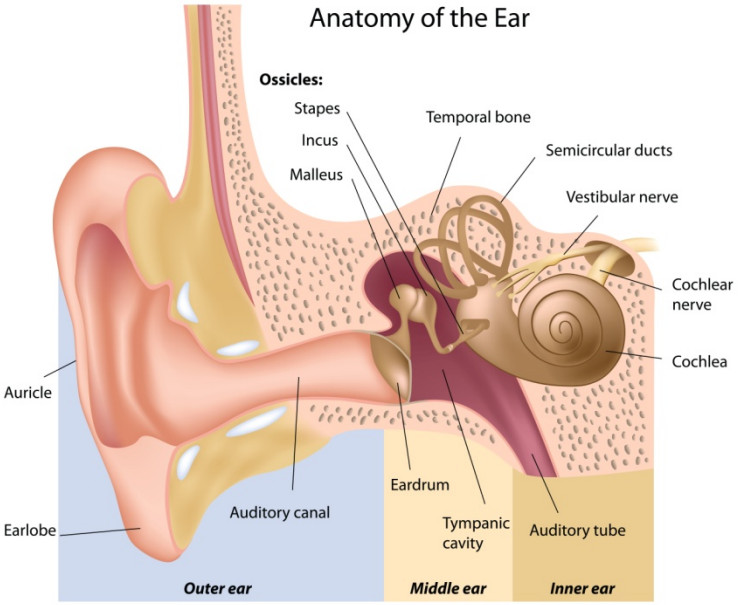
Types of hearing loss

Sensorineural hearing loss (SNHL)

Sensorineural hearing loss is a term that is used to describe a problem with the processing of sound. It is a loss of the ability to convert sound into electrical impulses that the brain can understand or a loss of the brain's ability to transmit and process the electrical impulses.



The term sensorineural hearing loss is usually used when describing the results of a standard hearing test. It is used if the hearing test has ruled out a conductive cause for the hearing loss (see conductive hearing loss below).

"Sensorineural" can actually be further divided into sensory and neural type losses. This distinction can be made with additional testing, although in most cases of SNHL it is not necessary to have any further testing performed.

A sensory loss is the most common type of hearing loss and is a hearing loss caused by the cochlea. The cochlea is filled with millions of tiny hair cells that vibrate in response to sound waves. The vibrations of the hair cells cause chemical changes which produce an electrical impulse. This is how the brain is able to interpret sound waves.

In a sensory loss the hair cells have been damaged. The more damaged hair cells there are the more severe the hearing loss. Hair cell damage can occur as a result of ageing, noise exposure or chemical damage as well as a variety of other less common causes.

A neural loss is far less common than a sensory loss. It is a problem with the transmission of information through the auditory pathways of the brain. Some children are born with neural losses and they may be caused by the absence of a nerve or by the nerves not firing together. Neural losses may also be acquired following brain injuries.

Sensorineural hearing loss is most commonly treated with hearing aids or implantable devices. Your audiologist will be able to give you more specific advice about your options.

Conductive hearing loss (CHL)

A conductive hearing loss occurs when sound can't travel through the outer or middle ear the normal way.

Conductive hearing loss may be caused by a physical blockage in the system, such as in the case of wax build up or ear infections.

It may also happen if something causes the system to become less flexible. This is the case in a condition called otosclerosis which causes the joints of the small middle ear bones to stiffen.

Often CHL may be able to be fixed. This may be by having wax removed, by taking antibiotics to clear up an infection or in certain cases by having surgery to correct any problems. When a CHL is first

diagnosed your audiologist will send you for medical opinion and if surgery is possible an Ear, Nose and Throat specialist will be able to advise you of your options.

In cases of CHL the cochlea and auditory pathways of the brain function normally, but the sound arrives at a softer volume. In cases where the loss can't be fixed hearing aids can be helpful by using higher volume to push through the problem so that the sound is heard like normal in the cochlea.

Implantable devices for CHL can bypass the problem completely by sending the sound through the skull bones directly to the cochlea. Your audiologist will be able to discuss your hearing aid and implantable options for CHL.

Mixed hearing loss (MHL)

The term mixed hearing loss is used to describe a hearing loss that has both sensorineural and conductive components. For example this may occur if someone has an underlying noise induced hearing loss and then also develops a wax blockage.

Just as with a CHL the conductive component of MHL may be able to be fixed. However hearing aids or implantable devices may still be required to treat the sensorineural component of the loss.

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