

UBC Hearing Conservation Program

1. Introduction & Background

Noise is one of the most common physical hazards that exists within a workplace. For this reason, UBC has developed and implemented a comprehensive Hearing Conservation Program (HCP) to ensure compliance with British Columbia's Occupational Health and Safety Regulation (OHSR) and to protect individuals from hearing loss due to occupational noise exposure. Using the hierarchy of controls, UBC is focused on either eliminating or reducing noise exposure. Only if engineering or administrative controls cannot decrease noise to acceptable levels should individuals use hearing protection.

2. Scope

This document is applicable to all university employees (faculty, staff, and students) that work in areas, or carry out tasks, in the presence of hazardous noise levels. The goal of this program is to identify spaces on campus where noise hazards exist and to eliminate/mitigate noise exposure through elimination, substitution, engineering, and administrative controls before mandating the use of hearing protection.

Nuisance noise is categorized as non-hazardous noise that will not result in noise-induced hearing loss. Nuisance noise is often described as irritating or annoying and could require follow up if it impedes communication. Nuisance noise will not be covered by this HCP.

This document describes the hearing conservation program, including techniques that can control noise levels, with a specific focus on:

1. Noise measurement
2. Education and training
3. Engineered noise control
4. Posting of noise hazard areas
5. Hearing protection
6. Hearing tests
7. Annual program review

3. References

- British Columbia's Occupational Health and Safety (OHS) Regulation and Guidelines [Part 7 Noise, Vibration, Radiation and Temperature Section 7.1-7.9](#)
- CSA Standard
 - Z107.56-94 Procedures for the Measurement of Occupational Noise Exposure
 - Z94.2-02 Hearing Protection Devices – Performance, Selection, Care, and Use
- [WorkSafeBC Sound Advice Publication](#)
- [WorkSafeBC Noise Control and Hearing Conservation Program Template](#)
- Canadian Centre for Occupational Health and Safety

- [Hearing Protectors](#)
- [Noise - Hearing Conservation Program](#)
- [Noise - Occupational Exposure Limits in Canada](#)
- [UBC Health and Safety Policy - SC1](#)

4. Legal Requirements

Occupational Health and Safety Regulation Part 7 outlines the regulatory requirements for noise. Part 7 also offers related guidelines that help to interpret and implement the requirements. In addition to Part 7, further requirements pertaining to hearing protection can be found in Part 8, personal protective equipment. This document outlines the minimum requirements for occupational noise exposure. All UBC faculty, staff, and students are expected to understand the legislative requirements and what must be done to protect from noise exposure in the workplace. Additional requirements may be applicable depending on the nature of the work being performed.

5. Definitions

Audiometry: A type of hearing assessment to test an individual's ability to hear sound at different intensities and frequencies. This assessment will identify early, asymptomatic, noise induced hearing loss in individuals.

A-Weighted Decibel (dBA): Decibel level measured using an A-weighted filter which provides a response similar to what is experienced by the human ear.

C-Weighted Decibel (dBC): Decibel level that represents maximum instantaneous sound level that the human ear is exposed to and is also referred to as peak sound level.

dBA_{Leq}: Unit of measurement to indicate average noise levels over a period of time.

dBA_{Lex}: Unit of measure for noise levels averaged over 8 hours, the duration of a typical workshift. A L_{ex} can be calculated from a noise measurement of any duration and provides an equivalent to a measurement done over an 8-hour period.

Decibel: A decibel is a unit of measure for sound pressure.

Exposure Limit: The maximum levels designated by the OHSR, above which a worker must not be exposed. For workplaces in British Columbia, the allowable limit is 85 dBA over an 8-hour period. For impact noises, a 140 dBC peak sound level cannot be exceeded.

L_{ex} = 8-hour daily noise exposure for a worker and is derived from the L_{eq} measured with an integrating sound level meter (SLM) or a noise dosimeter.

Noise: Unwanted sound energy. UBC's HCP will focus on noise exposures that are associated with noise-induced hearing loss in the occupational workplace.

Noise Dosimetry: A measure of an employee's personal noise exposure. This type of measurement is useful when employees work in numerous noisy areas for short durations or perform different noisy operations. Noise dosimetry results can help determine the types of controls needed and identify those workers that should participate in audiometric testing.

Noise Hazard: An area where the sound levels exceed 85 dBA or the peak noise exposure is greater than 140 dBC due to tasks being performed or equipment being used.

Noise Measuring Equipment: Sound level meters or noise dosimeters can be used to measure noise exposure. Both instruments are capable to averaging noise levels over time to produce a L_{eq} measurement. Sound level meters are typically used for noise surveys while dosimeters are used for personal sampling. **Smartphone apps are **NOT** a substitute for sound level meters or dosimeters due to variations in accuracy and lack of calibration.

Noise Surveys: A noise assessment that provides information on the sound levels in an area. “Area Noise Surveys” are intended to measure the general noise levels in a work area while “Spot Surveys” measure the noise levels near a particular equipment or during a specific work process.

6. Roles and Responsibilities

The roles and responsibilities described in this HCP are in accordance with the OHSR and University Health and Safety Policy - SC1.

6.1 Employer Responsibilities

- Ensuring employees are protected from noise hazards in the workplace through the implementation of the hierarchy of controls, in order of effectiveness, with hearing protection only being used when other control options are not feasible.
- Ensuring a variety of hearing protection devices are made available and the type of protection selected is based on the noise levels workers are exposed to, the attenuation levels provided by the hearing protection devices and the manufacturer’s information on use/limitation of the devices.
- Ensuring employees exposed to hazardous noise levels participate in the audiometric testing program described in this document. Audiometric testing appointments must be made for new staff within the first 6 months of employment and annually thereafter for all staff exposed to hazardous noise levels.
- Ensuring the resources and supplies that are required with the hearing conservation program (including exposure assessments, safe work procedures, audiometric testing, etc.) are easily accessible.
- Ensuring compliance with British Columbia’s OHSR.

6.2 Department Manager/Supervisor Responsibilities

- Identifying noise hazard areas, equipment, and work tasks where employees may be exposed to harmful noise levels (85 dBA or higher) and require the implementation of controls.
- Maintaining a current list of noise hazard areas and/or operations and providing this information to UBC Safety & Risk Services, if requested.
- Ensuring employees receive general noise awareness training which includes information on the use, care, maintenance, and inspection of hearing protection devices.

- Taking the appropriate steps to minimize the risk of noise-induced hearing loss through the hierarchy of controls: elimination/substitution controls, engineering controls, administrative controls, personal protective equipment. Ensuring PPE is only used if the other controls are not practicable or feasible.
- Ensuring employees are compliant with wearing the appropriate hearing protection in areas where noise hazards exist or when carrying out tasks that generate hazardous noise levels. It is the responsibility of the supervisor to enforce the use of hearing protection in the same manner as other forms of PPE (ie. safety eyewear, safety headgear, safety footwear etc.).

6.3 Employee Responsibilities

- Actively participating in the HCP and any noise awareness training
- Understanding where noise hazards exist in the workplace
- Wearing the appropriate hearing protection device depending on the workplace or task
- Inspecting hearing protection devices for damage, prior to donning, and caring for the devices appropriately
- Removing from service any hearing protection devices that are deformed or malfunctioning and reporting findings to the supervisor
- Following site-specific safe work procedures and immediately reporting any noise concerns to the supervisor
- Reporting to the supervisor any occupational exposure incidents to peak/impulse noise levels and to UBC first aid if a ringing sound is experienced in the ears
- Participating in the audiometric testing program annually

6.4 Safety and Risk Services (SRS) Responsibilities

- Ensuring the UBC HCP is complete and current with OHSR requirements
- Conducting noise surveys and personal dosimetry assessments to determine the need for hearing protection devices, where necessary
- Providing technical services, which includes interpretation of the OHSR, and assisting with the appropriate selection of hearing protection devices
- Providing education and training on occupational hazardous noise exposure
- Organizing audiometric screening for new and existing employees who may be exposed to hazardous noise
- Consulting with supervisors, employees, JOHSC members during the updating of this program
- Participating in incident investigations involving exposures to hazardous noise

6.5 Joint Occupational Health & Safety Committee Responsibilities

- Consulting with the employer and employees on topics related to hearing protection
- Providing recommendations on the improvement of the health and safety of workers that are participating in the hearing conservation program
- Participating in incident investigations relating to noise exposure

6.6 Occupational & Preventive Health (OPH) Responsibilities

- Receiving and maintaining records of employee audiometric hearing tests
- Notifying employees of audiometric test results that indicate potential noise induced hearing loss (Early Warning, Early Warning Change, Abnormal, and Abnormal Change results)
- Notifying SRS of annual audiometric test results (non-identifying aggregate data)

7. Noise Exposure & Health Hazards

Exposures to hazardous noise levels can negatively affect the auditory system of individuals resulting in Noise Induced Hearing Loss (NIHL). The categories of NIHL include tinnitus, temporary hearing loss, or permanent hearing loss. Tinnitus is a medical condition that results in a constant ringing, buzzing, and/or roaring in the ears. Temporary hearing loss takes place after short-term exposures to hazardous noise levels and has the potential to result in tinnitus. Often temporary hearing loss will disappear when employees remove themselves from the environment where they are exposed to harmful noise levels. Permanent hearing loss is associated with long-term exposures to hazardous noise levels and will result in permanent hearing damage that cannot be corrected through hearing aids or surgery.

8. Risk Identification & Assessment

8.1 Risk Identification

Risk identification is the process by which noise hazards are determined. Work environments or job tasks that generate hazardous noise levels and place employees at risk of noise overexposure should be identified by the department manager or supervisor. Reviewing past inspection records, job/task demands, working procedures, first aid records and incident investigation reports can help identify occupational exposure risks to noise. Performing a walk-through of spaces where hazardous noise levels potentially exist can also help with risk identification.

UBC SRS can be contacted to assist with the noise hazard identification process.

8.1 Risk Assessment

Noise sampling needs to be conducted in situations where employees are exposed to noise levels greater than 82 dBA L_{ex} to better understand the level of risk present. Noise measurements must follow the requirements established in CSA Standard Z107.56-94, Procedures for the Measurement of Occupational Noise Exposure. All noise assessment reports should be posted at the workplace, either electronically or in paper form, and employees should be informed and trained on the noise level they will be exposed to and the associated health implications (ie. noise induced hearing loss) if controls are not being utilized properly.

Noise Sampling Strategies

Noise sampling can take place through either area measurements, spot measurements, or personal measurements.

Area sampling is used to monitor the general noise levels in a work space.

Spot sampling is used to monitor the noise levels during a particular work process or near a specific piece of equipment.

Personal sampling is used to monitor an individual's exposure levels to noise.

When selecting hearing protection, it is important that area or spot measurements are not used in lieu of personal sampling. Personal sampling will account for the duration of personal noise exposure, unlike the other sampling strategies, and therefore, provide more valuable information.

Noise Sampling Equipment

Noise measurements can be conducted using either a Sound Level Meter (SLM) or Dosimeter depending on the situation and the information required. Generally, a SLM is effective at taking area measurements and spot measurements while a Dosimeter is used for personal sampling. It is important to not use smart phones as a substitute for SLM's or Dosimeters as their microphones are not calibrated and could vary in accuracy.

During area or spot sampling, the microphone should be directed towards the area of the workplace where the noise levels need to be investigated. The sampling may take place for specific tasks or during an entire shift. During personal sampling, the microphone should be attached as close to an employee's ear as possible, preferably resting on the shoulder, while noise generating tasks or processes are being performed. In both cases, the microphone will capture the noise levels and the exposure level can be determined for ensuring compliance with the OHSR.

9. Noise Exposure Limits

Part 7 of the BC OHSR can be used to test for compliance of noise levels within a work environment. Noise, also known as the intensity or loudness of sound, is typically measured in decibels (dB). OHSR Section 7.2, Noise Exposure Limits, states the following:

"An employer must ensure that a worker is not exposed to noise levels above either of the following exposure limits:

- (a) 85 dBA Lex daily noise exposure level;
- (b) 140 dBC peak sound level."

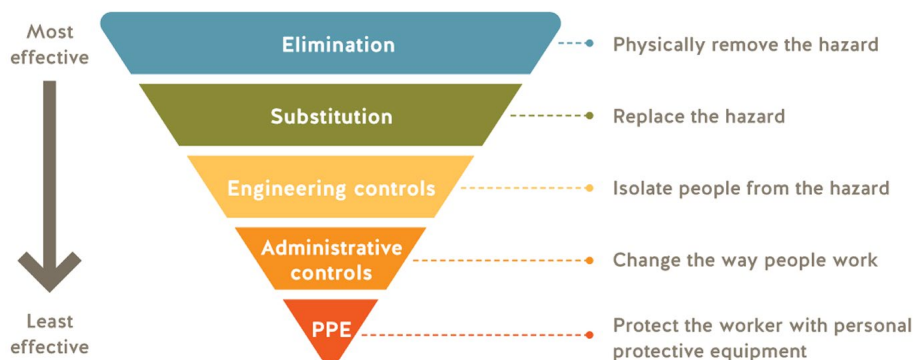
Part 7 of the OHSR also states that employees exposed to harmful noise levels, or noise levels above 82 dBA Lex, need to have their noise exposures measured, recorded, and filed by the employer in accordance with the Canadian Standards Association (CSA) Standard Z107.56-94, Procedures for the Measurement of Occupational Noise Exposure. Measuring noise exposure levels is not required if the employer identifies the levels to be in excess of the exposure limit, based on other information, and the employer establishes an effective noise control and hearing conservation program for the employee.

All Hearing Protection Devices used at the workplace need to comply with CSA Standard Z94.2-02, Hearing Protection Devices – Performance, Selection, Care and Use.

10. Risk Controls

Once a risk to hazardous noise levels has been identified and assessed and exposure limits are not exceeded then further controls are not needed. However, if exposure limits are exceeded, the hierarchy of controls

must be implemented to ensure exposure is eliminated or mitigated. The hierarchy of controls is a systematic approach to control for the risks in a workplace from most effective to least effective.



Picture 1 : Hierarchy of Controls Diagram received from [Controlling risks - WorkSafeBC](#)

10.1 Elimination / Substitution

Whenever practicable, equipment and tasks that do not produce hazardous noise levels should be purchased or chosen for use so that the risk of exposure can be eliminated.

If elimination is not possible, considerations should always be made to purchase equipment and tools that produce less noise as a substitution control. Whenever feasible, ensure suppliers or manufacturers are contacted about the noise levels being generated by potential new purchases. In certain cases, purchasing equipment that is quieter, but more expensive, may be worthwhile to eliminate the long-term cost requirements of hearing protection.

10.2 Engineering

Following the hierarchy, engineering controls are the next most effective option to reduce hazardous noise levels to or below the exposure limits and should always be implemented where practicable. Examples of engineering controls are listed below.

Lowering Noise at the Source

Retrofitting the design of equipment and tools can help lower the noise levels at the source but must involve consultation with the manufacturer and/or subject matter experts, such as acoustical engineers, to ensure no additional hazards are being introduced.

Enclosing the Noise Source

Implementing an enclosure around the noise source allows a barrier to be formed so that sound can be absorbed. Effective enclosures can reduce noise exposure levels by 25 dB. However, if the enclosure is not lined with sound-absorbing material, noise can escape and may continue to impact worker hearing. Where possible, any open gaps in enclosures should be kept as small as possible to prevent noise from escaping.

Enclosing Workers

Providing employees with sound absorbing booths is another type of engineering control and is most effective for employees that only need to leave the booth temporarily. Studies have shown sound absorbing booths for employees can reduce noise exposure levels up to 20 dB.

Acoustical Treatment of Rooms

Designing and implementing sound absorbing panels or baffles into rooms where hazardous noise levels are being generated is also an engineering control that can reduce reflected noise. However, the noise level in rooms that are acoustically treated can only be lowered by 2-5 dB. As a result, with this engineering control, employees working in close proximity to the noise source may still be exposed to high noise levels and require additional controls.

10.3 Administrative

If engineering controls are not feasible, the next most effective control option is administrative. Administrative controls assist in minimizing exposure to hazardous noise levels through work methods and work procedures. Examples of administrative controls include:

- Identifying areas/zones through signage where hazardous noise levels exist
- Developing and implementing written, task-specific, safe work procedures where there is a risk of exposure to hazardous noise levels
- Organizing work schedules so that fewer employees are present when hazardous noise is being generated
- Rotating employees so that each employee's duration of exposure to excessive noise is minimized

In addition to the above, visible signage should be posted to identify areas/zones where sound levels exceed 85 dBA or 140 dBC, as an administrative control. The signage should also state any requirements to wear hearing protection. In certain cases, where machinery generates hazardous noise levels, signs should be posted on the equipment to inform users that hearing protection is required.

All equipment should also be on a preventative maintenance schedule as malfunctioning machinery can contribute to the noise levels in a space.

10.4 Personal Protective Equipment (PPE):

Engineering and/or administrative controls are always the preferred method for reducing noise exposure. Hearing protection devices should only be used if other controls cannot reduce hazardous noise to safe levels. Hearing protection devices should be used in conjunction with the other more effective controls.

The type of hearing protection device chosen must be appropriately rated to protect against the hazardous noise levels being generated, and comply with CSA standard Z94.2-02, Hearing Devices - Performance, Selection, Care, and Use.

Hearing Protection Device Types

Earplugs

Earplugs are worn inside or against the external ear canal. If inserted properly, earplugs should not be uncomfortable and will provide effective noise reduction. Training on how to properly insert earplugs

should be delivered by the supervisor, in consultation with the manufacturer’s instructions. There are several types of earplugs available and descriptions of each are provided below.

Compressible Foam Earplugs

These earplugs are made of compressible foam and may come in several sizes. Employees with small ear canals will have difficulty making these earplugs stay inside the canal. Instructions on inserting compressible earplugs are as follows:

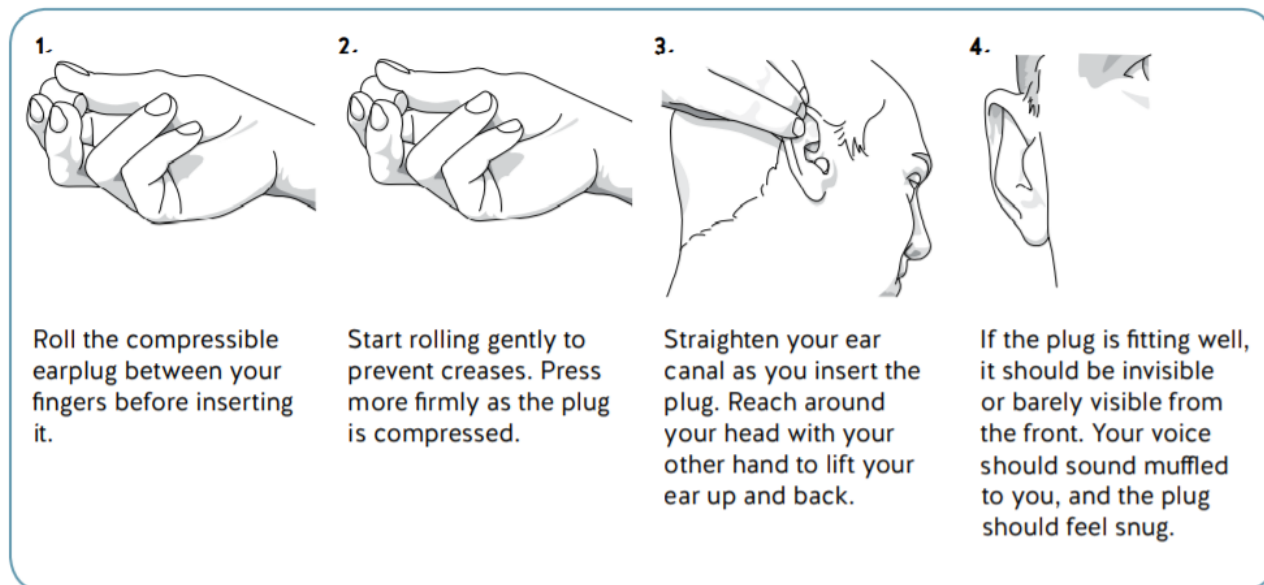


Figure 2: Instructions for Inserting Compressible Foam Earplugs from [WorkSafeBC | Sound Advice: A Guide to Hearing Conservation Programs](#)

Push to Fit Earplugs

These earplugs are composed of foam or pre-molded plastic with a flexible stem that assists with fit. This type of earplug is useful for employees that may have dirty hands as there is no need to have direct contact with the earplug portion of this PPE. To insert this model of earplug, the ear canal should be straightened and the earplug should be twisted in so that there is some tension if the stem is pulled.

Semi-Insert Earplugs

These earplugs are composed of a headband with a spring and the earplug fits onto the opening of the ear canal rather than inside the ear canal. For these earplugs, the size of the ear canal will not affect noise reduction capabilities. Semi-insert earplugs are typically used by employees that have intermittent noise exposure.

Custom-Molded Earplugs

These earplugs are a cast made from the mold of an employee’s ear canal. If the mold is not done properly, the earplug will not provide a tight fit and will allow for noise penetration. The manufacturer’s directions should be consulted for change-out frequency however the earplugs usually last between 3-5 years, depending on care, maintenance, and use. Note that new earplugs may be needed sooner if an employee’s ear canal changes shape (ie. with weight gain or weight loss).

Earmuffs

Earmuffs are comprised of a headband and domes (earcups) with a soft outer cushion. The domes have a lining of acoustical material to attenuate noise levels. Ear muffs are placed on the ears and the fit can be modified through the head strap. Earmuffs could be mounted on a hard hat with the appropriate accessories in place. In order for earmuffs to be effective, the entire dome needs to fit over the ear, there needs to be sufficient tension by the headband, and the headband should be flush with the user's head. As with all PPE, the manufacturer's instructions should be followed for proper use and care of earmuffs.

Factors that could affect the seal of an earmuff include:

- Facial hair
- Safety glasses
- Face shields
- Hats/toques/caps
- Jaw size
- Head shape

Hearing Protection Device Selection

All approved hearing protection devices are categorized into a particular class and/or labelled with a noise reduction rating (NRR). The class and rating values can be used to help choose the appropriate protection device for the work being performed and will be described further below. In addition to class and NRR, the following should be considered for hearing protection used in the workplace:

- noise levels in the workplace
- comfort and ease of wear for employees
- need to wear additional PPE (ie. hardhats, respirators, etc.)
- requirement to communicate (hear/speak) with coworkers
- shape of ear canal
- type of work performed (e.g. dirty or clean hands)

Class

Hearing protection devices are categorized into different classes. The class of hearing protection required is based on the average noise exposure levels, for an employee, within an 8-hour time period. It is important to note that the class of protection is based on personal exposure and not area or spot noise measurements. The table below shows which class of hearing protection should be used under different noise exposure levels:

| Exposure = $L_{ex,8}$ (dBA) | Recommended class |
|------------------------------|-------------------|
| < 90 | C |
| > 90 up to and including 95 | B or BL |
| > 95 up to and including 105 | A or AL |
| > 105 | Dual* |

* Dual hearing protection is required. Use a minimum of a Class B earmuff and a Class A earplug.

Figure 3: Recommended Class of Hearing Protection Depending on L_{ex} , 8 hour (dBA) Noise Exposure from [WorkSafeBC | Sound Advice: A Guide to Hearing Conservation Programs](#)

Noise Reduction Rating (NRR)

NRR is provided by the manufacturer of hearing protection devices and is used to describe the level of noise reduction that the PPE can provide. A CSA correction factor should be applied to the NRR as the rating typically overestimates the reduction levels. The table below describes the correction factor calculation for the different hearing protection devices:

| Device type | For use with dBA |
|-----------------|--|
| Earplugs | $L_{ex} - (NRR \times 0.5) - 3 = XX \text{ dBA}$ |
| Earmuffs | $L_{ex} - (NRR \times 0.7) - 3 = XX \text{ dBA}$ |
| Dual protection | $L_{ex} - (NRR \times 0.6) - 3 = XX \text{ dBA}$ |

Figure 4: Noise Reduction Rating with Correction Factors for Hearing Protection Devices from [WorkSafeBC | Sound Advice: A Guide to Hearing Conservation Programs](#)

Once the correction factor to a NRR is applied, it is important to confirm that the noise levels aren't over attenuated so that employee exposure is below 70 dBA. Hearing protection devices that provide over attenuation can cause employees to feel isolated and can prevent employees from reacting to safety warning signals.

UBC SRS can be contacted for assistance on how to apply and interpret NRR correction factors.

Hearing Protection Device Use, Care, Maintenance

The following should be considered for all hearing protection devices to ensure their proper use, care and maintenance:

- Manufacturer's directions should be consulted and followed
- Hearing protection devices should be inspected for damage prior to each use

- Any components of the hearing protection device that is malfunctioning should be replaced (ie. earplugs that aren't flexible, headbands that are stretched)
- Single use hearing protection devices should not be re-used
- All reusable hearing protection devices should be cleaned with a soft brush, soap (no harsh detergents/chemicals), and water. Care should be taken not to damage any sensitive sound attenuating material (ie. dome liners for earmuffs)
- Earplugs that are reusable should be washed at the end of the day and left to dry overnight. Reusable earplugs could last between 6 months to 1 year
- Custom molded earplugs should be washed weekly, at minimum, and can last between 2-5 years
- Earmuff domes should be cleaned with a damp cloth and the hard plastic can last up to 2 years. The liners should be replaced if they harden, are discolored, or soiled.
- All drying of hearing protection devices should take place on a flat, dry, clean surface

11. Education and Training

Employees exposed to hazardous noise levels must receive the appropriate education and training which should include:

1. Identification of tasks and areas where noise exposure may take place
2. Hazards and risks associated with exposure to harmful noise levels
3. Health signs and symptoms related to noise exposure
4. The importance of the hierarchy of controls with respect to hazardous noise
5. Proper use of safety equipment and control systems (ie. baffles)
6. Hearing protection device selection, use, care, maintenance and limitations
7. The importance of audiometric hearing tests

Records of attendance, training dates, and training material provided to workers must be documented and retained.

12. Health Monitoring

Noise induced hearing loss (NIHL) is typically a gradual process that results from over exposure to hazardous noise levels. Unfortunately, the effects of noise damage on hearing are permanent and irreversible. Audiometric testing is a requirement, as per the OHSR, to assess the effects of noise exposure on employee's hearing. The goal of hearing tests is to preemptively identify workers that are at risk of developing noise induced hearing loss. The audiometric test results will also help evaluate the effectiveness of the Hearing Conservation Program and target areas and/or job tasks that may need to have their noise controls re-evaluated.

UBC hires an industrial audiometric testing business, with qualified technicians, to perform the required hearing tests. All industrial audiometric businesses must be approved by WorkSafeBC. Audiometric testing needs to take place annually for employees that are exposed to hazardous noise levels. New employees must have a baseline of their hearing taken within 6 months of employment.

The results from a baseline audiometric test for a new employee can be categorized as follows:

Normal Test: Normal or near normal hearing

Early Warning Test: The start of noise induced hearing loss

Abnormal Test: Hearing loss that should be brought to the attention of a physician but may not be due to noise exposure

The results from an annual audiometric test, also referred to as a periodic test, can be categorized as follows:

Normal-Change Test: No significant change in test results from last year

Early Warning-Change Test: Deterioration in hearing that may be due to noise exposure

Abnormal-Change Test: Significant change in test results from last year that should be brought to the attention of a physician but may not be due to noise exposure

Any UBC employee that is at risk of developing noise induced hearing loss is expected to participate in audiometric testing organized through SRS. A baseline test should be done for new employees within six months of hire and this again should be arranged through SRS.

OPH will receive and securely store audiometric testing results for UBC employees. OPH informs employees of their results if they are categorized as Early Warning, Early Warning Change, Abnormal, or Abnormal Change. For Early Warning and Early Warning Change results, a letter is sent to the employee notifying them of their result and outlining basic hearing loss prevention measures. For Abnormal and Abnormal Change results, the OPH Nurse informs employees of their result and recommends that they follow-up with a physician for further assessment.

OPH provides SRS with non-identifying, aggregate data of annual hearing test results.

13. Documentation and Record Keeping

Any education and training provided on this HCP must be maintained on file by the supervisor of the respective department.

SRS will forward copies of noise surveys or personal dosimetry sampling results to the appropriate department manager/supervisor and JOHSC for their records, as requested.

If requested, SRS can also provide departmental audiometric test results, without releasing confidential information, to the appropriate department manager/supervisor and JOHSC. All audiometric testing results will be kept for the duration of the employee's employment and must be stored in a secure location to maintain confidentiality. UBC OPH will be responsible to keep and maintain audiometric testing results.

14. Program Review

The Hearing Conservation Program will be reviewed and updated as needed by Safety & Risk Services and UBC stakeholders to include any necessary changes.

15. Appendix

WorkSafeBC has published the following Noise Control and Hearing Conservation Checklist for managers & supervisors to use at their workplace to assist in the identification and control of hazardous noise levels.

| | Completed or checked by | Date |
|--|-------------------------|------|
| 1. Noise measurement | | |
| <input type="checkbox"/> Representative noise-exposure levels have been determined for all noise-exposed workers, as specified in <i>CSA Standard Z107.56-18</i> . | name and job title | date |
| <input type="checkbox"/> Warning signs stating that hearing protection is required are posted in noisy areas. | name and job title | date |
| <input type="checkbox"/> A report of the noise-survey findings is available for review, unless an exception applies. | name and job title | date |
| 2. Education and training | | |
| Noise-exposed workers have received education on: | | |
| <input type="checkbox"/> The results of noise-exposure measurements | name and job title | date |
| <input type="checkbox"/> Effects of noise on hearing | name and job title | date |
| <input type="checkbox"/> Proper fit, use, and maintenance of hearing protection | name and job title | date |
| <input type="checkbox"/> The purpose of hearing testing | name and job title | date |
| Staff responsible for administering the program have: | | |
| <input type="checkbox"/> Received education on hearing loss to understand the program goals and policies | name and job title | date |
| <input type="checkbox"/> Received training in the use and fitting of hearing protection | name and job title | date |
| 3. Noise control | | |
| <input type="checkbox"/> Major noise sources and options for engineering and administrative controls have been identified. | name and job title | date |
| <input type="checkbox"/> Where practicable, noise-control solutions have been implemented. | name and job title | date |
| <input type="checkbox"/> There is a noise-control maintenance plan. | name and job title | date |
| <input type="checkbox"/> There are specifications for purchasing noise-control equipment. | name and job title | date |
| <input type="checkbox"/> New facility planning includes noise control. | name and job title | date |
| <input type="checkbox"/> If possible, shifts have been altered to reduce the duration of noise exposure. | name and job title | date |
| 4. Hearing protection | | |
| <input type="checkbox"/> The use of hearing protection is consistently enforced. | name and job title | date |
| <input type="checkbox"/> Hearing protection is selected as specified in <i>CSA Standard Z94.2-14</i> . | name and job title | date |

| | Completed or checked by | Date |
|--|-------------------------|------|
| <input type="checkbox"/> Each worker is individually fitted with hearing protection and trained in its use and care. | name and job title | date |
| <input type="checkbox"/> Hearing protection is replaced regularly. | name and job title | date |
| <input type="checkbox"/> Hearing protection is inspected for condition, fit, and correct placement. | name and job title | date |
| 5. Posting of noise hazard areas | | |
| <input type="checkbox"/> Warning signs are posted in all areas where noise hazards exist. | name and job title | date |
| <input type="checkbox"/> Signs state that all workers must wear hearing protection in these areas. | name and job title | date |
| 6. Hearing tests | | |
| Employers who contract an industrial audiometric business | | |
| <input type="checkbox"/> The mobile hearing-test facility is in a suitably quiet location. | name and job title | date |
| Employers using an in-house program or a contracted industrial audiometric business | | |
| <input type="checkbox"/> Workers are privately and individually counselled on the hearing-test results, as well as the use and care of hearing protection. | name and job title | date |
| <input type="checkbox"/> The employer maintains confidential records of hearing tests. | name and job title | date |
| <input type="checkbox"/> All noise-exposed workers are tested annually. | name and job title | date |
| <input type="checkbox"/> Test results are submitted to WorkSafeBC. | name and job title | date |
| 7. Program review | | |
| <input type="checkbox"/> The hearing conservation program addresses the eight elements specified in the Regulation. | name and job title | date |
| <input type="checkbox"/> The effectiveness of the program is reviewed at least annually. | name and job title | date |
| <input type="checkbox"/> An action plan addresses identified deficiencies. | name and job title | date |
| <input type="checkbox"/> The action plan is put in place and documented. | name and job title | date |
| <input type="checkbox"/> Review results are shared with the joint health and safety committee (or worker health and safety representative). | name and job title | date |
| The review addresses the following: | | |
| <input type="checkbox"/> Need for further noise measurement | name and job title | date |
| <input type="checkbox"/> Education and training | name and job title | date |
| <input type="checkbox"/> Adequacy of noise-control measures | name and job title | date |
| <input type="checkbox"/> Selection and use of hearing protection | name and job title | date |
| <input type="checkbox"/> Hearing-test data on rate and extent of noise-related hearing loss | name and job title | date |

| | Completed or checked by | Date |
|---|-------------------------|------|
| 8. Record keeping | | |
| <input type="checkbox"/> Records are kept of education and training provided to workers. | name and job title | date |
| <input type="checkbox"/> Records are kept of the results of noise-exposure measurements (if applicable). | name and job title | date |
| <input type="checkbox"/> Records are kept of annual hearing-test results for each worker for as long as each worker remains an employee. | name and job title | date |
| <input type="checkbox"/> Test results are kept confidential and are not copied or released to anyone without the written permission of the worker, or as otherwise required by law. | name and job title | date |