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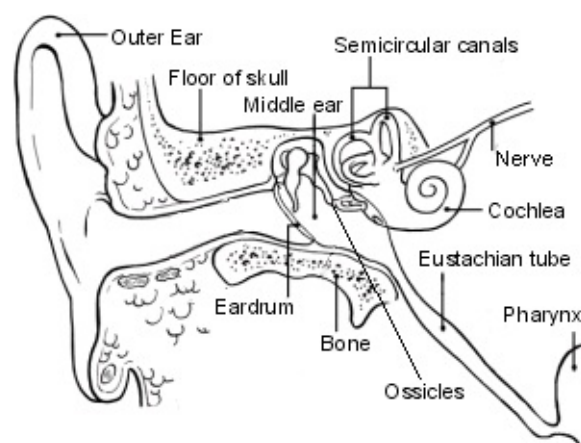
Hearing Loss of Older People (Presbycusis)

Most people over the age of 60 develop some hearing loss. The severity can vary greatly from person to person. Hearing aids and equipment to help when you have hearing loss can make a big difference to your quality of life. If you are concerned about your hearing, don't suffer in silence - discuss this with your doctor.

What is the ear like and how do we hear?

The ear is divided into three parts - the outer, middle, and inner ear. Sound waves come into the outer (external) ear and hit the eardrum, causing it to vibrate.

Behind the eardrum, in the middle ear, are three tiny bones (ossicles) - the hammer, anvil and stirrup (also known as the malleus, incus, and stapes). The vibrations pass from the eardrum to these middle-ear bones. The bones then transmit the vibrations to the cochlea in the inner ear. The cochlea converts the vibrations to sound signals which are sent down the ear nerve to the brain and allow us to hear.



What is presbycusis?

Presbycusis (sometimes written presbycusis) is the medical term for hearing loss that occurs in older people as they age. It is the most common cause for hearing loss in people aged over 55.

The hearing loss comes on gradually, often over several years. Both ears are usually affected equally. It is usually high-pitched (high-frequency) sounds that are most affected. For example, you may find it difficult to hear the telephone ringing or birds singing. You may not be aware of your hearing loss at first. You may only realise that your hearing is becoming poor when you have difficulty using the telephone or following a conversation in a group or noisy room. Friends or family may comment about the television being loud or having to repeat themselves more often to people with hearing loss.

Why does it happen?

Most people will tend to lose some of their hearing to a greater or lesser extent as they become older. Over half of people over the age of 60 have some degree of hearing loss. The exact cause of presbycusis is not known. The inner ear (cochlea) contains nerve cells that convert sound into nervous impulses which are sent to the brain. It is thought that most people develop presbycusis because these nerve cells don't seem to work as well and they become damaged.

It is probably a number of different things that contribute to this damage and it seems to be part of the ageing process. A number of things have been suggested as possible causes for the damage:

- Arteriosclerosis - hardening and narrowing of the blood vessels that supply blood to the cochlea, which means that less blood gets through. Heart disease, high blood pressure or diabetes may also make the situation worse.
- Exposure to noise over the years.

- Exposure to harmful chemicals produced by body cells over the years.
- Exposure to certain types of medication over the years.
- Smoking.
- Being overweight.
- There may also be some inherited (hereditary) reasons for presbycusis.

When a sufficient number of nerve cells are damaged, this is when you notice hearing loss. Most people do not go completely deaf. The severity of the hearing loss varies from person to person of the same age.

Can it be prevented?

There is little that can be done to prevent this age-related process. It is likely that being exposed to a lot of loud noise over long periods may make hearing loss worse when you are older. For example, if you work in a noisy factory, you should wear ear protection. It is also advisable to avoid excessive noise during leisure time (such as listening to loud music for long periods). See the Noise Association website under 'References' at the end of this leaflet for guidance as to safe sound limits.

A healthy lifestyle may help to reduce the likelihood of hearing loss later. For example, exercising healthily, eating healthily, and not smoking. This is partly because an unhealthy lifestyle increases the risks of conditions such as diabetes, heart disease, high blood pressure and diseases of the blood vessels. These conditions in turn seem to increase the risk of developing hearing loss.

Plugs of earwax may make any hearing loss worse. Therefore, from time to time it may be worthwhile having your ears checked for wax. Wax can usually be cleared out to allow the hearing to be as good as possible. [See separate leaflet called Earwax for details.](#)

Do I need any investigations?

Your doctor may suggest that they examine your ear to look for any problems such as earwax or problems with your eardrum that may be contributing to your hearing loss. Your doctor will usually refer you to an audiology clinic or ear, nose and throat (ENT) unit for assessment. A [hearing test](#) is performed to confirm the diagnosis and assess your level of hearing loss.

What is the treatment for presbycusis?

When there is a mild degree of hearing loss, most people manage well in normal situations of everyday life and may not need any treatment. Asking people to speak more clearly may be all that is required.

However, eventually, you may need a hearing aid. Hearing aids are provided by the NHS. A mould of the outer ear is made if a hearing aid is prescribed. This should mean it fits comfortably. There are several types of hearing aids. The most common type is worn behind the ear.

You may prefer to get your hearing aid privately. However, most NHS hearing aids are now digital, so make sure you aren't paying for something you can get free on the NHS. Organisations such as Action on Hearing Loss and ENT UK (listed under 'References' at the end of this leaflet) have a lot of information about hearing aids. This includes the types available, how they work, and how to learn to adjust to them.

Will my hearing go back to normal with a hearing aid?

Although modern hearing aids are excellent (they are much better in quality and also a lot smaller than they used to be), they cannot make hearing fully normal.

It must be stressed that it takes time to get used to a hearing aid. You have to get accustomed to the louder (amplified) sound - it can seem as if background noise is amplified too much. People sometimes give up on their hearing aid too soon, and it is common for hearing aids to be under-used. In time, most people *can* get used to hearing aids, and find them of great benefit. It is important that hearing aid users be fully instructed on how to use and look after their aid.

They really can make a big difference to your life once you get used to hearing aids, so do persevere. If you are having problems, contact your hearing aid clinic for advice.

You may have noticed signs in public places about hearing loops. Hearing aids have a setting which will allow these loops to make sounds clearer. They may be present, for example, in auditoriums, at train stations (so people with hearing aids can hear the announcements), and at counters in banks, shops or post offices.

Are there any alternatives to hearing aids?

Lip-reading can be helpful. Many people with hearing loss instinctively lip-read to some extent to help understand speech. In addition, lip-reading can be formally taught and learned - see 'Further help & information', below.

There are various devices which can help if you have hearing loss (whether you use a hearing aid or not). These are sometimes called hearing assistive devices. They include:

- Telephone amplifiers for ordinary telephones.
- Specially designed telephones for people with hearing loss.
- Devices to let you know when your telephone or doorbell is ringing.
- Lights and devices to let you know when smoke detectors, alarm clocks, etc are activated.
- Equipment to help you listen to the TV, radio, stereo, etc.

Some people find it helpful to have a hearing dog (the hearing equivalent of guide dogs).

Cochlear implants

If you have severe hearing loss, sometimes a hearing aid may not be enough to help improve your hearing. Or, you may have worn a hearing aid for a number of years but, because your hearing continues to worsen, the hearing aid may no longer be effective. Your doctor may suggest that you consider having a cochlear implant. This is an electronic device that is used to help people with severe hearing loss. The external part of the device is called an external speech processor. A microphone around the ear picks up sounds. These sounds are then converted into electrical signals. These signals are transmitted through the skin to an internal implant inside the cochlea. This implant allows the hearing nerve to be stimulated despite the fact that the cochlear cells are damaged. The brain picks up signals from the hearing nerve and you hear.

Guidance from the National Institute for Health and Care Excellence (NICE) states that implants can be considered for people who have severe hearing loss in both ears which has not improved with hearing aids. This includes people with presbycusis.

Electric acoustic stimulation is the use of a hearing aid and cochlear implant in combination. This helps to make use of the existing low-frequency hearing in the ear, while the cochlear implant helps to replace the missing high frequencies. When the two are combined, this helps to understand speech.

Active middle-ear implants

The active middle-ear implant is a device implanted in the middle ear, which mechanically vibrates the middle-ear structures. It designed for use in people with mild-to-severe hearing loss, who are unable to wear conventional hearing aids.

Further help & information

Action on Hearing Loss

19-23 Featherstone Street, London, EC1Y 8SL

Tel: (Information Line) Voice 0808 808 0123, Text 0808 808 9000

Web: www.actiononhearingloss.org.uk

Association of Teachers of Lipreading to Adults

c/o HearingLink, 27-28 The Waterfront, Eastbourne, East Sussex, BN23 5UZ

Web: atlalipreading.org.uk/

BSHAA- British Society of Hearing Aid Audiologists

Web: www.bshaa.com

NCIUA- National Cochlear Implant Users Association

Web: www.nciua.org.uk

Further reading & references

- [Hearing impairment - cochlear implants](#); NICE Technology Appraisal Guidance, January 2009
- [Sprinzl GM, Riechelmann H](#); Current trends in treating hearing loss in elderly people: a review of the Gerontology. 2010;56(3):351-8. Epub 2010 Jan 12.
- [Hearing aids and how to get one](#); ENT UK
- [Noise Dose Chart: Noise Exposure Limits](#); Noise Help
- [Hearing aids](#); Action on Hearing Loss
- [British Cochlear Implant Group](#)
- [McCormack A and Fortnum H](#); Why do people fitted with hearing aids not wear them? Int J Audiol. 2013 May;52(5):360-8. doi: 10.3109/14992027.2013.769066. Epub 2013 Mar 11.
- [Walling AD and Dickson GM](#); Hearing loss in older adults. Am Fam Physician. 2012 Jun 15;85(12):1150-6.

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