

Hearing Assessment

A hearing assessment is the first step in diagnosing and treating hearing loss. This assessment involves a range of tests, including pure-tone audiometry, speech discrimination/audiometry testing, and tympanometry.

What are the signs that I may need a hearing assessment?

There are several signs that a person may have hearing loss. Below are some of the more obvious signs that a person may need a hearing assessment:

- Voices sound muffled in conversation
- TV volume is louder than what family members/friends would like
- Difficulty understanding people in the presence of background noise [e.g. at restaurants, big gatherings, work meetings]
- Needing people to repeat themselves
- Withdrawing from social situations
- Feeling tired or stressed from straining to hear people

What tests will be performed?

Pure-tone audiometry

This hearing test is used to determine your sensitivity to auditory stimulus. It uses a series of pure tones to identify the softest level you can hear across a range of frequencies in each ear. It's subjective and behavioural as it relies on patient response. Pure-tone audiometry determines the

degree, shape and type of hearing loss in each ear. It also indicates whether further referral to an Ear, Nose and Throat [ENT] specialist is required.

Speech audiometry

Speech audiometry assesses how clearly a person can hear and distinguish speech. It is used to confirm the audiogram, it provides information regarding discomfort or tolerance to speech stimuli, and gives information on word recognition abilities. It can also provide an indication of how successful a hearing aid may be.

Tympanometry

Tympanometry is used to assess middle ear function. It is a quick and painless test that provides valuable information concerning the middle ear system. It works by creating a small change in air pressure within the ear canal and records the movement of the tympanic membrane [eardrum] in response.

Tympanometry can identify if there is a perforation in the eardrum, middle ear fluid, patent grommet, eustachian tube dysfunction, or other medical conditions of the ear.

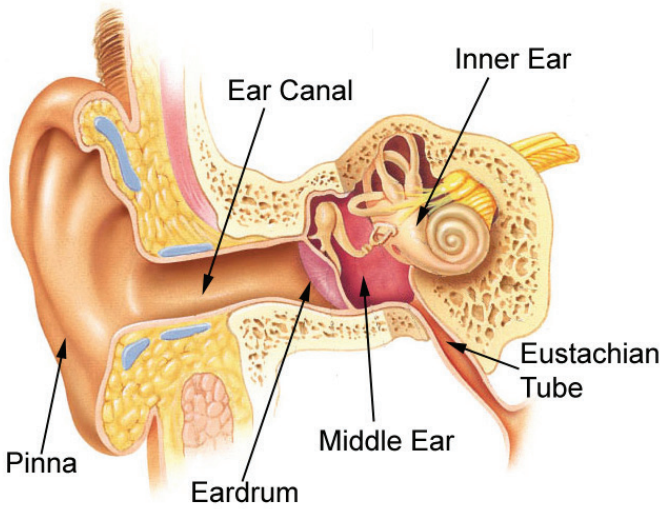


Diagram of the human ear¹

Types of hearing loss

There are three types of hearing impairment:

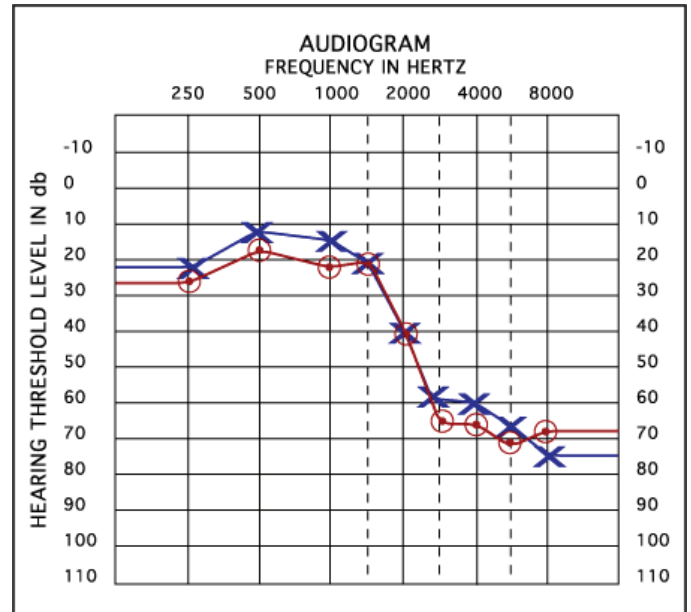
- **Sensorineural:** damage to the cochlea or cochlear nerve.
- **Conductive:** damage or blockage to the middle ear, which may affect either the eardrum or the three tiny bones in your ear. For example, an ear infection or fluid behind the ear drum.
- **Mixed:** is a result of a combination of both sensorineural and conductive hearing losses.

Severities of hearing loss

Hearing loss is measured in decibels hearing level [dBHL]. Conversational speech is around 65dBHL. The degrees of hearing loss are listed below:

- **Mild (21-45 dBHL):** difficulty understanding soft sounds.
- **Moderately-severe (61-70 dBHL):** difficulty hearing conversational speech in any setting.
- **Severe (71-90 dBHL):** conversational speech cannot be heard, even in quiet settings.
- **Profound (91+ dBHL):** hearing no speech or

sound at all. People with profound hearing losses are usually very reliant on hearing devices and may benefit from a cochlear implant.



After the hearing assessment

Once the hearing assessment has taken place, your audiologist will explain the results of your tests, and will provide information on how to proceed. The next step will depend on what the results have shown, but this may or may not include a discussion on hearing aids and whether they would benefit you. There is no obligation to proceed with a hearing aid fitting, so don't hesitate to take the time to think about this should you need to.

Should your results indicate that further medical treatment is required, your audiologist will explain this to you, and usually write a detailed letter to your GP outlining the need for further treatment. Your GP will then either treat you themselves, or refer you to an ENT specialist for treatment.

Who to contact?

- Your GP
- Audiologist
- Ear, Nose and Throat specialist
- Better Hearing Australia
www.betterhearingaustralia.org.au

References

1. MDhealth.com. Parts of human ear and their functions. [Image on internet]. 2017 [updated 2017 Oct 15; cited 2017 Oct 16]. Available from: <http://www.md-health.com/Parts-Of-The-Ears.html>
2. Clearly Hearing. How to read audiogram results. [Image on internet]. 2016 [cited 2017 Oct 16]. Available from: <https://www.clearlyhearing.com/pages/audiogram>