



Hearing Conservation



Session Objectives

You will be able to:

- Discuss how we hear and how noise impacts our hearing
- Understand SCS Hearing Conservation Program
- Understand the need for hearing protection devices
- Encourage co-workers to wear hearing protection devices
- Communicate problems to supervisors

How We Hear Sounds

- Sound waves enter the outer ear and travel down the ear canal where they strike the eardrum
- The eardrum vibrations are passed along by tiny bones, sometimes referred to as the hammer, anvil, and stirrup, into the inner ear
- The vibrations cause tiny hairlike cells in the inner ear to flow back and forth
- This movement stimulates auditory nerve sends signals that are registered as sound to the brain



How Hearing Is Damaged

THE MOST COMMON WAY OF LOSING HEARING IS THROUGH GRADUAL DAMAGE TO THE DELICATE HAIRLIKE CELLS.


- Normal sounds cause the cells to move back and forth like grass in a gentle breeze.
- Loud noise will cause the hair to lie flat. Once the noise stops, the hairs will spring back much the way a trampled field of grass will slowly spring back.
- Eventually, over a long period of loud noise exposure, the tiny hairlike cells will take longer and longer to spring back until one day they are too damaged to return to their normal position

Signs of Hearing Loss

- Hearing loss often goes undetected because it is a gradual and pain-free process.
 - Do people have to repeat what they say for you to hear them?
 - Do you have trouble hearing certain sounds, such as the ticking of a clock or a watch?
 - Do you feel as if noise or ringing sounds always echo through your ears?
 - Do others tell you to turn down the volume of the TV when you think it is at a normal level? When they turn the volume down to a level that is comfortable for them, is it too soft for you?
- People who answer yes to any of these questions may have damaged hearing

Types of Noise

- Pitch or frequency
 - measured in hertz
 - shrill noises such as whistles, high-pitched screams, fingernails on a chalkboard, etc.
 - These noises are much more likely to harm your hearing, especially when they are also loud noises.
- Loudness is measured in decibels with a sound meter.
 - Hearing damage is risked when you are exposed to more than 90 decibels during an 8-hour time period without hearing protection.
 - 140 decibels for any duration is considered very dangerous to your hearing



• Whisper	10 decibels
• Street sounds	70 decibels
• Sander	85 decibels
• Sporting event	100 decibels
• Mowing the lawn	101 decibels
• Motorcycle riding	112 decibels
• Concerts	125 decibels
• Shooting range	130 decibels

Types of Noise (cont.)

DOES NOISE IMPACT THE WORKPLACE?

- **Interferes with communication**
- **Causes fatigue**
- **Distracting or irritating**
- **Reduces morale or efficiency**



Affected Employees

- Each employee exposed to noise at or above the 8-hour time-weighted average (TWA) of 85 decibels must be notified
- Affected employees must be included in the Hearing Conservation Program



- Hearing, or audiometric, tests are offered to all employees who are exposed to 8-hour TWA 85 decibels or greater.
- Must be conducted and evaluated by a qualified medical provider
- Baseline tests must be conducted within the affected employees first 6 months.
- OSHA requires baseline hearing tests to be preceded by 14 hours without exposure to workplace noise
- Follow-up tests are conducted annually.

Hearing Tests for an Affected Employee

Noise Reduction Efforts

- Engineering controls (i.e., mufflers, acoustical curtains, rubber mounts, sound absorbing material)
 - Reduce noise at the source
 - Interrupt the noise path
 - Reduce reverberation and structural vibration
- Administrative
 - Operate noisy equipment on 2nd or 3rd shifts
 - Rotate employees through high-noise areas



Hearing Protection Devices (HPDs)

- If noise exposure cannot be reduced with engineering or administrative controls, provide affected employee with a hearing protection device
 - Ear plugs – lightweight and unobtrusive. Clean before inserting them in our ear and get a new pair at the beginning of each day
 - Canal caps – when exposed to loud noise for a short period of time
 - Earmuffs – supplemental protection from noise



OSHA Hearing Protection Use

- Voluntary use
 - Exposed to an 8-hour TWA of 85 decibels
- Mandatory use
 - Exposed to an 8-hour TWA of 90 decibels
 - Exposed to an 8-hour TWA of 85 decibels but have not had a baseline hearing test
 - Employees who have suffered STS hearing loss and are exposed to an 8-hour TWA of 85 decibels

MANAGEMENT RESPONSIBILITY

- Provide hearing protection devices
- Demonstrate commitment—wear HPDs
- Provide hearing protection training
- Enforce the use of HPDs
- Knowledgeable in HPD selection and use
- Encourage questions and solve problem



RECORDKEEPING

- OSHA requires recordkeeping for noise exposure testing and the results of the hearing tests
- Employee's job assignments, exposure history, and protection can be recorded for further evidence of your company's due diligence and efforts to reduce the exposure to noise

Employee Responsibilities

- Understand the need for Hearing Protection Devices (HPDs)
- Wear HPDs and seek replacements
- Encourage co-workers to wear HPDs
- Communicate problems to supervisors

Key Points to Remember

- Constant exposure to noise over 85 decibels can cause hearing damage
- Hearing loss can not be cured or repaired
- Hearing tests are conducted annually for each affected employee
- Hearing protection devices include ear plugs, earmuffs, and canal caps

TAKE THE QUIZ

- <https://forms.office.com/Pages/ResponsePage.aspx?id=RZJ-M6ZIREqmNwwW9nbIKxyzzaSUgJJFgf5zZdrqY-IUNTFDWFIESFYxWVo1MVpBS1JWQkNZVTIOWi4u>