

Tipsheet

SERVING STUDENTS WHO ARE HARD OF HEARING

TELECOILS

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SUMMARY

Telecoils, now available on both hearing aids and cochlear implants, can make a vast difference in the quality of sound for an individual with hearing loss. Hearing aids and cochlear implants may be very effective alone, but when noise is introduced, the hearing device by itself may not be able to adequately compensate. This is why assistive listening devices, such as FM systems, often are recommended. Nonetheless, if the individual does not have telecoils, he may not be able to make the best use of this assistive technology.

KEY TERMINOLOGY

Assistive Listening Devices (ALDs)

include a microphone to collect sound, a transmitter and receiver to transmit sound across a distance, a volume control, and an option to get the sound from the receiver to the ear (e.g., headphones, patchcords, or neckloops). Patchcords are used with specially fitted hearing aids or with cochlear implants. Headphones can be used by many with or without hearing aids. Neckloops can only be used by individuals with telecoils in their hearing aids or cochlear implants.

Telecoils

Optional equipment available on many hearing aids and cochlear implants. They are a way that people can use assistive listening devices or phones while maintaining the benefit of their hearing aid amplification prescription or their cochlear implant mapping.

KEY CONCEPTS

A wire with a current running through it naturally gives off a magnetic field. If another wire is placed near it, the magnetic field in one induces a field in the other. Magnetic fields carry signals that may be disorganized (e.g., static), or organized (e.g., music or speech). A telecoil is a small metal rod wrapped in wire. Telecoils work by induction. Telephones and other speakers give off a magnetic field unless the equipment has

been shielded to prevent it. Telecoils were first put in hearing aids to assist hearing on telephones. The user simply flips a tiny switch on the hearing aid to activate it. When the user places the phone speaker (the “ear piece”) near the telecoil, the signal is picked up and the hearing aid converts it to acoustic sound waves, amplifies the signal according to the individual’s hearing loss, and sends the amplified sound into the ear canal. Some hearing aids and cochlear implants have telecoils that automatically activate when they come into contact with a magnetic field.

For people who have a hearing loss, the sound that they want to hear (signal) needs to be significantly louder than the surrounding background noise in order for it to be understandable. Although hearing aids may have technology to reduce background noise, that same technology also can compromise the speech signal. An ALD can greatly improve the signal-to-noise ratio where hearing aids or cochlear implants cannot.

Nonetheless, some people have problems using ALDs. For people who need more amplification, removing their hearing aids to use headphones is not a viable option. Covering the hearing aid ear molds with headphones can result in feedback. Using a patch cord is an option for some users; however, many people don’t like the feeling of having a wire hanging from their hearing aid or cochlear implant.

Coupling via a telecoil is ideal for many users. A neckloop (a coated wire that is worn around the neck) is plugged into the headphone jack on the FM or infrared receiver. The neckloop gives off a magnetic field. If the hearing aid or cochlear implant has a telecoil, the telecoil will pick up that signal, and then the hearing aid or cochlear implant will convert the signal according to the individual’s needs. For people who don’t want to be too obvious about using an assistive device (e.g., by wearing headphones in a classroom), the neckloop is a desirable alternative because it can be worn under clothing.

Besides FM and infrared, a third ALD technology exists: Induction loops. Telecoils are an exciting option because, if a room or area is looped with an induction system, the user does not need any additional equipment besides the hearing aid to enjoy improved listening. As long as someone is speaking into the microphone attached to the system, the signal will be sent out from the loop of wire through the magnetic field. Newer induction systems come in a variety of styles, such as small, free-standing panels, chair pads, and floor mats. There is a movement in Holland-Zeeland, MI to loop it and other cities across America. (For more information on this initiative, go to www.hearingloop.org.)

TIPS FOR PROPER USE

- If you are working with someone who is purchasing hearing aids, make sure he or she is aware of the telecoil option and the benefits it can provide.
- The telecoil must be programmed, especially in newer hearing aids and cochlear implants. Confusion occurs when the option seems to be available, but in reality it has not been activated.
- If the sound output does not seem to be loud enough when the telecoil is used, make sure the individual checks with her audiologist regarding the

type of equipment being used and the situations where it is needed.

- Interference sometimes is a problem. Simply changing seats (or even changing head or neckloop position) can make a difference.
- Electrical equipment may give off interference in the form of static or a hum that is picked up by the telecoil. This is easily detected with the proper equipment. The department that handles setting up sound equipment for events will likely be able to assist in these situations.
- Neckloop testers (induction receivers) are available to determine if a neckloop is working or not. Plug headphones into it and place the neckloop next to the receiver to list to what is being transmitted across the FM or infrared system.
- If a room is being made accessible through an induction loop, induction receivers and headphones should be kept on hand for users who do not have telecoils.

ADDITIONAL RESOURCES

From PepNet

The Role of Assistive Listening in the Classroom
(1009)

Demystifying Hearing Assistance Technology
(1221)

Demystifying Assistive Listening Devices
(1073)

Serving Deaf Students who have Cochlear Implants
(1089)

Hard of Hearing Students in Postsecondary Settings
(1219)

National Task Force Reports on Quality of Services in the Postsecondary Education of Deaf and Hard of Hearing Students: Report on Assistive Listening Devices
(1004)

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