



West Virginia University®

ENVIRONMENTAL HEALTH & SAFETY

HEARING CONSERVATION PROGRAM

Revised – April 2016

WEST VIRGINIA UNIVERSITY
HEARING CONSERVATION PROGRAM

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1. Purpose

The Hearing Conservation Program ensures that University faculty, staff, and students who are exposed to hazardous occupational noise levels are adequately protected to prevent hearing loss. This program contains the procedures for identifying and reducing hazardous noise levels in the workplace and monitoring employee hearing levels as outlined in 29 CFR 1910.95.

2. Scope

This program shall apply to University employees and students, including Divisional Campuses, who are exposed to occupational noise levels that equal or exceed an 8-hour time-weighted average (TWA) of 85 dBA.

3. Definitions

Action Level – An 8-hour time weighted average of 85 decibels measured on the A-scale; a measurement which approximates the human speech and hearing range. The action level is equivalent to a dose of 50%.

Audiogram – A chart, graph or table resulting from a hearing test showing an individual's hearing sensitivity as a function of frequency.

Baseline Audiogram – The audiogram against which future audiograms are compared.

Decibel 'A' scale (dBA) – The measurement of sound level as measured on the A scale of a sound level meter.

Dosimeter – An instrument for the measurement of sound, commonly used for personal monitoring.

HCP – Hearing Conservation Program.

Hertz (Hz) – The international unit of frequency, equal to one cycle per second.

Noise – Unwanted sound that is occurring in the worker's environment that is annoying, distracting/harmful, and prohibits communication with co-workers.

Permanent Threshold Shift (PTS) – Permanent hearing loss as a result of noise exposure.

Sound Level Meter – An instrument for the measurement of sound, commonly used for area noise monitoring.

Standard Threshold Shift (STS) – 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.

Time-Weighted Average (TWA) – A worker's daily exposure to occupational noise averaged over an 8-hour period, taking into account the average levels of noise and the time spent in each area.

Type 1 Sound Level Meter – Precision type instrument intended for accurate measurements in the field and laboratory. The discrepancy is typically +/- 1 dBA.

Type 2 Sound Level Meter – An instrument with more lenient design tolerance than a type 1 sound level meter, intended for general field use. The discrepancy is typically +/- 2 dBA.

4. Roles & Responsibilities

The Hearing Conservation Program roles and responsibilities are identified in the following sections and play an important role in safety at WVU. The success of the program relies on the WVU employees adhering to and following the procedures outlined in this program.

4.1 Environmental Health and Safety (EHS) Shall:

- Develop the written Hearing Conservation Program and revise the program as necessary.
- Conduct noise monitoring, as requested, to identify employees in areas or operations requiring inclusion in a hearing conservation program.
- Assist in developing noise control measures.
- Identify hearing protection that provides the appropriate hearing attenuation for employee use.
- Provide Hearing Conservation Program training.

4.2 Deans/Directors, Managers and Supervisors Shall:

- Identify potentially hazardous noise locations and operations and contact EHS for noise monitoring.
- Implement feasible noise control measures to reduce noise level exposures below the action level of 85 dBA.
- Maintain accurate records of who is included in the Hearing Conservation Program and schedule employees for annual training and hearing evaluations.
- Purchase, and make available, a selection of hearing protection for employees included in the program.
- Supervise the use of hearing protection.
- With the assistance of EHS, post “Hearing Protection Required” notices in hazardous noise level areas.
- Provide hearing protection and require its use for all employees.
- Post a copy of OSHA’s Occupational Noise Exposure standard in areas where employees are included in the Hearing Conservation Program as identified with the assistance of EHS.

4.3 Employees

- Wear appropriate hearing protection.
- Assist the supervisor in identifying potentially hazardous noise locations or operations.
- Attend scheduled appointments and attend the annual training program.

4.4 Occupational Medicine

- Abide by all current OSHA regulation in the performance of employee baseline evaluations and annual audiograms.
- Copy EHS on all employee hearing evaluations/audiograms as they are completed.
- Retain employee audiometric test records for the duration of employment plus ten years.

5. Training

Training shall be provided to all employees included in the Hearing Conservation Program on an annual basis. At minimum training shall cover the following topics:

- The effect of noise on hearing.
- The purpose, advantages and disadvantages, and attenuation of various types of hearing protection.
- Updated information consistent with changes in protective equipment and/or work processes.
- Instructions on selection, fitting, use and care of hearing protection.
- The purpose of audiometric testing and explanation of the procedures.
- Demonstration of employees' ability to properly use hearing protection devices must occur during annual training.

Employees will be provided upon request the OSHA Occupational Noise Exposure Standard 29 CFR 1910.95, Appendix A, as well as other applicable information provided by OSHA.

6. General Requirements

- Where potentially hazardous noise locations and operations exist, EHS will conduct noise monitoring.
- Noise monitoring may consist of area sound level measurements or personal noise dosimetry.
- EHS will develop a specific noise monitoring strategy for each location or operation in order to determine employee exposure. Affected employees will have the opportunity to observe the noise measurements.
- Employees exposed at or above the action level for noise (8-hour time weighted average of 85 dBA) will be notified of the results and be included in the Hearing Conservation Program.
- Re-monitoring will take place whenever a change in production, process, equipment or controls increases noise exposures to the extent that: additional employees may be exposed at or above the action level; the attenuation provided by hearing protectors may be rendered inadequate; or follow-up monitoring if a standard threshold shift has occurred.

6.1 Noise Control Methods

The use of engineering and administrative controls to reduce noise levels in the workplace should be considered when purchasing new tools and equipment and during the design phases of construction projects. Existing areas where hazardous noise levels are present should consider engineering or administrative controls as a method to control noise levels below the Action Level (AL) of 85 dbA. Hearing protection use will be required if engineering and/or administrative controls do not reduce employee noise exposures below the Action Level of 85 dBA, or if controls are not feasible to implement. If employee exposures meet or exceed an 8-

hour TWA of 90 dBA, engineering and administrative controls are required to be reviewed for feasibility to reduce exposures below 90 dBA.

6.1.1 Engineering Controls

- Preferred method of noise control.
- Defined as any modification or replacement of equipment, or related physical change at a noise source or along the transmission path that reduces the noise level at the employee's ear.
- Examples include adding barriers or enclosures, equipment substitution, and reducing vibration.

6.1.2 Administrative Controls

- Reduce the personal noise exposure by adjustment of work schedule or amount of exposure time.
- Examples include worker isolation from noise by distance and worker rotation.

6.1.3 Personal Protective Equipment (PPE)

- A selection of hearing protection devices shall be made available to the employee by the employer.
- Each type of hearing protection must attenuate to, or below, an 8-hour TWA of 85 dBA, or its equivalent. Contact WVU EHS for assistance in choosing the appropriate hearing protection.
- EHS shall make the determination as to which hearing protection devices are appropriate for an area or project and inform the Dean, Director, or Supervisor for said area or project.
- Departments shall place hearing protection at the worksite in locations that are posted as "Hearing Protection Required" areas, or in areas where hazardous noise is known to exist periodically.
- EHS shall be notified by the Dean, Director, Supervisor, or worker of any changes in work areas that may increase hazardous noise levels so that hearing protection can be re-evaluated for adequacy as needed.

6.2 Audiometric Testing

- Occupational Medicine will conduct audiometric testing for University employees included in the Hearing Conservation Program.
- Audiometric testing shall be provided on an annual basis at no cost to the employees who are included in the Hearing Conservation Program.
- Audiometric testing shall be conducted by a licensed or certified audiologist, otolaryngologist, physician, nurse, or technician certified by the Council of Accreditation in Occupational Hearing Conservation.
- A valid baseline audiogram shall be established within six (6) months of an employee entering the Hearing Conservation Program.
- Baseline audiogram testing shall be preceded by at least 14 hours without exposure to high levels of noise, either by absence from the areas of high noise or by use of hearing protection.

- Each employee's annual audiogram shall be compared to their baseline audiogram to determine if a standard threshold shift has occurred.
- If the annual audiogram shows a standard threshold shift, a retest may be done within 30 days.
- An audiologist, otolaryngologist, or physician shall review all problem audiograms and determine the need for further evaluation.
- Determination of a standard threshold shift may allow for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in 29 CFR 1910.95.

6.2.1 If a standard threshold shift is found:

- The employee will be notified in writing within 21 days.
- EHS will re-monitor the employee's noise exposure levels and make appropriate recommendations for noise control methods. Employee hearing protection availability and usage will be reviewed to determine adequacy.

7. Recordkeeping

- Occupational Medicine shall retain employee audiometric test records for the duration of employment plus ten years.
- EHS shall retain noise monitoring results for a minimum of two years.
- Records shall be provided upon request to employees, former employees, representatives appointed by the individual employee, and the OSHA Assistant Secretary.

8. References

- National Institute for Occupational Safety and Health (NIOSH) List of Personal Hearing Protectors and Attenuation Data 76-120.
- Occupational Safety & Health Administration (OSHA) Hearing Conservation Program 29 CFR 1910.95.

9. Program Review

EHS will coordinate a review of the program every three years or as necessary.

10. Program Revisions

This program replaces the March 2015 revision.