

Vertigo

By Dr. Connie D'Astolfo, DC, PhD (candidate)

Now that the fall season is approaching, many sufferers of vertigo will unfortunately re-experience their symptoms. Many of us will remember that feeling as a child of spinning around and round in the playground until the point of dizziness and even when we stopped turning, it seemed like everything around us is still spinning? That's exactly what it feels like to have vertigo.

Vertigo is a common symptom reported by adults during visits to their doctors. The prevalence rate of vertigo is 3 percent in people under 60 years old and 1 in 10 people over the age of 60 years. The recurrence rate averages between 40-50% within a 5 year period. Almost everyone experiences a few seconds of disorientation at some point- but frequent episodes of vertigo—whether lasting only for a few seconds or days on end—are a primary sign of vestibular dysfunction, especially when linked to changes in head position.

The Facts on Vertigo

Disequilibrium simply means unsteadiness, imbalance that is often accompanied by spatial disorientation. Dizziness is a sensation of light-headedness, faintness, or unsteadiness. Unlike dizziness or disequilibrium, Vertigo is a condition in which you feel off-balance with a rotational, spinning component, and is the perception of movement, either of the self or surrounding objects (as if you or your surroundings are moving, spinning, or swaying). It can lead to nausea, vomiting, sensation of head fullness and long term disability. Vertigo is most common in elderly people, but it can affect both sexes at any age. It may be a temporary or permanent condition.

Causes of Vertigo

The organ of balance is the vestibular system in the ear, a tiny grid of fluid-filled tubes and sacs. There are two identical vestibular systems, located in the labyrinth of each inner ear. As you move, the liquid in the tubes also moves about, and its levels are read by nerve cells. The information is sent to the brain, which uses it to calculate which way is down and what should be the horizontal level.

Any problems with balance originate in the vestibular system, so people who suffer from frequent vertigo are said to have a vestibular disorder. Balance problems may be associated along with ringing in the ears or loss of hearing. The causes of vertigo are either central, related to the brain or central nervous system, or peripheral, related to the organs of the inner ear. Central causes are associated with the brain itself such a tumor or stroke or are related to outside conditions which affect the brain indirectly like drugs and alcohol. Other disorders which affect the brain indirectly include heart disease and rhythm abnormalities which interrupt the supply of oxygen to the brain and can cause vertigo. Complications from diabetes can cause arteriosclerosis (hardening of the arteries) which can lead to lowered blood flow to the brain, caus-

ing vertigo symptoms. Neuro-degenerative conditions such as Multiple Sclerosis (MS). Migraine, a severe form of headache, may also cause vertigo.

The most common causes of Vertigo are Peripheral causes which include:

- Benign Paroxysmal Positional Vertigo (BPPV) This is the most common form of vertigo, usually brought on by specific head positions or movements. It is caused by calcium deposits in the inner ear balance organ that periodically become dislodged and cause symptoms. Benign paroxysmal positional vertigo (BPPV) is characterized by the sensation of motion initiated by sudden head movements or moving the head in a certain direction. About 1 in 5 people who have vertigo will have BPPV. This number increases in the elderly or in at risk populations

- Cervicogenic Vertigo and Vestibular System Degeneration (this is highly associated with immobility and degeneration in the neck) – This the second most common cause of vertigo. With age, the function of the inner ear decreases, which can cause problems such as loss of balance, or disequilibrium. This can be complicated by mobility problems such as arthritis, resulting in falls. Good balance relies on three body systems working together: the eyes, the inner ear, and the joints (ankles, knees, hips and neck). Therefore, if one area is under performing, it can be helped by the other two.

- Vestibular dysfunction caused by infection (labyrinthitis, vestibular neuritis Meniere's Disease), ototoxicity (from medication), barotraumas (such as explosion), vascular insufficiency or acoustic neuroma. The brain receives confusing signals which can result in symptoms such as nausea, or motion sickness.

- Head injury, Concussion Syndrome and Whiplash Injury are the single most common causes of vestibular disorders in people under 50 years of age.

- Aging brings its own set of challenges to the vestibular system. In many cases, the underlying cause of a vestibular disorder can't be determined.

- Some antibiotics can damage the vestibular system in high doses or with prolonged use. Acetylsalicylic acid* (ASA), caffeine, alcohol, nicotine, sedatives, tranquilizers, and several illegal drugs can cause temporary dizziness but do no permanent damage to the balance organs once they are stopped.

SPINEgroup's Innovative Treatment for Vertigo

The most common treatment, called the Epley Manoeuvre, involves rotating the patient's head and body through four specific movements at differing speeds, each

Vestibular System 101:

The vestibular system includes the parts of the inner ear and brain that process sensory information involved with controlling balance and eye movements. If disease or injury damages these processing areas, vestibular disorders can result. The vestibular apparatus, a series of canals located inside the ear, includes a structure that contains tiny crystals of calcium carbonate. These crystals help the body detect gravity, tilting and speed changes in linear motions like stopping and starting at a traffic light. BPPV occurs when some of the crystals escape from their normal chamber and get into one or more of the canals. Vertigo symptoms are essentially caused by a confusion of signals to the brain.

Benign Paroxysmal Positional Vertigo (BPPV) Checklist:

- My vertigo lasts only seconds to minutes, never hours or days.
- I can bring on the symptoms by certain head positions.
- It feels like either the room or my body is spinning.
- My vertigo is not associated with a change in my hearing or a noise in my ears.

held for about 30 seconds. The patient's head and body are manipulated so that the dislodged crystals are moved along the canal and drop back into the correct chamber of the inner ear. The treatment is 98.4 per cent effective after three treatments for most cases of Benign Positional Vertigo (BPPV)

When vertigo conditions are chronic and more severe, i.e. associated with cognitive deficits such as poor concentration, issues with spatial perception and coordination as well as short-term memory loss, a more comprehensive treatment approach is required.

Medication and nutraceuticals can also aid in the reduction of motion sickness, vertigo and nausea. This may include antihistamines, anticholinergics and benzodiazepines of either a nutraceutical or pharmaceutical approach. Dietary changes may include increasing water intake and

Home Safety Tips:

Get rid of area rugs and anything that may cause you to slip

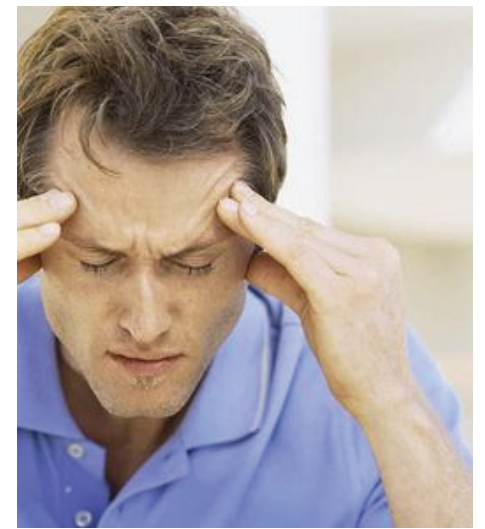
Install grab bars and shower seats in the bathroom area

Sleep in a slightly flexed position (use extra pillows). This will help prevent your head from resting on an angle that further aggravates your condition

Get in and out of bed very slowly

Walk as if you have a book on your head. This minimizes head movement and helps avoid moving the crystals

Avoid rapid movements such as tilting your head forward, upward or sideways



less consumption of beverages that contain alcohol and caffeine.

Vestibular dysfunction has also been correlated with many disorders including ataxia; low back pain; neck pain; cervico-brachial syndromes; ankle instability; knee instability and osteoarthritis.

SPINEgroup has developed an innovative program known as "Cognitive Vestibular integration Therapy" to aid in vestibular rehabilitation including canalith repositioning (Epley's Manoeuvre), training in proprioception, visual acuity, tactility, vestibular system coordination and cognitive based learning skills, physical rehabilitation and dietary counselling- retraining the brain's ability to adjust, cope and/or compensate which has a very high success rate.

Dr. Connie D'Astolfo, DC, PhD (c) is a chiropractor and the director of SPINEgroup® an integrated medical rehab clinic located in Vaughan. Dr. D'Astolfo is currently pursuing a PhD at York University. She has several published peer reviewed articles and is a chapter author for several medical texts. Her interests include chronic disease prevention and management, vestibular disorders, spine care and rehabilitation. You can visit our website at www.spinegroup.ca or contact our client care representative at 905-850-7746 for more information on our clinical programs including our popular Vestibular Therapy Program

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