

Experts sound the alarm on excessive noise and risks to children's hearing in updated policy statement

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The parent's universal cry in response to loud music— "Turn that thing down!"—is well-founded, as evidence shows that children and teens risk hearing loss by cranking up their personal listening devices. What

families may not realize is that children are exposed to potentially harmful noise from infancy and that the effects are cumulative over a lifetime.

The American Academy of Pediatrics discusses the common sources and effects of [noise](#), from infant sleep machines to fireworks, within the [policy statement](#) "Preventing Excessive Noise Exposure in Infants, Children, and Adolescents," published in the November 2023 issue of *Pediatrics*.

The statement and an accompanying technical report published in *Pediatrics* online Oct. 21, will be featured in a session at the [2023 AAP National Conference & Exhibition](#) in Washington, D.C. Lead authors Sophie J. Balk, MD, FAAP, and Brian K. Reilly, MD, FAAP, will discuss the policy during a session, "Noise 201: More than Headphones!".

"Excessive noise exposure is a serious public health hazard that goes largely unrecognized," said Dr. Balk, past chair of the Council on Environmental Health and Climate Change.

"Children have smaller ear canals than adults, which intensifies higher frequency sounds. And the concern is not only with volume, but how long and how often children are exposed to noise. Common everyday noises, like road traffic or a television playing in the background, can also disrupt sleep, learning and quality of life. It's very important to prevent harmful noise exposures starting early in a child's life."

Children and teens' use of personal listening devices is one of the most prevalent forms of noise exposure, research shows. Excessive or prolonged exposure to high volumes can result in hearing loss, tinnitus, or hyperacusis, a condition in which every day sounds may seem unbearably loud and painful.

Sensorineural hearing loss results from damage to the inner ear and is usually irreversible. Listening to loud music, whether by personal listening devices or at a concert, can cause sensorineural hearing loss, even in children and teens. It's also likely to contribute to hearing loss in adulthood—and poor hearing is a serious health problem for many adults.

"When using a personal listening device, a child should be able to hear when spoken to and should take breaks from the device," said Brian K. Reilly, MD, FAAP, FACS, co-author of the policy statement and member of the Section on Otolaryngology—Head and Neck Surgery.

"The American Academy of Pediatrics also advises caregivers to avoid bringing young children to excessively noisy venues, such as concerts, sporting events, or fireworks displays. If they do attend these types of events, children should be sure to use protective earmuffs, including on young infants."

One study found that 60% of adolescents and [young adults](#) exceed the maximum daily noise dose recommended, particularly in the presence of background noise, which often results in the user increasing volume. The maximum noise threshold is based on a standard of 85 decibels averaged over eight hours used in occupational settings and is intended for adults, so should not be assumed as safe for children or teens, according to the AAP.

The average listening levels of young adults range from 71 to 105 decibels that are weighted on a scale that describes relative loudness of sounds as perceived by the human ear. For context, the sounds of a motorcycle, a rock concert and a movie theater range from 80 to up to 115 decibels, according to the Centers for Disease Control and Prevention. Noise above 70 decibels over a prolonged period of time may start to damage hearing. Loud noise above 120 decibels, such as a

thunderclap or jetliner take-off, can cause immediate harm to the ears.

The AAP recommends that parents and caregivers consider that if an environment sounds too loud for an adult, it probably is too loud for a child. "Too loud" can mean having to raise your voice to speak with someone just an arm's length away. Other suggestions are to reduce the volume on televisions, computers, radios, and personal listening devices, take listening breaks, and use headphones and earbuds with caution.

The AAP also recommends:

- Pediatricians can provide information about noise and preventing excessive exposure during patient well visits and when examining the ears. This includes addressing safe use of personal listening devices with families, including during confidential adolescent interviews.
- Include discussions on the dose of noise—the duration of exposure, not just the volume. As one increases, the other should decrease.
- Parents can also be encouraged to advocate for reduced noise spaces in early childcare and education settings and for using earmuffs or over-the-ear headsets for children with audio sensitivity. Be cautious with earplugs, as they can pose a choking hazard to [young children](#).
- Pediatricians can counsel parents who use infant sleep machines or noise machines about [safe use](#). While some studies show [potential benefits](#) in the use of infant sleep machines, one study raised potential concern about sound levels from these devices.
- Noise exposure can be incorporated into discussions of age-appropriate toys, video games, tablets and other devices, and screen time. Discussions can include information about volume control, frequency and duration of use, and noise-canceling technologies.

- Adolescents employed in noisy occupations or engaged in shooting sports can be counseled about the importance of using hearing protection; adolescents attending excessively noisy events can be counseled to use ear protection or to relocate further away from the speakers.
- Pediatricians can consider recommending formal hearing evaluations for children with a history of excessive noise exposure or for children with tinnitus or hyperacusis.

The AAP notes that noise exposures are higher in people of lower socioeconomic status. Although occupational standards exist, there currently are no federal regulations or standards in the United States to protect the public from environmental noise hazards.

The AAP Council on Environmental Health and Climate Change and AAP Section on Otolaryngology—Head and Neck Surgery wrote the policy statement and technical report.

"Now is the time to raise public awareness about noise levels and their impact on our health and the health of our [children](#) and teens," Dr. Balk said. "While loud noises are often accepted or even celebrated during recreational events, there are ways we can protect ourselves. Let's lower the volume on our devices—and raise our voices on protecting our ears."

More information: Lead authors Sophie J. Balk, MD, FAAP, and Brian K. Reilly, MD, FAAP, will discuss the policy during a session, "Noise 201: More than Headphones!"

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