

# HEARING CONSERVATION

## IDENTIFY

Exposure to high noise levels is the primary cause of noise induced hearing loss (NIHL).

Workers are generally exposed to high noise levels in their workplace, yet are more likely to resist wearing hearing protection more than any other type of PPE. The reason being is that they don't see it as a "need." However, what people don't realize is that hearing loss happens over time, so once you're at a point where you can't hear as well as you used to, the damage is already done.

Fortunately, the risk of noise-induced hearing loss can be reduced or eliminated all together with the successful application of workplace controls, hearing conservation programs, and the tips and tricks in this toolbox talk.

## COMMUNICATE AND CONTROL

**dBA Lex** is the unit of measurement that describes a worker's total noise exposure averaged over the entire workday.

**Noise-reduction rating (NRR)** is a unit of measurement that determines the effectiveness of hearing-protection devices used to decrease excessive sound exposure in a noisy working environment.

### Determining noise levels

When evaluating your workplace for noise levels, be mindful of these three factors:

1. If you need to speak in a very loud voice or shout directly into the ear of a person in order to be understood, it is likely that the exposure limit for noise is being exceeded.
2. If you have heard noises and ringing noises in your ears at the end of the work day, you are being exposed to too much noise.
3. If speech or music sounds muffled to you after leaving work, but sounds fairly clear in the morning when you return to work, there is no doubt about your exposure to noise levels that can eventually cause a partial loss of hearing that can be permanent.

If you are working in any of these conditions, consult your manager/supervisor and have a safety professional measure the noise levels throughout your workplace. A proper noise level reading can determine whether your exposure to noise is great enough to require specialized PPE for hearing protection.

### Audiometric testing (hearing test)

In Section 12.4(2) (c) of Part 12 of the Workplace Safety and Health Regulation, the employer is required to provide audiometric tests for workers exposed to noise levels 85 dBA Lex or more. The employer must arrange for a baseline test as soon as reasonably practicable, or within six months of first exposure to noise over 85 dBA Lex. After the initial baseline test, audiometric testing is required every two years.

### Sound control measures

Sound control measures are engineering or administrative controls that eliminate, control, or reduce noise exposure, including:

- Replacing, changing, or eliminating noisy equipment.
- Distancing workers from sound sources.
- Enclosing noisy processes or machines.
- Changing buildings or structures (e.g., installing sound dampening walls and barriers).
- Administrative controls such as limiting the length of time a worker is exposed to noise or alternating workers doing noisy jobs.

### Hearing protection in the workplace

If a worker is exposed or is likely to be exposed to noise in a workplace that exceeds 80 dBA Lex but does not exceed 85 dBA Lex, the employer must do the following:

- a) Inform a worker about the hazards of the level of noise.
- b) On the request of the worker, provide him or her with:
  - (i) A hearing protector that complies with CSA Standard-Z94.2-14, Hearing Protection Devices — Performance, Selection, Care, and Use.
  - (ii) Information about the selection, use, and care of the hearing protector.

## COMMUNICATE AND CONTROL

There are four classes of hearing protection:

- Class A or AL – used when noise exposure levels are greater than 95 dBA Lex, up to and including 105 dBA Lex. Generally, hearing protection devices with a NRR of at least 24 will fit into this category.
- Class B or BL – used when noise levels are greater than 90 dBA Lex, up to and including 95 dBA Lex. Generally, hearing protection devices with a NRR from 17 to 24 will fit into this category.
- Class C – used when noise levels are equal to or less than 90 dBA Lex. Generally, hearing protection devices with a NRR of less than 17 will fit into this category.
- Dual hearing protection – used when noise levels are greater than 105 dBA Lex, using earplugs and earmuffs together is recommended.

### Training

Employers should provide training on the selection, fit, care, and use of hearing protection on an annual basis.

Wear hearing protection devices when exposed to noise from loud tools such as air nailers, chop saws, chainsaws, circular saws, routers, screw guns, drills, and power planers.

Meanwhile, be sure you can still communicate with your co-workers by wearing hearing protection devices that do not block out too much noise. Examples include custom-molded earplugs with vents, earplugs with a connecting cord, Class B earplugs or earmuffs, and electronic earmuffs or earplugs.

### Noise levels

Permanent hearing loss (nerve damage) can occur when the ear is exposed to 85 dBA Lex or higher, averaged over an eight-hour work day.

Symptoms of noise-induced hearing loss can include ringing in the ears (tinnitus) and difficulty understanding conversation (sound distortion).

If workers standing only a few feet apart have to shout or raise their voices to be heard, it is an indication that noise levels are above 85dBA Lex. Any exposure to the ear at 140 dBA Lex or higher can cause immediate and permanent hearing loss.

To compare:

- |                       |             |
|-----------------------|-------------|
| • Normal conversation | 60 dBA Lex  |
| • Vacuum cleaner      | 85 dBA Lex  |
| • Push lawnmower      | 95 dBA Lex  |
| • Table saw           | 100 dBA Lex |
| • Chainsaw            | 105 dBA Lex |
| • Wood chipper        | 110 dBA Lex |

### Summary

Here's a summary of guidance for all workplaces above 80dBA Lex:

- Periodic noise exposure measurements must be taken, and workers informed of results.
- All workers must receive training about hazards of the level of noise they experience or are likely to experience.
- If requested by a worker, the employer must provide hearing protectors and instruct the worker in the selection, use, and maintenance of hearing protection.

All workplaces above 85dBA Lex should follow the following guidelines:

- All measures taken for 80 dBA Lex exposure must also be taken for 85 dBA Lex exposure.
- Employers must determine the practicality of sound control measures.
- If sound control measures are not practical, the following work practice controls must be considered.
- If sound control measures do not limit the exposure to 85 dBA Lex or less:
  - Hearing protection is mandatory.
  - Information on hearing protector limitations and instruction on their fit and care must be provided to workers.
  - Periodic reassessment of the practicality of engineering and work practice controls to limit noise exposure is required.
  - Audiometric tests must be performed on workers no later than six months after workers are initially exposed to the workplace noise level and once every two years after the initial test.
  - Warning signs indicating that the area has a harmful noise level must be posted prominently at the entrance to all work areas where sound is above 85 dBA Lex.

# THE QUIZ

1. When evaluating your workplace for noise levels, you should consider the following factors:

- a) How loudly you are speaking to your co-workers
- b) If you hear noises/ringing sounds in your ears at the end of the day
- c) Your speech/music sounds muffled after your workday
- d) All of the above

2. Hearing protection is mandatory if noise exposure is 80 dBA Lex or less:

TRUE \_\_\_\_\_ FALSE \_\_\_\_\_

3. At what noise level is hearing protection required?

- a) 30 dBA
- b) 72 dBA
- c) 85 dBA
- d) 95 dBA

4. Construction workers must have their hearing tested every two years:

TRUE \_\_\_\_\_ FALSE \_\_\_\_\_

5. List three components of a hearing conservation plan:

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_

6. At what noise level is dual hearing protection required?

- a) 85 dBA
- b) 95 dBA
- c) 100 dBA
- d) 105 dBA

7. Give an example of a tool that has a noise level where dual hearing protection would be required?

\_\_\_\_\_

8. List two symptoms of noise-induced hearing loss:

- a) \_\_\_\_\_
- b) \_\_\_\_\_

1. d; 2. FALSE; 3. c; 4. TRUE; 5. Noise monitoring, annual employee training, implementation of noise controls, biennial testing; 6. d; 7. Wood chipper, chainsaw, table saw, etc.; 8. Tinnitus, sound distortion

ANSWERS: