Vertigo: Not your average dizzy spell

People often think of vertigo simply as dizziness, an imprecise term that variously means lightheadedness, faintness, weakness, or disorientation. But vertigo is distinguished by a false sense of movement or spinning. For some people, vertigo elicits feelings of twirling in space, while for others the world seems to be turning around them. Nausea and vomiting often accompany it.

When a whirling amusement park ride causes vertigo, the spinning feeling usually disappears quickly. But when the cause is an inner ear disorder, vertigo can recur and last for days or even months, making it difficult or even dangerous to engage in usual activities such as driving a car.

A single episode of vertigo won’t continue unabated because the nervous system adapts, allowing symptoms to subside over time. Even so, it can be frightening while it lasts and can severely curtail normal life. Just sitting up or walking, for example, may be too unsettling to bear. Thankfully, several therapies are available that may help.

Many conditions can bring about vertigo, but the most common ones are benign positional vertigo, vestibular neuronitis, and Meniere’s disease.

Positioned for trouble
As the name implies, benign positional vertigo (BPV) occurs when a person is in a particular position. For example, vertigo may hit whenever you lie on your left side or when you look up. BPV’s likely cause is calcium debris floating around in the semicircular canals of the ear, where it can make contact with nerve cells that affect balance. No one knows exactly how or why the calcium particles appear.

The position that triggers BPV varies from person to person, depending on the individual’s ear and the specific location of the particles. An episode of BPV-induced vertigo typically lasts 10–20 seconds. It’s most common among adults age 60 and over.

BPV usually disappears in 2–3 months without treatment. But if it’s disturbing your quality of life, ask your physician about the Epley maneuver. This series of head and body movements may help reposition the calcium particles so that they don’t impinge on the nerve cells. About 90% of people report improvement, although more than one treatment may be necessary. You need to keep your head above your heart for two days afterward to prevent the calcium from migrating back to its original position.

Another treatment is habituation, in which you get into the position that causes your vertigo, doing so twice a day for a few weeks. The idea is that once you’ve been exposed to the stimuli (in this case, a particular position) enough times, your brain will learn not to set off the vertigo response.

Anatomy of balance: The vestibular system
Vertigo is always related to the body’s vestibular (balance) system, a portion of the inner ear and its nerve connections to the brain, which work together to help orient us and maintain our sense of balance.

The vestibular structures in the ear include three small C-shaped loops, called the semicircular canals, and a rounded chamber at the base of each. These structures contain fluid-filled ducts and sacs that are lined with specialized nerve cells (hair cells).

When you move your head or change position, the fluid shifts, bending the tops of the hair cells. This action tells the brain, via the vestibular nerve, about the direction and speed of head movements, such as nodding or looking from right to left.

The vestibular system also includes two larger chambers, the utricle and saccule, which detect movements in a straight line, such as walking forward. The hair cells that line these chambers are embedded in a jelly-like substance studded with tiny calcium stones. Tilting your head or changing your body’s position causes the stones to shift and deflect the hair cells. This lets your brain know that you’re moving.

To maintain balance, your brain also relies on visual input from your eyes, which monitor your body’s position, and nerve signals from muscles and joints, which tell the brain which part of your body is touching the ground.
World in a spin
Vestibular neuronitis — also called acute labyrinthitis — is an inflammation, usually caused by a virus, of the vestibular nerve in the inner ear. Vestibular neuronitis occurs in people of all ages. It causes recurring episodes of vertigo that may last for days or weeks.

During an episode, your surroundings may seem to spin violently, and you may vomit or feel nauseated. You may also have trouble maintaining your balance or focusing your eyes. Unfortunately, vestibular neuronitis may permanently damage the balance system of the affected ear. But even in prolonged cases, it usually peaks early and becomes milder over time.

There’s no way to stop the feeling of vertigo other than waiting it out. Doctors often recommend “head rest” — minimizing head movement as much as possible — during the early, acute stage of vertigo. Limiting head movement may speed recovery, and it can make you feel better.

If your difficulties are pronounced, your doctor may prescribe medicine (Antivert) or promethazine (Phenergan). These drugs suppress your awareness of the spinning. You can also take prochlorperazine (Compazine) to ease the nausea. Some doctors prescribe prednisone (Deltasone, Cortan, and others) to help reduce inflammation of the affected nerve. None of these drugs is actually a cure, but they can make vertigo easier to live with.

A long-term treatment option is vestibular physical therapy, which can help you function better as you recover. During this therapy, you do certain exercises daily on your own and periodically check in with a physical therapist. Aerobic exercise helps prevent muscle loss and strengthens your brain’s ability to take in sensory information. This should help you keep your balance.

Fluid imbalance
Meniere’s disease is caused by a change in the amount of fluid inside the inner ear, but it’s not clear why this occurs. Experts hypothesize that an ear infection early in life may trigger fluid buildup.

In addition to vertigo, Meniere’s disease can cause other symptoms, including an inability to hear low-frequency sounds, a feeling of ear fullness, or a ringing in the ears known as tinnitus (see HWHW, September 2002). A doctor may be able to diagnose Meniere’s disease just from your description of the symptoms. But she or he may also want to test your vestibular system by recording your eye movements as you look in various directions, close your eyes, and lie in different positions.

Once Meniere’s disease is diagnosed, your doctor may prescribe the same medications used for short-term management of vestibular neuronitis symptoms (see “World in a spin,” above). For most people, the vertigo is mild and eventually goes away on its own. Usually, only one ear is involved.

A visit to the clinician
The exact reason for vertigo can be difficult to identify. In fact, about half of those who experience it never know what caused it. But you can do several things to help your clinician get to the bottom of your problem.

• Come armed with information. Bring your medical history and anything you know about your immediate family’s experience with vertigo. Also, bring a list of the drugs you take (over-the-counter and prescription) and information about alcohol and caffeine use, allergies, and any exposure to toxic chemicals, such as paint solvents.

• Track your symptoms. In the days before you see your clinician, note any patterns (for example, whether the attacks occur at the same time of day), how long each episode lasts, and if certain things make your vertigo better or worse.

• Be prepared to see another physician. You’ll most likely see your primary care doctor first. If your symptoms don’t resolve within a few days, you may need to see a specialist such as a neurologist (a doctor who focuses on the nervous system), an otolaryngologist (an ear and throat specialist), or a neuro- otologist (someone with expertise in ear-related problems).

Other causes of vertigo
Vertigo may also be a symptom of stroke, tumors, multiple sclerosis, or skull fracture, conditions that can affect parts of the brain that interpret balance signals. In such cases, vertigo may occur along with slurred speech, headache, double vision, impaired coordination, or weakness or numbness of an arm or leg. Anyone who experiences a sudden onset of any of these symptoms should seek immediate medical attention, preferably at a hospital emergency department.

People who suffer from migraines — characterized by throbbing pain, sensitivity to light and noise, and visual disturbances — sometimes experience vertigo, with or without the headaches.

Long-term, high doses of the antibiotics streptomycin, gentamycin, and tobramycin can damage the inner ear and induce vertigo. This is a particular danger for people with impaired kidneys, the organs responsible for eliminating these drugs from the body. Reducing the dose or changing the medication may clear up the problem.

Selected resource
Vestibular Disorders Association (VEDA)
P.O. Box 4467
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(800)837-8428 (toll-free)
www.vestibular.org
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