

# Hooked on headphones? personal listening devices can harm hearing

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Personal listening devices like iPods have become increasingly popular among young — and not-so-young — people in recent years. But music played through headphones too loud or too long might pose a significant risk to hearing, according to a 24-year study of adolescent girls.

The study, which appears online in the [Journal of Adolescent Health](#), involved 8,710 girls of lower [socioeconomic status](#), whose average age was about 16. They underwent [hearing](#) tests when they entered a residential facility in the U.S Northeast.

“I had the rare opportunity, as an audiologist, to see how this population changed over the years,” said Abbey Berg, Ph.D., lead study author and a professor in the Department of Biology & Health Sciences at Pace University in New York.

In this period, high-frequency hearing loss — a common casualty of excessive noise exposure — nearly doubled, from 10.1 percent in 1985 to 19.2 percent in 2008, she found.

Between 2001 — when testers first asked about it, and 2008 — personal music player use rose fourfold, from 18.3 percent to 76.4 percent. High-frequency hearing loss increased from 12.4 percent to 19.2 percent during these years, while the proportion of girls reporting tinnitus — ringing, buzzing or hissing in the ears — nearly tripled, from 4.6 percent to 12.5 percent.

Overall, girls using the devices were 80 percent more likely to have impaired hearing than those who did not; of the teens reporting tinnitus, all but one (99.7 percent) were users.

However, “just because there’s an association, it doesn’t mean cause and effect,” Berg said. For the girls who took part in the study, other aspects of their lives — poverty, poor air quality, substance abuse, risk-taking behavior — might add to the effects of noise exposure.

“This paper offers compelling evidence that the inappropriate use of [headphones](#) is indeed affecting some people’s hearing, and the number of ‘some people’ is not small,” said Brian Fligor, director of diagnostic audiology at Children’s Hospital Boston.

The level of impairment detected in this study might have been relatively subtle “but the point is that it is completely avoidable,” said Fligor, who has no affiliation with the study.

“The ear is going to be damaged throughout your lifetime; what we’re seeing here resembles early onset age-related [hearing loss](#) — you might think of it as prematurely aging the ear,” he said.

“I don’t demonize headphones,” said Fligor, who encourages moderation, not prohibition. At a reasonable volume — conversational or slightly louder — there is little risk, he said: “It’s when you start overworking the ear that you get problems.”

Berg said her findings suggest the need for more effective educational efforts to reduce unsafe listening behavior, particularly among disadvantaged youth. “You have to target them at a much younger age, when they are liable be more receptive,” she said.

**More information:** Berg AL, Serpanos YC. High frequency hearing

sensitivity in adolescent females of low socioeconomic status over a 24-year period (1985-2008). *J Adol Health* online, 2010.

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