



AGE-RELATED DIZZINESS AND IMBALANCE

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

- One of the most common problems of older people.
- Has many causes that often overlap including age-related decline of the balance and other body systems.
- Often complicated by having one or more other conditions that can affect balance function.
- Taking 4 or more medications increases risk.
- Other risk factors include an unsteady way of walking, fear of falling, loss of muscle mass, vision problems, dehydration, blood pressure abnormalities, thinking issues, bladder or bowel conditions, foot problems, drinking alcohol, degenerative diseases that affect the brain, and heart disease.
- Speak with a doctor as it might be a sign of something serious.
- Dangerous if it leads to a fall.
- Can have a major impact on quality of life.
- Fortunately, much can be done to treat and manage it.

What is age-related dizziness and imbalance?

Dizziness and imbalance increase as we get older because of age-related deterioration of the balance and other body systems. It is often complicated by one or more other conditions (comorbidities) that can affect balance function. Taking multiple medications also plays a role.

Age-related dizziness and imbalance are one of the most common problems of older people. The cause is often difficult to determine and varies greatly from person to person. Another name for it is presbystasis, meaning age-related loss of balance function.

Older people with dizziness have a much greater risk of falls and injury. Falls in the elderly are especially serious. They carry a significant risk of bone fracture, dislocation, or severe head injury.

Between 20 and 30% of Canadian seniors fall each year. Falls are the leading cause of hospitalization for seniors. Almost 90% of people in their 80s and older are likely to have a balance impairment that carries a greater risk of falling. With a 20% mortality rate, falls are the leading cause of accidental death in people over the age of 65.

Dizziness and imbalance can also lead to fear of falling. This fear results in an even greater risk of falling. Half of older adults who have fallen before are afraid of falling again. Of those who have never fallen, about 30% have a fear of falling.

Dizziness and imbalance can have a major impact on the quality of life of an older adult. It affects mental (cognitive) function, mobility, and independence as well as overall health and wellbeing.

Deterioration of each part of the balance system is normal with age. The frequency of dizziness related to a problem with the vestibular system in older people remains uncertain. Estimates by researchers vary widely from a low of about 20% to as much as 40% to 50% or possibly even higher.

Dizziness in older people is often caused by medical conditions not related to the vestibular system. The likelihood of having one or more non-vestibular conditions (comorbidities) that contribute to dizziness and imbalance also increases with age. Older people may have both vestibular and non-vestibular dizziness at the same time.

Dizziness accounts for 75% of visits to primary care doctors for those over 65 years of age. It interferes with the daily life of 30% of seniors over the age of 70.

The likelihood of dizziness increases with age. By 80 years of age, 60% of people will have seen a doctor at some point in their life for dizziness. And almost 70% of people over the age of 90 experience daily or weekly dizziness.

What are the causes?

The brain receives and processes information from the inner ear balance sensors (vestibular system), the eyes (visual system), and sensors in the muscles and joints (proprioceptive system) to keep the body balanced while standing or walking. Signals are also sent to control eye movements to keep vision stable while moving. A breakdown or information mismatch within any part of the balance system can result in dizziness or imbalance. As part of the normal aging process, every part of the delicate and complex balance system gradually becomes impaired with age.

The most common vestibular (inner ear balance) disorders in older people include:

- **Benign positional paroxysmal vertigo (BPPV)**
With increasing age, the crystals (otoconia) in the inner ear become less dense and more varied in size. They are also replaced more slowly. These changes lead to a greater likelihood of

BPPV. This condition is the most common vestibular disorder in the elderly. By age 70, one third of people will have had BPPV at least once. People with osteoporosis are up to 3 times as likely to have BPPV. Older people may not specifically complain of vertigo (spinning sensation) when they have BPPV.

- **Bilateral vestibulopathy**

Bilateral vestibulopathy means the loss of function on both sides of the balance part of the inner ear (vestibular system). It is often overlooked as a cause of dizziness and unstable gait in older people.

Symptoms include staggering while walking, particularly in the dark and on uneven ground. Some people also have blurred or “jumpy” vision (oscillopsia). The symptoms are most obvious when vision is limited (such as in the dark or when the eyes are closed) or when walking slowly.

Causes include medications that are toxic to the vestibular system (vestibular toxins) and pre-existing bilateral (in both ears) Ménière's disease. In older people, bilateral vestibular loss is sometimes associated with peripheral neuropathy. In about 50% of cases, no specific cause can be identified.

- **Vestibular neuritis**

Vestibular neuritis is a condition that causes a sudden, severe attack of dizziness, usually with nausea and vomiting. This attack may last for days. Vestibular neuritis does not come and go. It is a single, major event. But after the attack, people may still have balance problems and unsteadiness for weeks or months. The aged-related degeneration of multiple systems makes it more difficult for older people to recover from vestibular neuritis.

Vestibular migraine is uncommon in older people.

Other causes and risk factors

- Often, age-related dizziness and imbalance is caused by a **combination of conditions** (comorbidities) affecting the muscles, joints, and nerves as well as impaired brain functioning and vision. Having 3 or more conditions increases risk.

- **Medication**

One or more side effects of many prescriptions and over-the-counter medications can affect balance. Taking 4 or more medications increases risk.

Common problems include vision changes, light-headedness, drowsiness, and impaired judgement.

Medications often associated with dizziness in older people include:

- anticonvulsants
- antidepressants
- antianxiety medications (anxiolytics)
- sedatives, including hypnotics
- strong pain relievers (analgesics)
- muscle relaxants
- medications to prevent and treat abnormal heartbeats (antiarrhythmics)
- chemotherapy

- **Gait instability**

Walking speed decreases with age. After 60, it goes down by about 1% each year. Walking slowly is associated with a greater risk of falling.

An unsteady way of walking (gait) is associated with how well an older person's sensory system, mental processes (cognition) and ability to move (locomotion) are working. Not being able to walk and talk at the same time is a sign of decline. Older people with dementia fall more often than cognitively healthy people of the same age.

- **Fear of falling**

Fear of falling is a major concern of many older people with unsteady gait. It can lead to a downward spiral as decreased confidence leads to inactivity, physical deterioration, and a greater likelihood of falling.

- **Loss of muscle mass**

Loss of muscle mass, especially in the core and legs, starts after age 50. Up to one-third of former muscle mass may be lost. The loss affects leg strength and power. Common causes include lack of exercise and physical activity, disorders such as arthritis as well as stiffening and aching of the joints (polymyalgia rheumatica or PMR). Loss of muscle mass is a major risk factor for gait disorders and falls. These issues all increase the risk of falling. Another name for loss of muscle mass is sarcopenia (saar-kow-PEE-nee-uh).

- **Vision issues**

Vision issues often associated with aging include:

- taking longer for eyes to adjust to darker or brighter areas
- decreased depth perception
- unsteadiness caused by changes in eyeglass prescriptions or adjusting to multi-focal lenses
- cataracts
- macular degeneration

- **Dehydration**

Poor hydration is more likely with age. The part of the brain that tells us we are thirsty becomes less active over the age of 65. Even mild dehydration can cause light-headedness. Dehydration, particularly in warm weather or with increased activity, can result. In addition, older adults are more likely to:

- have impaired kidney function
- avoid fluids because of poor bladder control (incontinence)

- take medication that increases urination
- have mobility issues that make it more challenging to get to the bathroom.
- **Blood pressure abnormalities**
These include high blood pressure (hypertension), low blood pressure (hypotension) and dropping blood pressure when getting up from lying or sitting (postural hypotension). All 3 may cause dizziness and increase the risk of falling.
- **Cognitive (thinking) issues**
These include memory problems and confusion or difficulties with thinking or problem solving. Judgement can be affected and risk of falling increased.
- **Bladder or bowel conditions**
Incontinence or urgency may result in rushing to the toilet many times both day and night. This, combined with unsteadiness on the feet, can increase the risk of falling.
- **Foot problems**
These include numbness, corns, calluses, bunions, ingrown or thick nails and ulcerations. Foot problems can make it more challenging to keep physically active, leading to increased risk of falling.
- **Drinking alcohol**
It is harder for aging bodies to process alcohol, especially when combined with medication. Greater sensitivity to its effects is linked to increased risk of falling.
- **Central vertigo**
Central vertigo is dizziness due to a central nervous system (brain and spinal cord) disorder. It develops because of damage along the vestibular structures and pathways.

An abrupt blockage of blood vessels leading to the brain may result in sudden dizziness and/or imbalance. This may be due to a labyrinthine infarction (a blockage in the inner ear) or an ischaemic stroke in the brain.

Dizziness and an unstable gait are often a first symptom of degenerative diseases like Parkinson's, cerebellar disorders (also called ataxias), and dementia (including normal-pressure hydrocephalus, Alzheimer's disease, and white matter disease).

- **Cardiovascular disease**
Problems with heart rate or rhythm, as well as having had a heart attack in the past, can cause dizziness and problems with balance.
- **Cervical spondylosis**
This is a type of osteoarthritis that causes deterioration in the vertebrae, discs and ligaments in the neck or cervical spine. Sometimes these changes can affect blood supply to the brain, possibly causing dizziness and even blackouts.

What are the symptoms?

Dizziness is a vague term. As applied to older people, it almost always suggests a complex combination of overlapping symptoms. Symptoms are usually episodic. Common ones include:

- **vertigo** – a spinning sensation
- **light-headedness** – the sensation of being woozy or about to faint
- **imbalance** – another word for this feeling is disequilibrium
- **spatial disorientation** – inability to correctly determine the position of the body in space
- **blurred vision**

Many older people cannot describe their dizziness by just one of these symptoms. About half have two or more types of dizziness. Older patients tend to report less vertigo and more non-specific dizziness than younger patients with the same condition.

Other symptoms might include:

- nausea and vomiting
- diarrhea
- changes in heart rate and blood pressure

- fear, anxiety, or panic
- motion intolerance
- instability and insecure gait, particularly when sudden turns are needed

How is it diagnosed?

If you are feeling dizzy or off balance, start by making an appointment for a full check-up with a family doctor. It is important to try to describe symptoms with as much detail and accuracy as possible. The doctor needs this information to help figure out where the problem is coming from.

Age-related dizziness and imbalance usually have a complex combination of overlapping symptoms. It is notoriously difficult to assess due to the likelihood of having two or more chronic conditions in combination with normal age-related deterioration of the balance system. You may be referred to one or more specialists. A variety of medical tests may be ordered.

Family doctors, emergency physicians and vestibular rehabilitation therapists can do a positioning test (Dix-Hallpike manoeuvre) to detect BPPV. You might be referred for diagnostic tests of vestibular function. These are the same tests as those used with younger people. Any age-related differences in test results are usually subtle. Referral to a diagnostic testing centre is needed for in-depth vestibular testing.

Some vestibular test results may have particular significance in the elderly. For example, the sole presence of vestibular-ocular reflex (VOR) asymmetry is a significant predictor of falls.

Clinicians are able to adapt some tests to accommodate issues with the joints, muscles, or cognition.

Sometimes dizziness is a sign of a serious and potentially life-threatening condition, usually a stroke. The risk of a more serious diagnosis rises with age.

If you or someone you know is dizzy and has any of these red flag signs, **get immediate medical help - call 911 or other emergency services right away:**

- Fever of 39.4°C (103°F) or greater.
- Chest pain/heart racing or symptoms of a stroke – stroke symptoms are treated as a medical emergency and usually include headache; passing out; double vision; facial numbness, slurred speech, or swallowing problems; weakness in one arm or leg; and difficulty walking. The symptoms of a brain stem stroke can be more complex and may include vertigo, dizziness, and severe imbalance without the hallmark of most strokes – weakness in one arm or leg.
- Fainting or collapsing.
- Behavioural changes.
- New, different, or severe headache.
- Persistent vertigo (spinning sensation) lasting more than a few minutes.
- History of stroke.
- Risk factors for stroke, such as diabetes and high blood pressure.

How is it treated and managed?

A common misconception about the management of older dizzy patients is that dizziness is a normal part of aging and is, therefore, untreatable. Fortunately, this is not true. Much can be done to treat and manage age-related dizziness and imbalance.

A critical part of successful management is correct diagnosis. Treatment and management need to be multifactorial and specific to the conditions that are causing the dizziness and imbalance. Considerable time for input from a wide range of health professionals may be needed to sort out whether or not your dizziness and imbalance is related to a normal aging process or represents a functional change due to a disorder or disease. A cross-

disciplinary team approach by health professionals is best.

Treatment and management strategies include:

- **Vestibular rehabilitation**, a type of exercise-based therapy, is helpful for most vestibular disorders. Its goal is to help train the brain to relearn how to balance and how to respond to signals from the vestibular and visual systems. Research suggests the effectiveness of vestibular rehabilitation does not change with age. There is evidence that it helps improve postural control, dizziness symptoms and emotional health as well as decreased falls risk even in older patients without a specific diagnosis. Bilateral vestibular weakness can most effectively be treated with vestibular rehabilitation that includes targeted balance training combined with active gait training and postural stability training.

In general, vestibular rehabilitation exercises are designed to:

- reduce dizziness associated with movement
- improve visual clarity and balance
- increase joint mobility and strength to decrease fall risk
- **When possible, reducing or changing medications that cause dizziness or imbalance** – always talk to your doctor before reducing or stopping any medication.
- **Cognitive behavioural therapy (CBT)** may help with anxiety related to dizziness and imbalance.
- **Staying active and exercising** may help prevent falls. Successful fall prevention strategies include balance-training exercises done at least 3 times a week. The exercises should be challenging and progressively more difficult (such as reducing base of support and/or increasing movement in several directions).

- **Creating a safer environment at home** may reduce the risk of falling. Over 50% of falls happen at home. The most common hazard is tripping over something on the floor.
- **Eating well** may improve balance and general health in older adults. Eat plenty of fruits, vegetables, and protein. Follow recommended intakes for calcium and vitamin D.
- **Gait abnormalities** may be treated by a physiotherapist. For example, walking speed may be improved with gait training. Assistive devices, such as a cane, walker, or hip protectors, may be recommended.
- **Fear of falling** may be treated and managed through a wide variety of strategies.
- **Low muscle mass (sarcopenia)** may be improved with high-speed power training in combination with enough protein. Training with a wobble board can increase foot and ankle strength. Core muscle strength gives a good base for controlling movement and maintaining balance. It can be improved through a variety of core-strength exercises on the floor or in a pool as well as by doing Pilates or yoga. Look into classes offered at local community or seniors' centres. Exercises may be adapted to be done while seated for those who are less mobile.

Muscle coordination and control may be improved with activities such as gait training, dancing, playing ping-pong, pool exercises, yoga, and tai chi. Some of these exercises may be adapted to be done while seated.

- **Treatment and management of other conditions** and issues related to dizziness and imbalance are condition specific. Talk to your health care team.

What to expect in the future

When the cause of dizziness and imbalance remains uncertain, or when treatment does not decrease symptoms, a focus on improving functional ability can increase overall well-being and quality of life.

Research into the effects of one or more conditions at the same time (comorbid conditions) in the elderly is ongoing. For example, a connection between orthostatic hypotension and increased risk for dementia was made recently. Future research will hopefully increase awareness and prevention of these and other disorders that affect us as we age.

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.

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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](#).

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