

Vertigo (Dizziness and Spinning)

Your inner ear tells your brain where you are in space—when signals get mixed up, your brain thinks you're spinning even though you're standing still.

THE ONE-LINE TRUTH

The false feeling that you or the room is spinning, usually from an inner-ear problem.

The chain — how it unfolds

1. The inner ear sends mismatched signals—one ear says 'spinning fast,' the other says 'standing still.' — why: Your brain expects both ears to agree. When they don't, it assumes you're in wild motion and triggers the sensation of spinning, which we call a spinning sensation (vertigo).
2. The brainstem tries to stabilize your gaze by jerking your eyes in the opposite direction of the false spin. This is called involuntary eye jerking (nystagmus). — why: Normally this reflex keeps your vision steady when you turn your head, but the wrong signal makes your eyes jump back and forth uncontrollably. You can feel it, and others can see it.
3. The mismatch also activates the area postrema (vomiting center) in the brainstem, causing nausea and often vomiting. — why: The brain interprets confusing balance signals the same way it interprets poison in the stomach—by making you throw up to protect yourself.
4. You instinctively freeze, close your eyes, and lie down to reduce head movement. — why: Any motion makes the mismatched signals worse, so staying still gives the brain fewer conflicting messages and eases the spinning slightly.
5. If the problem is temporary (BPPV, vestibular neuritis), the brain begins to suppress the faulty signals over days to weeks. — why: Neurons in the vestibular nuclei (brainstem processing centers) gradually learn to ignore the damaged ear and rely on the healthy ear plus vision and proprioceptors (muscle and joint sensors). This process is called vestibular compensation.
6. You regain the ability to walk and function, but balance in the dark or on soft surfaces stays shaky. — why: You've lost one of three balance inputs, so when vision is poor or the ground is uneven, you have fewer backup signals and feel unsteady.

7. If the underlying cause isn't treated (fluid buildup, ongoing nerve inflammation, repeated crystal events), attacks can come back. — why: Each new episode re-triggers the mismatch and nausea until the root problem—infection, fluid pressure, loose crystals, or vascular disease—is addressed.
8. Chronic, untreated a spinning sensation (vertigo) can lead to falls, fear of movement, and withdrawal from daily activities. — why: People become afraid to bend over, look up, or move quickly, which weakens muscles and worsens balance over time—creating a cycle of more instability and more fear.

Spot it — what you see, and why

- The room feels like it is spinning or moving around you: Your inner ear has tiny balance sensors called the vestibular system. They tell your brain exactly where your head is in space and whether you are moving. When something goes wrong with these sensors — infection, loose crystals, or swelling — they send false signals to your brain, saying you are spinning when you are actually standing still. Your brain believes the signal, so the whole room seems to whirl.
- Feeling unsteady or like you might fall: Your brain relies on three sources to keep you balanced: the inner ear sensors, your eyes, and stretch sensors in your muscles. When your inner ear sends the wrong message, those three sources no longer agree. Your brain gets confused and cannot figure out where you really are in space, so your body feels wobbly and you may stagger or grab onto things to stay upright.
- Nausea or throwing up: The balance centers in your inner ear sit right next to the part of your brainstem that controls nausea and vomiting (the area postrema and nucleus tractus solitarius). When your balance system fires off confusing signals, it triggers that nausea center, just like when you get carsick. The mismatch between what your inner ear feels and what your eyes see makes your stomach turn.
- Eyes that jerk or drift to one side on their own, called involuntary eye jerking (nystagmus): Your inner ear balance sensors are wired directly to the muscles that move your eyes, through a reflex arc in the brainstem. This reflex normally keeps your vision steady when you turn your head. When one inner ear is damaged or overstimulated, the reflex goes haywire: your eyes slowly drift in one direction, then snap back fast, over and over. You cannot stop it — it is automatic.
- Dizziness that comes on suddenly when you move your head or change position: In BPPV (benign paroxysmal positional a spinning sensation (vertigo)), tiny calcium crystals called otoconia break loose from one part of the inner ear and float into the semicircular canals (the loop-shaped tubes that sense head rotation). When you tip your head or roll over in bed, gravity shifts those crystals and they tumble through the fluid, bending the delicate hair cells inside the canal and fooling your brain into thinking you are spinning fast.

- Ringing, buzzing, or fullness in one or both ears (tinnitus or aural fullness): The inner ear houses both the cochlea (the snail-shaped hearing organ) and the vestibular system (the balance sensors), and they share the same fluid compartment and blood supply. Conditions like Meniere disease (too much fluid pressure), vestibular neuritis (inflammation of the balance nerve), or labyrinthitis (infection of the whole inner ear) irritate both systems at once, causing both spinning and ear symptoms like ringing or a stuffed feeling.

Red flags — act now

- Sudden trouble speaking, slurred words, trouble understanding speech, or drooping on one side of the face
- Double vision, sudden vision loss, or new trouble seeing to one side
- Sudden very severe headache — the worst you have ever had — especially if it came on like a thunderclap
- Weakness, numbness, tingling, or trouble moving one side of your body (arm, leg, or face)
- Trouble walking, loss of coordination, repeated falls, or inability to stand without help

Treat it — in this order

1. Epley maneuver (canalith repositioning) — a series of four head positions, each held for 30 seconds, that guide the loose ear crystals out of the semicircular canal and back into the part of the inner ear where they belong → Immediately stops or greatly reduces a spinning sensation (vertigo) in about 70–80% of people with posterior-canal BPPV after one session, and over 90% after two or three sessions (Cochrane 2014, AAO-HNS 2017). The person may feel mild dizziness during the maneuver but dramatic relief within minutes to hours afterward.
2. Meclizine 25 mg by mouth every 6–8 hours as needed (or dimenhydrinate 50 mg, or promethazine 25 mg) — these are vestibular suppressants that calm the inner-ear signals and reduce the sensation of spinning → Eases nausea and the intense spinning feeling during the first 1–3 days of acute vestibular neuritis, labyrinthitis, or severe BPPV episodes. Helps the person rest and avoid vomiting. Works within 30–60 minutes.
3. Vestibular rehabilitation therapy (VRT) — supervised exercises (gaze stabilization, balance training, habituation tasks) done with a physical therapist 1–2 times per week for 4–8 weeks → Speeds up central compensation (the brain's adjustment to a damaged balance system), reduces chronic imbalance and dizziness, and helps the person return to normal activities. Evidence (Cochrane 2015, AAN 2016) shows moderate-to-large benefit for unilateral vestibular loss (like after vestibular neuritis) and chronic dizziness. Especially important if dizziness persists beyond 2–4 weeks.

4. Oral corticosteroids (e.g. prednisone 60 mg daily, tapered over 2–3 weeks, started within 3 days of symptom onset) — sometimes combined with antiviral medication (e.g. valacyclovir 1 g three times daily for 7 days) → May improve recovery of vestibular function in vestibular neuritis by reducing nerve inflammation, though benefit is modest and debated (Cochrane 2011). Best evidence is for starting within 72 hours. Antivirals alone show no clear benefit; steroids alone are more commonly used.
5. Diuretics (e.g. hydrochlorothiazide 25 mg daily or acetazolamide 250 mg twice daily) plus low-sodium diet (< 2 g/day) for Meniere disease → Reduces fluid pressure (endolymphatic hydrops, meaning too much fluid in the inner-ear chambers) over weeks to months, which may decrease the frequency and severity of Meniere attacks (spinning episodes lasting 20 minutes to 12 hours with hearing loss, ringing in the ears (tinnitus), and ear fullness). Guideline support is moderate (AAO-HNS 2020); many patients report benefit, though high-quality trial data are limited.

Your top priorities at the bedside

1. Check blood pressure lying down and then standing, and check heart rate and rhythm on the monitor. — why: Low blood pressure or a dangerous heart rhythm can cut blood flow to the brain and cause dizziness. We need to catch these right away because they can lead to fainting or even cardiac arrest.
2. Keep the bed in the lowest position with side rails up, and keep the call light within reach. — why: A spinning sensation (Vertigo) makes people feel like the room is spinning, so they can easily lose balance and fall. Falls can cause head injuries or broken bones, especially in older adults.
3. Watch for sudden weakness on one side of the body, slurred speech, drooping face, vision changes, or severe headache, and notify the provider immediately if any appear. — why: These are stroke warning signs. The brain is losing blood flow and cells are dying. Treatment within the first few hours can save brain tissue and prevent permanent disability.