A Looming Epidemic: Personal Music Player Use in a Young Adult Sample and Its Implications for Future Noise-Induced Hearing Loss

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Noise induced hearing loss is a preventable cause of deafness. The deafness is permanent, as there is no treatment to regenerate damaged nerve cells. Hearing loss is debilitating and has a correlation with depression, dementia, and deterioration in cognitive performance. The widespread use of personal music players (PMPs), such as earbuds and headphones, presents a currently unregulated threat to hearing. The use of PMPs may result in an excessive and persistent exposure to damaging noise levels. Usage patterns of contemporary PMPs by young adults are understudied and understanding of this issue is crucial to developing updated safe listening recommendations. Sixty-two anonymously returned electronic surveys from young adults (average age 21.5 years old) revealed usage patterns. Average daily use was 3.1 hours and maximum consecutive use averaged 4.3 hours. Sound output from four PMPs was measured in dBA using a sound mannequin and attached sound meter. Data was obtained across three music genres and a podcast at four intensity levels, producing 64 trials. Peak recorded volume was 101.2 dBA, equivalent to noise from a motorcycle. The majority of respondents used their PMPs at 50-100% of capacity, and 11.3% listened within the 75-100% range. Nearly 60% listened at levels associated with potential future noise-induced hearing loss. This study highlights the association of seemingly innocuous PMP use with possible future deafness. Guidelines for safe use are offered, which when coupled with public health education may favorably impact a looming epidemic of hearing loss.

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