



Deafness in Later Life

This factsheet has been written for anybody who is interested in the way ageing affects hearing. It may be particularly useful if you think you might be affected by age-related hearing loss. The factsheet covers the following topics:

- Causes of age-related hearing loss
- Recruitment
- What to do if you are affected
- Available treatments
- Research into age-related hearing loss

WHAT CAUSES AGE-RELATED HEARING LOSS?

Gradual deterioration of the ear means that for most people, deafness is an unwelcome feature of later life. Although the degree of disability varies greatly, and some people adjust quite well to the slow decline in their hearing, for many this form of hearing loss, known as presbycusis, causes frustration, loneliness and depression.

Presbycusis occurs in both ears and affects over half of all people over 60 years old, making it the second most common cause of disability in older people behind mobility problems.

The most common form of hearing loss associated with ageing results from degeneration of a part of the inner ear which contains microscopic blood vessels. This type of hearing loss does not disproportionately affect the individual's ability to hear and understand speech. However, other changes within the inner ear associated with ageing, including the loss of the ear's tiny 'hair' cells, can have a more serious effect on the ability to understand speech. Vital components of speech sounds, usually the higher pitched consonants, which give intelligibility to speech, are missing or distorted and, for this reason, many people first experience difficulty in understanding women and children – the lower pitched male voices often being easier for them to hear and comprehend. As hearing deteriorates the ability to understand speech becomes more severely affected, especially in noisy surroundings.

Although the main cause of presbycusis is ageing, there are other factors to consider. Some people may have a genetic predisposition to presbycusis, whilst diet and lifestyle may also have a role to play. Exposure to noise in earlier life may hasten the onset of noticeable hearing loss, and a history of middle ear disease may also contribute. Other aggravating factors include medication frequently prescribed in later life (such as certain strong antibiotics), and osteoporosis.

Research has shown that hearing deterioration tends to halt at around the age of 70.

WHAT IS 'RECRUITMENT'?

A common phenomenon associated with presbycusis is recruitment. This occurs because whilst the threshold of hearing increases as hearing declines, the discomfort level (or level of tolerance to loudness) remains the same, resulting in a much narrower dynamic range of hearing.

A person with recruitment may experience increased difficulty understanding speech if there is more than one speaker, or if they are in a noisy environment. Moderately loud noise may also be physically uncomfortable, even painful.

WHAT IF I SUSPECT I AM AFFECTED?

If you are over sixty and have problems hearing conversations, TV, music or the telephone at volumes others find comfortable, you may be suffering from presbycusis.

Although the majority of older people are affected, a significant number find it difficult to seek advice and information on their hearing loss. Sometimes this is because they are unwilling to accept that they have a problem. In other cases they believe that nothing can be done to help them. However, treatments are available. Hearing aids, particularly some of the newer devices, can offer significantly improved hearing, and there are many ways that you can learn to adapt to a hearing loss. The first step towards accessing these treatments is to accept that there may be a problem and visit your family doctor.

Your family doctor will probably carry out some basic tests to determine whether or not you have a hearing loss. These may involve asking what sounds you can hear. (S)he will also ask questions about the reasons why you believe that you may have a hearing loss.

If your family doctor suspects you may have a hearing impairment, you should be referred to a local audiology clinic or Ear, Nose and Throat (ENT) department for further tests. If it is confirmed that you have a hearing loss, the audiologist or consultant will explain what treatment options are available.

WHAT TREATMENTS ARE AVAILABLE?

Presbycusis is incurable, but not untreatable. For most it will be a case of appropriate hearing aids. The development of digital hearing aids and other technological advances mean that modern hearing aids can match your hearing loss more closely than older aids were able to do. Deafness Research UK can provide free information to help choose the type of hearing aid that is most appropriate. However, hearing aids can only provide part of the answer.

Because speech discrimination is affected, lipreading classes can be extremely beneficial. With age-related hearing loss it is easy to misinterpret what is being said, and eventually your self-confidence can become eroded. As a result, you may begin to avoid social contact, and therefore become isolated and depressed. Lipreading classes are invaluable because not only do they help you to develop an important skill, they also give you the chance to meet others who have similar problems with their hearing. Hard of hearing people need not feel left out of conversations in a lipreading class, and can compare coping strategies with the other students.

Assistive devices can also help. These include loop systems (to help your hearing aid work better in certain places), TV listening devices, amplified telephones, telephones that use text instead of sound, and flashing or vibrating alarm clocks and doorbells. Some of these devices are used in conjunction with a hearing aid, whilst others are used on their own, but they all help to prevent hard of hearing people from becoming isolated.

WHAT RESEARCH IS BEING CONDUCTED INTO AGE-RELATED HEARING LOSS?

Hair cells

One of the main focuses of Deafness Research UK is to look at factors that may allow the regeneration of hair cells that detect sound in the inner ear. When these hair cells are damaged they cannot be replaced in mammals, which leads to progressive age-related hearing loss.

However it has been shown that birds possess the ability to replace these damaged hair cells. The task now being undertaken by Deafness Research UK is to try and understand why birds are capable of regenerating hair cells, and what prevents this occurring in mammals. This will hopefully lead to the future development of treatments to induce hair cell regeneration in humans in order to restore lost hearing.

Genetic factors

Noise, drugs and infections can damage hearing, but there is also a strong genetic element leading to hearing loss. Researchers from Deafness Research UK are working on identifying and understanding how deafness genes work.

This information will be valuable as it will help with the development of measures to prevent the onset of hearing loss, and even measures to reverse that which has already occurred whatever the cause. It will also allow definitive diagnosis of the cause of hearing loss and enable genetic counselling to be given to other family members where appropriate.

Hearing Aids

Deafness Research UK is currently working to develop better clinical methods to diagnose hearing loss for more effective prescription and tuning of hearing aids. These new methods will help accurately identify 'dead regions' in the inner ear. In these regions the hair cells that detect sound are completely non-functioning, therefore even if noises detected by those regions are amplified, no sound can be heard. This improved diagnosis of hearing loss will avoid amplifying sounds detected by the dead regions, which further impairs speech discrimination.

FURTHER INFORMATION

Contact the Deafness Research UK Information Service for further information about research into age-related hearing loss.

If any of your questions concerning age-related hearing loss have not been answered by reading this factsheet, contact the Deafness Research UK Information Service for further assistance. Our Information team will either answer your enquiry directly or refer it to one of our scientific or medical advisers.

Open: 9.00 a.m. to 5.00 p.m., Monday to Friday (a message can be left at other times).

Freephone: 0808 808 2222

Textphone: 020 7915 1412

E-mail: info@deafnessresearch.org.uk

or click the 'ask question' option from our website homepage:
www.deafnessresearch.org.uk

You can also get information from other organisations including:

Association of Teachers of Lipreading to Adults (ATLA)
PO Box 506, Henley, Stoke-on-Trent, ST2 9RE
Website: www.lipreading.org.uk email: atla@lipreading.org.uk

Hearing Concern Link
19 Hartfield Road, Eastbourne, East Sussex, BN21 2AR
Tel: 01323 638230 / Textphone: 01323 739998
Website: www.hearingconcernlink.org Email: info@hearingconcernlink.org

Royal National Institute for Deaf People (RNID)
19-23 Featherstone Street, London, EC1Y 8SL
Tel: 0808 808 0123 / Textphone: 0808 808 9000
Website: www.rnid.org.uk email: informationline@rnid.org.uk

Deafness Research UK is the only national medical research charity dedicated to helping people with deafness, tinnitus or other hearing problems.

Scientists are now predicting that within the next ten to fifteen years there could be a cure for some forms of deafness and much more effective treatments for tinnitus. Deafness Research UK is at the forefront of this work.

You can support us by making a donation or joining the Deafness Research UK League of Friends. For more information call us on 0207833 1733 or write to:

Deafness Research UK, 330-332 Gray's Inn Rd, London WC1X8EE
Charity no. 326915

This factsheet has been produced by Deafness Research UK, in consultation with our medical and scientific advisers. Whilst all reasonable efforts have been made to ensure the information and advice given is taken from reputable sources and passed to the public in good faith, no responsibility can be taken on the part of Deafness Research UK or its advisers for any error or omission. You should not act on any advice without first referring to your family doctor or another medically qualified adviser.

Reviewed: September 2007