

Cranial Nerve Nuclei (Overview)

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1 Motor columns 1

The cranial nerve nuclei can be broken down into divided into 2 categories (motor & sensory columns) and then 3 subcategories each:

- Motor columns
 - Somatic motor nuclei
 - Branchial Motor Nuclei
 - Parasympathetic Nuclei
- Sensory columns
 - Visceral Sensory Column
 - General Somatosensory Nuclei
 - Special Somatic Sensory Nuclei

1 Motor columns

- Somatic motor nuclei: Adjacent to midline & Exit @ midline
 - Oculomotor Nucleus (CN III)
 - Trochlear Nucleus (CN IV)
 - Abducens Nucleus (CN VI)
 - Hypoglossal Nucleus (CN XII)
- Branchial Motor Nuclei: Ventrolateral Tegmentum
 - Trigeminal Motor Nucleus (CN V)
 - Facial Nucleus (VII)
 - Nucleus Ambiguus (CN IX, CN X)

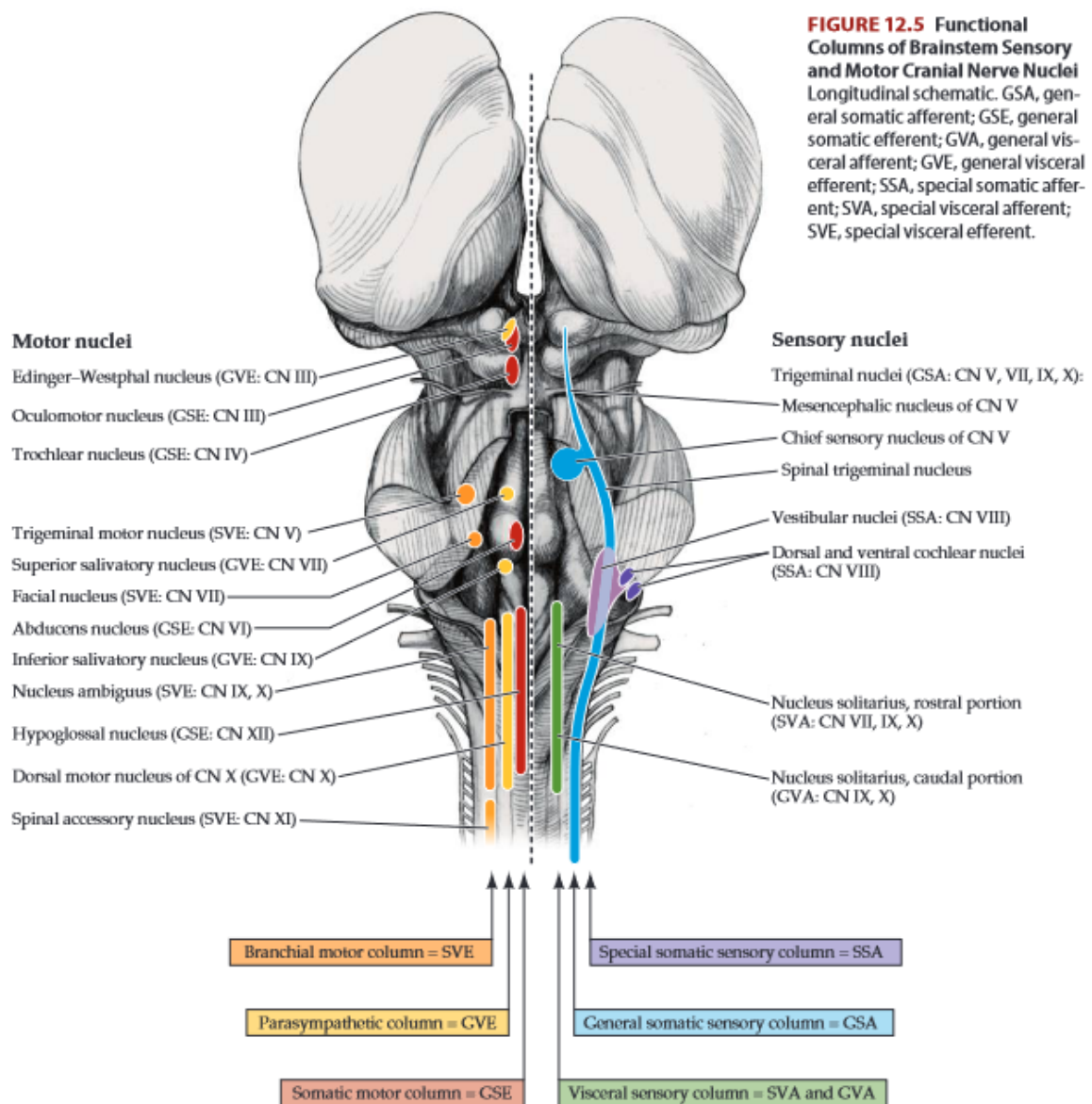


Figure 1: Functional columns of brainstem sensory and motor cranial nerve nuclei (from Blumenfeld Figure 12.5¹)

- Spinal Accessory Nucleus (CN XI)
- Parasympathetic Nuclei:
 - Edinger-Westphal Nucleus (CN III)
 - Superior Salivatory Nucleus (CN VII)
 - Inferior Salivatory Nucleus (CN IX)
 - Dorsal Motor Nucleus of the Vagus (CN X)

Sensory Nuclei:

- Visceral Sensory Column:
 - Rostral portion of Nucleus Solitarius (Taste CN VII, IX, X)
 - Caudal portion of Nucleus Solitarius (ChemoR: CN IX, X)
- General Somatosensory Nuclei:
 - Trigeminal Sensory nuclei (CN V, IX, X)
 - * Mesencephalic nucleus of CN V (CN V)
 - * Main sensory nucleus of CN V (CN V)
 - * Spinal Trigeminal nucleus
- Special Somatic Sensory Nuclei: Hearing & Balance
 - Cochlear Nuclei (CN VIII)
 - Vestibular Nuclei (CN VIII)

1. Blumenfeld H. *Neuroanatomy Through Clinical Cases*. 3rd ed. Oxford university press; 2022.