

## What is a cochlear implant?

A cochlear implant is a device that replaces the function of the ear in people with severe to profound hearing loss. It takes sound and converts it into an electrical signal. An internal device is implanted surgically, and an external speech processor is worn. The units work together to transmit the signal to the brain for interpretation.

# Who is a candidate for a cochlear implant?

There are criterion that have been established by the FDA to determine if a patient is a candidate for a cochlear implant based on the patient's age. Generally, children and adults with severe to profound hearing loss in both ears with limited benefit from hearing aids may be considered potential candidates for cochlear implantation. A series of tests are performed by several medical professionals to determine if a person can benefit from and receive an implant.

A candidate must understand that the device will not restore their hearing to normal levels, but can make an improvement in hearing ability. Receiving a cochlear implant is a lifelong commitment; the device will have to be adjusted regularly over the course of your lifetime. Weill Cornell Medicine Otolaryngology

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Websites for more information: www.cornellent.org www.nidcd.nih.gov/health.hearing www.asha.org www.hearingloss.org **Cochlear** Implant Program

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#### **The Cochlear Implant Candidacy Process:** Adults

There are several steps for determining candidacy for a cochlear implant. First is audiologic candidacy. Several types of hearing tests are administered at different appointments to determine the type and degree of hearing loss and how a person can understand speech with and without hearing aids. It is important that current hearing aids and/or earmolds are brought to this appointment.

Cochlear implant candidates will meet a neuro-otologist who will review medical and hearing history. If deemed a possible candidate, imaging studies (MRI or CT) will be performed to verify if anatomy would permit placement of an implant. All medical, audiological and otological results including CT and MRI films, reports and audiograms should be brought to appointments. A primary care physician will also need to verify if the candidate is healthy enough to undergo surgery.

#### **The Cochlear Implant Candidacy Process:** Children

Audiologic evaluation for a cochlear implant in a child is somewhat different from adults. Testing is done using a battery of medical evaluations and audiological testing that include brainstem response (ABR), behavioral tests, aided and unaided hearing testing in the soundbooth, and age appropriate family and educational questionnaires. A listening, speech and language evaluation is also performed in order to establish base-line skills and candidacy from a communication perspective.

Communication with the child's early intervention (EI) providers and/or school will also help determine if a cochlear implant is appropriate. All audiological and educational documents should be provided to the members of the implant team. Cochlear implantation is considered for a child only after a trial period with traditional amplification. If hearing aids do not provide adequate benefit to allow or speech and language development, the child may be considered for cochlear implantation.

CT scan or MRI imaging is typically performed. It will be necessary when considering candidacy to return to the audiologist for frequent testing and hearing aid adjustments.

#### What Are the Possible Outcomes

Adults who lost their hearing after they learned to speak may perform better than those who lost their hearing as a child. Length of time with hearing loss and use of hearing aids may also influence a person's ability to understand speech with a cochlear implant. Results with cochlear implants vary from person to person with most people demonstrating ability to hear words and complete sentences and in many cases engage in conversation. In order to maximize the benefits from a cochlear implant, adults are seen for an auditory/speech evaluation and auditory training (i.e., listening therapy) by a speech-language pathologist beginning the first week following activation of the device(s).

**Children** who are born with hearing loss or who lost their hearing before they learned speech-language will require intensive listening and speech-language therapy after implantation to optimize benefit from the device(s).

### Does Insurance Pay For the Cochlear Implantation?

Medicare and most third party insurance carriers cover the costs of assessments, implant and surgical costs. Insurance verification is necessary prior to CI candidacy testing.

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