CONDITION

Nystagmus benign paroxysmal positional

Brief, position-triggered eye movements caused by displaced particles in the inner ear

WHAT IT IS
Position-triggered eye movements from an inner-ear balance problem

BODY SYSTEM
Inner ear and balance

MAIN SYMPTOMS
Brief vertigo, jerking eyes, nausea, unsteadiness

WHAT CAUSES IT
Loose calcium particles in the inner ear

HOW IT IS DIAGNOSED
Dix-Hallpike or supine roll positional testing

MAIN TREATMENT
Canalith repositioning manoeuvres

CAN IT BE CURED?
Sometimes - repositioning often ends an episode

IS IT AN EMERGENCY?
Sometimes - emergency care for new neurological symptoms

LONG-TERM OUTLOOK
Episodes often resolve but may return

Overview

Benign paroxysmal positional nystagmus is a pattern of involuntary eye movement triggered by certain changes in head position. It usually occurs as part of benign paroxysmal positional vertigo, often shortened to BPPV.

BPPV is an inner-ear balance condition. Small calcium carbonate particles become displaced and enter one of the fluid-filled balance canals. When your head moves, these particles disturb the fluid and send an incorrect movement signal to the brain.

This mismatch commonly causes vertigo: a false feeling that you or your surroundings are spinning. At the same time, the eyes make quick, repeated movements called nystagmus. The direction and timing of these eye movements can help identify which ear and balance canal are involved.

"Benign" means that the usual form is not caused by a dangerous disease. It does not mean that the symptoms are minor. An episode can be frightening, cause nausea, and increase the risk of falling.

"Paroxysmal" means sudden and brief. "Positional" means triggered by a change in head position. The typical episodes last less than a minute, although a sense of imbalance may continue afterward.

Not all positional vertigo or nystagmus is BPPV. Different eye-movement patterns, continuous symptoms, hearing changes, or neurological symptoms may point to another inner-ear or brain condition.

Symptoms

Symptoms usually begin after a particular head movement. Common triggers include:

The main symptom is a brief burst of vertigo. It may feel as though the room is spinning, the bed is tipping, or your body is being pulled sideways. Nausea, sweating, and temporary unsteadiness may occur.

Nystagmus is the rapid eye movement that accompanies the vertigo. You may not notice it yourself, although another person might see your eyes flick or jump. A clinician looks at its direction, duration, and relationship to head movement during positional testing.

The most intense spinning generally stops when the head remains still. Some people then feel mildly dizzy, "off," or unsteady for hours or days. BPPV does not usually cause fainting, weakness, numbness, speech problems, or a new loss of hearing.

Symptoms can come and go. You may have several attacks over a few days and then have no symptoms for weeks, months, or longer.

- Rolling over or sitting up in bed
- Lying back or turning the head to one side
- Looking upward
- Bending down and then standing
- Moving the head quickly

Causes and risk factors

The inner ear contains three loop-shaped semicircular canals filled with fluid. These canals

detect head rotation. Nearby balance organs contain tiny calcium carbonate particles, sometimes called crystals or canaliths.

In BPPV, some particles break free and move into a semicircular canal. Head movement shifts them through the canal, producing a stronger or longer signal than expected. The brain receives conflicting information from the two ears, which causes vertigo and nystagmus.

The posterior canal is most often involved, but the horizontal or anterior canal can also be affected. The affected canal determines which positions trigger symptoms and how the eyes move.

Often there is no clear reason why the particles became displaced. Recognised associations include:

BPPV can occur after dental, surgical, or other procedures that keep the head tilted, but a direct cause cannot always be established. It is not caused by stress, although stress can make dizziness feel harder to manage.

- Increasing age
- A recent head injury
- A previous inner-ear disorder or infection
- Long periods with the head kept in one position
- A past episode of BPPV

Diagnosis

Diagnosis is based on your symptom pattern and a positional examination. A clinician will ask what the dizziness feels like, how long each attack lasts, what triggers it, and whether you have hearing or neurological symptoms.

For suspected posterior-canal BPPV, the usual examination is the Dix-Hallpike test. You begin seated while your head is turned. The clinician then helps you lie back with your head supported in a specific position. They watch for vertigo and the characteristic nystagmus.

A supine roll test may be used when the horizontal canal is suspected. During this test, you lie on your back while your head is turned from side to side.

Special goggles or video equipment can make subtle eye movements easier to see. The tests may briefly reproduce your symptoms, so support is provided to reduce the risk of falling.

Hearing tests, brain scans, or blood tests do not confirm typical BPPV. They may be appropriate when symptoms or examination findings are unusual, when hearing has changed,

or when another condition needs to be considered.

Other possible causes of positional dizziness include migraine, inflammation of the inner ear, Ménière's disease, medication effects, low blood pressure, and less commonly a problem affecting the brain or nervous system.

Treatment and management

The main treatment is a canalith repositioning manoeuvre. This is a planned sequence of head and body movements that guides the displaced particles out of the affected canal and back to an area where they no longer trigger vertigo.

The Epley manoeuvre is commonly used for posterior-canal BPPV. Other manoeuvres are used for horizontal- or anterior-canal forms. Choosing the correct sequence depends on identifying the affected ear and canal.

A manoeuvre may work after one session, but it sometimes needs to be repeated. Brief vertigo or nausea can occur during treatment. Mild imbalance may remain after the spinning attacks improve.

A trained clinician or vestibular physical therapist can perform the manoeuvre. Once the pattern has been confirmed, some people are taught how to repeat an appropriate manoeuvre at home if symptoms return. Internet videos may not identify the correct ear or canal, and some movements may be unsuitable for people with certain neck, back, blood-vessel, or mobility problems.

Medicines used for motion sickness or nausea may reduce severe short-term symptoms, but they do not move the particles or correct the cause. Routine or prolonged use of medicines that suppress the balance system is generally avoided in BPPV unless there is another reason to use them.

During an active episode, move carefully and use support when standing. Avoid driving, climbing ladders, or operating machinery while sudden vertigo is still occurring.

Routine follow-up is appropriate if symptoms continue after treatment, return often, or leave ongoing imbalance. Persistent symptoms may require repeat positional testing, a different manoeuvre, balance rehabilitation, or assessment for another cause.

Complications

The main concern is injury from losing balance. An attack while walking, using stairs,

showering, or driving can lead to a fall or collision.

Severe nausea may occasionally cause repeated vomiting and dehydration. Some people also limit normal movement because they fear triggering an attack. This can contribute to stiffness, reduced activity, and ongoing unsteadiness.

BPPV does not normally damage hearing or cause permanent injury to the brain. Symptoms that do not fit the usual brief, position-triggered pattern are not simply complications of BPPV and deserve further assessment.

Prevention

There is no reliable way to prevent a first episode because the particles often become displaced without a known cause.

Routine restrictions on sleeping position or everyday head movement have not been shown to prevent all future episodes. After a repositioning manoeuvre, follow any short-term instructions given by the clinician who performed it, particularly if you have mobility or fall risks.

Preventing injury is more practical than trying to prevent every attack. Keep a light within reach at night, sit before standing if a movement triggers vertigo, and use a handrail on stairs. Avoid hazardous activities until sudden attacks have settled.

Living with it and what to expect

Many episodes improve after a successful repositioning manoeuvre. Some also settle without treatment as the particles move or the balance system adapts. Recovery time is not the same for everyone.

A mild sense of swaying or imbalance can continue after the brief spinning has stopped. This often improves gradually as you return to normal movement. Vestibular rehabilitation may help when imbalance persists. This is a form of physical therapy using eye, head, balance, and walking exercises.

BPPV can return in the same or the other ear, even after successful treatment. A recurrence does not necessarily mean that treatment failed or that the condition has become dangerous. Repeat examination is useful because a different canal may be involved.

Between episodes, BPPV does not usually cause progressive damage. Most people can continue their usual work, exercise, and travel once sudden vertigo is controlled. Jobs involving heights, driving, heavy machinery, or a high fall risk may require temporary adjustments.

If your symptom pattern changes over months or years, do not assume every dizzy spell is BPPV. Continuous dizziness, new hearing symptoms, fainting, severe headache, or neurological changes need a separate assessment.

When to get medical help

Arrange routine medical assessment if you have new, repeated vertigo triggered by head position. Positional testing can help confirm whether BPPV is responsible and identify the correct treatment manoeuvre.

Seek prompt medical advice if:

Seek emergency care for vertigo accompanied by signs that may indicate a stroke or another urgent condition, including:

Continuous severe vertigo with neurological symptoms is not the typical pattern of BPPV.

- Symptoms persist despite repositioning treatment
- Attacks are becoming more frequent or no longer position-related
- You have a new loss of hearing, ear fullness, or persistent ringing
- Vomiting prevents you from keeping fluids down
- Unsteadiness is causing falls or limiting normal activities
- New facial drooping, arm or leg weakness, or numbness
- Trouble speaking, understanding speech, swallowing, or seeing
- A sudden severe headache unlike your usual headaches
- New inability to stand or walk, even with support
- Fainting, chest pain, or severe breathing difficulty
- Symptoms beginning after a significant head injury

Common questions

Is benign positional nystagmus the same as vertigo?

No. Nystagmus is the involuntary eye movement seen during an attack. Vertigo is the spinning or movement sensation you feel. Both can result from the same incorrect balance signals.

How long does an attack last?

The strong spinning from typical BPPV usually lasts less than a minute after the triggering movement. Nausea or mild imbalance can last longer. Continuous spinning for hours is not the usual pattern and should be assessed.

Can I do the Epley manoeuvre at home?

Some people can after a clinician has confirmed the affected ear and canal and shown them the correct steps. It may not be suitable if you have certain neck, back, circulation, or mobility problems. Using the wrong manoeuvre may not help and can make symptoms difficult to interpret.

Will BPPV go away permanently?

An episode may resolve with treatment or over time, but BPPV can return. Further repositioning treatment is often effective when a recurrence is confirmed.

Can BPPV cause hearing loss?

Typical BPPV does not cause hearing loss. Sudden hearing loss, new one-sided ringing, or ear pressure with vertigo may have another cause and needs prompt medical assessment.

Is positional nystagmus always harmless?

No. The characteristic brief nystagmus of confirmed BPPV is considered benign, but other positional eye-movement patterns can come from migraine, medication effects, or a neurological condition. Atypical or persistent symptoms need assessment rather than self-diagnosis.

Sources

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