



## Key points

- A migraine is a severe headache.
- Of over 300 types of migraine, dizziness is a symptom of two: migraine with brainstem aura and vestibular migraine.
- See a doctor who specialized in headaches for accurate diagnosis.
- Lifestyle changes may help prevent or lessen the occurrence of migraine.
- Medication may help prevent migraine.

**Note:** *Concussion* also causes migraine-type dizziness – concussion sufferers can substitute the word “concussion” for “migraine” in the information below.

## What is migraine?

Migraine is a neurovascular headache, meaning it can be triggered by annoyance or disturbance to the nerves or blood vessels in the brain. All migraines are caused by the same type of neurotransmitter dysregulation and respond to the same treatments. Neurotransmission is the process where the brain takes in signals and responds.

Of more than 300 distinct headache diagnoses, the most common is acute episodic migraine. These migraines start rapidly and end with no after effects. They tend to be unilateral (one-sided) with a pulsating quality. Pain is moderate to severe and aggravated by physical activity. They can be accompanied by nausea or vomiting as well as light sensitivity (photophobia) or sound sensitivity (phonophobia).

There are two types of migraine with dizziness – migraine with brainstem aura (central migraine with dizziness) and vestibular migraine (peripheral migraine with dizziness).

Children are affected by two episodic syndromes that may be associated with migraine – benign paroxysmal torticollis (BPT) and benign paroxysmal vertigo (BPV). Children with BPT and BPV often have a family history of migraine.

Migraine is almost as common as high blood pressure in the Canadian population. It is more common than asthma or diabetes. An estimated 300,000 Canadians suffer needlessly because they have either been misdiagnosed or not diagnosed with chronic migraine.

## What are the symptoms of migraine with dizziness?

Common symptoms include:

- Visual aura – you may see flashes of light or have blind spots in your vision.
- Localized pain behind or near the eye on one side of your head.
- Light, sound (hyperacusis) and odor sensitivity (hyperosmia). You may have some sensitivity daily and increased sensitivity when you have migraine.
- Visual vestibular mismatch (the brain's hypersensitivity to motion) is common in migraine-type brains both episodically and chronically. Sometimes it will occur without headache and you may feel “off” for an hour or two.
- Vertigo (spinning sensation) – it may start before the headache (prodromal) or with the headache (concurrent). Vertigo may be constant in a few rare individuals.
- Neck pain - 75% of people with migraine have pain in their neck without any headache. Pain that starts in the neck and goes up into the back of your head is caused by migraine, rather than a problem with your neck. If this pain is accompanied by dizziness, the possibility of vestibular migraine needs to be investigated.

## Migraine with brainstem aura

Research suggests the firing of nerves in the brainstem causes migraine with brainstem aura. It is also called basilar migraine.

**Symptoms of migraine with brainstem aura** include:

- significant speech disturbance (dysarthria) – this can mimic a stroke and should be

investigated at the emergency department to be on the safe side

- vertigo (spinning sensation)
- ringing in the ears (tinnitus)
- sound sensitivity (hyperacusis)
- double vision (diplopia)
- loss of balance (ataxia)
- fainting (syncope)

In migraine with brainstem aura, one or more of the above symptoms occur over more than 5 minutes.

The symptoms last for at least 5 to 60 minutes and at least one symptom is only on one side. The symptoms are followed by headache, often severe.

**Diagnosis of migraine with brainstem aura** is typically done by investigation with a CT (computerized tomography) scan or MRI (magnetic resonance imaging). If it is stereotypical in presentation, however, these tests may not be needed.

## Vestibular migraine

Vestibular migraine originates in the inner ear. It is more common than migraine with brainstem aura. Vestibular migraine tends to be chronic and harder to treat than migraine with brainstem aura. It is sometimes called migraine-associated vertigo, migraine-associated dizziness, migraine-related vestibulopathy and migranous vertigo.

### Symptoms of vestibular migraine

Typical vestibular migraine is one-sided, accompanied by a pounding headache and light- or sound-sensitivity as well as nausea. Vestibular symptoms last from 5 minutes to 72 hours. In some rare cases, the vestibular symptoms last 4 weeks or more, or become a constant that waxes and wanes. Vestibular symptoms of vestibular migraines can include:

- vertigo (sensation that you or your surroundings are spinning)
- positional vertigo (starting when you tilt your head to the side) – it can mimic BPPV (benign paroxysmal positional vertigo), but does not respond to typical treatments for BPPV
- vertigo or nausea brought on by moving your head

10% of those with vestibular migraine may experience symptoms for 10 seconds or less. This can be very disconcerting, particularly for those with any anxiety.

### Diagnosis of vestibular migraine

It is estimated that about 20% of vestibular migraines are not recognized or are misdiagnosed. Sometimes people are given vestibular rehabilitation exercises and, despite diligence, the dizziness does not go away. This is because the underlying problem has not been addressed.

It is necessary to see a neuro-ophthalmologist, otolaryngologist (ear nose and throat doctor or ENT) or neurologist specializing in headaches for accurate diagnosis. To make an appointment, ask for a referral from your family doctor or another specialist doctor.

The number one barrier to treating vestibular migraine is failed diagnosis. Cost and access to treatment are challenges for some. Physician and patient bias can be problematical. Some physicians do not know how to recognize these unusual, atypical forms of migraine. It is important to be persistent. Do not settle for an offhand diagnosis of untreatable vertigo.

## Management and treatment of migraine

After diagnosis, your doctor will likely take the following course of action:

- manage your triggers and comorbid (meaning having two chronic diseases or conditions at the same time)
- take a complete history of your medications
- come up with a treatment plan

Almost all chronic vestibular migraine patients – those who are in pain or are dizzy daily - have sleep or mood disorders. It is important that these be addressed. Your migraine problem is unlikely to get better if you are not sleeping well or feeling depressed. Your family doctor can prescribe medications to adjust your mood and improve sleep. It is important to understand depression does not cause dizziness – living with chronic dizziness, however, can result in depression.

50 to 80% of people with migraine-associated vertigo overuse analgesics (painkillers). Headaches that accompany migraine-associated vertigo are exquisitely sensitive to anti-inflammatory medications such as Advil® (ibuprofen) or Tylenol® (acetaminophen). Frequent use of these medications – perhaps three times a week – can cause rebound headaches. These may happen daily or with greater frequency.

Patients with comorbid disease, such as a bad back or neck, may need to take painkillers to function. Taking them may also play a role in triggering migraine or making it worse.

### Non-medicinal treatment of acute migraine

Try to identify foods that trigger migraine. It is likely not a matter of simply giving up one food, such as chocolate. Usually there is more than one trigger or overlapping triggers. And sometimes a trigger cannot be found.

It can be helpful to keep a headache diary for 6 weeks. Record:

- what time you go to bed and get up
- your activities throughout the day
- how your blood sugar feels
- everything you eat and drink and the time of consumption

Migraine thrives on routine. People who usually go to bed at the same time and get up at the same time, for example, can give themselves a migraine by sleeping in or getting up early.

Migraine does not respond well to blood sugar bouncing up and down. Be mindful of how you consume carbohydrates.

It is important to stay hydrated especially if you exercise vigorously. Adding electrolytes to your water bottle, doing a slow warm-up and not letting your heartbeat rise above a certain prescribed number of beats per minute (this will vary by individual) can help.

How your neck and back move plays a large role in vestibular migraine. If you have chronic neck and back pain, sitting can send a signal to your brain that sparks pain at the back - or in some cases, the front - of the head. If you are employed, ask for a workplace ergonomic assessment. Consider paying for an ergonomic assessment to be done at your

home. Even a minor adjustment to a desk- or chair-height can make an enormous difference.

Stretching every day and icing your neck can also be helpful.

If you have acute or episodic migraine, go into a dark room, have a glass of water and lie down. Essential oils, such as lavender or peppermint, on your temples or under your nose may help.

Supplementation with magnesium citrate (200mg three times a day) and vitamin B2, also known as riboflavin (400mg daily), will decrease migraine-associated vertigo in about 10% of people.

Supplementation must be tried for 6 weeks before effectiveness can be evaluated.

### Medical treatment of acute migraine

If the treatments above do not work, these medicines may help “rescue” you:

- NSAIDS (non-steroidal anti-inflammatory drugs) such as Tylenol®, Advil®, and Gravol® – care must be taken with these medicines because the brain is very sensitive to them
- IV Maxeran® (metoclopramide)
- ergotamines
- tryptans

If your neurotransmitter regulation is off more than 10 days each month – that is, you have more than 10 days each month when your head does not feel 100% normal – a strategy to prevent the migraines and vertigo is called for. The aim of a preventative strategy is to reduce migraine and vertigo by 50%. A number of medications designed for other disorders can help prevent migraine. They include:

- anticonvulsants - anti-seizure drugs such as gabapentin, valproate and topiramate (TOPAMAX®)
- antidepressants or sleep agents - amitriptyline (also helps with sleep disorders), fluoxetine, and tizanidine
- BOTOX® (onabotulinumtoxinA) has no side effects and has worked well in clinical trials – it is a first choice for migraine treatment
- propranolol – a beta-blocker that works on the vascular part of neuro-vascular headaches and can help stop your heart rate from increasing during exercise

The above drugs can be very effective, particularly for migraine with headache. They may also work for those who have aura alone and daily vertigo. In the absence of any other effective treatment, they should at least be tried.

CGRP (calcitonin gene related peptide) MABs (monoclonal antibodies) are a recent biologic therapy for chronic migraine. AIMOVIG® is the first in this new class of drugs available in Canada. CGRP MABs are the only drugs ever developed for chronic symptoms of migraine and outperformed both BOTOX® and TOPAMAX® in clinical trials.

### The role of vestibular testing and rehabilitation

Vestibular testing with goggles can be helpful in differentiating classic forms of inner ear positional vertigo and positional nystagmus (involuntary rapid movements of the eyes) that occurs in vestibular migraines.

Once you have started a trial treatment for migraine, vestibular rehabilitation can help by increasing your balance confidence in balance and reducing persistent symptoms. The rehabilitation therapist can record and effectively communicate your progress to your doctor.

### What to expect in the future

Though some physicians still have a long way to go to serve adequately those suffering from vestibular migraine, awareness of this disorder is improving. Knowledge has increased in the last 5 to 10 years and the outlook for better options in the future is hopeful.

### Sources

View sources used for this handout:

<https://bit.ly/3p55xpu>

*Handout updated January 2021.*

If you find the information in this handout helpful, we ask for your help in return. The cause of supporting those affected by balance and dizziness disorders with ad-free, up-to-date, evidence-based information written for Canadians needs you. Please become its champion – [donate to Balance & Dizziness Canada](#).

This handout is intended as a general introduction to the topic. As each person is affected differently, speak with your health care professional for individual advice.

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