Headway
the brain injury association

Balance problems and dizziness

after brain injury

This publication explains how the human balance system is made up and how a brain injury can affect this system. It describes the types of balance and dizziness problems that can occur after brain injury. It also offers tips on coping with these issues.

www.headway.org.uk
0808 800 2244

Contents

Introduction 1
The human balance system 1
Types of balance problems and dizziness after brain injury 2
Treatment for balance problems and dizziness after brain injury 5
Coping with balance problems and dizziness after brain injury 7
Balance problems and dizziness in the dark 12

Introduction

There are various systems in the body that are responsible for maintaining balance, and the brain plays a key role in this skill. Unfortunately, problems with balance and dizziness can therefore develop after brain injury, causing a wide range of difficulties and affecting people's quality of life.

This publication explains how the human balance system is made up, how brain injury can affect this system to cause problems with balance and dizziness, and offers tips on how to cope with these issues.

The information in this publication does not replace clinical guidance from medical professionals. You should always get advice from your GP or other suitably qualified professional for help with managing the effects of brain injury.

The human balance system

The human balance system is a complex interaction of the following systems:

- **The vestibular system** - this is made up of parts of the inner ear, which respond to movements of the head in order to build up a picture of the body's position in space.

- **The brain** - information from the vestibular system is passed to different parts of the brain for processing. Key areas include the cerebellum, the brainstem, the basal ganglia and the cerebral cortex.

- **The proprioceptive system** - this is the system that processes the sense of body position and movement.

- **The visual system** - vision provides vital information to the brain about where we are in space and how we are positioned relative to other objects.

Types of balance problems and dizziness after brain injury

There are many types of balance problems after brain injury. Even mild injuries can cause difficulties. Specific conditions are listed below.

Do not attempt to self-diagnose yourself with any of the following conditions. If you have concerns, contact your GP or neurologist to discuss.

- **Post-traumatic vertigo** - this refers to dizziness specifically after head injury.

- **Labyrinthine concussion** - this refers to symptoms of hearing loss, dizziness and tinnitus which can occur after head injury, but without signs of direct injury to the

labyrinth (an inner structure of the ear).

- **Vascular vertigo** - this occurs when the vessels that supply blood to the inner ear and parts of the brain are blocked, causing dizziness, hearing loss, visual problems and numbness.

- **Visual impairment** - vision is extremely important for balance, so any visual impairment can cause balance issues, or make existing issues even worse. Visual impairments which might have a particular effect on balance are double vision, blurred vision and problems with depth perception. More information on these issues is available in our publication *Visual problems after brain injury*.

- **Peripheral sensory impairments** - this is injury or loss of feeling in the feet or other locations in the body that can lead to balance problems.

- **Benign paroxysmal positional vertigo (BPPV)** - this makes people feel like they are spinning around in short bursts. It is caused when crystals of the inner ear are dislodged from their usual position and build up in the ear canals, which cause sensitivity to specific kinds of movement such as lying down and turning over.

- **Traumatic endolymphatic hydrops** - this condition is an abnormal build-up of fluid in the inner ear, which can be caused by a head injury, sometimes with a delayed onset. There can be periods of intense dizziness and spinning sensations (vertigo), along with sounds in the affected ear (tinnitus), fluctuating hearing loss, loss of balance and a

feeling of pressure, or fulness in the ear.

- **Perilymph fistula** – sometimes a head injury can cause a tear in the membranes connecting the inner and middle ear. This can allow fluid to leak into the middle ear, affecting pressure and causing balance issues. Symptoms can worsen with changes in external air pressure, such as with rising or falling altitude, or weather changes. Fortunately, fistulas usually heal by themselves with time and rest.

- **Visual vertigo** - dizziness and unsteadiness can be triggered by complex environments with lots of visual stimulation, such as fast-moving objects, crowded environments, flickering lights or spinning objects. Symptoms include loss of balance, dizziness, sweating, fatigue, pallor, nausea, vomiting and disorientation.

- **Cervicogenic vertigo** - this form of dizziness is associated with neck pains such as whiplash injuries. The attacks of dizziness start during or after head injury, especially when the head has been still for some time. However, the diagnosis of cervicogenic vertigo is controversial as it can be difficult to distinguish from other disorders.

- **Medication** - some types of medication, such as blood pressure or
anti-seizure drugs, can cause dizziness, light-headedness and subsequent balance issues. If you are on medication, you should talk to your doctor about whether they may be causing the problems. **Never make changes to your medication without first consulting your doctor.**

Treatment for balance problems and dizziness after brain injury

It is important to have a specialist assessment to diagnose and treat balance problems and dizziness. Many hospitals have balance clinics which provide assessment and treatment.

Professionals typically involved include:

- **Ear, nose and throat specialists (ENT)** - specialists in the investigation and treatment of ear, nose and throat;
- **Neurologists** - specialists in the investigation and treatment of issues with the brain and spinal cord;
- **Physiotherapists** - specialists who help to restore movement and function;
- **Opthalmologists** - specialists in the investigation and treatment of eyes;
- **Audiologists and otologists** - specialists in the investigation and treatment of ear issues and hearing.

Types of treatment and therapy offered for balance problems and dizziness include:

- **Vestibular rehabilitation (VR)** - this is the main treatment for most types of balance problems. It helps the brain to minimise dizziness symptoms caused by imbalances between different parts of the inner ears. The brain learns to rely more on other signals from the balance system, such as joints and limbs. This process is known as ‘vestibular compensation’.

  VR involves a programme of head, eye, neck and body

exercises under different visual situations (for example, with the eyes open or closed, or with background objects moving or stationary), on different surfaces and in different environments.

- **Vascular vertigo treatment** - treatment is aimed at lowering blood pressure and cholesterol. Increased exercise, eating a healthy diet and cutting down on smoking and alcohol can all help.

- **Traumatic endolymphatic hydrops** - regulating the diet can be helpful towards controlling traumatic lymphatic hydrops. This can include cutting out caffeine and reducing sugar, salt and alcohol intake.

- **BPPV treatment** - includes undergoing a series of head and upper body movements aimed at clearing crystals trapped in the inner ear.

- **Talking therapies** - balance issues and dizziness can cause people to feel anxious and stressed. It might lead to people avoiding social situations and reducing contact with friends. Talking therapies such as cognitive behavioural therapy (CBT) and counselling can help people suffering from stress, anxiety and depression. CBT can be particularly effective for learning relaxation techniques to reduce anxiety and for helping people to recognise and manage the ‘triggers’ for vestibular problems. Once you understand these triggers, you can develop the strategies to cope with them.

- **Medication** - anti-vertigo or anti-sickness medication can help in some cases. These should usually only be taken for a short time, as they may interfere with vestibular

compensation if taken for too long.

- **Eyewear** - certain types of glasses, such as bifocal and varifocal lenses, might make you feel disoriented and worsen balance problems. If you think your eyewear might be contributing to balance and dizziness issues, speak to your GP and optician.

- **Surgical procedures** - this may be considered as a last resort in some cases; usually those with dizziness associated with ear infections or perforated ear drums.

Coping with balance problems and dizziness after brain injury

Balance problems and dizziness are different for everyone. The strategies that will work for you personally will depend on the exact nature and cause of the problems. Therefore some of the following tips might be helpful to you, while others might not be.

Keep a balance diary

Keeping a balance diary is a good way of recording when and where you experience issues. You can then identify triggers and patterns, and pinpoint activities that you have particular difficulties with.

Note-taking apps on smartphones can be a convenient way to keep a diary, or you could keep a pocket-sized diary with you at all times so that you can make notes at any time.

It can be helpful to take your diary along with you to medical appointments, as the information could be helpful for the medical professionals in putting together a treatment plan.

Consider psychological support

Talking therapies such as counselling and cognitive behavioural therapy (CBT) can help you to develop coping strategies to deal with anxiety. They can also help you to adjust to your changed circumstances. Discuss getting a referral to talking therapies with your GP.

Talk to family and friends

Keeping things bottled up and suffering in silence can be the worst thing you can do. Sharing your feelings with people you trust can help you to get things off your chest and make others in your life better aware of any support needs you may have. Other people can also be a good source of helpful advice and tips.

Try one thing at a time

There are often multiple things that can be affecting your balance. If you change too many things at once, you won't be sure which ones have made a difference. Try changing one thing at a time and monitoring how you feel afterwards to better identify what helps.

Stay active

It can be very tempting to avoid doing activities that you have difficulties with, but this can make balance issues worse, or cause you to become isolated from friends. Try to stay active and find ways to adapt activities that you enjoy so that you can continue to do them safely.

Carry a Headway Brain Injury Identity Card with you

Headway's Brain Injury Identity Card can help to explain the effects of brain injury to others quickly and access support when needed. Some people with balance issues have been accused of being drunk, so showing people the card can help them to understand the real issue.

It is very important to work with a professional who specialises in balance problems for the tips the following section. None of these tips should replace expert, professional advice, and you should discuss these with your GP, rehabilitation team or other suitably qualified healthcare professionals before you try any of them.

You must also remember to never change, stop or reduce any medication without discussing this with your doctor first.

Consider trying different exercises

Strength-building exercises can be helpful for some, especially core-strengthening exercises that target the upper body and abdominal regions, such as press-ups, sit-ups, pull-ups and weight training.

Stretching exercises such as yoga, Pilates and Tai Chi may also be helpful.

Walking can be a good, gentle introduction back into activity, or a useful exercise in itself.

Swimming, dancing and aqua aerobics are other exercises that can help with building fitness, strength, flexibility and balance.

Consider using exercise equipment such as gym balls and balance boards to help. Physiotherapists with experience in brain injury can offer advice on suitable equipment.

Other exercises can include weight adjustment (practice shifting your balance over your feet without moving your feet), standing on one leg and gradually increasing the time you do this (be very careful and make sure you have someone else

there and/or something stable to lean on if you lose your balance) and practicing walking on different surfaces.

Consider balance training techniques

As well as strength and fitness exercises, there are a number of training techniques to consider when working to improve balance.

- Use a guardrail to hold onto while your balance improves.
- Some people practice walking on their hands and feet until their balance improves.
- Consider wearing protective headgear while you are still unsteady.
- Practising walking on grass or other soft, stable surfaces can be helpful.
- Try to keep correct posture, as upright as possible with head and eyes level.
- Practice walking down a chalk line.
- Practice movements while leaning on a chair or other solid, stable object.
- Try to make activities fun and enjoyable so that you are more likely to stick with them.
- Build activities up slowly so as not to dent your confidence by taking on too much too soon.
- Try to vary your activities.

Use compensatory strategies

Exercises and training techniques sometimes can't help or will require a lot of practice and time before you notice an improvement. You should therefore also try to learn strategies that allow you to compensate for the problem. Some suggestions are as follows:

- If necessary, walk with another person supporting you.
- Consider making adaptations around the home, such as installing handrails and handles so that you can hold onto something as you move around. An occupational therapist can help with choosing and installing these.
- Focusing your eyes on upright, solid objects like lampposts can help when walking in the street.
- Using a cane, crutch or walking frame can be helpful, as this not only provides support but also feedback as you move.
- Touching objects with your hand as you walk past them can provide feedback, support and a sense of distance.
- It might help to wear good quality footwear with soles that allow the feet to feel the ground, which can give you feedback from the ground as you walk.
- Try to avoid uneven floors.
- Avoid sudden head movements and swivelling your eyes.

- Use slow, gradual movements when turning around or turning over.

- Consult a physiotherapist to learn how to fall safely.

Balance problems and dizziness in the dark

Balance problems can worsen in dark conditions. This is because visual cues are very important for balance. If you have particular difficulties in the dark, the following suggestions might help.

- Keep lights and lamps readily available, in easy to access spots around the house. Directional lights can be very useful as they can be aimed in the direction you need.

- Put glow-in-the-dark stickers on light switches and door handles so you can always locate them in the dark.

- Make sure you have help in dark places, such as cinemas.

- Carry a small pocket flashlight, or consider downloading a torch app for your smartphone.

We hope that this has been a helpful resource. Please consider sharing your feedback with us by scanning the QR code or by visiting our publication feedback survey https://uk.surveymonkey.com/r/hwpublications.

Learn more and support our work at www.headway.org.uk/get-involved.

This information was last reviewed in 2023.

We're here to listen.

If you need support, or have a question about brain injury, contact our free nurse-led helpline:

0808 800 2244
helpline@headway.org.uk

0115 924 0800 | enquiries@headway.org.uk
www.headway.org.uk

Head office: Bradbury House, 190 Bagnall Road,
Old Basford, Nottingham, NG6 8SF

Headway – the brain injury association is registered with the Charity Commission for England and Wales [Charity No. 1025852] and the Office of the Scottish Charity Regulator (Charity No. SC 039992]. Headway – the brain injury association is a company limited by guarantee registered in England [No. 2346893].