

## HEARING AIDS AND HOW THEY WORK

A hearing aid is a small, electronic device that amplifies sound. No matter what the size, style or manufacturer, all hearing aids have some of the same basic components: a microphone to pick up sound, sound processor and amplifier, a receiver (miniature loudspeaker) and a battery for power.

Internal controls are set by your audiologist. These controls determine which pitches are amplified, the amount of initial volume provided when the aid is turned on, and the loudest sound the hearing aid can process. External controls are set by the hearing aid user. (Very small aids may not have external controls.) The controls may include a volume button and program switch.

### Styles of Hearing Aids

#### Behind-The-Ear (BTE)

As the name suggests, this type of hearing aid fits behind the ear and is connected to an earpiece that delivers sound inside the ear canal. BTEs are suitable for both children and adults and for any degree of hearing loss, from mild to profound. Some BTEs are now available in miniature sizes and are cosmetically discreet. They have seen a major increase in sales because of smaller sizes, comfort in the ear, and more natural sound quality (especially if the ear canal is not completely plugged.) However, depending on the volume requirements and individual factors of the user, larger instruments may be necessary.

#### In-The-Ear (ITE)

The hearing aid case is a custom shell made to fit the curves of the ear canal and outer ear. It is made out of a hard plastic material. The hearing aid shell houses all of the miniature hearing aid components. There are several sub-styles: Full-shell—aid fills entire “bowl” of outer ear; Half-shell—aid fills half of the “bowl”; In-the-canal (ITC)—aid is mostly in the ear canal but is still visible; and Completely-in-the-canal (CIC)—aid is recessed deeply into the ear canal and is usually not visible.

ITE aids are generally not recommended for children because of safety concerns over the hard plastic cracking in their ears, and the increased number of shell re-makes due to rapid ear growth.

#### Bone-Conduction Hearing Device

Bone conduction hearing devices provide sound through a small vibrator powered by a hearing device attached to a wearable headband, or a surgically implanted attachment. These are used for patients who were born with no ear canals, and yet have normal inner ear function. They are also used with patients with single-sided deafness or other conditions that make it difficult to use other types of hearing devices.

**Which hearing aid is right for me?**

With so many factors involved in the process of selecting amplification, the assistance of an experienced audiologist assures you of choosing a hearing aid that best suits your needs.