

# Diagnosing a hearing loss

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In adults, hearing loss may be very gradual, as in age-related hearing loss, or it can be very sudden, as in some viral infections of the inner ear. If you, your friends or your family think that your hearing is deteriorating, you should see your GP.

If you experience hearing problems, there are a range of tests available, usually at an audiology clinic of the local hospital or health centre. A number of different professionals may be involved in testing and treatment of hearing loss.

- an ear, nose and throat (ENT) specialist, also called an otolaryngologist
- an audiovestibular physician or paediatrician (doctor specialising in hearing problems)
- an audiologist (a specialist in the testing of hearing and fitting of hearing aids)

When examining a person with hearing loss, a doctor will want to know how the hearing loss has developed and what sort of problems it causes.

He or she will also perform a physical examination. A special electronic device with headphones (an audiometer) and other equipment is used to test the degree of hearing loss.

## **Hearing tests**

### Whispered speech test

Your doctor may use this as a basic screening test by whispering words behind you and asking if you can hear anything.

### Tuning fork test

Different tuning forks can be used to test hearing at a variety of frequencies.

### Pure tone audiometry

An audiometer produces sounds of different volumes and pitch (frequencies). During the test, you are asked to indicate, usually by pushing a button, when you hear a sound in the headphones. The level at which a person cannot hear a sound of a certain frequency is known as their threshold.

Hearing loss is measured in decibels hearing level (dBHL). A person who can hear sounds across a range of frequencies at 0 to 20dB is considered to have normal hearing. The thresholds for the different types of hearing loss are as follows:

<b>Mild</b>	21-40 dB
<b>Moderate</b>	41-70 dB
<b>Severe</b>	71-95 dB

The RNID (Royal National Institute for Deaf People) offers the following definitions of deafness:

#### *Mild*

People who have difficulty in following speech, particularly in noisy situations. The quietest sound they can hear with their 'better' ear averages between 25 and 40 decibels.

#### *Moderate*

People having difficulty following speech without a hearing instrument, but able to use an amplified telephone. The quietest sound they can hear with their 'better' ear is between 40 and 70 decibels.

#### *Severe*

The severely deaf need to rely on lip-reading, even when using a hearing instrument. The quietest sounds they can hear in their 'better' ear are between 70 and 95 decibels. They may prefer to use sign language.

#### *Profound*

Those who are profoundly deaf rely on lip-reading and may use sign language. The quietest sounds they can hear in their 'better' ear average 95 decibels or more.

Profoundly deaf people, who cannot hear sounds quieter than 95dB, often communicate using sign language and lip reading. However, cochlear implants or hearing aids can now provide an alternative, allowing oral communication.

If a sensorineural cause is suspected, a number of tests can be performed to pinpoint where the problem lies.

**Otoacoustic emissions.** This measures the responses the cochlear makes to sounds produced by a probe placed in the outer ear.

**Auditory brainstem response.** This measures the activity of the cochlear, auditory nerve and brain when a sound is heard.

None of these hearing tests are uncomfortable.

### **Other tests**

If the cause of the hearing loss seems to be due to a brain abnormality, a magnetic resonance imaging (MRI) scan of the head may be recommended.