

Hear for a Lifetime®

Carolynn Travis - Global Brand Advocate, Etymotic Research, Inc.

If I have heard it once, I have heard it 1,000 times. “I wish I had met you back when I was in school.” Every band director, orchestra leader, drumline instructor or performing musician that I have met over the past 10 years says something to that effect. During lectures to hundreds of music students, both middle school and high school music students reveal that they regularly experience tinnitus and fullness in their ears after long practices and performances, which is an indication of a temporary decrease in hearing. Most music educators experience the same.

Brass players are taught how their embouchure should function. Percussionists learn how to avoid tendinitis and carpal tunnel syndrome. Almost all musicians learn how to avoid overuse injuries. Yet very few music educators and musicians take the time to learn about how hearing functions and what steps can be taken to maintain healthy hearing. Any musician knows that being a good musician is about listening just as much as it is about playing their instrument.

Six Recommendations:

1. Learn about hearing.

You use your hearing all the time, but how much do you know about how it works? If you're

like most people, the answer is probably, “Not that much.” The process of capturing sounds from the physical world and processing them with our brains is among the most complex and precise of all of our senses.

Unfortunately, it's also a sense that people tend to take for granted, until they experience problems. The more young musicians learn about how their hearing works, the more likely they are to take personal responsibility to protect it. We are a visual culture. Seeing is believing. I recommend watching *Auditory Transduction*, a seven-minute video on *YouTube* using 3D animation that explains how sound enters the ears and

is processed by our brains. It's a fascinating anatomy lesson, put to music. Show it on your first day of class. Your students will leave that day learning one of the most important lessons in their music education. The video can be

found at www.youtube.com/watch?v=PeTriGTENoc

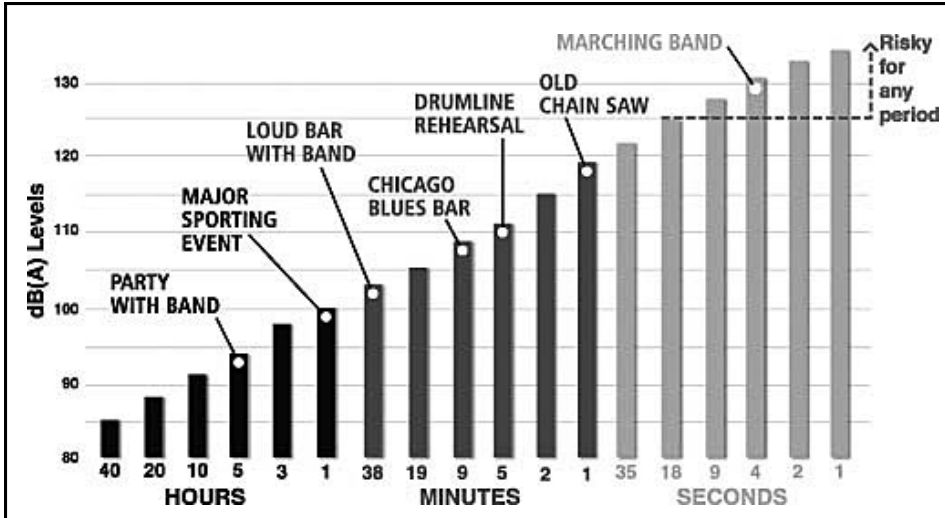
2. Be curious.

Know how loud your classroom can be. Sound level meters are used to measure sound pressure levels (SPL). The SPL meters are affordable and are available online at amazon.com for as little as \$20.00. Hearing loss is a function of exposure time, the average sound level, and the peak level of very loud sounds. Music from a player's own instrument or nearby instruments can cause permanent hearing loss depending on the intensity and duration of the

sound. Some persons are more susceptible to hearing loss from high-level sound than others. Just because it doesn't seem too loud or isn't uncomfortable, doesn't mean that you or your students are not at risk.

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Etymotic Research will offer free hearing evaluations at the convention this summer. Visit their booth for details.



insults. Even if a temporary hearing loss recovers over a period of hours or days, there is a risk that repeated exposure to loud noise will result in permanent hearing loss.

5. Keep tabs on hearing.

Find an audiologist if you don't already have one and go for yearly hearing checks. Encourage your students and their parents to do the same, especially those going on to college to major

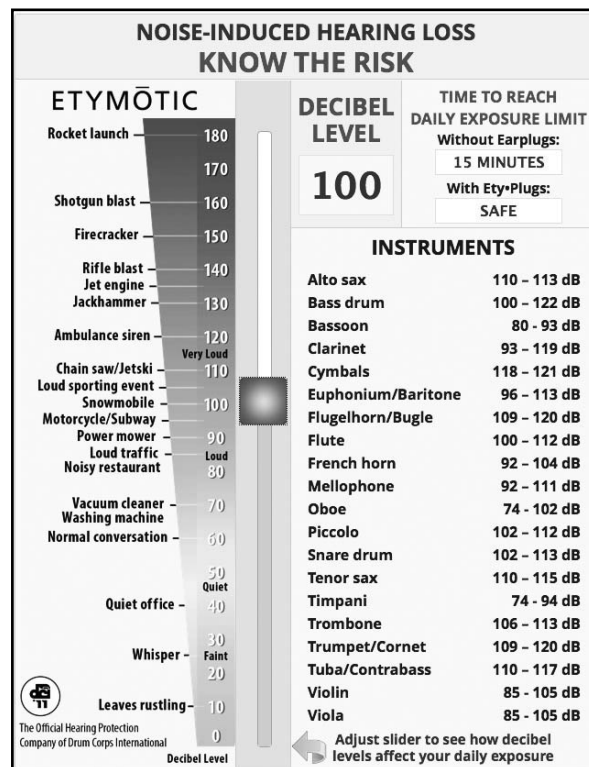
3. Know the risk.

Once you know how loud your classroom is, learn about safe exposure times. Most music rooms exceed 85dB. The government has guidelines in place for the workplace. Hearing protection is mandatory if adult workers in a factory are exposed to noise above 85dB yet directors and students are exposed daily to volumes that far exceed safe levels. According to the National Institute of Occupational Safety and Health (NIOSH) damage risk criteria, the average person can be exposed to 85dB, for 8 hours per week, 5 days per week without undue risk of developing permanent hearing loss. The NIOSH standard uses a 3-dB time-intensity trade-off (also known as an “exchange rate”): for every 3dB increase in the noise level, the allowed exposure time is reduced by half. At 100dB, the safe exposure time is only 15 minutes before damage to your hearing can occur.

in performance or music education. Invite a local audiologist to your class to give a presentation to students, parents and administrators.

4. Check with your students.

Ask your students daily if any are experiencing muffled sound or auditory fatigue during or after class. Tinnitus (ringing in the ears) and temporary hearing loss can occur from a single concert, sporting event or sudden loud noise like a firecracker. In rare cases, permanent hearing loss results from such auditory



This interactive SoundRule is available online at www.etymotic-media.com/sliderule. Students can quickly and easily find out the safe exposure time of their own instrument.



6. Start a hearing conservation program at your school.

If sound levels in your music room exceed safe levels, use hearing protection. There are many types of hearing protection on the market today. Some are made specifically for musicians and people who need to hear clearly in noise. Many band directors already wear custom Musicians Earplugs™. The human ear overloads at high sound levels, making it difficult to impossible to distinguish the blend with other instruments. High-fidelity earplugs not only protect from noise exposure, but they actually help educators and musicians hear and play better. We wouldn't dream of letting football players on the field without wearing protective equipment. Broken bones and strained ankles heal, but there are no known cures for noise induced hearing loss or tinnitus. Prevention of hearing damage is the only viable treatment at this time.

Q: What is the best kind of earplug?

A: An earplug that is worn!

In summary, decades of research show that shifts in hearing due to noise exposure appear to be temporary, but recent studies on recovery from temporary hearing loss challenge long-held beliefs. We now have irrefutable evidence that permanent damage to the inner ear does occur even when hearing returns to previous levels after prolonged exposure. Band directors and music educators need information on how to best advise the musicians under their direction. The key to prevention is to understand the risks and consistently act to minimize them.

Etymotic Research will present *Adopt-a-Band, A Hearing Conservation Program for Educators and Young Musicians* at the TBA Product Showcase on Tuesday, July 23 at 5:15 p.m. Attendees will receive an in-depth look at noise exposure in the classroom, the risks involved and learn about Etymotic's full line of high-fidelity hearing protection that includes ETYPlugs (available at a reduced cost through the Adopt-a-Band program), custom Musicians Earplugs™ and MusicPRO 9-15 electronic earplugs with adaptive attenuation.