What is a hearing aid?

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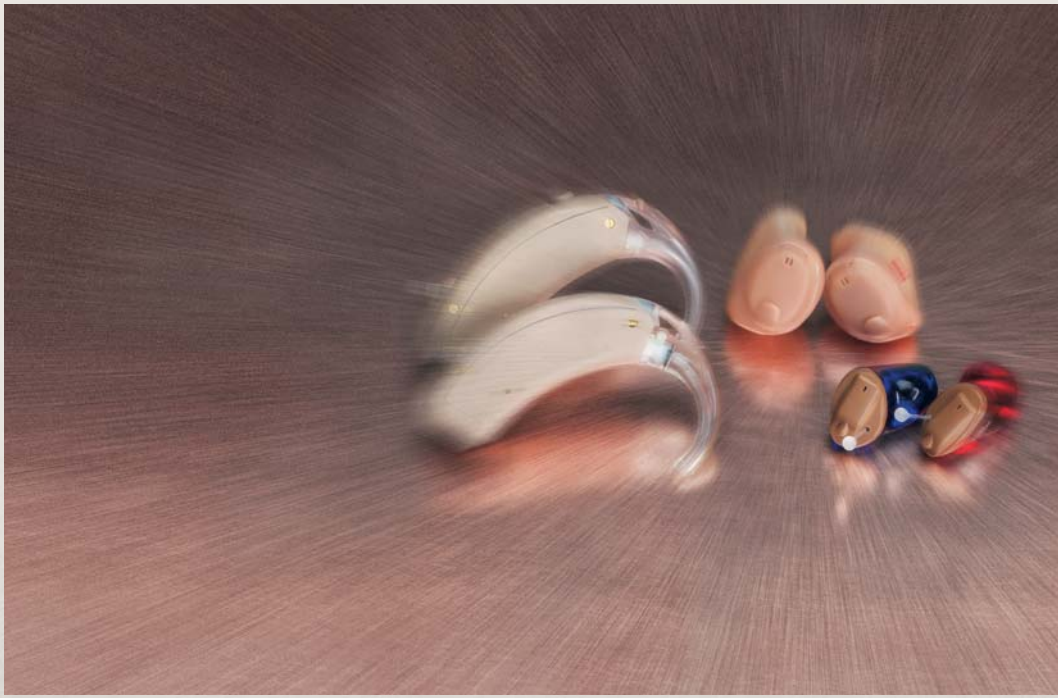

A brief description of hearing aids and the different types available

This is number three in a series of brochures from Widex on hearing and hearing-related matters.

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high definition hearing

What is a hearing aid?

A hearing aid is an electronic assistive device which is most often worn behind or in the ear and basically consists of a microphone, a receiver (i.e. loudspeaker) and an amplifier microchip powered by a tiny battery. Thanks to recent developments in digital technology and advanced electronic design, today's hearing aids can be so small that they are virtually invisible in the ear canal. Despite their small size, there need be no compromise in quality of sound reproduction, which is transmitted with the clarity of a CD recording.

Although a hearing aid may not provide its wearer with completely "normal" hearing, it should be able to provide considerable benefit in overcoming the effects of a hearing loss. One of the biggest problems for hearing aid users is the disturbing effect of background noise. The computer chips in today's most advanced digital hearing aids are able to reduce noise effectively and enhance speech by adjusting the sound smoothly and automatically.

Myths about hearing aids

There is still a great deal of misunderstanding about using hearing aids. Many people still believe:

- that hearing aids are big and clumsy.
- that they continuously whistle.
- that they need a remote control as big as those used for TV.
- that they are difficult to operate and maintain.

Fortunately, none of the above is the case.

The smallest hearing aids on the market today are not much bigger than a coffee bean; and problems with feedback whistling have been considerably reduced. Most hearing aids have automatic functions and are individually programmed for people's specific needs, so operating them is very easy. Maintaining the earmould is also straightforward, when using the cleaning tools supplied with the hearing aids.

The different types of hearing aids

There are three main types of hearing aids in use today: behind-the-ear, in-the-ear and completely-in-canal. A brief description follows of the three types and some of the different features available within each type.

Behind-the-ear (BTE) hearing aids consist of a plastic casing containing the electronics, from which the amplified sound is fed through a clear plastic tube to an earmould. The earhook on the behind-the-ear hearing aid connects to this tube, which itself forms the connection to the custom-made earmould worn in the user's ear. It is very important that the earmould fits well and is placed correctly in the ear, so the user obtains the best possible performance from the hearing aid and avoids acoustic feedback (whistling). The tube must also be adjusted to the correct length and be soft and pliable. Volume is adjusted either automatically, or with a manual volume control in the form of a small lever or wheel. Most BTE models also have a "T" switch to select the telecoil mode, for receiving sounds transmitted from an induction loop (see overleaf). On some models, the battery compartment has a built-in on/off switch; on others the on/off function is combined with the "T" switch.

Behind-the-ear hearing aids are available in a wide range of types and performance levels. High power hearing aids help people with severe hearing losses. Hearing aids with directional microphones make it easier for the user to hear speech in background noise, as they amplify sound coming from the front of the user more than unwanted sounds coming from behind. Some models are equipped with a remote control for selecting different listening programs in different sound environments, while others accomplish this automatically.

In-the-ear (ITE) hearing aids. Unlike behind-the-ear hearing aids, in-the-ear hearing aids are placed inside the ear and consist of only one part (the shell) into which the electronics are built. The shell is custom-made from an impression of the user's ear canal. This type of hearing aid is often 100% automatically controlled, but on some models it is possible to adjust the volume manually by means of a small lever or wheel. The battery compartment on some ITE aids has a built-in on/off switch and on others the on/off function is combined with the volume control. ITE models can usually be ordered with a "T" switch (space permitting) to select the telecoil mode, for receiving sounds transmitted from an induction loop.

Completely-in-canal (CIC) hearing aids are, as the name indicates, placed deeply within the ear canal. Despite the small size, this hearing aid type contains the latest technology of equal quality to larger models. They are almost invisible in the ear, so nobody can see you are wearing hearing aids. The position of CIC aids deeper in the ear canal provides certain natural acoustical advantages. These diminish problems with wind noise, make it easier to speak on the telephone using a normal handset and also help to determine from which direction sounds are coming. The CIC is usually fully automatic and has no space for any additional manual controls. The battery is located in the lid of the CIC, which also functions as its on/off switch. It is not possible to incorporate a telecoil into a CIC model.

It can be difficult for hearing impaired people to hear well at public venues such as cinemas, theatres, churches and meetings. Fortunately such places are sometimes equipped with an induction loop system. If your BTE or ITE hearing aid has a telecoil, you can switch to picking up sounds transmitted through the loop system instead of through the hearing aid's microphone. This means that you hear the signal directly from the desired sound source and are free from the disturbance of reverberation and background noise, often caused by others around you in the crowd or audience. Other public buildings, such as post offices and stations, may also be equipped with a desk or counter loop system.

Many BTE models can now be connected to special FM radio communication equipment, which can be a great help in, for example, classrooms, meetings and work environments. The person speaking uses a small radio microphone, which transmits what is being said via a special FM radio frequency. The signal is picked up by a tiny radio receiver attached onto the base of the BTE hearing aid and is directly amplified into the ear.

Although hearing aids cannot restore your original hearing ability, they can make the most of your remaining hearing ability. They may also be your way back to active life, where you do not have to make a constant effort to hear. The latest technology has brought us much closer to the goal of offering total compensation for each individual hearing loss.

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