ENT NEWS

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Hearing Aid Devices

This month we would like to highlight amplification (different types of hearing aid devices) for hearing loss (conductive, mixed or sensorineural hearing loss (SHHL)) that cannot be helped with medication or surgery. This will be divided into three areas; the first being the more conventional hearing aids, the second will include cochlear implants and the third will include a new device called the Bone Anchored Hearing Aid (BAHA).

Digital Hearing Aids. Today almost all hearing aid manufacturers are moving toward providing exclusively digital technology in their products. This is due to the significant advantages that the technology provides versus traditional analog and programmable hearing aids. The most significant advantage of the digital technology is that it is designed to "self adjust" providing more gain for softer sounds and less for louder sounds. This provides the user with a higher quality of sound and overall better results. The following describe three categories for a pair (2) hearing aids:

Grade	Price Point	Characteristics
Basic	$2,000-$3,000	Self-enhancement of softer sounds Self-reduction of louder sounds
Mid-Grade	$3,000-$4,500	Self-enhancement of softer sounds Self-reduction of louder sounds 2nd Program option for noisy situations
High-Grade	$4,800-$5,500	Self-enhancement of softer sounds Self-reduction of louder sounds Multiple program capabilities Advanced noise reduction capabilities Greater programming flexibility

Our certified audiologists are ready to assist in choosing the hearing aid that will provide you with the highest quality of sound and best overall results. Please see them for details.

Cochlear Implants. Over the past few years, there have been new advances in cochlear implants. The criteria for the procedure has changed and the benefits have improved. The newest models have really decreased in size for both the implant and the processor. The implanted electrode array now has up to 22 stimulation sites and is made to curl around the cochlea much better which gives better amplification and has a less destructive affect to the remaining inner ear nerve cells.

Criteria for these candidates has become somewhat more lenient. We can now fit both adults and children with some residual hearing who cannot be aided with conventional hearing aids. People with less severe losses and poor discrimination now meet the newly established criteria. We are also fitting children as young as 12 months of age and also people who have an abnormal cochlea can still benefit from the implantation.

The benefit from cochlear implants has really increased. One study with adults found that there was an 80% improvement in sentence recognition after three months of wearing the cochlear implant. That number grew to 90% after six months of usage as compared to 10% sentence recognition with conventional hearing aids prior to the cochlear implant.

We feel that the earlier a child can be identified and have a cochlear implant, the better the probability is for their speech development and the higher the probability that they can be mainstreamed in a regular classroom by five or six years of age. There is also some interest in doing bilateral cochlear implants since we have always believed that bilateral hearing is more beneficial than unilateral hearing.

The third area of amplification is new and very exciting. The BAHA device is a partially implanted titanium fixture into the temporal bone behind the ear. This is done as an outpatient procedure under local anesthesia in an adult and under a general anesthetic for a child. This titanium implant develops osteointegration into the temporal bone over a three to six month period. Then the sound processor is attached to the titanium implant to transfer sound via bone conduction through the skull to stimulate the cochlea. For conductive hearing losses or mixed hearing losses, this is placed on the side where there is some hearing. The other indication is in a patient who has a total or profound nerve hearing loss in one ear and where a hearing aid offers no benefit. There really are a fair number of patients who fit this category who had tumors, trauma or suffer from what is known as sudden sensorineural hearing loss which occurs in 30 patients out of every 100,000 with no specific etiology. Before this time there has really been no way to bring sound to the side of the head that has a total hearing loss. Now with this implant fixture placed on the bad side, sound is transferred very well through the skull via bone conduction to the opposite normal hearing cochlea (ear). The patient can now hear sound from the non-hearing side of his or her head. The satisfaction rate of being able to hear people in a noisy background, or in a group setting is at least 80-90 % compared to the situation when there is no amplification on this totally nerve hearing loss side situation.

All of these services are provided or can be facilitated by our audiologists, Susan, Robyn or Allison, or by one of the doctors in our office. Please call if your group, doctors, nurses, or staff would like an in depth presentation on any of these topics. Otherwise please call if you have a patient that you would desire to be evaluated concerning one of these advances in hearing amplification to help their quality of life. Please call 575-1212 for a doctor appointment or 575-1213 for an audiologist appointment.