

Cochlear implants



What is a cochlear implant?

A cochlear implant is a small, complex electronic device that can help to provide a sense of sound to a person who is profoundly deaf, providing that the hearing nerve between the brain and cochlea still works.

It restores hearing levels to between 20 & 30 dB, which is the normal hearing thresholds. Unlike hearing aids, which make sounds louder, it replaces the function of the damaged inner ear (cochlea).

The implant consists of an external portion that sits behind the ear and a second portion that is surgically placed under the skin.

How does it work?

- A receiver-stimulator is placed just under the skin, behind the ear
- An electrode array is implanted surgically into the cochlea
- An external sound processor transmits digitally-coded sound to the cochlea
- The recipient manages his/her hearing with a hand held remote assistant



Who qualifies for an implant?

Adults

- moderate to profound hearing loss in both ears
- receive little or no benefit from hearing aids
- score 50% or less on sentence recognition tests in the ear to be implanted
- score 60% or less on sentence recognition tests in the non-implanted ear or in both ears with hearing aids

Children

- severe to profound sensorineural (inner ear) hearing loss in both ears
- receive no real hearing benefit from hearing aids and
- are not making progress in developing speech and
- have parents and families dedicated to their child learning speech and being part of the hearing world



What is considered a successful implant?

Adult with acquired hearing loss often benefit immediately after the activation of the electrodes and many understand speech without lip-reading on the first day already. More than 70% can be employed in an environment that requires the use of a telephone.

Children, born deaf, who received a cochlear implant before the age of 2 years, have the potential to enter grade 1 with spoken language skills that closely match those of their hearing peers – providing there are no other factors influencing the child's progress and the child receives the required speech and language therapy.

It is important to remember that an implant does not restore normal hearing. Instead, it can give a deaf person a useful representation of sounds in the environment and help him or her to understand speech.