



## Sounds Good

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Can you hear a mosquito buzzing in your ear?

It isn't a pleasant sound. But if you can hear it, you can try to swat it.

If you have noise-induced hearing loss, that high pitched mosquito whine is lost to you, but the bug will bite you anyway. A conversation in a crowded restaurant is unintelligible. The excited brag from your young niece is a blur.

People who repair cars are at risk of damaging their hearing. Air powered tools make the work easier, but they're loud. We've measured some tools at well over 100 dBA, loud enough to cause damage if you work with them for just fifteen minutes a day. Add in the things you do for fun, and your ears will be assaulted beyond repair.

Noise-induced hearing loss is permanent damage to specialized nerve cells in the inner ear. It first shows up as a very characteristic loss of the ability to hear 4000 hertz, a pretty high frequency tone. As hearing loss gets worse, the ability to hear other frequencies drops. Someone with hearing loss caused by noise has a hard time following conversations when background noise is present, and has an especially hard time understanding what children and women (people with higher pitched voices) are saying. (So if your wife complains that you never hear what she's saying, it could be due to hearing loss.)

If you're exposed to loud noises once, you could suffer a temporary threshold shift – your ability to hear will drop until your ears are rested. But those specialized nerve cells can't keep recovering. Once they're permanently damaged, they can no longer transmit sound pressures to your brain. Hearing aids can amplify sounds. But they can't take over that transmission role. Think how hard it would be to navigate a world that was always blurry. That's what happens with noise-induced hearing loss.

Hearing loss from noise is 100% preventable. But too many people don't take the simple steps to prevent it. Remove or reduce the noise sources. Wear hearing protection when you can't lower the volume. Get your hearing tested.

### Reduce the noise: Buy Quiet

If you purchase a new compressor, opt for a quieter one. When your employees purchase new tools, consider giving them incentives to buy ones designed to operate at lower sound levels.

You can look at engineering controls to reduce the noise. Put your noisy old compressor in an insulated room. Put sound-absorbing materials on the walls.

If you can't reduce the noise levels, provide hearing protection. Provide more than one type, so your employees can choose whatever they find most comfortable. Don't pay much attention to the noise reduction ratings (NRR), which show how much hearing protection can reduce noise in ideal conditions. If the ear plugs aren't worn correctly, deep in the ear, the actual noise reduction will be far below the NRR.

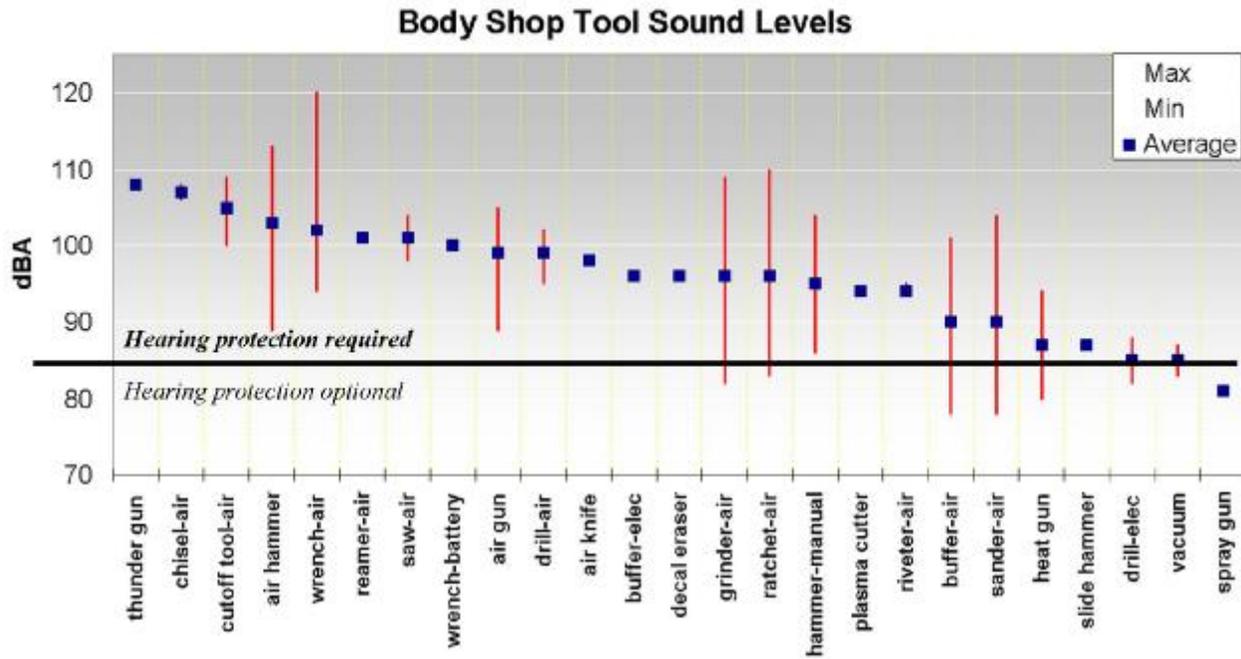
For typical sound levels in body and mechanical shops, an NRR of 20 or higher will probably provide ample protection, if the ear plugs or muffs are worn correctly. Ear muffs have to completely encircle the ear (no earlobes sticking out), and the band needs to be tight against the head. Ear plugs need to be so deep in the ear that you can't easily see them (don't worry – no one's lost an ear plug inside the head).

Got dirty hands? Push-in ear plugs may work better. Don't fit comfortably? Try a different style or a different brand – or practice rolling up the plug into a very tight cylinder. Cranking the radio up loud enough for neighbors five doors away to hear, just so you can hear it over the ear plugs and the tools? Switch to ear muffs with built-in radios. As long as they're from a reputable manufacturer (Bose, 3M, Howard Leight/Honeywell...) and have an assigned NRR, they'll provide effective hearing protection. The one disadvantage: the wearer may not hear someone shouting a warning.

To evaluate whether the hearing protection is working, get a hearing test. OSHA requires that if employees are ever exposed above an eight hour average of 85 dBA (that's the level at which you need to shout to talk to someone next to you). Hearing tests are simple: the audiometric technician will ask if you can hear different tones. If you show a significant change from a baseline test, it's a sign that you need to be more diligent about protecting your hearing.

OSHA requires employers whose employees have exposure over 85 dBA to provide a selection of hearing protection, to train employees on the hazards of noise, to test hearing annually, and to have a written program describing how all that will be done. If you could create a quieter shop, you wouldn't have to do any of this.

But remember that it isn't just noise at work that damages hearing. Planning to go to a football game at the new football stadium? Wear hearing protection, as the stadium was actually designed to be over 110 dBA. Game 7 of the 1987 World Series at the Metrodome was reportedly as loud as 125 dBA. A rifle shot is around 150 dBA. At those levels, your hearing will be damaged almost immediately. Is it really worth losing your ability to hear a deer in the woods, the punchline of a joke, or a daughter telling you she loves you?



This article is intended to provide general information (no advice) about current safety topics. To discuss your specific concerns and how CHESSE may help, please contact CHESSE at 651-481-9787 or [chess@chess-safety.com](mailto:chess@chess-safety.com)

This article originally appeared in *AASP News* (July 2017).