

So many HATs

Hearing Assistive Technologies



There are a variety of Hearing Assistive Technologies, referred to as HATS. They are designed to enhance the understanding of speech for individuals with a hearing loss, especially for those individuals with amplification such as hearing aids (HA), cochlear implants (CI) or bone anchored hearing devices (BAHA).

Factors that can degrade the speech signal and impact one's ability to understand

- ❖ When the sound comes from a distance (sound fades as it travels)
- ❖ When there is a lot of noise in room (side conversations, air blowing from heating system, noise outside the room, etc.)
- ❖ When sound bounces around the room (poor acoustics from sound bouncing off of hard surfaces called reverberation)

HATs can be used with cochlear implants, hearing aids or bone anchored hearing devices to make hearing easier in theaters, classrooms, conference rooms, places of workshops, museums, theme parks and even in the home. By reducing stress and fatigue, HATs can help a person with a hearing loss relax and focus on life's best experiences, instead of sound distractions.

Hearing Assistive Technologies provide communication access using different broadcasting processes. Providing "effective" communication access is driven by the person's hearing system they have, whether it is hearing aids, cochlear implants or bone anchored hearing devices. Talk to an audiologist to become familiar with what assistive listening systems are compatible with device worn.

The system should be chosen based on room size, configuration, and the student's need. The challenge is to find the most appropriate listening option or connection coupler to provide the cleanest sound signal possible to meet the deaf individual's needs.

For more information, go to nationaldeafcenter.org/ALS101.



Soundfield Systems: This system amplifies the speaker's voice above the ambient room noise for all the individuals in the room. The teacher's voice is transmitted from a microphone to ceiling or wall mounted speakers. The systems listed on the other page differs from sound field systems in that it delivers the speaker's voice directly to the ear so the message is not interfered by distance or noise. A discussion with your audiologist and your situation will help to make the correct decision for your hearing loss.



HATs for you: Hearing Assistive



Frequency Modulation (FM) and Digital Modulation (DM) Systems

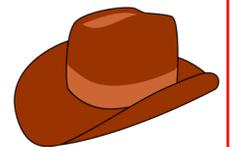
The primary difference between FM and DM systems is how the sound signal is broadcast. FM systems use analog radio frequency to transmit sound on frequencies set aside specifically for hearing assistive technology to reduce potential for interference. DM systems digitize and compress the signal into a narrow band providing a clean signal with less possible interference. Both systems function alike. The transmitter (sound source) and receiver (audio processor - HA, CI, BAHA) need to be on the same frequency or channel. The signal is sent by the transmitter to the audio processor either through direct audio input or through a telecoil accessory (such as a neckloop or silhouette)



Bluetooth is a low-power, short-range technology that wirelessly connects cell phones (or MP3 devices, PDAs, computers, etc.) to a compatible receiver. Some receivers can be connected directly to the audio processor and others are used with a headset or telecoil accessory. (such as a neckloop or silhouette).



One on One Communication: Sometimes in a restaurant, nursing home situation, or riding in a car, you want to be able to easily hear just one person. Or perhaps you are delivering a lecture or running a meeting and a person in the audience has a question. You can give the person a microphone to speak into. The sound is amplified and delivered directly into your hearing aid (or headset if you don't have a hearing aid), and you can adjust the volume to your comfort level. When using the one-to-one communicator, the speaker does not have to shout, private conversations can remain private, and in a car your eyes can remain on the road!



Telecoils (t-coils): Whenever talking about Hearing Assistive Technologies for persons with a hearing loss, you often see the word "telecoil" or "t-coil". A telecoil is a very helpful (and relatively inexpensive) addition to hearing aids that can greatly expand their capabilities. Make sure to talk to your audiologist about telecoils when exploring your hearing aid's options, as not all hearing aids, are compatible with telecoils.



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Induction Loop Systems are most common in large group areas, but can be used in the home (i.e. rooms with a television). A thin wire is placed (or “looped”) around the listening area and is connected to a special amplifier where sound signals are circulated through the loop wire. The sound is sent directly to the audio processor(s) by simply activating the telecoil on the processor(s)



Infrared systems are often used in the home with TV sets, but, like FM systems, they can also be used in large settings like theaters.



With an infrared system, sound from the TV is transmitted using infrared light waves. This sound is transmitted to the receiver, which can be adjusted to the person’s desired volume. The TV can be set to a volume comfortable for any other viewers with normal hearing. Thus, TV watching as a family becomes pleasurable for all.



LISTENING TO MUSIC OR OTHER ELECTRONICS DEVICES:

Many people who wear amplification are not aware that there are ways to get high quality sound when listening to recordings.

1. **Direct input:** a direct connection into your amplification will give you best sound quality. To connect, you need the appropriate adaptors know as “shoes.” These “shoes” are specific for each model of hearing aid and fit onto the bottom of the hearing aid.



2. Using your hearing aid loop program - "T"

Neckloops: worn around the neck. Very easy to use and wear but only gives mono sound. Can be worn under clothing for discreet listening.



Silent Headphones: Gives stereo sound because there is one telecoil for each ear. May have to experiment with the positioning of headphones to get best sound.



Silhouette ear hooks: Gives a good loud sound but are the fiddliest to wear. Earhooks come as a pair or a single.

