Neuro Examination in the Primary Care Setting

GENERAL INTRO	WHAT WE ARE LOOKING FOR	Notes
Body position During movement and rest	Hemiplegia in stroke	observe overall posture when sitting, standing, or changing positions.
Involuntary movements Location, quality, rate, rhythm, amplitude, and setting	Tremors, fasciculation, tics, chorea, athetosis, oral-facial dyskinesias	Scan the body to any uncontrolled movements and note any specific attributes.
Muscle bulk Inspection and palpation	Atrophy, over-developed muscles, or significant variations from side to side,	Muscles should be balanced and even in bulk and mass. Consideration for nerve impingement, MS,
Muscle tone Technique to assess included inspection and palpation, best done when the patient relaxes their muscles	Resistance to passive stretch of arms and legs Spasticity, rigidity, flaccidity	Changes in tone indicate nerve impact.
Muscle strength Test and grade the major muscle groups	Weakness and symmetry Describe grading system 0-5	Weakness can indicate degenerative changes, nerve impingements, myopathy, polyneuropathy, or deconditioning. The location and severity of the weakness will help guide diagnosis Be mindful of dominance – especially with hands
Coordination / Rapid alternating movements Upper and lower extremities	Clumsiness, slow movements, inconsistency between sides	Dysfunctional in cerebellar disease and upper motor injury/disease
Point-to-point movements Arms legs	Clumsiness, unsteady movements in cerebellar disease	Testing could uncover intention tremors or cerebellar disease
Gait	Observing for balance, rigidity, discoordination, ability to stop and turn smoothly	CVA, cerebellar ataxia, parkinsonism, or loss of position sense may affect performance
Walk heel to toe (tandem)	Inability to complete several steps in tandem	Corticospinal tract injury, ataxia, cerebellar instability, or substance use

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GENERAL INTRO	WHAT WE ARE LOOKING FOR	Notes
Romberg Feet together and eyes closed for 30 seconds	Loss of balance when eyes are closed suggests poor position sense	Corticospinal tract injury, cerebellar injury
Pronator drift Arms forward, palms up, and eyes closed for 20-30 seconds	Flexion and pronation at the elbow and downward drift of one or both arms	Corticospinal tract injury, cerebellar injury
Sharp/dull and Light touch On symmetric areas Compare proximal and distal areas of arms and legs	Hemi-sensory defects if one side is different	Glove-and-stocking loss of peripheral neuropathy
Vibration Use a 128-Hz tuning fork, held on a bony prominence	Appropriate sensation until the vibration stops – if tester still feels the vibration this could indication of dysfunction	Carried on the posterior columns
Position Holding the patient's finger or big toe by its sides, move it up and down, stopping abruptly asking for the position	Inability to currently identify the position	Posterior column lesions
Discriminative sensations: Filament, stereognosis, number identification,	Inaccurate identification of test	Lesions in the posterior columns or sensory cortex impair stereognosis, number identification, and two-point discrimination. A lesion in the sensory cortex may impair point localization on the opposite side and cause the extinction of touch sensation on that side
Cutaneous stimulation reflexes	Abdominals (upper: T8, T9, T10; lover: T10, T11, T12)	May be absent with upper or lower neuron lesions
Plantar	Babinski response or Clonus	Corticospinal tract lesion
Meningeal signs Brudzinski's sign **Kernig's sign**	Meningeal irritation may cause resistance or pain on flexion during both maneuvers	Infection, inflammation, or impingement
Straight leg raise	Pain and muscle weakness may also see calf wasting and weak ankle dorsiflexion	Herniated disc or Lumbosacral radiculopathy

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Reflexes	Nerve being tested	Notes
Biceps	C5, C6	Check bilaterally noting symmetry and action. Graded on 0-4 scale.
Triceps	C6, C7	
Supinator-(brachioradialis)	C5, C6	
Knee	L2, L3, L4	
Ankle	S1	

Bickley LS, Szilagyi PG, Bates B. *Bates' Guide to Physical Examination and History Taking.* 11th ed. Wolters Kluwer Health/Lippincott Williams & Wilkins; 2013.