

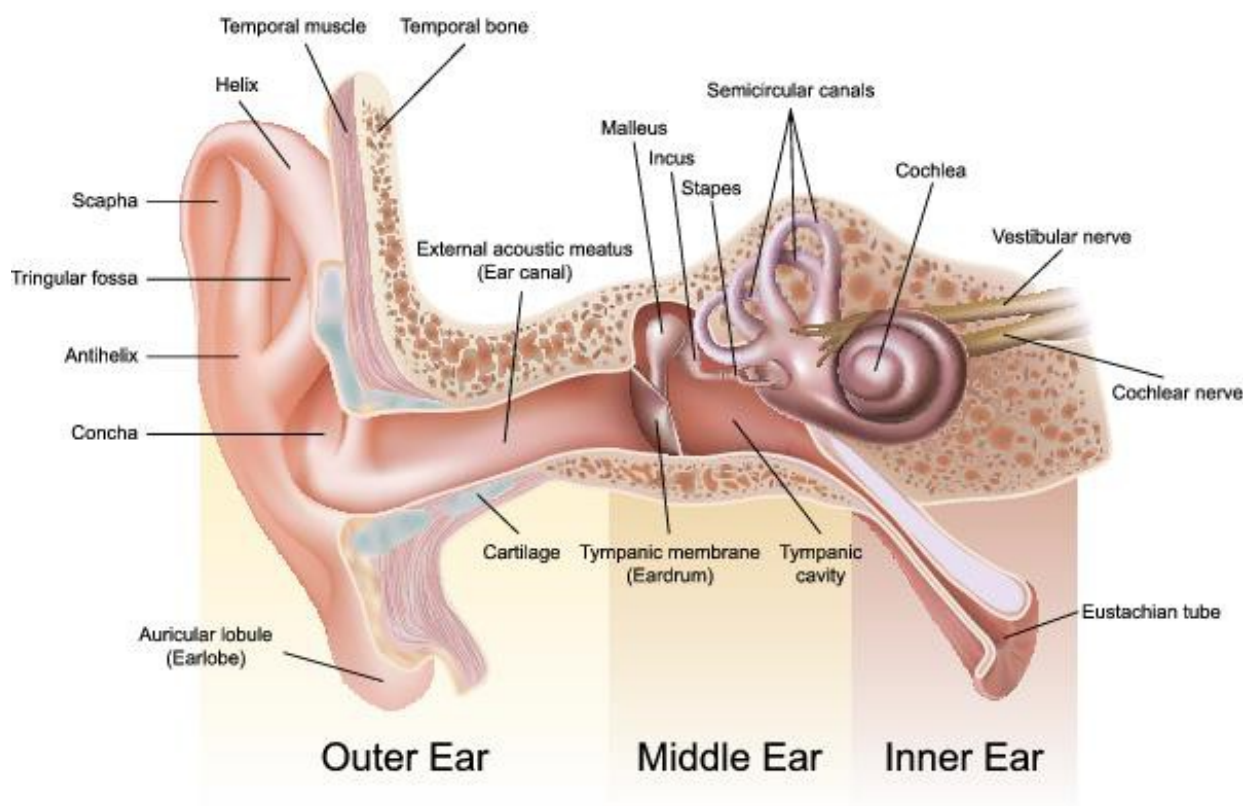
Understanding hearing loss

Hearing is one of the five senses. It is a complex process of detecting sound and attaching meaning to it. The ability to hear is critical to communication and navigating the world around you.

The human ear is a fully developed part of the body at birth and responds to sounds that are very faint, as well as sounds that are very loud. Even before birth, infants respond to sound.

So, how do we hear?

Anatomy of the Ear



The auditory system can be divided into two main sections: the peripheral auditory system and the central auditory system. The peripheral auditory system consists of the outer ear, the middle ear and the cochlea (inner ear). The outer ear consists of the external ear (pinna), the ear canal and eardrum, also known as the tympanic membrane. Sound travels down the ear canal, striking the eardrum and causing it to move or vibrate.

The middle ear is the space behind the eardrum that contains three small bones called ossicles. This chain of tiny bones is connected to the eardrum at one end and to an opening in the inner ear at the other end. Vibrations from the eardrum will pass through the ossicles and into the inner ear. The ossicles are the smallest bones in the entire human body.

The inner ear is a fluid-filled structure that contains specialized cells called cochlear hair cells. Vibrations passed into the inner ear cause changes in these tiny hair cells, resulting in the generation of an electrical signal that enters the central auditory system. The electrical signal produced in the peripheral auditory system is then relayed through the central auditory pathways to the auditory cortex, where it is interpreted as sound.

You might have hearing loss if you . . .

Socially:

require frequent repetition.

have difficulty following conversations involving more than 2 people.

think that other people sound muffled or like they're mumbling.

have difficulty hearing in noisy situations, like conferences, restaurants, malls, or crowded meeting rooms.

have trouble hearing children and women.

have your TV or radio turned up to a high volume.

answer or respond inappropriately in conversations.

have ringing in your ears.

read lips or more intently watch people's faces when they speak with you.

Emotionally:

feel stressed out from straining to hear what others are saying.

feel annoyed at other people because you can't hear or understand them.

feel embarrassed to meet new people or from misunderstanding what others are saying.

feel nervous about trying to hear and understand.

withdraw from social situations that you once enjoyed because of difficulty hearing.

Medically:

have a family history of hearing loss.

take medications that can harm the hearing system (ototoxic drugs).

have diabetes, heart, circulation or thyroid problems.

have been exposed to very loud sounds over a long period or single exposure to explosive noise.

Hearing loss causes and types

Sensorineural

Approximately 95 percent of hearing loss in the adult population is sensorineural in nature. In this type of hearing loss, the problem is due to damage to or degeneration of the inner ear (sensory) or auditory nerve (neural). The most common causes of sensorineural hearing loss are noise exposure, age, and hereditary predisposition. Other causes include drugs toxic to the ears, viral illness, disturbance of inner ear fluids, and invasion of the inner ear by excessive temporal bone growth.

Conductive

Approximately five percent of hearing loss in the adult population is conductive in nature. In this type of hearing loss, the problem is due to mechanical or structural damage to the outer and/or middle ear, resulting in reduced sound transmission to the inner ear. Common causes are impacted wax, perforated eardrum, middle ear infection, otosclerosis (stiffening of the middle ear bones), cholesteatoma, and congenital anomalies. In most other cases, medical intervention can result in partial or complete restoration of hearing.

Mixed

Mixed hearing loss is a combination of sensorineural and conductive hearing loss.

The impact of hearing loss

The inability to remain alert to everyday environmental sounds and maintain good communications with others can not only cause embarrassment, but may have serious consequences. A person with a mild to moderate hearing loss may be at risk without knowing it. Research has confirmed that hearing loss can have adverse effects on your ability to function and upon several aspects of life. This includes family relationships, enjoyment of social activities, and performance in work settings. Hearing loss can also cause potential danger from failing to hear warning devices or even hear the doctor's instructions regarding proper use of medications.

A Hearing Industries Association and National Council on Aging study clearly demonstrated that individuals who went untreated for hearing loss reported significantly more feelings of depression, paranoia, anger, and frustration than hearing aid users.

Other studies have linked hearing loss to serious health issues, including heart disease, early onset of dementia, and even diabetes. Hearing loss can greatly affect the quality of life for adults and children. Unmanaged hearing loss can have an impact on employment, education, and general well-being. The good news is that individuals who use hearing aids report significantly higher levels of involvement in social activities, fewer worries, and more positive social and family experiences.

Rehabilitation of hearing loss

If your Hearing Evaluation reveals hearing loss, your audiologist will work with you to develop a plan to improve your hearing and communication. This consultation will begin with a discussion about your hearing loss, your lifestyle, and your listening needs. This will help determine the technology that is recommended for you. It is important for you to understand your hearing loss and what you can expect from Hearing Aids if they are recommended for you.

With a better understanding of you and your hearing loss, your audiologist may recommend Hearing Assistive Technology (telephone amplifiers, TV devices, FM systems, audio-loops) to help you hear better in situations where hearing aids may be of less help (in a car, when the TV is on, or in groups of people talking). Hearing assistive technology can be used alone or with hearing aids.