

## What is Hard-of-hearing?

### WHAT DOES “HARD-OF-HEARING” MEAN?

The term “hard-of-hearing” refers to people who have a mild to profound degrees of hearing acuity. These individuals have some degree of “**residual hearing**” they use to communicate. They often supplement their residual hearing with **communication technology** (such as hearing loop systems) and **communication techniques** (such as lip-reading). In general, however, the term “hard-of-hearing” refers to a level of hearing acuity that is under 90 decibels (dB), while “deaf” or “profound level of hearing acuity” refers to individuals with hearing acuity that is over 90 dB. There are more than 500 million people who are deaf or hard-of-hearing worldwide.

Hard-of-hearing people generally:

- Have some degree of hearing acuity ranging in the mild to profound category (see chart),
- Rely primarily on spoken or written English for communication,
- Are not a part of the deaf community,
- May have difficulty accepting or admitting changes to their hearing, and as a result they might avoid taking steps to diagnose and test hearing acuity,
- May benefit to some extent from the use of hearing aids and Hearing Assistive Technology (HAT),
- Use English as their primary mode of communication instead of Sign Language. However, there are some persons who are hard-of-hearing who use sign language to communicate.

### HOW DOES SOMEONE GET DIAGNOSED?

Audiometric tests will identify when a person is not responding to sounds that are established as average hearing levels. Changes in hearing acuity will vary.

### WHY NOT USE THE TERM “HEARING IMPAIRED”?

The term “hearing impaired” is commonly used by the mainstream media to describe people with decreased hearing acuity. It is considered a derogatory label within the deaf community. The term “hearing impaired” is considered offensive because this term is perceived as negative, emphasizing what the person cannot do. People who are deaf and involved in the community are proud to be deaf. They are proud of their language (American Sign Language) and cultural identity. They do not consider themselves impaired. The terms “deaf” and “hard-of-hearing, or “deaf-blind” are considered more respectful.

### WHAT ARE THE DEGREES OF HEARING ACUITY (DHA)?

When people talk about changes in degrees of hearing acuity, they usually use the terms **Mild**, **Moderate**, **Severe**, and **Profound**. These terms refer to certain decibel (dB) ranges of hearing acuity. The decibel (dB) is a basic unit of measurement that measures the intensity of sound. The measurement 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 launch pad during a rocket launch.

(dB)	DHA	Characteristics
25-40	Mild	Causes some degree of difficulty understanding speech in an environment with background noise or at a distance.
41-55	Moderate	Causes difficulty keeping up with conversations.
56-70	Moderate/ Severe	May cause challenges with conversing unless conversations are very loud. Very little can be understood in a group situation.
71-90	Severe	Sound is often very distorted and inaudible.
91 and up	Profound	Some very loud sounds may be heard, or felt through vibration.

### WHAT ARE THE DEGREES OF DIMINISHED HEARING ACUITY?

There are 3 degrees of diminished hearing acuity: **Conductive**, **sensorineural**, and **central**. Some people may exhibit a combination of types and have a **mixed hearing loss**. Central loss is rarer, 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.

### WHAT CAUSES DIMINISHED HEARING ACUITY?

There are many causes for diminished hearing acuity. The three types of diminished hearing acuity are outlined:

A **conductive loss** indicates that there is a challenge with the mechanism that conducts sound from the environment to the inner ear. A conductive loss is often caused by:

- Obstruction in or damage to the sound pathway into the inner ear.

- Damage to the ear canal, the eardrum, and/or the small bones near the eardrum (ossicles).
- Middle ear infections, earwax accumulation, or build-up of fluid behind the eardrum.
- Ruptured eardrums from injury or disease.
- Abnormal conditions in the bones of the middle ear between the eardrum and the inner ear.

A **sensorineural loss** is often called “nerve loss”, and refers to the damage or destruction of the inner ear mechanisms such as the cochlea or auditory nerve fibers. A sensorineural loss can be caused by:

- Genetics
- Excessive exposure to loud noise
- Mumps or Measles
- Extremely high fever
- Certain medications
- Other medical conditions
  - Waardenburg Syndrome
  - Usher Syndrome
  - Meniere’s Disease

People with sensorineural loss often have varying degrees of hearing acuity. **Sensitivity** refers to a person’s ability to detect soft sounds and with diminished sensitivity, the individual may not be able to hear a quiet voice or bird singing, but if the sound is made loud enough, the individual may 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. Amplification through hearing aids that amplify all noise, may not always be effective if an individual has difficulty discriminating sounds.

#### AGE OF ONSET

“Age of onset” refers to the age at which changes to hearing acuity are discovered.

#### Infants and children:

- The sooner the child is tested and the level of hearing acuity is discovered, the greater chance the child has at developing language (spoken and/or signed).
- All infants should undergo a hearing screening within their first month of life.
- If hearing is not screened early in the child’s life they may face delays in developing language.
- When provided language (spoken or signed) as well as appropriate auxiliary aids and services, deaf or hard-of-hearing children typically adapt to accepting their level of hearing acuity as a part of their identity and every day life.

#### Adults (under 60):

- May be categorized as “late deafened”
- For some individuals, their hearing will change over a period of time. (This is what is called “**progressive**” hearing acuity.)

- Some people who experience changes in hearing acuity face social and psychological strain.
- Most hard-of-hearing and late deafened people develop coping strategies (such as lip-reading and using assistive technology) for communicating.

#### Older Adults (over 60):

- One in three persons older than 60 have some degree of change in hearing acuity.
- Half of all adults over 75 experience change in hearing acuity.
- May face challenges in obtaining accessible technology.
- May be unable to adapt to changes in their hearing and may feel isolated and depressed.

Most individuals live their lives as hearing people, so the change of hearing later in life can require significant changes in communication strategies and lifestyle. This adjustment may have a more profound social and psychological impact than the actual experience of decreased hearing acuity.

#### FACTS ABOUT HEARING AIDS

A hearing aid is a device designed to amplify sound for people who are deaf or hard-of-hearing. Most hearing aids have these components:

- Microphone that picks up sound
- Amplifier that makes the sound louder
- Receiver that delivers the sound to the ear canal
- Batteries that power the device

Hearing aids vary depending on the type of hearing aid used and the technology used to amplify sound (analog vs. digital).

- **Analog** hearing aids amplify speech and environmental noise indiscriminately. Some analog hearing aids can be programmed to adapt to various environments.
- **Digital** hearing aids convert sound into digital signals to duplicate sound. They can be programmed to adapt well to several different environments. New hearing aids use digital technology.

#### There are several hearing aid features that benefit persons who are hard-of-hearing.

- A **Telecoil Switch (T-Coil)** is technology installed in the hearing aid that allows the user to hear better on the telephone, and prevents the user from hearing a whistling sound. The T-coil switch can also be used in other environments such as courthouses, movie theaters, and sporting events.
- An **Induction Loop** magnetically sends sounds directly to a person’s hearing aid (if it’s equipped with T-coil technology).

- A **FM System** uses a transmitter and a microphone used by the speaking party to send sound either directly to a receiver or a person's hearing aid (if it is equipped with T-coil technology).
- Some **Amplified Phones**, landline or cell phones, can connect directly to a person's hearing aid using the T-coil function.

Here are some other facts to know about hearing aids:

- Most insurance companies will not cover the cost of hearing aids for adults.
- Some states have legislation/programs that provide children with hearing aids, but not adults
- There are several styles of hearing aids available
  - Behind the Ear hearing aids tend to be more durable and are more commonly used by those with greater need for amplification.
  - In the Ear/Canal (smaller) hearing aids are often for individuals who have mild to moderate changes in hearing acuity.
- **Hearing aids are not for everyone.** Some characteristics about the persons hearing may prevent the effectiveness of hearing aids.
- The Colorado Commission for the Deaf and Hard-of-hearing has a publication on local and Federal resources for Coloradoans seeking financial assistance for hearing aids. You can find this resource on our website: [www.ccdhh.com](http://www.ccdhh.com) in the resource directory.

#### OTHER AUXILIARY SERVICES

Hard-of-hearing people can also benefit from other communication aids, devices and services.

- A **Captioned Telephone** is a telephone with a display that captions everything the person says on the other side of the telephone conversation. When someone using the captioned phone places a call, the call is connected to a Captioned Telephone Service (CTS). An operator stands by and listens to the conversation and uses voice recognition software to produce captions. This technology is ideal for persons who are hard-of-hearing and are native English, Spanish, or French speakers.

- Some persons who are hard-of-hearing use sign language to communicate. If utilizing an interpreter is effective, a person who is hard-of-hearing has the right to request a qualified **Sign Language Interpreter** for some situations.
- Some people (but not all) who are hard-of-hearing are skillful at lip-reading. If a person uses lip-reading as an effective mode of communication, a person who is hard-of-hearing could request an **Oral Transliterators** facilitate spoken communication. Individuals who are "oralist" use speech and speechreading as their primary mode of communication can use this type of service. Oral transliterators are used when the circumstances or environment inhibit a persons ability to speechread. Typical settings where oral transliterators are used include classrooms, groups, conferences and seminars, telephone conference calls, etc. Oral transliterators are also good to utilize when communicating with a speaker who is difficult to speechread due to an accent or facial hair.
- **Communication Access Realtime Translation (CART)** services can be delivered remotely on site and uses a system similar to court reporting to translate verbatim the information spoken in the room. Trained stenographers use a "Steno Machine" to produce live captions for a deaf or hard-of-hearing person. This service is widely preferred by persons who are deaf or hard-of-hearing whose first language is ASL.

#### COMMUNICATION TIPS

Here are some ways persons who are hard-of-hearing and hearing can work together:

- Ask/Disclose communication preferences. Every person has different preferences when it comes to communicating. People who are deaf or hard-of-hearing should ask for the types of services they need to communicate. The other party should be prepared to accommodate the request for effective communication.
- Find a well-lit area that is free of distractions and background noise for communication.
- Ask for clarification if either party doesn't understand. **Do not pretend to understand if you don't.**

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