

# ASSISTIVE LISTENING DEVICES

Dianna Theokas

DIANNA THEOKAS: I'm an audiologist with 11 years of experience. One of the things I specialize in is assistive listening devices, because I don't feel there are enough people giving out the information that people with hearing loss need. All too often they are just fitted with a hearing aid and sent on their way. A whole evaluation of all listening needs, whether it be work, school, travel, as well as fitting aids, should be done. A hearing aid can work in many situations, but there are many times where it's not enough.

Telephone devices: One of the simplest ones is just an amplified handset with a volume control. It's important to know that if you buy from Radio Shack or a similar store, that what they sell are not very strong. You need to buy from a company that manufactures devices specifically for the hearing impaired or ask an audiologist to assist you.

Another simple device is an in-line amplifier. This device plugs into the side of the phone. It really works well for people with a high-frequency hearing loss because it really amplifies the higher pitches to make speech clearer. And you can just turn it up to the volume that you need. There are also similar portable devices that can be used if you travel a lot, which are compatible with any phone.

The Teletalker phone can give up to 55 decibels of gain. You have a volume and a tone control on it, so you can adjust the tone to enhance high or low frequencies, which is a big help for many people. It also has very large buttons, so it can be helpful to people who also have vision problems. It is also possible to plug a neck loop into it. And if you have hearing aids or a cochlear implant that has a telephone or T coil switch, and you would hear directly through the hearing aid/ cochlear implant without feedback or interference from other noises around you. It can also be used binaurally so that you hear from both sides if you have T-coils on both aids. With a cochlear implant that does not have a T Coil, you would plug in using a patch cord, which allows you to hear directly through your implant.

Then, of course, there is the TTY, which allows you to call other deaf people who cannot hear on the phone, as well as hearing people via the relay system by typing your message. One bit of very good news is that you can now connect with the relay nationwide by simply dialing 711. There is also a phone specifically for voice carryover phone which allows you to use your own voice when talking to hearing people.

There are also cordless amplified telephones, and these amplify up to 30 decibels. Anyone can use them at normal volume and to amplify you simply press a button and roll the volume control to where you want it.

In addition there is a phone called the V-Tech Telephone, which also amplifies to 30 dec, and when you pick this one up, there are three different loudness levels. This one is always amplified to some degree so it may not be something you want to use if there are other people with normal hearing using the same telephone. You can also use it with a

neckloop. It is also the only cordless phone that is cochlear implant compatible with a patch cord. So if you have an implant and order one be sure you order it with the patch cord.

Another thing becoming increasingly compatible are cell phones. In the beginning, a lot of people who had hearing loss could not use digital cell phones because there were a lot of interference problems with digital cell phones.

There are three companies, that have cell phones that you can use neck loops with. They are Nokia, Motorola, and Ericsson, and they have developed neck loops that inductively couple to a hearing aid's telecoil. Now, when you use a neck loop, once again, if you have two hearing aids that have telecoils, you can hear from both sides when you're talking on the phone. These neck loops have a built-in microphone, so it's sort of hands-free use when you have the neck loop around your neck and the phone attached, and that can be very convenient. Remember though that if you go to a store to buy a cell phone you are talking to someone who probably knows nothing about these things, and you may have to keep going back again and again to find someone who knows what you are talking about.

Siemens also came out with a cell phone. It's actually an analog cell phone, and it is hearing aid compatible. So you can just use it with your hearing aids normally. I believe it's, like, \$350, though, so probably if you have T coils, you're much better off getting one of the brands that I already mentioned.

Television: Most of you probably know about closed captioning. TVs built after July 1 of 1993, if they're 13 inches or larger, have to have closed captioning. So if you buy a TV these days as long as it is 13 inches or larger it will have closed captioning ability. Decoder boxes are also available but are becoming obsolete because of the fact that all new TVs have built in closed captioning.

There is also a device called Direct Ear. It is a small box that sits on top of your TV and has a headset. It runs on rechargeable batteries and has a volume control. It works through infrared signals, but you can sit up to 65 feet away and hear the television, and the volume on the television can be completely off, or it can be turned to the volume for hearing viewers. This can also be used for cochlear implants by plugging in the patch cord and plugging into your implant with a neck loop. It can also be used with hearing aids, and the neck loop. You can also use this headset in many theatres that have infrared systems; you must take the headset portion with you and if you have your neck loop or cable if you have an implant, and can use it right in the theatre and hear everything that's going on, or it can be used without hearing aids just worn on the ears. It costs about \$209, and if you want to be able to have the plug-in jack on the bottom for implants and neckloop access, it's approximately \$229.

The signal that was pretty uniform across all states was 95KHz; so many people could take their device into a theater and use it. Now places are starting to use other frequency signals, so you may take this somewhere now and it may not work because they changed their signal. It's crazy, but we need to be aware of this.

Now I'm going to talk about some personal FM. Systems. There is one called a Pocket Talker. You put on headphones and clip the unit on somewhere and when people are talking, the microphone will pick up sound and transfer them through the headset. Now, if you don't want to wear the headset and you have hearing aids, or an implant, you can plug the patch cord for the cochlear implant or the neckloop for hearing aids into the headphone jack. There are accessories such as extra microphones, long extension cords so you can place the unit on a table or other convenient surface. One couple I know uses this to place the mic on the dashboard of the car. The Sound Director is a similar device, although it has 2 microphones. There are two settings that come with this. You can set it with the forward mic on to just hear those in front of you. Or you can have the front mic and the environmental mic on so you can hear those in front of you and those close to you. You can also put the environmental mic on an extension cord so that way if you were in a small group at a table for example, you would put this in the middle of the table or people could just pick it up when they were talking. Again, this can also be used with cochlear implants also.

When you buy a hearing aid they often ask you which ear you use a telephone on and put a T switch only in that hearing aid. You should always get a T coil on both sides because then you will have the ability to hear on both sides using these devices. Behind the ear aids may have a couple different switches in addition. They may have an M switch for microphone, or MT, which is half microphone, half T. coil, which is kind of a nice feature because if you're sitting talking to someone but you're also trying to watch TV, with a neck loop you can hear them talking as well as the TV. When you are fully on T coil, you are totally plugged into whatever device you are using.

There are other personal FM systems that you don't need long cords for, the Williams Sound PFM 300 or 350. You give a small box with a mic (transmitter) to whoever is speaking and you wear a small box also (receiver) and it is either plugged directly into a neck loop or an implant with a patch cord or used with headphones. So you hear the speaker directly through the aids, implant or headphones without being distracted by other sounds in the room. There are also some hearing aids where you have what are called FM boots that fit on the bottom of your hearing aids, and you have a little device that the speaker wears around their neck or it could sit in front of the speaker and you can hear right through the T coil of the hearing aid. They can be nice as they are cordless and less bulky. They are, however, a lot more expensive. Boots cost about \$3500. The Williams Sound is around \$650.00.

Many of the devices are cordless, so you can place it somewhere rather than having a speaker wear a unit. There is a wooden octagon shaped conference mic that can be used with the Williams sound FM system. You put the transmitter in the bottom of the wooden piece and simply place it in the middle of a table and it picks up whatever is being said and transfers it to the receiver that the person is wearing. Nobody would even know it's a conference mic, so some people who are in meetings all day tend to like this one. They even have one where if you had the one on the cord, you could plug two or three microphones in, if it was a long table, so you would have microphones sitting throughout the table length.

There are also a lot of large area systems. The local SHHH meetings in Rhode Island have a loop in the ceiling, right over where everybody talks and sits. Now, that's a type of system where you have to have a telecoil (T coil). If you're sitting within that loop, you put your hearing aids on T, and now you can hear whoever is talking on the microphone at the front of the room. If you don't have T coils, it's of absolutely no benefit to you.

There's also what they call large area FM systems, so there would be an FM system throughout the room and people can use T coils and neck loops, head phones or patch cords for their implants and plug it into the FM system. Anybody can benefit from this system even without hearing aids by wearing headphones.

Another system is infrared, which works by light beams. You wear a device or headphones into which the beams, which convey the sound, are directed to you. Movie theatres and theatres are increasingly offering systems such as this, and allowing you to borrow the units on admission. Some of them couple to your hearing aids or implant or they may, as I said, be of the headphone variety.

To benefit from a room with an induction loop you must have a hearing aid with a telecoil. You also cannot use induction loops in adjacent rooms as you get what is called spillover—you hear what is going on in the next room—the sound leaks and spills over from room to room. So in a conference if multiple rooms are being used they use either FM or infrared systems.

Fire Alarms: There are two ways you can be alerted to a fire alarm. The first one is a strobe light and the second one would be a bed vibrator under your pillow or mattress. They go off based on picking up the sound of a smoke alarm. They are portable and/or hardwired and can be put wherever you need it. The portable ones are not hard wired into your house, so you can take them with you on trips. The strobe runs on 9-volt batteries. Also, there are some local fire departments, which provide you with strobes if your income level is below a certain amount. In Rhode Island, there is also Ocean State Center for Independent Living that will help people purchase many devices, based on income. They do have to pay some, sometimes, depending on their income level. So you may want to check in your states to see what's available for you.

Now keep in mind that to work the portable alarms, you do have to worry about distance from the device, and it's usually about 100 feet. They cost about \$260 to \$280.

There are some last miscellaneous things: Many people don't hear that they have left their turning signal on while driving. There is something called the "blinker buddy." It plugs into your car wiring and it flashes a light, and it emits a tone that gets louder and louder the longer your blinker is left on.

There is also something called the "auto minder" and it monitors things like low fuel, fasten your seat belt, door ajar, all those other little signals in the car. Most of those also light up on your dashboard, too, but our blinkers also light up on

the dashboard, and you leave those on, so you never know if you're going to know those things are going off or not. So this one you can install yourself and it flashes a light when one of those warning signals in your vehicle is going off so that you know to look down and see which one it is.

Then there is "EARS." This stands for Emergency Vehicle Detection System, and what that does is detect sirens, so if there's a siren coming up behind you, and you don't hear it, this will alert you to it. They say this installs in ten minutes.

**Sonic Alert Alerting Devices:** One of the newest alerting devices they have come out with is called call waiting, and it is a little device that sits by your phone and flashes when a call comes in. The only problem I found with it is that if you use a cordless phone, you're not right next to your phone so you won't see it flash. It would be better if it were made to attach to a lamp so when the phone rang you would see it more easily. But it's brand new, so we'll see what happens with it.

There are also systems for the phone, doorbell, alarm clock where you plug a light bulb or lamp into it and when the phone rings the light flashes. If you have more than one of these devices, you can make them flash differently, so you know which device is going off in your house. (where can you get these????) If you want all of these things to go off in different rooms, you just plug in remote receivers in any room that you want these devices to alert you to, and then you would just plug in a lamp or you would plug in a bed vibrator, if that's what you wanted to use, because if you're sleeping and the doorbell goes off, it would vibrate in a pulsing motion to let you know that somebody is at the door, versus the phone ringing would be sort of a slower on and off vibration every time the phone rings.

There is also a baby cry alert. It has a sensitivity control on the bottom, so you can set it to pick up the loudness of sound that you need and when the baby or child cries it sets the device off, and when that happens wherever you have a receiver in the house the lamp or bulb in the receiver will go off in a very fast flashing motion. Some people also use these for other things, such as oven timers. They put it next to the oven, and they set the sensitivity so that it picks up the buzzer going off. You can do this by setting the sensitivity control so that it just picks up the range of sound that you desire.

There is also one that can be used if you don't have an outlet near where you want to pick ups found It is a small box with a long cord and does the same thing. Some people use it with the intercom in their apartments. They place it next to the intercom and when the light flashes they know somebody is at the door or talking on their intercom system. The doorbell device can also be put right on the doorbell chimes for a door alert, and you don't need an electrician to come in and hard wire it. Plus it can be set so that the flashing pattern from the front door differs from the back door.

Last is the sonic boom alarm clock, and this has three ways to wake someone up. It has a VERY loud alarm, it has a bed vibrator, and one can also if one wants plug a lamp into it and the lamp will flash. You can adjust it to have one; two or all three of these devices go off.

You can get these alerting devices from an Audiologist who deals with assistive listening and alerting devices.

On a different note, I want to mention "hearing ear dogs." In Rhode Island this program is called "Paws for Independence," and dogs are trained just as Seeing Eye dogs are. They are trained to alert their owners to sounds by barking, or nudging them and taking them to the sound source.

Dianna Theokas is a certified Audiologist with 10 years of experience in the field. She is the owner of Atlantic Hearing and Rehabilitation in Cranston, RI, where she provides audiological testing, hearing aid evaluations, fittings, assistive listening devices, cochlear implant evaluations, mapping and aural rehabilitation and industrial screening and educational presentation. [Ditheokas@aol.com](mailto:Ditheokas@aol.com)