

# Vestibular Migraine

## *Where Headache and Dizziness Intersect*

**Valerie, a 26-year-old legal assistant who lives in Rockville, Maryland:**

*I have suffered from migraine headaches for over 10 years. While I've noticed that riding on the subway during a migraine can make me feel dizzy, more nauseated and generally uncomfortable, until today I'd never experienced anything remotely like this. I awoke in the morning with a pretty bad migraine headache, and while I was standing in the subway car, feeling miserable and hanging onto a strap, I looked out the window at the tunnel lights whizzing by and suddenly felt like everything around me was spinning out of control. A stranger kindly offered me his seat, but I was so sick and so dizzy that I was unable even to sit. I had to lie down on the floor of the subway car, but then I became so nauseated that I started to vomit. Truly humiliating, but I was too frightened to be embarrassed! I literally crawled off the train at the next stop and lay down on a concrete bench. After about 20 minutes the dizziness began to lessen, and with a lot of effort I was able to take the escalator up to the street level and call for a ride. An hour later I was okay except for my usual headache. What happened to me? Did I have a stroke?*



**Migraine and “dizziness” may be clinically and biologically linked.**

Migraineurs often report experiencing “dizziness” during migraine attacks, but in medical jargon “dizziness” is a highly non-specific symptom. In many cases the “dizziness” migraineurs describe simply implies they are dehydrated from migraine-associated nausea and vomiting or a general disinterest in taking fluids by mouth. The resulting volume depletion and consequent drop in blood pressure may cause them to become lightheaded and feel as if they might faint, especially when arising from bed, couch or chair.

Not infrequently, however, migrainous “dizziness” indicates a very different symptom: disequilibrium (loss of balance) or even vertigo (the hallucination of movement). Pressed for details, patients may describe the symptoms as “feeling like I just stepped off a merry-go-round” (vertigo) or “like trying to stand steady on a boat that’s rocking” (disequilibrium). Disequilibrium/vertigo results from a disturbance in the vestibular system, a circuit that links

together balance centers in the inner ear and brain with clusters of cells in the brainstem that control eye movement. This circuit is critical to our maintaining balance between the eyes, head and body when we change position or there is movement in the environment around us. The many causes of “vestibulopathy” (a disturbance within this circuit) range from disorders as benign and transient as a viral infection of the inner ear to stroke, tumor or multiple sclerosis. Because both migraine and vestibulopathy are so common, many migraineurs may experience vertigo/disequilibrium that is entirely unrelated to their headache disorder. In a sizable percentage of migraineurs who experience vertigo/disequilibrium, however, and especially in those who have recurrent episodes of vestibulopathy over a prolonged period with complete resolution of vestibular symptoms during the intervals between episodes, the migraine and the vestibulopathy may be clinically and biologically linked. When this occurs,

the symptom complex bears the name vestibular migraine.

There is no blood test, imaging procedure or other diagnostic study that can confirm the diagnosis of vestibular migraine. This is a clinical diagnosis that's based on the patient's history, and diagnostic studies assist only by excluding disorders which may mimic vestibular migraine.

How, then, is vestibular migraine clinically defined? First, one must have an established history of migraine plus a history of at least 5 episodes of vertigo/disequilibrium which persist anywhere from 5 minutes up to 3 days. As for these episodes of vestibulopathy, at least half must be accompanied by (a) headache with characteristic migraine features (egs, throbbing quality, moderate to severe intensity), or (b) sensitivity to light and sound, or (c) typical migrainous visual aura.

What do these diagnostic criteria imply? First, in the absence of an established history of migraine, there can be no diagnosis of vestibular migraine. On the other hand, in those migraineurs who do appear to have vestibular migraine not every episode of acute vertigo/disequilibrium may be accompanied by migraine headache, light/sound sensitivity or visual aura. Conversely, not every episode of migraine headache may be accompanied by vertigo/disequilibrium. Finally, especially given the wide (minutes to days) range in duration of the vertigo/disequilibrium episodes which occur in vestibular migraine, there is little to distinguish the acute vestibulopathy associated with vestibular migraine from other disorders that may cause identical episodes of "dizziness".

Suppose your history does match up with these diagnostic criteria for vestibular migraine and other disorders that can mimic vestibular migraine have been excluded. Having an explanation for your episodes of incapacitating "dizziness" may provide some measure of satisfaction, but what can be done to treat vestibular migraine?

Not surprising for a disorder whose biologic origins remain obscure, we currently lack evidence-based therapies for vestibular migraine. Acute episodes

of vertigo/disequilibrium may be treated with nonspecific medications that "sedate" the vestibular system and so reduce the unpleasant sensation of "motion sickness". Unfortunately, these medications (egs, diazepam/Valium, meclizine/Antivert, promethazine/Phenergan) also may sedate your brain as well and cause drowsiness. Medications typically used to treat acute migraine headache (eg, the triptans) appear to have little effect on the acute "dizziness" of vestibular migraine. While it seems logical that reducing the frequency of migraine headache episodes would also reduce the vestibular component of vestibular migraine, there is little evidence to support that presumption. Virtually all of the medications used for prevention of migraine headache have been evaluated for their usefulness in treating vestibular migraine, but to date none has stood out as being clearly effective. Verapamil is considered the prevention drug of choice in this clinical setting, but its modest popularity is based more on anecdote than science.

Whew! So in vestibular migraine we have a disorder that is probably far more common than is generally recognized, unknown to many medical providers, not simple to diagnose and lacking in evidence-based therapies. While this may sound like a perfect recipe for frustration, the management strategy that follows may help those with

vestibular migraine experience a more positive clinical outcome.

- **Step 1** if you suspect you have vestibular migraine, confirm your diagnosis. To do so, seek evaluation by a headache subspecialist. For help in finding one, try the American Migraine Foundation ([americanmigrainefoundation.org/find-a-doctor](http://americanmigrainefoundation.org/find-a-doctor)).
- **Step 2** Ask your provider for medications to use that may help reduce your symptoms when you have an acute episode of vertigo/disequilibrium.
- **Step 3** If you are experiencing frequent episodes of headache, vertigo/disequilibrium or both, discuss with your provider the options available to you for prevention therapy.
  - (a) choose a prevention therapy with a solid evidence base for use in migraine and an acceptable side effect profile
  - (b) keep a concise diary and record not only the frequency and severity of your headaches but also the frequency of your vertigo/disequilibrium episodes, the duration of those episodes and whether the episodes are linked time-wise to an accompanying headache

Questions? Feel free to send them to our editorial office at:

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