

# Protecting Your Child against Hearing Loss

Published on Jan 23, 2018 in [Health Tip of the Week](#)

Just like you pay attention to what your children are eating, drinking, and being exposed to in other parts of their lives, it's also important to be aware of the sounds they are exposed to on a regular basis. Over-exposure to loud noises can lead to potentially permanent hearing damage.



[Frank C. Wartinger, AuD](#), an audiologist in the [Department of Audiology](#), part of the [Center for Childhood Communication](#) at Children's Hospital of Philadelphia (CHOP), weighs in on what causes hearing loss in children, symptoms to watch out for, and ways to prevent it.

## What causes hearing loss in children?

Some children are born with hearing loss, called congenital hearing loss. Other common causes of hearing loss include ear infections, exposure to medications that can be toxic to the ear (ototoxic), certain infectious diseases, and noise exposure. Of these, noise exposure causes permanent hearing loss in the highest proportion of children.

Approximately **1 in 6 teenagers** show signs of hearing loss that can be attributed to recreational (personal music players, concerts, sports/auto events, etc.) and occupational (lawn care, power tools, farm machinery, etc.) noise exposure.

## What are some symptoms of hearing damage?

Hearing damage from noise is an invisible ailment and may not yield specific complaints from children. Instead of saying “I can’t hear well,” a child may exhibit more subtle signs and symptoms.

- **Increased fatigue during a busy school day or in noisy settings.** Listening requires effort, so if you aren’t hearing well, you’re expending more energy to listen. At the end of the day, your listening energy may be spent.
- **Distracted behavior that may resemble attention problems.** When background sounds are present, children who have hearing loss may be readily distracted and have trouble paying attention. Sometimes this can happen in seemingly quiet settings as well.
- **Muffled hearing or “ringing in the ears” — explained a bit differently.** Children often describe a ringing in their ears (tinnitus) as it relates to a sound in their imagination. For example, they may say they hear bees, train whistles, or the wind blowing. Younger children who do not realize other people aren’t hearing the same thing may not report anything at all.
- **Avoidance or sensitivity to loud sounds and settings.** Your child may be especially irritable or upset when in a loud setting, like a sporting event, a noisy restaurant, or a crowded birthday party.
- **Vague reports of pain or annoyance with ears or head.**

These symptoms may be common, but think of hearing loss from noise exposure like a sunburn after a day at the beach — they are far from normal or healthy, and can lead to long-term problems.

## Common questions and tips to prevent hearing damage

In Wartinger's practice, he frequently hears many of the same questions coming from concerned caregivers. Here are some of the questions parents ask most, and some strategies to help you protect your child's hearing.

## How loud can I listen to music through earphones?

Because every earphone and device has different loudness levels with the same volume settings, there's no one-size-fits-all answer. But in general, most earphones can get loud enough to damage your hearing in only a few minutes of exposure at full volume. Follow these guidelines for safe listening:

- **80/90 rule:** A volume setting of 80 percent can only be safely enjoyed for a maximum of 90 minutes. Louder volume settings are only safe for more brief periods of time.
- **Arm's length rule:** If you can't hear someone speaking to you from an arm's length away, your music is probably too loud.

## How can I tell when loud is too loud?

Try to speak to someone a few feet away. (Hint: The arm's length rule again!) If you have to shout to be heard over the background music or noise, the setting or volume is likely too loud. Additionally, there are many sound pressure level (SPL) measurement smartphone apps available which can give you a better estimate of the sound levels of a given setting.

## If I can hear music coming from my child's earbuds, does that mean the volume setting is too high?

Short answer, no. Certain types of headphones and earbuds are designed to leak sound out while others are designed to keep all the sound in the ear canal. The leaky earbuds can be overheard even when played at a safe level, and the isolating earphones can be played at a dangerously loud level without being overheard at all. The arm's length rule (yes, again!) is a more appropriate and accurate measure.

## Can hearing aids fix the problem?

Hearing loss from noise exposure is permanent and may require treatment with hearing aids. Hearing aids help individuals with hearing loss hear better, but cannot restore normal hearing.

Besides the ever-present earphone conversation, it's important to pay attention to sporting events, auto races, summer jobs, music rehearsal and performance, fireworks, concerts, and

music played over car or home stereos. These can all pose a risk to a child's hearing.

## Teaching healthy listening habits

Teaching healthy listening habits starts with knowledge of the risks and appreciation of hearing as a valuable sense that should be protected.

Parents can model good behavior by turning down the volume when it becomes too loud, walking away from loud sounds, and protecting their ears from loud sounds and settings.

Earplugs can be used in recreational settings such as concerts and races, and not limit the wearer's enjoyment of the event. Special filtered earplugs allow for lower listening levels while still hearing all the details of music and communication.

When in doubt (as you may have guessed), follow the arm's length rule. Though conservative, this rule has the added benefit of making sure kids can hear warning signals in their environment — like a siren or other alert.

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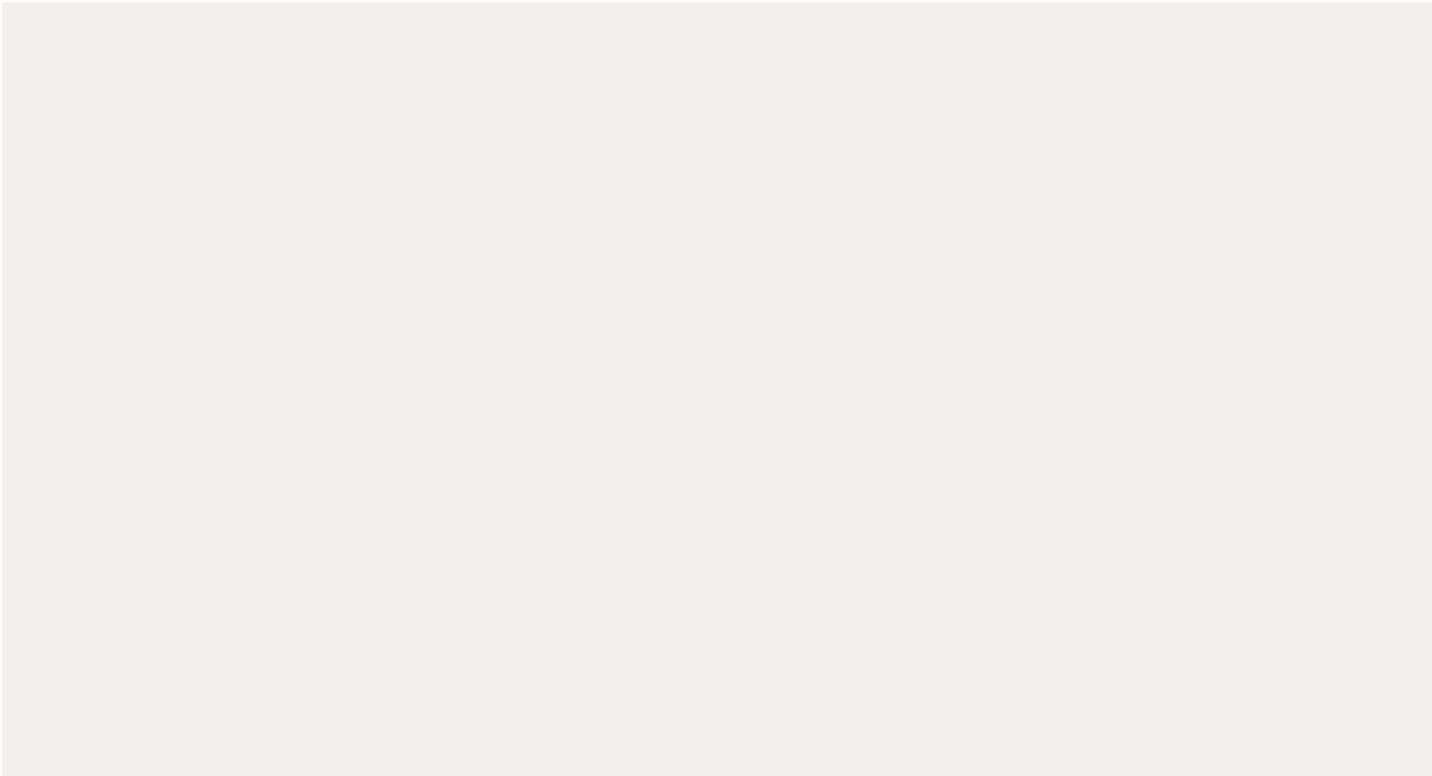
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