

THE NEUROLOGIC EXAMINATION IN DOGS & CATS

Part 1: Performing the Examination

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CRANIAL NERVE ASSESSMENT

There are 12 cranial nerves:

- **Cranial nerve (CN) I:** Olfactory nerve*
- **CN II:** Optic nerve
- **CN III:** Oculomotor nerve
- **CN IV:** Trochlear nerve
- **CN V:** Trigeminal nerve
- **CN VI:** Abducens nerve
- **CN VII:** Facial nerve
- **CN VIII:** Vestibulocochlear nerve
- **CN IX:** Glossopharyngeal nerve
- **CN X:** Vagus nerve
- **CN XI:** Accessory nerve
- **CN XII:** Hypoglossal nerve

* Rarely evaluated in clinical practice

The following tests are done to assess cranial nerves and nerves involved in the *response* or *reflex*; *afferent* (A) and *efferent* (E) nerves are listed.

- **Menace response (Figure 1):** A: CN II (retina); E: CN VI, CN VII; in addition, the thalamus, cerebrum, and cerebellum are involved in the response and its pathway
- **Palpebral reflex (Figure 2):** A: CN V; E: CN VII
- **Vibrissae (and maxilla) response (Figure 3):** A: CN V (maxillary branch); E: CN VII; this response also involves the cerebrum
- **Mandibular touch:** A: CN V (mandibular branch); E: CN VII
- **Auricular reflex (Figure 4):** A: CN VII; E: CN VII
- **Corneal reflex:** A: CN V (ophthalmic branch); E: CN VI
 - » The cornea is touched lightly with a moist cotton tip applicator; the eye should retract.
- **Pupillary light reflex (PLR):** A: CN II; E: CN III
 - » Performed in a dark room to assess anisocoria (unequal pupil size)
 - » Dark and light environments can help determine which pupil is miotic/mydriatic (constriction/dilation)
 - » Indirect PLR is usually not as strong as direct PLR
- **Oculocephalic reflex, normal physiologic nystagmus (Figure 5):** A: CN VIII; E: CN III, IV, & VI
 - » Palpation of the head for symmetry: Muscles of mastication are innervated by CN V (mandibular motor branch); muscles of facial expression are innervated by CN VII
 - » Assess for asymmetry, muscle atrophy, and droopy lips
- **Gag reflex (Figure 6):** A: CN IX; E: CN X
- **Palpation of the neck to assess muscle atrophy:** E: CN XI (difficult to assess)
- **Tongue movement & symmetry (Figure 7):** E: CN XII



Figure 1. Menace response: Move the hand slowly toward the eye in a menacing movement, without touching the face or pushing air onto the cornea; dropping a cotton ball in front of the eye helps assess vision.



Figure 2. Palpebral reflex: Touch the medial canthus of the eye with a finger, cotton tip applicator, hemostat, or pen; the blink should be complete.



Figure 3. Vibrissae response: Touch the upper lip; the patient may move the lip only or turn the head away.



Figure 4. Auricular reflex: The inner pinna is innervated by CN VII; the response should be twitching of the ear, blinking, or shaking of the head.

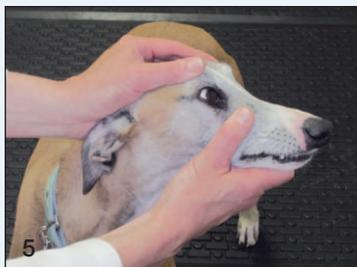


Figure 5. Oculocephalic reflex: Eye movement is easier to see if the sclera is exposed. Movement should be steady with moderate speed; before turning the head the other direction, wait and look for any postrotational nystagmus (more than a few beats is abnormal).

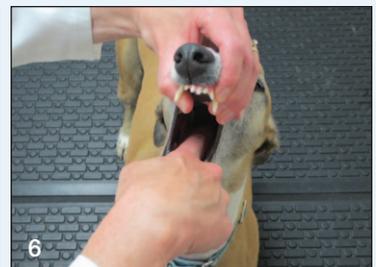


Figure 6. Gag reflex: Touch the larynx with a finger to induce the reflex.



Figure 7. Inspect the tongue for asymmetry or muscle atrophy, indicating a lesion affecting the hypoglossal nerve.