

# Cochlear Implant for Hearing Loss CASE STUDY



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# **Patient History**

An 83 year old male presented with sensorineural hearing loss that had progressed to a level where hearing aids were no longer effective.

# **Treatment Plan**

The patient underwent cochlear implant evaluation and work up, and was found to be an excellent candidate for cochlear implantation. He elected to proceed and underwent an outpatient surgery for implantation.

# Results

His cochlear implant was activated and he noted improved hearing and comprehension. After implantation he was able to have a phone call with his daughter - something he had not been able to do in years. The patient continues to work on his own, and with his cochlear implant audiologist, to optimize his sound processing using the implant.



The Florida Center for Hearing Health, a department of Florida E.N.T. & Allergy, specializes in the prevention, identification, and management of hearing loss. Our doctors of audiology work in conjunction with our ENT physicians to address potential causes and treatment options available.







Intra-operative view of the round window (designated by the arrow) and entrance to the cochlea - where the cochlear implant electrode is inserted.



Cochlear implant electrode is inserted into the round window. Once inside, it can stimulate the spiral ganglion and allow for transmission of sound input to the brain via the cochlear nerve.



Non-magnified view of the incision and access site to the round window (through the mastoid bone behind the auricle).



Intra-operative X-ray confirms full 360-degree placement of the electrode within the cochlea.

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# **How Do Cochlear Implants Work?**

Cochlear implants provide electrical stimulation to nerve fibers in the ear by bypassing the damaged inner ear to directly stimulate the auditory nerve. A cochlear implant does not restore normal hearing; however, it replaces the function of damaged sensory hearing cells inside the inner ear to help provide clearer sound than what hearing aids can provide. It has the ability to give the perception of sounds in the environment which can help individuals understand speech.

# A cochlear implant system has two parts:

- The external sound processor
- The implant that is surgically placed under the skin and attached to an electrode array that is placed in the inner ear.

Together, these parts bypass the part of the ear that isn't working and send sound straight to the hearing nerve.



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