UNDERSTANDING HEARING LOSS

How Do We Hear?

Our ears are divided into three parts: The outer ear, the middle ear and the inner ear.

See information sheet: “Our Ears and How We Hear”

How Many People Have a Hearing Loss?

According to recent studies, hearing loss is conservatively estimated to affect 20% of the Australian population.

People who have a hearing loss can be divided into two main groups:
1. those who are hard of hearing and use speechreading and spoken language as their main form of communication
2. those who are Deaf and use sign language as their main form of communication

Whether people define themselves as Deaf or hard of hearing may depend on:
• the age they developed a hearing loss
• if Auslan (Australian Sign Language) is their first language with spoken English being acquired as a second language
• how much identity they have with the Deaf community (a people who share a common language, culture and history)

Types and Causes of Hearing Loss

Hearing loss can vary in degree and may be described as mild, moderate, severe or profound. A person may have normal hearing for low pitched sounds, but have a moderate or severe hearing loss for high-pitched sounds.

There are two main types of hearing loss:

1. Conductive Hearing Loss

This type of hearing loss occurs in the outer or middle ear and is often temporary. People with conductive hearing loss notice a reduction in the volume of sounds. The clarity of sounds is not usually a problem as long as the message is loud enough.

Possible reasons for being born with a conductive hearing loss:
• Craniofacial malformations (e.g. absent ear canal)

Possible reasons for developing a conductive hearing loss later in life:
• A build-up of wax in the ear canal
• Injury or damage to the outer or middle ear
• Foreign body blocking the ear canal
• Middle or outer ear infections
• Perforated tympanic membrane (ear drum)
• Fluid build-up in the middle ear
• Otosclerosis (bony growth affecting the movement of the ossicles, the three little bones in the middle ear)

2. Sensorineural Hearing Loss
This type of hearing loss occurs in the inner ear and/or the auditory nerve and is usually permanent. People with sensorineural loss notice a reduction in the volume of sound as well as a distortion of sound clarity. They may also have increased sensitivity to loud sound and significant problems hearing in background noise.

Possible reasons for being born with a sensorineural hearing loss:
• Birth injury and/or complications of prematurity
• Hereditary/genetic disorders or influences
• Maternal rubella and some other viral infections
• Ototoxic medication (medication that is damaging to the hearing system)
• Rh-induced haemolytic disease of the newborn

Possible reasons for developing a sensorineural hearing loss later in life:
• Complications following viral or bacterial infections (eg mumps, measles, viral meningitis)
• Complications following bacterial infections (eg bacterial meningitis)
• Ageing
• Exposure to loud noise  
  o excessively loud noise can cause immediate permanent damage  
  o loud noise can also cause a temporary hearing loss, which can become permanent with continued noise exposure
• Ototoxic medication (medication that is damaging to the hearing system)
• Head injury
• Temporary interruption of blood supply within the brain (eg stroke) or at ear level
• Tumours on the auditory nerve or brainstem
• Otosclerosis (starts out as a conductive hearing loss and extends into the inner ear)
• Meniere’s disease
Associated Hearing Problems and Conditions

Unilateral hearing loss (hearing loss in one ear)

Relying on hearing in one ear will lead to difficulty hearing in background noise and difficulty or inability to detect the location or source of a sound. The person will have to make sure that they are facing their better ear towards the sound they want to hear.

Hearing Loss due to noise damage

Hearing may be permanently damaged by exposure to loud noise. Some examples of potentially damaging sounds are gunshots, loud machinery, loud music, and listening through headphones at loud levels.

See information sheet: “Noise, Hearing Protection and You”
See information sheet: “Effects of Loud Music on Hearing”

Balance problems

Some people who have a hearing loss also have associated balance problems because the system that controls our balance is connected to the hearing system.

Tinnitus

Tinnitus is any sound heard in one or both ears or the head that does not originate from an external source. Most people experience tinnitus at some time in their lives. You may have experienced tinnitus yourself if you have been exposed to very loud noise and have a temporary hearing loss. Tinnitus may sound like a ringing in your ears, though people describe a variety of noises such as ‘crickets’ or ‘the wind’ or ‘the sea’. For about 17% to 30% of the population, tinnitus is constant and for 0.5% to 2% it is very distressing.

See information sheet: “Introduction to Tinnitus”

The Vicdeaf Rehabilitation team offers tinnitus counselling services to help people manage their tinnitus.

How is Hearing Tested?

A hearing screening test (preliminary hearing check) is a short test that determines whether a person has a hearing loss that requires further investigation. Results indicating potential hearing loss can be followed up by referral to an audiologist for a full hearing assessment.

A full hearing assessment should be carried out by an audiologist in a sound-proof booth (audiologists are university trained to carry out hearing assessments, the fitting of hearing aids and rehabilitation of people with a hearing loss).

The full hearing assessment includes a series of tests including air conduction hearing thresholds, bone conduction hearing thresholds and a speech discrimination test. Other tests that may be carried out include loudness tolerance testing and hearing aid evaluation.

This assessment will show how much hearing has been lost at each frequency (or pitch) in each ear and these results are recorded on a graph called an audiogram. The audiogram tells us the level of hearing loss for each frequency in each ear.

See information sheet: “What is an Audiogram?”
The Vicdeaf Rehabilitation team conducts regular adult hearing checks. Full hearing assessments for adults are available at hear service clinics.

How Does a Hearing Loss Affect People?

The main impact of a hearing loss is on the ability to communicate with other people. The degree of difficulty in communication tends to be related to the type and severity of the hearing loss.

**Background Noise**
Almost every person with a hearing loss, whether it is mild, moderate or severe, will have difficulty hearing in a noisy place.

People with normal hearing are able to listen in a noisy place by concentrating on the sounds they want to hear whilst ignoring the background noise. This is very difficult for a person with a hearing loss; especially those with a sensorineural hearing loss. These people may have trouble differentiating the speech sounds from the background noise, as the sounds all seem to blend together. Using a hearing aid is often not much help in a noisy place, because it will amplify the noise as well as speech. However, recent advances in hearing aid technology have allowed the design of more sophisticated hearing aids that can help reduce the levels of background noise.

High levels of background noise can occur in a group, at a restaurant or party, in a room with the TV or radio on and in a noisy classroom. The person with a hearing loss may have difficulty following conversation in all of these situations. It will help if the person with the hearing loss is close to the person speaking. The optimal distance is about one metre, as this allows the speaker’s face to be clearly visible without making his/her speech sound distorted.

**Concentration**
People with a hearing loss will need to concentrate much harder to follow a conversation, even if they wear a hearing aid. This can be very tiring. If they are sick, upset or tired, concentration will be affected and they will find it even harder to follow a conversation. It is important to encourage a person with a hearing loss to use relaxation strategies to maximise concentration and reduce the stress of listening.

**Listening in a Group**
This is an especially difficult listening situation. Groups tend to be noisy and people with a hearing loss often have difficulty understanding speech in background noise. There are lots of different voices in a group conversation and some may be easier to hear than others. A group conversation is often very quick, and there may be rapid changes of topic and speaker. The person with a hearing loss may therefore miss some words and may not be able to pick up the conversation again.

See information sheet: “Listening in a group”
See information sheet: “Communicating with people who are Deaf and hard of hearing”
See information sheet: “Conversation Tactics”
See information sheet: “Effective Strategies for Communicating with people who are hard of hearing”
See information sheet: “How not to say “I beg your pardon?”

How can you help a person who is hard of hearing?

When you are talking, you can help by:

- Being face to face (i.e. not talking from another room or from a distance)
- Getting the person’s attention before you start to speak
- Speaking clearly and a little more slowly than normal
- Removing any unwanted background noise (e.g. turning off TV or radio) as even quiet background noise can be distracting to the listener
- Repeating or rephrasing speech that is not heard
- Using gesture and natural facial expressions
- Being patient

See information sheet: “Communicating with People who are Deaf or Hard of Hearing”
See information sheet: “Deaf Culture and Communication – A Basic Guide”

Other Help Available

Hearing Aids

Hearing aids are worn either in the ear or behind the ear. They will pick up sound, make it louder and channel the louder sound into the ear. These days, with improved technology, hearing aids have become both smaller and more effective. While hearing aids are often a great help they do not restore perfect hearing.

Many people think that a person wearing a hearing aid will be able to hear in the same way as people with normal hearing do. This is not true. Generally, the greater the degree of hearing loss, the more distortion or loss of clarity occurs in the person’s hearing and the less effective a hearing aid will be. Even though the hearing aid will make speech louder, it will not make speech clearer if distortion is part of the person’s hearing loss. Sound through the hearing aid will then seem fuzzy and difficult to understand.

Service providers:

- The Commonwealth funded Office of Hearing Services issues Hearing Service Vouchers to eligible Australian citizens or permanent residents over 21 years of age. Eligible people include pensioners, war veterans and widows and defence force personnel. Eligible people are able to obtain hearing aids as well as regular hearing assessments, hearing aid repairs and batteries for a minimal cost. For advice on eligibility contact 1800 686 126.
• The Australian Hearing Service offers Commonwealth funded hearing services to children under 21 years of age. Contact 131 797 for further information.

• The hear**service** offers hearing assessments, hearing aid evaluations and the fitting of hearing aids at a reduced price for low income earners who are not eligible for the Office of Hearing Services.

• Adults who are not on a low income can obtain their hearing aids through any of the hear**service** audiology clinics or through a hearing aid consultant or an audiologist in private practice.

See information sheet: “Hearing Aids”
See information sheet: “A Guide to hearing aid use”
See information sheet: “Information for Family and Friends as well as the Hearing Aid User”

**Assistive Listening Devices**

There are many assistive listening devices for use with or without a hearing aid, such as:

• **TV or radio:** Devices to help overcome the problem of a group of people wanting to listen to the TV or radio at different volume levels. These devices can also improve the sound of the TV or radio for the person with the hearing loss. People who do not find these devices helpful can purchase a special teletext TV and read the Supertext subtitles that are available on all prime time TV programs. Captioned programs are marked in TV guides with an S or cc.

• **Phone:** Devices to help people hear more clearly on the telephone and to alert them to the telephone ringing (eg louder bell, flashing light). There is also a device called a telephone typewriter (TTY), that enables people who are Deaf, hearing impaired or speech impaired to use the telephone system. This will display or print out a typed message. A TTY will only pick up messages from another TTY. However, there is a special service called the National Relay Service that enables phone calls to be relayed between TTY users and the wider community. This service is funded by the Commonwealth Government.

• **Alarms:** Devices to alert people to a doorbell, an alarm clock, a smoke alarm, or a baby cry alarm (eg louder alarm, flashing light and/or vibration source).

• **Hearing dogs:** Dogs that have been trained to let their owner know by touch when the doorbell, telephone bell or other alarm has sounded. The training and distribution of hearing dogs is a project of Lions Clubs of Australia.

See information sheet: “Devices for People who are hard of hearing”

hear**service** has a wide range of assistive listening devices on display and can provide information about retail costs and suppliers. Trial of these devices is available by appointment.

**Cochlear Implant**

The cochlear implant is an artificial hearing device that has also been known as the bionic ear. It is designed to produce useful hearing sensations by electrically stimulating nerves inside the inner ear. The cochlear implant has been developed for people with little or no hearing in both ears. It produces a sound which people can be taught to understand and is particularly useful for people who have lost their hearing after they have learned to speak. Children ten months of age or older can also receive the device. Further information about the cochlear implant is available from hear**service** or by contacting the Cochlear Implant Clinic on (03) 9929 8624.
**Tactics**

People with a hearing loss often rely on visual cues to help them. They will develop speechreading skills. These skills include lipreading and looking at facial expressions, gesture and body language. They can also develop tactics and strategies to help them in difficult listening situations, such as when there is a lot of background noise. These may involve:

- Positioning themselves near the sound they wish to hear
- Making sure they can see the speaker’s face easily
- Being prepared to ask for words or sentences to be repeated
- Using visual cues to help them get the message

*See information sheet: “Speechreading”*

The Vicdeaf rehabilitation team runs regular courses to help people develop skills to manage their hearing loss.

**Sign Language**

People born with a profound hearing loss may receive very little or no benefit from hearing aids. They will find it very difficult to learn to speak because they are not able to hear speech. Often it is easier or more appropriate to learn sign language. Australian Sign Language is called Auslan. Some people with a less severe hearing loss are able to use sign language and often learn to speak. They may choose to communicate in Auslan and also use some speech, lipreading and residual hearing to assist communication when appropriate. Some schools for children with a profound hearing loss teach in sign language.

*See information sheet: “Introduction to Auslan (Australian Sign Language)”*
*See information sheet: “Manual Communication and Sign Language”*

Vicdeaf runs regular Auslan classes to help people develop basic Auslan skills.

**Teaching Deaf Children**

In Australia, people with teaching qualifications can undergo a further course specialising in teaching deaf children. If they teach in a School for the Deaf, they may be required to teach in Auslan. Some deaf children are able to use their residual hearing to help them understand a spoken message. If this is the case, teachers will need to understand some of the special equipment used in some classrooms. FM radio systems pick up the sound of the teacher’s voice via a microphone that the teacher wears. This is then relayed via radio waves to a receiver worn by each child. The sound of the teacher’s voice is then channelled by the receiver to the child’s hearing aids.

**A Teacher of the Deaf** will work closely with speech pathologists to teach the deaf child to speak, if appropriate, as well as with audiologists who will assess the child’s hearing as needed and prescribe and monitor hearing aids.
Job Opportunities for Deaf and Hard of Hearing People

Providing those with a hearing loss have an equal access to education, there should be very few restrictions on the type of work they can carry out. The choice of job should take into account the conditions of communication, for example:

- Is the telephone to be used a great deal?
- Does the job require a lot of communication with the general public?
- Are there excessive levels of background noise?

There are devices such as TTYs, telephones with a volume control, fax machines, pagers and computers that can assist with communication in the workplace. Equal opportunity legislation protects people with a hearing loss from being discriminated against in the workplace.

Resources

- Your library will have books on many different aspects of hearing and hearing loss. Many university libraries also have excellent resources on hearing loss and deaf culture.
- Look up the Internet. Start with www.vicdeaf.com.au
- hearservice has a display of assistive listening devices for people to trial (by appointment only).
- Teachers of the Deaf.
- Talk to someone with a hearing loss (maybe grandparents).
- Simulate a hearing loss and see what it’s like! Try wearing earplugs for an hour to simulate a mild conductive hearing loss. You can also simulate a hearing loss by watching TV with the sound turned down low. What situations are particularly difficult? How did you feel?

Information sheets included in this package

- Our Ears and How We Hear
- What is an Audiogram?
- Listening in a Group
- Speechreading
- Hearing Aids
- Information for Family and Friends of the Hearing Aid user
- Devices for People who are Hard of Hearing
- Noise, Hearing Protection and You
- Effects of Loud Music on Hearing
- Introduction to Tinnitus
- Communicating with People who are Deaf or Hard of Hearing
- Introduction to Auslan
- Manual Communication and Sign Language
- A Guide to hearing aid use
- Deaf Culture and Communication – A Basic Guide
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- Conversation Tactics
- Effective Strategies for Communicating with people who are hard of hearing
- How not to say “I beg your pardon?”
AN ACTIVITY FOR CLASSROOM OR SMALL GROUP DISCUSSION

“A Hearing Loss Will Affect Different People in Different Ways”

Consider three different people with a hearing loss.

1. A two-year-old girl who was born with a profound hearing loss (very little hearing at all).
2. A young man of twenty, who has suddenly lost some of his hearing (moderate to severe hearing loss).
3. A grandfather who complains that people mumble (moderate hearing loss).

What sorts of issues will these three people have to cope with? Consider some possible solutions. Some ideas for discussion are listed below.

The two-year old:
The girl’s parents will need to consider:

- Will hearing aids or assistive listening devices help her?
- What language should she learn (spoken or sign language or both)?
- How will the family communicate with her?
- What is the best type of school for her? Does a regular school have extra support services to assist her teacher as well as the child directly? Would a school for Deaf children be preferable?
- How will she cope with secondary/tertiary education? Are there note taker or interpreter services available?

The twenty-year old:
This young man will have to reassess his situation and consider:

- Who can he go to for advice about study, work and/or lifestyle issues?
- Will hearing aids or assistive listening devices help and if so, what types?
- If he is studying, what help can he get to hear the lecturers?
- If he is working:
  - Can he continue to work in the same job? How will he manage? Who can he ask for assistance?
- How will he tell his employer and fellow employees about ways to help him communicate? Are there any services that can help him to do this?
- Should he change to a job that does not require him to communicate as much?
- Will the hearing loss affect his self-esteem? Will he be grieving? Why?
- How will his family and friends adjust to this new situation? How will they learn new strategies to help communication?
- How can he protect his remaining hearing?

The grandfather:
This older man will need to consider:

- What impact the hearing loss will have on his social life (eg at the Bowls club, at the RSL).
- What will happen if he can’t hear the phone or the doorbell ring? What could he do about this?
- Will the hearing loss make him tired or irritable? Why? What could he do about this?
- How will he manage at noisy family gatherings?
- How will he feel about using hearing aids and new technology? How will he know where to go for help?

As you can see, the needs of these three people are very different. Their life experiences are different. The number of family members around them, and the support they receive will be different. They will need to be able to communicate with different types of people for different reasons. Keep in mind that the young man and the grandfather already have a language so they won’t need to learn a new one, but they will need to learn new coping tactics and strategies.

People may experience a hearing loss at any age!

- How would you cope with a hearing loss?
- Are there any things you could do to prevent getting one?