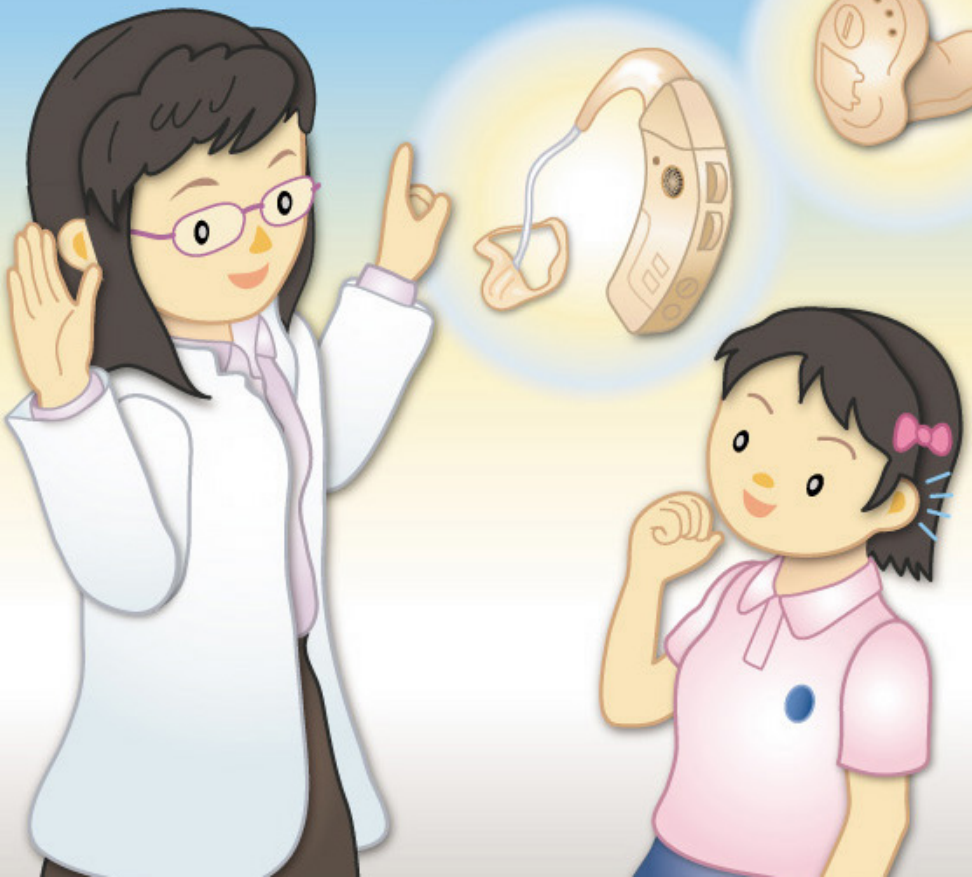
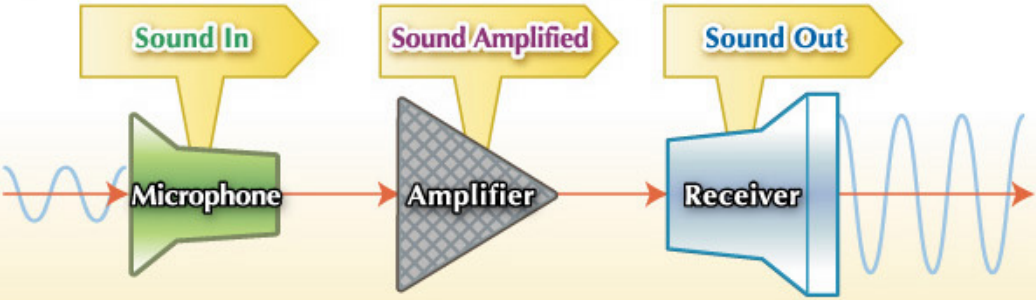
Education Bureau
The Government of the Hong Kong Special Administrative Region
AS-08E

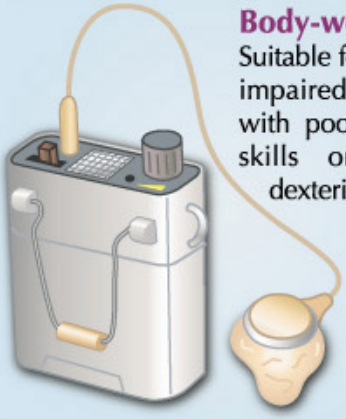
Hearing Devices



A hearing aid consists of three components: a microphone, an amplifier and a receiver. The sound is first received by the microphone, then amplified by the amplifier and transmitted out via the receiver. The function of a hearing aid to amplify sound helps hearing-impaired students to hear more easily. With a hearing aid, students with severe to profound hearing impairment will have their listening abilities enhanced. If these students start to wear hearing aids from childhood and receive auditory training as early as possible, they will benefit more from the device.



Types of hearing aids

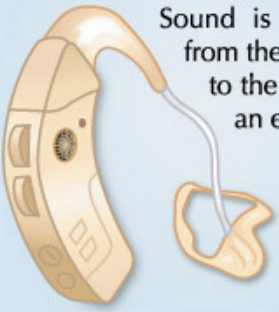


Body-worn

Suitable for hearing-impaired students with poor self-care skills or manual dexterity.

Behind-the-ear (BTE)

Placed behind the ear. Sound is transmitted from the hearing aid to the ear through an earmould.



In-the-ear (ITE)

Smaller in size and functioning both as an earmould and a hearing aid; placed directly inside the auricle and ear canal; suitable for students with wider ear canals and mild to moderate hearing impairment.

In-the-canal (ITC)

Placed directly inside the ear canal; smaller than the ITE hearing aid.

Bone-conduction (external)

Suitable for students with conductive hearing impairment caused by outer ear / middle ear dysplasia or ear illness with serious discharge.

Bone-conduction (bone anchored)

Suitable for students with conductive hearing impairment caused by outer ear / middle ear dysplasia or ear illness with serious discharge. As a screw must be driven into the user's temporal bone to fix the hearing aid, the skull bone of the user has to be thick enough to hold the fixture.

How hearing aids process information

Hearing aids process information in the following ways:

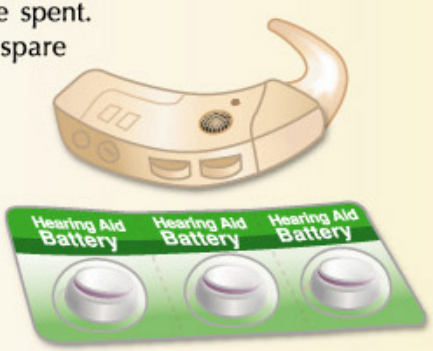
Analogue (Conventional) type:	Conventional hearing aids use linear or compression analogue technology to process sound. A tiny screwdriver is normally used for making adjustments.
Digitally-programmable type:	Digitally-programmable hearing aids process sound basically in the same way as conventional hearing aids. By setting different programmes with the aid of a computer, programmable hearing aids can adjust to different listening environments.
Digital type:	Digital hearing aids process sound by means of digital technology. They can control different channels separately, adjust cross-over frequencies and set different programmes. Digital hearing aids are thus more flexible than conventional and digitally-programmable hearing aids.

Points to note

- Keep the hearing aid as clean as possible.
- Avoid hitting the device or dropping it to the ground.
- Keep the hearing aid as dry as possible.
- Take out the battery and put the hearing aid in a damp proof box when it is not in use.
- Do not put the hearing aid under direct sunlight or near any heat source.
- Adjust the hearing aids to the designated sound volume. Seek help from audiologists if you find the amplified sound too high or too low.

Batteries

- Zinc-air button batteries are commonly used for BTE and ITE hearing aids. They are different from ordinary batteries. Ordinary batteries run out of power gradually after being used for some time whereas zinc-air batteries run out of power abruptly once they are spent. Users should therefore always carry spare batteries for replacement.
- Do not use the wrong type of batteries.
- Test the battery with a tester to see if there is enough power before wearing the hearing aid.
- Check if the contact points of the battery are corroded.



Common problems of hearing aids, their causes and solutions

Problems	Causes	Solutions
Weak sound	• Insufficient battery power	• Replace battery
	• Blocked earmould / tubing	• Clean earmould / tubing
	• Connecting tubing twisted	• Place the device in the correct position
	• Volume too low	• Adjust the volume to a suitable level
No sound	• Battery inserted improperly	• Reinsert battery correctly
	• Battery running out	• Replace battery
	• Switch turned to the wrong position	• Turn the switch to the correct position
	• Corroded battery contacts	• Repair the hearing aid
	• Blocked earmould / tubing	• Clean earmould / tubing
Acoustic Feedback	• Earmould inserted improperly	• Reinsert earmould
	• Cracked earmould tubing	• Replace tubing
	• Ill-formed earmould not fitting the user's ear	• Have earmould re-made

Helping hearing-impaired children to use hearing aids effectively

- Teach your children how to wear and remove earmoulds and hearing aids properly. This may help prevent problems like acoustic feedback caused by wrong fitting of the earmould.

- Instruct children to test their hearing aid every morning to see if the device works properly (for example, check if there is enough battery, or if the sound of the device is intermittent, unnatural or too low). For very young children who do not know how to test their hearing aid, parents can do it for them for the time being.

- Observe how children respond to amplified sounds, for example, their response to conversation and background noise. See if there is any change in their visual contact, or if they feel dizzy? Will using a hearing aid affect children with other impairments? Inform the audiologist immediately if any problem arises. Children may have problems initially in adjusting to wearing a hearing aid, hence it is better to introduce it gradually to the children.

- Tell your children to wear the hearing aid at all times except when they are sleeping, bathing or doing strenuous exercises. In other words, children should wear the device in school, at home and outdoors. If children feel uncomfortable in a noisy environment (for example, in a noisy restaurant, on a busy street or in a place where construction work is in progress nearby), parents may advise them to adjust the volume of the device or select another programme (suitable for a noisy environment).

- Arrange a quiet environment for effective communication, as people wearing hearing aids hate noises.

- Clean earmoulds and change battery regularly, otherwise normal operation of the hearing aid will be affected.

- Place the hearing aid and earmould in a sealed box with damp proof function when they are not in use. This can reduce the risk of malfunctioning, as Hong Kong is humid in spring and summer.

- Face your children when talking to them to facilitate lip-reading. This should be so even though their listening abilities have been improved with the help of a hearing aid.

- Readjust the volume or select a suitable pre-set programme for the best hearing effect of the hearing aid when it is used with a loop system, FM system or telephone.

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