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“Nearly 35 million Americans suffer from hearing loss, and that number grows considerably every year! There is not an exact statistic since many people either do not realize or refuse to admit that they are not hearing as well as they were once able to.”

iPods and Hearing Loss

Portable MP3 players, like the iPod, have become extremely popular with all age groups. They are easy to use, portable and provide very good sound quality at a relatively low price. However, they are causing hearing loss in people that ordinarily would not have problems with hearing loss for several decades. In fact, a Northwestern University audiologist and professor recently found more hearing loss in younger people using iPods and earbud headphones. This hearing loss was similar to that found in aging adults!

Three factors of MP3 (iPod) players affect hearing:

Volume level. Sounds louder than 80-85 decibels are potentially dangerous to your hearing, and exposure to sounds above 90-95 decibels for extended periods of time causes hearing loss. At maximum volume, iPods put out music at up to 120 decibels, about as loud as a jet taking off.

Type of headphone. Because the earbud headphones that typically come with iPods and other mp3 players are placed directly into the ear, they can boost the sound signal by as much as six to nine decibels.

Length of time used. With batteries that last up to 12 hours and storage for hundreds of songs, iPod users can hook themselves up and listen to music for hours at a time. At moderate volume levels, this length of time will likely not cause any damage. But at 100-105 decibels, hearing damage can occur in eight to 15 minutes.

National standards for noise exposure say that a person can be safely exposed to noises up to 85dBA for up to eight hours per day. According to Harvard audiologist Brian Fligor, 85 dBA is just below the 60% mark on the iPod Nano volume control. At a 60% volume setting you can listen for eight hours. According to Fligor, a volume setting of 80% on the Nano produces a 98 dBA level, producing a safe listening duration of just 23 minutes! What about full volume? 111 dBA and 1 minute of safe listening. The intensity of sound is about 7dB louder if you use deeply inserted ear phones for listening. The bottom line is that you need to keep the volume at 40% or less if you want to listen for long periods of time.

% of Maximum Volume Control	Free-field Equivalent dBA	Time to 85 dBA TWA
25%	65	indefinite
30%	68	indefinite
40%	73	indefinite
50%	81	indefinite (roughly)
60%	87	271 min (4.5 hours)
70%	92	98 min (1.6 hours)
80%	98	23 minutes
90%	106	4 minutes
100%	111	1 minutes

Figure 1 Percent of maximum volume and its equivalent dB for the iPod Nano. Fligor, Hearing Review, 2006

In the same 2006 Hearing Review article cited above, Dr. Fligor saw a 15-year old patient who had significant wax in his right ear. After removing the wax, hearing thresholds were measured in both ears. The ear that didn't have the wax showed a 20 dB hearing loss at 4kHz while the ear with the wax was normal. The teenager said that he listened to his portable music player at full volume, and Fligor concludes that the most likely explanation for the loss in the one ear was the music player--the ear with wax didn't have loss because it was protected by the wax which naturally reduced the loudness and protected that ear. Figure 2 shows the audiogram, which your hearing care professional can explain in more detail.

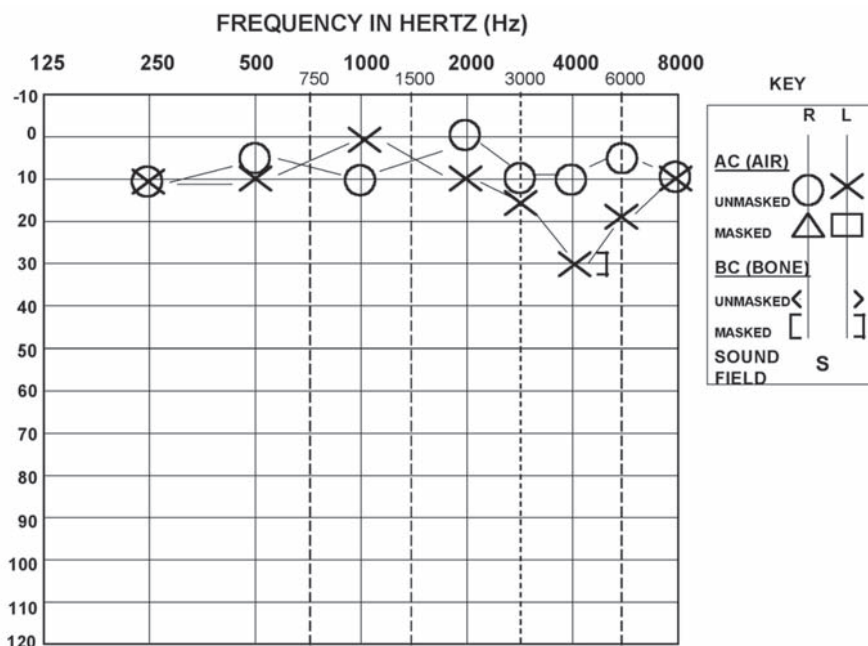


Figure 2. Suspected permanent hearing threshold shift in the left ear resulting from iPod use. Fligor, Hearing Review, 2006.

Data suggests that you can listen to your iPod or MP3 player at a 40% volume for eight hours per day. Of course, when you are listening it is likely to be in a noisy place (subway, airplane, crowded area), therefore, you will have to turn it up to 80% or higher volume to drown out the ambient noises. Be aware that when you do this that over a relatively short period of time, you are risking permanent damage to your ears.

The consequence of this exposure is a permanent hearing loss at a relatively young age. You are never too young to have your hearing checked, and your hearing care professional is just the person to complete the evaluation and discuss results and next steps.

Signs of Hearing Loss

Take this quiz to discover whether or not you are experiencing signs of hearing loss:

- Do you often miss certain words?
- Do you frequently ask the speaker to repeat what was said?
- Have family members or friends expressed concern about your hearing?
- Do you avoid certain social situations (the theater, restaurants) because it is difficult to hear?
- Do you have a history of work-related noise exposure?
- Do you have difficulty understanding telephone conversations?
- Do you turn up the radio or television to volume levels that are too loud for others?
- Do you have difficulty following conversations in groups or in the presence of background noise?
- Do you experience ringing or buzzing sounds in one or both ears?



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