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ELDER CARE

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Hearing Aids

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Most older adults with hearing impairment have either partial or total damage to the cochlea and/or auditory nerve, causing a sensorineural hearing loss. This type of hearing loss results in several major problems for persons with hearing loss (PHL), as shown in Table 1.

Table 1. Problems Experienced by Older Adults Who Have Hearing Loss

- Inability to hear soft sounds
- Loss of clarity of audible sounds, resulting in distortion
- Decreased ability to separate what they want to hear from a background of noise
- Decreased ability to process or understand speech quickly
- Tinnitus or "ringing in the ears"

While a detailed knowledge about hearing aids is best left to an audiologist, health professionals who provide care for older adults should be familiar with what hearing aids can and cannot do. They should also understand the basic concepts involved in hearing aid selection, care, and troubleshooting.

What Hearing Aids Can and Cannot Do

Today's hearing aids can compensate for some of the problems experienced by PHLs, but they are limited in what they can do about others. Indeed, even the most sophisticated hearing aids cannot help a PHL hear perfectly in all situations. Rather, hearing aids are tools that assist individuals to communicate effectively in more situations than they can without a hearing aid. Similar to crutches after breaking a leg, they are not perfect but permit PHLs to do more than they could do otherwise. Table 2 lists some of what hearing aids can and cannot do.

Considerations in Selecting Hearing Aids

There are several technologies to consider when selecting a hearing aid. These include directional microphones, volume controls, programs, and the various sizes and shapes that are available. Hearing aids cost from $800-$3000 and are not covered by Medicare.

Directional Microphones. In a crowded restaurant, PHLs find it difficult to separate the speech of the person they want to hear from the speech of all the other people they don't want to hear. A directional microphone represents the best technology for addressing this issue. It gives some preference to sound coming from the front versus sounds coming from other directions, and research shows that directional microphones help more than any other hearing aid technology in dealing with background noise. Directional microphones, however, take up space inside the hearing aid, as the technology requires two microphone holes a certain distance apart. Some of the very smallest hearing aids cannot accommodate directional microphones.

Table 2. What Hearing Aids Can and Cannot Do

Hearing Aids CAN…

- make most sounds audible.
- make speech somewhat clearer, by amplifying only the specific speech sounds that are misheard.
- sometimes make tinnitus less noticeable.

Hearing Aids CANNOT…

- make audible sounds completely clear. Sounds that are heard are still processed by a damaged hearing mechanism. Similar to a broken amplifier, increased volume make sounds louder, not clearer.
- separate what individuals want to hear from what they don't want to hear.
- compensate for the loss of processing speed that accompanies age-related hearing impairment.

TIPS FOR ADVISING PATIENTS ABOUT HEARING AIDS

- Be sure patients know that while hearing aids usually improve the ability to hear speech and music, they do not help an individual to hear perfectly in all situations.
- Advise patients that while they may desire a cosmetically small, in-the-ear hearing aid, the very smallest hearing aids may not be able to provide all the new technology, like directional microphones or manual controls.
- Encourage daily cleaning of hearing aids, and opening the battery compartment to the air when not in use.
- Remind patients to store batteries out of the reach of children and pets.

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Volume Control. Modern hearing aids can adjust volume automatically depending upon the sound they receive. But, many people still prefer to adjust the volume themselves. For example, hearing an extremely soft-spoken person across a table may require turning the volume up. Some of the smallest hearing aids cannot accommodate a manual volume control.

Programs. Many hearing aids can alter the way they function, depending on the situation or on listener preferences or needs. For example, by pushing a button or switching a switch, some hearing aids can make it easier to appreciate all the sounds in music. Some hearing aids can make the change automatically, but the more automatic the changes, typically the more expensive the hearing aid.

Size and Shape. Hearing aids come in many sizes and shapes (see figures). There are advantages and limitations to each type. Some are less visible than others, and lack of visibility appeals to many PHLs. But over and above visibility, the most important considerations about size and shape are whether (a) the hearing aid can accommodate the features desired by the PHL (e.g., a directional microphone) and (b) the user can easily manipulate and care for the device.

Care of Hearing Aids

Hearing aids are electronic devices and must be maintained regularly to assure optimal performance. Routine maintenance of hearing aids involves several things.

First, hearing aids and batteries should be stored in a safe place – out of the reach of pets and children. Batteries can be confused with pills and may be toxic if they are ingested and swallowed. Second, open the battery compartment when the device is not in use. This avoids inadvertent battery drain and allows air circulation to prevent accumulation of moisture. Third, each day the hearing aid or earmold (the part that is inserted in the ear canal) should be cleaned using the cleaning tools supplied at the time of purchase. This will help prevent ear wax from accumulating and blocking sound from reaching the ear.

Troubleshooting

Batteries in the smallest hearing aids last only 2-3 days; they last up to 2-3 weeks in larger devices. Most hearing aids give an audible warning when the battery is about to die, and then they die immediately rather than fade out.

Simple tests can be performed if a hearing aid is not working. If one ear's hearing aid is not working but the other is, the first step is to put the battery from the bad hearing aid into the good one. If it works, then the battery is not the problem. If it doesn't work, the battery is dead.

You can also insert a new battery and turn the hearing aid on, cupping the hearing aid in your hand and listening for feedback or a squealing noise. If present, the battery is good and the hearing aid is operating. Such feedback sounds should not, however, occur when hearing aids are properly inserted in the ear.

When in doubt, the hearing aid should be taken to the audiologist or hearing instrument specialist to be checked.

Images from National Institute on Deafness and other Communication Disorders www.nidcd.nih.gov/health/hearing/hearingaid.html#hearingaid_01

References and Resources

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Hearing Loss Association of America. Organization by and for persons with hearing loss. http://www.hearingloss.org/

National Council for Better Hearing. Links to professional organizations and information. http://www.ncbh.org/links-resources.html

University of Arizona, Department of Speech, Language, and Hearing Sciences, Programs and Services for Adults with Hearing Loss. Useful links and information. http://lwhl.arizona.edu/

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