

## Preventing Hearing Loss Among Miners

by James P. Rider

**Overexposure** to noise continues to be a widespread serious health hazard in the U.S. mining industry. The use of heavy equipment, the drilling of rock, and a confined work environment are just a few of the factors that contribute to high levels of noise exposure.

Prolonged exposure to hazardous noise levels over a period of several years -- with no hearing protection -- will almost always cause permanent damage to the auditory nerve and almost certainly affects an individual's quality of life. Generally, the greater the noise exposure, the more rapid the loss.

Unfortunately, loss of hearing occurs gradually and is so subtle that an individual may not realize it until

Noise-induced hearing loss is irreversible -- prevention is the only "CURE".

a substantial amount of hearing is lost. This damage -- known as noise-induced hearing loss (NIHL) -- is *irreversible*, that

is, there is no medical or surgical treatment that will restore this type of lost hearing.

A recent NIOSH analysis of audiograms showed that by age 50 about 90 percent of coal miners and 49 percent of metal/nonmetal miners had hearing impairment. By contrast, only 10 percent of the population that experienced nonoccupational exposure to noise had any hearing loss by age 50. NIOSH recognizes that NIHL is one of the 10 leading work-related diseases and injuries in the nation.

One goal of the Hearing Loss Prevention Branch at the NIOSH Research

Laboratory in Pittsburgh is to develop a program that will provide noise control techniques and equipment modifications that could reduce

NIOSH will survey, analyze, and assist in reducing noise levels by "engineering them out".

noise levels to miners. This program of assistance to the mining community would involve noise surveys of equipment, workers' exposure levels, analysis of data, and control of mining noise problems.

The level of assistance available will range from simply providing information to developing engineering solutions, as well as participating in the implementation of retrofit noise controls. Requests from mine operators and MSHA personnel will identify where technical assistance may be needed.

One intervention activity was performed at a pulverizing operation at a silica processing plant. Acoustic tests were conducted at various locations throughout the mill building. Analyses of the data indicated excessively high noise levels around high-pressure air slide blowers on the second floor of the mill. A simple, inexpensive plywood enclosure, lined with a 2-inch fiberglass material, was constructed around the blowers. Follow-up surveys showed a significant reduction of noise in the immediate area surrounding the blowers.

Another area of research, requested by MSHA, is to reduce noise exposures of

air-track drill operators. Air-track drills generate noise

Noise from air-track drills is hard to control.

at levels in the 100 to 110 dBA range and are historically difficult to bring into compliance. Possible solutions include retrofitting cabs at either the drill mast or the tramming location, and could range from simple partial barriers to complex full enclosures.



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*The Holmes Safety Association*

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The **Holmes Safety Association Bulletin** contains safety articles on a variety of subjects: fatal accident abstracts, studies, posters, and other health and safety-related topics. This information is provided free of charge and is designed to assist in presentations to groups of mine and plant workers during on-the-job safety meetings. For more information visit the *MSHA Home Page* at [www.msha.gov](http://www.msha.gov).

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