

## Hearing Conservation

### 5-Minute Talk

#### Overview

Exposure to high levels of noise causes hearing loss and may cause other harmful health effects as well. The extent of damage depends primarily on the intensity of the noise and the duration of the exposure.

Noise-induced hearing loss can be temporary or permanent. Temporary hearing loss, also called temporary threshold shift (that level of sound that a person can just barely hear), results from short-term exposures to noise, with normal hearing returning after a period of rest.

Generally, prolonged exposure to high noise levels over a period of time causes permanent damage. Therefore, a person who regularly sustains a temporary loss or shift in hearing threshold will eventually suffer permanent hearing loss or noise-induced permanent threshold shift (NIPTS). NIPTS occurs very gradually over time. In fact, for a long time the worker may not notice any change in hearing acuity until the hearing loss begins to interfere with everyday communication. By then, it is too late to do anything about the hearing loss that has occurred.

#### Control measures

Engineering or administrative such as the following are always the first step in reducing worker exposure to noise:

- Set up noisy machinery in a separate area away from as many workers as possible.
- Place machinery on rubber mountings to reduce vibration.
- Use sound absorbing acoustical tiles and blankets on floors, walls, and ceilings.
- Arrange work schedules to cut down on the time each worker spends in a noisy area.

Many machines currently meet noise specifications because manufacturers have responded to the need to cut noise. Some equipment like saws and punch presses, however, can't be made to run any quieter, so proper hearing protection is a must.

#### Selecting hearing protection

Some of the factors you should take into account when selecting the right hearing protection devices (HPDs), include:

- Noise hazard—how much noise will workers be dealing with?
- Noise frequency—will it be continuous or intermittent? (Some earplugs or muffs reduce the force of noise (attenuate) better at lower frequencies than at higher frequencies.)



- Fit and comfort—protective devices must fit properly and be comfortable enough to wear as long as they are needed.
- Noise Reduction Rating (NRR)—All hearing protectors carry a label indicating the NRR; a higher number on the label means more effectiveness.

HPDs filter out the loud noise. This means they do not block out sound completely, but they reduce the amount of sound reaching the delicate parts of the ear. By doing so, they offer some protection so that hearing will not get overloaded by the surrounding noises (glare) that interfere with speech and machinery sounds.

## **Audiometric testing**

If your facility has noise exposure equaling or exceeding an average of 85 decibels (dB) or more over an eight-hour day, you are required to provide your employees with audiometric (hearing) testing.

A trained technician uses an audiometer to send tones through headphones. The person being tested responds to the test sounds when they are first heard. The chart that records responses to the test sounds is called an audiogram.

## **Hearing protection only makes common sense**

You are ultimately responsible for protecting your own hearing. You have the most to lose if you suffer hearing loss as a result of on-the-job noise hazards. Here are a few points to remember about protecting your sense of hearing: (1) make sure earplugs fit properly, (2) have an annual hearing test, (3) keep HPDs in good operation, (4) don't use homemade HPDs or cotton; they don't work, and (5) wear HPDs as required.

## **Employee training**

Workers exposed to TWAs of 85 dB and above must be trained every year in the (1) effects of noise, (2) purpose, advantages, disadvantages, and attenuation of various types of hearing protectors, (3) selection, fitting, and care of protectors, and (4) purpose and procedures of audiometric testing. The training requirements are found at 1910.95(k)—Training programs, 1910.95(l)—Access to information and training materials, and 1910.95(i)(4)—The employer shall provide training in the use and care of all hearing protectors provided to employees.



## **Training tips**

Explain your company's audiometric testing program or provide more details on the requirements of the program (these can be found in the regulation itself).

There are three types of noise: wide band, narrow band, and impulse. Discuss the sources of noise at your facility.

## **Where to go for more information**

See "Employee training" above.

