



Best Practices to Prevent Noise-Induced Hearing Loss in the Workplace

by Adam Dawson

These Tips Can Help People In Very Noisy Workplaces

Do you have any idea how many people occupational hearing specialists for American workplaces can help?

Let's look at some facts as we figure out the answer. According to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA), 22 million Americans are exposed to "potentially damaging" noise in the workplace every year. About one-third of Americans in these kinds of workplaces do, in fact, experience noise-induced hearing loss, the Centers for Disease Control and Prevention (CDC) has reported.

If you're an occupational hearing specialist for an industrial business, the math is tantalizing, but here's the kicker -- hearing loss due to noise

can be 100 percent preventable. Surgery and hearing aids can't correct noise-induced hearing problems, but a wide variety of hearing protection earmuffs and earplugs can -- and often do -- prevent hearing problems.

"Prevention is the only cure for hearing loss, as it is currently not curable," emphasizes a report entitled "Workplace Hearing Safety." "If you experience a very loud pulse sound in excess of 100 dB (decibels) in close range, your hearing may be immediately compromised...According to federal regulations, employers need to provide hearing conservation devices if employees sustain noise levels in excess of 90 (decibels)."

As an occupational hearing specialist, you should seek effective workplace hearing protection for employees exposed to potentially hazardous noise, even if they aren't exhibiting any warning signs

of hearing problems. Sometimes, there are no physiological warning signs; the noise itself is the warning sign. Loud noises can also cause anxiety, chronic fatigue, gastrointestinal problems, high blood pressure, stress, and tinnitus, which is also known as ringing in the ear, reports the OSHA Fact Sheet "Laboratory Safety Noise."

Note that noise levels above 85 decibels are harmful, so OSHA requires workplaces with a noise level greater than or equal to that to have a hearing conservation program. Workplace hearing protection is also required when the decibel levels increase. For example, if a workplace has an average sound level of 95 decibels during an 8-hour shift, employees cannot work there for more than four hours without hearing protection.

As an occupational hearing specialist, you can also help your employer identify the sources of the most noise and encourage the company to seek equipment that is just as productive, but produces less hazardous noise.

"Using a sound level meter, employers should monitor the noise levels generated by various pieces of lab equipment to identify equipment that has excessive noise levels," the "Laboratory Safety Noise" report says.

Many Possible Solutions

Fortunately, there is a plethora of ways to prevent hearing loss in the workplace.

Here are some tips:

1. Talk to employees about their hearing. If they are having hearing problems, they might

need more workplace hearing protection than their colleagues. Symptoms of hearing problems include difficulty hearing when there is background noise, asking colleagues to shout in the workplace, and avoiding social settings because of hearing problems.

2. Talk to employees about their exposure to loud noises. In the workplace, they can be encouraged to stay away from loud noises during work breaks. Outside the workplace, they can be advised about the decibel levels of various noises and encouraged to avoid them. The Mayo Clinic's "Hearing Loss" report, for example, lists loud music, motorcycling, and snowmobiling as activities with "dangerously high noise levels."
3. Encourage the employer to make hearing tests part of the company's health insurance package so employees who are having hearing problems and are regularly exposed to loud noises will consider getting regular hearing tests.
4. Monitor employees who are most in danger of workplace-induced hearing loss more regularly and rigorously than other employees. The CDC's National Institute for Occupational Safety and Health reports that the occupations most susceptible to hearing loss are agriculture, construction, manufacturing, military, mining, music, transportation, and utilities. About 49 percent of male miners experience hearing loss by age 50. Here is another report on the topic.
5. Emphasize to employers the financial cost of not protecting employees from hazardous noise. OSHA reports that U.S. companies paid more than \$1.5 million in fines in 2016 for

violating laws on workplace noise exposure and about \$242 million is spent each year on workers' compensation because of employees with hearing loss. Hearing problems also make workers less productive and, thus, can cause declines in revenues and profits.

6. The last tip is to use hearing protection products but before discussing them we should emphasize that the Noise Reduction Rating (NRR) on a product does not mean that wearing it will reduce the decibel level of a workplace by the NRR. A product with an NRR of 30 will reduce the noise level by a maximum of 30 decibels if the worker inserts the product correctly in his or her ear and it fits perfectly, according to this "Understanding NRR and Hearing Protection" report.

In practice, hearing protection devices rarely reduce noise levels by the maximum. Many workplace hearing experts estimate that they reduce the noise level of a workplace by about half the maximum so a product with an NRR of 30 in a 100-decibel workplace will reduce the wearer's noise exposure to 85 decibels.

Other hearing experts use a formula -- $NRR - 7/2$ -- so a hearing device with a 30 NRR will reduce the noise by 11.5 ($30 - 7/2 = 23/2 = 11.5$) from 100 to 88.5 decibels.

Earmuffs Vs. Earplugs

If you want to simplify the decision-making process of the employees at your workplace, you can tell them that the two primary options for workplace hearing protection are earmuffs and earplugs.

Earplugs typically have an NRR of between 22 and 33 decibels while earmuffs have an NRR of between 20 and 30 decibels, according to the article "5 Tips for Choosing the Right PPE Hearing Protection." The article recommends using both to maximize hearing protection but fit and comfort are crucial in deciding whether that option is optimal.

"The best way to guarantee comfort is to make sure the hearing protection fits correctly," the story says. "Ensure there's a tight seal with the ear canal (for earplugs) or against the side of the head (for earmuffs). Hair and clothing shouldn't be in the way.

For earplugs, most of the foam body should be in the ear canal. To double-check that the fit for earplugs is correct, cup your hands over your ears, and when you remove them, the sound level should not be different. If the sound has altered then the seal hasn't been put in place properly, and they need to be refit."

"Hearing Protectors," an article by the Canadian Centre for Occupational Health and Safety, has a chart listing the pros and cons of earplugs and earmuffs. Earplugs' pros includes their small size, convenience and how comfortable they are for long-term use in hot and humid work areas. Earmuffs, on the other hand, are more consistent in how many decibels they reduce the workplace noise by and they are designed "so that one size fits most head sizes."

As an occupational hearing specialist, you can also use your discretion in providing more information for employees and employers. The Canadian

article, for example, lists three kinds of workplace hearing protection -- earplugs, earmuffs, and semi-insert ear plugs, "which consist of two ear plugs held over the ends of the ear canal by a rigid headband." The "5 Tips" article lists two kinds of earplugs (disposable and banded) and two kinds of earmuffs (regular and helmet-mounted).

The CDC article "Choose The Hearing Protection That's Right For You" lists the following options for hearing protection:

- Expandable foam earplugs
- Pre-molded reusable earplugs
- Canal caps (they often "resemble earplugs on a flexible plastic or metal band")
- Earmuffs
- "Miscellaneous devices"

And if you can't decide between earplugs and earmuffs, you can have a combination, reports the "Workplace Hearing Safety" article. "The headphone-like design features two ear caps that plug directly into your ears," the article says. "They are much smaller than earmuffs and do not interfere with glasses, with models designed for over the head and behind the head operation. Ear canal caps are not effective at blocking noises exceeding 95 (decibels)."

You should inform employees in your workplace that making a decision on which hearing protection device to wear is not the end of their responsibility for preventing hearing loss. The "Hearing Protectors" article has tips for how to take care of a hearing protection device while the "5 Tips" article has tips on maintenance, cleaning, and storage. Employees should learn when they need to replace their hearing protection.

Do you have any questions? You should. This is an important subject. The CDC report "Noise And Hearing Loss Prevention" has a list of frequently answered questions. Hopefully, you will soon be able to answer all the questions that your employer and the employees at your workplace have on your own. Good luck!!

About the Author

Adam is the Digital Marketing Coordinator at e3 Diagnostics. His interest in hearing healthcare is driven by his passion for music because he feels everyone should be able to clearly listen to Pet Sounds at least once in their life. In his free time, he enjoys playing video games, digging through record stores for classic vinyl, shooting hoops, and writing stories.