

Telecoil

[\(Back\)](#)

A wonderful feature available on many hearing aids is called the "telecoil". It's also referred to as a "t-switch" or "t-coil". The image at the right shows a telecoil at several times actual size that might be installed in a typical telecoil-equipped hearing aid.



It's nothing more than a tiny coil of wire around a core that will induce an electric current in the coil when it's in the presence of a changing magnetic field.

A telecoil, can therefore, be an alternate or supplemental input device for a hearing aid.

Normally, a hearing aid "listens" with its microphone, then amplifies what it "hears". But with a telecoil used as the input source instead of (or in addition to) the microphone, the hearing aid can "hear" a magnetic signal which represents sound.

On telecoil-equipped hearing aids and CIs, the wearer must "turn on" or "switch to" telecoil mode by moving a small switch (on older models) to the "T" position, or by changing to a program mode (by pressing a button on the ear-level device or on a remote control) that is set up to use the telecoil as an input source instead of or in addition to the microphones. Some users prefer a mode that only uses the telecoil and not the microphones when they are in telecoil mode, and other users prefer a combination of telecoil and microphones. There is no right way for everyone but there may be a best way for each person.

Automatic telecoils have become available on some hearing aids and CIs recently. So far, only a few of these will work when using a neckloop or a room loop, and they may even be intermittent in their recognition of a compatible phone's magnetic signal. Be sure if you are purchasing a telecoil equipped hearing aid or CI that has an automatic option that you also have a way to force the telecoil program to be on and stay on while you want it.

Originally, the telecoil was meant to "hear" the magnetic signal naturally generated in an older telephone, whose speaker was driven by powerful magnets. This allowed someone with a hearing aid to hear the telephone better, if they just turned on (or switched to) their telecoil as an input source for their hearing aid.

Now there are many more magnetic sources that can be "heard" by a telecoil equipped hearing aid.

Even though newer phones are not natural sources of a magnetic signal, most phones contain extra electronics to generate a magnetic signal and are thus "Hearing Aid Compatible" ([HAC](#)). What that means is that a hearing aid with a telecoil can "hear" the magnetic signal they put out.

In addition, because of the Americans with Disabilities Act ([ADA](#)), many public accommodations such as movie theaters, theaters, auditoriums, and sports stadiums provide Assistive Listening Systems ([ALSs](#)), which may include headsets or receivers loaned to patrons to help them hear. Many of these are HAC, so if you have a telecoil equipped hearing aid, then you can hear the magnetic signal ... many times you can hear that a lot better than you can hear an acoustic signal.

Many churches, though not required to provide ALSs, do so because they know it's good for their members.

You can also use a telecoil to hear the TV, telephones, in meetings, in noisy restaurants, or in a noisy car if you supply the magnetic signal using an Assistive Listening Device ([ALD](#)) coupled with a [room loop](#), a [neckloop](#) or [silhouettes](#).

One major advantage of a using a telecoil is that you can turn off your normal hearing aid microphone, and thus, not hear all the noise that might be around you. You only hear the magnetic signal, which doesn't include all that noise, so you can hear it a lot better.

There are some limitations of telecoils that may make alternative assistive technology a better for some situations.

- Electromagnetic Interference (EMI) can be present in some environments and can cause the telecoil to pick up a buzzing, or clicking that interferes with the sound quality or even makes the telecoil unusable. For example, some car motors, some dimmer switches, some fluorescent lights, and some heavy electrical equipment, some phones, or even building wiring can generate an annoying EMI signal.
- Room (or auditorium) sized loops can be difficult to install in some larger facilities, especially if there is a lot of metal in the construction (such as rebar in concrete floors). There are options for avoiding the uneven coverage that this can cause, but a good professional loop installer can usually suggest the best solution.
- Some cellphones can also cause an RF interference from the protocol they use to communicate with cell towers.
- Generally the magnetic signal generated by a loop is within the perimeter of the loop, but there can be a little signal generated outside that perimeter. This spillover is usually not a problem, but it can be if loops are installed in adjacent rooms. Again, this problem can be usually be resolved by professional loop installers.

Telecoils are available (and not very expensive) on most [BTE](#) hearing aids and on some [ITE](#) hearing aids. A few [ITC](#) aids may also have telecoils, but normally, [CIC](#) aids do not.

Telecoils can provide that extra help you need to hear in many otherwise impossible situations. Ask your hearing health care provider about telecoils if you think they might help you. Don't always count on your provider to suggest it.

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