Cranial Nerve Examination

Statement of Goals

Understand and perform a complete examination of cranial nerve function.

Learning Objectives

A. List all twelve cranial nerves by number and name, and describe their functions.
B. Describe and perform a complete examination of cranial nerve function, including:
   I smell
   II visual acuity, visual fields, and ocular fundi
   II, III pupillary reactions
   III, IV, VI extraocular movements
   V corneal reflexes, facial sensation, and jaw movements
   VII facial movements
   VIII hearing, nystagmus
   IX, X voice quality, swallowing, gag reflex
   X rise of the palate
   V, VII, X, XII voice and speech
   XI sternomastoid and trapezius
   XII inspection of the tongue
C. Record the findings from the cranial nerve examination in the format of a medical record.

Student’s Preparation for the Unit

A. Reading Assignments:

Required:
Bates 9th Edition
pp. 598-599 (the cranial nerves); pp. 611-616, 771-772

Optional:
Bates 9th Edition
B. Special Instructions:

Bring ophthalmoscope and penlight if you own them. Equipment will be available in class as well.

Examination of the cranial nerves will be studied as an independent examination today. You will also learn to integrate it with the rest of the head and neck exam.

Curriculum Comments

Objective A:

Cranial Nerve Function: the cranial nerves perform either motor, sensory or both functions. The following mnemonic is an easy way to remember their functions:

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s=sensory, m=motor, b=both

"some say money matters, but my brother says big bonuses matter more"

Objective B:

Cranial Nerve VII: If you ask the patient to close the eyes tightly, you can observe whether the eyelashes are "buried" symmetrically as a screening approach.

Objective C:

Documentation of a cranial nerve exam can be seen in Bates on page 646 as part of the neurologic exam. Your documentation will vary based on the patient's physical exam findings.

Apply Your Skills

Observe your preceptor performing cranial nerve examinations. If possible, perform examinations yourself, with supervision and independently. Include the cranial nerve examination in at least one of your patient encounter notes.
Cranial Nerves Checklist

Equipment: Different fragrances, ophthalmoscope, penlight, tuning fork, wood / cotton swab-sticks, cup for water, and tongue blades

☐ Appropriate guidance given to the patient throughout the examination
☐ I. Ask the patient if there is a history of absent or distorted sense of smell. (If indicated, test smell in each nostril, while occluding the other nostril.
☐ II. Test visual acuity and visual fields. Observe both optic fundi, especially discs.
☐ II, III. Inspect size and symmetry of pupils. Test direct and consensual pupillary reactions to light.
☐ III. Observe eyelids.
☐ III, IV, VI. Test extraocular movements in six cardinal positions. Test convergence.
☐ VIII. Watch for nystagmus during extraocular movements.
☐ V. Test bilateral masseter muscle contraction.
☐ V. Test sensation in three divisions, both sides of face, with broken cotton swab.
☐ V, VII. Test corneal reflex in each eye, observing blink response (if indicated)
☐ VII. Inspect face at rest and during deliberate movements:
☐ Upper face - wrinkle brow or close eyes tightly.
☐ Lower face - smile, showing the teeth or puff out both cheeks.
☐ VIII. Test hearing.
☐ IX, X. Listen to patient's voice. Observe swallowing.
☐ X. Watch movement of soft plate.
☐ IX, X. Test gag reflex bilaterally
☐ XI. Test strength of sternomastoid (and / or trapezius) bilaterally.
☐ XII. Inspect tongue. Observe protrusion in the midline, and rapid side to side movement.

Study Questions:

1. Can you name each cranial nerve and describe its function?

2. Which cranial nerves have both motor and sensory function?

3. How do you check the function of each cranial nerve?