

Assistive listening devices and systems

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Assistive listening devices (ALDs) enable personal connections to audio sources for music and TV. Similarly, assistive listening systems (ALS) help in places like theaters and lecture halls.

If you have hearing loss, it is likely hearing aids will be a tremendous help to you in your daily life. But what about situations when your hearing aids aren't quite enough? First, make sure you've read up on tips for communicating with hearing loss. Next, look into the large variety of assistive listening devices (ALDs) and assistive listening systems (ALSs) that fill the gap in both private and public settings. Collectively, these are known as hearing assistive technology.

"These devices and systems often augment the information coming from a hearing aid, cochlear implant, or other personal hearing device, though some hearing assistive technology can be used even if you don't use personal hearing devices at all," notes Lise Hamlin, director of public policy for the Hearing Loss Association of America (HLAA), in an article in *The Hearing Journal*. Anyone who's toured a museum wearing a special headset has used an assistive listening system, for example.

Types of assistive listening devices

Assistive listening devices enable personal connections to devices, making it easier to hear or communicate. They include amplified telephones, hearing aid compatible phones and smartphones, television compatible devices, and alerting devices. Let's take a look at each category:

Telephone IP relay service

IP relay is a service that allows people with hearing and speech disabilities to make and receive phone calls using an operator (also known as a communication assistant) as an intermediary. The user types messages on a smartphone, tablet, laptop, or desktop computer with an Internet connection, and the operator reads those messages aloud to the other party.



Captioned phones are a type of ALD. Smartphones and apps also provide many ALD-like tools.

Amplified and captioned telephones

Amplified phones are specifically designed for people with hearing loss, allowing you to turn up the volume as necessary to hear speech clearly. You do not need to wear hearing aids to benefit from these devices. They can make it easier to hear high-pitched sounds, the same sounds many people with hearing loss struggle to hear. These phones sometimes also feature amplified ring tones so you'll never miss a call.

Also, captioned phones provide real-time captioning, which are particularly helpful for people with severe to profound hearing loss.

Hearing aid compatible phones and telecoils

By law, telephone manufacturers must make phones compatible with hearing aids. This includes smartphones like iPhones and Androids. Hearing aid compatible phones generally use either acoustic or telecoil coupling. *Acoustic* coupling picks up and amplifies sounds from the phone as well as any noise around you. *Telecoil* coupling requires your hearing aid to be equipped with a telecoil, a special feature that only picks up the phone signal for amplification. Telecoils in hearing aids are desirable for many people because background noise is blocked out during phone calls.

"Many hearing aids are equipped with a built-in telecoil but the audiologist may have not activated it," says Dr. Juliëtte Sterkens, an audiologist with HLAA. She recommends consumers ask their provider about telecoils. Another option is for consumers to search HLAA support chapters, where peers can give an in-person demonstration. "People can benefit from this telecoil feature, especially if they spend significant time on the phone or in a theater," Sterkens explains.

Additionally, phone apps can serve as their own unique ALDs. For example, caption apps can provide text translation for speech.

Assistive listening devices for televisions

When you have trouble clearly understanding or hearing the television, watching your favorite shows can become a chore. Turning up the television isn't always the best option since it can make sound distorted and even more difficult to understand. And, when you're watching TV with others, maxing out the volume isn't always a popular option. There are several television ALDs that can work for you whether or not you already wear hearing aids.

Some television amplifiers work even without hearing aids. For example, TV Ears[®] is a popular and relatively inexpensive wireless headset with a personal volume control that plugs directly into your TV's earphone socket.

Alerting devices

Most ALDs help make listening easier, but some also help you stay connected to what is going on around you and improve your safety. These alerting devices rely on amplified sounds, visual cues and even vibrations to alert you to sounds in your environment. Some examples of alerting devices include vibrating alarm clocks to help you start your day on time, doorbell alerts that use flashing lights to let you know a visitor is at your door, vibrating and flashing smoke and carbon monoxide detectors.

Wearable sensory/tactile devices for hearing loss

Relatively new to the ALD market are wearable wrist devices that can provide tactile sensations to let you know when there is sound in your environment that you're not normally capable of hearing, such as several products from Neosensory for people who are hearing impaired or Deaf.



Neosensory Buzz

Assistive listening systems for public settings

Assistive listening systems (ALSs) generally refers to system-wide technology that's useful in public settings such as a theater, airport, church or lecture hall. The Americans with Disabilities Act, or ADA, mandates that most public places offer some type of assistive listening system.

There are three types of ALSs recognized by the ADA:

- **Hearing loops**, also known as induction loops or audio frequency induction loop systems (AFILS), consist of a copper wire placed within a room, theater, or counter that is connected via a special loop “driver” to a public address or sound system. Sound is wirelessly transmitted via small changes in the magnetic field and is directed into the telecoil of hearing aids, cochlear implants, or telecoil receivers worn on the body, like a neckloop.
- FM or DM systems, or radio frequency assistive listening systems, transmit wireless, low-power FM



HEARING LOOP INSTALLED
Switch hearing aid to T-coil

frequency radio transmission from a sound system to FM receivers.

Look for this symbol in public places to access hearing loops.

Everyone using the system needs a

receiver and either headphones or a neckloop. For those who have telecoil-equipped hearing aids, neckloops eliminate the need for headphones. These systems are widely used in schools to help children with hearing loss achieve their educational goals but they are also helpful for adults in many situations.

- **Infrared systems (IR)** use invisible infrared light waves to transmit speech or music from a public address or sound system to an IR receiver. This technology is line-of-sight and can't be used in direct sunlight. Because IR signals are sent and received in a straight line, users are encouraged to sit as centrally as possible.

All assistive listening systems are required to be accessible for people with hearing aids, hearing aids with a telecoil, or hearing aids with no telecoil.

"If your hearing aid has this telecoil built in, connecting to a hearing loop is very easy," Sterkens says.

Of the three different public listening systems, hearing loops are preferred by most users, Sterkens says. "Many users like them so much they're working to get them installed all over the country."

In fact, telecoils are one of the four key features the best hearing aids should have, along with rechargeable batteries, a pleasing cosmetic appearance and Bluetooth streaming.

Hearing aid technology is impressive and can be a big help for people with hearing loss. However, if you have unique needs that aren't addressed by your hearing aids or if you aren't yet ready for hearing aids, assistive listening devices or systems can be the answer.

Where can I buy hearing assistive technologies and ALDs?

"Unfortunately, there are very few storefronts providing HAT. What we do have is mail order and internet-based stores that sell much of this equipment online," Hamlin explains. "To find them, you need only search the web under 'products for people with hearing loss.'"

No question, you will find a number of options to purchase the kind of equipment you need to make life just a little easier when you have hearing loss."

Also, your hearing care provider is your ally in this realm and can help you get set up with home ALDs or access public ALSs.

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Joy Victory has extensive experience editing consumer health information. Her training in particular has focused on how to best communicate evidence-based medical guidelines and clinical trial results to the public. She strives to make health content accurate, accessible and engaging to the public. Read more about Joy.