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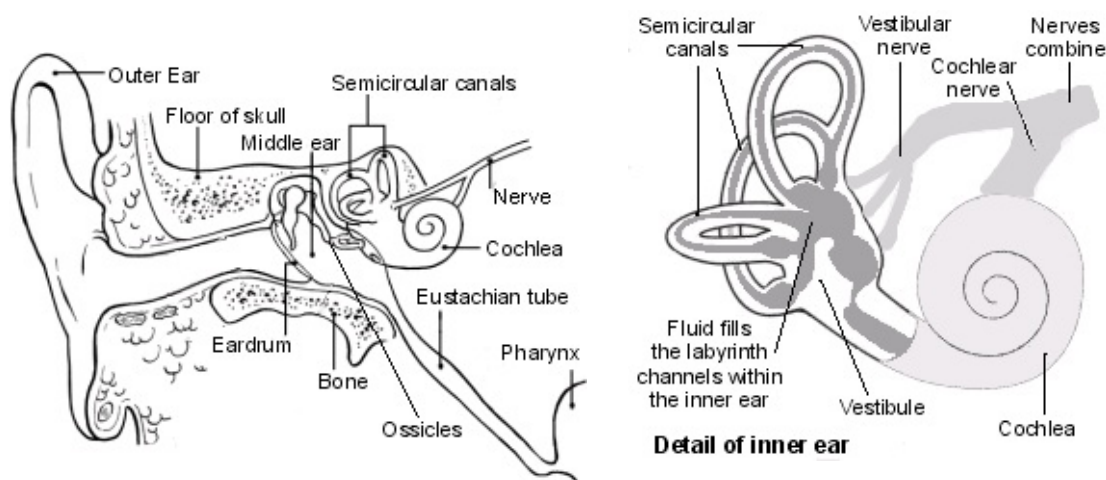
## Labyrinthitis and Vestibular Neuritis

Labyrinthitis and vestibular neuritis are most commonly caused by a viral infection that affects the inner ear. These conditions typically cause vertigo (intense dizziness, often with vomiting). In most cases the symptoms gradually ease and go within a few weeks as the infection clears. Medication may help to ease symptoms. There are some less common causes which may have a different outlook and treatment.

### What is the labyrinth and what does it do?

The labyrinth is in the inner ear. The inner ear includes the cochlea, vestibule and and semicircular canals. These are small shell-like structures in which there is a system of narrow fluid-filled channels called the labyrinth. The semicircular canals sense movement of your head and help to control balance and posture. The cochlea is concerned with hearing.

There are three semicircular canals (anterior, lateral and posterior). These are roughly at right angles to each other and sense movement in different directions - left-right, forward-back and up-down head movements. The semicircular canals are connected to a larger fluid-filled chamber called the vestibule which in turn is connected to the fluid-filled canal in the cochlea.



Head movements are sensed because when you move your head, the fluid in the labyrinth within the semicircular canals moves too. The movement of the fluid moves tiny hairs on the inside lining of the labyrinth. When the hairs move, this triggers nerve messages to be sent to the brain via a nerve called the vestibular nerve. This gives the brain information about the movement and position of your head, even when your eyes are closed.

Looking with your eyes, and nerve messages from the joints and muscles of the body, also help to tell your brain about your position and posture. However, a properly working labyrinth in each ear is needed for a good sense of posture and balance.

### What is vestibular neuritis and labyrinthitis?

These names used to be used interchangeably but are now used more specifically:

- **Vestibular neuritis** (sometimes called vestibular neuronitis) means inflammation of the vestibular nerve. This is the nerve that comes from the inner ear and takes messages from the semicircular canals to the brain.
- **Labyrinthitis** is a condition that is due to inflammation of the labyrinth in the inner ear, although sometimes the vestibular nerve is also involved.

The causes and symptoms of labyrinthitis and vestibular neuritis are similar. Often it is impossible to tell whether you have one or other or both of these conditions. (However, if hearing is affected in addition to other symptoms listed below, then labyrinthitis is much more likely than vestibular neuritis. This is because the labyrinth in the cochlea may also be inflamed which can affect hearing.)

## What are the causes of labyrinthitis and vestibular neuritis?

### Viral infection

The common cause of labyrinthitis and vestibular neuritis is a viral infection. They are called viral labyrinthitis and viral vestibular neuritis. There are various viruses that can cause these problems. The infection may occur at the same time as, or just after, you have a common viral illness such as a **sore throat**, **glandular fever**, **flu**, or a **cold**. The **cold sore virus** may also be a cause. Sometimes you may not be aware of any other viral infection and just develop symptoms of labyrinthitis or vestibular neuritis.

### Other causes

Other causes are uncommon. Strictly speaking, 'itis' at the end of a word means inflammation. However, the terms labyrinthitis and vestibular neuritis are sometimes used for any damage or inflammation to the labyrinth or vestibular nerve, which can be due to various causes. For example, the following conditions will all have other symptoms and problems but may also cause labyrinthitis or vestibular neuritis as a complication:

- **Infection with a germ (bacterium) in the middle ear.** Most ear infections do not spread into the inner ear but a labyrinthitis or vestibular neuritis is an uncommon complication.
- **Meningitis.** The infection may spread from the brain to the inner ear.
- A blockage of the blood circulation to part of the brain.
- Injury to the ear.
- Allergies.
- Tumours.
- An uncommon side-effect of some medicines.

## What are the symptoms of labyrinthitis and vestibular neuritis?

### Vertigo

The main symptom is vertigo. Vertigo is dizziness with a spinning sensation. If you have vertigo you feel as if the world is spinning around you and you feel very unsteady. Often you will also feel sick or vomit. Typically, if a viral infection is the cause (the common situation), you develop vertigo quite quickly. Vertigo occurs because the inflamed or damaged labyrinth or vestibular nerve sends conflicting signals to the brain compared with the normal ear. The brain becomes very confused about your head posture and reacts to cause vertigo.

The vertigo can become intense and constant for the first few days and you simply have to lie down until the symptoms ease. The vertigo may be less intense if you lie down and is often made worse by sitting up, moving your head, or moving around. In milder cases the vertigo is less intense but you feel unsteady when moving or walking around.

### Other symptoms

You may also have:

- Some mild hearing loss on the affected side if you have labyrinthitis.
- Nystagmus. This is a 'shaking' of the eyes from side to side or in a rotary movement. You may not notice this but a doctor will look for it as it is often present. (Labyrinthitis and vestibular neuritis are one cause of nystagmus. There are other causes.)
- Other symptoms of a viral infection such as a sore throat, flu symptoms or a cold.

- Pain in an ear. However, this is not normally a feature of a viral labyrinthitis or viral vestibular neuritis. If you have ear pain it may indicate that you have an infection with a germ (bacterium) in your middle ear that has spread to the inner ear.

Symptoms of a viral labyrinthitis or viral vestibular neuritis can last anything from a few days to several weeks. A typical case is for symptoms to be bad for 2-3 weeks and then gradually to settle down over several days. There may be some slight unsteadiness for 2-3 months before symptoms clear completely.

However, in a small number of cases, symptoms can persist for months or years. In these cases, the viral infection will have gone but the inflammation and damage caused by the infection may cause persisting symptoms.

## Do I need any tests?

If you have a typical episode of labyrinthitis or vestibular neuritis due to a viral infection then your doctor will usually be able to diagnose this on the basis of your symptoms and the examination. Tests are not usually needed or helpful.

However, you may be referred for tests such as a scan, hearing tests, balance tests, etc, if you have symptoms that suggest anything other than a viral infection, or if symptoms are not settling within 3-4 weeks.

## What is the treatment for labyrinthitis and vestibular neuritis?

If you get a sudden attack of vertigo **accompanied by deafness in one ear** you should seek urgent medical help, as this could be a sign of blockage of the blood vessels to part of the brain and you may need urgent treatment.

### Treatment if a viral infection is the cause

No treatment will completely take away the symptoms - especially the main symptom of vertigo. You may simply have to accept that you will be dizzy and may need to stay in bed until the viral infection runs its course and the worst of the symptoms subside.

A doctor may prescribe **anti-sickness medication** if you are troubled with being sick (vomiting). Some medicines also help to quieten the nerve messages from the inner ear and may ease vertigo. For example, **prochlorperazine**. Occasionally, some people become so lacking in water in the body (dehydrated) due to the vomiting that goes with vertigo that they need to be admitted to hospital. In hospital, a 'drip' (fluid through a vein) can be put in place until the vomiting stops.

Some doctors prescribe a short course of **steroid tablets**. The theory is that this may reduce the inflammation more quickly than it would do naturally. It is not clear if this is of value.

If symptoms do not clear within a few weeks then you may be referred to an ear specialist who may recommend treatment called vestibular rehabilitation therapy (VRT). This therapy uses physical and occupational therapy techniques to treat vertigo and balance disorders.

### Treatment of other causes

Treatment of other less common causes depends on the cause. Your doctor will advise. For example, if you have an infection with a germ (bacterium) in your middle ear you may be prescribed antibiotic medication.

## What is the outcome (prognosis)?

A bout of labyrinthitis or vestibular neuritis can make you feel very unwell and you may have to go to bed. However, in most cases, the cause is a viral infection and this usually clears away. Therefore, symptoms in most cases clear completely but this may take several weeks. Some cases are milder and you just feel a bit unsteady on your feet for a short time.

In a small number of cases, symptoms following a viral labyrinthitis or viral vestibular neuritis can persist for months or years. Also, there are more serious causes of labyrinthitis and vestibular neuritis but these are much less common. Therefore, tell your doctor if you do not improve, or if you develop other symptoms.

## Further help & information

**Labyrinthitis.org.uk**

Web: [www.labyrinthitis.org.uk/](http://www.labyrinthitis.org.uk/)

## Further reading & references

- [Vertigo](#); NICE CKS, April 2010 (UK access only)
- [L MLuxon](#); Evaluation and management of the dizzy patient; Journal of Neurology, Neurosurgery & Psychiatry 2004;75:iv45-iv52
- [Epley manoeuvre](#); Australian Prescriber

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