

# It's TOO Loud!

## What to do for Students with Sound Sensitivities (Hyperacusis) in the Classroom



Many professionals in educational settings have encountered children with sound sensitivities. It could be a toddler who recently had pressure equalization (PE) tubes placed after having frequent ear infections and now covers her ears when she hears a loud sound. It could be a teenager who becomes outwardly anxious when the school bell rings, or it could be more severe such as a student with autism who wears headphones to cope with extreme sensory overload. All of these examples, no matter how minor or major, affect students' abilities to succeed during the school day. These difficulties tend to have nothing to do with hearing - so whose job is it to help them? As professionals in the field of audiology and deaf education, it is our duty to be the "auditory experts" and that means thinking above and beyond just hearing loss even if it feels like unfamiliar territory.

### **So what are sound sensitivities and how can I provide services to these students?**

This article will primarily focus on what is called "hyperacusis" or an abnormal loudness perception in which every day sounds are perceived as extremely uncomfortable. This is typically separate from loudness recruitment often associated with hearing loss. It should be noted that "misophonia" or a psychologically-based fear/extreme dislike of certain sounds, typically regardless of loudness, will not be addressed in this article but is another very valid sound sensitivity that can be treated with many of the same recommendations ([refer to misophonia resources](#)).

Hyperacusis, while not typically associated with hearing loss, can be present in conjunction with a variety of diagnoses. It frequently occurs along with ringing in the ears (tinnitus) even in populations with normal hearing. It can also be associated with conditions such as autism spectrum disorder (ASD), William's Syndrome, or young children with developmental delays. The physiology of this response is thought to be related to maturation of the auditory system that allows for improved intensity discrimination, temporary auditory deprivation (e.g. recurrent ear infections and fluctuating hearing loss), development of sensory gating (ability to "filter out" unwanted stimuli), or use of non-classical auditory pathways for loudness perception (e.g. limbic system and amygdala = flight/fight response). [Kennedy and Benton, 2019. ENT and Audiology News.](#)

#### **Think of hyperacusis as similar to pain tolerance.**

We all experience auditory input in our own way and our reactions change based on multiple factors, such as the environment or our mood. No one person will experience pain in the same way as someone else and that is true for "auditory tolerance" as well. The buzz of a vacuum cleaner or a fire alarm can be bothersome sounds but are usually easily ignored. Our nervous systems ignore the unimportant information and we can move on without annoyance or negative reaction to the sound. In children with hyperacusis, their auditory tolerance is lower - meaning what sounds "loud but okay" to one person may be intolerable at a much softer volume.

It is considered developmentally appropriate for children to cover their ears in response to loud sounds. Their brains are growing and developing their own auditory map. **The concern for hyperacusis comes later - when the sound is gone but the child is still extremely distressed.** This could look like something as common as covering their ears but it may also appear like anxiety, obsessive or compulsive habits, avoidance, behavioral

The key to understanding hyperacusis in children is that while it appears to be an auditory condition, it cannot be treated only as such. It must be managed in a way that involves multiple professionals and a variety of coping mechanisms that are specific to that child. In an educational setting, audiologists and teachers of the Deaf/hard-of-hearing have the luxury of working closely with teachers and therapists. This can be an invaluable tool to see what works for each child and how they can best be helped at school.

outbursts, or rapid changes in mood. These reactions can have significant psychosocial consequences. Younger children may use maladaptive behaviors that are disturbing to the classroom environment. Teenagers may withdraw from social situations, display avoidance behaviors, and/or experience anxiety or depression.

There is no “official” criteria for a child to be diagnosed with hyperacusis, however, it is typically easy to determine based on the child’s amount of distress. A child who prefers to use paper towels to dry her hands because she does not like the sound of the hand dryer in the school bathroom probably doesn’t have hyperacusis...but a child who refuses to go to the bathroom at all for fear of the sound of the hand dryer likely does.

Regardless of severity, here are some things to consider when working with children who have sound sensitivities.

### **Always rule out hearing loss.**

While most children with hyperacusis do not have hearing loss, sound sensitivities can certainly be associated with loudness recruitment commonly experienced by people with hearing loss. Many children with developmental and/or communication delays may not be able to express changes in hearing. Even if hearing is normal during one evaluation, a child with a history of fluctuating conductive hearing loss and recurrent ear infections may have intermittent sound sensitivities depending on their health. It may be beneficial to consider annual hearing evaluations for students with sound sensitivities, particularly if they are also known to have fluctuations in hearing.

### **Find the happy sounds.**

As auditory experts, we are aware that some sounds are more pleasing than others. The calming melody of a lullaby will likely produce a more positive reaction than a fast-paced rock song - but every child will have their own preferences. Work with the student’s teachers, therapists, and family members to find the sounds they enjoy most. This could be an hour loop of the infamous “Baby Shark” song, a recording of the child’s mother’s voice, or simply some white noise. The sound has to be soothing and meaningful in order to be effective. Find what evokes tranquility for that child and have it on hand for difficult moments. It is important that these small moments of sound therapy be targeted towards defense against the distressing sound and not as a constant distraction. While students with sound sensitivities are not likely at risk for noise exposure due to their aversion to loudness, the student and his/her family should be counseled on safe listening practices.

## **Develop a plan of action.**

When a student has sound sensitivities that disrupt their school day, they should have a plan of action in place that is specific to their needs. These recommendations may also be added to a student's 504 Plan or IEP if appropriate. Try to observe the child in the classroom to see when and how they are affected by everyday sounds. Sometimes a simple warning before a particular sound occurs could be effective enough to avoid an anxious response. The following recommendations are inspired by content from the [Tinnitus in Children: Practice Guidance](#) and can be used as a template to give to teachers, therapists, and family members.

A) Consider allowing the student to listen to low level background noise or music via personal headphones during times that require a quiet environment, e.g. taking tests, silent reading, homeroom, etc. It is not recommended that this strategy be used during active instruction.

B) Offer flexible/strategic seating in all educational settings. The student may wish to sit near a source of background noise, such as a fan, air conditioner, or open window.

C) Consider offering the student a way to alert his/her teachers when his/her hyperacusis occurs in the classroom and that he/she may need a break from instruction or a quiet environment to relax and apply coping strategies.

## **Work with other professionals.**

The student may already have a team of therapists and healthcare providers who can help implement your recommendations. Students with sound sensitivities often benefit from additional services, such as occupational therapy or mental health therapy if there are emotional components to their hyperacusis that have not yet been addressed.

## **Use hearing protection as a last resort.**

Recommending hearing protection for a child with sound sensitivities is typically a slippery slope. Success is highly dependent on how and when the hearing protection is used. It can be great for protection in excessively loud listening environments, reducing decibel level (by about 30 dB on average), and can reduce anxiety. However, hearing protection can also act as a crutch instead of addressing long term behavioral changes and increasing sound tolerance. It can cause auditory deprivation, and in some cases, increase auditory sensitivities with prolonged use. Non-custom hearing protection (e.g. over-the-ear headphones) reduce overall volume and does not preserve speech clarity in the same way custom filtered earplugs do. Remember that hearing protection can be an excellent tool for short term use, but be mindful when recommending its use in a classroom environment. The student and their family should be counseled heavily on appropriate use.

**Above all - remember it is our job as auditory experts to help students suffering with sound sensitivities too, whether hearing loss is present or not. Address the whole child and you will find a way to make the classroom a positive auditory environment for all students.**

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