



Maintaining auditory health

By Cecelia Damask, DO

One in ten Americans has a hearing loss that affects his or her ability to understand normal speech. Age-related hearing loss is the most common cause of this condition and is more prevalent than hearing loss caused by excessive noise exposure. However, exposure to excessive noise can damage hearing, and it is important to understand the effects of this kind of noise, particularly because this exposure is avoidable.

What causes hearing loss?

The ear has three main parts: the outer, middle, and inner ear. The outer ear (the part you can see) opens into the ear canal. The eardrum separates the ear canal from the middle ear. Small bones in the middle ear help transfer sound vibrations to the inner ear. Here, the vibrations become nerve impulses, which the brain interprets as music, a slamming door, a voice, etc.

When noise is too loud, it begins to kill the nerve endings in the inner ear. Prolonged exposure to loud noise destroys nerve endings. As the number of nerve endings decreases, so does your hearing. There is no way to restore life to dead nerve endings; the damage is permanent. The longer you are exposed to a loud noise, the more damaging it may be. Also, the closer you are to the source of intense noise, the more damaging it is.

How can I tell if a noise is dangerous?

People differ in their sensitivity to noise. As a general rule, noise may damage your hearing if you are at arm's length from another person, and have to shout to make yourself heard. If noise is hurting your ears, your ears may ring or you may have difficulty hearing for several hours after exposure to the noise.

How can I protect myself against noise?

Wear hearing protection, especially if you must work in an excessively noisy environment. You should also wear hearing protection when using power tools, yard equipment, or firearms, and when riding a motorcycle. Hearing protection comes in two forms: earplugs and earmuffs.

Earplugs are small inserts that fit into the outer ear canal. They must be sealed snugly so the entire circumference of the ear canal is blocked. An improperly fitted, dirty or worn-out plug may not seal properly and can result in irritation of the ear canal. Plugs are available in a variety of shapes and sizes to fit individual ear canals and can be custom-made. For people who have trouble keeping them in their ears, the plugs can be

fitted to a headband.

Earmuffs fit over the entire outer ear to form an air seal so the entire circumference of the ear canal is blocked and they are held in place by an adjustable band. Earmuffs will not seal around eyeglasses or long hair and the adjustable headband tension must be sufficient to hold earmuffs firmly in place. Earplugs and earmuffs can be obtained from an audiologist or an otolaryngologist's (ENT doctor) office.

Will I hear other people if I wear hearing protection?

Just as sunglasses help vision in very bright light, hearing protection enhances speech understanding in very noisy places. Even in a quiet setting, a normal-hearing person wearing hearing protection should be able to understand a regular conversation.

Hearing protection does slightly reduce the ability of those with damaged hearing or poor comprehension of language to understand normal conversation. However, it is essential that persons with impaired hearing wear earplugs or muffs to prevent further inner ear damage in very noisy places.

How can I tell if my hearing is damaged?

Hearing loss usually develops over a period of several years. Because it is painless and gradual, you might not notice it. What you might notice is a ringing or other sound in your ear (tinnitus), which could be the result of long-term exposure to noise that has damaged your hearing nerves. Or you may have trouble understanding what people say; they may seem to be mumbling, especially when you are in a noisy place such as a restaurant or a party. This could be the beginning of high-frequency hearing loss. A hearing test will detect any hearing loss or damage.

If you have any of these symptoms, they may be caused by impacted wax or an ear infection, which are relatively easy to correct. However, you may suffer from noise-related hearing loss. In any case, take no chances with noise — the hearing loss it causes is permanent. If you suspect hearing loss, consult a physician with special training in ear care and hearing disorders (an otolaryngologist). This doctor can diagnose your hearing problem and recommend the best way to manage it.

Dr. Damask is a board-certified otolaryngologist, a physician who practices the medical management of diseases of the ears, nose, and throat. Her specialty is in the treatment of allergies. Dr. Damask attended medical school in Chicago, and was in private practice in North Carolina prior to opening Lake Mary Ear, Nose, Throat & Allergy.

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