



# Understanding Hearing Loss

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## ② 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.

The people around you will notice it first. You may have to ask people to repeat themselves, especially if there is any background noise. You may make mistakes and need to turn up the TV louder than before. You may fail to hear the doorbell, the telephone and/or warning signals.

As the hearing loss worsens, you may find yourself straining to hear conversations and becoming tired from the effort required to listen. Over time, you may find yourself avoiding social situations and losing interest in activities that you once enjoyed.



Approximately 500 million people worldwide suffer from hearing loss. Although nearly 20 % of persons between the ages of 65 and 74 have a significant hearing loss, it may surprise you to learn that the population of hearing-impaired people is getting younger and younger, largely due to excessive noise exposure. A recent survey by the Better Hearing Institute in the US found that 14.6 percent of baby boomers (ages 41 – 59) have a hearing problem and 7.4 percent of Generation Xers (ages 29 – 40) already have hearing loss.

Hearing loss has been called the invisible handicap yet the impact on quality of life can be profound. A study by the NCOA (National Council on Aging) in the US revealed the following: Hearing impaired persons with untreated hearing loss report increased feelings of depression and anxiety, increased paranoia and social phobias, more anger and frustration, increased introversion and feelings of



self criticism. They also report decreased overall health, decreased social activity, and even decreased earning power.

Fortunately, the situation can be greatly improved for most people with hearing loss. The same study revealed that persons with treated hearing loss (through hearing aids and/or medical treatment) report better family relationships, higher self-esteem, improved mental health, greater feelings of independence and security, better overall health and increased social activity.



## ② Normal hearing

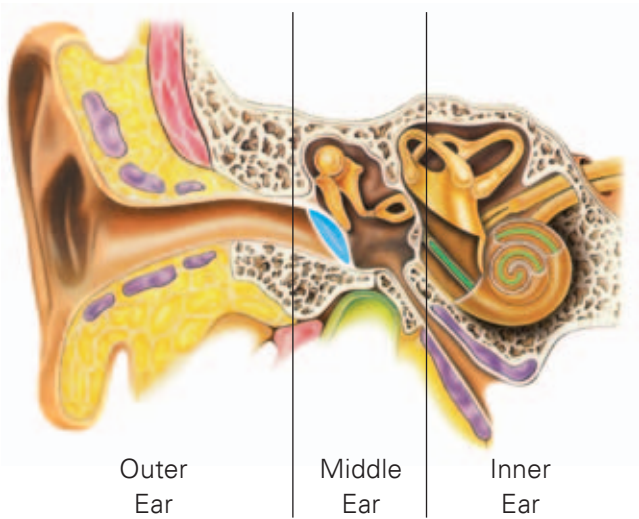
To understand hearing loss, you must first know a little about how the ear works. The human ear is a remarkably complex sound analyzing system, capable of detecting sounds over an incredibly wide range of intensity and frequency.

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 system serves to intensify 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 that are connected to fibers of the hearing nerve. 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 which travel through the hearing nerve to the brain where they are recognized as sounds.

A person with normal hearing can hear everything from the faintest whisper of the breeze to the roaring of a jet engine taking off. Normal hearing alerts us to dangers – our ears can give us information about the location and speed of an approaching car, for instance. With good hearing we are able to listen selectively, focusing on one conversation at a loud party and shifting easily to another conversation without missing a word. We are able to appreciate the beauty of a string quartet and the sound of a loved one’s voice.



## Hearing loss

When hearing is damaged, the sounds of life begin to fade. For most people this is a gradual process. Typically the sounds in the higher frequencies begin to disappear first. Birds chirping in the trees become fainter and fainter. Music becomes less clear. Since the lower frequencies are usually heard better or even normally, it isn't unusual for people to think that there is no problem. It's easy to forget what things sounded like before. Especially since many of the softer sounds are things we often tend to tune out anyway.

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. At this point, it may become obvious that you can hear but you can't always understand what is said, especially when there is background noise. You need to turn the TV volume louder than before. It seems like people mumble sometimes but other times, you understand perfectly. It is natural to think that the problem must be because other people are not speaking clearly, when in fact, it is your hearing that is not clear. Because people can't see or understand your hearing loss, they may think you are just being unsociable. The comment "He can hear perfectly when he wants to" is

a common complaint from family and friends of a hearing impaired person. The gradual nature of most hearing loss makes it easy to ignore until it begins to have a major impact on your life. If the loss were to happen overnight, the difference would be dramatic and you would quickly seek help to find out what was the matter.

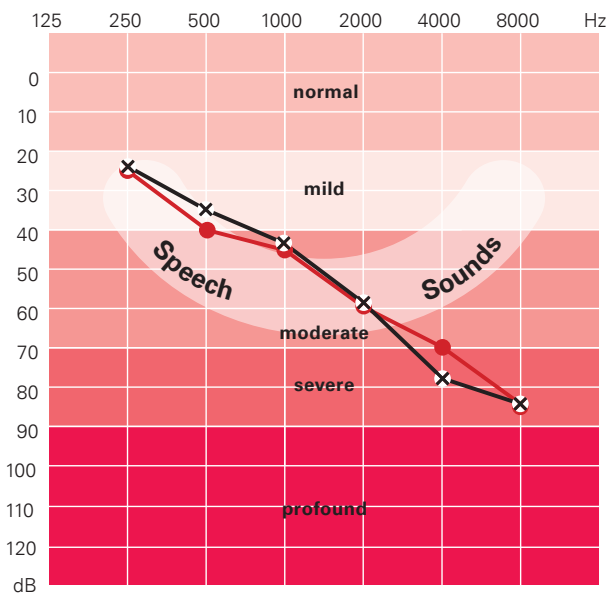
So what causes people to lose their hearing? As you can see from the previous description, the ear is quite complicated. A problem with any part of the system can cause a loss of hearing. The medical profession defines two main categories of hearing loss.

**Conductive hearing loss** is caused by any problem in the outer or middle ear that interferes with the transmission of sound. This interference can be caused by such things as a large build-up of earwax, infections or growths in the outer ear, holes in the eardrum, a disease called otosclerosis (which causes the tiny bones to become fixed and unable to vibrate) or genetic factors. Conductive hearing loss can often be corrected or improved with medical intervention but when that is not possible, hearing instruments 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). This type of hearing loss can be caused by many things but the most common cause is deterioration of the hair cells in the cochlea due to aging and/or



exposure to loud sounds. 90 % of all hearing losses are the sensorineural type. This kind of problem can rarely be helped medically but fortunately hearing instruments can help. A third type of hearing loss is called mixed hearing loss and is simply a combination of conductive and sensorineural problems. Many people with mixed hearing loss are also able to benefit from hearing instruments.



Audiogram showing typical hearing loss

## Getting help

Surveys have shown that most people with a significant hearing loss wait several years before finally seeking help. This may be partly due to a reluctance to admit there is a problem, but it is certainly related to the gradual nature of most hearing loss and the length of time it takes for an individual to realize that a hearing loss exists. When people finally try hearing instruments, they are usually amazed to discover how much they had been missing! 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. (For further information please read Bernafon's publication "Understanding Hearing Instruments")



## About Bernafon

Since 1946, we have been passionate about developing quality hearing systems that enable people with hearing difficulties to enjoy authentic listening experiences. With Swiss Engineering, precision technology and our commitment to individual service we strive to exceed our customer's expectations. Our aim is to provide extra value to our partners every day. Bernafon representatives and employees in over 70 countries fulfill our vision to help people with impaired hearing communicate again without limitation.



Hearing and understanding are basic human needs. Hearing problems and the resulting social consequences represent a challenge for society. We believe in a world in which people with restricted hearing can communicate again without limitation thanks to advanced technology.

For more information about hearing and hearing loss [www.bernafon.com](http://www.bernafon.com)

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