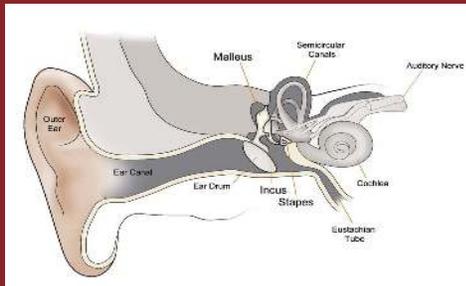


Hearing Loss

What is Hearing Loss?

Hearing loss is a symptom of a variety of conditions affecting the hearing organ or its nerve connection to the brain. It may be caused by problems affecting the transmission of sound through the eardrum and bones of hearing (called ossicles) to the cochlea (the organ of hearing), or it may be due to problems in the cochlea and the auditory nerve that connects the cochlea to the brain (Figure 1).



Conductive hearing loss is caused when something interferes with the transmission of sound from the ear canal to the cochlea. Sensorineural hearing loss is caused when there is a problem with the cochlea, or the nerve connection from the cochlea to the brain.

What Causes Hearing Loss?

Conductive hearing loss can be due to problems in the ear canal, ear drum (tympanic membrane) or the middle ear bones (ossicles). These three bones are called the Hammer, Anvil and Stirrup (or Malleus, Incus and Stapes).

In children the commonest type of hearing loss is conductive hearing loss. This is usually due to fluid being trapped behind the eardrum. This condition is called glue ear, or Otitis Media with Effusion (OME). The fluid stops the eardrum from vibrating. Sometimes there are other causes for childhood conductive hearing loss.

Rarely children may be born with poorly formed middle ear bones, or these structures can be damaged through ear infection.

Conductive hearing loss in adults is less common, but may be due to problems with the bones of hearing or occasionally glue ear. Heavy wax accumulation in the ear canal can also cause a mild degree of conductive hearing impairment.

Infection which damages the ossicles may lead to conductive hearing loss. One such condition is called cholesteatoma. Here infected skin grows around the ossicles. This can restrict movement of the ossicles or even damage their structure and connections. Other conditions may affect the ossicles, for instance the stapes bone can become attached to the surrounding bone which stops it transmitting sound. This is a condition called otosclerosis.

Sensorineural hearing loss is due to loss of sound sensing cells in the cochlea (These are called hair cells) or damage to the nerves that take hearing signals to the brain. There are many causes of this type of hearing loss.

Age related hearing loss is sensorineural, and due to loss of hair cells with ageing. It is the commonest cause of hearing loss in adults. Sensorineural loss can also be due to excessive noise exposure in both work situations (industrial noise damage) or through excessively loud music exposure (recreational noise damage). Other causes of sensorineural hearing loss include some prescribed medication, and some infections.

Children can also suffer from sensorineural hearing loss, and for some children this is an inherited disorder that may even be present at birth. It can vary from a mild hearing loss to severe deafness.

Finally it is worth remembering that hearing loss can be due to a mixture of conductive and sensorineural causes.

Some types of sensorineural hearing loss require urgent treatment. Please seek medical advice immediately if :

1. You lose your hearing suddenly ie over just a few hours or days
2. If your hearing loss is associated with ear discharge, dizziness or ear ache

What are the symptoms?

Most adults first start to notice difficulty in following conversation when there is background noise or when more than one person is talking. Often their friends will complain that they don't listen or that they turn the television volume up too loud. They may become increasingly withdrawn and frustrated that they cannot socialise easily.

In children, parents find that they might be inattentive, or ignore instructions or appear naughty. Listening to the television at high volumes is common and some times the child's teachers will complain. Young children with delayed speech production should always be assessed for hearing loss.

What should you do if you suspect hearing loss?

The Royal National Institute for the Deaf offers a telephone screening test (http://www.rnid.org.uk/howwehelp/hearing_check). In most circumstances you should see your doctor, who will be able to examine you for wax impaction and look for signs of ear disease. Your doctor can then arrange hearing tests and if necessary review by an ENT consultant.