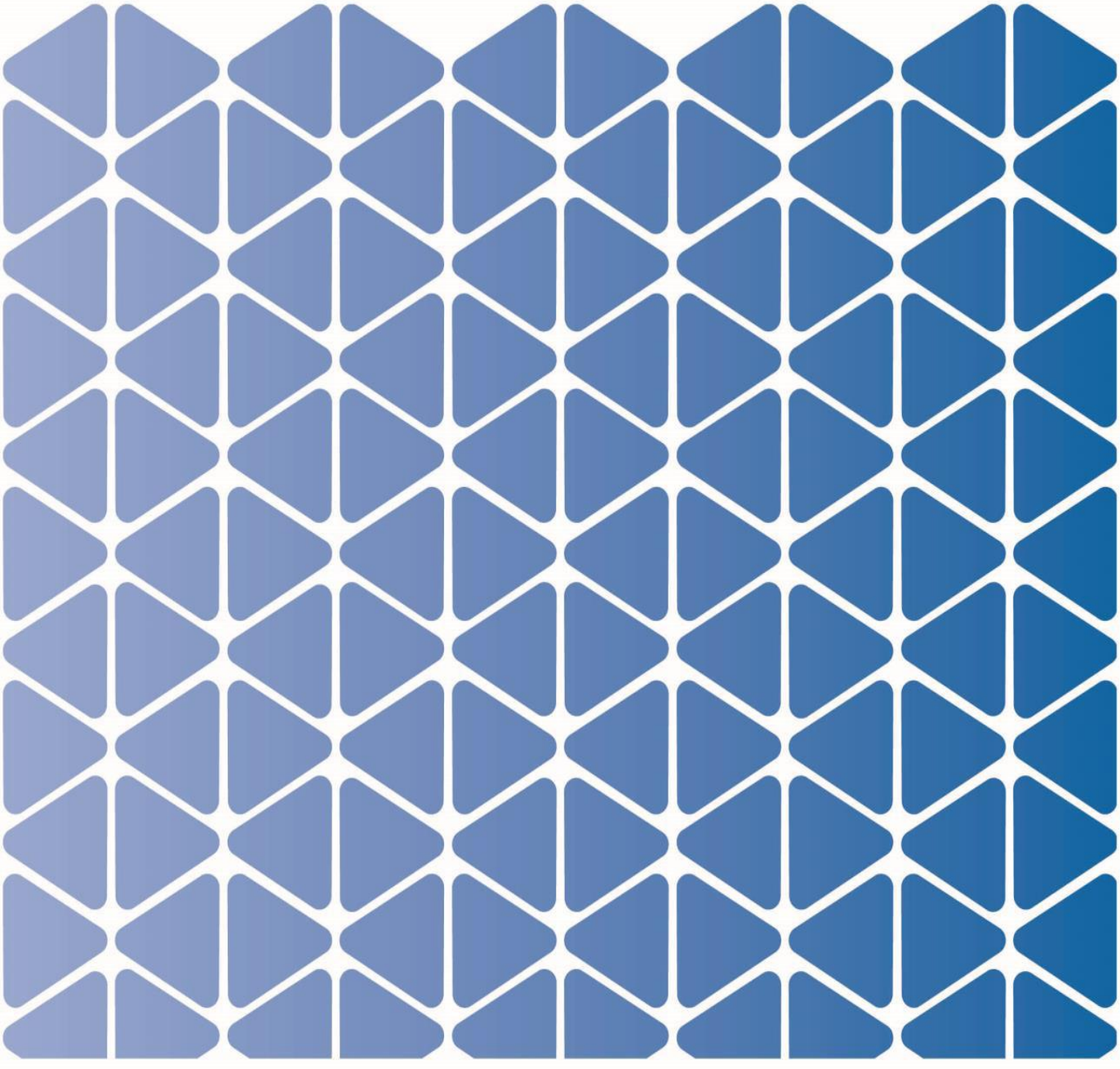
NHS
Worcestershire Acute Hospitals NHS Trust

PATIENT INFORMATION

ADULT HYPERACUSIS AND SOUND SENSITIVITY



What is Hyperacusis? (Pronounced ‘hyper-a-queue-siss’)

The auditory system has the amazing ability to hear really quiet sounds such as leaves rustling but can also tolerate loud sounds such as music at a disco. We all have a limit to the loudness of sound that we can comfortably tolerate. This limit is not fixed but varies according to the context of the sound or our mood. A sound that we can usually tolerate with ease can seem unbearably loud when we are stressed or ill. Similarly, most of us will have particular sounds that we dislike e.g. fingernails down a chalkboard.

Sometimes these day-to-day sounds will appear loud, uncomfortable and sometimes painful. Hyperacusis is an increased sensitivity, or decreased tolerance to everyday sounds. Some may find this a minor annoyance, but for others it can impact their life greatly. They may withdraw and become socially isolated. It may impact their work, everyday activities or relationships.

Examples of sounds that some people are affected by:

- A vacuum cleaner
- Lawn mower
- Car engine, traffic noise
- Jingling coins
- Restaurant environment/ crockery/cutlery
- Someone chewing, sniffing
- Children laughing or shouting
- The turning of pages of a newspaper

Hyperacusis can develop gradually or come on suddenly. It can affect one or both ears. Hyperacusis is an umbrella term for all reduced sound tolerance.

Just like adults, some children can find certain sounds uncomfortable e.g. hand dryers, fire alarms, fireworks, vacuum cleaners. Especially if the sound is sudden in nature and the child does not know the cause of the sound. Often this is a normal phase and will improve through the understanding of what the sounds are, and that they are not dangerous. Typically, as children grow and mature, so does their tolerance for loud noise.

Types of sound sensitivity are:

Misophonia

An intense dislike or repulsion to a certain sound e.g. someone chewing or sniffing, whistling, or a pen tapping on a desk. Volume level does not matter in this instance. The reaction can also be further triggered from seeing the source of the offending sound. Mostly the sounds are human generated.

Phonophobia

Similar to misophonia, but there is fear or an adverse emotional response to certain sounds e.g. hand driers in public toilets or fireworks. There may be fear and anxiety when exposed in real-time, but also the worry of discomfort or pain if exposed to these sounds in the future. The person can become very isolated through avoidance behaviour.

Recruitment

Altered sound tolerance associated with people who have a hearing loss. There is a rapid growth of perceived loudness of sounds. The auditory system can go from too little, to too much very quickly. People with hearing loss can also have other types of hyperacusis.

What causes Hyperacusis?

A few medical conditions have hyperacusis as a symptom or it can be connected with a condition such as autism spectrum disorder (ASD) or tinnitus.

See below for a list of possible causes.

- Lyme Disease
- Migraine
- Head injury
- Meniere's disease
- William's Syndrome
- Bell's Palsy
- Certain ear surgery
- Hearing Loss
- Acoustic trauma- sudden or prolonged noise exposure
- Tonic tensor tympani syndrome (TTTS)
- Temporomandibular Joint (TMJ) problems

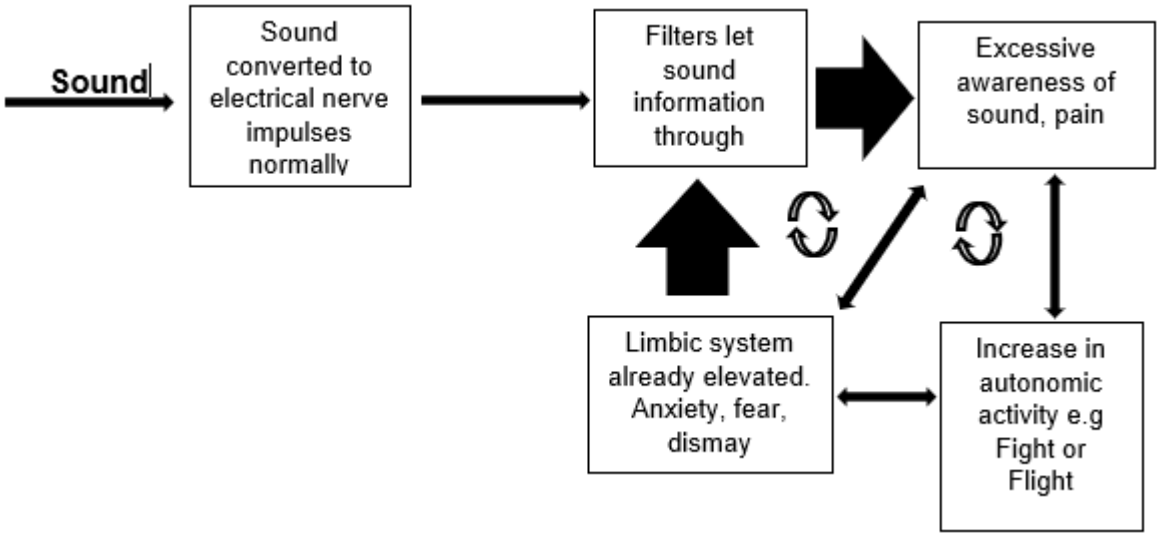
Sometimes it can be in response to a sudden loud sound or come on around a time of significant stress/ life event e.g. bereavement.

There are probably two main mechanisms by which hyperacusis can develop:

1. The emotional part of the brain (the limbic system) becomes overactive.

See diagram below (Courtesy of Living with Tinnitus and Hyperacusis by Laurence Mckenna et al, 2021).

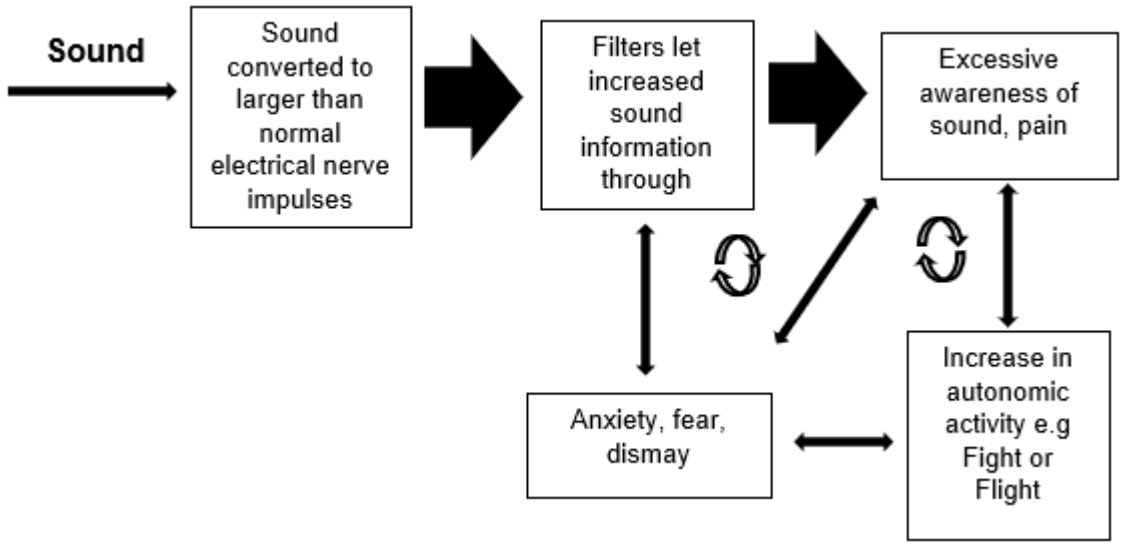
The filtering system allows more sound inputs (thick black arrows) through to the central auditory system. A viscous cycle will develop as the increase in anxiety causes an increased auditory awareness, which in turn causes more anxiety and the cycle continues (see curved arrows).



2. The auditory system becomes overactive.

See diagram below (Courtesy of Living with Tinnitus and Hyperacusis by Laurence Mckenna et al, 2021).

Increased activity in the auditory pathway, which abnormally enhances sound inputs. (thick black arrows). This causes more activity in the emotional brain and the autonomic nervous system. The increased auditory awareness causes increased anxiety, which heightens awareness, and a vicious cycle develops (see curved arrows).



What is the 'Fight or Flight' response?

It is a physiological reaction that occurs in response to perceived threat. It is a survival mechanism that is triggered in the body in order to prepare for a physical response to danger.

Symptoms of the 'Fight or Flight' Response

- Faster breathing rate (can lead to hyperventilating)
- Increase in heart rate, blood pressure and body temperature
- Digestion slows down
- Increase in blood supply to the brain and muscles.
- Brain activity changes from 'thinking' to 'reacting'.
- Senses enhance- pupils dilate to give greater awareness and the hearing heightens

Both hyperacusis and tinnitus involve the limbic system, the part of the brain that registers every positive and negative interaction with sound e.g. birds singing may feel relaxing, an ambulance siren may cause anxiety. Any strong emotional response to a sound will stimulate the autonomic 'fight or flight' response. Any negative response to a particular sound will highlight it as a perceived 'threat' and will keep a focus on this 'threat', giving the same emotional response. Looking at ways to reduce this stress response will help manage both tinnitus and hyperacusis.

Hyperacusis and Tinnitus

Tinnitus is the medical term for any noise that is heard in one ear, two ears or the head, that does not originate from our external environment. Tinnitus differs from person to person but is often described as being a ringing or humming noise. Sometimes it may be like a tune or singing, and sometimes it may be pulsatile (a noise beating in time with your pulse). There is a consensus that 40 percent of people with troublesome tinnitus will have some degree of sound sensitivity, and that 90 percent of people with hyperacusis will have tinnitus. They estimate that approx.2 percent of the adult UK population will have significant hyperacusis. (Living With Tinnitus and Hyperacusis by Laurence Mckenna et al, 2021) Hyperacusis is much less common than tinnitus, and it is possible to have one without the other. The emotional response to tinnitus can be like that of hyperacusis. For some the tinnitus may be more bothersome than the hyperacusis. A hearing specialist will ascertain if you have tinnitus and/or hyperacusis and can give management advice.

Treatment for Hyperacusis

Often an explanation and reassurance can help most people manage their hyperacusis independently, however there are other options that can be explored further with a hearing specialist.

Relaxation will help reduce tension in the body. There are many apps and sources that can provide guided relaxation and breathing techniques.

Deep breathing exercises can help calm the body down to sound triggers, slowing breathing can be associated with relaxation to help control emotions and reduce anxiety.

Mindfulness involves relaxation and breathing exercises that help you to pay attention to the present moment; it can help you to become more aware of how you tend to respond to difficult things such as stress, and sound sensitivities.

Cognitive Behavioural Therapy (CBT) looks at how our thinking affects how we feel and how we behave Stressed thinking can lead to unhelpful thinking habits that can have a negative effect on how we feel and behave. This process can create a more negative reaction to sounds and situations. CBT can help you learn how to develop more helpful thoughts, behaviours and emotions.

Try not to avoid noise completely, either by avoidance of sounds, or wearing ear protection or noise cancelling headphones for everyday tasks such as emptying the dishwasher. This can lead to worsening of the problem. Exposure to normal sound is crucial if the brain is going to habituate and re-establish normal sensitivity. Only use ear protection when exposed to potentially damaging levels e.g. DIY tools, concerts

Sound Therapy/Sound enrichment. Rather than avoiding sounds, reintroduce sound slowly and gently in a controlled manner. This could also include a recording of the feared sound. It is important to create positive relationships with sound. You can use your internet browser to search for specific sounds, CD's, relaxation guides, YouTube videos or you can download Relaxation/ Mindfulness Apps for your Smart phone or Tablet. Alternatively, you could ask your Smart Speaker to play you relaxing music, or a favourite soothing sound effect such as sea waves.

Sound enrichment ear level devices can be used to improve sound sensitivity and increase normal tolerances. This is usually recommended for both ears and consists of a device worn over the ear with a thin tube that goes into the ear.

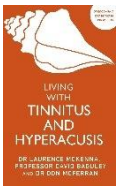
Hyperacusis/ Tinnitus Counselling is available countywide with our specially trained clinicians. This provides an opportunity for an in-depth discussion and explanation of your hyperacusis and/or tinnitus, and management options.

If you have any concerns, speak to your GP, they may be able to treat the condition causing the hyperacusis. For a lot of people, the cause may remain unknown. In this case, the GP can refer on to a hearing specialist for further investigation and treatment.

Tinnitus UK Recommended Booklist:

• Living with Tinnitus and Hyperacusis

by Laurence McKenna, David Baguley and Don McFerran



• Living Well with Tinnitus

by Hashir Aazh and Brian Moo



Other Tinnitus Support Apps developed by Hearing Aid Manufacturers available:

ReSound Tinnitus relief App

Starkey Relax App

Phonak Tinnitus Balance App

Widex Zen, Tinnitus Management App

Download via your mobile phone/ Tablet

Google Play **Android Devices** **Apple Devices**

The Hyperacusis Network

The Hyperacusis Network (based in America) contains some very useful information about hyperacusis symptoms and treatment options. There is support available on the message board.

On the web: **www.hyperacusis.net**

ishush- Internet Self-help, Understanding and Support for Hyperacusis

ishush is a self-directed online resource all about hyperacusis. It provides you with comprehensive and reliable information about hyperacusis and sound, the impact it can have on daily life, and helpful ways to manage hyperacusis. You can use it at your own pace and revisit it as often as you need.

On the web: **ishush.ac.uk**

Tinnitus UK (formally the British Tinnitus Association) offer support and information:

A website with useful coping strategies, tips and ideas, and video's on how to manage tinnitus and factsheet on Hyperacusis

On the web: **www.tinnitus.org.uk**

Free phone helpline: **0800 018 0527**

Take on Tinnitus by Tinnitus UK
Online Tinnitus Management Resource

On the web: **www.tinnitus.org.uk/how-we-can-help/take-on-tinnitus**

The contact details for RNID (formally Action on Hearing Loss) are:
On the web: www.rnid.org.uk

Telephone: **0808 808 0123**

Textphone: 0736 026 8988

Contact details for the Birmingham and district tinnitus group:
On the web: **www.tinnitusbham.org.uk**

Online Enquiry Form available

Meets 2nd Tuesday of February, April, June, August,

October and December at:

St Martin in the Bullring

Edgbaston Street

Birmingham B5 5BB

24Hr Mental Health Free Helpline
Telephone: 0808 196 9127 or call NHS 111

Samaritans
Telephone: 116 123

The contact details for Now We're Talking for Healthy Minds (formally IAPT) are:
You can self- refer for Talking Therapies on the NHS. Talking Therapies provides a range of free, confidential support to people aged 16 and over across Herefordshire and Worcestershire.
On the web: **www.talkingtherapies.hwhct.nhs.uk**

The Silver Line
The Silver Line offer friendship, conversation, and support to older people aged 55 and over. Whatever the day or time, you can pick up the phone and speak to one of their friendly Silver Line team members.

Opening hours: 24/7

Telephone: **0800 4 70 80 90**

Website: **www.thesilverline.org.uk**

Tinnitus UK Charity



If your symptoms or condition worsens, or if you are concerned about anything, please call your GP, 111, or 999.

Patient Experience

We know that being admitted to hospital can be a difficult and unsettling time for you and your loved ones. If you have any questions or concerns, please do speak with a member of staff on the ward or in the relevant department who will do their best to answer your questions and reassure you.

Feedback

Feedback is really important and useful to us – it can tell us where we are working well and where improvements can be made. There are lots of ways you can share your experience with us including completing our Friends and Family Test – cards are available and can be posted on all wards, departments and clinics at our hospitals. We value your comments and feedback and thank you for taking the time to share this with us.

Patient Advice and Liaison Service (PALS)

If you have any concerns or questions about your care, we advise you to talk with the nurse in charge or the department manager in the first instance as they are best placed to answer any questions or resolve concerns quickly. If the relevant member of staff is unable to help resolve your concern, you can contact the PALS Team. We offer informal help, advice or support about any aspect of hospital services & experiences.

Our PALS team will liaise with the various departments in our hospitals on your behalf, if you feel unable to do so, to resolve your problems and where appropriate refer to outside help.

If you are still unhappy you can contact the Complaints Department, who can investigate your concerns. You can make a complaint orally, electronically or in writing and we can advise and guide you through the complaints procedure.

How to contact PALS:

Telephone Patient Services: 0300 123 1732 or via email at: wah-tr.PALS@nhs.net

Opening times:

The PALS telephone lines are open Monday to Friday from 8.30am to 4.00pm. Please be aware that you may need to leave a voicemail message, but we aim to return your call within one working day.

If you are unable to understand this leaflet, please communicate with a member of staff.