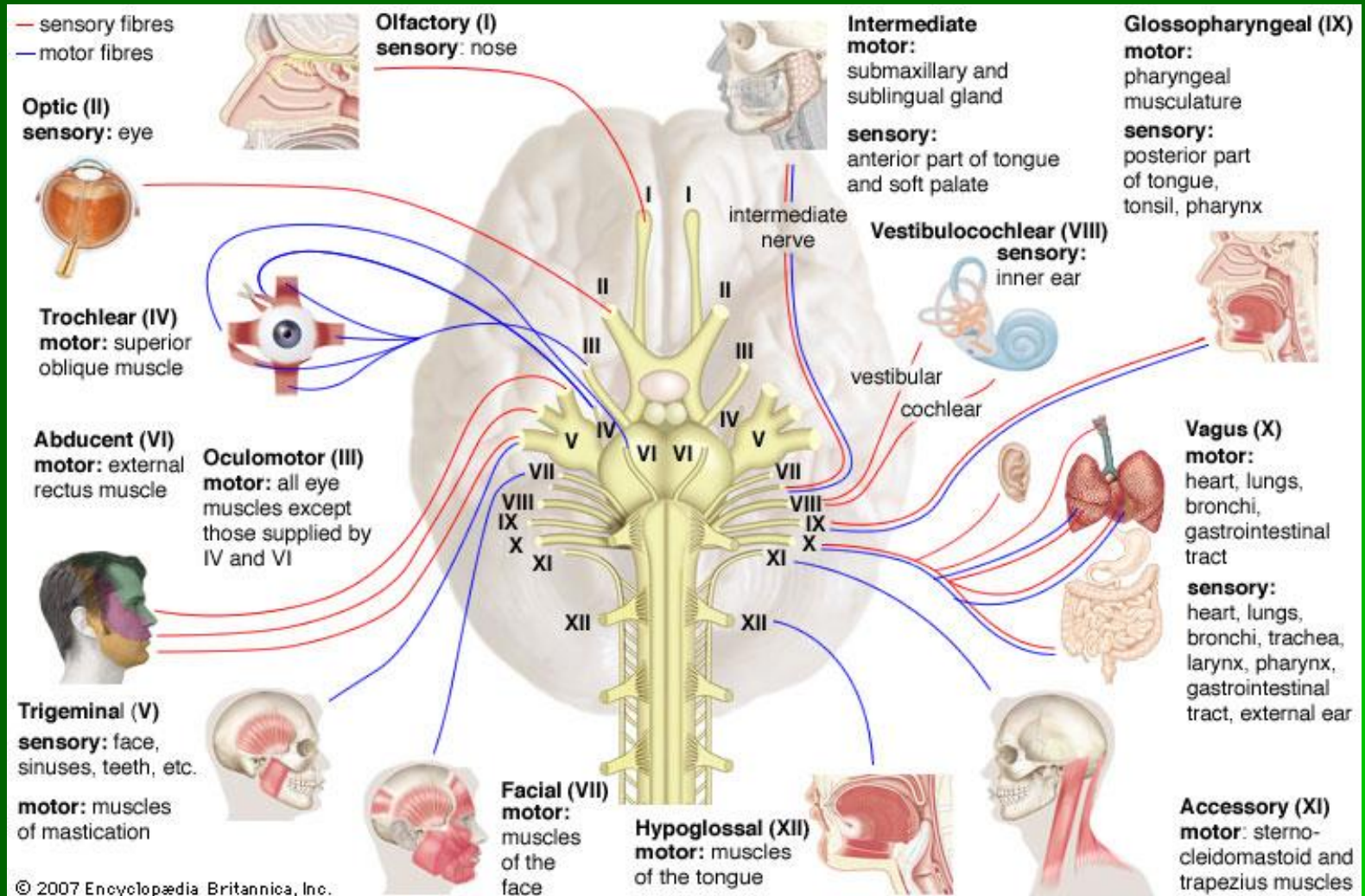
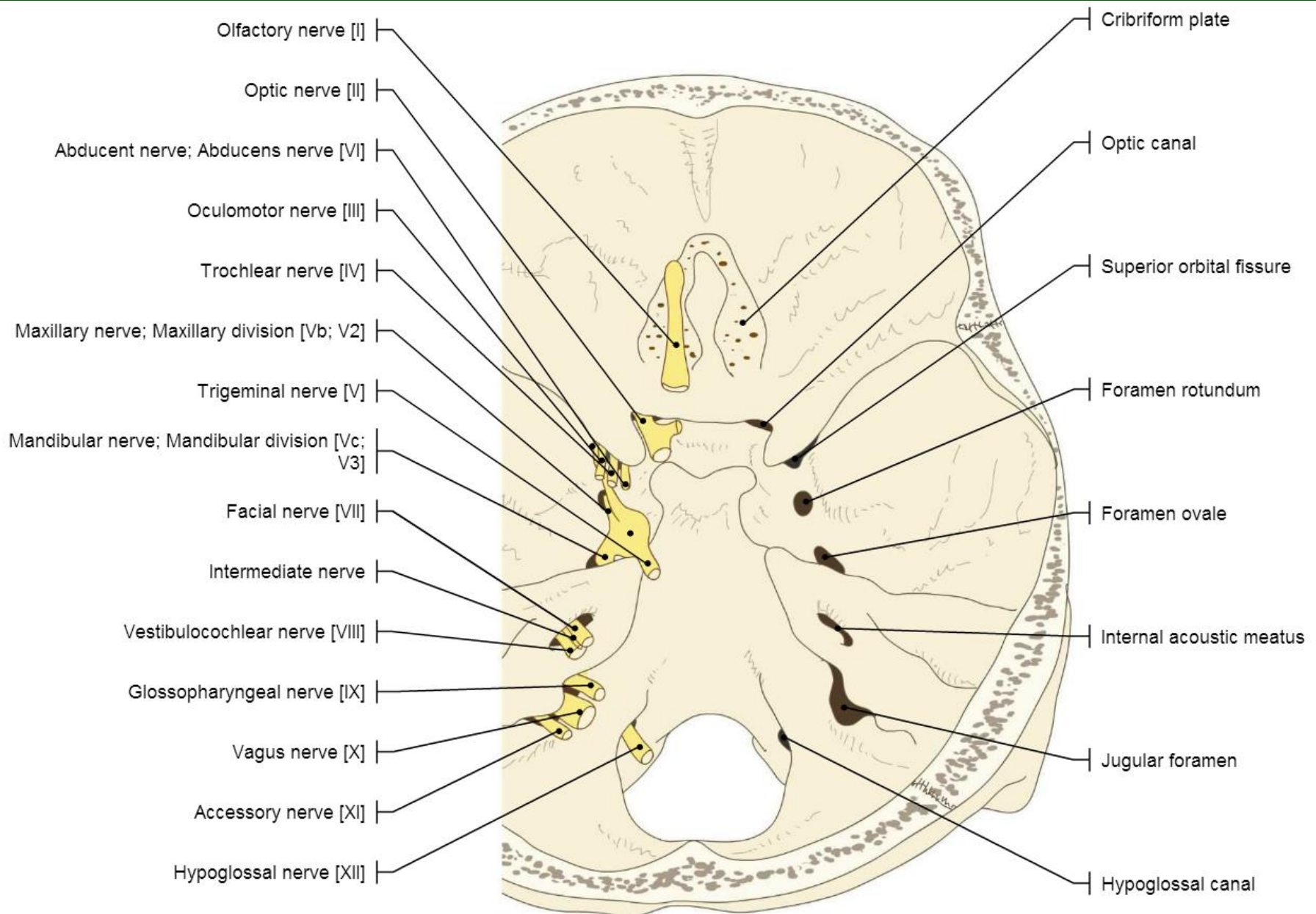


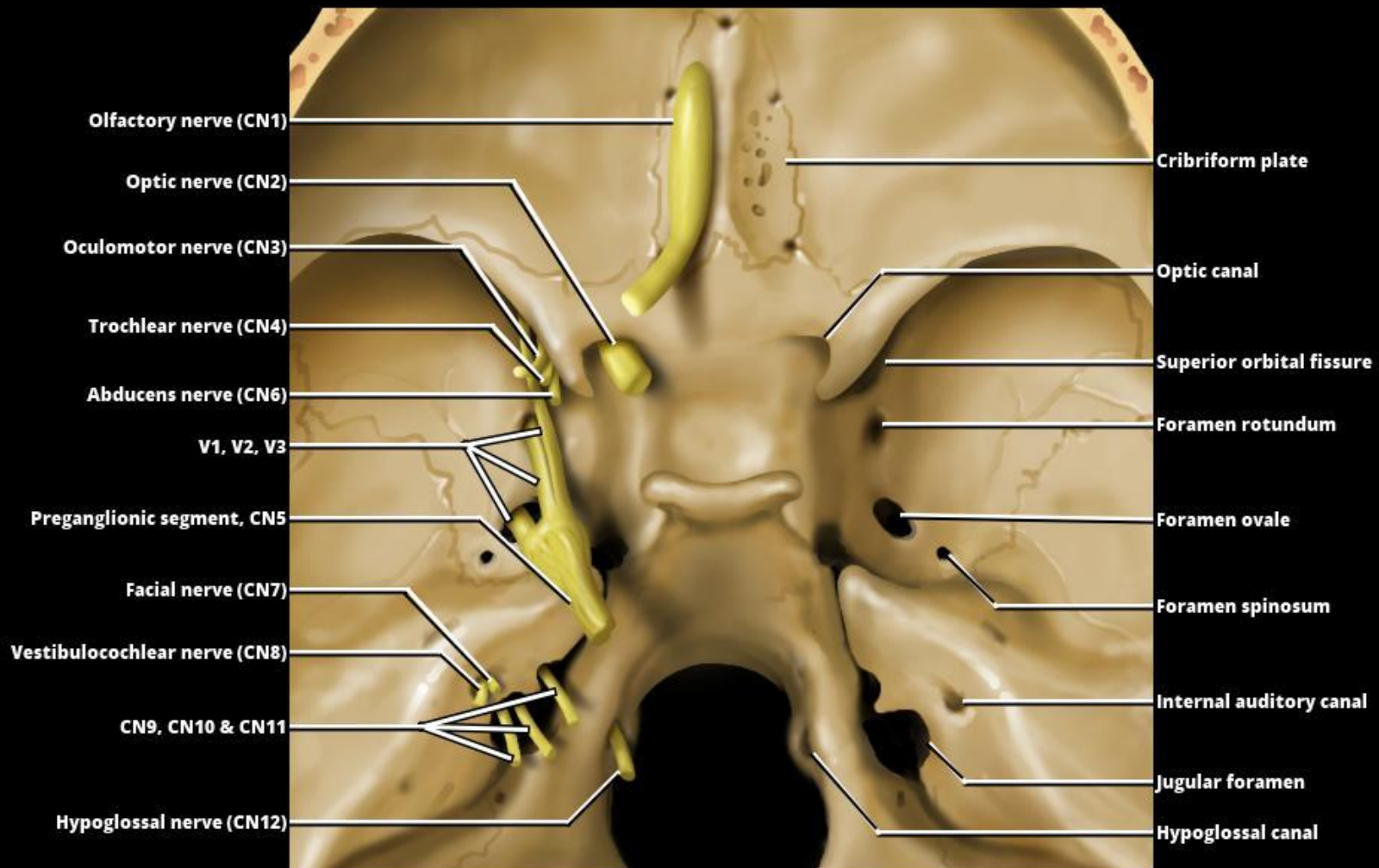
# Cranial Nerves



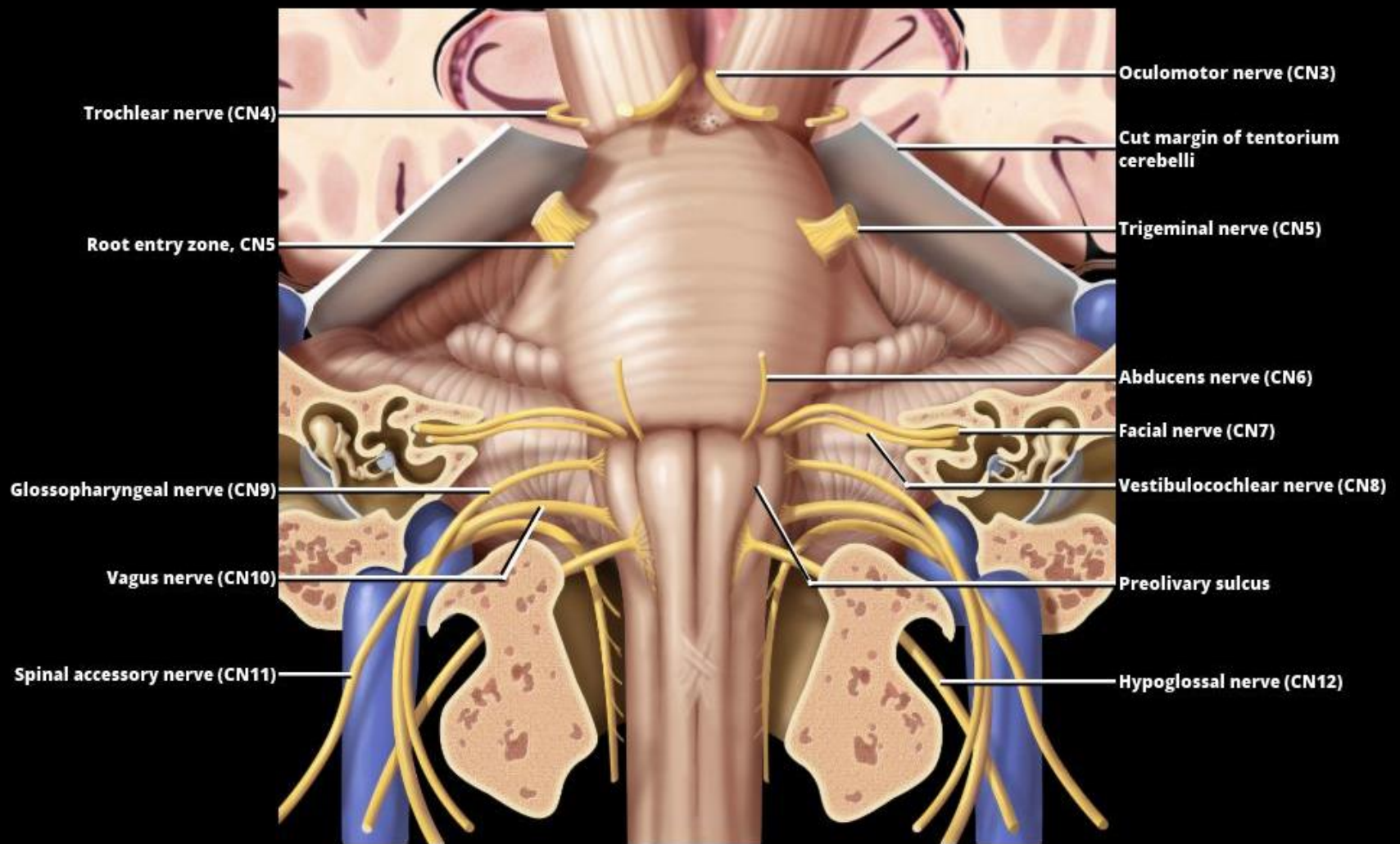
- **Cranial nerves** and their functions
  - Olfactory nerve
    - Sense of **smell**
  - Optic nerve
    - Sense of **vision**
  - Oculomotor nerve
    - **Motor** to all **extraocular muscles** except lateral rectus and superior oblique
    - **Parasympathetic** supply to ciliary and pupillary constrictor muscles
  - Trochlear nerve
    - **Motor** to **superior oblique**
  - Trigeminal nerve
    - **Motor** (V3) to **muscles of mastication**, anterior belly digastric, mylohyoid, tensor tympani and palatini
    - **Sensory** to surface of **forehead and nose** (V1), **cheek** (V2) and **jaw** (V3)
    - **Sensory** to surfaces of nose, sinuses, meninges and external surface of tympanic membrane (auriculotemporal nerve)
  - Abducens nerve
    - **Motor** to **lateral rectus** muscle
  - Facial nerve
    - **Motor** to **muscles of facial expression**
    - **Motor** to **stapedius muscle**
    - **Parasympathetic** to lacrimal, submandibular and sublingual glands
    - Anterior 2/3 tongue taste (chorda tympani nerve)
    - General sensation for periauricular skin, external surface of tympanic membrane
  - Vestibulocochlear nerve
    - Senses of **hearing and balance**
  - Glossopharyngeal nerve
    - **Motor** to **stylopharyngeus** muscle
    - **Parasympathetic** to parotid gland
    - Visceral sensory to carotid body
    - Posterior 1/3 tongue **taste**
    - General sensation to posterior 1/3 of tongue and internal surface of tympanic membrane
  - Vagus nerve
    - **Motor** to **pharynx-larynx**
    - Parasympathetic to pharynx, larynx, thoracic and abdominal viscera
    - Visceral sensory from pharynx, larynx and viscera
    - General sensation from small area around external ear
  - Accessory nerve
    - **Motor** to **sternocleidomastoid and trapezius** muscles
  - Hypoglossal nerve
    - **Motor** to intrinsic and extrinsic **tongue muscles** except palatoglossus



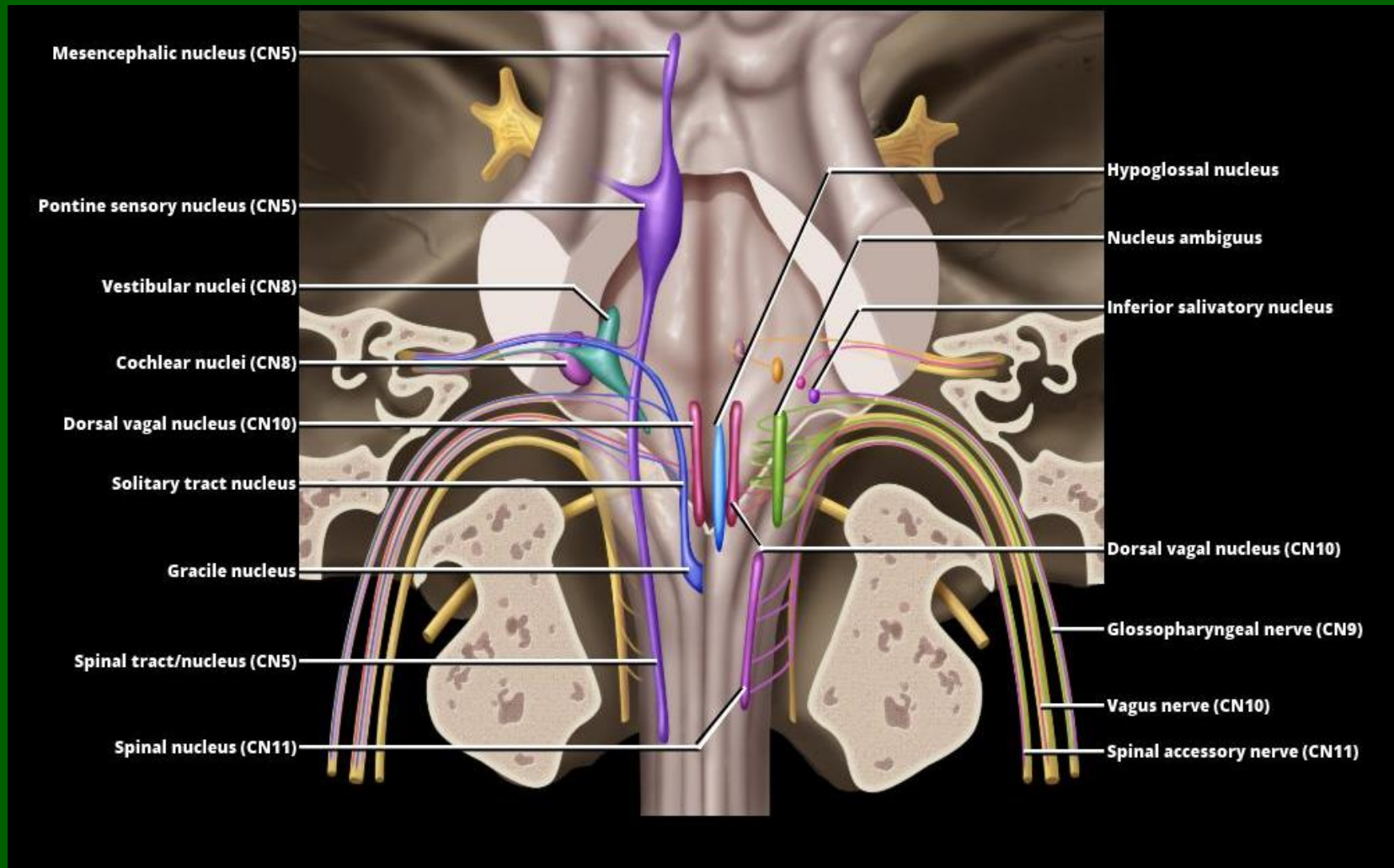




In this graphic of the skull base viewed from above the foramina themselves are on the patient's right while the nerves with the foramen are on the left. CN1 exits the skull base through many openings in the cribriform plate. CN2 exits via the optic canal while CN3, 4, 6 and V1 all go through the superior orbital fissure. V2 traverses foramen rotundum with V3 seen exiting the foramen ovale. CN7 and CN8 are seen in internal auditory canal with CN9-11 found in jugular foramen. Finally, CN12 uses its own hypoglossal canal to leave the basal cistern.



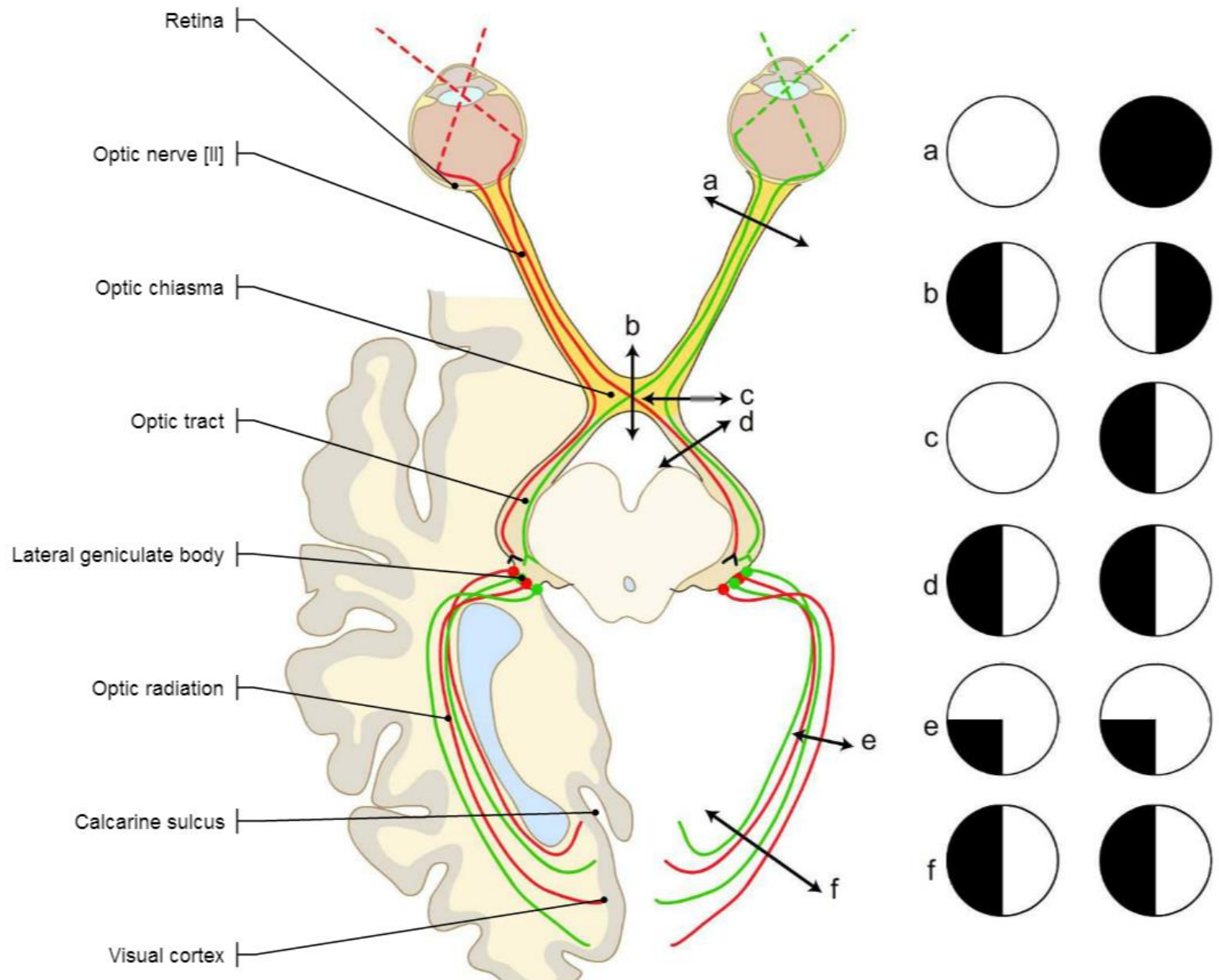
Graphic of frontal view of brainstem & exiting cranial nerves. CN3 is seen exiting midbrain into interpeduncular cistern. CN4 wraps around lateral midbrain in tentorial margin. CN6 exits at pontomedullary junction. CN7 and CN8 exit brainstem at cerebellopontine angle. Inferiorly CN9-11 leave lateral medulla in post-olivary sulcus. CN12 on the other hand exits via pre-olivary sulcus.



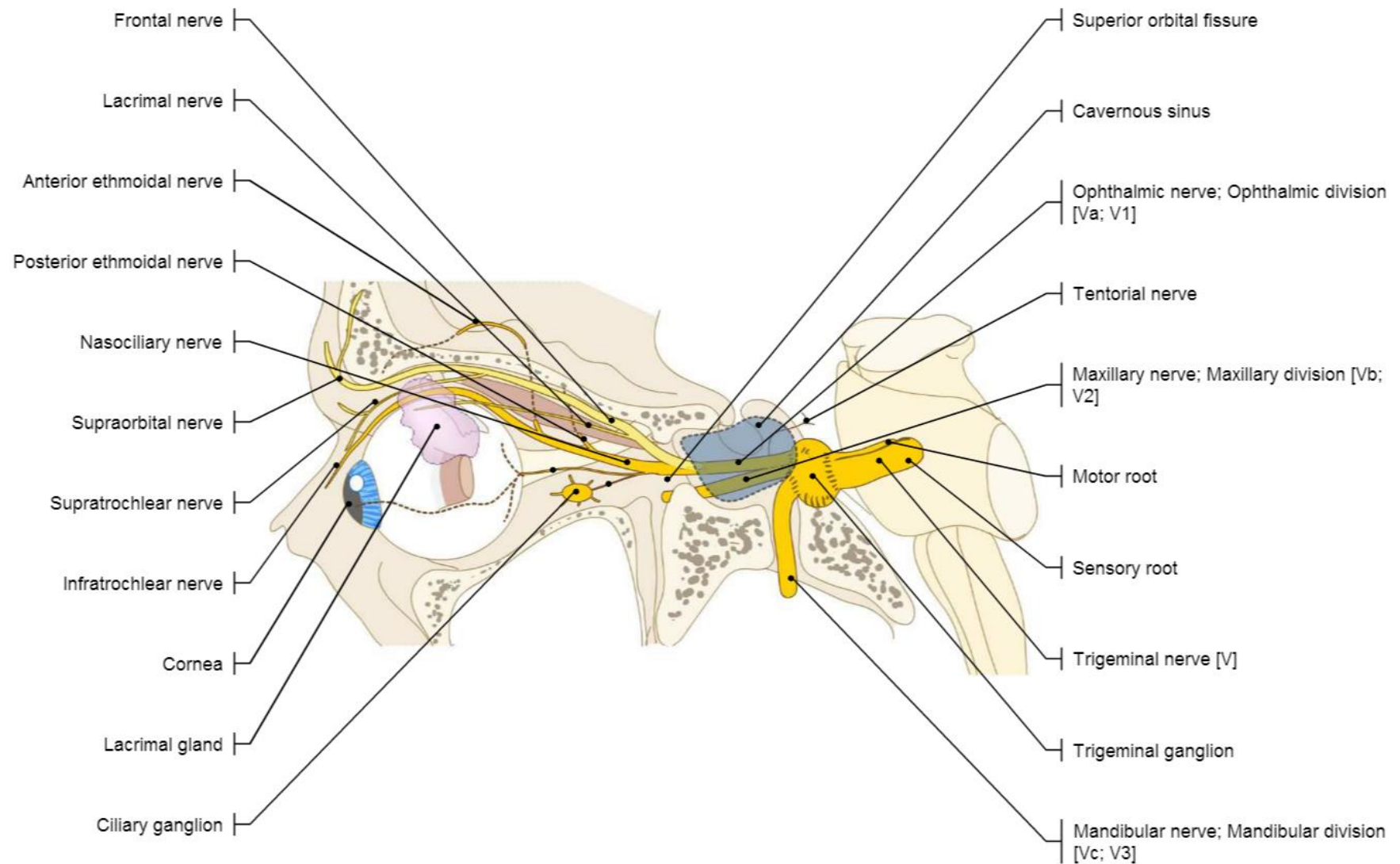
Graphic of brainstem from behind emphasizes lower cranial nerve nuclei. On patient's right are efferent fibers, on left are afferent fibers connecting to brainstem nuclei. Highlights of this drawing include nucleus ambiguus providing voluntary motor fibers for CN9 and CN10. Inferior salivatory nucleus provides secretomotor fibers to the parotid via CN9. Dorsal motor nucleus provides involuntary motor and sensory fibers to CN10. Solitary tract receives taste from CN7 and CN9.



# Optic nerve [II]

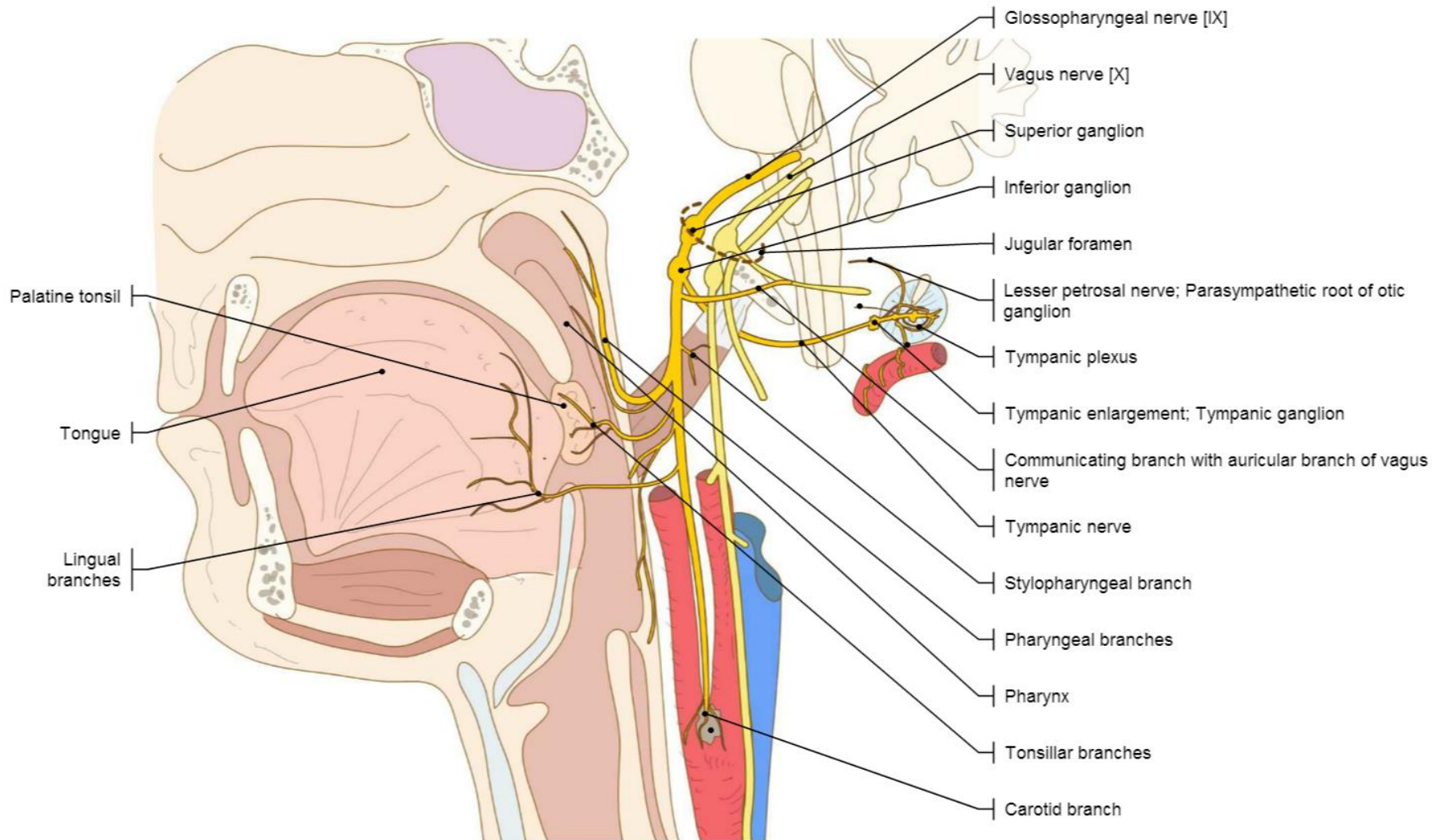


## Ophthalmic nerve; Ophthalmic division [Va; V1]

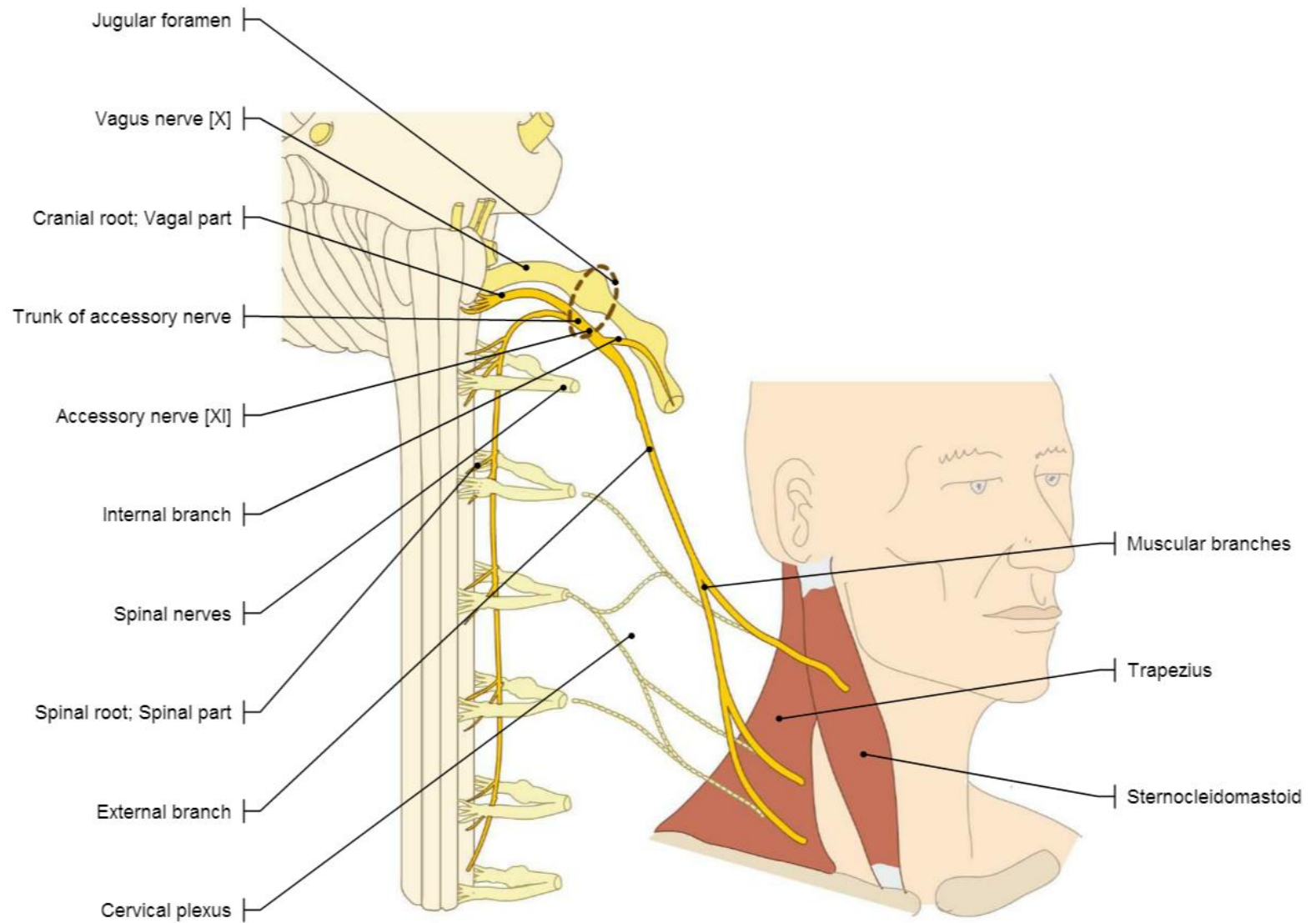




## Glossopharyngeal nerve [IX]



## Accessory nerve [XI]



## Hypoglossal nerve [XII]

