NEUROLOGICAL PHYSICAL EXAM

CRANIAL NERVES I-XII

- **CN I (Olfactory) →** Assess smell with alternate nostrils
  Positive: anosmia (trauma, neurodegeneration)
- **CN II (Optic) →** Check pupillary reaction with light
  Positive: sluggish or absent reflex, afferent pupillary defect
- **CN II, III, IV, VI →** Check visual fields & extraocular eye movements
  Positive: field cuts, nystagmus, diplopia
- **CN V (Trigeminal) →** Test facial sensation & motor (jaw clench)
  Positive: sensory loss, weak masseter/temporalis muscles
- **CN VII (Facial) →** Check facial expression
  Positive: asymmetry, facial droop, inability to close eye
- **CN VIII (Vestibulocochlear) →** Check hearing, Weber & Rinne if indicated
  Positive: conductive vs sensorineural hearing loss
- **CN IX, X (Glossopharyngeal/Vagus) →** Ask patient to open mouth & say "ahhh"
  Positive: uvula deviation, hoarseness, dysphagia
- **CN XI (Accessory) →** Assess SCM & trapezius strength
  Positive: weakness, asymmetry
- **CN XII (Hypoglossal) →** Ask patient to stick out tongue
  Positive: tongue deviation, atrophy, fasciculations

MOTOR FUNCTION

- Observe the overall body position at rest and in motion, look for involuntary movements
  Positive: tremors, fasciculations, rigidity

- **C1/C2:** Head rotation, SCM
- **C3:** Head lateral flexion, scalenes
- **C4:** Shoulder abduction, deltoids
- **C5:** Elbow flexion, biceps
- **C6:** Wrist extension
- **C7:** Elbow extension, triceps
- **C8:** Finger flexion, grip strength
- **T1:** Finger abduction/adduction
- **L2:** Hip flexion, iliopsoas
- **L3:** Knee extension, quadriceps
- **L4:** Foot dorsiflexion, tibialis anterior
- **L5:** Great toe extension, extensor hallucis longus
- **S1:** Foot plantarflexion, gastrocnemius/soleus
- **S2:** Hip extension, gluteus maximus

Positive: weakness, asymmetry, decreased strength suggests nerve root lesion or myopathy

DEEP TENDON REFLEXES

- **C3/C4:** Levator scapula reflex
- **C4/C5:** Deltoid reflex
- **C5/C6:** Biceps, brachioradialis
- **C6/C7:** Triceps
- **C8/T1:** Pisiform
- **L2/L3:** Vastus medialis reflex
- **L3/L4:** Patellar reflex
- **L4/L5:** Tibialis anterior reflex
- **S1/S2:** Achilles reflex

    Positive: hyperreflexia (UMN lesion), hyporeflexia/areflexia (LMN lesion)

- Test for ankle clonus
    Positive: sustained beats = UMN lesion

- Abdominal reflexes (above/below umbilicus)
    Positive: absent reflex = corticospinal tract lesion

CEREBELLAR FUNCTION

- Rapid alternating movements (RAM)
    Positive: dysdiadochokinesia (cerebellar lesion)
- Point-to-point motion (finger-to-nose, heel-to-shin)
    Positive: dysmetria, intention tremor
- Still point-to-point movement
    Positive: tremor, inaccuracy
- Evaluate gait (all types: normal, heel, toe, tandem)
    Positive: ataxia, wide-based gait, unsteadiness

SPECIAL TESTS

- Romberg test (sensory ataxia)
    Positive: loss of balance with eyes closed → proprioceptive dysfunction
- Pronator drift
    Positive: arm pronation/drift downward → UMN lesion
- Pin prick test
    Positive: loss of sensation (peripheral neuropathy, radiculopathy)
- Position test (great toe)
    Positive: impaired joint position sense (dorsal column lesion)
- Vibration sense test
    Positive: loss = dorsal column lesion, peripheral neuropathy
- Discriminative sensation testing
    Positive: impaired stereognosis/graphesthesia = cortical lesion
- Meningeal signs (Brudzinski, Kernig)
    Positive: pain, stiffness = meningeal irritation