

Auditory Function in MP3 Users and Association with Hidden Hearing Loss

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Abstract : Hidden hearing loss may occur in humans exposed to prolonged high-level sound. It is the loss of ability to hear high-level background noise while having normal hearing in quiet. We compared the hearing of people who regularly listen 3 hours and more to personal music players and those who do not. Forty participants aged 18-30 years were divided into two groups: regular users of music players and people who had never used them. And the third group - elders aged 50-55 years, had 15 participants. Pure-tone audiometry (125-16000 Hz), auditory brainstem response (ABR) (70dB SPL), and ability to identify speech in noise (4-talker babble with a 65-dB signal-to-noise ratio at 80 dB) were measured in all participants. All participants had normal pure-tone audiometry (all thresholds < 25 dB HL). A significant difference between groups was observed in that regular users of personal audio systems correctly identified 53% of words, whereas the non-users identified 74% and the elder group - 63%. This contributes evidence supporting the presence of a hidden hearing loss in humans and demonstrates that speech-in-noise audiometry is an effective method and can be considered as the GOLD standard for detecting hidden hearing loss.

Keywords : mp3 player, hidden hearing loss, speech audiometry, pure tone audiometry

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