Exposure to Work-Related Noise In Teenagers

The prevalence of hearing loss increases with age, ranging from 6% in 18-25 year olds, 7% in 25-34 year olds, 11% in 35-44 year olds, 17% in 45-54 year olds, 22% in 55-64 year olds, 33% in 65-74 year olds and 44% among those older than 74. Two recent studies found that 24-30% of that hearing loss can be attributed to noise exposure at work (1,2).

Patients seen in the office today reflect the adverse effect of noise exposure over many years. A significant proportion of workplace noise exposure among older patients may have taken place prior to the adoption of the noise standard in 1981 or even the establishment of OSHA in 1972. Hopefully, with more workplace controls and increased awareness about the adverse effects of noise, the prevalence of hearing loss will decrease as the current youth become older.

Is there evidence that teenagers who work today are exposed to less noise or are more likely to use hearing protection than their parents or grandparents? A cross-sectional telephone survey of a nationally representative sample of U.S. working teenagers, 14-17 years of age, published in October 2008, would suggest that our working youth are no better protected from hearing loss than their parents or grandparents and that we will continue to see significant occurrence of noise-induced hearing loss in the future (3).

Respondents for this survey held a paying job for at least 2 months within the prior 12 months. Analysis was performed by age categories 14-15 and 16-17 to reflect the age categories that child labor laws use for different work restrictions.

Table I shows that over 60% of working teenagers responded they are “exposed to continuous loud noises.”

<table>
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<tr>
<th>Weighted Percent (95% CI) of U.S. Youth Working in the Retail or Service Industry Reporting Selected Continuous Noise Exposures, by Sex and Age, 2003</th>
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<tr>
<td>Male</td>
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<td>14-15 years</td>
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<td>64.1% (95% CI 47.2, 81.1)</td>
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(Adapted from reference 3)
Despite reported high exposures to noise, the use of hearing protection was almost non-existent (Table II). Even though a "yes" response for hearing protection was based on "ever used" rather than usually or frequently used, less than 3% of those exposed to continuous loud noise answered "yes" to using hearing protection.

The strength is of this study is its nationally representative sample, which allows the results to be extrapolated to the whole population of U.S. working teenagers. Its major limitation is that the results are based on self-reporting; it is possible that teenagers over-estimated their noise exposure. However, there is not a plausible reason to suggest why they would have understated their use of hearing protection.

The National Institute for Occupational Safety and Health has educational material for adults on their web site: http://www.cdc.gov/niosh/topics/noise/default.html. The National Hearing Conservation Association has educational brochures including one for parents about their children: http://www.hearingconservation.org/rs_pracGuides.html.

The American Academy of Audiology also has a brochure on noise and hearing loss for children: http://www.audiology.org/publications/books/.

We are not aware of any organization that has material specially targeted for teenagers.
Health professionals who see teenagers need to emphasize the importance of hearing protection from high levels of noise from both work and recreational activity exposures. As always, we are interested in reports from hearing professionals of patients employed at work places with exposure to high noise levels.

REFERENCES


On-line Resources!

The National Hearing Conservation Association
http://www.hearingconservation.org/rs_pracGuides.html
Provides educational brochures including one for parents about how to prevent noise damage among children.

The American Academy of Audiology
http://www.audiology.org/publications/books/
Provides a brochure on noise and hearing loss for children.
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