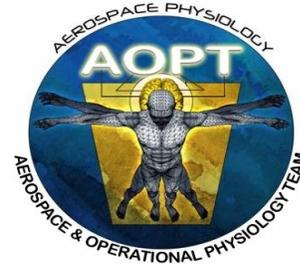


The Phiz Biz

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Courtesy of Aerospace and Operational Physiology
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Can you hear me now?



It's the question most of us have asked ourselves as we stand in the electronic section of the store: should I buy headphones or earbuds? We make our decision based on a number of factors, such as price, brand, comfort, and sound quality. One consideration we don't always address is hearing loss prevention. According to a 2010 report by the CDC, as many as 16% of Americans have reported some hearing loss that could be caused by loud noise, a rate about 30% higher than the 1980s and 1990s.¹ While some of this noise can be attributed to your environment, a good portion is completely optional, coming from personal listening devices. So how does sound damage our hearing and what device will prevent hearing loss?

Noise Induced Hearing Loss

Sound waves travel through the ear canal to the ear drum. The vibration created on the ear drum are converted to fluid vibrations in the cochlea and the wave, created from the vibration, travels along the basilar membrane (bottom partition of the cochlea). Hair cells sitting on the basilar membrane move, and as the hair cells move, pore-like structures on the tips begin to open up. When this occurs, electrical signals are sent to the brain as auditory cues.²

Noise induced hearing loss occurs when these hair cells are damaged. If the harm is significant enough, the hair cells may be permanently damaged or there may even be cell death. But how do we know if the music or sound we are listening to is damaging our hearing? Sound is measured in units called decibels (dB). Sounds of less than 75 decibels, even after long exposure, are unlikely to cause hearing loss.³ However, long or repeated exposure to sounds at or above 85 decibels can cause hearing loss.

Here are the average decibel ratings of some familiar sounds:

- Normal conversation: 60 dB
- Heavy city traffic: 85 db
- MP3 Player at max volume: 120 dB (Permanent damage can begin within 1 hour)



Headphones or Earbuds?

The question still remains: which is better, headphones or earbuds? While both options can cause harm if used improperly, doctors often recommend headphones instead of earbuds.⁶ Headphones sit on the outside of your ear, similar to earmuffs, while earbuds are inside your ear. Because earbuds sit inside the ear closer to the eardrum, they naturally add about 9dB of volume.⁴ Additionally, earbuds do not always block out background noise and our initial instinct is to turn the volume up, reaching unsafe volume levels.

If earbuds are your jam and you do not want to make the switch to headphones, the Action on Hearing Loss Organization has a few other safety guidelines that may help:

- Take regular breaks (5 minutes every hour) to give your ears a rest.
- Use your device's volume limiter if it has one.
- Turn the music down. Even one or two notches can make a big difference.⁵

One thing is certain: noise induced hear loss is preventable. When all is said and done, just go ahead and turn the volume down because preserving your hearing will be worth it.

We are human performance enhancement consultants. Here for you—providing a multitude of services.
Call us today 719-556-4185 to see how we can help your organization!

1, 4, 6 - <https://www.medicaldaily.com/earbuds-vs-headphones-which-will-cause-noise-induced-hearing-loss-366088> , 2, 3 - <https://www.nidcd.nih.gov/health/noise-induced-hearing-loss>, 5 - <https://www.actiononhearingloss.org.uk/hearing-health/look-after-your-hearing/listen-to-music-safely/>