

Hyperacusis

Hyperacusis is increased sensitivity to everyday sounds that causes discomfort and sometimes pain. This factsheet explains what causes hyperacusis, what it can be linked to and what treatment is available.

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Medical disclaimer

The information given in this factsheet is not medical advice and, by providing it, Action on Hearing Loss nor our medical advisers undertake any responsibility for your medical care, or accept you as a patient. Before acting on any of the information in this factsheet, or deciding on a course of treatment, you should discuss the matter with your GP or other medical professional.

What is hyperacusis?

Hyperacusis is an increased sensitivity to normal everyday sounds. People who have hyperacusis are very sensitive to sounds above a certain volume level, and often find everyday sounds, such as running water or the rustling of a newspaper, uncomfortably loud and sometimes painful. Many people with hyperacusis also experience a feeling of fullness (pressure) in their ear(s).

Hyperacusis can develop over time or come on suddenly. It can affect one or both ears. Hyperacusis can be a nuisance to some people but very distressing for others, having a big impact on their life ([see page 4](#)).

Different types of sound intolerance

Sometimes, hyperacusis is confused with other types of sound intolerance:

Recruitment

This is commonly associated with hearing loss. It happens when people can't hear quiet sounds but can hear loud sounds at their normal level. The change from no sound to loud sound happens too quickly, causing discomfort and pain. Many people

with hyperacusis have no detectable hearing loss, although it can be linked with other hearing problems such as tinnitus and Ménière's disease ([see page 3](#)).

Phonophobia

This word literally means 'fear of sound'. People who have phonophobia are over-sensitive to particular sounds and have a negative emotional response to them – they worry about hearing these sounds. Phonophobia often develops in people who have a significant sound intolerance.

Misophonia

This word describes the dislike of certain sounds, such as eating and breathing noises, without necessarily involving any element of fear.

What causes hyperacusis?

There are probably several different causes of hyperacusis, and research is ongoing.

It's possible that hyperacusis is a result of a problem with some functions of the hearing system, which normally 'balance' sounds and protect the system. When you're in a noisy environment, your brain

sends information about loud noise back to the inner ear, so that the 'volume' can be turned down and the inner ear can be protected. Damage to this 'feedback mechanism' may be an underlying cause of hyperacusis.

The brain is also responsible for processing the sound signals it receives from the inner ear. Problems in the way these signals are processed could be another cause of hyperacusis.

Recent research indicates that one cause of hyperacusis may be a reduction in a brain chemical that controls the amount of information arriving in the brain from the sense organs. For this reason, some people who have hyperacusis may also have extreme sensitivity to light (photophobia), as seen in those who have migraines.

We also know that some people first develop hyperacusis after sudden exposure to very high levels of noise or after a head injury. Such experiences may damage delicate structures within the inner ear, leading to increased sensitivity to noise.

What may hyperacusis be linked to?

Hyperacusis may occur independently, but there are recognised links with a wide range of disorders and hearing problems, including Ménière's disease and tinnitus.

Ménière's disease is a rare disorder that affects the inner ear. It can typically cause severe vertigo ('spinning' dizziness), tinnitus (see right), hearing loss and a

feeling of pressure deep inside the ear, though the symptoms vary from person to person. The symptoms often begin as sudden attacks, lasting a few hours. Some people have several attacks each week – others have them every few weeks, months or even years. The disorder usually affects one ear. Hearing fluctuates with Ménière's disease, so the individual may have hyperacusis when their hearing is 'normal' and recruitment when their hearing is poor. To find out more, see our factsheet *Ménière's disease*.

Tinnitus is the medical term to describe noises that people can hear in one ear, both ears or in their head, such as ringing, buzzing or whistling, which don't have an external source. It's not a disease or an illness – in most cases, it's a symptom of a problem in the hearing system. Research has shown that 40% of people with tinnitus have hyperacusis, while 86% of people with hyperacusis have tinnitus. To find out more, see our **Tinnitus** factsheets.

Hyperacusis is also associated with:

- migraine
- some types of depression
- post-traumatic stress disorder
- multiple sclerosis
- post-head-injury syndrome
- Williams' syndrome – as many as 90% of people with Williams' syndrome may have hyperacusis
- Lyme disease
- conditions that prevent the ear's normal sound protection mechanism from working, such as Bell's palsy
- autistic spectrum disorders.

What does it feel like to have hyperacusis?

If you have hyperacusis, you'll find everyday sounds uncomfortable, painful or startling, when they don't trouble others. You may find the things most people take for granted, such as watching TV, listening to music, shopping or using the telephone, very difficult. This may make you feel angry, distressed and anxious. You may find that after being exposed to an uncomfortable sound, the discomfort continues for a period of time and becomes worse if you hear the sound again.

Your reaction to an uncomfortable sound may be worse if you're in a place where you expect to hear the sound. This is because when you are afraid of hearing a sound, you may become anxious, which increases your discomfort (and reduces your sound tolerance). And when you are afraid or stressed, your brain produces substances that increase your sensitivity to sound. In this way, a vicious circle can develop.

It's important to remember that everyone reacts differently to hyperacusis, but it's common for people to avoid situations where they are likely to hear uncomfortable sounds.

What treatment is available?

If you think you have hyperacusis, see your GP, who may refer you to a specialised audiologist or the ear, nose and throat (ENT) department of your local hospital.

They will be able to investigate your hearing system, try to find a cause for your hyperacusis and advise you on the most appropriate treatment.

You may need specialised advice on how to manage your hyperacusis – this will usually come from a hearing therapist or specialised audiologist. You may also be referred to a clinical psychologist or behavioural therapist to help you manage the anxiety, phobia, stress and avoidance that are associated with hyperacusis and can make it worse.

Hyperacusis can be managed most effectively by using a treatment called 'auditory desensitisation' alongside a behaviour modification programme that aims to reduce the fear and anxiety associated with sound exposure (we explain these treatments on the following pages).

Auditory desensitisation

This treatment should be available through your audiology department and is usually carried out by an audiologist or hearing therapist.

Auditory desensitisation aims to help improve the level of noise you can tolerate, by reducing the sensitivity of the ear. It involves using small sound generators on a daily basis, which you wear behind your ears in a similar way to hearing aids. These devices feed different types of sound, known as 'white', 'broadband' or 'pink' noise, into your ears through an earmould. Although sound generators can mask disturbing sounds, they are intended to provide long-term, low-level noise exposure while you maintain your

normal exposure to everyday noise. As hyperacusis usually affects both ears, you'll normally be given a sound generator for each ear.

You start by listening to a very low level of noise for a very short time. You gradually increase the length of time that you wear the sound generators, until you have been using them quite comfortably for six hours a day without any problems.

You'll then need to slightly increase the volume. The new sound level shouldn't cause any problems, though you may need time to adjust to it. Again, when you can easily tolerate the new sound level, you should increase the volume. This gradual increase in volume will help to improve your ability to tolerate different environments in everyday life.

There's no set volume level that you must reach, but when you can tolerate all the typical noise situations with the generators on, there's no need to continue to increase the volume. At this point, you can reduce your reliance on the generators to mask noise, either by gradually lowering the volume level, or by reducing the hours you wear them for.

Only when you can clearly cope in all circumstances without your sound generators is the process complete and your brain's 'volume control' mechanism reset.

How long will it take?

Some people find that auditory desensitisation gives them initial relief, but it typically takes 12–18 months for most people to find a long-term improvement without the need to use noise generators.

Your audiologist or consultant will advise you on how long you should use the noise generators for.

Behaviour modification programme

An auditory desensitisation programme may be more effective if you follow a behaviour modification programme at the same time. A clinical psychologist can design an individual programme for you. This aims to break down any routines that you may have developed to avoid noisy situations. It should also help you to control any anxiety patterns that you have developed because of the pain and distress caused by certain sounds.

What else can help with hyperacusis?

To help with hyperacusis treatment:


- Try not to wear earmuffs or earplugs unless you really need to, and then only for short periods of time (we explain this in more detail below).
- Try not to avoid situations where you might hear sounds that will cause you discomfort.
- Try to avoid being in a completely quiet environment. It's important to try to listen to everyday sounds, as a quiet environment tends to make hyperacusis worse.

Earplugs and earmuffs

Some people with hyperacusis tend to use devices such as earplugs or earmuffs to block out sound. Your audiologist may call these 'attenuators'. These devices may

provide temporary relief, but, in the long term, they can undo any progress you're making to adapt to sound. They can even make hyperacusis worse.

However, if you're exposed to very loud sounds for a long time – for example, in your job – this can make hyperacusis worse. Wearing special 'active' electronic sound attenuators and musicians' earplugs may help if you work in a noisy place. Your audiology department may be able to provide these and suggest how best to use them.

 To find out more about ear protection, see our factsheet *Noise exposure*.

What research is being carried out?

Researchers are focusing on understanding the nature of hyperacusis, raising awareness of the previously unknown scale of this distressing sound intolerance. They are also investigating the possibility of developing new, drug-based treatments for hyperacusis. We'll update this factsheet when advances are made.

Where can I find out more about hyperacusis?

You can find out more about hyperacusis from the following organisations:

British Tinnitus Association

A charity that provides support and information for people with tinnitus.

Ground Floor
Unit 5, Acorn Business Park
Woodseats Close
Sheffield
S8 0TB

Telephone: **0800 018 0527**

Textphone: **0114 258 5694**

Email: info@tinnitus.org.uk

Website: tinnitus.org.uk

The Hyperacusis Network

A website containing information about hyperacusis and possible treatments, written by clinicians and people with hyperacusis from all over the world.

Website: hyperacusis.net

Information you can trust

The Information Standard certifies us as producers of high-quality, evidence-based information.

Thank you to **Linda Luxon, Professor Emeritus of Audiovestibular Medicine**, University College London Institute of Child Health and National Hospital for Neurology and Neurosurgery, for reviewing this factsheet and making sure that our information is accurate and based on the latest evidence.

For a list of references for this factsheet, please email references@hearingloss.org.uk

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Further information from Action on Hearing Loss

Our expert information covers everything you need to know about:

- hearing loss and deafness
- tinnitus
- ear problems and treatments
- hearing aids and cochlear implants
- useful products and technology
- communication tactics and support
- benefits and grants
- your rights.

Visit our website actiononhearingloss.org.uk or call our Information Line ([see last page](#)) for information, support and publications. You can also find out about services in your area, our hearing research, and how you can get involved.

Please help us support others

We provide our leaflets, factsheets and Information Line service free of charge to anyone affected by deafness, tinnitus or hearing loss in the UK. We rely on the generosity of our supporters to help us do this. We would be very grateful if you would consider making a donation – of as little or as much as you can afford.

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Thank you.

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To find out more about what we do and how you can support us, go to **actiononhearingloss.org.uk**

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