## Let's talk about . . .

# CERVICOGENIC DIZZINESS

*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.*

## Key points

- Dizziness related to a neck problem.
- Not all health care professionals and researchers agree about its cause or symptoms.
- Common symptoms include episodes of dizziness, lightheadedness, and unsteadiness.
- Neck movement often triggers symptoms.
- Diagnosis made after all other causes of dizziness have been ruled out.
- Treating the neck problem sometimes makes dizziness symptoms better.
- Treatment includes massage, physiotherapy, vestibular rehabilitation (an exercise-based therapy) and medications.
- Surgery may be done if caused by bow-hunter's syndrome or degenerative disc disease.

## What is cervicogenic dizziness?

"Cervicogenic" (SER-vick-oh-JEN-ick) means "originating in the neck." Cervicogenic dizziness is dizziness that is caused by or combined with a problem in the neck, such as injury. Treating the neck problem can sometimes make the dizziness symptoms better.

Cervicogenic dizziness can be a somewhat controversial diagnosis. Not all health care professionals and researchers agree about what counts as cervicogenic dizziness or what causes the symptoms. Also, there is no specific test to find out if dizziness is caused by an underlying neck condition. In general, if another cause is found for dizziness, it will not be classified as cervicogenic dizziness.

This does not mean that cervicogenic dizziness does not exist. But it does mean that your doctor needs to consider all the possibilities before making the diagnosis.

Cervicogenic dizziness may also be called cervical vertigo, proprioceptive vertigo or cervicogenic vertigo.

## What are the causes?

The brain's balance system combines information from the eyes (visual system), inner ear (vestibular system) and bones and joints (proprioceptive system) to help you keep your balance.

The neck contains many muscles, bones, joints, ligaments, blood vessels and nerves. Proprioceptive signals from the neck—how the neck is bending, stretching, or turning—help your brain know where your head is in relation to your body. In turn, this helps the brain interpret signals from the visual and vestibular systems. Researchers believe that a neck problem or injury may change the proprioception

signals that are sent from the neck to the brain's balance system.

Cervicogenic dizziness can be associated with several different problems, including:

- degenerative spine disorders in the neck, such as arthritis or degenerative disc disease; these can compress the spinal cord (myelopathy) or cause a pinched nerve (radiculopathy)
- whiplash and related injuries, which can also cause benign postural-positional vertigo (BPPV) and damage to the inner ear (labyrinthine concussion)
- vascular disorders such as rotational vertebral artery vertigo (bow-hunter's syndrome), a condition where turning the head to one side cuts off blood flow in the vertebral artery; this causes a temporary loss of blood to the brain

Although there are several theories about how the neck can cause dizziness, there is no definite conclusion from research.

## What are the symptoms?

Together with neck problems like stiffness, pain or limited range of motion, the most common symptoms of cervicogenic dizziness are:

- dizziness
- lightheadedness or a swimming feeling
- unsteadiness, balance problems or a feeling like being drunk

These symptoms happen during episodes that may last minutes or hours. They are often caused or made worse by neck movement. However, different people have different symptoms.

Cervicogenic dizziness usually does not involve feelings of rotation or spinning (vertigo).

Depending on what is causing the problem, people with cervicogenic dizziness may have other symptoms as well:

- People with degenerative spine disease may also have neck stiffness, shoulder pain, headache, weakness, or numbness. Turning their head may trigger dizziness.
- People with whiplash may have head, neck, or shoulder pain. They may feel as though their head is light, heavy, or full.
- People with bow-hunter's syndrome may also have ringing in the ears (tinnitus), headache, low vision or double vision (diplopia), coordination problems (ataxia) or fainting when they turn their heads between 45 and 90 degrees. These problems usually stop when they turn their heads back to a neutral position.

## How is it diagnosed?

Cervicogenic dizziness may be diagnosed by a specialist, such as a neurologist, an otolaryngologist or an otologist.

There is no specific test for cervicogenic dizziness. Other conditions can cause the same symptoms, so your doctor needs to rule out other possible causes of dizziness before making a diagnosis.

Your doctor will ask about your symptoms. Try to be as specific as possible about your symptoms and when they get better or worse. It may be helpful to keep a diary of your symptoms.

Your doctor will also ask about your medical history, including:

- any injuries you have had, especially head or neck injuries that happened around the time your symptoms started
- any medications you are taking or recently stopped taking

Your doctor will also do a thorough physical exam, including testing various neck movements. You will also have a neurological exam. Tests may include asking you to watch the doctor's nose while the doctor moves your head, or to watch your own thumbs while the doctor turns you in an office chair.

You may have some of the following diagnostic tests:

- hearing and vestibular function tests
- balance tests that measure what happens when you get less input from your visual or proprioceptive systems; for example, by asking you to stand on a soft surface or a moving platform with your eyes closed
- imaging tests (X-ray, CT scan, MRI, or angiography, which uses a special contrast dye to get images of your blood vessels)

In people with cervicogenic dizziness, hearing and vestibular function tests usually do not show anything wrong. Sometimes, however, specific neck movements may trigger abnormal eye movements (nystagmus). Cervicogenic dizziness is often diagnosed based on what helps to make the symptoms better: if treating a neck disorder helps the dizziness symptoms, it may be cervicogenic dizziness.

It is important to get at accurate diagnosis. Sometimes neck problems are secondary to another cause of dizziness such as a vestibular disorder. Muscle tension and neck pain are not uncommon when people reduce head and neck movements to avoid triggering dizziness. In these cases, if the primary cause of dizziness is not addressed and only the secondary neck problem is treated, dizziness will persist.

## How is it treated and managed?

Treating cervicogenic dizziness involves treating the underlying cause of the problem. In some cases, such as bow-hunter's syndrome or degenerative disc disease, surgery may be recommended to improve blood flow or release a compressed nerve.

Other treatments may also help with the symptoms of cervicogenic dizziness. They include physiotherapy, vestibular rehabilitation, and medications to help your neck move better.

### Physiotherapy

Physiotherapy seems to be useful for treating cervicogenic dizziness. Exercises may focus on:

- stretching, strengthening, and improving range of motion
- hands-on treatments known as manual therapy
- cervical proprioception and kinesthesia (perception of position and movement) training, which involves head movements while focusing the eyes on a fixed or moving point; proprioception is the perception of position and kinesthesia is the perception of movement

### Vestibular rehabilitation

Although it has not been well studied, vestibular rehabilitation therapy combined with manual therapy treatments seems to be useful.

Vestibular rehabilitation is an exercise-based therapy. Its goal is to help your brain relearn how to balance and how to respond to signals from the visual, vestibular, and proprioceptive systems.

A vestibular therapist can help you set treatment goals and design an appropriate program.

### Medication

Some forms of cervicogenic dizziness can be helped with medications such as NSAIDs and muscle relaxants.

Taking benzodiazepines (ben-zoh-dahy-AZ-uh-peens) for a short time can sometimes help with whiplash injury.

### Other treatments

Using a heating pad, soft tissue treatments (massage) and medications can sometimes help with pain and stiffness and help normalize movements of the neck or help you participate in rehabilitation.

## What to expect in the future

There is still a lot that we do not know about cervicogenic dizziness. Researchers are still studying what causes it, how many people have it, and the best ways to define, diagnose and treat it.

## Visit our website

View this and other articles about vestibular disorders – www.balance&dizziness.org.

In addition, find information about how the balance system works, the journey from diagnosis to treatment, building a wellness toolkit, and more.

*Handout updated September 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.



www.balanceanddizziness.org