



Loss Control Insight

Improper Use of In Ear Headphones and
Earbuds-May Put Hearing at Risk

There is such a variety in personal portable sound systems that can be conveniently worn for extended periods and are used in one form or another by so many. Included with the variety of sound systems is the variety of amplification systems that come in all shapes and sizes of headphones and earphones. These devices are potentially dangerous because, if used improperly, they can cause permanent hearing loss.

Personal sound systems have become so overwhelmingly popular it seems almost everywhere you go, you see people of all ages tuned into what they want to hear and tuned out of the world around them. That said, what is the future cost for the luxury we have today to pump up the volume and listen to anything we want whenever and wherever we go, for how ever long we choose? What is the cost to the people that portable listening devices, especially in-ear headphones, are most popular with; namely, our youth?

A leading cause of hearing impairments used to be excessive noise exposure in the workplace, but today many young people are losing their hearing at alarming rates due to excessive noise exposure from portable stereo earphones.

Headphones and earphones appear to be the most damaging. Since noise-induced hearing loss is a result of intensity (loudness) and duration of exposure, these devices may be capable of inducing a permanent hearing loss — especially if they are used at a volume setting of four or above for extended periods. The amount of hearing loss that one will suffer is related both to the volume, measured in decibels (dB), and the duration of time that one is exposed to the sound. Sound at 85 dB or below is considered safe. Think about it!

If one is exposed to sounds greater than 90 dB for an average of eight hours per day without hearing protection, hearing loss will most likely result. As the volume increases, the safe time of exposure decreases.

Here are some loudness/time facts to consider (the unit of measurement is decibel):

- **At 95 dB**, damage will occur after four hours of exposure per day.
- **At 100 dB**, damage will occur after two hours of exposure per day.
- **At 105 dB**, damage will occur after one hour of exposure per day.
- **At 110 dB**, damage will occur after 30 minutes of exposure per day.
- **At 115 dB**, damage will occur after 15 minutes of exposure per day.
- **At 120-plus dB**, damage occurs almost immediately.

Most portable stereo music systems produce sound in the range of 95-108 dB at level four and in excess of 115 dB at level eight. For comparison, a soft whisper is usually measured at 30dB; busy traffic at 75dB; a subway train at 90dB; a gunshot blast at 100 dB, a jet plane at 140 dB; and a rocket launching pad at 180 dB. Sounds above 140 dB usually cause pain. If you have to speak in a loud voice to be understood, background sound is probably in excess of 90 dB.

If you can hear the sound being delivered into a person's ear via headphones or earphones, it indicates the sound is too loud and over an extended period can lead to permanent hearing loss.