

A firefighter in a dark green jacket and red pants stands in a forest, holding a red helmet. The scene is lit with warm, golden light, suggesting a sunset or sunrise. The firefighter has a circular logo on his jacket and helmet. The background shows tall, thin trees and some foliage.

UNDERSTANDING HEARING LOSS

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Your hearing • Our passion

How do you know if you have a hearing loss?

Chances are, you will be the last to know. Most hearing loss happens so gradually that you may not notice it until it becomes a big problem. Usually, the people around you will notice it first.

You may notice that you have to ask people to repeat themselves. You may find yourself straining to hear conversations. You may become tired from the effort required to listen. You may need to turn up the TV louder than before. Over time, you may find yourself avoiding social situations and losing interest in activities that you once enjoyed. You may feel that you can hear but cannot always understand what you hear. This is especially so when there is background noise. It may seem like people mumble sometimes.

Other times, you may understand perfectly. It is natural to think that the problem must be that other people are not speaking clearly.

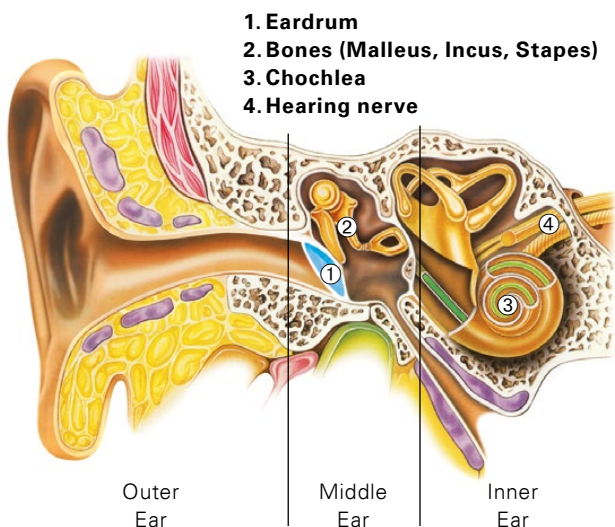
If so, you are not alone. According to the World Health Organization, approximately 360 million people worldwide have disabling hearing loss. Nearly one out of every three persons over 65 years of age are affected by hearing loss. In addition, the population of hearing-impaired people is getting younger and younger.

The impact of hearing loss on quality of life can be profound. Fortunately, there is help available.

Understanding Hearing Loss

So what causes this to happen? The human ear is a remarkably complex sound-analyzing system. It is capable of detecting sounds over an incredibly wide range of intensities and frequencies. A problem with any part of the system can cause a loss of hearing.

We usually describe the ear in three main sections: the outer ear, the middle ear, and the inner ear. The outer ear serves as a sound collector. Sound vibrations cause movement of the eardrum which is connected to a chain of three tiny bones in the middle ear. The middle ear intensifies the energy of the sound vibrations and delivers them to the cochlea in the inner ear.



The cochlea is the actual organ of hearing. Inside the cochlea are thousands of hair-like cells. These hair cells are sensitive to different frequencies and intensities of sound.

Sound vibrations entering the cochlea cause the hair cells to generate electrochemical signals. The hair cells are connected to hearing nerve fibers. The electrochemical signals travel through the hearing nerve fibers to the brain and the brain recognizes them as sounds.

The medical profession defines two main categories of hearing loss: conductive hearing loss and sensorineural hearing loss.

Conductive hearing loss occurs when a problem in the outer or middle ear interferes with the transmission of sound. For example, a large build-up of earwax, infections or growths in the outer ear, or holes in the eardrum can interfere with the transmission of sound. A disease called otosclerosis (which causes the tiny bones to become fixed and unable to vibrate) or genetic factors can also cause conductive hearing loss. Medical intervention can often correct or improve this type of hearing loss. When that is not possible, hearing aids can usually help.

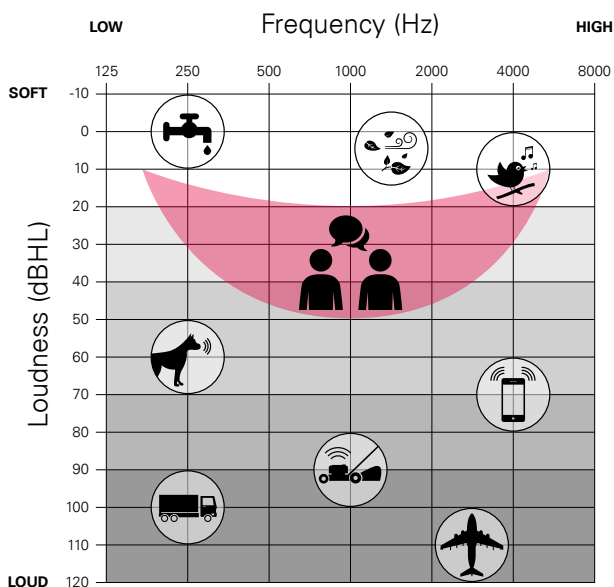
Sensorineural hearing loss is the term used to describe problems in the inner ear, either in the cochlea, hearing nerve or auditory pathway (often called nerve deafness). There are many causes for sensorineural hearing loss but the most common one is deterioration of the hair cells in the cochlea due to aging and/or exposure to prolonged loud sounds. 90% of all hearing losses are the sensorineural type. Medical intervention rarely helps this kind of problem. Fortunately, hearing aids can help.

Mixed hearing loss is a third type of hearing loss. It is simply a combination of conductive and sensorineural problems. Many people with mixed hearing loss are also able to benefit from hearing aids.

When hearing is damaged, typically the sounds in the higher frequencies begin to disappear first (e.g., the sounds of the birds singing). As the hearing loss worsens, the sounds necessary for understanding speech begin to be affected. Soft high-frequency consonants are no longer heard and it becomes difficult to reliably distinguish one sound from another. This is why you may find it difficult to follow the conversation.

Next Steps

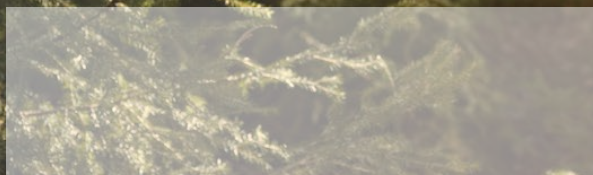
The sooner you become aware that you may have a hearing loss, the sooner you can have a thorough hearing evaluation and begin to benefit from the appropriate treatment. When people finally try hearing aids, they are usually amazed to discover how much they have been missing! If you or your family members have any questions or concerns about hearing loss, ask your medical doctor or hearing care professional for further information. More information is also available in the Bernafon booklet "Understanding Hearing Aids" and on our website www.bernafon.com.



Hearing and understanding are basic human needs. Hearing problems and the resulting social consequences represent a challenge to society. We believe in a world where people with restricted hearing can communicate again thanks to advanced technology.

Visit **www.bernafon.com** for more information about hearing and hearing loss.

Your hearing care professional:



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