

Stop hearing loss  
before it starts.



## Noise induced hearing loss is preventable

### Sound and hearing



Noise is a result of pressure changes in the air created by vibrations, which are transferred to the ear by sound waves.

The soundwaves are then converted to sound by delicate hair cells called *cilia*, found in your inner ear.

Exposure to loud noise breaks down cilia and often large groups of the cells get torn away. When the cilia become damaged they do not grow back and there is no way to repair them. **The result is permanent hearing loss.**

#### THE DISAPPEARANCE OF CILIA (HAIR CELLS) IN THE INNER EAR DUE TO NOISE DAMAGE



Before damage



After damage

Cilia never grow back once they have disappeared.

### Noise is a hazard

Noise induced hearing loss occurs gradually, is rarely painful, and takes about five years of continuous exposure to develop. Because of this, people do not realize they are being affected by this disease until it is too late and the damage has become irreversible.

The gradual nature of hearing loss explains why younger workers, who are most at risk for hearing loss, do not seem to suffer any visible effects, while many older or retired workers have hearing problems.

Workers may experience greater hearing loss if high noise levels are combined with other workplace hazards, such as exposure to chemicals (e.g. styrene and toluene), heavy metals (e.g. mercury, lead and arsenic), vibration and extreme heat.

### Harmful noise levels

Many industrial and off-the-job noise levels are unacceptably high and are on the rise. The chart provides a range of common sounds to help you identify dangerous noise levels. Sound levels are measured in decibels (dB). Exposure limits are generally measured on a dB(A) scale, which duplicates the frequencies and amplitudes that are recognizable to the human ear.

**If you need to raise your voice to be heard, then the noise level is high enough to cause hearing loss.**

## Hearing conservation programs



Do not be lulled into believing that harmful noise levels are just a part of your normal workplace environment. If noise levels are a concern at your workplace, a noise control and hearing conservation program should be put into practice that:

be put into practice that:

- ▶ Reduces or eliminates noise through engineering or administrative controls
- ▶ Provides adequate hearing protection
- ▶ Provides training and education in the use of hearing protection
- ▶ Includes annual hearing tests
- ▶ Keeps private records of your hearing test results
- ▶ Ensures noisy areas have signs to clearly indicate hearing protection is required

We can help. Contact the Workplace Safety and Insurance Board to find out about training and prevention programs.

Toronto: 416-344-6699 or 344-3603

Toll free: 1-800-465-9646

ext. 6699 or ext. 3603

Telephone service for the deaf (TTY):

1-800-387-0050

**WSIB** Workplace Safety & Insurance Board  
ONTARIO  
**CSPAAT** Commission de la sécurité professionnelle et de l'assurance contre les accidents du travail

[www.wsib.on.ca](http://www.wsib.on.ca)

safety starts with you

## Symptoms of hearing loss



As you slowly lose your hearing, you will initially lose your ability to hear high-pitched sounds, but as exposure continues your entire hearing range will be affected.

Early stages of hearing loss will make it difficult to hear children's voices, followed by women's voices and finally all speech will become distorted.

In addition, hearing loss may affect you in ways you may not have considered, such as:

- ▶ Ringing or buzzing in your ears or head (called tinnitus)
- ▶ Elevated blood pressure
- ▶ Fatigue
- ▶ Stress
- ▶ Social isolation from co-workers, family and friends

The effects of hearing loss extend far beyond the workplace. Every aspect of your life can become affected - straining family and social relationships. Permanent hearing loss is a high price to pay for a disease that can be prevented.



	COMMON SOUNDS	DECIBEL LEVELS dB(A)
DAMAGING	rock concert, jet takeoff, gun shot	120 to 140
	chain saw, air gun, portable stereo, dance club, boiler room, sandblasting	100 to 120
HARMFUL	power tools, motorcycle, headphones, snowmobile, manufacturing plant, hydraulic press, pneumatic drill	90 to 100
IRRITATING	lawnmower, dishwasher, computer room, subway, busy restaurant or kitchen	75 to 90
SAFE	city traffic, hair dryer, office equipment, cell phone	70 to 80
	normal conversation	50 to 70
	countryside with rustling leaves	20 to 50

## Hearing protection

On or off the job, it is strongly recommended that you wear hearing protection whenever you are unable to avoid excessive noise – e.g. over 85 dB(A) – or when you are concerned about sound levels.

