ASSISTIVE TECHNOLOGY AND ASSISTIVE LISTENING DEVICES FOR HEARING LOSS

What Is An Assistive Listening Device (ALD)?

An ALD helps amplify the sounds you want to hear, especially where there’s a lot of background noise. ALDs can be used with a hearing aid or cochlear implant to help a wearer hear certain sounds better. The user is able to adjust the intensity of the transmitted sound through a volume control device either on the ALD receiver or on the hearing aid or cochlear implant.

What different kinds of ALDs are available?

Personal Listening Systems; Telephone Amplifying Device; TV Listening Systems, Direct Audio Input Hearing Aids;

Types of Assistive Listening Device Systems:

**FM Systems**

FM System stands for Frequency Modulation. It’s a wireless devices that operates on special frequencies assigned by the Federal Communications Commission. They usually consist of a transmitter microphone used by the person speaking and a receiver and headset used by the listener. The FM receiver has volume control and the sound is carried to the user by headphones, a hearing aid or cochlear implant with a telecoil, (T-Coil) or through other induction loop devices such as a neck loop or a hearing aid silhouette. More than one system can be used in a small area without fear of crossover sound from one system to another. FM systems are often used in theaters, places of worship, museums, public meeting places, corporate conference rooms and convention centers.

**Pocket Talker**

The Pocket talker is a device wired with an attached microphone that transmits sound signals to someone wearing earphones or earbuds. This system is often used in medical settings, interviews and vehicles when a person is having a one-on-one conversation and does not wear hearing aids.

**Infrared Systems**

Infrared systems transmit sound using infrared light waves. Sound is carried on an infrared beam of light between a transmitter and receiver that closely resembles the FM system in size and appearance. Infrared is especially preferred where confidentiality is a concern as all receivers must be in the same room as the transmitter. There must be an unobstructed line of sight for the light beam to travel between transmitter and receiver. Infrared does not perform well in bright sunlight and thus makes it a poor choice as an outdoor system. Although they are often used in the home with TV sets, they can also be used in large settings such as theaters.

**Audio Loop Systems**

The Audio Loop System uses an electromagnetic energy to transmit sound. An audio loop system involves four parts:

1. The sound source; public address system, microphone or a home TV or telephone.
2. An amplifier
3. Thin loop of wire
4. Receiver

Sound is transmitted from microphones or other signal source through an induction cable that is often placed on the floor, under the room’s carpet or above in the ceiling tile. The loop can be as small as a personal neckloop worn by an individual, or can be as large as a wire which encompasses a room, auditorium or other listening area. People who are seated inside the wire loop and wearing hearing aids with T-coils, hear the sounds spoken into the microphones connected to the receiver. The receiver is most often a hearing aid with a built in telephone coil. Most, but not all hearing aids have a T-
coil. Check with your hearing care provider if you are not sure about yours. Listeners who do not have hearing aids equipped with T-coils, or who do not use hearing aids at all, can use special induction receivers with earphones. FM systems are used in a variety of situations such as listening to a tour guide, a classroom lecturer, a church, or a theatre.

**Telephones**
There are various telephones depending on the person’s hearing loss.

There are amplified phones with mini jack plugs to use with headphones, neckloop, silhouette, FM receivers, and Audio Direct Input. These phones have frequency adjustments and adjustable ringer. There are also Caption phones that are amplified phones with a text display that shows what the caller is saying.

There are other services also used by persons who have a severe hearing loss or are deaf such as Relay Services. These can include a Telecommunication Device for the Deaf (TDD), Internet protocol (IP) relay, video relay service and IP captioned telephone service which often eliminates the need for a TDD by making use of a computer with Web access.

**Hearing Aids**
A Hearing Aid is an electronic device usually worn in or behind the ear of a person who has hearing loss so sounds can be amplified. There are several types and brands of hearing aids. Make sure you find a device that fits your loss.

**Next Steps:** Using assistive technology can make everyday tasks possible and easier. A simple first step is to contact the Arizona Technology Access Program.

Visit our website at www.aztap.org or call 800-477-9921, 602-728-9534; 602-728-9536 (TTY). Reach us by email: askaztap@nau.edu.

---

Notes

---

Website QR Code

---

This publication was made possible by Grant Number 90AG0004 from the Administration for Community Living. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the US Department of Health and Human Services (HHS).

56 statewide Assistive Technology (AT) Programs form a national network of statewide assistive technology (AT) programs. In Arizona, this program is known as the Arizona Technology Access Program (AzTAP).

AzTAP is a Phoenix-based program of the Institute for Human Development at Northern Arizona University.