

Cochlear Implant Program at the Yale Hearing and Balance Center

The Yale Hearing and Balance Center provides a comprehensive cochlear implant program for both children and adults who qualify for the device and surgery. Our team consists of a cochlear implant surgeon and two cochlear implant audiologists. Please see our frequently asked questions for more information on cochlear implants.

Frequently Asked Questions:

What is a cochlear implant?

A cochlear implant is an electrical device that provides a sensation of hearing to individuals who are deaf or severely hard of hearing. There are two main parts of the device: the external and internal parts. The external part of the device is known as the speech processor. The speech processor has a *microphone*, which picks up the sound and is worn over (behind) the ear. The microphone has a cord leading it to the speech processor. The processor codes the sound into electrical signals. Those signals are then sent to the *transmitter*, a thin plastic piece about one inch in diameter that contains a magnet placed under the skin on the side of the head slightly behind the ear. The transmitter sends the signal through the skin to the internal part of the implant. The internal part is known as the receiver/stimulator.



The receiver/stimulator sends the signals into the electrode array, which is a one-inch long wire surgically inserted into the inner ear. The electrode array consists of an array of electrode bands, each of which can provide a tiny current to the inner ear. The array's purpose is to replace the function of the damaged or missing hair cells which ordinarily would stimulate the nerve endings of the auditory nerve.

Does a cochlear implant provide normal hearing?

No. A cochlear implant provides a limited sense of hearing. However, many abilities can combine this sensation with visual cues to understand spoken words. Cochlear implant users can learn to understand spoken sentences without looking at the speaker in many situations.



With a good language background, cochlear implant users can understand speech in quiet.

Am I /Is my Child a candidate?

Candidacy requirements differ for children and adults. However, both children and adults need to have:

- at least a severe to profound hearing loss in both ears
- Not receiving benefit or has stopped receiving benefit from hearing aids
- In good general health to undergo surgery
- Family members and the patient need to be motivated

If you feel that you or your child meet these criteria and are interested in learning more about the candidacy requirements, please contact our center.

How long does the process take to get a cochlear implant?

There are several appointments that are required before candidacy would be considered. You first need a *surgical consultation* to discuss the surgery with the doctor. Next, you will have a *cochlear implant evaluation*, which includes a comprehensive hearing test, speech testing in quiet and noise (if appropriate) and a counseling session with the audiologist. You will also need to undergo a *CT scan* to ensure the structures of the inner ear are appropriate for implantation. For adults you may also need to undergo a *balance assessment*. Children must have at least a three month trial with hearing aids before an implant will be considered. Documentation must be shown that the child is receiving little to no benefit from hearing aids.

What happens after surgery?

Approximately 3 to 4 weeks after surgery, patients return for the initial stimulation that will take about 90 minutes. We will also review the external device (processor) use and care. The patient will have their processor fine tuned to meet their individual hearing needs. Patients are encouraged to seek therapy to help them adjust to their cochlear implant. Patients often work with speech language pathologists and aural rehabilitation specialists to get the most out of their implant. The patient will also have follow up appointment to fine tune the device. The frequency of these follow up appointments vary from patient to patient.

If you are interested in pursuing a cochlear implant, please contact The Yale Hearing and Balance Center at (203) 785-2467.