

Noise-Induced Hearing Loss

We live in an increasingly noisy world. Not only does the overall noise level seem to be going up, but we are surrounded by a growing number of tools, toys and other gadgets that make noise – and lots of it. Noise-induced hearing loss (NIHL) occurs when tiny sensory cells in our inner ear, called hair cells, are damaged by sounds that are too loud and that last too long. How near we are to the source of the noise also matters. NIHL can be **permanent** – but it is also **preventable**. You can help enjoy healthy hearing for a lifetime by learning about hearing protectors and when to use them.

How is sound measured?

Sound is measured in units called decibels (dB). Decibel levels begin at zero, which is near total silence and the weakest sound our ears can hear. By comparison, a whisper is 30 dB and normal conversation is 60 dB. An increase of 10 dB means that a sound is 10 times more intense or powerful. To your ears, this is twice as loud.

When are hearing protectors recommended?

Hearing protectors are recommended whenever a person's hearing is exposed to noise levels that exceed a certain level and time. This level in the workplace has been set at 85 decibels (dB) for exposures longer than eight continuous hours. The louder the sound, the shorter the time before damage can occur.

How can I reduce the possibility of NIHL?

Your ears can be your warning system for potentially dangerous noises. The noise is too loud when:

- You have to raise your voice to be understood by someone standing nearby.
- The noise hurts your ears.
- You develop a buzzing or ringing sound in your ears, even temporarily.
- You don't hear as well as you normally do until several hours after you get away from the noise.

If you are around noises at this level, take protective action. To avoid NIHL:

- Block the noise (wear earplugs or earmuffs).
- Avoid the noise (walk away).
- Turn down the sound.

Remember the 4 P's of NIHL

Noise-Induced Hearing Loss is:

- **P**ainless
- **P**rogressive
- **P**ermanent
- but it is also **P**reventable!

Types of Ear Protection

Earplugs are soft foam or plastic inserts that fit directly into the ear canal. They are cheaper than earmuffs and come in both disposable and reusable types.

- Disposable Formable Earplugs are designed to be rolled into a thin cylinder that is inserted about halfway into the ear canal. Once inserted, the earplug reshapes itself to fill the canal snugly. The steps for inserting formable earplugs are below.
- Pre-molded Earplugs are made from plastic, rubber or silicone. These earplugs have a tapered shape similar to an ice cream cone. To fit a pre-molded earplug, reach over your head and pull up on one ear. Use the other hand to insert the plug with a gentle rocking motion until it feels tight in the ear canal. Refer to steps 4 and 5 below.

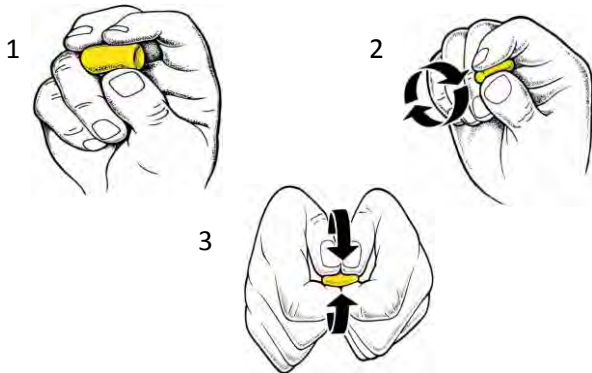


Earmuffs look like wireless headphones. The part that fits over the ear is often filled with fluid, foam or both to make sure that the earmuff fits comfortably and closely. Earmuffs cost more than earplugs, but they are easier to put on correctly. However, if you wear glasses, you may find earmuffs uncomfortable, and they may not seal properly.

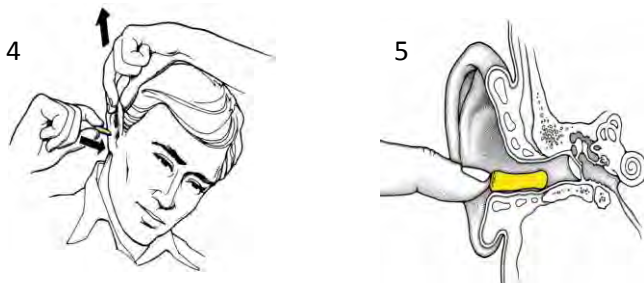


How to use ear protection

Roll down slowly; make sure you don't get a crease in them.



Reach over your head, straighten your ear canal.
Insert and hold for about 10 seconds.



Maintaining hearing protection

Pre-molded earplugs can be used repeatedly. Just remember to:

- Keep earplugs clean
- Store appropriately
- Replace when needed
- Do not alter

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References:
The National Institutes of Health, National Institute on Deafness and Other Communication Disorders, 2009.
<http://noisyplanet.nidcd.nih.gov>

