

# Unilateral vestibular loss or hypofunction

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## What is unilateral vestibular loss or hypofunction?

Unilateral vestibular loss (UVL) is the complete loss of vestibular (balance) function in the inner ear one side. Unilateral vestibular hypofunction (UVH) is a partial loss of vestibular function in one ear.

There are two balance organs in your head, one in each cochlea (a twisted tube inside the inner ear). Each balance organ sends the brain similar electrical information when you are stationary or moving at a constant speed, and electrical stimulus increases when movement/acceleration is detected. However, in the case of vestibular loss of function, this information becomes weaker or absent on one side whilst the other balance organ continues to function normally.

Under normal circumstances, this imbalance of electrical signal from the vestibular organs indicates to the brain that you have turned or moved in some way. However, if you have a UVL, it creates an illusion of movement, triggering 'vertigo' or 'dizziness'.

## What causes UVL/UVH?

UVL can be caused by a number of reasons, including:

- Medications that damage the inner ear nerve or hair cells
- Inner ear damage through physical trauma
- Labyrinthitis
- Vestibular neuronitis
- Autoimmune disease, or conditions that cause damage to the inner ear over time
- Meniere's disease
- Acoustic neuroma – a rare benign tumour on the inner ear nerve
- Meningitis, or swelling of the protective membrane of your brain or spinal cord

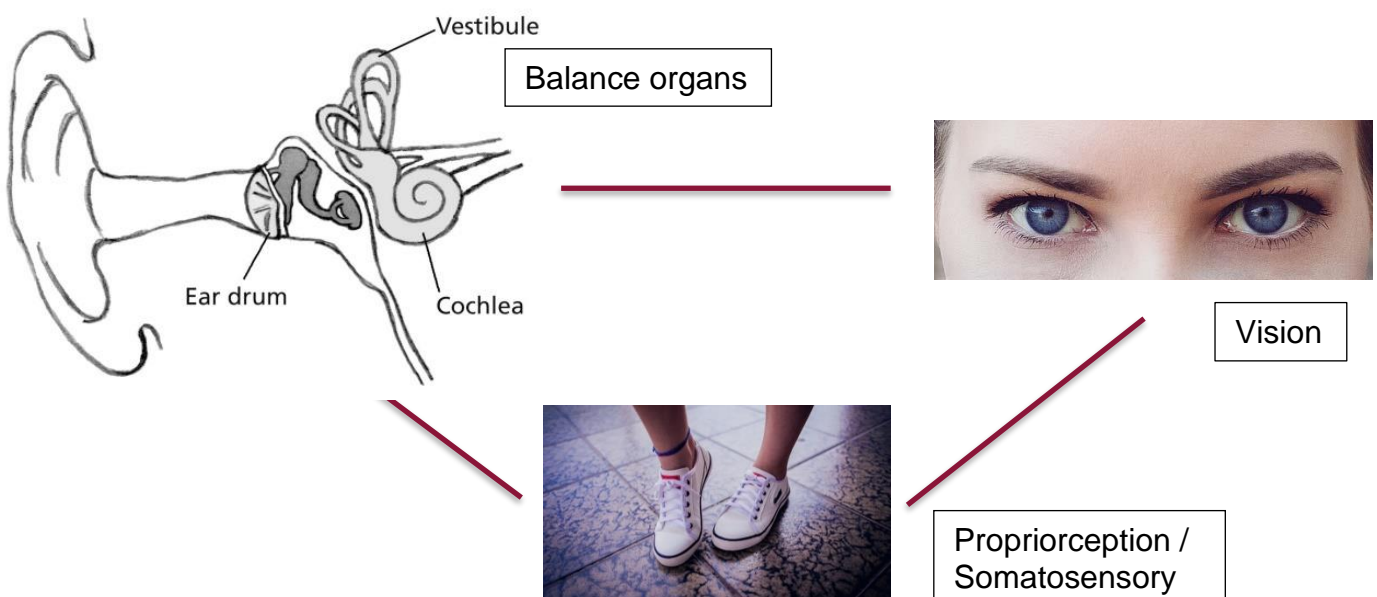
- Otosclerosis – a rare condition that causes hearing loss because the stapes (a small bone in the middle ear) cannot move well
- Paget's disease – a condition that causes fragile bones
- Congenital abnormalities – defects from birth
- Neurofibromatosis
- Syphilis
- Idiopathic – no identifiable cause

## What are the symptoms?

Symptoms of UVL/UVH can vary from person to person and can last up to several weeks. These can include:

- Rotational vertigo
- Nausea and possibly vomiting
- General imbalance
- Veering or difficulty walking
- Unsteadiness in the dark or with eyes closed
- Unsteadiness on uneven surfaces
- 'Catching up' eye movement or difficulty focusing, especially when moving quickly or driving

The brain uses three main mechanisms simultaneously to keep us balanced – the vestibular system in the ears, the visual information through the eyes and the internal/external physical information or proprioception.



When the balance in information from the balance organs is affected, the brain must compensate for this by relying more on the visual and physical information instead. Additionally, the communication between the balance organs and the brain; the visual link known as the Vestibulo-ocular Reflex (VOR) will be affected. When this is the case, a person may experience a distortion in their vision when they are physically moving.

## How is it treated?

The vestibular function, once lost, may or may not recover. But there are ways to manage the condition and potentially improve everyday function.

Initially your GP may prescribe balance suppressants to control the vertigo. But it is important to not rely on these long-term as this will impede your ability to recover balance function efficiently using your natural compensation mechanisms.

Ways to encourage recovery include:

1. Vestibular rehabilitation exercises given by an audiologist to help the brain compensate for the damages caused to the balance organs and strengthen the remaining vestibular function.
2. Gaze stabilisation exercises may also be issued to strengthen the visual information used to balance, which can reduce blurring or jumping of the vision during physical movement.
3. Physical aids such as a walking stick/pole or wheeled walker may be suggested initially to increase your stability using extra somatosensory/proprioceptive information. However, it is a good idea to move away from these when you feel you can, to sharpen your balance function further, rather than rely on these long-term.
4. Paying attention to your surroundings, feel your feet on the ground, and widen your stance.
5. Removing throw rugs, adding night-lights, and using flashlights at night to reduce risk of falling.
6. Use handrails in stairwells and/or in the bathroom to decrease the risk of falling
7. Employing relaxation therapies if you are anxious about your condition as anxiety can increase symptoms.

## What is the prognosis or expected outcome of treatment?

Given time and staying active, your central nervous system adjusts to its new level of balance information it receives. It will use the remaining 'good' ear and more visual and somatosensory/proprioceptive information to compensate for the lack of vestibular information the brain receives from one cochlea. However, you may find there are certain activities which may always be slightly difficult or restricted due to the lack of vestibular information the brain can use one side.

## Follow up

Your rehabilitation progress will be monitored initially until you are functioning well.

Should you have any further concerns or questions, please contact your GP or the Vestibular team within the Audiology department on 01271322476.

If you require assistance at home, a referral to the Devon Sensory team can be arranged with your consent. Please ask the audiologist for more information about this.

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## PALS

The Patient Advice and Liaison Service (PALS) ensures that the NHS listens to patients, relatives, carers and friends, answers questions and resolves concerns as quickly as possible. If you have a query or concern call 01271 314090 or email [rduh.pals-northern@nhs.net](mailto:rduh.pals-northern@nhs.net). You can also visit the PALS and Information Centre in person at North Devon District Hospital, Barnstaple.

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