



Self Help for Hard of Hearing People



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Information Sheets

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Information Sheet Number 9

ASSISTIVE LISTENING DEVICES

Contents

1. Introduction
2. TV, Radio and other amplified sound
3. Interpersonal communication
4. Telephone
5. Alarms and alerting devices
6. A Word About Adaptors
7. List of suppliers

1. Introduction

For most people, coming to terms with a loss of hearing is not easy. Positive first steps are:

- To acknowledge that your hearing is not as good as it could be, and

- To arrange for a full hearing assessment by a professionally qualified person.

If a hearing aid is recommended, and a correctly prescribed and well-fitted aid is acquired, you can hope to cope well in most listening situations. You can be confident of success if you learn to manage hearing aids effectively and adopt good listening tactics.

But even the best hearing aids have limitations and there are some listening environments which hearing aid wearers often find more difficult. There will be times when the use of an appropriate Assistive Listening Device (ALD) to supplement your hearing aid will make life easier for you – and for those around you! Sometimes an ALD can help those people who do not yet need a hearing aid or those who may be unable to manage a hearing aid adequately.

Here we give a brief overview of some of the ALDs currently available.

The devices listed are available for trial – but not for sale – at SHHH Hearing Information Centres. We recommend a visit to a Centre to find out what works best for you before you consider a purchase.

2. For Listening to Television, Radio, or Other Amplified Sound

- 2.1 TV Amplifier
- 2.2 Headphones
- 2.3 Radio with TV Sound
- 2.4 Audio Loop Systems: Neckloops – Induction Plates – Room Loops – Loop Mat – Hall Loops – Loop Receivers
- 2.5 Infra-Red and FM Systems
- 2.6 Decoders

Sections 2.1 through 2.4.2 below describe systems with a cable (wire) connection between the sound source and the listener. The remaining systems (2.4.3 through 2.6) describe systems where the sound signals are transmitted and no cable to the listener is required.

2.1 TV Amplifier

- Provides means to use assistive devices with a television set which has no inbuilt socket.

- Comprises a microphone and small amplifier with volume control and socket. Powered from a 240 volt outlet.
- The microphone is placed close to the television speaker grille. The amplifier can be placed on or near the television, or the long lead allows the amplifier to be placed beside the viewer for greater convenience.
- Volume control allows comfortable sound levels for both user and others in the room.
- Avoids the need for a technician to re-wire the TV speaker system to install a socket. This may void the warranty on your set.
- Small and completely portable – of special value when staying with relatives or friends.

2.2 Headphones

- Sound delivered directly to the ear by headphones is often loud enough, even though the volume of the TV is set to a low level .
- Headphones plugged directly into an inbuilt headphone socket on television, VCR, radio, cassette, etc will usually mute the speakers. If there are others in the room who wish to listen it will be necessary to use a TV amplifier as described above to plug in the headphones.
- If you normally wear hearing aids, you may obtain increased benefits by wearing your aids when using headphones. Your aids are prescribed for you – they perform important modification to the sounds reaching you and compensate for your particular hearing loss.
- If wearing aids, you should select a headphone with large pads which comfortably enclose the hearing aid and your ear. Headphones with earpieces faced with foam pads can prevent feedback (whistling) which may otherwise occur with hearing aids.
- Headphones are available with adjustable volume to each earpiece. This is helpful for those who wish to use headphones and hearing aids together, and for those without hearing aids and with a significant difference in level of hearing ability in each ear.
- It should be remembered that headphones with “volume control” can only reduce the volume below that coming from the television or other sound source. Because of this you may need to increase the volume coming from the television. In some situations this may cause discomfort to others listening with you.
- It is important to try out headphones when making a purchase and select those which are most comfortable for your particular needs.

2.3 Radio with TV sound

- A small AM/FM radio which can also be tuned to local television VHS channels. (Analogue channels 2, 7, 9, 10) It can be placed near you and adjusted to give you extra volume without increasing the level of sound from the TV. There is a socket for ear/headphones. Not all areas are suitable for successful reception and should be checked if possible.

2.4 Audio Loop Systems (Induction Loops)

When an electric current is fed into a loop of wire a magnetic field is created in the vicinity of the loop. If a second loop of wire is brought into that magnetic field a similar electric current will be induced in the second loop. This phenomenon, known as **induction**, is used to provide improved reception of amplified sound for hearing impaired people.

Some hearing aids have, as an inbuilt component, a small loop known as a **telecoil** – often referred to as a T switch. If your hearing aid/s have this facility, a number of options are open to you for improved listening – without interference from distracting background noise often picked up by the microphone of your hearing aids.

Audio loops may be on a small, personal scale to allow one person to hear on the telephone or television, or can be much larger and provide audio access for many, as in a hall, cinema, theatre, or church. (See paragraph 2.4.5 below)

The following are devices using this principle:

2.4.1 Neckloops

- A loop of plastic covered wire is slipped over the head to rest on the shoulders and connected to the television, radio, etc by a light cable.
- Used with hearing aid switched to the T position – you may need to turn up the volume control on your hearing aid.
- On the T position, sound is not received through the microphone of the hearing aid – you must switch back to the M position to join in conversation around you.
- A neckloop may be draped over the top of a high-backed chair and will usually provide sufficient strength of signal without actually wearing the loop.
- The thin cable between the sound source and the user can usually be placed safely and unobtrusively, but for some older users it could constitute a hazard. In this case you may wish to consider alternative cable free devices such as a room loop or infra-red system or FM (see below).

2.4.2 Induction Plates

- If you are severely or profoundly hearing impaired, a neckloop may not provide a sound signal of sufficient strength.
- An alternative device which delivers a stronger signal is an **induction plate**, a small coil of wire encased in a slim hook-shaped plastic covering.

- The plate is hooked over the ear and slipped between hearing aid and head. It is connected to the sound source by a light cable. Your aid is switched to the T switch.
- Induction plates can be used for listening with one ear (monaural) or both ears (binaural).

(For use **only** with hearing aids with a telecoil.)

The following paragraphs describe systems which do **not** require cable (wire) connection between the sound source and the listener.

2.4.3 Room Loops

- Give freedom of movement within the looped area –no need to be connected by a cable to the sound source.
- Supplied for do-it-yourself installations, the package includes an amplifier, about 25 metres of wire for positioning by the purchaser around the room and a small microphone to place near the sound source.
- They may also be directly connected to the Head Phone or Audio Out socket of the television, radio, or other sound source.
- Suitable for use by up to about 15 people (for larger groups see paragraph 2.4.5: **Hall Loops** below.)

2.4.4 Loop Mat

- Provides a simple means of looping a small area in the home or office for the TV or an information counter, library counter, office desk, ticket office, or small group meeting table.
- The small loop is contained within a vinyl mat approximately 40cm square and is easily connected to a suitable amplifier with microphone or to a TV or similar. In some devices for office use the microphone and amplifier and the loop are in one compact unit.
- Portable and easy to install .

(For use **only** with hearing aids with a telecoil.)

2.4.5 Hall Loops

- Many public halls, churches and cinemas have permanently installed loop systems. Look for the “Hearing Help Available” blue ear sign which should be prominently displayed.
- Portable loop systems for halls of different sizes, comprising amplifier, loop wire and microphone can be purchased from specialist suppliers.

2.4.6 Loop Receivers

- If you do not wear a hearing aid, or if your aid does not have a T switch, a loop receiver can be used to pick up the signal from an audio loop system in public halls, churches, cinemas, etc.
- Used with headphones or earphones and incorporating volume control.

For more detailed information about loops and loop installations, ask for SHHH Information Sheet No. 11: "**Audio Loop Systems in Public Places**".

2.5 Infra-Red and FM Systems

- Devices using infra-red or FM to transmit sound are available for use in homes and public venues.
- The system consists of a transmitter, which is connected in to the sound source, and a receiver is worn by the listener. There is no cable connection so there is freedom of movement. (An Infra-red system requires line of sight between transmitter and receiver)
- Headphones or stethoscope earphones are used by those not wearing hearing aids. Neckloop or induction plates provide the best reception for those wearing hearing aids with T switch.
- Cheaper infra-red or FM systems use expendable batteries and are generally limited to use with headphones. More expensive systems incorporate rechargeable batteries – a long term cost saving – and can also be used with neckloops, induction plates or direct audio input into hearing aids.
- Transmitters are available to accept sound input either from a microphone positioned near the speaker of the sound source, or by plugging into the headphone socket or the Audio Out socket of the TV or radio. If no microphone is provided and your TV lacks a headphone socket or audio out socket, the transmitter may be connected via the audio out socket of a video cassette or DVD recorder. Access to sound from stereo hi-fi sets is also possible.
- Each listener requires an individual receiver, but only one transmitter is required for a small audience.
- The quality of sound can be equal to that received by cable connection, but with infra-red some degradation of signal may occur due to fluorescent lights and/or sunlight.

(For use by all – with or without hearing aids.)

2.6 Decoders

If you are unable to gain sufficient help from amplified sound to enjoy listening to TV, **captions** may be the answer for you. For information about captioned TV and decoders contact the Australian Caption Centre, Level 4, 187 Thomas St., Haymarket NSW 2000. Phone (02) 9212 5277, TTY (02) 9212 3129 and Fax (02) 9281 2198. Freecall 1800 777801. Web address is auscap.com.au.

3. Aids to Interpersonal Communications

3.1 Mini Amplifiers

- Small hand-held battery-operated amplifiers for use where a hearing aid is not available or not advisable for medical reasons. The hearing impaired person wears earphones or headphones and controls the volume with the amplifier and the speaker has a microphone. There are a number of different types of equipment. Particularly useful in an emergency and in hospitals and nursing homes.
- The amplifier should not be seen as a long term substitute for a correctly prescribed and properly fitted personal hearing aid.

3.2 Communicators

Useful multi-purpose devices which function as either an audioloop receiver or as a general aid to communication. Battery operated and with volume control. Serves as a hand-held microphone used in conjunction with ear/headphones, neckloop or induction plates.

(For use without hearing aids – also with aids with or without Telecoil)

3.3 Phonic Ear TA80 Telephone Adaptor (Multi-Purpose Device.)

- Designed for use as a telephone coupler (see below), this multi-purpose device can also be used to improve communication in noisy environments, and when listening to television.
- Battery operated and feeding into either a neckloop or induction plates (monaural or binaural) the TA80 functions as a personal microphone.
- Small enough to fit easily into pocket or handbag and relatively unobtrusive when hand-held near the person speaking.
- Used with hearing aid set to the T switch to reduce background noise entering via the hearing aid microphone. Particularly useful in the car or train.

(For use only with T switch hearing aids.)

3.4 Direct Audio Input

- For wearers of hearing aids capable of receiving direct audio input, sound is fed directly to the aids, reducing background noise and giving greater clarity.
- The headphone socket of sound sources, including infra-red and FM sources, can be connected directly to suitable hearing aids by means of a "shoe" which fits over the lower part of the aid. Available for both monaural and binaural listening.

3.5 FM Communications Systems

- In situations where you are remote from the speaker, as in a lecture hall, hand-held devices may not be practical, or give sufficient clarity or signal strength.

- In the absence of any audio access facilities such as a loop or infra-red system a small personal FM system can be used.
- The speaker uses a small transmitter with lapel microphone or hand held microphone transmitter. The listener has a receiver with ear/headphones, neckloop, induction plate, or direct audio input.

(For use with or without hearing aids.)

4. For Use With The Telephone

4.1 Special Telephones and Accessories for Hearing Impaired People.

Major providers of telephone equipment have special models for hearing impaired people such as amplified or speaker phones.

See SHHH Information Sheet No. 5: "***Telephone Tactics for Those with a Hearing Impairment***" for current details and contacts.

4.2 Telephone Couplers and Amplifiers

- If you need to use a telephone without an inbuilt induction coil, or amplifier a portable, pocket sized telephone coupler or amplifier will be helpful to slip over the telephone earpiece.
- If wearing two hearing aids, the Phonic Ear TA 80 coupler has the advantage of having a socket into which can be plugged an induction plate for use on the opposite ear. This multi-purpose device can also be used as a personal microphone (see page 5 – Aids to Communication). Note that at least one hearing aid must be fitted with a T switch.

Bluetooth compatible loops are also available, particularly for use with mobile phones.

4.3 Telephone Typewriter (TTY)

- For those who are profoundly deaf and/or suffer speech discrimination problems which preclude the use of an amplified phone. Both caller and receiver must have a TTY.
- The telephone hand piece is fitted into cups on the TTY allowing two way conversations. Messages are typed in at one end and displayed on a small screen at the other. An optional printer allows messages to be printed.

See SHHH Information Sheet No. 5: "***Telephone Tactics for Those with a Hearing Impairment***" for details and contacts for the Telstra Program to provide TTYs to eligible customers on the same basis as ordinary telephones:

- A Directory of public TTY numbers is available from Telstra.
- A limited number of public telephones with TTY facility have also been installed by Telstra.

(For use when amplification does not provide sufficient help to allow use of regular telephones).

Note that a fax machine may also be considered as an alternative means of communication to TTYs. Also that a computer with modem opens up opportunities for communication by email.

5. Alarms and Alerting Devices

These devices may be individual as described below or combined for a complete system.

5.1 Doorbells

- Remote operated door alarms can be purchased in many local hardware shops from approx \$30. Easy to install and with the ability to take the unit with you to whatever part of the house you may be in, this may be the answer for you. Plug-in chimes are also available. But BEWARE! These devices function on a limited range of frequencies. It could be an advantage to buy one which provides a choice of frequencies as the range of each device can cover several floors of an apartment block and pressing one doorbell may activate a number of bells throughout a building!
- For those who travel and need alerting to a door knock, there is a useful flashing light device. The unit is portable and attached by Velcro to the inside of the door.
- Flashing light alarms for use with various sound sources are available.
- Pocket vibrating devices are also available

5.2 Alarm Clocks

Vibrating and/or flashing alarm clocks range in price from about \$50 to \$200.

5.3 Smoke Alarms

- Smoke detectors may be of the ionizing sensor type or photoelectric or both combined. Check with your Fire Brigade as some states have specific requirements. They may be battery operated or hardwired to mains power.
- In addition to the audible alarm, which may not be heard by a sleeping hearing impaired person, mains powered flashing strobe lights or a bed vibrator or a combination of both may be necessary for wakening.

6. A Word About Adaptors

These small, unlabelled items, available at electrical appliance stores such as Tandy or Dick Smith, are invaluable in allowing flexibility in the use of

assistive listening devices. An adaptor is used to provide a change in size of connection between cables and devices, or a change in mode of operation, e.g. between stereo and mono. Sometimes one adaptor will provide a change in both size and mode. By use of an adaptor, one piece of equipment can be used with another, even though their sockets are of a different size. When purchasing, always make quite clear to the salesperson the exact purpose for which you require the adaptor.

7. Suppliers

The major specialist suppliers of Assistive Listening Devices are:

- **Printacall**, 2 Doig Ave., Denistone East, NSW 2112.
Phone (02) 9809 2392 TTY (02) 9809 1283 Fax (02) 9809 2345
www.printacall.com.au
- **Word of Mouth**, 2 Floriston Rd, Boronia, Victoria 3155
Phone (03) 9761 2211 Fax (03) 9761 1834
www.wom.com.au
- **Phoenix Hearing Instruments**, 6/49 Butterfield St, Herston
Queensland 4006
Phone (07) 3852 4622 Fax (07) 3852 4633
www.phoenixhearing.com.au
- **Moore Hearing**, PO Box 171 Kyogle NSW 2174
Ph (02) 6632 28717
www.moorehearing.com.au

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