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## Noise monitoring

Monitoring noise levels in the workplace is essential to protecting employees' hearing and ensuring a conducive working environment. The Centers for Disease Control & Prevention has estimated that nearly 22 million workers are exposed to potentially damaging noise at work each year. Damaging noise levels can occur in many industries, including manufacturing, construction, agriculture, maintenance, landscaping & lawncare and even at sports venues.

High noise exposure can be damaging to the nerve endings of the inner ear. Continuous exposure to high levels may result in the nerve endings dying. Once the nerve endings have died, there is no way to reverse it, resulting in permanent hearing loss. In addition to potential hearing loss, excessive noise can also cause physical and mental stress. This stress can result in employees being tired and irritable. All this can affect productivity, efficiency, morale, as well as safety. This is why taking care of your employees' hearing is critical.

The Occupational Safety and Health Administration created the Hearing Conservation Standard to protect employees from high noise levels. 29 CFR 1910.95 (<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.95>) outlines the requirements that employers must follow to protect employees. The basic requirement of the standard states, if noise monitoring identifies employee exposure equal to or exceeding an 8-hour time-weighted average (TWA) of 85 decibels, then a Hearing Conservation Program must be implemented. Therefore, employers must evaluate the workplace to determine if there are elevated noise levels present.

In order to approximate or get an idea of what operations, activities, equipment or machinery may be contributing to elevated sound levels, a sound level meter or even certain noise measuring smartphone apps can be used. Both of these tools are designed to obtain real-time noise levels that employees are exposed to while work is being performed. Sound level meters can be purchased or rented from industrial equipment suppliers. The IOS sound level meter app, created by the National Institute of Occupational Safety and Health (NIOSH), can be downloaded at [https://www.cdc.gov/niosh/noise/about/app.html?CDC\\_AAref\\_Val=https://www.cdc.gov/niosh/topics/noise/app.html](https://www.cdc.gov/niosh/noise/about/app.html?CDC_AAref_Val=https://www.cdc.gov/niosh/topics/noise/app.html). For android, there are a number of sound level meter apps that can be downloaded from the Google Play Store - [https://play.google.com/store/search?q=sound+level+meter+app&c=apps&hl=en\\_US](https://play.google.com/store/search?q=sound+level+meter+app&c=apps&hl=en_US). The apps may not be as accurate as a sound level meter, but whichever device you use, be sure to follow the manufacturer's guidelines for proper operation and calibration.

These methods can be used to estimate whether noise levels are elevated, but only noise dosimeters should be used to obtain an 8-hour TWA, which is what OSHA uses as a basis for determining whether workers may be overexposed. Using dosimeters should be completed by a Certified Industrial Hygienist (CIH), Certified Safety Professional (CSP), an outside consulting firm or the Ohio Bureau of Workers Compensation. To obtain a good representation for testing employees, pick a day that would reflect a normal workday.

If the results are at or above the Permissible Exposure Limit (PEL) of 90 decibels, employers must implement a Hearing Conservation Program, require employees to wear hearing protection and investigate ways to lower decibel levels to below 90. If results are above the OSHA Action Level of 85 decibels, but below the 90 decibel PEL, employers must implement a Hearing Conservation Program and offer hearing protection to employees. If the results are below OSHA's Action Level of 85 decibels nothing is required from the employer. Keep in mind though, if new equipment is installed or changes to equipment occur, it may increase the noise levels in the area.

Using the Hierarchy of Controls, is the preferred order of actions to best control hazardous noise exposure to below 90 decibels. The actions are arranged in order of the most effective to the least effective ways to prevent exposure: elimination, substitution, engineering controls, administrative controls and personal protective equipment.

If the resulting noise levels in the facility cannot be reduced to below the Action Level using the first controls, then a Hearing Conservation Program (HCP) must be implemented. Most HCP's will include the following:

1. Employee Notification
2. Observations of monitoring
3. Audiometric testing program
4. Baseline/Annual Audiograms
5. Evaluation of Audiograms
6. Standard Threshold Shift
7. Hearing Protectors
8. Training
9. Recordkeeping

An explanation of each part can be found in the OSHA Hearing Conservation Standard and there are brochures and documents issued by OSHA that will help implement a compliant program.

<https://www.osha.gov/sites/default/files/publications/osha3074.pdf>

There are many benefits to investigating the need for noise monitoring. Employee safety should be at the forefront, but other reasons include increased employee morale, production, efficiency, lower claim costs and an overall sense of a safe workplace. Remember, once an employee's hearing is lost, there is no way of getting it back.

If you need help identifying potential hazards in your workplace, please contact Andy Sawan, Risk Services Specialist at Sedgwick at [andrew.sawan@sedgwick.com](mailto:andrew.sawan@sedgwick.com) or 330-819-4728.