

	MEDULLA				PONS
Cranial Nerve	X: Vagus	IX: Glossopharyngeal	XI: Spinal Accessory	XII: Hypoglossal	VII: Facial
Parasympathetic					
Origin	Dorsal Motor Nucleus - Preganglionic Neurons	Inf. Salivatory Nucleus - Otic Ganglion			Small Nucleus of Pons
Innervation	Viscera of Neck, Thorax, Abdomen	Parotid Salivary Gland			Lacrimal Glands (via Pterygopalatine Ganglion) Sublingual Salivary Glands (Submandibular Gng. - V ₃)
Clinical Test					
Visceral Sensory					
Origin	Nucleus Solitarius - Vagal Ganglia	Nucleus Solitarius			
Innervation	Aortic Arch Press/Chemo Cough/Vomit Reflex Pain/Temperature (to V)	Carotid Body, C. Sinus (BP/O ₂) Pain: Middle Ear (to V) Pain/Temp: Posterior 1/3 Tongue, SP, Pharynx (V)			
Clinical Test		Gag Reflex - Sensory			
Skeletal Motor					
Origin	Nucleus Ambiguus - Recurrent Laryngeal N.	Nucleus Ambiguus	Caudal Medulla, Top 5 C-Spine V.Horn	Hypoglossal Nucleus	Facial Nucleus
Innervation	Swallowing Muscles, Soft Palate, Uvula, Larynx	Stylopharyngeal Muscle	Sternocleidomastoid Trapezius	Intrinsic + (Most) Extrinsic Tongue M.	Muscles of Facial Expression
Clinical Test	Dysphagia, Dysarthria Cough/Gag Reflex - Motor Uvula Dev. (Contralateral)		Turning Head (SCM) Shrug Shoulders (TP)	Protrusion of Tongue (Ipsilateral - LMNL)	Facial Express (UMN/LMN) Bell's Palsy Corneal Blink Reflex
General Sensory					
Origin	Spinal Trigeminal Nucleus	IX Ganglia to V Nucleus			Geniculate Ganglion (to V)
Innervation	External Auditory Meatus	Region of External Ear			Area of External Ear
Clinical Test					Acoustic Neuroma
Special Sensory	Taste	Taste (IX Ganglia)			Taste
Origin	Nucleus Solitarius	Nucleus Solitarius			Geniculate Ganglion
Innervation	Laryngopharynx, Epiglottis	Posterior 1/3 Tongue			Anterior 2/3 Tongue
Clinical Test					

PONS	
V: Trigeminal	
Ophthalmic (V₁)	
Origin	Trigeminal Ganglion - Main Sensory Nucleus (Touch) Spinal Nucleus and Tract (Pain/Temp)
Innervation	<i>Sensory</i> : Cornea, Skin of Forehead
Clinical Test	Corneal Blink Reflex
Maxillary (V₂)	
Origin	Trigeminal Ganglion - Main Sensory Nucleus Spinal Nucleus and Tract
Innervation	<i>Sensory</i> : Upper Jaw, Teeth, Skin of Lower Eyelid and Cheeks
Clinical Test	Trigeminal Neuralgia
Mandibular (V₃)	
Origin: S	Trigeminal Ganglion - Main Sensory Nucleus Spinal Nucleus and Tract
Innervation: S	<i>Sensory</i> : Lower Jaw, Teeth, Lower Lip, Chin
Origin: M	Motor Nucleus Mesencephalic Nucleus (Mast. Muscle Spindles)
Innervation: M	<i>Motor</i> : Muscles of Mastication, Tensor Tympani
Clinical Test	Jaw Jerk Reflex

MIDBRAIN			
	III: Oculomotor	IV: Trochlear	VI: Abducens
Origin	Oculomotor Nucleus	Trochlear Nucleus (Decuss)	Abducens Nucleus
Innervation	Superior Rectus Inferior Rectus Medial Rectus Inferior Oblique Levator Palpebrae Superioris	Superior Oblique	Lateral Rectus
Test	SR: Lat+Up, IR: Lat+Down, MR: Med, IO: Med+Up	SO: Medial+Down	LR: Lateral
Origin	Edinger-Westphal Nucleus		
Innervation	Sphincter Pupillae: Con. Pupil Ciliaris: Round Lens (Near Vision)		
Test	Pupillary Light Reflex Accommodation Reflex		
Clinical Conditions	Oculomotor Ophthalmoplegia: Lateral Strabismus Diplopia (Double Vision) Ptosis (Upper Eyelid Droop) Mydriasis (Dilated Pupil) No Light Reflex	Weak Downward Gaze [Nerve Decussates]	Medial Strabismus: affected eye deviates medially because muscles that moves eye laterally is damaged