

I	<u>O</u> n	Olfactory	<u>S</u> ome	Sensory	Sense of smell	Have pt hold one nostril closed and pass a familiar smelling item under the nostril (coffee, orange, peppermint, vanilla)
II	<u>O</u> ccasion	Optic	<u>S</u> ay	Sensory	Sense of vision	Block one eye at a time and have pt read something. If can't read, then hold up fingers and ask how many fingers you're showing.
III	<u>O</u> ur	Oculomotor	<u>M</u> arry	Motor	Moves 4 of muscles of eye, raises eyelid, papillary constriction and lens accommodation	Constricting pupils with a light. Opening eyelid, moving eye superiorly, medially and diagonally.. (with 4, 6...make big movements with hand and have them follow it with their eyes only)
IV	<u>T</u> rusty	Trochlear	<u>M</u> oney	Motor	Superior oblique eye muscles	Move eye down and laterally (with 3, 6)
V	<u>T</u> ruck	Trigeminal	<u>B</u> ut	Sensory, Motor	Sensation over face Muscles of mastication	Touch cornea lightly with cotton wisp, check for blink. Chewing, jaw opening and clenching. Touch three areas on the face with light cotton (near temple, at cheek and next to mouth)
VI	<u>A</u> cts	Abducens	<u>M</u> y	Motor	Moves eye laterally	Moving eye laterally (with 3, 4)
VII	<u>F</u> unny	Facial	<u>B</u> rother	Sensory, Motor	Controls the muscles of facial expression, and taste to the anterior two-thirds of the tongue	Closing eyes, closing mouth, moving lips and other muscles of facial expression (have pt smile); salivation and lacrimation.
VIII	<u>A</u> mazingly	Acoustic	<u>B</u> elieves it's	Sensory, Motor	Hearing and equilibrium	Whisper a word in the pt's ear from 1-2 feet away. A better method is to use tuning fork.
IX	<u>G</u> ood	Glossopharyngeal	<u>B</u> ad	Sensory, Motor	Sense from pharynx and taste on posterior 1/3 of tongue; Swallowing, parotid salivary gland	Swallowing, gag sensation, secretion of saliva. Tasting on posterior tongue (place sugar, salt, etc...on tongue)
X	<u>V</u> ehicle	Vagus	<u>B</u> usiness to	Sensory, Motor	Proprioception from pharynx, larynx. Pharyngeal and laryngeal muscles.	Speaking and swallowing (test motor fxn of palate, pharynx, larynx). Have pt say "L, N, T", have them swallow, have them say "aaaah" and watch for uvula going up.
XI	<u>A</u> ny	Accessory	<u>M</u> arry	Motor	Pharyngeal, laryngeal and soft palate muscles, trapezius and sternocleidomastoid.	Put hands on shoulders and have the pt shrug against your hands. Can also put hand on cheek and have them turn head against your hand.
XII	<u>H</u> ow	Hypoglossal	<u>M</u> oney	Motor	Intrinsic and extrinsic muscles of tongue.	Have pt stick out tongue, it should be medial. Have pt push tongue into each cheek...if they can only do one side, this is bad news.

Glascow Coma Scale

Best eye opening (spontaneous, to speech, to pain, none)
Best verbal response (oriented, confused, inappropriate words, incomprehensible words, no sounds with painful stimuli)
Best motor response (Obeys commands, localizes pain, flexion withdrawal, decorticate, decerebrate, none)

15 points possible

Assessment Criteria for Brain Death

General: Date, time, blood pressure (SBP < 90 mmHg), and body temp (above 32 degrees)
Responsiveness/movement: No responsiveness to noxious stimuli, no movement, spinal reflexes such as Babinski are not indicative of brainstem function.
Evidence of absence of brainstem fxn: Absent papillary light reflex; absent corneal, gag, cough reflexes; absent oculocephalic reflex (Doll's Eyes); absent oculovestibular reflex (ice water in ear, eyes should track toward ear); apnea test.

FOUR Score Scale

Eye Response:

Eyelids open or opened, tracking or blinking to command	4
Eyelids open but not tracking	3
Eyelids closed but opens to loud voice	2
Eyelids closed but open to pain	1
Eyelids remain closed with pain	0

Motor Response:

Thumbs up, first or peace sign to command	4
Localizes to pain	3
Flexion response to pain	2
Extensor posturing	1
No response to pain or generalized myoclonus status epilepticus	0

Brainstem Reflexes

Pupil and corneal reflexes present	4
One pupil wide and fixed	3
Pupil or corneal reflexes absent	2
Pupil and corneal reflexes absent	1

Respiration

Not intubated, regular breathing pattern	4
Not intubated, Cheyne-Stokes breathing pattern	3
Not intubated, irregular breathing pattern	2
Breathes above ventilator rate	1
Breathes at ventilator rate or apnea	0

Balance Tests (Cerebellar Function)

Romberg Test: Have patient balance with eyes closed. Make sure you hold your arms out so you can catch them if they teeter.
Heel-to-Toe Walking: Self explanatory (not sure if it's eyes closed or not)
Rapid Alternating Movements: Have pt turn hands palm-side up and palm-side down really really fast.

Additional Checks and Reflexes

Chvostek's Sign: This is a spasm of the facial muscle elicited by tapping the facial nerve in the region of the parotid gland. If positive this is a sign of hypocalcemia.
Babinski: Move finer along lateral side of foot and across the top...normal in babies but abnormal otherwise. The toes flare and flex.
Patellar: Use hammer. Hv pt clench hands if it is difficult to elicit a response.
Pronator Drift: Have pt hold arms up with palms upward. Close eyes. If one arm drifts down and pronates, this is a positive sign for pronator drift (and stroke!)

Cushing's Triad

Hypertension, irregular respirations and bradycardia.

This is a sign of increased intracranial pressure which is never a good thing.



Thought Process/Mental Status

Orientation: person, place, time. Person is the last thing to go.
Abstract Thinking: understanding idioms such as “that person is out to lunch.”
Ability to Solve Problems/Concentrate: give pt some easy math problems (use paper and pencil).
Memory (immediate, recent and remote): Say 3 unrelated words and have the pt repeat them; Ask pt what they had for the dinner or breakfast; Ask pt when they graduated from high school.
Judgment: If this room were on fire, what would you do?

Level of Consciousness

Fully Awake: self explanatory
Alert:
Lethargic: still oriented, but have to call their name to get their attention.
Stuporous (Semi-Comatose): Patient responds when you shake them and yell louder.
Comatose: Not waking up.

Methods to Elicit Response

Central Methods: Trapezius squeeze, supraorbital pressure, sternal rub, mandibular pressure.
Peripheral Methods: Pencil across nail beds, achilles tendon squeeze.

Responses to Painful Stimuli

Normal: Pt shouts, pulls away
Flexion: Decorticate posturing indicates lesions of deep hemispheric areas of pons (could be one side only)
Extension: Decerebrate posturing indicates lesions between pons and mid-brain

Muscle Tone

Normal: Self explanatory
Flaccid: If you take the pt’s arm and pick it up and let it drop...it drops. No tone at all!
Rigidity: Not a contracture. You can straighten it.
Spasticity: Twitching. This is a sign that the pt is recovering some muscle tone.

Sensory Function Tests

Light touch sensation: Touch pt lightly in various places.
Sharp versus dull: Paperclip point vs. dull end.
Stereognosis (object recognition): Place a familiar object in the pt’s hand and have them identify it.
Temperature recognition: Warm and cold test tubes.
Sense of position (proprioception): Move fingers up/dwn
Graphesthesia: Draw a letter or number on pt’s skin.
Two-point discrimination: Gets harder to discriminate as the two points get closer together.

Neurovascular Checks of Extremities

Hand/Motor	Radial Nerve:	Pt hyperextends thumb or wrist (hitchhiker thumb)
	Medial Nerve:	Pt opposes thumb and little finger, flexes wrist
	Ulnar Nerve:	Pt abducts all fingers
Hand/Sensory	Radial Nerve:	Prick web space between thumb and index finger
	Medial Nerve:	Prick distal surface of the index finger
	Ulnar Nerve:	Prick distal end of small finger
Lwr Extmtly/M	Peroneal Nerve:	Dorsiflex ankle; extend toes
	Tibial Nerve:	Plantar flex ankle and flex toes
Lower Extmtly/S	Peroneal Nerve:	Prick lateral surface of great toe and medial surface of second toe
	Tibial Nerve:	Prick medial and lateral surfaces of sole of foot.