

Assistive Listening Systems

By: Dr. Mary Maddock Au.D.

Doctor of Audiology

The ability to understand speech is negatively affected by factors such as background noise, poor room acoustics (reverberation), increased distance between the speaker and listener, poor visual access and poor lighting. These factors affect those with normal hearing but have a greater affect on people with hearing loss.

While obtaining hearing aids is probably the most important thing a person can do to cope with hearing loss, these instruments have performance limitations. Assistive Listening Devices (ALD) can be used with or without hearing aids to provide better speech understanding in those difficult situations where hearing aids do not provide enough benefit. These devices have been described as “binoculars for the ears”.

ALDs separate the sounds, particularly speech that a person wants to hear from the background noise of the room. They reduce or eliminate the effects of distance and they override poor acoustics. They are found in entertainment venues, places of worship, employment settings, education and at home. They provide access to the spoken word. They may be used with a hearing aid or instead of a hearing aid. Some people use them prior to purchasing a hearing aid for isolated settings.

Types of Assistive Listening Devices:

Blue Tooth systems are a new form of wireless technology that enable the hearing aid wearer to use their cell phone with greater ease and better sound clarity. There are Blue Tooth receivers that can be coupled directly to some hearing aids and most recently there are Blue Tooth receivers that will connect wirelessly to the hearing aid. These most recent receivers will enable the hearing aid user to listen to an iPod via Blue Tooth transmission and hear and talk through their cell phone without holding the phone to their ear. Future uses for Blue Tooth will include finding this technology in home phones and transmitters for television.

Personal Frequency modulation (FM) systems are miniature radio stations operating on a special frequency. They consist of a transmitter and microphone worn by the speaker and a receiver used by the listener. The receiver transmits the sound to the listener's ear either through a personal hearing aid, through a headset or via a small speaker that is placed near the listener. Personal FM systems eliminate the negative factor of distance and reduces the effects of background noise. Personal FM systems can be found in movie theatres, schools, museums, churches and for personal uses at home. Home uses include listening to others in the car, hearing your television and hearing better in a restaurant.

Infra-red systems are often used at home with TV sets and are found in many performing arts theatres. The sound is transmitted via infrared light waves to a special receiver that is worn by the listener. These devices eliminate the negative factor of distance and

reduce the effects of background noise. They cannot be used in outdoor settings as sunshine will interfere with the infra-red light signal. Infra-red systems are typically used instead of a hearing aid in specific settings. This is an ideal solution for people with mild hearing losses that currently do not wear hearing aids or just want to hear the TV better.

Inductive Loop systems require the use of a T-coil in a personal hearing aid in order to receive the spoken word. They are typically used in smaller auditoriums and on the telephone. However, until recently they have been very cumbersome and require extensive installation even in home settings. There are newer personal inductive loop systems that are portable, affordable and ideal for use in businesses such as banks or in the home for watching television. Miniature loop systems are located in most home telephones and some cell phones. Use of the inductive loop system requires the use of a hearing aid with a T-coil as the receiver. Not all hearing aids have this special coil. The hearing aid wearer would need to be notified of the presence of the inductive loop system so that they can manually change their hearing aid to the T-coil setting. Inductive loop systems reduce the effect of distance and background noise.

One to one communicators are the least expensive option. This category includes amplified telephones and “pocket talkers”. Guidance is required when purchasing an amplified telephone as it is important to purchase the amplifier with the correct strength to accommodate the individual’s hearing loss. Purchasing a mild gain amplified phone for a moderate hearing loss will be unsuccessful. The personal one to one communicator (pocket talker) is ideal for communicating with someone in the hospital or nursing home and in doctor’s offices. The listener wears a headset that is wired to an amplified box that is held by the speaker. This is a cumbersome system but has value in some settings.

Alerting systems allow the hearing impaired person to be aware of potentially threatening situations or enables them to live life with more ease. These systems include smoke detectors with strobe lights, alarm clocks that will vibrate and even the use of service dogs known as “hearing ear dogs”.

In Wilmington, many churches, movie theatres and prominent performing arts theatres use Assistive Listening Systems in order to provide access of the message by the individual. All cell phone companies are required to have at least two models that are hearing aid compatible. There is at least one retirement living center in Wilmington that has a loop system in their auditorium so that their residents are able to enjoy programs and performances. To ensure ease of listening and better understanding, investigate use of these systems in your daily life.

For more information on Assistive Listening Systems and a more complete list of what is available for your specific needs contact Dr. Mary Maddock Au.D., Doctor of Audiology at Wilmington Hearing Specialists.