

## Screening neurological examination

	Item	Test
	<i>patient position</i>	<i>sitting</i>
1.	Consciousness, orientation, memory and behavior	Screening test for vigilance, attention, orientation to person, time and place Ask: a) What is the date or the day of the week? b) Where are we? c) How old are you? D) Where do you live? Assess the memory functions during the history taking and behavior during the whole examination.
2.	Speech and articulation	During the basic conversation and history taking assess the speech with regards to possible aphasia (fluency, verbal content, word selection, phrase length, comprehension) and possible dysarthria (volume, phonation, articulation, intelligibility, melody).
3.	Visual field	Sit or stand about 1 meter away from and opposite to the patient and have him/her fixate your nose consistently. Stretch out your arms sideways half way between you and the patient in the upper quadrant fields to a position where you can still see your fingers well. Then move your fingers slowly on one and the other side and on both sides simultaneously and have the patient name the side of movement. Your own visual field is the control. Then repeat the exam in the lower quadrant fields.
4.	Eye movements and pupillary reaction	Instruct the patient to follow a moving object (finger, hammer) at 1m distance in both horizontal and vertical directions ("cross") without moving the head (ask the patient to put one finger on his chin). Observe potential nystagmus, assess range and speed of the eye movements. Ask about diplopia. Assess pupillary width, symmetry and reactivity to light.
5.	Facial movements	Observe facial expression and symmetry of the face at rest and during conversation. Instruct patient to perform movements to test innervation in both upper and lower branch of the facial nerve (raise eyebrows, close eyes, smile, show his teeth, whistle).
6.	Tongue movements	Observe the position of the tongue at rest and at protrusion, assess atrophy and fasciculation.
7.	Upper limb muscle tone	Assess the resistance to passive movements at the wrist and elbow (slow movement for rigidity, fast for spasticity).
8.	Upper limb muscle strength	Examine both proximal and distal muscle groups – a) elevations of elbows above horizontal (bent and abducting), b) symmetry of grasp (test with two fingers in the patient's palm). Ask patient to apply maximum strength, assess the power and symmetry.
9.	Bicipital reflex	Semi-flexed elbow, forearm supported, patient's muscles relaxed. Tap his biceps tendon with the reflex hammer. Assess flexion response and symmetry.
10.	Tricipital reflex	Passive abduction in shoulder and semi-flexed elbow, muscles relaxed. Tap the triceps tendon above the olecranon ulnae. Assess extension response and symmetry.
11.	Pronation sign	Both arms stretched forward, forearms in supine position, eyes closed. Observe forearm pronation and/or arm decline.
12.	Finger-to-nose test	Instruct the patient to point with his finger to his nose and to your finger. Note precision and continuity of movement.
	<i>patient position</i>	<i>supine</i>
13.	Lower limb muscle tone	Assess the resistance to passive movement in the knee and ankle (slow movement for rigidity, fast for spasticity).
14.	Lower limb muscle strength	Examine both proximal and distal muscle groups – a) Hip flexion b) Dorsal and plantar flexion of the foot. Ask patient to apply maximum strength against your arms resistance, assess the power and symmetry. Alternative to b) is walking on heels and tiptoes – observe the level of elevation and symmetry.
15.	Patellar reflex	Have the patient's knee flexed and quadriceps muscle relaxed, support the back of his thigh. Tap the patellar tendon just below the patella. Assess extension response and symmetry.
16.	Achilles tendon reflex	Have patient supine with semi-flexed lower limb, muscles relaxed, hold his foot with your hand at a 90° angle. Tap the Achilles tendon. Assess plantar flexion response and symmetry.
17.	Mingazzini sign	Patient's thighs are bent 90 degrees, calves held horizontal, limbs not touching each other. Observe any decline of the limb.
18.	Babinski sign (plantar response)	Scratch the lateral border of the patient's sole, by starting near the heel and moving up above the metatarsal heads towards the big toe. Use a pointed but not-too-sharp object (eg. a wooden stick). Look for extension of the big toe.
19.	Heel-knee-shin test	Eyes closed and legs stretched, patient is instructed to place the heel of one foot on the other knee and run it straight down his shin to the ankle. Note precision and continuity of movement.
20.	Sensory testing	Touch the face, dorsal forearm and hand, thigh and shin, left and right side. Ask the patient to refer feeling a/symmetry.
	<i>patient position</i>	<i>standing</i>
21.	Romberg sign	Assess normal stance (I). Then ask patient to stand with feet together (II), and then to close the eyes (III). Assess instability in 20 sec after closing the eyes. Note wider base and/or any side steps. Minor instability and oscillations with no side steps is normal.
22.	Gait	Evaluate the patient walking over at least 3 m, then ask the patient to turn and come back. Assess the body posture, base width, step length, speed, symmetry, arm swing, turning (instability, freezing).

