Hyperacusis in Children

Information for parents and carers

Audiology Department

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What is Hyperacusis?

Hyperacusis is a term used to describe an acute sensitivity to noise. Even everyday sounds, which most people don't find intrusive, cause discomfort or pain. Many patients describe these everyday sounds as too loud. This can make concentration difficult and bring on anxiety. Some people withdraw from everyday activities which can exacerbate the condition.

Other forms of intolerance to sound are:

- Misophonia: a strong dislike to certain sounds causing an angry response.

- Phonophobia: an anxiety disorder caused by a fear of noise.
What Causes Hyperacusis?

In some cases, exposure to loud noises such as fireworks or a balloon popping can trigger hyperacusis. This can result in an anticipation of fear of loud sounds and an avoidance of certain situations such as parties. For others it can be a life event that causes anxiety. Hyperacusis is linked to increased sensitivity in the hearing pathway to the brain (Auditory System) which can be influenced by anxiety. Other possible causes are head injury, noise induced trauma, toxins from medication or viral infections. There are many people who never find the reason.

Conditions associated with Hyperacusis

Hyperacusis can occur on its own or with other conditions such as depression, migraine, Meniere’s disease, chronic fatigue syndrome and visual over-sensitivity.

It is more common with certain syndromes and conditions, such as:

- Williams’s syndrome,
- Autism,
- Attention deficit disorder,
- Auditory processing disorder,
- Learning difficulties.

Please ask your clinician if you have any questions.
When we feel frightened, anxious, annoyed, excited or happy, our body secretes adrenaline into our bloodstream. Adrenaline is a hormone which affects our body in many ways. It increases our heart rate, making the heart beat more strongly as well as enhancing our senses, particularly sight, touch and hearing. This can affect our reaction to sound and lead to avoidance behaviour. If our feelings toward the source of the sound are also affected, it reinforces the cycle.

The distress caused by hyperacusis increases peoples' sensitivity to sound by allowing more adrenaline to be released in the body. Thus a spiral of permanent anxiety leading to permanent excessive adrenaline stimulation is created which increases the hyperacusis.

This cycle has to be broken for us to make hyperacusis more manageable. By breaking the cycle, we reduce the amount of adrenaline that our body makes and this will have the effect of reducing the range of our senses from “heightened” to a more “normal” level. This, in turn, will bring the perceived sound level down to a more manageable level.
Hyperacusis in Children

Children with hyperacusis may struggle to listen to loud sounds such as the washing machine, vacuum cleaner, hand dryers or traffic noise. They can become afraid of these sounds refusing to go near the sound source. For some children the distress may. Not all noises at the same volume will evoke the same reaction.

In children, episodes of glue ear can lead to an increased sensitivity in the auditory system which in turn can lead to hyperacusis. As the glue ear clears the increased gain can lead to over sensitivity which can cause normally loud sounds to become unbearably loud. This in turn triggers the fear response which increases anxiety and negative associations with loud sounds and the hyperacusis is re-enforced. The result is that the child often anticipates the fear and wants to avoid loud situations for example parties, public toilets.

With children, it is important to acknowledge the intolerance to certain sounds, but not to focus on this. Explaining the origin of the sound to your child and giving them control of when the sound occurs may help reduce your child’s fear and anxiety. This may involve getting your child to turn the vacuum cleaner on and off for example, or encouraging the use of sound while playing. This should help your child learn that sound is not something that they need to be afraid of and actually can be fun.
Studies have shown that hyperacusis is usually less of a problem after the age of 5-6 years and unlike many adults affected, most children will find that the problem lessens with time (Sheffield children’s hospital).
How Can I help my child cope with sound sensitivity?

1. When the child becomes distressed by exposure to sound, move the child away from the sound source if possible and then comfort and reassure him/her.

2. Try to explain the source of the sound to the child.

3. The child's fear reaction will often diminish if s/he can exercise some control over the sounds. Encourage the child to clap his own hands, play with noise makers or start and stop the vacuum cleaner at home. There is a specific therapy program which is based on the child producing a range of different sounds in a play situation. This may involve tapping a table top in a certain rhythm or shaking rattles but the child is always in control of the sounds.

4. Repeated gentle exposure to the noise may help the child reduce anxiety and desensitize the auditory aspect of the sensitivity. You could record one or more of the problem sounds (e.g. laughter, clapping, thunder, sirens, and machine-noise) and help him to switch the recording to a very low volume. Gradually over a period of days or weeks the volume can be increased. Practice with the sounds under play conditions that the child can control to help break the association of that sound with fear. This is not the same as unexpected exposure to the same sound, as people with hyperacusis do say that they can often cope better if they are warned that a sound is about occur, but it is helpful.
5. Children should not be forced to stay in a situation that is causing them obvious distress (for example during singing in assembly). This may compound their apprehension and make them associate that situation (e.g. the assembly hall) with pain. If fear of a specific situation has become established, it is important to gradually desensitize the child, with time and care.

6. Older children may be reassured if they are told they have the teacher's permission to leave the classroom for a few minutes at any point if they are exposed to an aversive noise. In our experience children do not abuse such an arrangement but are greatly reassured to know that they can leave a room, for a short time, if noise becomes distressing to them.

7. The use of ear plugs, muffs or defenders should be avoided except in extreme or short-term, unavoidable situations (e.g. during a journey). Exposure to normal and tolerable sound is crucial if the ear and brain are to establish normal sensitivity.
Relaxation

Being able to help your child relax is important in managing the stress often associated with hyperacusis. It can help your child to reduce any physical anxiety response to hyperacusis.

There are various techniques which can be taught including controlled breathing and muscle relaxing exercises.

Where can I obtain further information?

The Hyperacusis Network (www.hyperacusis.net) is an invaluable resource, with much useful and up to date information, lively forums and the opportunity to purchase sound therapy CDs for hyperacusis.

Relax kids www.relaxkids.com

British Tinnitus Association Helpline: 0800 018 0527
www.tinnitus.org.uk

References

Living with Tinnitus and Hyperacusis; (2010) McKenna, L. Baguley, D. McFerran, D. p108
Tell us what you think of this leaflet

We hope that you found this leaflet helpful. If you would like to tell us what you think, please contact: Georgina Liddle, Senior Audiologist, Audiology Department, The York Hospital, Wigginton Road, York, YO31 8HE, telephone 01904 726741 or email georgina.liddle@york.nhs.uk.

Teaching, Training and Research

Our Trust is committed to teaching, training and research to support the development of health and healthcare in our community. Healthcare students may observe consultations for this purpose. You can opt out if you do not want students to observe. We may also ask you if you would like to be involved in our research.

Patient Advice and Liaison Service (PALS)

PALS offers impartial advice and assistance to patients, their relatives, friends and carers. We can listen to feedback (positive or negative), answer questions and help resolve any concerns about Trust services.

PALS can be contacted on 01904 726262, or email pals@york.nhs.uk.

An answer phone is available out of hours.