

NEUROLOGY - CRANIAL NERVES

Cranial Nerve	Name	Sensory, Motor, or Both	Function/Location
CN I	<u>O</u> lfactory	Sensory	<ul style="list-style-type: none"> ◆ Sense of Smell or Olfaction ◆ DOES NOT pass thru Thalamus but goes directly to Temporal Lobe of Cerebrum
CN II	<u>O</u> ptic	Sensory	<ul style="list-style-type: none"> ◆ Vision/Sight ◆ Impulse from Retina (rods & cones) to Thalamus (Diencephalon) to Occipital Lobe of Cerebrum.
CN III	<u>O</u> culomotor	Motor (primarily)	<ul style="list-style-type: none"> ◆ Eye movement (innervates extrinsic muscles of Eye; 5 of them) ◆ <u>Parasympathetic</u> Innervation - - smooth muscles - intrinsic eye muscles (ciliary muscles move lens & circular muscles move iris - constrict pupil). ◆ CN of Midbrain
CN IV	<u>T</u> rochlear	Motor (primarily)	<ul style="list-style-type: none"> ◆ Eye movements ◆ CN of the Midbrain ◆ Smallest of 12 Cranial Nerves
CN V	<u>T</u> rigeminal	Both	<ul style="list-style-type: none"> ◆ Sensory = Face, Teeth, Nose, Lips, Tongue (NOT TASTE) ◆ Motor = Chewing (Innervates Muscles of Mastication; digastric) ◆ Largest of 12 Cranial Nerves ◆ Pathology - - Trigeminal Neuralgia/Tic Douloureux (intense, lancinating facial pain) ◆ CN of Pons
CN VI	<u>A</u> bducens	Motor	<ul style="list-style-type: none"> ◆ Eye movement (innervates last 6 extrinsic eye muscles) - Abduction of the Eye ◆ CN of Pons
CN VII	<u>F</u> acial	Both	<ul style="list-style-type: none"> ◆ Sensory = Taste ◆ Motor = Muscles of Facial EXPRESSION ◆ <u>Parasympathetic</u> Innervation - glands/secretions (sublingual, lacrimal, nasal, palatine) ◆ Pathology - - Bell's Palsy (flaccid, unilateral paralysis of facial muscles - droopiness, decrease salivation, dry-open eye) ◆ CN of Pons
CN VIII	<u>A</u> coustic or Vestibulocochlear	Sensory	<ul style="list-style-type: none"> ◆ Sense of Hearing & Equilibrium (Balance) ◆ CN of Medulla Oblongata & Pons
CN IX	<u>G</u> lossopharyngeal	Both	<ul style="list-style-type: none"> ◆ Sensory = Pharynx & Posterior Tongue (gag reflex & taste) ◆ Motor = Swallowing - muscles of Pharynx ◆ <u>Parasympathetic</u> Innervation - Parotid gland - secretes saliva (major salivary gland)

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			◆ CN of Medulla Oblongata
CN X	<u>Vagus</u>	Both	<ul style="list-style-type: none"> ◆ <u>Parasympathetic</u> Innervation - 80-85% of all Parasympathetic output - - viscera/organs of thoracic & abdominal cavities plus lungs (heart, blood vessels, respiratory, GI tract, etc..) ◆ Sensory = Larynx & Pharynx ◆ Motor = Swallowing & Speech (muscles of larynx & pharynx) ◆ CN of Medullar Oblongata
CN XI	<u>Spinal Accessory</u>	Motor	◆ Innervates SCM and Trapezius (coordinates head/neck movements); also swallowing
CN XII	<u>Hypoglossal</u>	Motor	◆ Tongue Muscles (swallowing & speech)

SUMMARY:

SENSORY ONLY ⇒

CN I, II, VIII (Olfactory, Optic, Auditory/Vestibulocochlear)

RELATED TO EYE (vision or movement) ⇒

CN II, III, IV, VI (Optic, Oculomotor, Trochlear, Abducens)

CARRY PARASYMPATHETIC FIBERS ⇒

CN III, VII, IX, X (Oculomotor, Facial, Glossopharyngeal & VAGUS)
VAGUS nerve carries 80-85% of Parasympathetic of ANS

TASTE ⇒

CN VII and IX (Facial and Glossopharyngeal)

SWALLOWING ⇒

CN IX, X, XI, XII - Last 4 (Glossopharyngeal, Vagus, Spinoaccessory, Hypoglossal)

Other Notes:

- ◆ CN part of PNS
- ◆ 10 of 12 originate from Brainstem (Midbrain, Pons or Medulla Oblongata)
- ◆ All pass through foramina in the cranium