

Noise at Work

Understanding the Difference Between Hazardous and Nuisance Noise

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Hazardous Noise

Unwanted sounds caused by workplace activities that are at levels harmful to human hearing [>85 decibels (dBA)].

Factors that determine the potential for hearing damage caused by exposure to occupational noise include:

- Decibel level (loudness)
- Distance from source
- Duration and frequency of exposure
- Type of noise: continuous, variable (intermittent), or impulse (impact)

Some examples are: mechanical rooms, machine shops, steam plants, construction, landscaping activities, laboratories

Typically generated by equipment, work process, or systems that are loud or poorly maintained/installed.

Examples:

- Mechanical and electronic equipment
- Machinery and motors
- Construction activities
- Lawn mowers and leaf blowers
- Steam released through exhaust valves
- Industrial exhaust fans
- HVAC systems

Regular exposure to excessively loud noise can cause auditory and non-auditory effects.

Auditory effects include:

- Permanent hearing loss [noise-induced hearing loss (NIHL)]
- Temporary hearing loss
- Acoustic trauma
- Tinnitus (ringing in the ears)

Non-auditory effects include:

- Physiological changes
- Annoyance and distraction
- Reduced concentration
- Interfere with job safety
- Impact on social and emotional health

Resource: [WSIB Ontario - Noise-Induced Hearing Loss](#)

Background Information



Definitions



Workplace Settings



Noise Sources



Symptoms & Health Effects

Nuisance Noise

Unwanted sounds from the surrounding environment that may be irritating or annoying but is not loud enough to cause hearing loss.

Nuisance noise is often subjective, difficult to describe, and dependent on the activities taking place.

Some examples are: offices, classrooms, computer rooms, libraries, laboratories

Nuisance noise is a natural part of our surroundings which can be generated from within the building or by intrusion from exterior sources.

Indoor noise sources: office appliances and devices, lab equipment, background music, verbal speech, objects impacting floors (e.g., footfall, gym equipment).

Outdoor noise sources: road traffic, pedestrians, background levels of construction noise, outdoor equipment.

Exposures to nuisance noise are generally not loud enough to be hazardous, but may cause:

- Annoyance
- Interference with speech communication
- Reduce concentration and memory retention
- Lower productivity and job satisfaction
- Accidents or distraction leading to errors



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Eliminate the noise by removing the source or by substituting noisy processes with quieter ones.

Reduce noise by modifying the source or the workplace environment.

Engineering controls may include:

- Acoustic barriers
- Enclosing the source or workers
- Vibration dampening
- Reducing speed of fans, force of impact, or fluid velocity
- Increasing distance from noise source

Reduce the length of time a worker is required to be in a noisy area by spreading the work out amongst multiple people. Implement job task or workspace rotation. Stagger shifts or decrease the number of staff needed in an area.

Perform regular maintenance on equipment.

Provide training, signage, and encourage participation in hearing conservation program.

If noise cannot be controlled adequately using the above control strategies, hearing protection devices (HPD) may be used as a last resort or in combination with other controls.

General categories of hearing protection devices:

- Ear muffs
- Ear plugs

Noise Reduction Strategies

Hierarchy of Controls



Elimination/ Substitution



Engineering Controls



Administrative Controls



Hearing Protection Devices

Nuisance Noise

The elimination/substitution of sources that contribute to nuisance noise may be difficult to achieve since it may not be within the control of the occupant and often depends on the activities of other people.

Consultation with a sound engineer specialist may be required to identify solutions. Here are some examples.

Modify the equipment to make it quieter.

Block the transmission of noise between adjacent spaces by using sound barriers (e.g., wall dividers, doors) and sealing gaps/penetrations on walls and doors.

Add sound-absorbing materials on interior wall/ceiling surfaces and provide sound reduction at exterior windows/doors. Minimize hard reflective surfaces.

Schedule noisy activity outside normal office hours to minimize disturbance to building occupants.

Establish designated rooms for meetings and provide staff with headsets for speaking on the phone.

Identify the noise sources in interior spaces and change office layout to keep loud and quiet zones separated.

Turn off or lower the volume of noise-generating devices (e.g., radios, appliances). Post signage to keep noise levels down.

As the noise is typically below hazardous levels, hearing protection is not required.

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In Ontario, no worker shall be exposed to a sound level greater than a time-weighted average exposure limit of 85 dBA measured over an 8-hour workday or workshift ([O. Reg. 381/15 - Noise](#)).

How loud is too loud?

Listen to some common sources of noise on the [WSIB Ontario](#) website.

Ontario workplaces are required to identify areas and operations where excessive noise exposure occurs and noise-exposed employees.

Engineering controls and proper work practices must be in place where the potential for occupational NIHL exists. Where this is not practical or feasible, workers are required to wear hearing protection. Noise-exposed employees are offered participation in a hearing conservation program.

Resource: [University of Toronto Noise Control and Hearing Conservation Program](#)

If a worker is provided with and uses or wears hearing protection devices, they must receive general and department-specific noise awareness training, including instructions on the use, care, and maintenance of the device.

For more information on occupational noise, review the online course: [EHS529 Noise - Recognizing and Controlling the Hazard](#)

Warning signs are required to be posted at every approach to an area where the sound level regularly exceeds 85 dBA and on equipment that present a noise hazard. Signs must indicate the person must wear appropriate hearing protection.

Regulatory Requirements



Exposure Limits



Noise Control Programs



Training



Signage

Nuisance Noise

There are no provincial or federal regulated personal exposure limits established for nuisance noise (workers or general public).

The World Health Organization (2018) recommends reducing average noise exposure from all leisure noise sources combined to below 70 dBA (24-hr average).

Other organizations have set maximum thresholds for ambient (background) noise depending on the function of the room (e.g., WELL Building Standard).

Environmental noise from construction or stationary sources that impact the indoor environment are regulated at both the municipal and provincial level.

The City of Toronto Noise By-Law provides decibel limits and time restrictions for different types of sources and activities.

At the provincial level, the Ministry of the Environment and Climate Change (MOECC) regulates noise emissions from stationary sources (e.g., industrial and commercial establishments).

Not applicable

Not applicable



Speak with your supervisor if there are noise concerns in your workplace. You may also contact EHS if you have any questions. For building-related noise concerns, contact Facilities & Services at 416-978-3000.