

Cranial Nerve Chart

Cranial nerve		Major functions		Assessment
I	Olfactory	Sensory	Smell	Ask the patient to close their eyes and occlude one nostril. Present a familiar scent (e.g., coffee, peppermint) to the open nostril and have them identify it. Repeat with the other nostril.
II	Optic	Sensory	Vision	<p>Visual acuity is assessed using a Snellen chart for distance vision or a handheld chart for near vision, evaluating each eye individually while the other is covered.</p> <p>Color perception is tested with standard pseudoisochromatic plates, such as Ishihara or Hardy-Rand-Ritter, featuring numbers or figures set against a background of colored dots.</p> <p>Visual fields are examined through directed confrontation across all four quadrants, while direct and consensual pupillary responses are also assessed. Additionally, a fundoscopic examination is performed to complete the evaluation.</p>
III	Oculomotor	Sensory and motor – primarily motor	Eyelid and eyeball movement	For the 3rd, 4th, and 6th cranial nerves, the eyes are assessed for movement symmetry, globe position, eyelid asymmetry or drooping (ptosis), and any twitches or fluttering of the eyes or eyelids.
IV	Trochlear	Sensory and motor – primarily motor	Innervates superior oblique eye muscle, turns eye downward and laterally	Extraocular movements governed by these nerves are evaluated by instructing the patient to track a moving target (such as the examiner's finger or a penlight) across all four quadrants, including across the midline and towards the tip of the nose.
V	Trigeminal	Sensory and motor	Chewing, face and mouth, touch and pain	<p>The three sensory divisions—ophthalmic, maxillary, and mandibular—are assessed by using a pinprick test to evaluate facial sensation.</p> <p>Additionally, a wisp of cotton is gently brushed against the lower or lateral cornea to assess the corneal reflex.</p>
VI	Abducens	Sensory and motor – primarily motor	Turns eye laterally, proprioception (sensory awareness of part of the body)	<p>For the 3rd, 4th, and 6th cranial nerves, the eyes are assessed for movement symmetry, globe position, eyelid asymmetry or drooping (ptosis), and any twitches or fluttering of the eyes or eyelids.</p> <p>Extraocular movements governed by these nerves are evaluated by instructing the patient to track a moving target (such as the examiner's finger or a penlight) across all four quadrants, including across the midline and towards the tip of the nose.</p>
VII	Facial	Sensory and motor	Controls most facial expressions, secretion of ears and saliva	The evaluation of the 7th cranial nerve involves assessing for hemifacial weakness. To test the sense of taste in the anterior two-thirds of the tongue, apply sweet, sour, salty, and bitter solutions with a cotton swab, first on one side of the tongue and then on the other.

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VIII	Optic	Sensory	Vision	<p>Hearing is initially assessed in each ear by whispering a phrase while covering the opposite ear. Any suspected hearing loss should lead to formal audiologic testing to confirm the findings and distinguish between conductive and sensorineural hearing loss.</p> <p>The Weber and Rinne tests can be performed at the bedside to help differentiate the two types, although they are challenging to conduct effectively outside of specialized settings.</p> <p>Vestibular function can be assessed through tests for nystagmus. The presence and characteristics of nystagmus—such as its direction, duration, and triggers—aid in identifying vestibular disorders and can help differentiate between central and peripheral vertigo.</p>
IX	Oculomotor	Sensory and motor – primarily motor	Eyelid and eyeball movement	<p>The 9th (glossopharyngeal) and 10th (vagus) cranial nerves are typically assessed together. During the evaluation, it's important to observe whether the palate elevates symmetrically when the patient says "ah." If one side is weak, the uvula will deviate towards the non-affected side.</p>
X	Trochlear	Sensory and motor – primarily motor	Innervates superior oblique eye muscle, turns eye downward and laterally	<p>A tongue blade can be employed to gently touch each side of the posterior pharynx, allowing for the observation of symmetry in the gag reflex. It's worth noting that a bilateral absence of the gag reflex is not uncommon in healthy individuals and may not hold clinical significance.</p>
XI	Trigeminal	Sensory and motor	Chewing, face and mouth, touch and pain	<p>The evaluation of the 11th cranial nerve (spinal accessory nerve) involves testing the muscles it innervates:</p> <ul style="list-style-type: none"> • For the sternocleidomastoid, the patient is instructed to turn their head against the resistance of the examiner's hand, while the examiner palpates the active muscle on the opposite side of the turned head. • For the upper trapezius, the patient is asked to shrug their shoulders against the examiner's resistance.
XII	Abducens	Sensory and motor – primarily motor	Turns eye laterally, proprioception (sensory awareness of part of the body)	<p>The 12th cranial nerve, known as the hypoglossal nerve, is assessed by having the patient extend their tongue. During this examination, the clinician inspects for signs of atrophy, fasciculations, and weakness, noting that any deviation will occur toward the side of a lesion.</p>

Duke University Medical School. (n.d.). *Duke Neurosciences - lab 3: Cranial nerve and neuromodulatory nuclei of the brainstem*. <https://brain.oit.duke.edu/lab04/lab04.html>

Newman, G. (2023, August). *How to assess the cranial nerves - neurologic disorders*. MSD Manual Professional Edition. <https://www.msmanuals.com/professional/neurologic-disorders/neurologic-examination/how-to-assess-the-cranial-nerve>