



WHAT IS A TECHNOLOGY EVALUATION?

You are scheduled for a Technology Evaluation to determine the best option to rehabilitate your hearing. Depending on your type and degree of hearing loss, one or more options may be available to you to help you hear well. Your hearing has been tested. The health of your ear has been established. Now we will evaluate how you are hearing in real-world situations.

There are 2 parts to this evaluation:

1. You will be fitted with a pair of hearing aids programmed with your prescription for hearing and tested in various listening environments.
2. Counseling on the best option to rehabilitate your hearing.

Depending on the options available to rehabilitate your hearing, your consultation appointment may be scheduled with a different professional than the testing appointment. For this reason, the consultation appointment will be scheduled after the initial testing is completed and your options are determined.

Your Technology Evaluation is scheduled on:

_____ at _____ in our office.

Please arrive 15 minutes early and be prepared to fill out 2 questionnaires regarding your hearing experience and general health. The testing should take no longer than 60 minutes.

Due to the length of the appointment, should you need to reschedule your appointment please contact our office immediately at 602-307-9919. Late arrival may result in cancellation of your appointment.



WHAT IS A COCHLEAR IMPLANT?

DEVICE DESCRIPTION

A cochlear implant is an electronic device designed to provide useful sound information to individuals who have hearing loss. The device consists of internal and external components. The internal components consist of a small electrode array (wires) that is surgically implanted into the cochlea (hearing organ), as well as, an internal receiver coil (antenna) with a magnet that is placed under the skin. The internal components cannot be seen and cannot stimulate hearing without working external components. The external parts consist of a sound processor with a microphone. A transmitter coil and cable also serve as external components. Internal and external magnets secure the transmitter (external) and the receiver (internal) in place for communication through the skin via radio frequency.

HOW A COCHLEAR IMPLANT WORKS

The microphone picks up sound in the environment and transmits the signal to the sound processor. The processor accepts the sound and transfers it into a coding strategy programmed for each patient. The program is based on measurements performed on a patient through the implant. The processor sends the signal to the transmitter coil which sends the signal through a radio frequency to the internal receiver. Finally, the electrical signal is sent to the electrodes to stimulate the auditory nerve. The nerve then carries the signal to the brain where it is interpreted as sound.

DIFFERENCES BETWEEN HEARING AIDS AND COCHLEAR IMPLANTS

Hearing aids provide acoustic and mechanical sound energy to the auditory system. They provide amplification to certain frequencies based on the recipient's audiogram. Hearing aids have mechanical limitations that may prevent adequate output levels or generate excessive feedback. In addition, hearing aids depend on the function of cochlear hair cells in order for a patient to hear and understand speech. Hearing aids send sounds through the entire hearing system including the hair cells (receptor cells) that are often damaged in patients with hearing loss. If a patient's hair cells are damaged severely enough, speech understanding (clarity) may be poor. In these situations, hearing aids will not provide what is necessary for a patient to understand speech. Although they will make sound louder, they cannot make sound more clear. On the contrary, a cochlear implant provides electrical sound energy by means of a prosthetic device. Unlike hearing aids, a cochlear implant can bypass the damaged hair cells in the cochlear and stimulate the neural cells. Cochlear implants do not share the same limitations for amplification that hearing aids have. Expected audiometric thresholds with a cochlear implant are between 20-35 dBHL for all tested frequencies 250-6000 Hz. The goal with a cochlear implant is for patients to experience all speech sounds loud enough and clear enough for speech understanding.