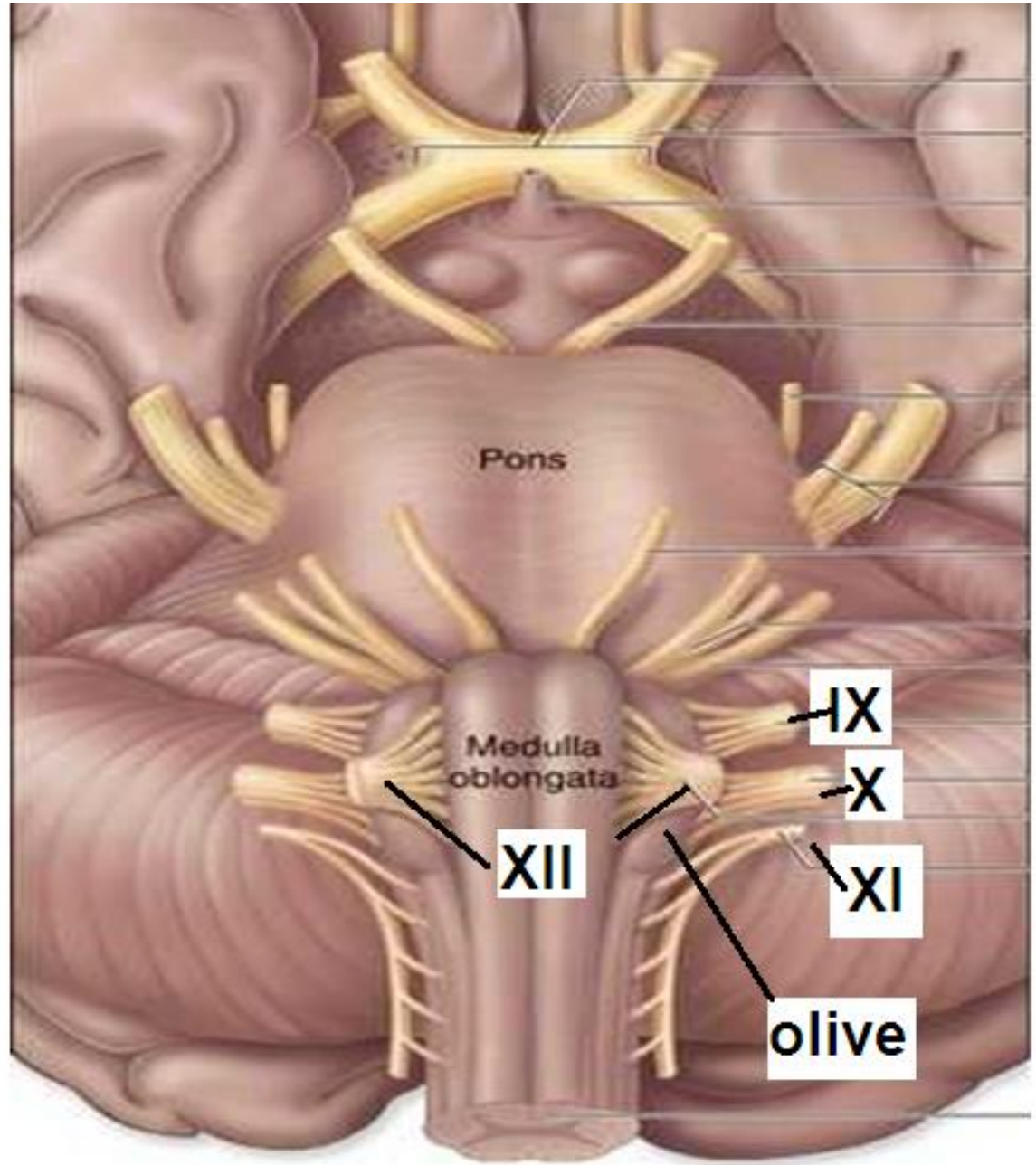
- It crosses the posterior triangle **lying on the levator scapulae**
- In the posterior triangle, it is **superficial** and is related to lymph nodes
- In the posterior triangle it receives communications from C2/C3
- **5cms above the clavicle**, it pierces the anterior border of the trapezius and innervates it

Cranial accessory nerve

- Nucleus of the cranial accessory nerve is nucleus ambiguous in the medulla deep to the reticular formation
- This nucleus gives motor fibers (branchial efferent) to IX X and XI cranial nerves

- Cranial accessory nerve emerges posterior to the olive as 4-5 rootlets in line with the IX and X cranial nerves
- The nerve runs laterally to the jugular foramen
- In the foramen the nerve may join with spinal XI for a short distance
- It then adheres to the inferior vagal ganglion and then blends with the vagus
- It is given off as the:

1. Pharyngeal branch of vagus
2. Some fibers pass into recurrent laryngeal nerve


Pons
Medulla oblongata
IX
X
XI
XII
olive