CONDITION

Labyrinthitis

Labyrinthitis is inflammation of the inner ear that causes vertigo, imbalance, and hearing symptoms.

WHAT IT IS
Inflammation of the inner-ear balance and hearing organs

BODY SYSTEM
Inner ear and nervous system

MAIN SYMPTOMS
Spinning vertigo, imbalance, hearing loss, ringing in one ear

WHAT CAUSES IT
Usually viral inflammation; rarely bacterial infection

HOW IT IS DIAGNOSED
Symptom pattern, examination, and formal hearing test

MAIN TREATMENT
Short-term symptom relief, movement, and vestibular rehabilitation

CAN IT BE CURED?
Sometimes - inflammation settles, but hearing problems can remain

IS IT AN EMERGENCY?
Sometimes - with stroke signs or sudden hearing loss

LONG-TERM OUTLOOK
Most regain balance; some retain hearing loss or tinnitus

Overview

Labyrinthitis is inflammation of the labyrinth, the part of the inner ear involved in hearing and balance. The labyrinth sends information about movement and sound to the brain. When it becomes inflamed, these signals can become disrupted.

The condition usually causes a sudden, intense feeling that you or your surroundings are spinning. This is called vertigo . Unlike vestibular neuritis, another inner-ear condition, labyrinthitis also causes hearing loss or ringing in the affected ear.

The most intense symptoms often improve within days. Balance may take several weeks or longer to recover as the brain adjusts to altered signals from the inner ear. Hearing can improve, but some people are left with hearing loss or tinnitus.

Other conditions, including stroke and sudden sensorineural hearing loss, can cause similar symptoms and may need urgent treatment. A new episode of severe vertigo with hearing loss should therefore be medically assessed rather than assumed to be labyrinthitis.[1,2]

Symptoms

Labyrinthitis usually begins suddenly. Symptoms are often continuous during the first stage rather than lasting only a few seconds.

Common symptoms include:

Vertigo may be severe enough to make normal movement difficult at first. Symptoms can be present even when you are still, although movement often makes them worse.

Labyrinthitis usually affects one ear. Ear pain is not a typical feature of uncomplicated viral labyrinthitis. Pain, discharge from the ear, fever, or swelling around the ear may point to a middle-ear infection or another problem.

Brief attacks brought on by rolling over in bed are more typical of benign paroxysmal positional vertigo, or BPPV. Repeated attacks with pressure in the ear may suggest Ménière's disease. These differences are useful, but symptoms alone cannot always establish the cause.

- A spinning or moving sensation
- Difficulty standing or walking steadily
- Nausea or vomiting
- Reduced hearing in one ear
- Ringing, buzzing, or roaring in the ear, called tinnitus
- Trouble focusing the eyes while moving
- Feeling worse when turning the head

Causes and risk factors

Most cases are thought to follow a viral infection, such as a cold or flu-like illness. Inflammation may continue after the infection itself has started to settle. In many people, no specific virus is identified.[1,3]

Bacterial labyrinthitis is much less common. It can develop when infection spreads from the middle ear, the bone behind the ear, or the tissues around the brain. This form can be more serious and requires prompt treatment.

Less common causes of inner-ear inflammation include autoimmune disease, in which the immune system attacks the body's own tissues, and certain infections that directly affect the ear or nearby nerves.

Having a recent respiratory or ear infection may increase the chance of labyrinthitis, but many people develop symptoms without a clear trigger. Stress can make dizziness feel harder to manage, but it is not considered a direct cause of labyrinthitis.

Diagnosis

There is no single test that confirms every case of labyrinthitis. Diagnosis is based on your symptoms, a physical examination, hearing assessment, and tests used to rule out other causes.

A clinician may examine your ears, eye movements, balance, walking, coordination, strength, and sensation. Involuntary flicking eye movements, called nystagmus , can provide information about the balance system.

A formal hearing test, or audiogram, is important when hearing has changed. It measures the type and degree of hearing loss. Sudden loss caused by damage to the inner ear or hearing nerve may need time-sensitive treatment.[2]

Further testing may include:

A bedside eye-movement assessment called the HINTS examination can sometimes help distinguish an inner-ear problem from stroke. It is reliable only in the right clinical setting and when performed by a trained professional. It is not a self-test.

- Blood tests when infection or inflammation is suspected
- MRI or CT imaging when symptoms could have another cause
- Specialist balance tests if symptoms continue
- Tests for middle-ear disease

Treatment and management

Treatment depends on the likely cause, the severity of symptoms, and whether hearing has been affected.

During the first few days, medicines may be offered to reduce nausea, vomiting, or severe vertigo. Some of these medicines cause drowsiness. Drugs that suppress balance signals are

generally used only for a short period because longer use may slow the brain's natural adjustment.[1,3]

Rest may be necessary while vertigo is intense. Drink enough fluid, especially if you have been vomiting. Once the worst symptoms ease, gradually returning to safe movement usually helps the balance system recover. Staying completely still for a long time can delay this process.

Corticosteroids like prednisone or hydrocortisone , which reduce inflammation, may be considered in some situations. Evidence for routine steroid treatment of vestibular symptoms is uncertain. However, sudden inner-ear hearing loss is managed as a separate, urgent hearing problem, and steroids may be offered after medical assessment.[2]

Antibiotics like amoxicillin or doxycycline do not treat viral labyrinthitis. They are needed when bacterial infection is suspected or confirmed. Antiviral medicine is not routinely used unless there is evidence of a specific viral illness that may benefit from it.

If imbalance continues, vestibular rehabilitation can help. This is a structured exercise programme that uses eye, head, and body movements to retrain the brain to handle altered balance signals. A hearing specialist may discuss hearing aids or other support if hearing loss remains.

Until the vertigo has settled, avoid driving, cycling, climbing ladders, operating machinery, or swimming alone. Alcohol can worsen dizziness, and sedating medicines can affect coordination.

Complications

Some people continue to feel unsteady, especially in busy places, low light, or when moving their head quickly. Vestibular rehabilitation can help with this persistent imbalance.

Possible longer-term effects include:

Severe bacterial labyrinthitis can cause major hearing loss and complications from the underlying infection. This is uncommon, but symptoms such as fever, severe headache, neck stiffness, confusion, or ear discharge need urgent assessment.

- Hearing loss in the affected ear
- Ongoing tinnitus
- Falls or reduced confidence with movement
- Sensitivity to visually busy surroundings
- Anxiety related to dizziness or fear of another episode

Prevention

Most viral labyrinthitis cannot be reliably prevented. It may occur after an ordinary viral infection, and the exact trigger is often unknown.

Routine vaccination can reduce some infections that may lead to serious middle-ear disease or meningitis. Handwashing and avoiding close contact when you or others have a contagious respiratory illness may also reduce the spread of some infections, but these steps cannot guarantee prevention.

Prompt assessment of significant ear infections may help prevent rare bacterial complications. Antibiotics should not be taken to prevent viral labyrinthitis unless they have been prescribed for a separate bacterial infection.

Living with it and what to expect

The early stage is usually the hardest. Constant vertigo and nausea often become less intense over several days. Balance may then improve gradually over weeks as the brain learns to rely more on information from the other ear, the eyes, and the joints.

Recovery is not always smooth. Tiredness, poor sleep, illness, alcohol, or visually busy settings can temporarily make dizziness more noticeable. A difficult day does not necessarily mean that the inner ear has become inflamed again.

Gentle, regular movement is usually part of recovery once it is safe. You may need temporary changes at work if your job involves driving, machinery, heights, or rapid head movements. Persistent symptoms may benefit from vestibular rehabilitation rather than prolonged rest.

Hearing recovery is less predictable than balance recovery. Hearing may return fully, improve partly, or remain reduced. Tinnitus may fade or become easier to ignore, but it can persist.

A true repeat episode can happen, although recurrent vertigo may have another cause. Repeated attacks, changing hearing, or symptoms that do not follow the expected pattern should be reassessed rather than automatically attributed to previous labyrinthitis.

When to get medical help

Seek emergency medical help for new vertigo accompanied by possible signs of stroke, including:

Also seek emergency help for vertigo with high fever, severe headache, neck stiffness, marked

drowsiness, or a new rash. These can be signs of a serious infection.

Arrange urgent, same-day medical assessment if you suddenly lose hearing in one or both ears, even if the ear feels blocked. Sudden sensorineural hearing loss can resemble labyrinthitis and treatment may be time-sensitive.[2]

Urgent assessment is also appropriate if you cannot keep fluids down, have signs of dehydration, develop discharge or severe pain from the ear, or became dizzy after a head injury.

Routine follow-up is appropriate if balance is not steadily improving, dizziness continues for several weeks, hearing or tinnitus remains troublesome, or attacks keep returning. These situations are not usually emergencies, but further hearing, balance, or neurological assessment may be useful.

- Facial drooping or weakness on one side
- Arm or leg weakness or numbness
- Trouble speaking or understanding speech
- New double vision or loss of vision
- A sudden, severe headache
- Fainting, confusion, or inability to stand unsupported

Common questions

How long does labyrinthitis last?

The most severe spinning and nausea often ease over several days. Unsteadiness can continue for several weeks, and some people need longer. Hearing symptoms may recover at a different rate from balance symptoms.

Is labyrinthitis contagious?

Labyrinthitis itself is not passed between people. A virus that triggered it, such as a respiratory virus, may be contagious.

Is labyrinthitis the same as vestibular neuritis?

No. Both affect the inner-ear balance system and can cause sudden vertigo. Labyrinthitis also affects hearing, causing hearing loss or tinnitus. Vestibular neuritis generally does not cause hearing symptoms.[3,4]

Can labyrinthitis cause permanent hearing loss?

Yes, although it does not happen to everyone. Hearing may return fully, improve partly, or remain reduced. Sudden hearing loss needs urgent assessment because early treatment may affect the outcome.

Can I drive with labyrinthitis?

Do not drive while you have vertigo, poor balance, unpredictable symptoms, or drowsiness from medicine. Return to driving only when you can control the vehicle safely and meet local licensing requirements.

Can labyrinthitis come back?

It can recur, but repeated vertigo may be caused by another condition, such as BPPV, migraine-related vertigo, or Ménière's disease. Recurrent attacks should be medically reviewed.

Sources

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