Noise Induced Hearing Loss

The Whole Body
A Therapists Perspective

A weekly informational piece from the Rehabilitation Professionals at North Country Hospital

North Country Hospital

Approximately 30 million Americans are affected by hearing loss. Hearing loss can develop at any age and may be caused by many different factors. Some causes of hearing loss include:

- Aging – Humans begin to lose their hearing at age 20, but it is often not noticeable until between the ages of 55 and 65.
- Disease
- Drug Induced- Some medications damage hearing with long term use. These drugs are referred to as being ototoxic.
- Tumors- on the auditory nerve
- Trauma- such as fractures to the tiny bones in the ear and punctures of the ear drum.
- Noise

The most preventable type of hearing loss is Noise Induced Hearing Loss (NIHL). NIHL is caused by exposure to either a sudden loud noise or exposure to loud noises for a period of time. When exposed to these noises tiny hair cells in the sensitive inner ear (needed to convert sound energy to electrical signals which can travel to the brain) are damaged. Once these cells are damaged they can never grow back and hearing loss is permanent. Over 10 million Americans suffer from this type of hearing loss. The American Academy of Audiology estimates that one in eight children have sustained NIHL and it is estimated that 16% of teenagers have sustained NIHL. However, this type of hearing loss is nearly 100 percent preventable if you understand how to protect yourself.

Sound is measured in units called decibels (dB). On the dB scale an increase of 10 means the sound is 10 times more powerful. The humming of a refrigerator is approximately 45 dB, typical conversation is approximately 60 dB, and the noise of city traffic can reach 85dB. Long or repeated exposure to noise over 85 dB can cause permanent NIHL. In order to prevent NIHL individuals should be aware of which noises can cause damage. As a general rule if you must raise your voice to shout over the noise, for someone within arm’s length to hear you, the noise is probably at a level that could cause damage. If you are exposed to noises at this level you should either reduce the noise at its source (i.e. lower the volume on your personal listening device) or wear hearing protective devices (i.e. earplugs or earmuffs). Some common noises and the dB level are listed below:
Faint Whisper 30 Decibels
Lawn Mower 90 Decibels (risk of damage in 8 hours)
Motorcycle, Power Saw 95 Decibels (risk of damage in 4 hours)
Chainsaw, Stereo Headphones 100 Decibels (risk of damage in 2 hours)
Jack Hammer, Helicopter 105 Decibels (risk of damage in 1 hour)
Snowmobile from driver's seat 110 Decibels (risk of damage in 30 min)
Stadium Football Game 115 Decibels (risk of damage 15 min)
Rock Concert, Sandblasting 120 Decibels (risk of damage 7.5 min)
Air Raid Siren, Fire Cracker 125 Decibels (Pain Threshold)
Gunshot, Jet Engine Take Off 140 Decibels (immediate danger to hearing)

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