



Hearing Conservation Program

Exposure to excessive noise in the workplace can cause temporary or permanent hearing loss. The objective of the University's Hearing Conservation Program is to control these exposures. The University will provide employees with proper protection against the effects of noise exposure when sound levels exceed an 8 hour time weighted average (TWA) of 90 dBA. The protective measures may be provided by either engineering or administrative controls. If these control measures fail to reduce the noise to acceptable limits, personal protective equipment shall be provided and used by employees. Additionally, whenever employee noise exposure levels equal or exceed an 8-hour TWA of 85dBA, referred to as the Action Level, they will be included in the University Hearing Conservation Program.

The University has identified areas of potentially high noise (**Appendix A**) and will reduce the noise by feasible engineering controls or will issue employees appropriate hearing protection for use in those areas.

Monitoring

All faculty and staff with a noise exposure potentially exceeding a TWA of 85 dBA are included in the University Of Pittsburgh Hearing Conservation Program. To identify occupations and areas regulated for inclusion in the Hearing Conservation Program the Environmental Health and Safety Department (EH&S) conducts noise exposure monitoring. All continuous, intermittent and impulse sound levels from 80 decibels to 130 decibels were integrated into the noise exposure measurement for both personal and area monitoring. Workplaces where the continuous sound level exceeds 90dBA shall have "Hearing Protection Required" signs posted.

Where noise levels fluctuate, a dosimeter is worn by an employee to measure personal sound levels over a given time period. This dosimeter develops a TWA exposure level for the work shift, referred to as the "noise dose." Monitoring will be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that:

1. Additional employees may be exposed at or above the action level; or
2. The attenuation provided by hearing protectors being used by employees may be rendered inadequate.

When personal dosimetry is conducted, EH&S will provide exposure information to the employee(s) monitored and to the supervisor/manager. This information will include exposures above the TWA of 85 decibels or 50% of the permitted noise dose. EH&S will notify Department supervisors/managers when hearing protection signs are required and shall maintain the University Hearing Conservation records.

Results of the Sound Level Survey can be found in Appendix B.

The following table identifies the OSHA permissible noise exposures.

Permissible Noise Exposures	
Duration/Day Hours	dBA
16	85
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

Audiograms

Audiometric testing is available to all employees whose potential exposure equals or exceeds an eight-hour TWA of 85 decibels. This program is provided at no cost to employees. Employee Health Services will perform the audiometric test. All audiograms obtained shall meet the requirements of *Audiometric Measuring Instruments* of Appendix C in the OSHA standard.

When an occupation whose exposure meets the Action Level is identified, a baseline audiogram is offered to each employee in that occupation. Where baseline audiograms are obtained more than six months after the employee's first exposure at or above the action level, employees are instructed to wear hearing protectors for any period exceeding six months after first exposure until the baseline audiogram is obtained. Testing to establish a baseline audiogram is to be preceded by at least 14 hours without exposure to workplace noise. Hearing protectors may be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without exposure to workplace noise. The University notifies employees of the need to avoid high levels of non-occupational noise exposure during the 14 hour period immediately preceding the audiometric examination.

At least annually after obtaining the baseline audiogram, a new audiogram is to be obtained for each employee exposed at or above an 8-hour time-weighted average of 85 decibels.

Evaluation of Audiogram

Each employee's annual audiogram is compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. If the annual audiogram shows that an employee has suffered a standard threshold shift, a retest may be obtained within 30 days. The University Medical Director for Employee Health will review problem audiograms and determine whether there is a need for further evaluation.

Standard Threshold Shift

The University will record work-related "Standard Threshold Shift," or STS (an average change of 10 dB at 2000, 3000, and 4000 Hz in either ear, compared to baseline; age-adjustments allowed) provided that the employee's average hearing level at the same frequencies in the same ear is 25 dB HL or greater (an average hearing level of 25 dB or more, regardless of employee's age, i.e., no age adjustment allowed).

Follow-up Procedures

If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift has occurred, the University Medical Director shall inform the employee of this fact in writing within 21 days of the determination. The University Medical Director will ensure that the following steps are taken when a standard threshold shift occurs:

1. Employees not using hearing protectors shall be fitted with hearing protectors, trained in their use and care, and required to use them.
2. Employees already using hearing protectors shall be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.
3. The employee may be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if it is suspected that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
4. The employee is informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.

If subsequent audiometric testing of an employee whose exposure to noise is less than an 8-hour TWA of 90 decibels indicates that a standard threshold shift is not persistent, the University Medical Director will inform the employee of:

1. The new audiometric interpretation; and
2. That he/she may discontinue the required use of hearing protectors

Revised Baseline

An annual audiogram may be substituted for the baseline audiogram when, in the judgment of the audiologist or the University Medical Director:

1. The standard threshold shift revealed by the audiogram is persistent; or
2. The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

Occupations Requiring Audiograms

The Environmental Health and Safety Department maintains a list of occupations requiring audiograms. EH&S provides lists of employees who require audiograms, who have not had the audiogram and who require training in each department.

Occupations included in the Program can be found in Appendix C.

Hearing Protectors

Hearing protection is made available to all University of Pittsburgh employees who may be exposed to sound levels at or above the Action Level. The decibel reduction (Noise Reduction Rating, NRR) of the hearing protection must be considered in the selection process. Hearing protectors must reduce the noise level below 90 dBA.

Hearing protection must be worn:

1. By employees whose work related exposure exceeds a TWA of 90 dBA.
2. By any employee who is exposed to an 8-hour TWA of 85 decibels or greater than 50% noise dose, and has a documented standard threshold shift.

Employees are given the opportunity to select their preferred hearing protection from a variety of suitable types. EH&S offers guidance into the selection process to insure that the appropriate noise reduction is achieved.

Training Program

The Environmental Health and Safety Department in conjunction with the individual University departments will ensure annual training for all employees who are potentially exposed to noise at or above an 8-hour time-weighted average of 85 decibels.

The training program ensures each employee is informed of the following:

1. The effects of noise on hearing;
2. The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care;
3. The purpose of audiometric testing, and an explanation of the test procedures.
4. The Hearing Conservation Program requirements.

Access to Information and Training Materials

Upon request, the University will make available to affected employees, or their representatives, copies of the standard and any informational materials pertaining to the standard through EH&S.

Recordkeeping

The University of Pittsburgh retains the required records in the following manner:
EH&S maintains accurate records of all employee exposure measurements.

Employee Health Services retains all employee audiometric test records obtained pursuant to OSHA regulation. This record includes:

1. Name and job classification of the employee;
2. Date of all audiograms;
3. Date of the last acoustic or exhaustive calibration of the audiometer; and
4. Employee's most recent noise exposure assessment.

EH&S documents the training of all employees participating in the Hearing Conservation Program.