LABOUR PROGRAM

Protect Your Ears!

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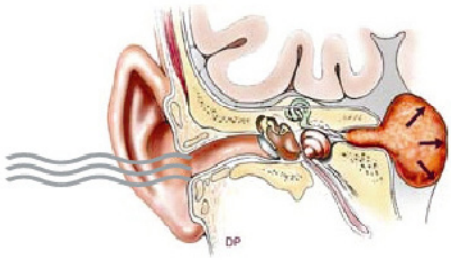
Protect Your Ears!

What is Sound?

When you clap your hands, strike something with a hammer or hum a tune, the surrounding air vibrates in the form of waves, similar to waves on water. These waves strike the eardrum, which functions much like an actual drum and transmits the vibrations through a chain of ossicles to a fluid contained in a special snail-shaped tube, the cochlea. The walls of this tube are covered with tiny hairs. If the sound is low, it will not travel far. If the sound is high, it will travel farther in the cochlea. The sound you hear varies depending on which hairs vibrate.



What is noise?

Noise can best be defined as an unpleasant sound. The prettiest song might seem like noise if you are trying to sleep. You may find another sound unbearable simply because it is too loud.

There is no direct way to measure noise. We can only measure sound in the form of air pressure exerted on the eardrum. Using guidelines established through experiments, we can determine whether a level of sound is intolerable or dangerous to your hearing.

Is sound harmful?

Sometimes it can be. It depends on a number of factors. The most important factors are the level of sound (loudness), the pitch or frequency of the sound, the duration of exposure and your individual susceptibility.

It is well known that as people grow older, their bodies begin to wear out and no longer function as well as they once did. Hearing is no exception to this rule. Your ability to hear decreases as you age. The degree of hearing loss may vary from person to person, but it happens to everyone. Prolonged exposure to high levels of sound accelerates this hearing loss.

Does noise bother everybody?

Most people say they become accustomed to the noise around them, especially if the noise is part of their everyday environment. They say they are "used to it" or that "the noise doesn't bother them". That does not mean their hearing is not being damaged by continuous exposure to noise. On the contrary, it may mean their hearing is already damaged. As a result, loud noises do not bother them, as they are partially deaf!

Noise causes hearing damage even though you do not feel any pain. It happens so slowly that most people may not be aware they are losing their hearing. Some people compensate for their hearing loss by lip reading and turning up the volume of their radio, stereo or television.

Others are not very susceptible to high levels of sound. Unfortunately, there is no way of knowing in advance. So, if you do not take the right precautions to protect yourself against high levels of sound, you may be gambling with your hearing. By the time you realize that you cannot hear, it will be too late. Remember that hearing loss caused by exposure to high levels of sound is permanent because it destroys the hairs in the cochlea. And they will not grow back!

What can you do about noise in your work place?

If your employer is under federal jurisdiction, Part II of the *Canada Labour Code* provides protection from health hazards in your work

place. Part VII, “Levels of Sound”, of the *Canada Occupational Health and Safety Regulations* deals with the problem of exposure to high levels of sound in the work place. Every employer under federal jurisdiction has to comply with these *Regulations*.

If you suspect that you are being regularly exposed to high sound levels in your work place, inform your employer. Your employer must appoint a qualified person to carry out an investigation in consultation with the work place health and safety committee.

Remember, your hearing is at stake. So, if you believe you are being exposed to excessive levels of sound in your work place, do not hesitate to ask questions of your employer, your union or your health and safety committee or representative.

If your employer is not under federal jurisdiction, we suggest that you contact the provincial or territorial authorities responsible for occupational health and safety protection.

Part VII of the *Regulations* – “Levels of Sound”

The objective of Part VII of the *Regulations* is to prevent you from incurring hearing damage. It does not specify a maximum sound pressure level, but rather the average exposure to noise. The term “noise exposure level” refers to both the sound level and the time period during which you are exposed to that level of sound.

The *Regulations* stipulate that your noise exposure level must be, on average, no greater than 87 dBA over an eight-hour period. This means that you can be exposed to sound levels higher than 87 dBA for short periods of time, as long as the average over 8 hours does not exceed 87 dBA. (See table on next page.)

The dBA is the unit of measurement of sound pressure on the eardrum. A sound level meter is used to measure the current sound pressure level, and a dosimeter is used to measure the average over a given period of time, for example, eight hours.

Maximum duration of exposure permitted under the *Regulations*

Sound Level in dBA	Maximum Duration of Exposure in Hours per Employee per 24 Hour Period	Sound Level in dBA	Maximum Duration of Exposure in Hours per Employee per 24 Hour Period
87	8.0	104	0.16
88	6.4	105	0.13
89	5.0	106	0.10
90	4.0	107	0.080
91	3.2	108	0.064
92	2.5	109	0.050
93	2.0	110	0.040
94	1.6	111	0.032
95	1.3	112	0.025
96	1.0	113	0.020
97	0.80	114	0.016
98	0.64	115	0.013
99	0.50	116	0.010
100	0.40	117	0.008
101	0.32	118	0.006
102	0.25	119	0.005
103	0.20	120	0.004

What can you do if sound levels in your work place exceed the limits?

Under the *Regulations*, your employer must maintain your noise exposure level at a level not exceeding 87 dBA, either by using engineering devices to reduce the noise or by shortening the duration of exposure. If, in spite of these efforts, your noise exposure level could exceed 87 dBA, your employer must submit a report to Human Resources Development Canada – Labour Program, with a copy to the work place health and safety committee or representative, and provide you with adequate hearing protectors.

Below are measures your employer must take to protect your hearing:

- If there is even a small chance that you might be exposed to high sound levels, your employer must have the matter investigated by a qualified person.
- If your noise exposure level varies between 84 and 87 dBA, the qualified person must determine whether or not you should use hearing protectors.
- If your noise exposure level is equal to or greater than 84 dBA, your employer must provide you with written information describing the hazards associated with exposure to high levels of sound and post the investigation report in a conspicuous place in the work place.
- If you require a hearing protector, your employer, in consultation with the work place health and safety committee or representative, must train you in the fit, care and use of such equipment.
- Warning signs must be posted within the work place where there is a risk of exposure to high sound levels.

The *Regulations* stipulate that every person, other than an employee, who visits a work place must use a hearing protector if the person's noise exposure level is likely to exceed 87 dBA.

How can you tell whether the sound level is too high?

If you have to speak in a loud voice when you are next to or in front of someone, or if you have to shout in the person's ear in order to be understood, it is more than likely that the sound level you are being exposed to exceeds acceptable limits.

How can you tell if you are losing your hearing?

- If, at the end of the work day, sounds are muffled or you hear a whistling or ringing noise or the sound of tires deflating, your noise exposure was probably above your personal tolerance level.
- If, at the end of the work day, speech or music seems muffled, or if high-pitched sounds, such as high musical notes or children's voices, are difficult to distinguish but your hearing returns to normal after a good night's sleep, you have suffered temporary hearing loss. These partial losses of hearing can eventually result in permanent damage to your hearing.

If you notice any of these symptoms, see a health professional in order to identify the problem and possible causes. He or she will ask you about your health, hearing and work history and arrange to have your hearing tested. Once your medical file is complete, he or she will, at your request, provide written recommendations for your employer or your work place health and safety committee or representative.

Is there anything else you should be aware of?

Your work place is not the only place where you could be exposed to high levels of sound. A number of recreational activities, such as snowmobiling, car racing, power boating and rifle shooting, expose you to high sound levels as well. So be careful and protect your hearing away from the work place as well as in it!

One last word! The exposure limits recommended in the *Regulations* provide reasonable protection for most people. But keep in mind that the less exposed you are to high sound levels, the better it is for your ears.

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