

## What comes after blasting music? It could be hearing loss, students told

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The audiologist walked through the packed lunchroom, holding a wand-like instrument near the 200 middle school students laughing, shrieking, and drumming on the tables.

This was an experiment to test just how loud is loud during lunch hour at Smith Leadership Academy in Dorchester. The results surprised even the doctor, the director of audiology at Massachusetts Eye and Ear Infirmary.

Her meter showed 85 to 90 decibels, the equivalent of a gas-powered lawnmower held at arms' length. At that level, the federal government would limit exposure to eight hours or less in a workplace, said the audiologist, Sharon G. Kujawa .

The experiment yesterday underscored a growing debate in the scientific community about whether children are at greater risk for hearing loss because of their constant exposure to loud sounds, not only in the lunchroom but any place where they listen to music on headphones.

There are conflicting studies on whether children are losing their hearing earlier in adulthood than in past generations, but there are enough warning signs that Kujawa and teachers want the students to pipe down and turn down the music.

"The risk is very real, so we shouldn't underestimate that," said Kujawa, who is also an associate professor of otology and laryngology at Harvard Medical School. "We don't want to wait to get the evidence, because once that happens, that's it. It's too late."

Doctors have long known that children can damage their hearing through a single exposure to a deafening noise, such as a firecracker, or repeated exposure to loud sounds, such as music from a stereo. But their concern has grown in recent years as more children listen to music through headphones, which bring the sound even closer to the fragile hair cells of the inner ear. Once those cells, which transform sound into electrochemical signals to the brain, are damaged, they can't be regrown or repaired through surgery, Kujawa said.

"We have very poor ways of dealing with the consequences," Kujawa said. "The very best we can do is educate people, so we can prevent it at the front end."

Kujawa visited the charter school yesterday at the request of David Fassler , an eighth-grade science teacher who suffers from hearing loss and had grown concerned about the din in the lunchroom. He compared it to "cackling chickens."

Kujawa showed up, armed with a digital sound meter, a bucket of earplugs, and a PowerPoint presentation about the inner ear. She also came with a 26-year-old rapper, Ben Jackson , whose father's sudden hearing loss inspired him to write "Turn it to the Left," a rap about the importance of turning down the volume to prevent hearing problems.

As students bobbed their heads, Jackson rapped, "It ain't no fun, man, it ain't no fun, when you're 13 years old and your ears are 81." The students said the message resonated, especially the notion that they could lose their ability to hear music.

"I'm an up-and-coming DJ so I use speakers that are about 50 to 70 watts," said Christopher Johnson , 12, a sixth-grader, adding that he learned that "I shouldn't turn the radio up too loud."

Noise in the cafeteria has been an ongoing problem, prompting the school to require that students read quietly while they eat breakfast, said Headmaster Karmala Sherwood . Students said they were surprised that their lunchtime ruckus measured as high as 90 decibels.

"It's amazing. I really didn't know that it was that loud in here, because when you're talking, you really don't even notice it," said

Tyrell Pugh , 14, an eighth-grader from South Boston. "It's like you're talking to your friends, and you don't even care how loud it is."

Besides recommending lower volumes for headphones, Kujawa showed the students how to put in earplugs and advised them not to clean the wax out of their ears, because its bitter taste repels insects. The students laughed and squealed in disgust.

Kujawa said the effects of loud noises on young people might not show up until they are adults. Fifteen-year-old Isabell Peters said she had been warned.

"When I'm older I want to be able to hear my grandchildren talk to me," said the eighth-grader from Fields Corner.

April Simpson can be reached at [asimpson@globe.com](mailto:asimpson@globe.com) and Michael Levenson can be reached at [mlevenson@globe.com](mailto:mlevenson@globe.com). ■

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