Faculty of Medicine, Dentistry & Health Sciences

Melbourne Audiology & Speech Pathology Clinic

Hearing Loss

HOW THE EAR WORKS

Sounds waves are vibrations through the air. When we hear, sound travels along the ear canal and vibrates the ear drum (tympanic membrane). The vibration of the ear drum causes movement of the three bones in the middle ear. These bones move against the cochlea (the hearing organ) and pass the vibrations to thousands of special hair cells inside it.

The hair cells send electrical signals along the nerves to the brain, where we perceive the sound.

DEGREE OF HEARING LOSS

Mild: Easy communication in most situations, with some difficulty in noisy environments, hearing over a distance, or if the speaker is looking away. A hearing aid may be of assistance for people who have a mild loss.

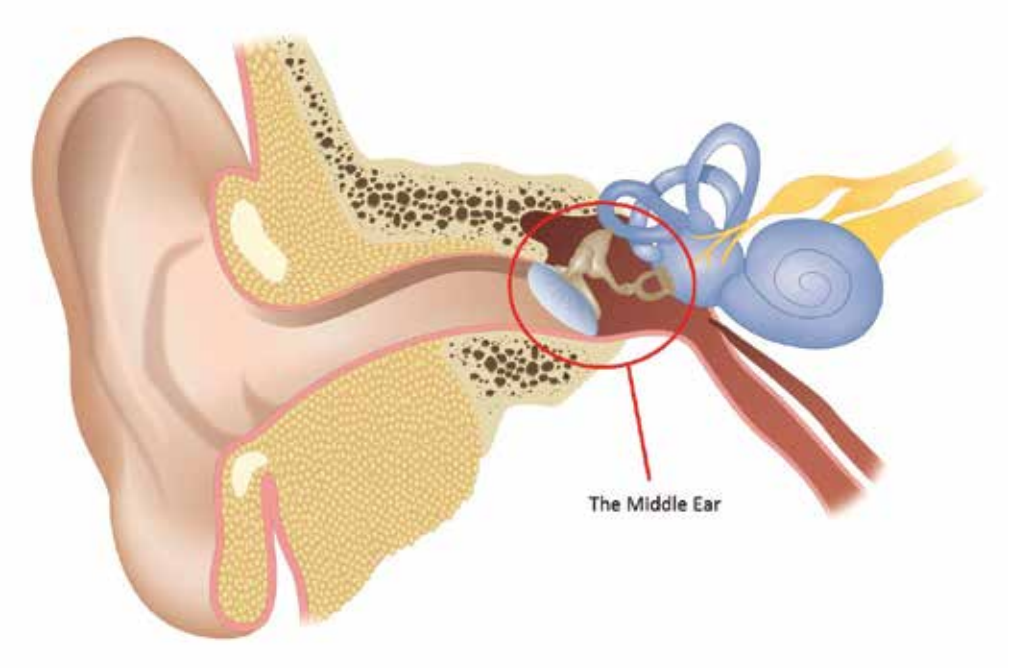
Moderate: Easy communication only in quiet, face to face situations, with some difficulties on the phone, listening to TV, in noise or over distance. People with moderate hearing losses usually will benefit from hearing devices.

Severe and Profound: Significant difficulty communicating in all environments, nearly always relying on hearing devices to improve communication.

TYPES OF HEARING LOSS

Sensorineural Hearing Loss:

Caused by a loss of sensitivity of the hearing organ (the cochlea) or the hearing nerves, usually permanent. Sensorineural hearing loss is a common feature of ageing in older people. It may also be caused by some infections or viruses, by diseases (such as Meniere's disease), by head injuries or exposure to loud noise. In some people it is present from birth. People with sensorineural hearing loss often complains about the loss of speech clarity.



Conductive Hearing Loss:

Caused by a problem in the middle or outer parts of the ear, and may often be corrected by medical or surgical treatment. Conductive hearing loss is common in young children, as a result of middle ear infection, blockage or fluid build-up in the middle ear. Other causes include malformations of the middle or external ear, diseases such as otosclerosis, injuries, perforations of the eardrum, or even a plug of wax in the ear canal.

Mixed Hearing Loss:

A mixed hearing loss is a combination of both conductive and sensorineural hearing losses. This may be caused by single disorders, such as otosclerosis, or by a combination of two unrelated problems.

INCIDENCE OF HEARING LOSS IN AUSTRALIA

39% of people aged between 55-90 years have a hearing loss (Blue Mountains)

84% of people in nursing homes have a hearing loss (Worrall et al)

3% of 40 year olds have a hearing impairment (Australian Hearing)

SIGNS OF HEARING LOSS

- Thinking that people mumble or do not talk clearly.
- Having difficulty hearing people clearly if they are not facing you.
- Difficulty hearing in groups of people, or when there is background noise.
- Asking for people to repeat what they have said.
- Avoiding some situations because you have difficulty hearing.
- Needing the TV volume louder than other listeners.
- Difficulty hearing clearly over the phone, or not hearing the phone ring.
- Experiencing noises in the ears (tinnitus).

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References:

Worral, L., Hickson, L. and Dodd, B. (1993) Screening for communication impairment in nursing hostels. Australian Journal of Human Communication Disorders, 21, 53-64

The Prevalence, Risk Factors and Impacts of Hearing Impairment in an Older Australian Community: the Blue Mountains Hearing Study, 2002 Libby Harricks Memorial Oration delivered at the ASA conference in Melbourne, delivered by Paul Mitchell on 19th March 2002