

Part 5: Better Hearing: Electronic Devices

5a) Hearing Aids

The following information on hearing aids is taken from National Institutes of Health, National Institute for Deafness and other Communication Disorders (NIDCD).

How Can Hearing Aids Help?

On the basis of the hearing test results, the audiologist can determine whether hearing aids will help. Hearing aids are particularly useful in improving the hearing and speech comprehension of people with sensorineural hearing loss. When choosing a hearing aid, the audiologist will consider your hearing ability, work and home activities, physical limitations, medical conditions, and cosmetic preferences. For many people, cost is also an important factor.

You and your audiologist must decide whether one or two hearing aids will be best for you. Wearing two hearing aids may help balance sounds, improve your understanding of words in noisy situations, and make it easier to locate the source of sounds.

What Are the Different Kinds of Hearing Aids?

There are several types of hearing aids. Each type offers different advantages, depending on its design, levels of amplification, and size. Before purchasing any hearing aid, ask whether it has a warranty that will allow you to try it out. Most manufacturers allow a 30- to 60-day trial period during which aids can be returned for a refund.

There are **four basic styles** of hearing aids for people with sensorineural hearing loss:

1. **In-the-Ear (ITE) hearing aids** fit completely in the outer ear and are used for mild to severe hearing loss. The case, which holds the components, is made of hard plastic. ITE aids can accommodate added technical mechanisms such as a telecoil, a small magnetic coil contained in the hearing aid that improves sound transmission during telephone calls. ITE aids can be damaged by earwax and ear drainage, and their small size can cause adjustment problems and feedback. They are not usually worn by children because the casings need to be replaced as the ear grows.
2. **Behind-the-Ear (BTE) hearing aids** are worn behind the ear and are

connected to a plastic earmold that fits inside the outer ear. The components are held in a case behind the ear. Sound travels through the earmold into the ear. BTE aids are used by people of all ages for mild to profound hearing loss. Poorly fitting BTE earmolds may cause feedback, a whistle sound caused by the fit of the hearing aid or by buildup of earwax or fluid.

3. **Canal Aids** fit into the ear canal and are available in two sizes. The In-the-Canal (ITC) hearing aid is customized to fit the size and shape of the ear canal and is used for mild or moderately severe hearing loss. A Completely-in-Canal (CIC) hearing aid is largely concealed in the ear canal and is used for mild to moderately severe hearing loss. Because of their small size, canal aids may be difficult for the user to adjust and remove, and may not be able to hold additional devices, such as a telecoil. Canal aids can also be damaged by earwax and ear drainage. They are not typically recommended for children.
4. **Body Aids** are used by people with profound hearing loss. The aid is attached to a belt or a pocket and connected to the ear by a wire. Because of its large size, it is able to incorporate many signal processing options, but it is usually used only when other types of aids cannot be used.

Do All Hearing Aids Work the Same Way?

The inside mechanisms of hearing aids vary among devices, even if they are the same style. Three types of circuitry, or electronics, are used:

- **Analog/Adjustable:** The audiologist determines the volume and other specifications you need in your hearing aid, and then a laboratory builds the aid to meet those specifications. The audiologist retains some flexibility to make adjustments. This type of circuitry is generally the least expensive.
- **Analog/Programmable:** The audiologist uses a computer to program your hearing aid. The circuitry of analog/programmable hearing aids will accommodate more than one program or setting. If the aid is equipped with a remote control device, the wearer can change the program to accommodate a given listening environment. Analog/programmable circuitry can be used in all types of hearing aids.
- **Digital/Programmable:** The audiologist programs the hearing aid with a computer and can adjust the sound quality and response time on an individual basis. Digital hearing aids use a microphone, receiver, battery, and computer chip. Digital circuitry provides the most flexibility for the audiologist to make adjustments for the hearing aid. Digital circuitry can be used in all types of hearing aids and is typically the most expensive.

What Can I Expect From My Hearing Aids?

Using hearing aids successfully takes time and patience. Hearing aids will not restore normal hearing or eliminate background noise. Adjusting to a hearing aid is a gradual process that involves learning to listen in a variety of environments and becoming accustomed to hearing different sounds. Try to become familiar with hearing aids under non-stressful circumstances a few hours at a time.

Programs are available to help users master new listening techniques and develop skills to manage hearing loss. Contact your audiologist for further information about programs that may suit your individual needs.

What Questions Should I Ask Before Buying Hearing Aids?

Before you buy a hearing aid, ask your audiologist these important questions:

- Are there any medical or surgical considerations or corrections for my hearing loss?
- Which design is best for my hearing loss?
- What is the total cost of the hearing aid?
- Is there a trial period to test the hearing aids? What fees are nonrefundable if they are returned after the trial period?
- How long is the warranty? Can it be extended?
- Does the warranty cover future maintenance and repairs?
- Can the audiologist make adjustments and provide servicing and minor repairs? Will loaner aids be provided when repairs are needed?
- What instruction does the audiologist provide?
- Can assistive devices such as a telecoil be used with the hearing aids?
- What problems might I experience while adjusting to my hearing aids?
- Become familiar with your hearing aid. Your audiologist will teach you to use and care for your hearing aids. Also, be sure to practice:
 - putting in and taking out the aids
 - adjusting volume control
 - cleaning
 - identifying right and left aids
 - replacing the batteries with the audiologist present.

- • The hearing aids may be uncomfortable. Ask the audiologist how long you should wear your hearing aids during the adjustment period. Also, ask how to test them in situations where you have problems hearing, and how to adjust the volume and/or program for sounds that are too loud or too soft.
- Your own voice may sound too loud. This is called the occlusion effect and is very common for new hearing aid users. Your audiologist may or may not be able to correct this problem; however, most people get used to it over time.
- Your hearing aid may "whistle." When this happens, you are experiencing feedback, which is caused by the fit of the hearing aid or by the buildup of earwax or fluid. See your audiologist for adjustments.
- You may hear background noise. Keep in mind that a hearing aid does not completely separate the sounds you want to hear from the ones you do not want to hear, but there may also be a problem with the hearing aid. Discuss this with your audiologist.

What Are Some Tips for Taking Care of My Hearing Aids?

The following suggestions will help you care for your hearing aids:

- • Keep hearing aids away from heat and moisture.
- • Replace dead batteries immediately.
- • Clean hearing aids as instructed.
- • Do not use hairspray or other hair care products while wearing hearing aids.
- • Turn off hearing aids when they are not in use.
- • Keep replacement batteries and small aids away from children and pets.