



ANWAR E.N.T
The Right Choice For Your Health

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Hearing Aids

What is a hearing aid?

A hearing aid is a device that is used to increase the loudness of the sound reaching the ear of a person with a hearing difficulty. Modern hearing aids consist of three basic electronic components: a microphone, an amplifier and a loudspeaker.

The most common types of hearing aids are those that are worn in or behind the ear, but there are others, such as implantable hearing aids, which can be used in certain situations (see below).

Behind-the-ear hearing aid



The most commonly used type of aid is the **behind-the-ear hearing aid**, where all the electronic components are contained in a skin-coloured plastic case that sits behind the ear.

In-the-ear hearing aid





Cosmetically more popular is the **in-the-ear hearing aid**, which is a smaller, more compact device worn in the ear canal, but it is inappropriate for people with severe deafness because it is not powerful enough to compensate for their hearing loss. It is not suitable for those with some loss of manual dexterity, because the control switches are quite small.

Completely-in-the-canal hearing aid



Even smaller is the **completely-in-the-canal hearing aid**, which is virtually invisible when worn. Again, because of its small size, its casing is too small to be able to hold a very powerful amplifier and so it is only useful for mild hearing losses.

Hearing aid information

For people with very severe deafness, the electronic components needed to amplify sounds can become too bulky to fit into small hearing aids and a separate body-worn hearing aid with larger switches and controls is useful. However, with the advances in hearing aid technology this type of hearing aid is now much less common.

People with a conductive hearing loss may benefit from a device which is held in place behind the ear with a headband or 'alice band'. This is known as a bone conduction hearing aid.

People tend to benefit from this type of hearing aid if they have problems in the ear canal or middle ear, for example because of recurrent ear infections, previous surgery, or anatomical abnormalities such that they are unable to wear conventional hearing aids. Bone conduction aids can work very well, but can be quite bulky and obvious, and a more sophisticated type of bone conduction aid has been developed. This is the bone anchored hearing aid (see below).



Analogue or digital hearing aids?

There has been a lot written in the media recently about digital hearing aids. The 'digital' part of the hearing aid implies that these types of aids are more sensitive and better at restoring hearing than the older type of aids, and this is often, but not always, the case.

Digital hearing aids process sound in a fundamentally different way to analogue aids, by dividing up the sound into 'packets' and then processing them. This means that it is possible for digital aids to be more selective in filtering out irritating background noise, but no hearing aid, digital or analogue, is capable of only amplifying the sounds that you want to hear.

Most NHS hearing aids are partly digital, but fully digital ones are currently being assessed in various pilot studies throughout the NHS. For more information, the [Royal National Institute for the Deaf](#) has a useful section on their website.

Implantable hearing devices

Cochlear implant

People who have such a severe deafness that they hardly derive any benefit from conventional hearing aids (ie those people with a profound sensorineural hearing loss) may benefit from a cochlear implant.

In this type of implantable hearing aid a wire electrode is surgically inserted into the inner ear (the cochlea). Intense speech and hearing therapy is required often for several years following this operation. Cochlear implants can be used for children and adults.

Bone-anchored hearing aid

For people with a conductive hearing loss, or for people who are unable to wear conventional hearing aids because of previous ear surgery or ear malformation, the bone-anchored hearing aid is proving to be an excellent alternative.

As mentioned above, bone conducting 'alice bands' are bulky and can be quite sore to wear, because they have to press hard on the skin behind the ear to transmit vibrations to the skull. The BAHA consists of a small screw that is implanted in the bone behind the ear during a short operation (usually, but not always, under general anaesthetic).

After the area has healed, a small case containing all the electronic components of the hearing aid can be easily clipped on and off. The hearing aid gives excellent clarity of hearing and leaves the ear canal open so that patients who have been troubled by constant ear infections when using other types of hearing aids find they usually clear up very quickly.

Implantable middle ear device



New, more sophisticated types of hearing aids and implants are being developed all the time and there is now a middle ear hearing aid for moderate degrees of sensorineural deafness implanted during an operation (the Symphonix Soundbridge). It is still being assessed and is not yet widely available.

In the future there may be a hearing aid for sensorineural hearing loss in which the stimulating electrodes are implanted directly into the brain, but this is still at an early stage of development.

Who can benefit from a hearing aid?

In theory, anybody with a hearing loss, whatever their age, who is having difficulty in following a normal conversation or listening to the TV or radio will benefit. However, you must have some residual hearing, however little, in order to benefit from a hearing aid. If no sound whatsoever is being heard, a cochlear implant may be indicated.

How can you obtain a hearing aid?

In the UK, most hearing aids are available free through the NHS. Your GP may refer you directly to the hospital hearing aid department or to the local otorhinolaryngologist (ear, nose and throat surgeon).

In-the-ear hearing aids are not generally available in the NHS, but can be purchased privately. If you are going to buy a hearing aid privately, make sure that you go to a reputable dealer and ensure that there is at least a 28 day trial period so you can make absolutely sure that you are buying the right type of aid for your hearing loss and your lifestyle as they can be very expensive.

Links

- [Royal National Institute for the Deaf](#)
- [National Deaf Childrens Society](#)