

All About Being Hard of Hearing

WHAT DOES “HARD OF HEARING” MEAN?

The term “hard of hearing” refers to people who have a mild to profound hearing loss. These individuals have some degree of “**residual hearing**” and make use of it to communicate. They often supplement their hearing with **devices** (hearing aids or assistive listening systems) or **techniques** (speech-reading or lip-reading). Culturally, most hard of hearing people consider themselves to be hearing people who just don’t hear well, and in general, most identify more with hearing people than with the Deaf community. Many people have difficulty admitting to having a hearing loss and may try to hide it.

According to consumer information website *Hearing Loss Web*, hard of hearing people generally:

- Have some degree of audiological hearing loss, from mild to profound.
- Rely primarily on spoken or written English for communication with others
- Function in the hearing world in all aspects of their lives (friends, relatives, employment)
- Can benefit to some extent from the use of hearing aids and assistive listening devices (ALDs)
- Generally know no or very little sign language
- Are uninvolved in the Culturally Deaf community
- May or may not have taken steps to deal with their hearing loss (hearing tests, use of hearing aids, etc.)

Hearing problems are extremely common. There are more hard of hearing people than any other group of disabled people (see below, *Disabilities in America: Statistics*). Worldwide, more than 500 million people are hard of hearing. Almost four out of five people who could benefit from using a hearing aid do not have one. According to Hearing Loss Web, “the vast majority of people who are hard of hearing have not yet taken any action to help them deal with their hearing loss” (see www.hearinglossweb.com).

Disabilities in America: Statistics

Disability	Population
All Disabilities	54 million
Hard of Hearing	21-28 million
Deaf	2 million
Visually Impaired	10 million
Legally Blind	1.3 million
Developmentally Disabilities	6.2 to 7.5 million
Serious Mental Illness	5.4 million
Learning Disabilities	2.8 million (in public schools)
Wheelchair Users	1.6 million
Multiple Sclerosis	250,000 to 350,000

One indication of this is the fact that about 2 million hearing aids are sold each year—and yet 30 million Americans have some degree of hearing impairment!

Most people recognize that the difference between hard of hearing and Deaf individuals is more a cultural distinction than an audiological one. That is, especially in the more severe and profound ranges of loss, the person’s response to such loss and the accommodations chosen are more a matter of personal preference and identification than of hearing ability. In general, however, the term “hard of hearing” refers to a hearing loss of less than 90 dB (see *Degrees of Hearing Loss* table, next page), while “deaf” or “profound hearing loss” refers to individuals with hearing loss exceeding 90 dB.

The term “hearing loss” is used when audiometric tests show that a person is not responding to sounds that are established as normal hearing levels. Hearing loss does not necessarily mean a complete inability to hear, because there are many degrees of hearing loss. A mild hearing loss may go unrecognized, while severe and profound loss can have definite personal, social, and psychological effects. Severe and profound hearing loss makes it almost impossible for a child to develop speech and language skills without appropriate help.

WHY NOT USE “HEARING IMPAIRED”?

The term “hearing impaired” is an umbrella term that is used to describe people with any degree of hearing loss. Many people who are hard of hearing or Deaf prefer to use those specific terms, however, rather than the term “hearing impaired” because first, hearing impaired does not give enough information about the person’s status or how to communicate best, and second, because this term is perceived as negative, emphasizing what the person can’t do. That said, some people *do* use the term hearing impaired, so ask each person how they prefer to be identified. Some individuals prefer the “People First” language used to describe people with disabilities, which puts the focus on the person, not the disability. Thus, “people with hearing loss” can include hard of hearing, late deafened, and oral deaf individuals.

WHAT ARE THE TYPES OF HEARING LOSS?

There are 3 main types of hearing loss: **conductive**, **sensorineural**, and **central** loss. Some people may exhibit a combination of types and have a **mixed hearing loss**. Central loss is more rare, and includes **central auditory processing disorder**, resulting from damage or impairment to nerves or nuclei of the central nervous system, in the pathways to the brain or in the brain itself.

Degrees of Hearing Loss

Decibel Loss (dB)	Degree of Loss	Characteristics
25-40	Mild	People who suffer from mild hearing loss have some difficulties keeping up with conversations, especially in noisy surroundings. Good communication is possible in ideal listening situations, but background noise and distant speech can make hearing difficult. Part-time use of a hearing aid will be helpful.
41-55	Moderate	People who suffer from moderate hearing loss have difficulty keeping up with conversations when not using a hearing aid. Conversation can be heard at a distance of three to five feet, but understanding is a strain, especially when background noise is present. Full-time use of a hearing aid is necessary.
56-70	Moderately severe	Conversation must be very loud and close by to be understood. Very little can be understood in group situations. A hearing aid is necessary, but may not provide enough assistance. Speech-reading training, speech therapy, and counseling can be helpful.
71-90	Severe	Only very loud speech, about one foot away from the ear, can be heard, and often this is very distorted. People who suffer from severe hearing loss will benefit from powerful hearing aids, but often they rely heavily on speech-reading even when they are using hearing aids. Speech therapy may be needed to prevent speech deterioration, since speech sounds can become distorted when speakers cannot hear themselves speak. Some people with severe loss also use sign language.
91 and up	Profound	People who have profound hearing loss are very hard of hearing or deaf, and rely mostly on speech-reading, written communication, and/or sign language. Some very loud sounds may be heard, or felt through vibration. Training in speech-reading, speech therapy, and counseling are essential.

When people talk about degrees of hearing loss, they usually use the terms **Mild**, **Moderate**, **Severe**, and **Profound**. These terms refer to certain decibel ranges of loss. For example, hearing loss in the 0-25 dB range is considered a slight loss and not usually recognized as significant. A “Mild” loss, then, is one in the range of 25-40 dB. The *Degrees of Hearing Loss* chart shows the most common classifications, and the resulting impact on the person affected. Decibel loss, however, is only one dimension of hearing loss. Discrimination ability is also very important in communication.

CONDUCTIVE LOSS

Conductive hearing loss indicates that there is a problem with the mechanism that conducts sound from the environment to the inner ear. It is caused by an obstruction in or damage to the sound pathway into the inner ear, and usually involves the **outer or middle ear**. There may be a problem with the ear canal, the eardrum, and/or the three bones near the eardrum (the ossicles). Many cases of conductive hearing loss are temporary and are cured by means of appropriate medical treatment, so it is very important to seek immediate medical assistance. This type of loss may be caused by middle ear infections, earwax accumulation, a build-up of fluid behind the eardrum, eardrums ruptured from injury or disease, an abnormal condition in the bones of the middle ear between the eardrum and the inner ear, or other causes. Conductive hearing loss can be caused by disease, or by damage and physical changes in the middle ear, such as *otosclerosis*, *cholesteatoma*, tumors, and *otic barotrauma*. Conductive losses are often characterized by a

loss of sensitivity to hearing soft sounds. If a conductive hearing loss cannot be corrected, the person with the loss may be helped by some hearing aids.

SENSORINEURAL LOSS

Sensorineural hearing loss (SNHL; also called “nerve loss” or “nerve deafness”) refers to damage or destruction of the inner ear mechanisms, such as the cochlea and auditory nerve, or to damage to the sensory cells and/or nerve fibers of the inner ear. This type of hearing loss causes reduced sensitivity to sounds and difficulty in understanding speech. There may be a distortion of speech sounds even when the sounds are loud enough to hear. Sensorineural hearing loss is seldom correctable with surgery or medical treatments. Note that “uncorrectable” does not mean “untreatable”—millions of people with sensorineural loss are benefiting from using hearing aids.

Sensorineural loss can be the result of a genetic condition. It can be caused by excessive exposure to loud noise, which can cause the fine hair cells in the cochlea to break down. Certain medical conditions—such as high blood pressure, arteriosclerosis, thrombosis, some coronary conditions, mumps, measles, extreme high fever, and some viruses—contribute to sensorineural hearing loss. Other specific medical conditions are linked to hearing loss, such as Waardenburg Syndrome, Usher Syndrome, and *otitis media*. Meniere’s Disease, for example, is characterized by too much fluid in the inner ear, which can cause a fluctuating hearing loss as well as dizzy spells, ringing in the ears, and a feeling of fullness in the ears.

Some medications, called **ototoxic drugs**, can lead to hearing loss. The causes of hearing loss can vary by age: the most common cause of hearing loss in children is *otitis media*, while for the elderly (the largest group affected by hearing loss), excessive noise, drugs, toxins, and heredity are the most frequent contributing factors.

People with sensorineural loss often have **decreased sensitivity** to sounds as well as **impaired discrimination**. Sensitivity refers to a person’s ability to detect soft sounds. If you have decreased sensitivity, you may not be able to hear a quiet voice or bird singing, but if the sound is made loud enough, you can recognize it correctly. **Discrimination** is the ability to distinguish one sound from another and to interpret sounds correctly. This is very important in understanding speech. If a person has a discrimination problem, even when the sound is loud enough to perceive, they may still misinterpret the sound or the words being said.

AGE OF ONSET OF HEARING LOSS

One factor that has a profound effect on a person’s experience is the age at which hearing loss occurs. Those who experience hearing loss or deafness before learning their first language are referred to as having **pre-lingual** loss of hearing. Hearing loss that occurs after the acquisition of language is a **post-lingual** hearing loss. Sometimes people refer to a “**pre-vocational**” hearing loss, indicating one that began before a person started on his or her work life. Thus, the person’s entire work experience has been as a person with hearing loss.

For **infants and children** with hearing loss, the most profound effects are related to the acquisition of language. The earlier that hearing loss or deafness is identified, the better the chances a child will acquire language, whether spoken or signed. Early hearing screening, while infants are still in the hospital or within the first month of life, is a very important indicator of hearing loss or deafness in a child. For this reason, all infants should be tested while still in the hospital or within the first month of life. This examination and follow-up testing can confirm the extent and type of hearing loss. It also allows parents, health professionals, and teachers to determine the best intervention strategy for the child, to overcome communication barriers caused by a hearing loss.

Hearing loss is one of the most common conditions affecting **older adults**. One in three people older than 60 and half of those older than 75 have hearing loss. This type of hearing loss can make it hard to understand and follow a doctor’s advice, to respond to warnings, and to hear doorbells and alarms, for example. It can also make it hard to enjoy talking with friends and family. All of this can be frustrating, embarrassing, and even dangerous. People with later-onset hearing loss typically live most of their lives as hearing people, so the loss of

hearing later in life can require significant changes in communication strategies and lifestyle. This adjustment can have more profound social and psychological effects than the “mere” physical fact of not hearing well.

Some hard-of-hearing people have a **progressive** hearing loss—which may or may not include some congenital or early-onset loss—which then grows more severe over time. People in this category tend to develop a range of alternative communication strategies over the years, such as speech-reading (also called lip-reading) and other adaptive listening habits. In contrast, others may have normal hearing most of their lives and then experience hearing loss or **sudden deafness** through injury or illness (this is sometimes called **adventitious deafness**).

Another type of hearing loss is called **presbycusis**. This is the loss of hearing that gradually occurs with many people as they grow older, whether or not there is a prior hearing loss. Presbycusis usually occurs in both ears, affecting them equally. Approximately 30 to 35 percent of all adults between the ages of 65 and 75 have presbycusis, and perhaps 40 to 50 percent of those 75 and older have this type of hearing loss. With this condition, people typically have greater losses in the higher frequency ranges (higher-pitched sounds). For example, they may no longer hear bird songs as well, but may still detect the low-pitched sound of a truck in the street. There are many causes of presbycusis; it usually arises from changes in the inner ear of a person as he or she ages, but it can also result from changes in the middle ear or from complex changes along the nerve pathways leading to the brain. Because the process of loss is

Table of Sound Levels

Decibel Level	Example
0	Faintest sound heard by human ear
20	A whisper, or a quiet library
45	Soft conversational speech
55	Loud conversational speech, sewing machine, typewriter
65	Loud music from a radio
75	City traffic noise
90	Lawnmower, shop tools, truck traffic. 8 hours per day is the maximum exposure limit to protect 90% of people.
100	Chainsaw, pneumatic drill, snowmobile, loud factory. 2 hours per day is the maximum exposure without protection.
110	A loud amplified rock band
115	Sandblasting, auto horns. 15 minutes per day is the maximum exposure without protection.
140	Gun muzzle blast, jet engine at takeoff. Noise causes pain, and even brief exposure can injure unprotected ears. Maximum allowed noise with hearing protectors.

gradual, people who have presbycusis may not always realize that their hearing is diminishing. Sometimes people with presbycusis will complain that others are always mumbling or speaking too softly. Meanwhile, others may be far more aware of the extent of hearing loss that the person is himself or herself.

DEGREES OF HEARING LOSS

How is hearing loss measured, and what do these measurements mean? The basic unit of measurement is the decibel (dB), a unit that measures the intensity of sound (a decibel is one-tenth of a bel). The scale runs from the faintest sound the human ear can detect, which is labeled 0 dB, to over 180 dB, or the noise at a rocket pad during a launch (see table). For every six decibels, the intensity of the sound doubles. With this logarithmic scale, as decibel intensity increases by units of 10, each increase is 10 times the lower figure. Thus, in the chart above, 20 decibels is 10 times the intensity of 10 decibels, and 30 decibels is 100 times as intense as 10 decibels. This increase is important when considering the effects of prolonged exposure to noise, because the damaging effect is also cumulative. At 90 dB of uninterrupted sound, the limit of safe noise exposure is eight hours. For each six dB increase of uninterrupted sound thereafter, the limit of safe exposure is reduced by half. Most experts agree that continual exposure to more than 85 decibels is dangerous to one's hearing.

HEARING AIDS: NOT AS COMMON AS YOU THINK

A 2000 survey of hard-of-hearing Americans and hearing aid use found that more than 28.6 million Americans had some degree of hearing loss. Of this number, 22.3 million did not have a hearing aid, and only about 25 percent of hearing-impaired Americans actually use hearing aids. For people of working age, the figures are even worse. Nine million hearing-impaired Americans aged 35 to 54 do not own a hearing aid, while a minority (approximately 1 million or 10 per cent), have accepted their hearing loss and are using hearing aids. This study also found that the reasons first-time owners purchased hearing aids included: the perception that their hearing loss got worse (68.5 percent), recommendations of a family member (45.2 per cent), audiologist recommendations (40.5 per cent), and other ear specialist recommendations (22.1 per cent).

WHAT HEARING AIDS DO— AND WHAT THEY DON'T DO

Many people compare hearing aids to corrective eyeglasses, but this analogy is misleading. Corrective lenses (glasses and contact lenses) help the eyes to adjust visual input so that the perceived image is in focus—that is, projected properly onto the focal plane in the eye.

A hearing aid, in contrast, does not “correct” hearing, nor does it restore the user's lost hearing. Instead, it makes the sounds louder in the range of a particular hearing loss and adjusts the quality of that sound. It amplifies both speech and environmental sounds. People who wear eyeglasses may expect those with hearing aids to have “normal” hearing, based on this false analogy.

A better model is to compare hearing aids to crutches used by a person who has a broken leg. The crutches do not restore full mobility, and the person is not truly walking, but he or she can get around better than before. Similarly, a hearing aid can help a person to perceive speech and other sounds better by making the sounds louder in certain frequencies and by other adjustments. But this is not the same as having “corrected” hearing.

It takes time to learn how to adjust to a hearing aid. The aid may make sounds louder but may not make words or sounds clearer. The “clarity” of the sound is more a factor of the ear itself than the hearing aid, and the user learns to make sense of the distorted sounds from the aids to interpret the meaning of the sounds.

All hearing aids have limitations. For example, they amplify the sounds we **want** to hear (such as speech), as well as those we **don't** (noise and background sounds). A hearing aid does not “cure” hearing loss. A hearing aid cannot make sound more clear if the cochlea is damaged, and they may not help people with auditory processing disorders. Some people have problems using hearing aids for other reasons. Many hearing aid users report continued difficulty with understanding speech in noisy restaurants, for example, and may use assistive listening devices to augment their hearing aids.

Hearing Loss in America

People with Hearing Loss	
33%	Deny or hide hearing loss
30%	Can't afford hearing aids
25%	Currently use hearing aids
7%	Unaware of hearing loss
5%	Medical or surgical treatment is effective
<i>Data from National Center on Hearing Assessment and Management</i>	

Hearing aid technology is changing rapidly. If you have not investigated hearing aids in recent years, you may be surprised at the variety of options available today. Today's hearing aids can also interact with and be assisted by a variety of assistive listening devices (ALDs) to help hard of hearing people keep in contact with the world of sound. While hearing aids remain the most important means of assisting Hard of Hearing people, they are no longer the only available choice. A variety of

other options has emerged in response to the particular listening challenges that hearing-aid users face.

How Do HEARING AIDS WORK?

While there are several types of hearing aids, all share some basic features. The components are held together in a protective case, usually plastic. A **microphone** picks up sounds from the environment. The sounds are carried to a **signal processor or amplifier**, which makes them louder (increases the intensity of the signals). It also shapes the incoming sounds to match the individual's hearing loss profile, adjusting **frequency** (or pitch: high, low, and mid-tones) and **intensity** (loudness). The sound is then sent through a **receiver**, which converts the electrical impulses into sounds that can be heard. Finally, the amplified and modified sounds are sent to the ear by way of the **earmold**, which is custom-fitted to the user's ear. Hearing aids have **volume controls** and other functions for individual adjustments.

Digital hearing aids have a small computer programmed to manipulate the signals to fit the hearing loss profile of an individual user. Many aids allow users to switch among different **programs**, or pre-programmed settings for specific situations, such as general conversation, telephone use, conversation in noisy backgrounds, listening to music, and so on.

Many hearing aids have internal **Telecoil** switches, or "**T-coil**" settings, originally developed for use with telephones. It is very important to consider getting a T-coil switch when you are looking at hearing aid options, since this option is needed for many **assistive listening systems**. For example, a conference room at a local library may set up an **induction loop system** connected to a speaker's microphone. People with hearing aids switch them to the "T-coil" setting when inside the loop, and the speaker's voice is transmitted directly to their hearing aids instead of traveling through the air space, resulting in much clearer sound quality. Hearing aid users can also use home systems to "loop" a chair, couch, or room and listen to the telephone, music, or television with "direct from the source" clarity delivered to customized hearing aids. Even if you don't need a T-coil for the phone, get one so you can use it with other devices!

HEARING AID TYPES

There are several basic hearing aid types, named by where the aid is worn. A person's particular hearing loss and listening needs, the size and shape of the ear and ear canal, and manual dexterity are all considered in determining which type of hearing aid is best for their needs.

Behind the Ear (BTE):

The main part of this hearing aid is worn above and behind the ear. A flexible tube con-



nects the aid and a custom-fitted earpiece, called the **earmold**. The aid is encased in a durable plastic shell, while the tube and earmold are made of softer, more flexible plastic or silicone. BTE aids are often less easily damaged than other types of aids, and may be more reliable. They usually offer users a wider range of options, since a number of accessories (such as FM systems or other assistive listening devices) may connect with them. BTE aids offer greater power than some smaller aids, and are a better choice for more severe losses. One advantage of a BTE aid is that if it needs repair or servicing, the owner can use their custom-fitted earmold piece with a loaner or replacement hearing aid while the original is being serviced. Because of their robust design, BTE aids are especially recommended for children.

In the Ear (ITE): This hearing aid fills the bowl of the ear and part of the ear canal. It can accommodate larger sound amplifiers and contain more features than ITC or CIC aids. Some people who wear eyeglasses may prefer ITE aids because they do not interfere with eyeglass temple pieces that go over the ear. Because the inner workings of this hearing aid are contained within a custom-fitted earmold shell, the user must send off the entire unit when it needs servicing and cannot make use of "loaner" aids, as with BTE models. In addition, because of the shorter distance from the earmold to the aid's electronics, this type of aid is more vulnerable to earwax build-up and moisture accumulation, and may need more frequent servicing and cleaning.

In-the-Canal (ITC): Smaller versions of In-the Ear hearing aids are called half-shell or In-the-Canal aids. This type of aid works much the same as the ITE aid, and is usually used for mild to moderate loss, as the shell is not large enough for more powerful amplification. Like ITE aids, the ITC aid is also more susceptible to problems with moisture and earwax accumulation.

Completely-in-the-Canal (CIC): The smallest aids are Completely-in-the-Canal hearing aids, which are almost invisible in the ear. These aids are restricted to people with ear canals large enough to hold the whole hearing aid. Again, the user must be aware of potential problems from moisture and from earwax build-up.

On the Ear or Over the Ear (OTE): A newer development is a smaller, lightweight variation of the BTE that sits atop the ear and uses small, flexible tubes to connect to an earmold or "open fit" ear set. These aids are best for those with mild to moderate losses.

HOW CAN HEARING PEOPLE COMMUNICATE BETTER WITH HARD OF HEARING PEOPLE?

As the consumer organization Hearing Loss Association of America points out, communication is a two-way street. Members of that organization compiled this list.

SET THE STAGE

- Face your audience directly
- Make sure the light is on your face (no backlighting)
- Avoid situations with noisy backgrounds
- Get the person's attention before speaking
- Ask how you can facilitate communication

PROJECT YOUR COMMUNICATION

- Don't shout
- Speak clearly, and do not exaggerate lip movements
- Speak slightly slower, and pause at the end of sentences
- Don't hide your mouth, chew gum, eat food, or smoke while talking
- Rephrase a sentence if you are not understood
- Use facial expressions and gestures
- Give clues when changing the subject

ESTABLISH EMPATHY WITH THE AUDIENCE

- Be patient if a person's response seems slow
- Stay positive and relaxed
- Talk *to* a hard of hearing person, not *about* him or her
- Understand that lip-reading for long periods of time can be tiring to the hard of hearing person
- Offer respect to help build confidence

HOW CAN HARD OF HEARING PEOPLE COMMUNICATE BETTER WITH HEARING PEOPLE?

Hard of hearing people must make as much effort as hearing people. Conscientious hard of hearing people can educate others about communication and hearing loss.

SET YOUR STAGE

- Tell others how to best communicate with you
- Pick your best spot (consider light, quiet, proximity)
- Anticipate difficult situations, and plan how to minimize them

PROJECT YOUR COMMUNICATION

- Pay attention
- Concentrate on the speaker
- Look for visual cues
- Ask for written cues if needed
- Don't interrupt. Let conversation flow awhile to gain more meaning

ESTABLISH EMPATHY WITH THE AUDIENCE

- React. Let the speaker know how well he or she is doing
- Don't bluff. Admit it when you don't understand, to prevent trouble
- If you are too tired to concentrate, ask for discussion later

Colorado Commission for the Deaf and Hard of Hearing

Address: 1575 Sherman Street, 2nd Floor • Denver, Colorado 80203

TTY: 303-866-4734 • **VP:** 720-457-3679 • **Voice:** 303-866-4824 • **Fax:** 303-866-4831

Email: email.ccdhh@state.co.us • **Website:** www.ColoradoDeafCommission.com