Causes of hearing loss

Did you know that one in five Australians – over 3 million people – report that they cannot hear properly? A hearing loss may happen suddenly or gradually but it differs from most other disabilities in one important respect – it is invisible. This means that it often isn't obvious, and it often isn't understood.

What can stop us from hearing well?

A hearing loss can result if there is a problem at any point in the hearing pathway – in the outer, middle or inner ears, or in the complex auditory nerve pathway up to the brain.

Hearing loss can be described as **congenital** or **acquired**. A congenital hearing loss is one that is present at, or soon after, birth. An acquired loss is one that occurs later on.

We can also describe hearing loss in terms of *when* it occurs in the process of the development of speech. A **pre-lingual** hearing loss is one where the hearing is lost before a child has completely developed speech and language. It may be congenital or acquired in the first few years of life, and can affect how well a child learns to speak. A **post-lingual** hearing impairment means the hearing loss is acquired after speech and language has developed, which is more common.

Depending on which part of the hearing system is affected, a hearing loss is categorised as **conductive** or **sensorineural** (pronounced *sen-sorry-new-rol*), or a mixture of both.

Conductive Hearing Loss

This is caused by blockage or damage in the outer and/or middle ear. A conductive hearing loss leads to a loss of loudness, and can often be helped by medical or surgical treatment. Some of the causes of conductive hearing losses are:

- blockage of the ear canal by impacted wax or foreign objects.
- outer ear infection (sometimes a result of swimming)
- "glue ear" (middle ear infection), a common problem in young children
- perforated ear drum, maybe from a bad middle ear infection or a loud explosion
- ostosclerosis, which is an hereditary condition where bone grows around the tiny stirrup bone (stapes) in the middle ear
- partial or complete closure of the ear canal (known as atresia).

A conductive loss can be acquired (like an ear drum perforation) or congenital (like atresia).

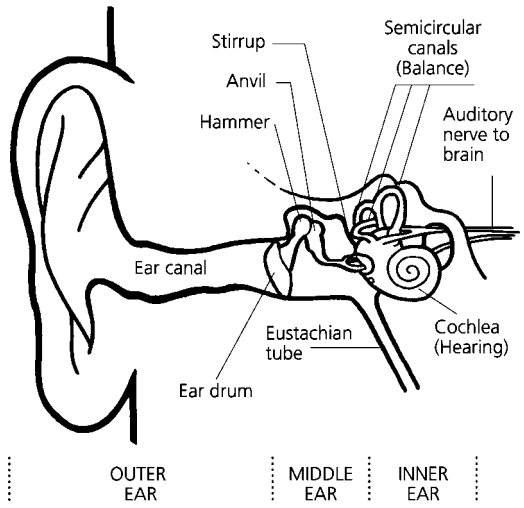
The degree of hearing loss caused by these different problems varies, but you cannot go completely deaf from a conductive hearing problem. In fact, it cannot cause any more than a moderately severe hearing impairment. This is because, at higher sound levels, sound waves travel through the skull. They "bypass" the conductive pathways of the hearing system and are picked up by the inner ear and hearing nerves.

If there is a blockage to the conduction of sound in the outer or middle ear, the amount of sound that is carried to the cochlea (or inner ear) is reduced. This means that the *quantity* rather than the *quality* of sound is affected.

If medical treatment is not possible, people with a conductive hearing loss generally find they benefit greatly from amplification provided by a hearing aid.

Sensorineural hearing loss

This is a result of damage to, or malfunction of, the cochlea (the sensory part) or the hearing



nerve (the neural part). Again it can be acquired or congenital. Examples of causes of an acquired sensorineural hearing loss are:

- The ageing process
- Excessive noise exposure
- Diseases such as meningitis and Meniere's disease
- Viruses, such as mumps and measles
- Drugs which can damage the hearing system (called ototoxic drugs)
- Head injuries

A congenital sensorineural hearing impairment may be the result of:

- Inherited hearing loss
- Prematurity, lack of oxygen at birth, or other birth traumas
- damage to the unborn baby due to a virus, such as German measles (rubella) or CMV (cytomegalovirus)
- jaundice, particularly when serious enough to require blood transfusion.

The best person to see about the possible cause of a hearing loss is an Ear, Nose and Throat specialist. He or she may arrange certain tests to eliminate some of the factors as the cause of a hearing loss. Parents who have a hearing impaired child may also wish to seek genetic counselling. This can be helpful in planning further children and also for finding out the chances of the child with hearing loss in turn having children with the same disability.

A sensorineural hearing loss usually leads not only to a loss of loudness but to a lack of clarity as well – the quantity *and* the quality of the sound is affected. This can sometimes limit the benefit that a hearing aid can offer as sounds may be loud enough but distorted.

There is rarely any medical treatment of a sensorineural hearing loss and so it is permanent.

Mixed hearing loss

This is a hearing loss where there is a problem in both the conductive pathway (i.e. in the outer or middle ear) and in the nerve pathway (i.e. the inner ear).

An example of a mixed hearing impairment is when there is a conductive loss due to a middle ear infection plus a sensorineural loss due to the ageing process.

Early warning signs of a hearing loss

- You can hear but not understand.
- You find it much harder to hear in noise and groups of people.
- You have difficulty understanding people unless they are facing you.
- You think people mumble or slur their words.
- You have to ask for repetition a lot.
- You need the TV up louder than others.
- You find you have misunderstood the topic and are embarrassed when you say the wrong thing.
- You avoid group meetings, social occasions, and even family gatherings because you have difficulty hearing.
- You don't hear the phone or door bell ring unless you are close to it.
- You have head noises, such as buzzing or ringing sounds (tinnitus).

If I suspect a hearing loss what should I do?

1. See your Doctor to check there is no obvious blockage in your ears, such as impacted wax or ear infection, that can be treated.
2. See an Audiologist for an expert assessment and advice. Children, war veterans and most pensioners are eligible to be seen at an Australian Hearing (formerly National Acoustic Laboratories) centre.

Children under 21 and most pensioners and war veterans are eligible for hearing help from Australian Hearing. There are permanent or visiting Australian Hearing centres in all capital cities and in many large towns around Australia. For more information, just ring 13 17 97 to be connected to the centre nearest you.

People not eligible for Australian Hearing help can arrange to see an audiologist at a hospital which has as Audiology Clinic, or consult an audiologist in private practice (look under "Audiologist" in the Yellow Pages).

If you would like advice or more information, call 131 797 to be connected to your local Australian Hearing centre.

***AUSTRALIAN HEARING* provides the best hearing care, the latest in hearing aid technology and leads the world in hearing research.**

If you would like more information, ring 13 17 97 to be connected to your nearest AUSTRALIAN HEARING Centre, or visit our website on **www.hearing.com.au**

May 2003