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## **An Overview of Hearing Loss – Its Signs, Causes, Implications and Solutions**

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### **What are the Signs of Hearing Loss?**

If you have a hearing loss, sounds may seem loud enough, but not clear. People may seem to be mumbling or talking too quickly. Quiet sounds, such as a clock ticking, birds singing, or voices from another room, just cannot be heard as well as before. You may hear some people's voices better than others. You may find that facing the speaker helps you to hear better. It is difficult to understand what is being said in a group when there is any background noise. Group conversations are more and more difficult to follow. You might find that meetings, groups, parties, and movies are not as rewarding as before. It is harder to keep up with small talk. You may favor one ear over the other. You need to ask for things to be repeated.

Sometimes, you misunderstand what has been said. Others may tell you that you have the radio or television turned up "too loud" or that you speak too loudly or too softly. You may be startled when someone enters the room. You may have difficulty locating the source or direction of sounds. Loud sounds may seem more sharp and annoying than before. You may hear ringing or buzzing in your ears. Read through the following checklist. If you answer yes to more than five of the signs and symptoms listed, see your physician and then get a thorough hearing evaluation by an audiologist.

### **Common Signs and Symptoms of Hearing Loss**

#### ***Do you...***

- frequently have to ask for repetition?
- have trouble hearing when you are spoken to from another room?
- feel that you hear sound but do not understand speech clearly?
- feel that people are mumbling?
- have trouble hearing when there is noise around you?
- need to turn the radio or TV volume up loud to hear well?
- have difficulty hearing women's or children's voices?
- have to turn one ear toward the person speaking?
- have trouble hearing when you can't see the speaker's face?
- need to be close to the person speaking?
- become anxious or tired in social situations because you cannot understand
- what is said?

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- have to strain to hear?
- frequently misunderstand what is said?
- have ringing or buzzing in your ear(s)?

***Do others tell you that you...***

- do not react to loud sounds?
- do not respond when spoken to?
- turn the radio or TV volume up too high?
- speak loudly or shout in conversation?
- are missing what is being said?
- do not hear sounds coming from behind you?
- have had a change in your speech?

**Are There Different Types of Hearing Loss?**

There are two main types of hearing loss.

**1. Conductive hearing loss results** in a loss of loudness. Someone with a conductive hearing loss is probably inclined to speak in a relatively quiet voice because when we speak, part of the sound of our own voice is transmitted directly through our head bone into our inner ear. Since we regulate the loudness of our voice by the way we hear ourselves, people with a conductive loss have a normal inner ear and hear their own voice louder than the voices of others.

People with a conductive loss can generally hear and understand well in noisy surroundings because the conductive loss cushions them from the loud environmental sounds, and they benefit from the fact that everyone is speaking more loudly. Basically, for people with a conductive hearing loss sounds are just not loud enough to be heard well. This can be overcome by amplifying the sound and can often be remedied by medical or surgical techniques.

**2. Sensorineural hearing loss** is the second main type. Sensorineural hearing loss, leads not only to a loss of loudness but of clarity as well. This condition is sometimes incorrectly referred to as *nerve deafness*, and there is generally no medical or surgical help available for sensorineural hearing loss.

People with a sensorineural hearing loss speak loudly, generally have more trouble understanding speech, and are especially bothered trying to understand speech in the presence

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of background noise. Often, people with sensorineural hearing loss have an increased intolerance to loud sounds called hyperacusis.

Correcting the lack of clarity that may be associated with a sensorineural hearing loss is not completely possible by amplifying sounds. It is important to be aware of this difference between a conductive and sensorineural hearing loss. This helps you to understand why some people with hearing loss seem to manage so much better than others.

### **What Can Cause Hearing Loss?**

The simplest cause of hearing loss is a buildup of wax in the ear canal. If this wax, called *cerumen*, completely blocks the ear canal, you might experience a very noticeable loss of hearing. Wax is produced naturally in the outer ear canal and some people produce much more wax than others. People who wear hearing aids may have an increase in the amount of wax in the ear canals since the hearing aid or earmold tends to reduce the amount of natural ventilation to the ear. Fortunately, in most cases the wax is easily removed by a physician (either with a probe or by flushing with water).

Other items pushed too far into the ear canal, such as cotton, can create the same effect. Even though some people use cotton or other items in an attempt to clean the ear canal, the adage that says that "you shouldn't put anything smaller than your elbow into your ear" should be followed. Using hairpins, matchsticks, or cotton swabs can cause the wax to be pushed deeper into the canal beyond the point where it will naturally leave.

A cold or a sinus infection may cause you to experience some hearing loss. These create a slight fullness that should disappear when you get over the cold or infection. If you fly or travel in the mountains, you may also experience a minor degree of hearing loss due to the difference in pressure between the air in the middle ear and the outside air. This problem usually will disappear if you blow your nose, swallow, or chew gum.

Exposure to loud noise, even for a short period, can cause you to feel that your hearing ability is lessened, and you may also experience some tinnitus (ringing in the ears). Called a *temporary threshold shift*, this problem usually goes away after a period of time once you are out of the noisy environment. Too much exposure to loud noise can lead in time to a permanent hearing loss.

As we live longer, the chances that we will experience some reduction in our ability to hear is high. It is estimated that on average one in ten people have some degree of hearing loss. Over the age of 60, the estimate changes to one in four, and over the age of seventy, it's one in two.

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A common cause of conductive hearing loss (affecting the middle ear) is otosclerosis, a condition in which one of the small bones in the middle ear (the stapes in the ossicular chain) is affected with a bony growth. An operation called a *stapedectomy* may be performed to overcome this problem.

Infection in the middle ear can cause a buildup of fluid in the middle ear cavity, leading to a temporary hearing loss and possibly a discharge from the ear. Perforations of the eardrum (tympanic membrane) can also lead to conductive hearing loss.

Conductive hearing loss is usually medically or surgically correctable, but sensorineural hearing loss is usually irreversible. Sensorineural hearing loss can be caused by a wide range of viral infections, such as measles, mumps, or meningitis. Certain medications can also cause an irreversible hearing loss as can exposure to loud noise or a blow to the head.

### **Can Noise Damage Hearing?**

Excessive noise can cause hearing loss. Some people who have worked in noisy factories or served in the armed forces in combat have experienced a change in hearing ability. Legislation has been introduced to regulate the limits of the sound levels to protect people's hearing. The current limit is 85 decibels, about the level of a subway train. If the noise exceeds the limit, employers must provide ear protection in the form of plugs or muffs; cotton is not effective. It is very important to follow the instructions of the health safety officer or nurse in your place of work. If there are areas that have been measured to be loud enough to cause damage to your hearing, wear ear protection. It is also necessary to consider the amount of time spent in the noisy environment. The louder the noise, the shorter the time you should be exposed to it.

Unfortunately, some people are more susceptible than others to this type of hearing loss, and there is no way to predict their susceptibility until it is too late. If your work or hobbies put you at risk, it is a good idea to be tested regularly to monitor and prevent any problems.

Many sounds can damage hearing. For example, if you fire a gun or a rifle or use a chainsaw, a lawnmower or a snow blower, you need to wear ear protection. If you attend rock concerts or play in a band or an orchestra, remember that exposure to loud sounds can damage hearing and it doesn't matter if it's the Beatles, Beethoven, or the Blues. Ear protection should be worn in any situation where noise levels exceed 85 dB. A good way to determine if it is too loud is to see if you have difficulty hearing someone speaking next to you while the music is playing. If so, use ear protectors (foam earplugs available over the counter at the drugstore), or at least limit the amount of time you are exposed to the loud music by taking periodic breaks to give your ears a rest. There are special custom-made ear protectors that are designed in such a way that

musicians still can hear the sounds of music but at a reduced level. Check with your audiologist to arrange to have impressions taken.

It is also important to use personal radios, iPods, or CD players with earphones carefully. If they are too loud, they can damage your hearing permanently. It is best not to set the volume beyond the halfway point; if a passerby can hear the sound of the music, it is too loud. It is important to remember that such damage to the hearing mechanism is cumulative. You may not be aware of it, but over time with frequent exposure to loud sounds, the loss is added to whatever loss you acquire as you get older.

Warning signs of exposure to sound levels that may be dangerous to your hearing include:

- You have ringing or buzzing in your ears after exposure to noise.
- You have pain in your ears after exposure to noise.
- You notice that sounds seem muffled.
- You have difficulty hearing quiet sounds after a period of exposure to loud sounds.
- You feel a fullness in your ears.

It is important to protect your hearing. You can do this by moving away from the sound source and, when possible, turning down the volume. There are also noise cancellation devices available that reduce the low-pitched sounds in the environment (such as the sounds you hear when riding on a plane). These reduce fatigue and allow you to hear speech more clearly. Whenever possible, take rest periods to reduce the cumulative effect of loud noise. Avoid leisure activities with high noise exposure and wear ear protection devices. Remember, you can prevent hearing loss by protecting your ears.

### **What Do I Do If I Feel That I've Lost Some Hearing?**

If you suspect that you have a hearing loss or if you feel that sounds are not as loud as you need them to be, or that speech is muffled, it is a good idea to first have your family physician check for wax in the ear canals, infection, or a treatable disease. If the problem can be treated medically or surgically, pursue that treatment.

If after treatment you still have some difficulty hearing, investigate hearing help with an audiologist. To begin, ask your physician for a signed statement or form called a "medical clearance" saying that the hearing loss has been medically evaluated and that you may be considered a candidate for hearing aids. This form is required by law before a hearing aid dispenser can provide you with a hearing aid. (Adults over 18 may sign a waiver of this regulation, but for your best hearing health you should obtain a medical checkup instead.)

Then arrange for a hearing test to determine how much hearing loss there is. Get a complete hearing evaluation from a licensed audiologist who is a Fellow in the American Academy of

Audiology (FAAA) and/or one with a Certificate of Clinical Competence in Audiology (CCC-A) issued by the American-Speech-Language and Hearing Association (ASHA). Do not confuse the FAAA or CCC-A certification with the description used by many hearing aid dealers of "Board Certified," which is granted by the National Hearing Aid Society (NHAS). NHAS is a trade association of hearing aid dealers.

Audiologists can measure hearing ability and identify the degree of loss. They can design and direct a rehabilitation program, recommend and fit the most appropriate hearing aids, and measure the hearing improvement from the use of hearing aids. They will provide guidance and training on how to use the new hearing aids and recommend the use of other assistive technology if appropriate. They can also teach speechreading. They can help you or your child to find solutions that reduce the effects of hearing loss by working with your spouse, family, employer, teacher, caregiver, or other medical specialists. In addition, audiologists evaluate balance, vertigo and dizziness disorders.

If a hearing aid is recommended, be certain to arrange for a trial of at least 30 days through a facility that will assist you in becoming oriented to the new experience of hearing with amplification. Remember, it is a learning experience that requires time, practice, and patience.