The Neurological Examination

Vanderbilt University Medical Center
Department of Neurology

- Is it neurological?
- Where is the beef?
- Is it central or peripheral?
- Is it sensory or motor?
- If sensory, small or large fiber?
- Is it symmetric?
- Is the exam consistent?

- How do I put it together?
- What may it be?
- What tests may I need?
- How do I present it to others?

The symptom (or the sign) and the company they keep!!

Be organized!!
Be deliberate!!

- The history will guide you on the steps of the examination beyond the basic exam
  - Inspect -
  - Test -
  - Describe -
  - Pattern of deficit – temporal and spatial
  - Careful about over and under calling deficits
• Personal hygiene and appearance
• Posture and motor activity
• Level of consciousness:
  – GCS: E4V5M6

• Mini-mental Exam:
  – Orientation: time (year, season, month, date, day of
    the week), place (state, county, town, building, floor
    or room), person
  – Memory/recall: immediate, recent, remote 3-object
    recall (immediate and 3-5 minutes later)
  – Attention and calculation: subtract 7 from 100, spell
    WORLD backwards
  – Language: naming, repetition, commands (1-3 levels),
    follow written commands, write a sentence.

• Praxis: Make a sandwich, draw 8 with
  foot, comb your hair
• Calculations: simple math
• Logic and abstraction: don't cry over
  spilled milk
• Constructional tasks: draw clock,
  intersecting pentagons

• Cranial Nerves I-XII
  • I: olfaction- use a non noxious stimulus
  • II: inspection, pupils, visual fields, visual acuity,
    funduscopic exam,
  • III, IV and VI: extraocular movements,
    conjugation, saccades, pupils
  • V: chewing, facial sensory

• VII: central versus peripheral; eyebrows, pucker
  lips, smile
• VIII: finger rubbing, vestibulo-ocular reflex,
  oculocephalic reflex
• IX and X: cough, gag, speech, swallowing
• XI: neck rotation, shoulder elevation
• XII: tongue in cheek
Motor

- LMN versus UMN
- Inspect: atrophy, fasciculations, asymmetries, lack or excess of movements,
- Palpate: tenderness, thickened nerves

Motor Exam (2)

- Tone testing:
  - Decreased: hypotonia, atonia
  - Increased: spasticity, rigidity
- Strength testing: drift, RAM, RSM
- Strength grading: 0-5

DTRs

- Grade: 0-5
- Reinforcement
- Levels of integrations: C5, C7, L4, S1

Coordination

- Station, walking, tandem
- Central versus peripheral
- RAME
- P2P
- Dysmetria, dysdiadochokinesis,

Speech

- Alternate motor rate
- Sequential motor rate
- Sip test (in booklet, dysphagia)

Language

- Verbal expression
- Comprehension (Broca v Wernicke)
- Repetition (cortical v transcortical)
- Naming
- Reading (alexia, vision)
- Writing (aphasia v dysarthria)
Gait (and Station)
- Hemiplegic
- Spastic diplegic
- Neuropathic
- Myopathic
- Parkinsonian
- Choreic
- Ataxic

Steppage
Retropulsion

Reflex Integration Levels
- Deltoid: C5
- Thumb: C6
- Index: C7
- Pinkie: C8
- Nipples: T4
- Umbilicus: T10
- Great toe: L5
- Lateral foot: S1

Sensory
- Pain: safety pin (sharp-dull)
- Light touch
- Temperature
- Position sense and vibration
- Stereognosia and graphesthesia
- Extinction

Sensory Patterns
- Spinal nerve: dermatome distribution
- Sensory "level": spinal column
- Stocking-glove: polyneuropathy
- Peripheral nerve: such distribution

Other Neurological Exam Scales
- NIHSS