

HEARING CONSERVATION PROGRAMS

Noise or unwanted sound is a by-product of many industrial processes. Employees exposed to these high noise levels are subject to hearing loss and other harmful health effects. The amount of hearing loss suffered by employees depends on the intensity and duration of the exposure. Noise-induced hearing loss can be temporary or permanent. Temporary hearing loss results from short-term exposure. Normal hearing returns after a period of rest. Prolonged exposure to high noise levels will cause permanent hearing loss.

The purpose of a hearing conservation program is to protect employees who are exposed to excessive noise levels from suffering related hearing loss. There are six main components to any hearing conservation program: Monitoring, Audiometric Testing, Audiogram Evaluation, Hearing Protectors, Training, and Recordkeeping.

Monitoring

Employers are required to monitor noise exposure levels in the work area in order to identify employees who are exposed to noise at or above 85 decibels averaged over eight working hours (eight-hour, time-weighted average). The measurement must include all continuous, intermittent, and impulsive noise within the 80db to 130db range. The measurement must be taken during a typical work situation. Hand-held sound level meters can be used to take point-in-time noise measurements. Noise dosimeters are used to obtain time-weighted averages. Monitoring should be repeated whenever there is a change in operations or equipment.

Audiometric Testing

Audiometric testing monitors the sharpness and acuity of employees hearing over time and indicates whether the employer's hearing conservation program is preventing hearing loss. OSHA requires employers to establish and maintain an audiometric testing program for all employees exposed to noise levels at or above 85db. The important elements of an audiometric testing program include baseline audiograms, annual audiograms, training, and follow-up procedures.

Audiometric tests must be performed by a licensed or certified audiologist, otolaryngologist, and physician or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation. Within six months of an employee's first exposure at or above the action level, the employer is required to establish a valid baseline audiogram against which subsequent audiograms can be compared. At least annually after obtaining the baseline audiogram, the employer is required to obtain a new audiogram for each exposed employee. It is important to test hearing on an annual basis to identify deterioration in hearing ability so that protective follow-up measures can be initiated.

Audiogram Evaluation

A standard threshold shift (STS) is a change in hearing threshold relative to the baseline audiogram of an average of 10db or more at 2000, 3000, and 4000 HZ in either ear. If a standard threshold shift is identified, employees must be fitted or refitted with adequate hearing protection, shown how to use them, and required to wear them. They must be notified in writing within 21 days that an STS has occurred. An annual audiogram may be substituted for the original baseline audiogram if the professional supervising the program determines that the employee's STS is persistent. This substitution will ensure that the same shift is not repeatedly identified. The original baseline audiogram must be retained for the length of the employee's employment.

Hearing Protectors

Hearing protection must be available for all employees exposed to an eight-hour, time-weighted average of 85db or greater at no cost to the employee. Hearing protectors must be replaced as necessary. Employees identified with an STS and those who are exposed to noise levels 90db or greater (TWA) are required to wear hearing protection. Employees must be offered several types of hearing protection. The hearing protection must attenuate employee exposure to an eight-hour, time-weighted average of 90db—85db if a standard threshold shift has occurred. Employees must be shown how to use and care for their protectors and must be supervised on the job to ensure that they continue to wear them correctly.

Training

When workers understand the reasons for the hearing conservation program and the need to protect their hearing, they will be better motivated to participate actively in the program. Employees exposed to 85db (TWA) and above must be trained annually in the effects of noise; the purpose, advantages, and disadvantages of various types of hearing protectors; the selection, fit, and care of protectors; and the purpose and procedures of audiometric testing. The training program may be structured in any format as long as the required topics are covered.

Recordkeeping

Noise exposure measurement records must be kept for two years. Records of audiometric test results must be kept for the duration of the employee's employment. These records must include the name and job classification of the employee, the date, the examiner's name, the date of the last acoustic or exhaustive calibration, measurements of the background sound pressure levels in audiometric test rooms, and the employee's most recent noise exposure measurements.

For more information, reference 29CFR 1910.95 (Code of Federal Regulations), The National Institute for Occupational Safety and Health (NIOSH), or contact your local OSHA office or State Bureau of Labor.