

Cranial Nerves I-VI

Learn the number, name, function and assessment together.

12 pairs of nerves. S = sensory input; M = motor output; B = both.
Compare both sides and interpret findings against the patient's baseline. [1-3]

I | Olfactory

SENSORY

Function: Smell.

Check: Identify a familiar, non-irritating odour in each nostril, eyes closed.

Clue: Avoid ammonia or alcohol: irritants stimulate trigeminal sensation.

II | Optic

SENSORY

Function: Vision; sensory input for the pupillary light reflex.

Check: Check visual acuity in each eye with usual correction and visual fields.

Clue: New visual loss or a field deficit needs prompt assessment.

III | Oculomotor

MOTOR

Function: Most eye movements, eyelid elevation, pupil constriction and focusing.

Check: Observe pupils, eyelids and eye movements.

Clue: Palsy may cause ptosis, a "down-and-out" eye and sometimes a dilated pupil.

IV | Trochlear

MOTOR

Function: Superior oblique: lowers the eye when turned inward; also rotates its top inward.

Check: Assess downward movement when the eye is turned toward the nose.

Clue: Vertical double vision may be worse when reading or walking downstairs.

V | Trigeminal

BOTH

Function: Facial sensation and chewing; divisions V1, V2 and V3.

Check: Compare touch on forehead, cheeks and jaw; palpate muscles with teeth clenched.

Clue: Reduced facial sensation or weak chewing suggests dysfunction.

VI | Abducens

MOTOR

Function: Lateral rectus moves the eye outward, away from the nose.

Check: Ask the patient to follow a target laterally.

Clue: Impaired outward movement may produce horizontal double vision.

Eye-muscle recall: LR6, SO4, all the rest 3. Assess III, IV and VI together.

Cranial Nerves VII-XII

Facial movement, hearing, swallowing, shoulders and tongue.

VII | Facial

BOTH

Function: Facial expression; anterior two-thirds taste; tears and some saliva.

Check: Raise eyebrows, close eyes tightly, smile and puff out cheeks.

Clue: Compare symmetry. Incomplete eyelid closure requires corneal protection.

VIII | Vestibulocochlear

SENSORY

Function: Hearing (cochlear) and balance (vestibular).

Check: Screen each ear; ask about hearing loss, tinnitus, vertigo and imbalance.

Clue: Romberg is not a test of VIII alone; imbalance has several possible causes.

IX | Glossopharyngeal

BOTH

Function: Posterior one-third taste/sensation, pharyngeal sensation and swallowing.

Check: Assess with X; ask about swallowing and observe pharyngeal function.

Clue: Classically carries sensory input for the gag reflex; also supplies the parotid.

X | Vagus

BOTH

Function: Palate, pharynx and larynx; visceral sensation and parasympathetic control.

Check: Listen to voice; observe palate elevation while the patient says “ah”.

Clue: Unilateral peripheral weakness: palate droops; uvula may move away from it.

XI | Accessory

MOTOR

Function: Trapezius and sternocleidomastoid: shoulder shrug and head turn.

Check: Compare shoulder shrug and head turning against resistance.

Clue: Right sternocleidomastoid turns the face to the left.

XII | Hypoglossal

MOTOR

Function: Tongue movement.

Check: Protrude tongue; move it side to side; inspect for wasting or twitching.

Clue: A unilateral lower motor neuron lesion makes it deviate toward the weak side.

Taste, touch or movement?

Anterior two-thirds: taste = VII; general sensation = V3.

Posterior one-third: taste and general sensation = IX. Tongue movement = XII. [1-3]

Apply It at the Bedside

Reflex pathways, safety decisions and examination recall.

REFLEXES: INPUT → OUTPUT

Pupillary light: II → III

Light in one eye normally causes direct constriction in that eye and consensual constriction in the other.

Corneal blink: V1 → VII

Corneal sensation triggers a blink. Test only when indicated and trained; avoid unnecessary corneal contact.

Gag: IX → X (classic pathway)

A present gag does not establish safe swallowing; an absent gag alone does not establish aspiration.

NURSING PRIORITIES

New facial droop with speech or limb changes: activate the stroke pathway; record last known well, assess airway/breathing and glucose, and follow swallowing precautions.

New pupil change with reduced consciousness, or painful diplopia/ptosis: urgent escalation. Not all unequal pupils are pathological; compare with baseline.

Dysphagia, wet voice, choking or poor secretion control: assess airway and aspiration risk. Follow the validated swallowing pathway before oral intake when indicated.

New eye-closure weakness: escalate and provide prescribed eye protection. Facial patterns alone do not rule stroke in or out.

Fast recall

Sensory only: I, II, VIII. Motor: III, IV, VI, XI, XII. Both: V, VII, IX, X.

Document the tests and findings. Do not write “all cranial nerves intact” when only selected nerves were assessed.

REFERENCES | [Select a source to open](#)

1. Merck Manual Professional: How to Assess the Cranial Nerves
2. Open RN, Nursing Skills: Chapter 6, Neurological Assessment
3. OpenStax, Anatomy and Physiology 2e: The Peripheral Nervous System