

Tips on hearing aid use



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Properly functioning hearing aids are of significant benefit to people with a hearing loss.

Today, hearing aids are available that help people with hearing loss put their remaining hearing to its most effective use. New technology in hearing aids makes it possible to suppress unwanted sounds and enhance speech, thereby facilitating conversation even in noisy surroundings.

However, some assistance may be helpful to get the full advantage of the hearing aids. This brochure has been written for family members, as well as care personnel, who assist and give guidance to hearing aid users.

Additional important information can be found in the user's instructions received with the hearing aids.

We would like to take this opportunity to thank hearing consultant Inger Riisager, speech and hearing therapists Bjarne Christensen and Bent Gottlieb as well as doctors Jean Courtois and Finn Mogensen for their contribution to this pamphlet. Also thanks to musician and author Lotte Rømer for reviewing this pamphlet and providing valuable insight from a hearing aid user's perspective.

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Introduction

1.

A hearing loss may be hereditary, occur suddenly or be an advancing process. Millions of people worldwide are faced with hearing problems. Hearing aids can be used successfully for almost all types of hearing losses.

Hearing aids are rather expensive, high precision electronic devices requiring proper care. The hearing aid should be kept clean and free of earwax and must not be exposed to extreme temperatures or humidity. When not in use, the hearing aid should be kept in its pouch or case.

Hearing aids do not restore normal hearing but they do put the wearer's remaining hearing ability to very effective use. By amplifying sound and speech, hearing aids help the wearer get the most out of each day.

The earmould: Until one gets used to the feeling, it can be annoying to have something in the ear. If the ear canal is tender and the earmould is not formed or placed correctly, it can be quite uncomfortable. In some cases the earmould can plug the ear, giving the sensation of talking in a barrel or having water in the ears.

In case of problems, it is important to consult the relevant hearing healthcare professional for advice or adjustment of the earmould.

New sound impressions: In principle, a conventional hearing aid amplifies all sounds, both wanted and unwanted ones. People with normal hearing are able to subconsciously “filter out” some unnecessary sounds, but this may prove more difficult for the hearing aid user. With the help of the hearing aid, the user may again be experiencing the “normal” noise levels that they lived with 20-30 years ago. This can take time to adjust to, especially since we all become more sensitive to noise with age.

There are digital hearing aids today that can compensate, to a great extent, for the user’s inability to ignore noise.

These hearing aids enhance speech and speech sounds, while suppressing background noise and other irritating sounds. Still, it takes time and effort to get used to the new sound impressions. Most people get accustomed to wearing hearing aids within a few months, but the process can easily take longer.

Getting used to hearing aids: The problems we just named can cause the users to give up wearing their hearing aids. Most hearing aid users hear reasonably well in quiet surroundings, often even without their hearing aids. Therefore, it may be tempting to only use the hearing aids in noisier surroundings. To maximise the benefit of their hearing aids, it is, however, important that the users allow themselves to get used to wearing them in all situations. And here, the assistance of family and care personnel could be very useful.

It is generally a good idea for users to start wearing their hearing aids in quiet surroundings. As they get accustomed to using their hearing aids, they can try wearing them also in noisier surroundings and for an increasing amount of time.

Advantages: Active use of the hearing aids will make communication with other people easier and this way contribute to increased quality of life. The user can better hear what people are saying and can hold conversations with one person, or even a group of people. They are better able to enjoy music, hear the TV and radio, hear the telephone ring – experience all the sounds that make up the day.

With the newer hearing aids, including the advanced digital instruments, users can enjoy greater nuance and variety in their perception of sounds.

Hearing: The ear is an incredibly sophisticated and complex sensory apparatus. Sensory cells in the inner ear convert the incoming sound to hearing. Damaged sensory cells are the most common cause of hearing loss. The damage reduces the ear's sensitivity to sound, so that the person is no longer able to hear soft sounds whereas very loud sounds are heard almost normally. In other words, soft sounds must be made louder, or amplified, to be heard, whereas loud sounds should only be amplified a little or not at all so they do not become uncomfortably loud.

Communicating with a hearing impaired person: Hearing aids are a big help, but cannot, as mentioned previously, restore normal hearing. One of the challenges facing a hearing impaired person is to determine from which direction speech or sounds come – and although advanced instruments are better at “separating sounds”, it can still be difficult to distinguish, and thereby understand, the various sounds.

Listening requires energy and resources of the hearing impaired person. Situations where many parts of the conversation must be repeated or where misunderstandings obstruct sensible communication are strenuous for everyone. Below are some guidelines that can help smooth away communication problems:



1. Never speak with your back to the hearing impaired person.
2. Make sure that you are not too far away from the person. The sound intensity is reduced by 50% if the distance is doubled, and just a few metres may prevent the message from reaching the person.
3. Make sure that you have eye contact. If several people are present, it is best to address the person by saying his or her name.
4. In very noisy surroundings it is a big help if you touch the person before speaking.
5. Speak slowly and clearly – but do not shout. Often it is not so much a question of volume as of the articulation of each individual word.
6. Misinterpretation of just a single word can cause the meaning of a comment or conversation to be lost. If the person does not understand a sentence although you repeat it several times, then try to rephrase it.

Increased sensitivity: Many types of hearing losses give increased sensitivity to loud sound and noise, which means that the hearing impaired individual has not just difficulty in hearing soft sounds, but also loud sounds. Consequently, loud speech may be just as unintelligible as soft speech, and loud sounds can sometimes even cause physical discomfort (e.g. screaming children, trucks, scraping chairs etc.).

Many modern hearing aids can be adjusted so that loud sounds are not uncomfortably loud and soft sounds are audible. It is therefore important to note whether the user often reacts negatively to loud sounds. If so, it would be a good idea to pay an extra visit to the hearing healthcare professional or maybe try with another type of hearing aid.



A general description of the hearing aid

A hearing aid consists of a microphone, an amplifier and a loudspeaker. The hearing aid helps the ear pick up sound, makes it louder and sends it into the ear. Both behind-the-ear and in-the-ear models are available.

A hearing aid consists of the following parts:

1. A microphone that picks up sound waves and converts them into electrical signals.
2. An amplifier that strengthens these signals.
3. A loudspeaker (called a receiver in hearing aids) that reconverts the amplified signals into sound.
4. An earmould that rests in the ear and through which sound travels to the eardrum (behind-the-ear models).
5. A plastic tube that sends the sound from the hearing aid into the earmould (behind-the-ear models).

To obtain maximum benefit of the hearing aid, the following functions (if available) can be used:

1. Microphone and Telecoil (M-MT-T switch)

Most hearing aids are equipped with an M-MT-T switch.

M = Microphone setting:

Set the switch to M for normal use.

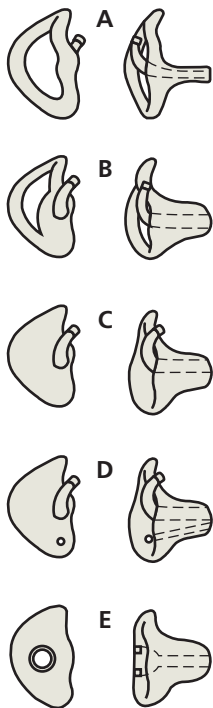
T = Telecoil setting: If the user is in a location where a loop system is installed, switching to T (telecoil) allows clear reception of the desired speech or music, without background noise. The telecoil is also recommended for telephone conversations, if the telephone receiver is fitted with a sufficiently powerful magnetic field. Telephones that can be used with a telecoil are available as audio-logical accessories. A telecoil can also amplify sound from a radio or TV provided that these are connected to a loop system.

MT = Microphone and Telecoil setting: It is possible on many hearing aids to listen through both the microphone and the telecoil simultaneously, by switching to MT (middle position). When the user listens with both the microphone and telecoil, he or she can converse with others while engaged in other activities such as talking on the telephone or watching TV.

2. Volume control: It is recommended to turn off the hearing aid or turn down the volume before inserting the hearing aid into the ear, so the user does not risk the discomfort of feedback whistling. When the hearing aid is in place, adjust to the desired volume. Many modern hearing aids automatically adjust the volume and are often not equipped with a manual volume control.

3. On-off switch: This can be a separate switch that, for example, opens the battery drawer, or an M-T-O switch, where O = off.

4. Battery drawer: This is where the battery is placed.



THE EARMOULD

It is important that the earmould is made so that it fits the user's ear as well as possible and that it is inserted correctly. This provides the user with wearing comfort and allows the hearing aid to function as it should. A well-formed earmould reduces the risk of feedback, and a vent duct in the earmould minimises the sensation of the ear being plugged up or of speaking in a barrel. If the earmould does not fit well, or causes pressure because it is incorrectly inserted, the user may be tempted to give up using the hearing aids. If the user or caregiver cannot insert the earmould correctly, it is important to seek assistance. The following illustrations show some different earmould shapes.

The tube: It is important that the length of the tube between the behind-the-ear instrument and the earmould is correct and that the tube is clean, intact and supple. If the tube is too short, the user will feel an uncomfortable pulling on the earmould and the hearing aid will whistle. If the tube is too long, it will be difficult to make the hearing aid sit correctly behind the ear. The tube can also become crimped, which can block the sound. Both the earmould and the tube must be clean, see chapter 4 on Maintenance.

The different earmould types:

- A. *open*
- B. *skeleton*
- C. *shell*
- D. *shell with vent*
- E. *solid earmould for body-worn hearing aids*

Placing the earmould in the ear

If a caregiver is inserting the earmould, we recommend that they are positioned behind the user. The broad curve of the earmould should be towards the back of the user's head – the tube held upwards. Holding the curve or elbow, insert the earmould into the ear from behind at a slanting angle. It may be helpful to gently pull the outer ear backwards and upwards so that the ear canal widens and slightly straightens. Place the pointed end above the curve carefully below the fold of the outer ear. Earmoulds slip easily into place in some people's ears, while in others they must be gently "rocked" into place.

Please remember to be gentle! The lining of the ear canal is sensitive and can easily become sore or irritated.





Hearing aid types and usage

The most common hearing aid types are behind-the-ear (BTE) instruments and in-the-ear (ITE) instruments, which include the tiny canal and completely-in-canal (CIC) hearing aids.





BEHIND-THE-EAR HEARING AIDS

Behind-the-ear hearing aids are placed behind the user's ears and are connected to an earmould by a tube.

Battery drawer and on-off switch

On the model illustrated, the battery drawer is opened using the nail grip. The battery drawer swings open. Place the battery in the drawer so that the plus (+) on the battery faces upwards and can be seen.

The battery drawer also functions as an on-off switch. When the drawer is closed and a click is felt, the hearing aid is turned on. The hearing aid is turned off by clicking the drawer downwards and turned on again by pushing it upwards. On some models, the on-off switch is combined with the M-T switch.

Battery drawers are designed differently on different makes and models. See the user's instructions included with the hearing aid. Please remember to switch the aid off when not in use and remove the battery if the hearing aid will not be used again soon.

Volume control:

The volume control is usually a small ribbed wheel that can be turned up or down. Be sure the hearing aid is turned off before inserting it into the ear. Some models with digital volume control have a spring-loaded switch, which is flipped up to raise the volume and down to lower the volume. Fully automatic hearing aids often have no manual volume control.

M-T switch:

The M-T switch can be set to M for microphone or T for telecoil. In some instances, the M-T switch has a middle position (MT), which permits listening through both the microphone and telecoil simultaneously. The MT position may not always be indicated with letters, but can be felt by a little click when you switch it into the mid-position.

In recent years, hearing aids have been developed which offer two or more listening programs. This allows the hearing aid to be programmed to suit different listening situations. These hearing aids may be supplied with a remote control, which is used to switch from one program to another. Several other function buttons are also transferred from the hearing aid onto the remote control. This can include the M-T switch and the volume control. There is usually a volume control on the hearing aid, so the volume can also be adjusted without the use of the remote control.





IN-THE-EAR AND COMPLETELY-IN-CANAL HEARING AIDS

In-the-ear hearing aids have the electronic components built right into the earmould. There are two basic designs: The concha model, which fills the contours of the outer ear; and the canal model, which only fills the ear canal. To use in-the-ear models, the ear canal must be of a certain size and shape, and good manual dexterity and a good eyesight will facilitate operation and maintenance. A right-ear hearing aid has a red dot and the left-ear hearing aid a blue dot.

CIC (completely-in-canal) instruments are tiny hearing aids with a small nylon extraction cord mounted at the battery drawer. The cord is used to remove the hearing aid from the ear. A right-ear CIC instrument is provided with a red shell, and a left-ear CIC instrument with a blue shell. When a CIC instrument is turned on, it whistles, indicating that the hearing aid and battery work. Once the aid is placed correctly in the ear, the whistling stops. The CIC hearing aid is turned off when the battery drawer is opened. Be careful not to force the battery drawer beyond the upright position.

Battery drawer and on-off switch

The placement of the battery drawer on in-the-ear instruments varies somewhat from one model to another. Care must be taken when inserting the battery. If it is incorrectly placed, the battery drawer will be difficult to close. Never force the drawer closed.





In CIC models, the battery is placed in a round holder built into the cover.

The on-off function varies from one model to another. On some types with vertically positioned batteries, the on-off switch is built into the battery drawer. When the drawer is closed, the hearing aid is turned on. When the drawer is ajar and you can feel a click, the aid is turned off. The on-off switch can also be built into the volume control. When the volume wheel is turned all the way down until a click is felt, the hearing aid is turned off.

Volume control:

The volume is adjusted in different ways on in-the-ear instruments. On some models the volume control is a small flat wheel that, by means of a fingertip, can be turned right to raise the volume or left to lower the volume.

On other models, the volume control is a small, ribbed vertically placed wheel that is adjusted up or down with a fingernail or fingertip. It can also be a small spring-loaded lever that can be moved up or down.

The volume of ITEs with remote control can be adjusted both on the remote and on the hearing aid.

Fully automatic hearing aids are not always provided with a manual volume control.

M-T switch:

If the hearing aid is provided with a telecoil, there are two settings

- 1) Microphone or Telecoil setting or
- 2) Microphone and Microphone/Telecoil setting.

The setting is chosen by pressing the battery cover for a couple of seconds. On hearing aids with remote control, you will find the telecoil function on the remote control.

See also the user's instructions included with the hearing aid.





MULTI-PROGRAM HEARING AIDS

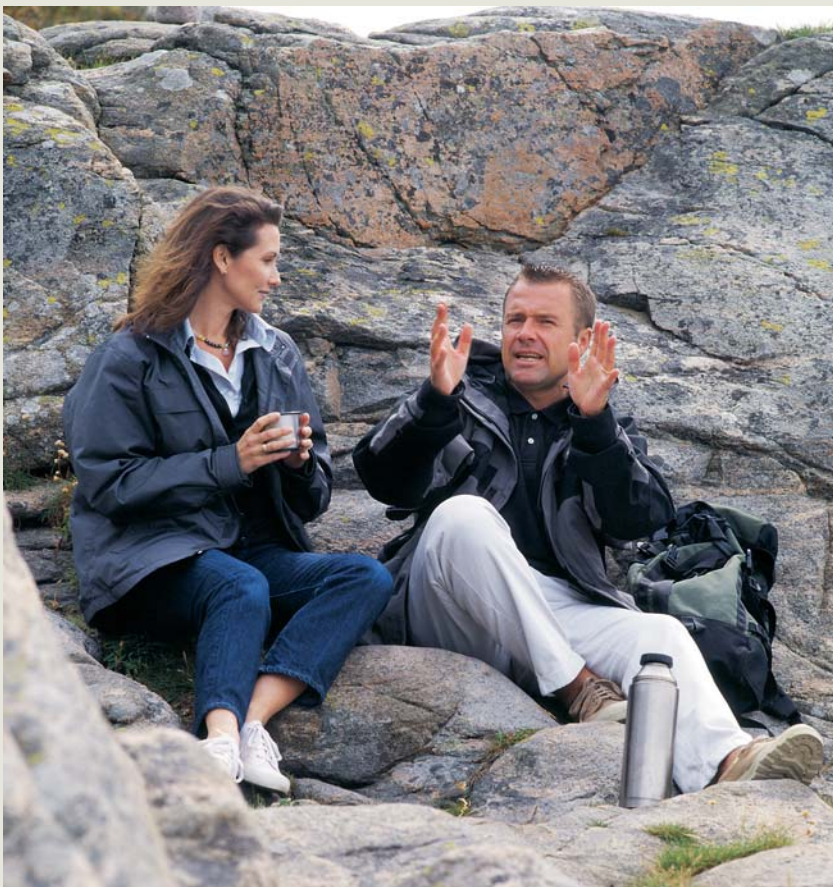
To reduce background noise and make, for example, music more comfortable and enjoyable to listen to, there are BTEs and ITEs with several listening programs that can be adjusted to the individual user's needs. These hearing aids are available with or without remote control.

To make operation easier, the controls of some hearing aids have been moved onto a remote control. The remote control is used to switch between microphone and telecoil, to switch between programs, or to raise or lower the volume. The remote uses its own battery.

BODY-WORN HEARING AIDS AND EYEGGLASS ADAPTORS

Body-worn hearing aids consist of a small box that contains the microphone and amplifier, a cord with a receiver and an ear-mould. They have an on-off switch, an M-T switch, a volume control and an N-H switch. When the hearing aid is set in position H, the low frequencies (bass) are reduced and the high frequencies (treble) are emphasised. This can help improve speech intelligibility in situations where it may be masked by background noise. N is the normal setting. The size of the body-worn hearing aids makes their operation easier for people who have trouble seeing or operating the smaller BTE and ITE hearing aids.

Eyeglass adaptors can be mounted on the eyeglass frame and fixed to a standard BTE. Operation is the same as described for other BTEs.



Maintenance

THE HEARING AID

1. Wipe the hearing aid with a soft, dry cloth. Never use water or other liquids to clean the hearing aid.
2. If the sound outlet is blocked by wax or moisture, remove the wax with the special removing tool supplied with the hearing aid and the moisture with a small blower.
3. The hearing aid should be turned off when not in use. Remove the battery if the hearing aid is not used for a couple of days. Place the battery in a cool, dry place and wipe the hearing aid clean.
4. The hearing aid must not be exposed to high temperatures or humidity.
5. The hearing aid must be removed before the user showers or bathes or uses a hair dryer, a hair spray or other sprays or is treated with ultrasound.

EARWAX

Earwax in the wrong place may cause even the best hearing aid to function badly or not at all. People use various tools (cotton buds, hairpins etc.) to clean their ears. Unfortunately, this often makes the problem worse, because the earwax is pushed further into the ear. We advise hearing aid users to have their ears cleaned regularly by their physician.



THE EARMOULD

To lengthen the life of the earmould and ensure its proper function, it is important to keep the earmould clean and to check it regularly for wax and moisture, which can block the sound transmission.

Cleaning the earmould:

1. Remove the earmould with the tube carefully from the hearing aid.
2. Put the earmould with the tube in a bowl of lukewarm water with mild detergent. Let it soak for 5-10 minutes to loosen any earwax or dirt.
3. Do not stick cotton buds, toothpicks, pipe cleaners or the like into the earmould. If the earmould is equipped with a vent and this is blocked by earwax, use the small plastic cleaning tool that is supplied with the hearing aid.
4. Rinse the earmould in running water.
5. Dry the earmould with a cloth. The earmould and the tube must be completely dry before they are mounted on the hearing aid again.

6. Mount the earmould with the tube on the hearing aid.
7. The small plastic tube connecting the earmould with the hearing aid must always be soft and flexible. An old tube may give rise to feedback whistling. Replace the tube at least every second month or if it becomes stiff or is loose. The tube must be of a make approved for this use.

The earmould can also be cleaned in an ultrasonic bath – or in a solution made with the type of effervescent tablets used for cleaning dentures (though not together).





WAX GUARD

A wax guard is a small plastic cap mounted in the sound outlet.

Earwax is one of the main causes of malfunctioning of in-the-ear hearing aids. During daily use, earwax can work its way into the sound outlet of the hearing aid and block the passage of sound.

In-the-ear hearing aids are equipped with a wax guard for protection against intrusion by earwax. It is important to clean the area around the wax guard and to replace the wax guard when necessary. The area around the wax guard can be cleaned with the cleaning tool supplied with the aid.

If problems arise, contact a hearing healthcare professional for help.

BATTERIES

Remove the sealing label covering the contact surface. The battery is then operative and uses current. Do not use batteries on which there is sticky residue. Insert the battery into the hearing aid so that the plus (+) is upwards (or as indicated in the battery drawer). Turn on the hearing aid and it will be operative.

The life of the battery depends on the type used. Powerful hearing aids and hearing aids that are used for many hours every day need more frequent change of batteries than hearing aids for minor hearing losses, or hearing aids only turned on for brief periods of time. Several of the new digital hearing aids have a built-in low-battery alarm. See the user's instructions for the individual hearing aid, regarding battery types.

TROUBLESHOOTING

If the hearing aid is not functioning properly, a quick check can be made in the following way: Turn the hearing aid on. Set the M-T switch on M, turn up the volume and hold the instrument in your hand. Close your hand. If the hearing aid works, it will whistle or make a short beep sound (fully automatic instruments). If the hearing aid does not whistle or beep, check the following things:

- Is there a fresh battery inside?
- Is the battery inserted correctly?
- Is the hearing aid turned on?
- Is the volume turned up?
- Are the sound outlet and the earmould free of wax?
- Are the tube and earmould free of moisture?

Remember that many hearing impaired people cannot hear the whistling or beep sound from the hearing aid. Therefore, they may need assistance with the troubleshooting procedure.

If the battery drawer has become dirty from a leaky battery or by other means, clean it with a cotton bud. Wipe the battery with a cloth in case of moisture.

If the hearing aid user complains that the sound of the hearing aid is generally too weak, this may be due to accumulation of earwax in their ear. Earwax should be removed by a physician. Other reasons for insufficient or distorted sound could be a change in hearing ability, in which case professional and qualified assistance should be acquired.

Whistling: If the hearing aid whistles while worn in the ear, check the following things:

- Is the earmould placed correctly in the ear canal?
- Are the sound outlet and earmould free of wax?
- Is the hearing aid tube flexible?
- Is the inside of the ear free of earwax?
- Is the tube sufficiently long?

If the hearing aid still whistles when all these points are in order, the earmould fit should be corrected or the hearing aid fine tuned.

If the hearing aid still does not work properly it should be taken in to be serviced. Never try to take the hearing aid apart yourself, as the parts inside the hearing aid are very sensitive and easily damaged. Only a qualified technician can service a hearing aid.



Accessories

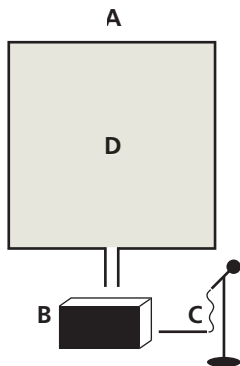
There are many different types of accessories available which by supplementing or working together with hearing aids can make the life of hearing impaired people easier.

Below, you will find some of the most common types, but accessories can often be tailor-made to individual needs. It would be a good idea to contact a hearing healthcare professional to hear what is available for you.

ALARM SYSTEMS

Many hearing impaired people have difficulties in hearing alarms. This problem can be overcome by installing a special alarm system.

An alarm system could be connected to the doorbell, telephone bell, alarm clock, smoke alarm or baby alarm or the like. The alarm signal is then presented as louder sound, vibrations or a light.



LOOP SYSTEMS

A loop system transfers sound from a transmitter, mounted for example on a television, via electromagnetic waves to a receiver, which is typically a hearing aid with a telecoil.

People with severe hearing loss can derive much benefit from loop systems in difficult listening environments, such as lecture rooms, theatres and churches. Listening to the TV or radio at home will also be much easier if a loop system is installed and the hearing aid has a telecoil function.

Loop system:

A. Induction loop

B. Amplifier

C. Microphone

D. Listening area

AMPLIFYING TELEPHONE

Special telephones are available that can amplify sound and make use of the telecoil in the hearing aid, so that the user can keep the hearing aid on when using the telephone.

HAND-HELD MICROPHONE

A hand-held microphone can be used with most behind-the-ear and body-worn hearing aids. It is connected to the hearing aid via an audio shoe.

When the connected microphone is held towards the person speaking, the speech signal from that direction is heard more clearly than other speech signals. This can be an advantage at parties and other situations with much background noise.



FM (TRANSMITTING/RECEIVING) SYSTEMS

FM systems are typically used in educational environments as well as at work and in leisure time. The person speaking talks into a microphone connected to a transmitter. The sound is then sent as a wireless signal to the listener's receiver.

With conventional systems, the receiver is connected to an audio shoe on the hearing aid by a cord. In newer systems such as Microlink by Widex the receiver is designed as an adaptor mounted on the hearing aid so that wires are avoided.

Useful tips

SPEAK SLOWLY AND CLEARLY

When communicating with a person with hearing loss, you should speak distinctly with your face in clear view of the person you are addressing.

Lip-reading is an important part of communication, also for people with normal hearing. Speech is much easier to perceive when looking at the speaker's lips.

HEARING AIDS AT AIRPORTS, SUPERMARKETS, ETC.

Hearing aids can be used almost anywhere, including airports and aeroplanes. Hearing aid wearers may experience a humming sound when using mobile phones or being near burglar alarms.

FM systems or hand-held microphones must be switched off in aeroplanes as transmitters may interfere with the communication system of the aircraft.

Most of the hearing aids shown on the illustrations are manufactured by Widex, but these instructions can also be used for hearing aids of other makes.



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