NOISE CONTROL: How to Develop a Compliant Hearing Conservation Plan

According to Health Canada, approximately 9,000 workers each year suffer from some form of hearing impairment, including tinnitus (ringing in the ears), due to overexposure to noise in the workplace. Excessive occupational noise has also been shown to increase the risk of safety incidents because workers may fail to hear warning sounds. As a result, the OHS laws require you to control noise levels in the workplace. One way to comply is through a hearing conservation plan, which is, in fact, required in some jurisdictions.

Defining Our Terms

The OHS laws use various terms for plans to protect workers from excessive noise, such as hearing conservation plans, noise management programs and noise control programs. For simplicity's sake, we'll use the term 'hearing conservation plan' to refer to such plans.

PLAN CHECKLIST: Download a Hearing Conservation Plan Checklist to ensure that your plan has all of the necessary components.

THE LAW ON HEARING CONSERVATION PLANS

The OHS laws in every jurisdiction require employers to protect workers from exposure to what's considered excessive noise in the workplace. But they don't all require the use of

hearing conservation plans.

Five jurisdictions'AB, BC, NL, PE and SK'specifically require employers to implement hearing conservation plans in workplaces with excessive noise. The remaining nine jurisdictions'federal, MB, NB, NT, NS, NU, ON, QC and YT'don't specifically require employers to implement hearing conservation programs. But they do list individual steps that employers must take to protect workers from exposure to excessive noise, such as implementing engineering and administrative noise controls and testing the hearing of workers exposed to excessive noise. And, in fact, most of these steps are the same ones that employers in AB, BC, NL, PE and SK are required to include as part of their hearing conservation plans.

Bottom line: All Canadian employers must essentially take the same basic steps to control workers' exposure to excessive noise levels.

8 COMPONENTS OF A COMPLIANT HEARING CONSERVATION PLAN

As noted above, the requirements for protecting workers from exposure to excessive noise vary by jurisdiction. (See this chart for the hearing conservation plan requirements under the OHS law in your jurisdiction.) But if you implement a hearing conservation plan with the following eight components, you should be in compliance with your jurisdiction's specific requirements:

[box]1. Noise Levels Measurements[/box]

All jurisdictions require employers to protect workers from *excessive* noise in the workplace. But how do you know if the noise level in your workplace is excessive under the OHS laws' You must measure the noise level and, if it exceeds the thresholds set in the OHS law, it's considered excessive.

Explanation: The OHS laws require employers to measure the noise levels in their workplace and often spell out how that should be done. For purposes of the OHS laws, workplace noise is measured in A-weighted decibel units indicated by dB(A). The dB(A) scale measures sound pressure modified to account for the ear's varying levels of sensitivity to sounds of different frequencies.

You should generally use a sound level meter, integrating sound level meter or noise dosimeter to conduct a noise survey of the workplace to identify:

- Areas where workers may be exposed to excessive noise;
- Workers who may be exposed to excessive noise;
- Machines and equipment that generate harmful noise levels; and
- Noise control options to reduce noise exposure.

Some jurisdictions specifically require noise surveys to be conducted in accordance with voluntary standards, such as CSA Standard Z107.56-94, *Procedures for the Measurement of Occupational Noise*.

***Insider* Says:** The OHS Insider has a noise survey form you can use to conduct a survey in your workplace.

Next, compare the results of your noise survey to the threshold limits set in the OHS regulations. The OHS laws typically set a threshold limit that reflects the steady noise level permitted for a full eight-hour work shift. (Some jurisdictions distinguish between continuous noise and 'impulse' noise and set different threshold and exposure limits for each.) They often use the Threshold Limit Values published by the American Conference of Governmental Industrial Hygienists. The threshold limits across Canada range from 85 dB(A) to 90 dB(A). If your noise measurements exceed these limits, the noise levels are excessive and so should be addressed through a hearing conservation plan.

[box]2. Engineered Noise Controls[/box]

As with other physical hazards, such as electricity and temperature, the preferred first line of defence is to address excessive noise with engineering controls that eliminate or reduce the level of noise. Examples:

- Replace noisy equipment and machinery with quieter models;
- Isolate noisy equipment in separate rooms; or
- Install sound-absorbent materials, dampers, mufflers, silencers or barriers.

[box]3. Administrative Noise Controls[/box]

If engineering solutions aren't practicable to address your noise levels, minimize or control workers' exposure to excessive noise through the use of administrative measures, such as safe work practices, which focus on workers themselves as opposed to the workplace.

For example, use administrative controls such as rotating work schedules to restrict workers' exposure to excessive noise to within acceptable limits. Workers can only be exposed to excessive noise for limited periods of time, which depend on how much the noise level exceeds the threshold. As the noise level increases above the threshold limit, the permitted exposure time decreases'that is, the noisier the environment, the less time workers can spend working there.

The permitted exposure time at various noise levels is calculated using an 'exchange rate"that is, the amount by which the permitted noise level may increase if the exposure time is halved. The OHS laws generally use one of two exchange rates: 5 dB(A) or 3 dB(A).

[box]4. Signage[/box]

Another example of an administrative control typically

required in a hearing conservation plan is the posting of signs that identify areas of the workplace with excessive noise levels. Such signs should generally notify workers that the noise level in the area is above safe levels and warn them to wear appropriate PPE and take other precautions before entering or working in the area. Depending on your jurisdiction, your signs may also have to list the dB(A) level and the maximum amount of time it's safe for a worker to be exposed to sound at that level before risking hearing damage.

[box]5. Hearing PPE[/box]

Although engineering and administrative controls are the preferred safety measures, it's not always 'practicable' or realistic to use such controls to reduce noise levels or limit exposure to excessive noise. In that event, you must provide appropriate PPE, such are earmuffs or earplugs, for workers who are exposed to excessive noise. Which type of PPE is appropriate will depend on the level of noise to which workers are exposed. Many jurisdictions require the hearing PPE you provide to meet the requirements of voluntary standards, such as CSA Standard Z94.2-94, *Hearing Protectors*.

[box]6. Hearing Tests[/box]

One of the problems with exposure to excessive noise is that many workers don't realize that they're suffering from hearing loss because the symptoms are generally painless and develop gradually over time. And by the time they *do* notice a problem, it may be too late because noise-induced hearing loss can't be reversed. As a result, many jurisdictions require employers to test workers' hearing if excessive noise is a problem in the workplace.

Thus, hearing or audiometric testing is a key component of a hearing conservation plan. To determine if workers are suffering from hearing loss, you need to establish a baseline. So conduct hearing tests when workers are first hired or

assigned to areas where they may be exposed to excessive noise. You should then retest workers on a regular basis to identify any changes in their hearing. Check the OHS law in your jurisdiction for any audiometric testing requirements, such as who must conduct the tests, how often workers must be tested and how long you must keep records of the test results.

[box]7. Education and Training[/box]

As with any safety hazard, it’s critical to educate workers on the risks of exposure to excessive noise and the warning signs of hearing problems. And you must train workers on how to protect themselves’and their hearing. For example, explain the meaning of the noise level signs posted in the workplace and which type of PPE they should use in situations where they may be exposed to excessive noise. At a minimum, worker training should cover the following:

- Regulatory requirements and responsibilities;
- Occupational exposure or threshold limits for noise;
- The effects of noise on hearing;
- Your policies and procedures on eliminating noise as a hazard, including the noise controls in place;
- Identification of hazardous noise sources in the workplace;
- The selection and proper use of hearing PPE;
- Audiometric testing; and
- Worker responsibilities for preventing hearing loss, such as compliance with the hearing conservation plan and hearing loss outside of work.

You should also train supervisors to ensure that workers apply their training on the job. For example, supervisors should be instructed to make sure that workers always wear appropriate hearing PPE in designated areas with excessive noise.

[box]8. Annual Plan Review[/box]

Lastly, you should conduct an annual review of the hearing

conservation plan to make sure it's effective. This review should cover:

- Worker and supervisor training;
- An assessment of whether there's a need for further noise measurement;
- The adequacy of engineering and administrative controls;
- Results of workers' hearing tests; and
- Compliance with regulatory requirements.

Depending on the results of your review, you may need to make changes to the hearing conservation plan, such as implementing new or additional controls, providing different hearing PPE or retraining workers.

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BOTTOM LINE

Noise-induced hearing loss is not only an irreversible workplace hazard but also one of the most expensive. For example, between 1995 and 2004, work-related hearing loss led to an estimated $100 million in workers' comp costs'and that's just in Ontario. So if noise levels in your workplace are excessive, you should ensure that workers are protected through an effective and compliant hearing conservation plan.

Chart: KNOW THE LAWS OF YOUR PROVINCE: Hearing Conservation Plan Requirements Under OHS Laws of Each Jurisdiction

[box]**Noise Control Resources**

Here are some resources provided by various jurisdictions on noise control, including hearing conservation plans:

FED: Protect Your Ears!
AB: Part 16 Noise Explanation Guide; Noise at the Work Site Bulletin

BC: Sound Advice: A Guide to Hearing Loss Prevention Programs
MB: Guide for Hearing Conservation and Noise Control
ON: Guideline on Amendments to Noise Requirements
SK: Noise in the Workplace[/box]