



**Guide to
Audiometric
Testing**
for
Prince Edward Island
Workplaces



WCB Information Series publication

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This guide is to be used for information purposes only. No warranty, express or implied, is given as to the accuracy or the timeliness of the material presented. In case of any inconsistency between this document and the *Prince Edward Island Occupational Health and Safety Act and Regulations*, the legislation will always prevail. The Act and Regulations are available on the Workers Compensation Board website at www.wcb.pe.ca

ACKNOWLEDGMENTS

Portions of the following publications have been included in this publication with permission:

WorkSafeBC's Publication *Sound Advice* - Please visit www.worksafebc.com for this and other free occupational health and safety material.

Workplace Health and Safety Bulletin from the Government of Alberta, Employment and Immigration, *Audiometric Testing: Information for Employers and Workers*, <http://employment.alberta.ca/SFW/295.html>

INTRODUCTION

This guide is intended to help Prince Edward Island employers understand the requirements of the audiometric testing component of a hearing conservation program. Under Part 8 of the *Occupational Health and Safety General Regulations*, a hearing conservation program is required where workers are exposed to noise in excess of any noise exposure limit. The *PEI Occupational Health and Safety Act and Regulations* can be viewed on our website at www.wcb.pe.ca

Noise exposure limits

Exposure Level (dBA)	Exposure Duration
80	24 hours
82	16 hours
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes
103	7.5 minutes
106	3.75 minutes
109	1.88 minutes
112	0.94 minutes
115 & greater	0 minutes

Exposure to noise in excess of the limits can lead to hearing loss. Additional information on basic noise information and occupational exposure limits can be found through the Canadian Centre for Occupational Health and Safety at www.ccohs.ca

Audiometric testing of a worker's hearing is important to the success of a hearing conservation program because it helps determine if occupational hearing loss is being prevented by the noise control measures. Because occupational hearing loss happens gradually over time, workers often fail to notice changes in their hearing ability until a relatively large change occurs. By comparing audiometric tests from year to year, early changes can be detected and appropriate protective measures can be implemented to prevent further damage.

If workers are exposed to noise in excess of the noise exposure limits at a worksite, the employer must develop and implement a hearing conservation program. The program must include audiometric testing and an annual review of the program to determine how effective it is in preventing hearing loss.

THE AUDIOMETRIC TEST

Who gets tested and how often?

Only workers who are exposed to excessive noise levels need to have audiometric testing. The employer will need to identify those workers through a noise assessment. This also includes both seasonal and temporary workers who are exposed.

A worker who is or may be exposed to excess noise must cooperate with the employer in implementing the hearing conservation program including having audiometric testing.

When a worker is or may be exposed to excessive noise, the worker must have a baseline audiogram as soon as practicable, but no later than six months after the start of employment. This requirement also applies if a worker is exposed due to a change in activities or duties. Additional tests are required at least once every 12 months after the baseline test as long as the worker continues to be employed with the employer. The annual test results can then be compared with the baseline audiogram to check for changes in hearing.

Is there a certain time of day to test?

Baseline test - In order to guard against a temporary threshold shift during testing, the most ideal time to perform a baseline hearing test is before a worker begins his or her shift or after 14 hours of non-exposure to excessive noise. However, where this is not possible, workers may be tested during their work shift but must be sure to wear hearing protection during their shift to reduce their exposure to noise.

Annual tests - Annual tests should be scheduled well into the work shift (one-third of the way in to the shift is recommended), if possible, so that temporary changes in hearing can be noted. The results can then be compared with the baseline results to check for changes in hearing sensitivity, identify a temporary hearing loss before it becomes permanent, and allow corrective control measures to be implemented.

Can workers be tested at the workplace?

Workers can be tested on the work site, either by an audiologist or by another certified administrator (see section, *Who does the audiometric testing?*), as long as the testing area does not exceed the maximum permissible ambient noise levels which may mask tones used during the audiometric test. Employers who are unsure about the level of permissible noise should consult with a competent person who is able to assess the room's suitability, using as a resource the CSA Standard¹ CAN3-Z107.4-M86, *Pure tone air conduction audiometers for hearing conservation and for screening*.

Workers can also be sent to an off-site or to a mobile-unit testing facility. These facilities typically are equipped with sound-treated booths that enable greater control of ambient noise that may otherwise interfere with the test.

¹ CSA Standards can be purchased through CSA's website at www.shopcsa.ca. Any Standards that are referenced in the PEI *Occupational Health and Safety General Regulations* can be viewed online at no charge at www.ohs.csa.ca

What can workers expect during the test?

During an audiometric test, a worker is seated in the sound-treated booth or other appropriate room and a set of headphones placed over the ears (or inserts placed into the ears). When the worker is ready, the audiometric technician sends a series of tones through the earphones to one ear, and then the other. The worker signals as each tone is heard. The worker's thresholds are recorded for each ear either on a graph, called an audiogram, or numerically on a chart.

The audiogram shows how loud a tone must be to be barely heard by the worker, at a number of different pitches or frequencies. In the early stages of noise-induced hearing loss, the audiogram will show some hearing loss for high-pitched sounds. As hearing loss advances, the audiogram shows a hearing loss for many pitches. Workers with advanced hearing loss will notice the sounds of speech and surrounding sounds becoming muffled.²

As part of the audiometric test, workers should expect to be counseled about the necessity, use, maintenance, and replacement of hearing protection.

² From *Sound Advice* © WorkSafeBC. Used with permission.

Who does the audiometric testing?

The employer is responsible for ensuring that audiometric tests are conducted by an audiologist or a person who is certified and competent to conduct audiometric testing.

The PEI *Occupational Health and Safety General Regulations* provide guidance on the criteria of qualified persons, at Section 1.4(f), which define a competent person as someone who

- (i) is qualified because of that person's knowledge, training and experience to do the assigned work in a manner that will ensure the health and safety of persons in the workplace; and
- (ii) is knowledgeable about the provisions of the *Act* and the *Regulations* that apply to the assigned work, and about potential or actual danger to health or safety associated with the assigned work.

When hiring a contractor or designating an employee to conduct audiometric testing, the above requirements must be met. You may also contact the Worker Compensation Board Occupational Health and Safety Division at 902-368-5697 (or toll free in Atlantic Canada 1-800-237-5049) to obtain a list of audiologists who provide this service.

The employer should expect a competent audiometric technician to provide the following services:

- Performing the audiometric test
 - Collecting medical history from the worker, where appropriate
 - Interpreting the test results
 - Counseling the workers on the state of their hearing, comparing it with previous tests whenever possible
 - Maintaining records
 - Advising workers on appropriate hearing protection.
- The PEI *Occupational Health and Safety General Regulations* require hearing protection to meet the requirements of *CSA Standard Z94.2-02, Hearing Protection Devices – Performance, Selection, Care and Use*.

Testing Equipment – Audiometers

Audiometric testing should be conducted using an audiometer that meets the specifications of an audiometer described in the ANSI Standard S3.6-2004, Specifications for Audiometers³ or equivalent.

Calibration of audiometers and related equipment is critical for reliable test results and should be calibrated following the CSA Standard CAN3-Z107.4-M86, *Pure Tone air conduction audiometers for hearing conservation and for screening. Annual acoustic calibrations are essential.*

AFTER THE TEST

The test results will typically be classified as normal or abnormal. If a worker's test result is found to be normal, no further testing is required until the next annual test.

If a worker's test result is found to be abnormal, the audiometric technician may ask the worker for additional medical history, and advise the worker to follow up with an appropriate medical professional for more in-depth testing.

Record Keeping

The *PEI Occupational Health and Safety General Regulations* require records of the initial and annual hearing test be kept as long as the worker is employed with the employer. Keeping records beyond that time is at the discretion of the employer. Details of the management of records will be determined by the individual employer and worker.

Who pays for testing?

The *PEI Occupational Health and Safety General Regulations* require the employer to pay for the baseline (initial) and subsequent annual audiometric tests.

³ ANSI Standards can be purchased through the American National Standard Institute website at www.ansi.org

Resources For More Information

If you would like more information, please contact the Occupational Health and Safety Division of the Workers Compensation Board at 902-368-5697 or toll free at 1-800-237-5049 (in Atlantic Canada). Additional health and safety resources referenced in this guide can be found at the following websites:

Workers Compensation Board of PEI

www.wcb.pe.ca

Canadian Centre for Occupational Health and Safety

www.ccohs.ca

Canadian Standards Association

www.csa.ca

American National Standards Institute

www.ansi.org

WorkSafeBC

www.worksafebc.com

Government of Alberta Employment and Immigration

<http://employment.alberta.ca/>



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