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## Adapter protects ears from dangerous volumes

By Cindy Sutter  
Daily Camera

If you're the parent of a teen, you'll likely recognize this scenario. Your son or daughter is sitting a few feet away, but you can hear their music through their earbuds.

When your music lover is nearby, "turn it down," will get a response. But how do you protect your child's hearing when you're not around?

Louisville audiologist Jeff Baron has an answer to that. His Sounds85 volume controller prevents the music connected to earbuds and headphones from being turned up louder than 85 decibels, the maximum federal occupational

standard for prolonged periods of noise exposure. Baron says most devices can be turned up as high as or higher than 110 decibels, louder than a motorcycle.

Baron, who sold an Arrvada practice fitting hearing aids 10 years ago, became concerned about the ubiquity of earbuds and headphones and the potential for widespread hearing loss. His fears have been borne out by data.

Information from a nationwide health survey, analyzing hearing tests on teenagers from 2005-2006 and conducted by a branch of the Centers for Disease Control and Prevention, found nearly 20 percent of teens had a

slight hearing loss. Slight was defined as 16 to 24 decibels, meaning the teens would not be able to hear whispers or rustling leaves. The results of the survey, published in the Journal of the American Medical Association in 2010, also found the prevalence of hearing loss in teenagers had increased from the 15 percent found in the years 1988-1994 to 19.5 percent.

As Baron points out, the use of headphones and earbuds has only grown more widespread since then.

Sounds85, an L-shaped, plug-in device, was designed to be unobtrusive, Baron says.

"We purposely made it

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Louisville audiologist Jeff Baron worked with an engineer to develop a device that plugs into headphones to limit volumes to safe levels.

Mark Leffingwell, Daily Camera

Jeff Baron's Sounds85 was designed to be small and inconspicuous, especially for looks-conscious teens. It's available at sounds85.com

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Daily Camera



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small, inconspicuous. (Teens) want to fit in."

Baron says turning down the volume is crucial, because damage to the cochlear outer hair cells is permanent.

"It does not regenerate," he says. Baron, who is also a musician, saw the urgency of the problem and the tragedy of losing part of your hearing range. That's not to mention, tinnitus — ringing in the ears — which often accompanies noise-induced hearing loss.

While he knew what kind of product was needed, he didn't have the technical skills to design it and didn't know how to get it made. For that, he turned to Michael Grace of Grace Design in Lyons,

who builds audio equipment for recording studios.

"I felt sort of a sense of duty to help, as someone who works as a professional in the world of sound," he says.

While the principle of what Baron wanted — volume control that didn't compromise sound quality — was simple, designing it correctly required effort.

"(It called for) nuance and detail of getting everything adjusted just right so it would work with a wide variety of devices — a telephone, an mp3, CD, a wide variety of headphones," Grace says. That includes the popular Beats by Dre.

"(Sounds85) is not a high-tech device, but it's a very carefully considered ... device," Grace says.

He adds that it's particularly effective for those who don't know what's dangerous and what isn't.

One of those is Eli Regalado of Littleton. The 34-year-old heard about the device when he was hired to shoot video of the Sounds85 for a marketing campaign. Regalado has experienced ringing in his ears and sometimes has a hard time hearing.

He admits he has abused his ears by, for example, turning up his music loud enough to hear it in his headphones as he's riding his Harley. Other loud noise exposure came doing construction work.

When he saw the device, he decided to buy one.

"For me, most of what's been done may not be reversed," he says. "At the same time, I don't want to make it any worse."

He now uses the Sounds85, and he no longer rides his motorcycle with headphones.

"As my mom would say, 'It's safer anyway,'" he says.