

Now Hear This...

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HEARING CONSERVATION PROGRAMS

Hearing conservation programs (HCP) can comply with all aspects of the Michigan Occupational Safety and Health Administration (MIOSHA) noise standard and yet be ineffective in preventing work related noise induced hearing loss. Education is vital to the overall success of a hearing conservation program-both of the employees and the employer. Employees must have an understanding of the permanent nature of noise induced hearing loss and their responsibility in the successful use of hearing protection. Employers must understand the importance and value of implementing and supporting a HCP. When a company has an effective hearing conservation program, everyone wins. The employer has provided a safe work setting, the employee does not suffer from the long term effects of noise induced hearing loss and the safety and health professionals who implement the program can report success in reducing the harmful effects of occupational noise exposure.

Michigan's Occupational Noise Standard R325.60101-.60128, mandates that employees be protected against the effects of excessive noise in the work place through the administration of a continuous, effective hearing conservation program, whenever noise exposures equal or exceed an 8 hour time weighted average (TWA) sound level of 85dBA. The goal of a successful hearing conservation program is to reduce and eventually eliminate hearing loss due to workplace

noise exposures. Hearing health care providers play an integral role in evaluating hearing sensitivity, monitoring levels of hearing loss, documenting threshold shifts and reporting cases of known or suspected occupational noise induced hearing loss. However, the audiometric testing of employees is only one part of a company's HCP. Comprehensive programs include six key elements: noise measurement, audiometric testing, hearing protection, employee education, record keeping, and ongoing monitoring of noise levels and employees.

Noise Measurements

When employees are subjected to excessive noise, MIOSHA mandates that appropriate controls shall be utilized. If administrative or engineering controls fail to reduce sound levels below the 85dBA action level, calibrated noise measurement samples from all areas of excessive noise are required to be made. The employer must administer a continuous HCP whenever employee noise exposure equals or exceeds

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an 8 hour TWA level of 85dBA. This program shall be implemented even if personal hearing protection devices (HPD) provide adequate attenuation of the noise. Employees subjected to noise above the action level shall be notified that the work place exposure is in excess of an 8 hour TWA of 85dBA, shall have appropriate HPDs available to them and shall be included in the HCP.

Audiometric Testing

All employees who are exposed to noise in excess of an 8 hour TWA sound level of 85dBA shall undergo audiometric testing, at no charge. Tests should be performed by a certified audiologist, otolaryngologist, physician or certified technician. Technicians who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician.

Baseline hearing tests must be made within six months of the employee's first exposure to noise above the action level. For companies using a mobile van, baseline audiograms must be obtained

within one year of the first exposure. Testing will be conducted for threshold measurements in each ear at 500, 1000, 2000, 3000, 4000 and 6000Hz. Audiometers must meet ANSI S3.601 1969 standards. Daily biologic checks and annual acoustic calibrations must be made for all audiometric testing equipment. Background noise in the testing environment must not be greater than 40dB SPL for 500 and 1000Hz, 47dB SPL at 2000Hz, 57dB SPL at 4000Hz and 62dB SPL at 8000Hz. Audiometric testing of an employee shall be preceded by at least 14 hours without exposure to workplace noise.

Once the baseline is established, all employees who continue to work in settings with noise levels in excess of 85dBA must obtain annual audiometric evaluations. A comparison between the annual audiogram and the baseline audiogram must be made to determine if a threshold shift has occurred. A standard threshold shift is defined as "a change in threshold relative to the baseline audiogram of an average of 10dB or more at 2000, 3000 and 4000Hz in either ear". If a standard threshold shift (STS) is present, a retest may be conducted within 30 days to verify the shift. Audiologists and physicians must review "problem" audiograms to verify STSs. The employee must be notified in writing by the employer, within 21 days of this determination if a STS has been confirmed. The annual audiogram may be considered a revised baseline if the hearing threshold

HEARING CONSERVATION PROGRAM

Steps to Implementation

- I. Comprehensive noise analysis survey
 - A. Determine intensity of noise
 - B. Determine hazardous work areas
 - C. Identify employees exposed to excessive noise
- II. Audiometric testing program
 - A. Baseline audiograms
 - B. Annual audiograms
 - C. Monitor for standard threshold shifts
- III. Hearing protection devices
 - A. Provide hearing protection devices
 - B. Monitor proper use of ear protection
 - C. Evaluate effectiveness of attenuation
- IV. Employee education programs
 - A. Proper usage of hearing protection devices
 - B. Effects of noise and permanent hearing loss
 - C. Audiometric testing results
- V. Maintain records
 - A. Noise measurements
 - B. Audiometric measurements
- VI. Monitor
 - A. Production changes which increase noise levels
 - B. Changes in personnel exposed to noise

shown in the annual audiogram indicates a significant improvement over the baseline audiogram (e.g., a 10dB average improvement for 2, 3 and 4kHz).

Hearing Protection

Employers must make hearing protection available at no charge to all employees exposed to noise above the action level of 85 dBA. Hearing protection is required to be worn by employees exposed to noise levels exceeding the permissible levels specified in Table 1 of R325.60104, or if they are exposed to noise above the action level but less than the permissible level and have not had a baseline audiogram, or if they have experienced a STS.

Employers are responsible for insuring that ear protection is appropriately fit and worn properly through ongoing supervision and training. Hearing protection devices must attenuate noise exposure to at least an 8 hour TWA of 90dB SPL.

Employers must provide employees exposed to noise exceeding 85dBA with educational training programs that include information on the effects of noise on hearing, the purposes of hearing protectors, the purpose of audiometric testing and an explanation of test procedures. Copies of the hearing conservation amendment must be available to all employees and the amendment shall be posted in the workplace. The adequacy of hearing protector attenuation shall be reevaluated whenever noise exposure increases.

Employees who display STSs must be refitted with ear protection and retrained in the appropriate use of HPDs. Hearing protection for employees with STS must attenuate noise exposure to an 8 hour TWA of 85dB or below.

Record Keeping

Employers shall maintain accurate records of all employee exposure measurements for at least two years. Audiometric test records shall be

maintained for the duration of an employee's employment and must include name and job classification, date of examination, examiner's name, calibration information, employee's noise exposure assessment and background noise levels of the testing room. All records shall be available to employees upon request. If the company ceases to do business, records shall be transferred to its successor.

Monitoring

Routine monitoring of noise levels is necessary when noise exposure exceeds 85dBA or when a change in the workplace environment increases noise exposure. This will ensure that additional employees who may be exposed to excessive noise are included in the hearing conservation program and that attenuation provided by hearing protection devices are adequate.

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Suggested Criteria for Reporting Occupational NIHL

1. A history of significant exposure to noise at work; AND
2. A STS of 10dB or more in either ear at an average of 2000, 3000 & 4000 Hz.
OR
3. A fixed loss.*

*Suggested definitions: a 25dB or greater loss in either ear at an average of: 500, 1000 & 2000 Hz; or 1000, 2000 & 3000 Hz; or 3000, 4000 & 6000 Hz; or a 15dB or greater loss in either ear at an average of 3000 & 4000 Hz.

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