Amplification Options for Children

Fact Sheet

If you suspect your child has a hearing loss see an audiologist. Your audiologist will determine the best course of action to help improve your child's hearing. If amplification is a possible treatment for your child the following are some of the options available to you.

Behind-the-Ear (BTE) Hearing Aid

This is the most popular style of hearing aids for children because it provides the greatest amount of flexibility for the fitting. This type of hearing aid sits behind your child's ear and simplifi ed sound is routed to the ear through an ear mold. BTE hearing aids are good for children who are still growing as the ear mold can be changed as they grow without changing the hearing aid itself. This style of hearing aid can provide the amplifi cation necessary for all degrees of hearing loss from mild to profound. BTE hearing aids can be used with a variety of other assistive devices including FM systems, telephone adaptors, television amplifiers and many others. Because the electronics are behind the ear, BTEs are particularly useful for those with chronic ear infections, excess cerumen (ear wax) and those with small ear canals.

Behind-the-ear hearing aids and ear molds come in a variety of colours and designs and they are durable for use with infants and children.

In-the-Ear Hearing Aid

This type of hearing aid fits in the ear canal and the concha (outer portion of the ear). This is a very popular style for adult hearing aid users but there are drawbacks for use with children who are still growing and active. They cannot be used with many assistive listening devices including direct audio input FM systems. Also, your child's ears are continually growing which results in the need for frequent re-casing and re-shelling of the hearing aids. While this is being done, your child is usually left without amplifi cation for a few days. This style of hearing aid cannot provide adequate amplification for individuals with severe to profound hearing losses.

CROS (Contralateral Routing of Signal)

This hearing system is designed for people with one ear that is unaidable (i.e. insufficient hearing to benefit from traditional hearing amplification). The better ear can have normal hearing (CROS Aid) or have some hearing loss as well (Bi-CROS). A microphone is placed on the poorer ear and the sound from that microphone is routed to a hearing aid on the better ear. This provides sound from the side of the head that has unaidable hearing. While this does not restore full ability to localize sounds in space, it does provide useful sound information that is not otherwise available to the individual.

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FM Systems

These are assistive listening devices used to improve the signal-to-noise ratio for the listener and to reduce the effects of poor acoustics. This system is made up of two parts:

1) the transmitter which is used by the speaker or placed near or connected to the device to be amplified (eg.TV, computer, stereo) and
2) the receiver which is used by the listener.

A personal FM system helps to bring the speaker's voice directly to the listener's ears either through hearing aids or headphones. The listener is able to hear the speaker above the background noise at considerable distances. There are no wires connecting the listener to the speaker which gives mobility to both. These units are sometimes used with infants and young children but are essential to the child with hearing loss in the classroom.

Sound field FM systems provide amplification for the whole classroom through the use of loudspeakers while the teacher wears a transmitter. This system has direct benefits to every child in the classroom but is particularly helpful for:

~ children with history of middle ear infection
~ children with unilateral hearing loss
~ children with minimal hearing loss who do not wear hearing aids
~ children with mild-to-moderate hearing loss who do wear hearing aids
~ children with central auditory processing problems or attention difficulties with normal hearing
~ children in early primary grades with normal hearing who are in the critical stages of developing academic competencies

These systems provide benefit to teachers as well because there are fewer incidents of vocal fatigue among users.

Fact Sheet

Cochlear Implant

A device surgically implanted into the cochlea to bypass the sensory organ to activate the hearing nerve directly. It is designed for individuals with severe-profound sensorineural hearing loss who do not benefit from hearing aid amplification. The system consists of a microphone, a cable, transmitter and speech processor which fit behind the ear, and the internal portion of the device (the magnet and receiver/stimulator) which are implanted in the mastoid process (behind the pinna). Once implanted, the device is programmed for the individual child over several months.

The criteria for candidacy for cochlear implants is updated yearly, please check with your local cochlear implant professional for the latest criteria.

For more information, see the CAA Fact Sheet *What Is A Cochlear Implant?*

BAHA (Bone Anchored Hearing Aid)

This device combines a sound processor with a small titanium fixture implanted behind the ear within the skull or held on the skull with a soft headband. The non-surgical option on a headband is suitable for younger children who do not meet the age criteria for the surgical option. The system allows sound to be conducted through the bone rather than via the middle ear – a process known as direct bone conduction. Children with chronic ear infections, and malformed outer ears are candidates for this type of device.