

Who is the doctor?

An Otolologist (or Neurotologist) is a specialist in diagnosing and treating problems involving the ear and related structures. This doctor will use very complex equipment essential in establishing an accurate diagnosis. This includes radiologic and audiologic equipment.

Hearing Tests

▶ The Pure Tone Hearing Test determines your ability to hear sound. Tones of low and high frequencies will be present at various levels of loudness. Some of these tones will be heard through the bone behind the ear. In many cases other noise is introduced into the ear not being tested. This distraction is to assure the test tones are heard only in the ear under evaluation. The test is performed in a soundproof room.

▶ The Speech Tests determine your ability to hear and understand speech. Two different samples of speech are presented through ear phone or loud speaker in a soundproof room. One series of words is heard at varying degrees of loudness and the second group is heard at a comfortable listening level.

▶ The Impedence Audiometry is done to measure and evaluate the sound-transmitting properties of the middle ear structures and hearing nerve, the function of the Eustachian tube and middle ear

muscles and middle ear pressure. A small plug is inserted into the ear canal. A low-pitched humming sound is delivered, accompanied occasionally by small pressure changes.

Ménière's patients usually have fluctuating hearing loss, mostly in the lower tones. But hearing loss may not occur initially.

Electrocochleography

The ECOG test is a computerized audiometric test using electrodes placed into the ear canal. It records the inner ear cochlea hearing response as a sequence of clicks are introduced. Responses are involuntary and automatically recorded. In this way the electrical activity within the cochlea is determined. Thousands of tiny nerve endings that lead to the hearing nerve are stimulated by sound. Amplified recordings are made from these nerves. This enables the doctor to evaluate conditions that might affect the nerve endings in the inner ear.

The ECOG is a difficult test to perform and interpret. It is neither 100% sensitive nor 100% specific. In other words, the patient can have Ménière's Disease but still have a normal ECOG, or he can also have an abnormal ECOG but not have Ménière's. It is advised to get copies of the ECOG, including all traces.¹

The test takes about 30-40 minutes.

¹ ECOG, Timothy Hain, www.dizziness-and-balance.com/testing

Electronystagmography

The ENG is designed to electronically determine the response of the balance center in each ear, and the extent of vestibular damage.

In order to accurately evaluate the balance center, certain medications should not be taken for 48 hours prior to the test. These include motion sickness tablets such as Dramamine, Bonamine or Bonine, Marezine, all tranquilizers, all sedatives, and the use of alcohol.

The test is administered with the patient in a reclining position. Cool and warm water (known as caloric testing) are alternately irrigated into each ear canal by means of a closed loop system. A tiny balloon will be placed in your ear canal, which will inflate and deflate with warm and cool water. The resulting responses of the balance mechanism, as expressed through rapid eye movements called nystagmus, are automatically recorded by electrodes that are applied to the skin of the face. This test takes about 45 minutes.²

Some patients experience nausea and vertigo during the test. This is actually an indication that the balance center is functioning. A lack of rapid eye movement and vertigo could indicate a diminished balance center and a possibility of Ménière's or other vestibular disorder.

² Diagnostic Procedures, Charles Luetje and Bradley Thedinger, Otologic Center, Kansas City, Missouri.

Rotary Chair Testing

The purpose of the Sinusoidal Harmonic Acceleration test is to measure the integrity of the vestibular (balance) relationship with the ocular (eye) system. Since the vestibular system is interconnected with the eye movement system, the intact vestibular input can be recorded and measured.³

The chair test measures nystagmus while the patient is turned slowly in a motorized chair. Persons with inner ear disease become less dizzy than do normal persons. The optokinetic test measures dizziness caused by viewing moving stripes. The fixation test measures nystagmus while the patient is being rotated and is looking at a dot of light that is rotating with him. Fixation suppression is improved by bilateral vestibular loss.

There are no injections or other invasive materials introduced. It does not cause acute dizziness and is not painful. This test takes about one hour.

The rotary chair and the caloric tests are both done to add accuracy. Tests can be falsely negative in situations where there is bilateral damage.⁴

³ Diagnostic Procedures, Charles Luetje and Bradley Thedinger, Otologic Center, Kansas City, Missouri.

⁴ Why Get Vestibular Tests, Timothy Hain, www.tchain.com/otoneurology/testing

Magnetic Resonance Imaging

The MRI does not confirm Ménière's Disease. It is a test of elimination, solely for the purpose of ruling out any other illness or abnormality that might be causing the patient's vertigo and hearing loss. This might include presence of a tumor, aneurysm, or other irregularity.⁵

Disclaimer: *Although this brochure is intended to reach out to others and offer support, comfort and advice, it is in no way intended to take the place of examination, diagnosis, opinion, or treatment provided by a licensed and qualified health professional.*

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www.menieresresources.org

We offer coping resources, personal stories, and support. Our goals are education and awareness as we seek more effective treatments and a cure.

Or you may contact us at:

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⁵ Because You Asked About Ménière's Disease, NIDCD Health Information. www.nidcd.nih.gov/health/pubs



Diagnostic Procedures

Common tests used to aid in diagnosis of Ménière's Disease

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