

Vertigo and Imbalance Disorders

Vertigo is defined as a hallucination of movement. Most often this is a spinning sensation, but it can also be to and fro. Vertigo almost always originates somewhere in the vestibular (balance) system; sometimes it comes from the balance canals of the inner ear, other times in the nerves or the brain. Common clinical causes of vertigo are labyrinthitis ([/health-library/diseases-conditions/labyrinthitis](#)), BPPV ([/locations/ear-institute/conditions/vertigo-balance-disorders/benign-paroxysmal-positional-vertigo](#)), Meniere's disease ([/locations/ear-institute/conditions/vertigo-balance-disorders/menieres-disease](#)), and **vestibular migraine**.

Imbalance refers to a gait disorder. This can have many causes. Often it is a phase in the recovery of an acute labyrinthitis. It can also be a neurological impairment, in the nerves that control movement. **Balance therapy** is often effective for the treatment of imbalance.

At Mount Sinai, our Center for Hearing and Balance is a premier referral center for vertigo and labyrinthitis. Our experts help detect the underlying cause of the condition and personalize a treatment solution for each patient.

Benign Paroxysmal Positional Vertigo (BPPV)



A common cause of vertigo, benign paroxysmal positional vertigo (BPPV) ([/locations/ear-institute/conditions/vertigo-balance-disorders/benign-paroxysmal-positional-vertigo](#)) is caused by loose particles (“crystals”) of calcium in the inner ear. The vertigo is brief, disturbing, and brought on by a change in head position. It is abrupt, intense, and sometimes violent, and is occasionally accompanied by nausea. It lasts for a few seconds, but the after-effect can be longer.

Labyrinthitis (Vestibular Neuritis)

Labyrinthitis is an acute vestibular syndrome, consisting of spinning vertigo, nausea, and sometimes vomiting, lasting for several hours to several days. The most common cause is a virus of the inner ear. It is incapacitating when it first happens. The acute phase is treated with medications such as meclizine or Valium anti-nausea drugs and fluids. Once this subsides, patients are usually off balance for several days or longer. The situation usually recovers back to normal. Persistent imbalance may be treated with vestibular physical therapy (“balance therapy”).

Meniere’s Disease

Caused by an overproduction of fluid within the inner ear, Meniere's disease ([/locations/ear-institute/conditions/vertigo-balance-disorders/menieres-disease](#)) affects men and women equally between the ages of 20 and 50 years. This disorder is associated with dizziness, ringing in the ear, hearing loss, and pressure in the ear. Due to excessive fluid pressure interfering with the function of ear hair cells, sudden increases in pressure occur. This makes the ear feel stopped up and causes vertigo.

Vestibular Migraine (Migraine Associated Dizziness)

Migraine is increasingly recognized to be a cause of vertigo. It can occur even in the absence of headaches. The “classical” migraine syndrome consists of an aura, or forewarning symptom such as dizziness, followed by a severe, disabling headache with intolerance of light and sound. Atypical migraines have become more prevalent however, and these may consist of less severe headaches, often occurring in cycles or waves, accompanied by episodes of vertigo. These vertigo spells are troublesome, but less severe or incapacitating than the vertigo of Meniere’s disease.

Vestibular migraine may be difficult to diagnose because there is no confirmatory test. Clues include a daily pattern, vague start and end, sensitivity to light and sound, and sensitivity to certain foods. There are several treatment options, including anti-migraine drugs, beta-blocker drugs, verapamil, antidepressants, and Diamox. Dietary modification is also often advised.

Vestibular Physical Therapy (Balance Therapy)

Balance therapy has been instrumental in helping patients recover from vestibular impairment. It is appropriate for patients who have persistent imbalance after recovering from vertigo, patients with vertigo that is induced by certain positions such as BPPV, patients with bilateral loss of balance function, patients recovering from acoustic neuroma or inner ear surgery, and patients with limb weakness, diabetes, or other problems that prevent them from compensating from loss of balance.

Balance therapy should be administered by a physical therapist who is experienced in the treatment of balance disorders. Patients are fully assessed as to what deficits they have, and the treatment program is individualized. The components of therapy include:

- **Sensory substitution**, using vision and limb sensation to help replace the lost balance function
- **Habituation**, using repetitive movements to help stimulate the balance system to recover
- **Balance retraining**, using gait and balance exercises to help regain stability and prevent falling

Balance therapy works best when it is done in an outpatient rehab center, although in-hospital or home-based therapy may also be done. The course of treatment is usually 6 to 12 weeks long, and is often supplemented by a program of home balance exercises.

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