Diagnostic Procedures

FUNCTIONAL NEUROLOGY SEMINARS
Diagnostic Procedures

Several procedures can be performed in office to evaluate a patient with complaints of dizziness, vertigo or balance disorders.

**Electronystagmography (ENG):** a group of eye movement tests that look for signs of vestibular dysfunction or neurological problems by measuring nystagmus (involuntary eye movements) and other eye movements. ENG tests are one of the most common ones administered to people with dizziness, vertigo and balance disorders. ENG is performed by placing small electrodes on the skin near the eyes to record eye movements. These eye movements can be recorded while the patient is performing different tasks such as following a visual target, during rapid eye movements, during positional head changes and/or in response to warm or cool water placed in the ear canal (caloric test).

**Videonystagmography (VNG):** VNG is similar to ENG in that it will aid in the detection of peripheral vs central vestibular imbalances, however, with VNG the eye movements are recorded on a video and are able to watched in real time by both the doctor and patient. During a VNG, the patient wears infrared goggles and performs a series of eye movements as directed by the physician. Once again, these eye movements can be recorded while the patient is performing different tasks such as following a visual target, during rapid eye movements, during positional head changes and/or in response to warm or cool water placed in the ear canal (caloric test).
**Frenzel lenses:** These goggles are a relatively cost effective diagnostic tool to evaluate patients with vestibular disorders. The patient places the goggles, which consist of a combination of magnified lenses and a lighting system. The patient can be placed in a provocative position to elicit nystagmus while removing fixation (the patient’s ability to inhibit eye movements) when the lights in the room are turned off and the goggles are illuminated. This can help the provider see the direction of the nystagmus when the head is in different positions.
**Dix-Hallpike Test:** This test requires no extra equipment on the physician’s part. Have the patient sit with their legs extended on the exam table and turn their head between 30 to 45 degrees to either the right or left to isolate a canal (in this case it is the right or left posterior canal). Have the patient lay back while their head is held in their hands. You are looking for nystagmus and or the patient to complain of dizziness, nausea, etc. Both sides are checked and if there is a canal that is compromised and it has been determined that it is a peripheral lesion such as a canalithiasis, you can go directly into an Epley Maneuver.

Other provocative testing at times will be used. This includes side lying testing, head shaking, vestibular balance testing from side to side and even labs and other studies. All of these are discussed in the modules to help understand the true key diagnostic procedures.