

Abstract

Systematic Observation of Noise Exposure and Hearing Protector Use in Worksites in
Two Noisy Industries

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Workers' compensation claims for noise-induced hearing loss (NIHL) accepted in Washington State have increased ten-fold in recent years. As a result the University of Washington has undertaken a cross-sectional occupational hearing loss study in collaboration with Washington Department of Labor and Industries (L&I). Ten industries with NIHL claims above the statewide average have been identified for study. Part K of the Washington State General Occupational Standards (WAC 296-62-09015) requires that workplaces with noise exposures above an 85 dBA eight hour time weighted average must have hearing conservation plans (HCP) to control noise exposure and prevent NIHL. A rule of thumb used in characterizing this level of exposure is "noise so loud that you have to raise your voice for someone to hear you from an arm's length away."

Sawmills and road construction were the industries targeted in this study. The worksites were recruited by informational mailings and follow-up telephone contact. We measured noise levels at five sawmills and six road construction sites in western Washington and concurrently obtained noise dosimetry on six to twelve employees at each site. A task observation protocol was used to assess individual workers' hearing protector use when exposed to noise above 85 dBA. We also interviewed employees and an employer representative to determine the knowledge of noise levels in the workplace, awareness of NIHL, use of hearing protectors and training received. An exit interview using the rule of thumb for excessive noise exposure assessed the employees' characterization of their noise exposure.

This study showed that a trained observer's assessment of excessive noise exposure (>85 dBA) agreed reasonably well with dosimeter results. Agreement was better in sawmills than road construction, suggesting that a trained observer is more accurate in fixed site industries. There was weaker agreement between the workers' responses using the rule of thumb for excessive noise exposure and the measured noise exposure. Observed use of hearing protection was very high in sawmills and lower in road construction, with a majority never observed using hearing protection. Hearing protection use in sawmills is most likely the result of a strong enforcement policy in the lumber industry.

Further study is warranted and it may be useful to formulate and test alternative questions in place of the current rule of thumb in order to allow workers to more accurately characterize their noise exposure.