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# Can stress cause vertigo?

Do you keep feeling so dizzy that you find it hard to control your balance? You may be experiencing vertigo, a strange and often distressing sensation that can have several possible causes. Most causes are physical, but what's the connection with emotional wellbeing and can stress cause vertigo?

## What is vertigo?

Vertigo is the sensation where you may feel like you, or the world around you, is constantly moving or spinning. This can make you feel dizzy and off balance. It may be mild and barely noticeable, or it could be so severe that it completely debilitates you - like being unable to stand without falling over.

#### Symptoms of vertigo

Vertigo is itself a symptom of an underlying health problem. If you experience vertigo, it may feel like you are: tilting, swaying, spinning, or being pulled in one direction.

Other vertigo symptoms may also accompany this:

- Nausea or vomiting.
- Headache.
- A ringing sound in your ears.
- Hearing loss.
- Sweating.
- Unusual eye movements jerking or twitching, known as nystagmus.

Your vertigo symptoms could last anywhere between a few seconds to days at a time.

# The link between stress and vertigo

Of the various possible causes of vertigo, a problem with the inner ear which is responsible for our sense of balance - is the most common. Several physical health problems can affect your inner ear, from an ear infection to Ménière's disease.

But can stress cause vertigo? While more scientific evidence is needed to prove whether stress or anxiety can directly cause vertigo, what is clear is that vertigo, stress, and the parts of your body that control your balance are all intricately connected.

These parts - collectively known as the vestibular system - include an organ in your inner ear that controls your balance, specific areas of your brain, and the nerves that transits messages between the two. Part of your inner ear sends information to your brain about your body position relative to gravity. Your brain then uses this message to determine if you're balanced.

# How can feeling stressed negatively affect your vestibular system, and therefore your sense of balance?

#### Stress hormones and nerve signals

If you're feeling stressed, you may notice that your heartbeat and breathing speed up. These are some of the physical changes that can take place when stress or anxiety triggers the release of stress hormones, like adrenaline and cortisol.

These stress hormones activate your autonomic nervous system, which prepares your body for a fight-or-flight response to a stressful situation. Alongside a quickened heart rate and sweating, this can also set off vertigo symptoms.

Adrenaline and cortisol – as well as other stress-triggered chemicals like histamine – may also disrupt the messages sent between your inner ear and brain. This means that vital information related to your sense of balance – like the exact position of your body – gets confused. For example, cortisol may do this by changing the activity in the nerve cells responsible for carrying this message<sup>1</sup>.

#### Balance and stress in the brain

The parts of your brain that control stress and balance are also connected through a network of signals. This could explain the two-way relationship between stress and vertigo - when one part of the brain experiences heightened activity, this triggers more activity in the other<sup>2</sup>.

In this theory, having vertigo or feeling off-balance can directly cause stress, and inversely feeling stressed could disrupt how your brain interprets your balance. This could help explain why higher rates of vertigo are found in people with anxiety disorders<sup>3</sup>.

#### Stress and injury recovery

Many accidents and health conditions can injure your vestibular system and cause vertigo - from common ear infections to rare and serious conditions like tumours.

It may be that stress can also prolong vertigo caused by something else, slowing down how long it takes the vestibular system to heal itself<sup>4</sup>.

### How to manage your stress

If you experience vertigo, the first thing you should do is visit your doctor to check for the underlying cause. Whether another cause is identified or not, if you're feeling stressed research suggests that stress management techniques may help your vertigo symptoms - on top of improving your quality of life.

- Recognise and address your source of stress if you can.
- Get plenty of sleep.
- Eat and drink well.
- Get enough exercise
- Try relaxation techniques for example, mindfulness and breathing exercises.
- Find a support network.
- Set reachable goals.
- Make time for things you love.

• Seek professional help - if self-help tips aren't making things better.

## Other causes of vertigo

Experts may not be clear on the exact relationship between vertigo and stress, but there is strong evidence for many other direct causes. These include:

- Ear infections or ear surgery that damages the inner ear.
- Benign paroxysmal positional vertigo (BPPV) tiny calcium particles collect in the inner ear.
- Ménière's disease a build-up of fluid and changing pressure in the inner ear.
- Neurological disorders for example, stroke and multiple sclerosis.
- Vestibular migraines a neurological condition triggering vertigo symptoms.
- Head injuries or trauma affecting the area of brain responsible for balance.
- Acoustic neuroma a non-cancerous tumour that develops along the nerve connecting the brain and inner ear.

Your risk of vertigo also increases with age. In fact, more than one in four people over 72 years of age experience dizziness and vertigo<sup>5</sup>. This is because your risk of vertigo-causing health problems - like BPPV - is much higher.

## When to see doctor

Treating vertigo depends on its underlying cause. For this reason, it's always worth visiting your doctor. However, vertigo may also require urgent medical attention if alongside feeling dizzy and off-balance you:

- Have a severe headache.
- It comes on suddenly and persists or gets worse.
- Are sick or feel very nauseous.
- Have a fever.

- If it is accompanied by tinnitus in one ear.
- There is sudden and complete hearing loss.

## **Further reading**

- 1. Bronson and Preuss: Cellular mechanisms of cortisol-induced changes in mauthner-cell excitability in the startle circuit of goldfish.
- 2. Furman et al: Interface between vestibular dysfunction and anxiety: more than just psychogenicity.
- 3. Chen et al: Increased risk of benign paroxysmal positional vertigo in patients with anxiety disorders: a nationwide population-based retrospective cohort study.
- 4. Saman et al: Interactions between stress and vestibular compensation a review.
- 5. National Dizzy and Balance Center: Causes of dizziness in seniors.

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