YOU AND YOUR HEARING AID

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by

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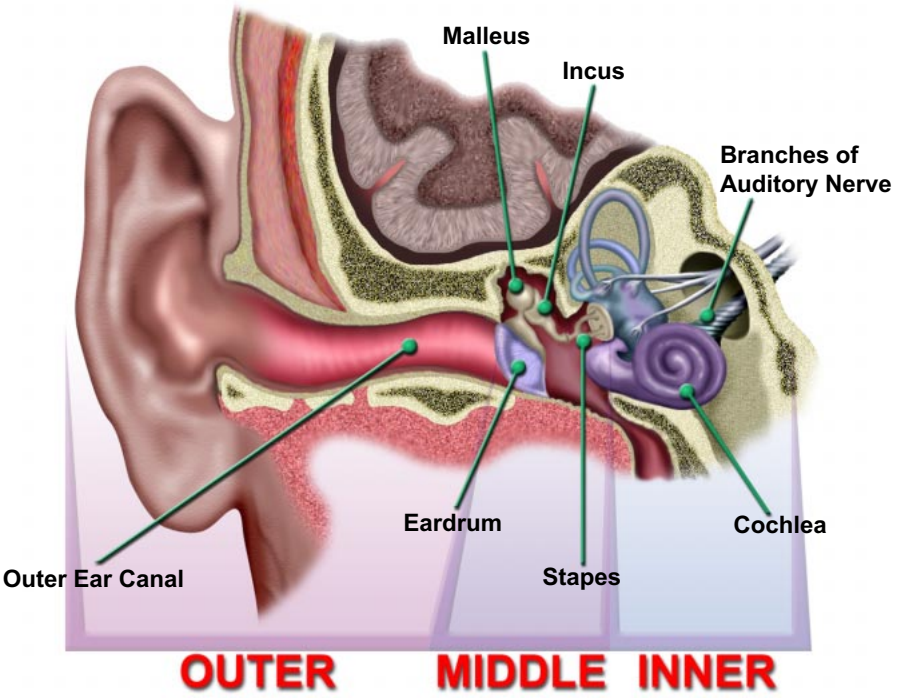
Contents

Anatomy of the Ear

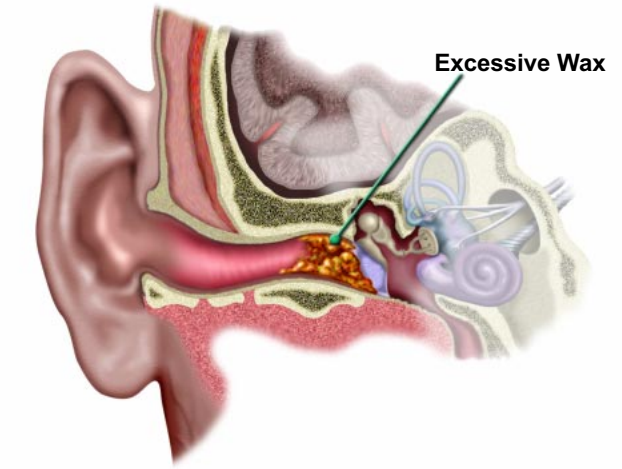


The Four Types of Hearing Loss

There are four basic types of hearing impairments. Each type is identified by where along the auditory system the impairment occurs.

1. Conductive Hearing Loss: This condition is caused by excessive wax (cerumen) or foreign bodies in the external ear canal, eardrum perforations, and middle ear mass or ear infections.

   Treatment: This condition can be medically treated.



2. Sensorineural Hearing Loss: The primary cause of sensorineural hearing loss is exposure to loud noises over a period of years. On rare occasions a single very loud noise can cause sensorineural hearing loss. Other causes are ototoxic medications, head trauma, and genetic factors.

   Treatment: Hearing aids

3. Mixed Hearing Loss: This is a combination of both 1 & 2 conditions occurring at the same time.

   Treatment: Medical treatment for the conductive involvement and the use of hearing aids

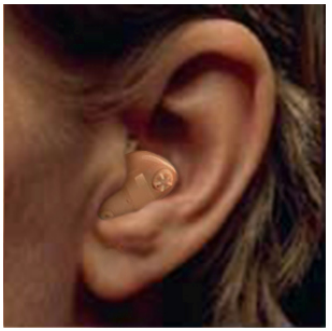
4. Central Hearing Loss: This condition results from abnormal formation of neural tissues in the brain.

   Treatment: Hearing aids

Auditory Neural Tissues

Types of Hearing Aids

In the Ear, Full Shell



Half Shell

In the Canal

Behind the Ear

One Hearing Aid or Two Hearing Aids

Benefit of Two Hearing Aids

- ***Your maker gave you two ears for a reason!***
- Localization of sounds
- Better hearing in noise
- Better understanding in group conversations
- Reduced tinnitus

Benefit of One Hearing Aid

- You hear better with one hearing aid than without any hearing aids

Problems Resulting from Hearing Loss

Family Difficulties

The hearing loss sufferer will often

- Find difficulty accepting the fact of hearing loss
- Begin questioning their role in the family.
- Stop participating in family decision making

Emotional Difficulties

It is very common for someone with hearing loss to experience:

- Stress
- Frustration from missing communication
- Inability to relax in communication situations
- Avoidance of any situation requiring communication
- Negative feeling about life

- Withdrawal because of hearing loss

- Lack of interest or motivation

- Depression

- Anger

Social Vocational Difficulties

The hearing impared will often

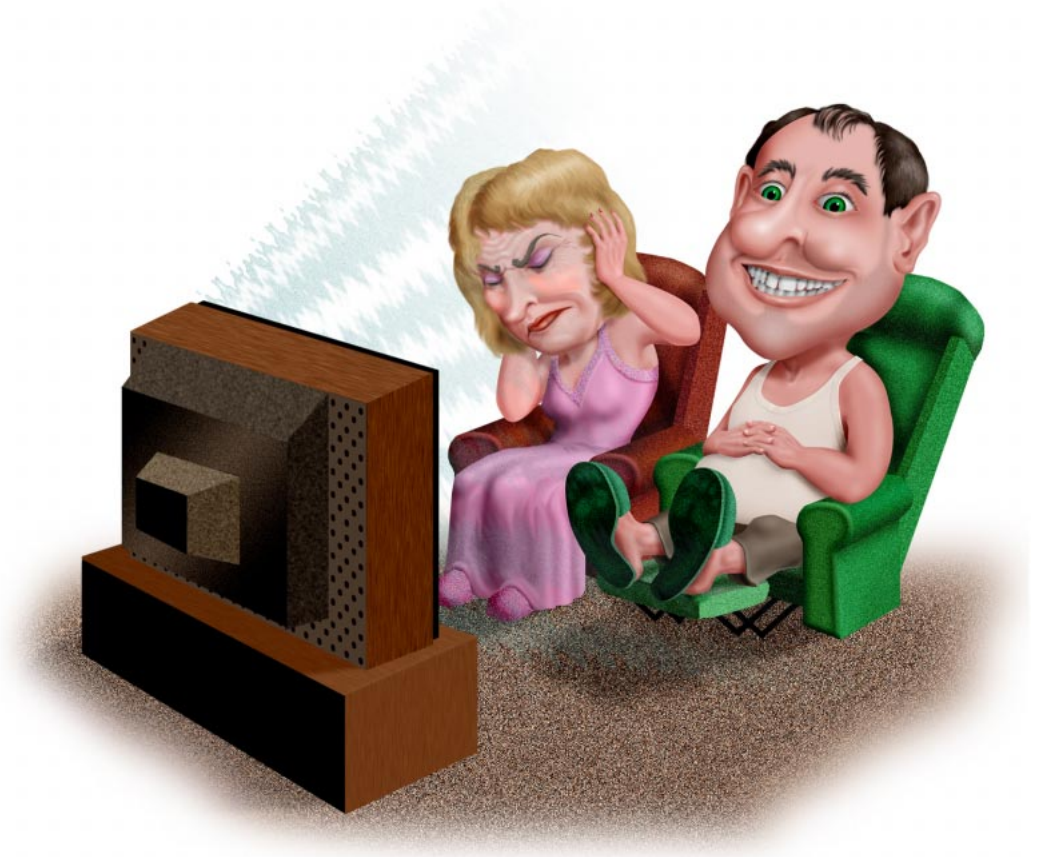
- Minimize involement in social activities
- Become hesitant to meet new friends
- Avoid group communication situations
- Become uncomfortable in communication situations
- Have difficulties with employer and colleagues
- Notice increased job stress

Situations where Hearing Difficulties are Common

- Telephone conversations
- Television or radio programs
- Theatrical performances or movies
- Religious services
- Traveling in automobiles, airplanes, and trains
- Amplification devices

Factors in Communications Breakdowns

- Degree of hearing loss – loudness and clarity of the signal
- Visual aptitude in communication – the ability to use visual cues such as lipreading to aid in understanding
- Auditory aptitude in understanding communication – the ability to use all the auditory cues in understanding communication
- Background noise



You and Your Hearing Aid

A hearing aid is an electronic device that amplifies sound for people with hearing impairments. Hearing aids have the same basic parts as a public-address system, but all the parts are miniaturized. The microphone, amplifier, receiver, and battery of a hearing aid are enclosed either in a shell, worn behind or within the ear, or in the stem or temple portion of eyeglasses. A small tube directs the amplified sound from the receiver into the ear canal. Most hearing aids have adjustable controls.

There are two types of processing systems for hearing aids: digital and analog. Until recently, all hearing aids were analog. Digital hearing aids process the signal differently than traditional analog hearing aids. These systems contain automatic signal processors that are constantly sampling your environment and making the soft sounds audible. When the signal is converted from the microphone, there is no loss of energy thus keeping distortion low.

Programmable hearing aids allow the audiologist to change the parameters inside the hearing aid in office rather than sending it back to the manufacturer thus decreasing down time. It offers more fitting flexibility to both patient and audiologist.

Multiple Microphone hearing aids are helpful for listening in background situations.

A recently developed cochlear implant is now available to some deaf people whose auditory nerves remain functional. The device consists of electrodes embedded in the cochlea of the inner ear to stimulate the auditory nerve, and is connected to a receiver, transmitter, microprocessor, and microphone.

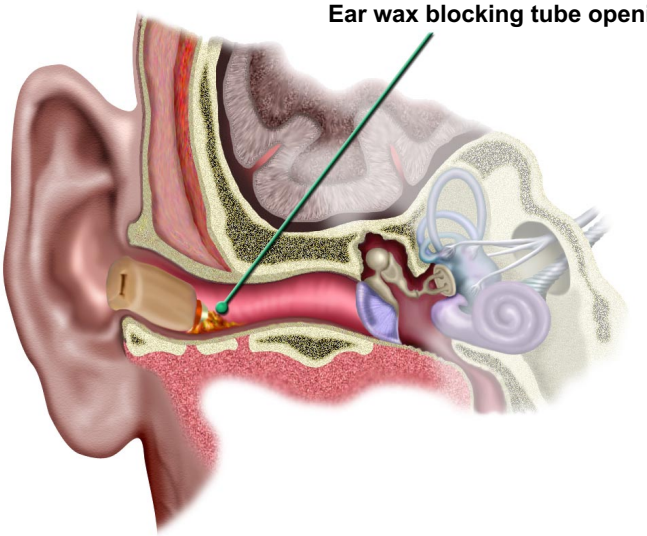
Adjusting to Your Hearing Aids

Whether it's your first set of hearing aid(s) or your tenth set, it takes time to get use to the device. It is very important to remember that a hearing aid does exactly what its name implies. It is an aid to hearing, but *it does not and cannot restore normal hearing.*

You have had the hearing loss for many years and you are not aware of volume of the everyday noises in our environment. It takes time to reacquaint you with those sounds. At first, these sounds might overwhelm you when you put the hearing aids in your ears. This is a common reaction to the hearing aid wearer. There are a couple of things to remember, first the hearing aid microphone picks up all sounds in your environment and amplifies them. Second, you have not heard them for many years *and it takes time to get use to those sounds*—be patient. When you had normal hearing you heard all those sounds and your brain sorted out the primary message and ignored the other sounds. This ability now must be relearned, and it will not necessarily be easy. It will take patience and time. Furthermore, a damaged ear produces distortion and a sensory hearing impairment will produce some form of distortion when sounds reaches the inner ear. No matter how good your hearing aid is, you are still dealing with an impaired system and that system cannot be restored to its original state with hearing aids.

Care and Maintenance of Your Hearing Aid

It is very important to keep your hearing aid clean. It is normal for ear wax to sluff out of the ear and normally we wash it away. Hearing aids block this normal occurrence and the wax will accumulate in ear canal. When you put your hearing aid in your ear, some of that wax will get on the hearing aid and can block the function of the hearing aid. The hearing aid will seem to be either "dead" or weak. You need to check your hearing aid daily for wax. It's preferable to do so each night before storing the aid in its container.



When you look into the opening of the hearing aid, you will see a small tube. This tube serves as a channel for the amplified sound and should not be removed or dislodged. If you dislodge this tube you might experience feedback or weakness with the sound transmission.

Working in a dusty area such as your garden or out in the field can also cause the hearing aid to malfunction. You must clean the hearing aid daily to prevent dust, wax and dirt from plugging the microphone. It is a good idea to see your audiologist yearly for a thorough hearing aid cleaning.

Squealing or whistling is most often associated with an improperly fitted hearing aid or wax occlusion in the ear. This can also be caused by cracks in the ear mold. You should have your hearing aid checked by an audiologist in order to have the problem fixed.

Your hearing aid is a delicate, electronic device and you must take care of it just like an expensive car. Be careful not to drop it on the floor. If your hands are somewhat unsteady, place a towel on a table and change the battery over the table to minimize the chance of the aid falling.

Your hearing aid has a 2-year warranty and if you need repairs it should be accomplished while the hearing aid is covered by manufacturer's warranty. Please do not file the aid in your desk drawer and expect it to work after several years.

Using the Telephone

Using the hearing aid on the telephone may take some practice. Depending on the type of hearing aid you are wearing, you may have a telephone pickup or telephone switch on the aid. If using the telephone is an important part of your job or social life, you should request the type of hearing aid that permits the inclusion of a telephone switch.

Hearing Aid Batteries

Hearing aid batteries are dangerous if swallowed. It is import to keep them away from small children and pets to avoid accidental swallowing of them. Do not store your batteries where you keep your medicine because they are small enough to be mistaken for medicine in the dark or without your glasses.

Depending on the magnitude of your hearing impairment and wear time, your battery should last between 7 -14 days. You may want to carry extra batteries with you in case your hearing aid stops functioning.

When inserting the battery make sure that the (+) side of the battery matches the (+) side of the hearing aid battery compartment. Otherwise the hearing aid will not function. After inserting the battery, if the battery door refuses to close, chances are you inserted the battery upside down. Remove the battery and start over. Forcing the door shut will result in you shearing the door off its hinge and might require us to send it back to the manufacturer for repairs.

Trouble Shooting Your Hearing Aid

Dead Hearing Aid:

1. Replace the battery.
2. Check the battery placement, the battery might be upside down.
3. Check the receiver tube for wax.
4. Check to make sure the telephone switch is not activated

Weak Hearing Aid:

1. Replace the battery; your battery may not be providing sufficient power to the hearing aid.
2. Check the receiver tube for wax
3. Check the microphone for dust or dirt
4. Check to see if the receiver tube is dislodged.

Scratchy or Intermittent Hearing Aid:

1. Check the microphone for dirt or dust accumulation
2. Check battery for corrosion

Feedback / Whistling:

Have your audiologist check this problem because it could be caused by a number of factors.

About the Authors

Captain Lesly Loiseau, Au.D.

Dr. Loiseau was born in Port Au Prince Haiti and immigrated to the United States in the early 1970's. He first entered the military on July 22, 1982 and worked as a 702 (Admin) for the 380th Bomb Wing at Plattsburgh Air force Base. He acquired his Master's Degree at State University at Plattsburgh and his Doctor of Audiology Degree (Au.D.) at the University of Florida.

Carolyn S. Bennett, Lieutenant Colonel, USAF, BSC

Born in Logan, Utah, Lt Col Bennett received her Masters Degree in Communicative Disorders and an AFROTC Commission from Utah State University. Her first assignment was as a Staff Audiologist at Keesler Medical Center, Keesler AFB, MS. She then was selected to establish an Audiology Clinic for the 92 Medical Group, Fairchild AFB, WA where she served as Chief of Audiological Services for 5 years. From Washington State, Lt Col Bennett moved to positions of Chief of Audiology and Hearing Conservation Program Manager at the 1st Medical Group, Langley AFB, VA and the 55th Medical Group, Offutt AFB, NE.

Awards include 1996 USAF Outstanding Audiologist of the Year and 2000 Research Award from the Military Audiology Association. Lt Col Bennett was also selected for a Fellowship with the National Institute of Occupational Safety and Health, Cincinnati, OH. At NIOSH she conducted research on the use of hearing protector devices by USAF workers.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