

BRITISH ASSOCIATION OF AUDIOVESTIBULAR PHYSICIANS VESTIBULAR NEURITIS

Information leaflet for patients

What is vestibular neuritis?

A sudden malfunction of the balance part of the inner ear is one of the commonest causes of a sudden attack of severe vertigo. Traditionally termed "vestibular neuritis" (or neuronitis), implying inflammation of the nerve of balance supplying the inner ear, it was long thought to be due to a viral infection. Whilst it is now known that autoimmune or vascular disease (compromised circulation of the inner ear) can cause identical symptoms, it can be difficult or impossible to distinguish between these causes of sudden vertigo, especially acutely, and the term "acute peripheral vestibulopathy" is now more correctly used to include them all. For the sake of simplicity, this information leaflet will adhere to "**vestibular neuritis**", which remains the term in most common use.

The inner ear houses both hearing and balance organs. Each inner ear contains five balance organs: three semicircular canals (sensing rotation) and two otolith organs (sensing gravity and movement in a straight line). The left and the right balance organs send matching signals to the brain via the balance nerves, the vestibular nerves, for the maintenance and gaze and balance. In vestibular neuritis, the inflammation severely disrupts the balance information between the two inner ears thereby causing a mis-match of information to the brain. This in turn gives rise to the symptoms of vertigo, dizziness and unsteadiness.

Vestibular neuritis is often used interchangeably with labyrinthitis. The main difference is that in labyrinthitis, the whole inner ear is affected causing both hearing loss and dizziness but in vestibular neuritis, there is no hearing loss.

What are the symptoms of vestibular neuritis?

The main symptoms of vestibular neuritis are:

- Sudden severe vertigo (a sense of movement even though you are not moving) and/or dizziness worse with head movements
- Unsteadiness
- Nausea and vomiting

Vestibular neuritis can be frightening because the onset is often sudden without warning. As a result some people might think they are having a stroke. In some cases, symptoms develop slowly over a few hours. Symptoms are often severe in the first two to three days when some patients may even struggle to stand up or walk. Most patients make a slow but **full** recovery over two to three months. Even after a few months, it is possible to experience some slight dizziness particularly with movements or turning the head quickly.

How is vestibular neuritis diagnosed?

Vestibular neuritis is diagnosed based on the symptoms and clinical examination. During the clinical examination, the doctor will examine the ears for any sign of infection, eyes for nystagmus (uncontrollable eye movements) and balance.

There are no specific investigations for vestibular neuritis. Because vestibular neuritis shares some similar symptoms with other medical conditions, such as stroke or neurological illnesses, the doctor may ask for investigations, sometimes urgently (for example associated sudden deafness and severe occipital headache) to rule out these conditions.

What is the treatment for vestibular neuritis?

The vertigo can initially cause vomiting which, if excessive, can lead to dehydration and a referral to the emergency department for intravenous fluids may be necessary. Anti-emetic medications may be prescribed to reduce symptoms of nausea and vomiting. This should only be taken for three days as it may delay recovery if used for longer. Depending on the suspected cause of the acute vestibulopathy, Prednisolone may be prescribed. Critical to recovery is the need to start moving about as soon as possible and to build up normal activity.

What should be expected after the severe symptoms have settled?

Most patients recover balance within one to two weeks but may have brief imbalance and dizziness provoked by sudden head and body movements before becoming symptom free within two to three months. The function of the vestibular nerve and inner ear may recover naturally. In addition, recovery is aided by a process of adaptation called '**central vestibular compensation**' during which the brain recognises the weakness of the balance nerve and responds through a complex process to compensate for the imbalance between the two inner ears.

Early physical activity, for example taking walks outside the home with support, enables central compensation. ***Getting up and moving as soon as the initial severe symptoms begin to improve, is essential even though this may be unpleasant at first.*** However, take a rest if the symptoms are particularly severe, during the first few days, to prevent falls.

What is the role of vestibular or balance rehabilitation?

Vestibular or balance rehabilitation is a rehabilitation approach that is specifically aimed at improving the imbalance and dizziness related to the inner ear weakness. The audiologist or physiotherapist specialising in vestibular rehabilitation will:

- assess the various senses that take part in balance (in other words, not only the inner ears but also the legs and eyes) as well as how the body integrates the information from these various senses.
- tailor an exercise program specifically to enable 'compensation' by training the different senses and the brain to adapt to changes in the vestibular system caused by the vestibular neuritis.

The exercise program may include visual and postural tasks which stimulate eye-head coordination and integration of information from the various senses. Tips of how to prevent falls may also be given. These tasks should be practiced at home and guided by the audiologist or physiotherapist. It may take several weeks to notice a difference but improvement within a month is possible. It is essential that the exercise program is closely followed to ensure rapid recovery.

Factors which can reduce the chances of effective rehabilitation include: prolonged use of anti-emetic medications (eg. Prochlorperazine), impaired mobility, visual problems (for example cataract), damage to nerves in the legs, neurological problems (such as untreated migraine), difficulty with moving, and anxiety.

What are the common complications of vestibular neuritis?

The majority of people remain free of symptoms after the initial period of recovery. However a small proportion may experience complications such as:

- ***Incomplete or failure of central compensation*** - fewer than 2 in 10 patients with vestibular neuritis fail to compensate and their symptoms may continue for months or even years. The causes for this are often the same as those that trigger decompensation (*see below*).
- ***Vestibular decompensation*** - this is when symptoms of dizziness, often provoked by movement, reappear after recovery from vestibular neuritis. This is due to the brain losing its previous ability of 'compensation'. Factors that may trigger vestibular decompensation include stress, depression, anxiety, alcohol, poor sleep, tiredness, reduced physical activity or other illnesses. Dealing with the trigger often resolves the symptoms in which case rapid improvement should be expected.

- **Benign paroxysmal positional vertigo (BPPV)** - this is caused by floating loose chalk crystals in the inner ear balance tubes (semicircular canals). The doctor may offer treatment (particle re-positioning manoeuvre) or refer to a clinician for treatment (*see the BPPV leaflet for more details*).
- **Visual vertigo** – in this condition, visually busy environment such as walking down supermarket aisle, exposure to repetitive patterns, striped objects, moving images (for instance on the computer, tablet or smartphone) may trigger dizziness. It can be caused by an over-reliance on vision to compensate for the inner ear weakness. Vestibular rehabilitation can help alleviate visual vertigo but when there is a significant underlying psychological impact, medications and/or Cognitive Behavioral Therapy (CBT) may be necessary. Visual vertigo can also occur without an episode of vestibular neuritis.
- **Increased risk of migraine and vestibular migraine** – recent evidence suggests that migraine/vestibular migraine can be unmasked following an episode of vestibular neuritis. If this were to happen, consult your doctor.
- Other non-specific symptoms such as disorientation, poor concentration or ‘brain fog’ may be experienced by some people.

What if initial recovery takes longer than two to four weeks?

If severe symptoms remain after two to a four weeks or become worse, a referral to see a balance specialist may be necessary. The specialist may review the symptoms to confirm if the diagnosis of vestibular neuritis is correct. Specialised vestibular tests, hearing tests and/or MRI scan of your brain and inner ears, may be requested to establish whether there are other medical conditions which share similar symptoms with vestibular neuritis.

Links to useful websites:

Visual vertigo:

<https://www.menieres.org.uk/information-and-support/day-to-day/vision-and-vertigo>

Vestibular migraine:

<https://www.menieres.org.uk/information-and-support/symptoms-and-conditions/migraine-associated-vertigo>

Balance Retraining <http://www.menieres.org.uk/files/pdfs/balance-retraining-2012.pdf>

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