

IT'S A NOISY PLANET: TWO STELLAR YEARS OF PROTECTING YOUNG EARS

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Every now and then, a study will come along that makes everyone sit up and take notice. For those people who are concerned about hearing loss, that study, which appeared in the 18 August issue of the *Journal of the American Medical Association* (JAMA), delivered the worrisome news that hearing loss in teens appears to be on the rise.

Comparing data from two National Health and Nutrition Examination Surveys, researchers from the Brigham and Women's Hospital, Boston, found that the number of teens who have hearing loss has jumped from roughly 15 percent for the years 1988-1994 to nearly 20 percent for the year 2005-2006, a 31 percent increase in a surprisingly short period of time. Although the researchers emphasized that the cause for the increase was unclear, many news headlines blamed the ubiquitous *earbud* for the startling statistic.

"It's become popular to point to MP3 players as the most likely cause for hearing loss in young people, but it's really too early to tell without further research," said James F. Battey, Jr., M.D., Ph.D., director of the National Institute on Deafness and Other Communication Disorders (NIDCD), one of the National Institutes of Health. "Nevertheless, the findings are a clear signal that there is reason for concern. They also reinforce the need for educational campaigns such as Noisy Planet to help young people develop good hearing habits early on—before they show the signs of hearing loss."

A campaign that sounds off against noise-induced hearing loss

Scientists believe that, depending upon the type of noise, the pure force of vibrations from loud sounds can cause hearing loss. In addition, exposure to too much noise can trigger the release of damaging molecules, called free radicals, which damage sensory cells in our inner ear. These sensory cells, called hair cells, are the tiny but tenacious structures that convert sound vibrations into electrical signals that travel to the brain. Although scientists have been working on means to regenerate hair cells, at least for mammals, once hair cells have been injured, they are gone for good.

With this in mind, the NIDCD created *It's a Noisy Planet. Protect Their Hearing*, a national educational campaign that was launched in October 2008 to increase awareness about hearing loss caused by overexposure to loud noise,



called noise-induced hearing loss, or NIHL. Although people of all ages can benefit from the Noisy Planet message, the campaign's primary target audience is the parents of tweens—kids aged 8 to 12.

"Tweens are at a great stage in life," said Patricia Blessing, chief of NIDCD's Office of Health Communication and Public Liaison and the mother of an energetic 11-year-old daughter. "They're figuring out who they are and what they like to do,

yet they're still not above looking to their parents for guidance. Our goal is to reach them while they're still young, so they can learn how to protect their hearing at home, at school, on the job, and throughout their lives."

NIHL is generally gradual, accumulating over a lifetime of exposure to cranked up music, sporting events, power tools, and loud traffic. However it can also occur right away after a very loud "impulse" noise, such as the blast of a gun or bottle rocket. While there are some causes of hearing loss over which we have little control—genes, disease, and aging to name a few—NIHL is perhaps the most preventable form of hearing loss there is. The NIDCD estimates that approximately 15 percent of Americans between the ages of 20 and 69 have high-frequency hearing loss due to exposure to loud sounds or noise at work or in leisure activities. Put another way, that is 26 million American adults who may have been able to prevent their hearing loss by practicing just a few simple steps when they were younger.

A history of NIDCD and NIHL

The NIDCD has been funding research and educational programs on NIHL since its beginning in 1988. In 1990, the NIDCD took part in a National Institutes of Health consensus conference on noise and hearing loss. The outcome of the conference was a consensus statement that addressed the characteristics of NIHL, dangerous sound levels, a person's susceptibility, prevention strategies, and directions for research. In its Fiscal Year 1998 Senate Appropriations Committee Report (S. Rept. 105-58), Congress also expressed concern about the number of Americans whose hearing is impacted by loud noise. As a result of that report, NIDCD sponsored an NIHL conference in collaboration with the National Institute for Occupational Safety and Health (NIOSH), the National Institute of Environmental

Health Sciences, and representatives of national organizations and advocacy groups. Months later, the WISE EARS! educational program was launched, which featured a brightly colored owl as its icon and which taught about safe listening practices.

The goals for WISE EARS! were to educate all audiences, including workers, employers, health professionals, teachers, parents, children, unions, industry, state and local government workers, and the general public, about NIHL and to motivate them to learn more about hearing health and hearing protection. A variety of educational materials was produced and more than 90 partners signed on to help encourage people to practice safe strategies to protect their hearing from noises that are too loud, too close, or that last too long. The message, then as now, was very simple: if you are exposed to loud noise, you can protect your hearing by turning down the sound, wearing earplugs, or walking away.

In 2006, the NIDCD conducted an evaluation of the WISE EARS! program to determine its overall effectiveness and future role in increasing public awareness of NIHL. After researching existing educational programs, resources, and media coverage on NIHL as well as interviewing former WISE EARS! partners, the NIDCD began to fashion a new campaign that focused on a smaller demographic group and that made better strategic use of its partnerships. What's

more, by targeting tweens, campaign organizers saw that they could help provide an enduring message that fills a gap between other national NIHL awareness programs that target either very young children or teens. It also brings parents into the fold as teachers and role models. Focus group testing with tweens and their parents, both in English and Spanish, along with a message development workshop with health communication professionals and researchers led to the creation of a campaign that seemed to overwhelmingly resonate with both kids and parents, *It's a Noisy Planet. Protect Their Hearing.*

Element #1: An out-of-this-world website

The centerpiece of the campaign is the Noisy Planet website, at www.noisyplanet.nidcd.nih.gov, which was designed to offer a fun, interactive way for parents to explain to their tweens why protecting their hearing is so important. The Noisy Planet website provides educational information for tweens, parents, campaign partners, community members, and the press and is continually updated with new activities, featured guests, noises in the news, and other information. A Noisy Planet e-bulletin provides news updates about partner activities regularly to anyone who subscribes. Also, educational materials in the form of fact sheets and parent tips can be ordered online.

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"I practice as an ear nurse specialist," said one Web visitor. "I think it is very good teaching material I could use in my practice." Another visitor said "Thanks for your website. It is very informative and easy to navigate. I have printed several pages for our church."

Since the campaign began, the NIDCD has experienced substantial leaps in the numbers of materials that have been disseminated, from roughly 5000 publications during the initial three months of the campaign, to nearly 91,000 for 2009 and more than 127,000 materials from January through August 2010. In addition, more than 1,000 people have subscribed to the Noisy Planet e-bulletin. Finally, activity on the Noisy Planet website has tallied nearly 320,000 user sessions and more than 58,000 file downloads of fact sheets, tip sheets, and other materials. In addition, the website and materials have earned several awards, including the 2009 Media Award from the National Hearing Conservation Association, a 2009 Silver W3 award in the Family/Parenting category, a 2009 Blue Pencil Award from the National Association of Government Communicators, and a 2009 Plain Language Award, Gold category, from the National Institutes of Health.

Of course, the Noisy Planet campaign recognizes that sometimes, speaking face to face is the best way to publicize an important health message, and for this reason, a Noisy Planet exhibit has been developed for participating at conferences sponsored by organizations that represent professionals who work with tweens. So far, the Noisy Planet campaign has participated in conferences sponsored by the National Association of School Nurses, the National Afterschool Association, the Association of Elementary School Principals, and the National Association of 4-H Extension Agents.

Element #2: Making the message go farther through Noisy Planet partners

Another important element of the Noisy Planet campaign is its partnerships. Noisy Planet partners have played a significant role in finding new ways to publicize the Noisy Planet message and distribute materials to a greater number of audiences. Partners also provide credibility with their constituency groups and help ensure a consistent message is conveyed between groups. In addition, partners can help make resources go farther with limited budgets and can help develop new materials targeted to certain demographic groups within a target audience.

So far, three national organizations are partnering with the Noisy Planet campaign to help get the message out, and several other organizations are also exploring the opportunity to collaborate. Activities that are being sponsored by our partners include:

American Speech-Language-Hearing Association (ASHA)—The American Speech-Language-Hearing Association's (ASHA's) Listen To Your Buds campaign has sponsored numerous safe-listening concerts in schools and auditoriums around the country, in collaboration with the Noisy Planet campaign, Parents' Choice Foundation, and the Consumer Electronics Association.

As part of May Is Better Hearing and Speech Month,

ASHA's Listen To Your Buds campaign teamed up with Noisy Planet to bring the hearing protection message to elementary and middle schoolers in the Washington, D.C., metro region. Staff from the two organizations pooled their time and resources to reach out to kids from pre-kindergarten through the eighth grade. With ASHA sponsoring safe-listening concerts for the younger students and NIDCD offering in-class presentations for the tweens, more than 2000 children received the hearing protection message in their schools.

"Because the need for public education about noise-induced hearing loss is so great, one organization can't do it all," said Joseph Cerquone, director of public relations for ASHA. "Working together means greater effectiveness. Alliances like the one between Listen To Your Buds and Noisy Planet are able to spread the word more widely, in more ways, and more often."

In addition, NIDCD's director, Dr. James F. Battey, Jr., has been interviewed about the Noisy Planet and Listen To Your Buds collaboration on ASHA's podcast: <http://podcast.asha.org/>. You can learn more about the Listen To Your Buds concerts at <http://www.listentoyourbuds.org/>.

Deafness Research Foundation (DRF)—In May 2009, the Deafness Research Foundation (DRF) sent a direct mail piece to more than 43,000 constituents highlighting the Noisy Planet program, and publicized the program in DRF's inaugural e-newsletter, which was sent to roughly 1,400 subscribers. In addition, DRF's Summer 2009 issue of *Hearing Health* magazine featured a cover story on the Noisy Planet campaign, which was distributed to roughly 31,000 recipients. DRF has also printed a 1/4 page full-color public service announcement in every issue of *Hearing Health* magazine.

"DRF was thrilled to be one of the first partners of the 'It's a Noisy Planet' campaign," said Andrea Boidman, executive director of the DRF. "We were looking into starting a campaign on noise-induced hearing loss ourselves, but by partnering with the NIDCD's program, we were able to effectively communicate to our constituents about how to prevent NIHL in a way that was cost-effective for DRF. The materials are useful and fun, and since they are created by the NIDCD, we trust the information they contain."

During this year's May Is Better Hearing and Speech Month, DRF sponsored a drawing contest for kids, called "It's a Noisy Planet. What are you doing to protect your hearing?" In addition, DRF has created a conference booth that highlights the Noisy Planet program and has designed a page on its website dedicated to the Noisy Planet campaign, which can be found at: www.drf.org/NoisyPlanet.

4-H—4-H, which is part of the United States Department of Agriculture, reaches youth and adults in agricultural environments. 4-H is working with the Noisy Planet campaign to develop materials for a rural audience to disseminate through 4-H program's extensive network of professional staff and volunteers, including 4-H youth members, parents, extension agents, and others.

Element #3: Exploring new orbits

Noise may be invisible, but one of the best ways to teach tweens and their parents about the harmful effects of noise is

to show them so they can see it with their own eyes.

Using hands-on activities that help parents and kids understand what sound is and how it can affect our hearing, NIDCD staff are delivering presentations at schools, camps, churches, health fairs, workplaces, and parenting organizations. So far, they have spoken to middle schools in Maryland and Virginia, as well as churches in Washington, D.C. Noisy Planet is also a popular offering at the annual NIH Take Your Child to Work Day, which is attended by both tweens and their parents.

“I was really amazed by the presentation, and what I liked about it is that there are so many easy, practical tips that we can do,” said Mimi Lising, multicultural health educator at the National Institute of Arthritis and Musculoskeletal and Skin Diseases, and mom to Zachary (8, Fig. 1) and Quinn (11, Fig. 2), who signed up for the Noisy Planet presentation at this year’s NIH event. “I learned a lot, and in fact, after the presentation, I was telling my husband, and he went out and bought some really good earplugs for all of us and we were able to use them the next time we went traveling. We’re just really cognizant now of loud noises and knowing now what we can do to prevent hearing loss or at least keep our hearing as intact as possible.”

Quinn and Zachary agree with their mom. They liked the demonstration that showed how a blow dryer, when placed up against a noise level meter, registered more than 100 decibels, a sound level that puts hearing at risk if listened to for too long a time. However when the meter was moved just a few steps away from the dryer, the sound level dropped to 80 decibels or lower, which is a safe noise level. Zachary was also impressed when he discovered that he and fellow tween-aged participants could hear an annoying, high-pitched tone but most of the adults in the room couldn’t, because their hair cells had become damaged over the years. In fact, months later, he talked about the things he learned for a presentation in front of friends at summer camp. “They said that was really cool,” he reported.

Health Education teacher LaKisha Liggins, who instructs 7th and 8th graders at Walker Mill Middle School, in Capitol Heights, Md., said that she would happily welcome the Noisy Planet presentation back to her classroom.

“That was the best presentation I’ve seen, and I’ve been teaching for seven years so far,” she said. “It’s very interactive and interesting information—something new that the kids never knew before. They really liked it.”

Not only did her students enjoy learning about why it’s important to play their MP3 players more softly, but the Noisy Planet message struck a chord with her as well. “After the presentation, I went out and bought a pair of earplugs and wore them to a party where the music was super loud,” she said. “It automatically made me think about the presentation,” she said.

What’s next for Noisy Planet

The Noisy Planet campaign continues to extend its outreach by forging new partnerships, by adding new interactive features to its website, and by exploring new ways to bring the message directly to tweens and their parents.



Fig. 1. Zachary Lising reaches for his earplugs whenever he helps his dad mow the lawn or rides in an airplane.



Fig. 2. Quinn Lising keeps the volume down on her earbuds so she can listen to them for life.

At the invitation of the Acoustical Society of America, NIDCD staff members delivered a presentation about the Noisy Planet campaign to members of the education committee during the Joint 159th ASA Meeting and Noise-Con 2010, in Baltimore, last April. They also distributed materials during the hands-on acoustic demonstrations with area Girl Scouts. This November, Noisy Planet materials in English and Spanish are being disseminated at the 2nd Pan-American/Iberian Meeting on Acoustics, in Cancun, Mexico.

The Noisy Planet campaign is also beginning a collaboration with Dangerous Decibels, a public health campaign designed to reduce the incidence and prevalence of NIHL

and tinnitus (ringing in the ear) by changing knowledge, attitudes, and behaviors of school-aged children. Whereas the Noisy Planet campaign makes use of activities developed by Dangerous Decibels for its classroom presentations, Dangerous Decibels is adapting Noisy Planet materials for parents in Native American tribes in the northwest United States. Visit the Dangerous Decibels website at <http://www.dangerousdecibels.org/>.

Finally, NIDCD's Noisy Planet campaign will be participating in the USA Science & Engineering Festival, which will be held October 23-24, 2010, at the National Mall and Freedom Plaza in Washington, D.C., and which is expected to attract roughly 100,000 visitors.

"Over the past two years, people have told us how excit-

ed they are to learn about the Noisy Planet campaign and how necessary it is," said Blessing. "Our goal is to keep that momentum going. We want tweens to think about protecting their hearing as routinely as they think about brushing their teeth or buckling their seat belt."

To learn more about the Noisy Planet campaign and its partner activities, go to www.noisyplanet.nidcd.nih.gov/. Sign up for the Noisy Planet e-bulletin, at www.nidcd.nih.gov/news/subscribe, to keep informed about the availability of new materials, including Spanish materials, as well as other activities. If you are in the D.C. metro region and would like to schedule a presentation, please contact Robert Miranda-Acevedo at (301) 496-7243 or Miranda1@mail.nih.gov to learn more. **AT**



Jennifer Wenger received a B.S. degree in education from Miami University, Oxford, Ohio, and her M.A. in biology from Kent State University, Kent, Ohio. She is the deputy director of the Office of Health Communication and Public Liaison at the National Institute on Deafness and Other Communication Disorders (NIDCD), one of the National Institutes of Health (NIH). There, she helps conduct media relations, community relations, public education, and dissemination of scientific information. She also helps oversee the NIDCD Information Clearinghouse, the arm of the NIDCD that provides information and resources for health professionals, patients, industry, and the public. Before joining the NIDCD, Ms. Wenger helped conduct media relations for the National Institute of Allergy and Infectious Diseases.

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