

## Types and Applications of Hearing Aids

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### DESCRIPTION

A hearing aid is a tool used to help hearing loss sufferers hear better by amplifying sound. It is prohibited to market small audio amplifiers as "hearing aids," such as personal sound amplification products (PSAPs) or other straightforward sound reinforcement systems.

### Uses of Hearing aids

For a number of diseases, including sensorineural hearing loss, conductive hearing loss, and single-sided deafness, hearing aids are employed [1]. The kind, degree, and aetiology of the hearing loss, the technology and fitting of the device, the user's motivation, personality, way of life, and general health all play a role in how much benefit the hearing aid user will receive [2].

Hearing aids are unable to completely restore hearing. Sensorineural hearing loss, which is the most prevalent type for which hearing aids are required, is brought on by harm to the hair Cochlea and auditory nerve cells and synapses [3]. Hearing aids work best for treating conductive hearing deficits that do not entail cochlea damage because they can amplify sound to a level that compensates for the conductive component's attenuation [4]. The occlusion effect, loudness recruitment, and comprehension of speech amid noise are common problems with hearing aid fitting and use.

### Types of hearing aids

There are different types, sizes and models in hearing aids

**Body-worn:** The first portable electronic hearing aids were body-worn devices. Body aids are made up of an ear mold and a casing that are wired together [5]. The electronic amplifier's casing, controls, and battery are located there, while the ear mold often houses a tiny loudspeaker.

**Behind the ear:** The case for BTE hearing aids hangs behind the pinna. A conventional tube, a thin tube, or wire is used to secure the case to an ear mold or dome tip. The concha, where the ear mould or dome tip is inserted into the external auditory canal, is reached by a tube or wire running from the superior-ventral region of the pinna [6]. The electronics, controls, batteries, and

microphone are all housed in the case (s). The RIC model of BTE hearing aid is more frequently utilized in more active populations and is frequently smaller than a regular BTE.

**Hearing aids CROS:** A hearing aid that sends auditory data from one side of the head to the other is termed as a CROS hearing aid. The CROS can assist the patient on their hearing-impaired side locate sounds and comprehend auditory information [7].

**Bone-anchored:** A surgically implanted auditory prosthetic based on bone conduction is known as a bone anchored hearing aid (BAHA) [8]. When conventional hearing aids with a mould in the ear cannot be utilised, it is an option for those without external ear canals [9].

### Applications for hearing aids have evolved

People someone having trouble hearing, those are audio players. These programmes serve as a music volume amplifier and auxiliary hearing aid by increasing the level of the reproduced audio signal in accordance with the user's hearing characteristics. The user's audiogram serves as the basis for the player adjustment, just like in hearing aid applications. There are other programmes that integrate some hearing aid features in addition to adapting the music's sound. These applications feature a mode that adjusts sound amplification to the user's hearing preferences, a mode that muffles background noise, and a mode that lets the user listen to ambient noise without halting the music.

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