



Advanced Bionics AG
Laubisrütistrasse 28, 8712 Stäfa, Switzerland
T: +41.58.928.78.00
F: +41.58.928.78.90
info.switzerland@AdvancedBionics.com

Advanced Bionics LLC
28515 Westinghouse Place
Valencia, CA 91355, United States
T: +1.877.829.0026
T: +1.661.362.1400
F: +1.661.362.1500
info.us@AdvancedBionics.com

For information on additional AB locations, please visit
AdvancedBionics.com/contact

What is a Cochlear Implant?



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A cochlear implant is an electronic device designed to provide enhanced sound perception and the potential for greater speech understanding for children and adults with significant hearing loss.

A cochlear implant has external components, a sound processor and a headpiece, which can be taken off and put on easily. It also has internal parts, which are implanted during surgery and are not visible: the implant and the electrode array.

A cochlear implant works by bypassing the damaged or missing hair cells in the cochlea and stimulating the hearing nerve directly.

"I am passionate about sharing the miracle of cochlear implants with others who are on the same journey I took. To be able to hear all the sounds of our beautiful world after much silence and frustration is an incredible experience."

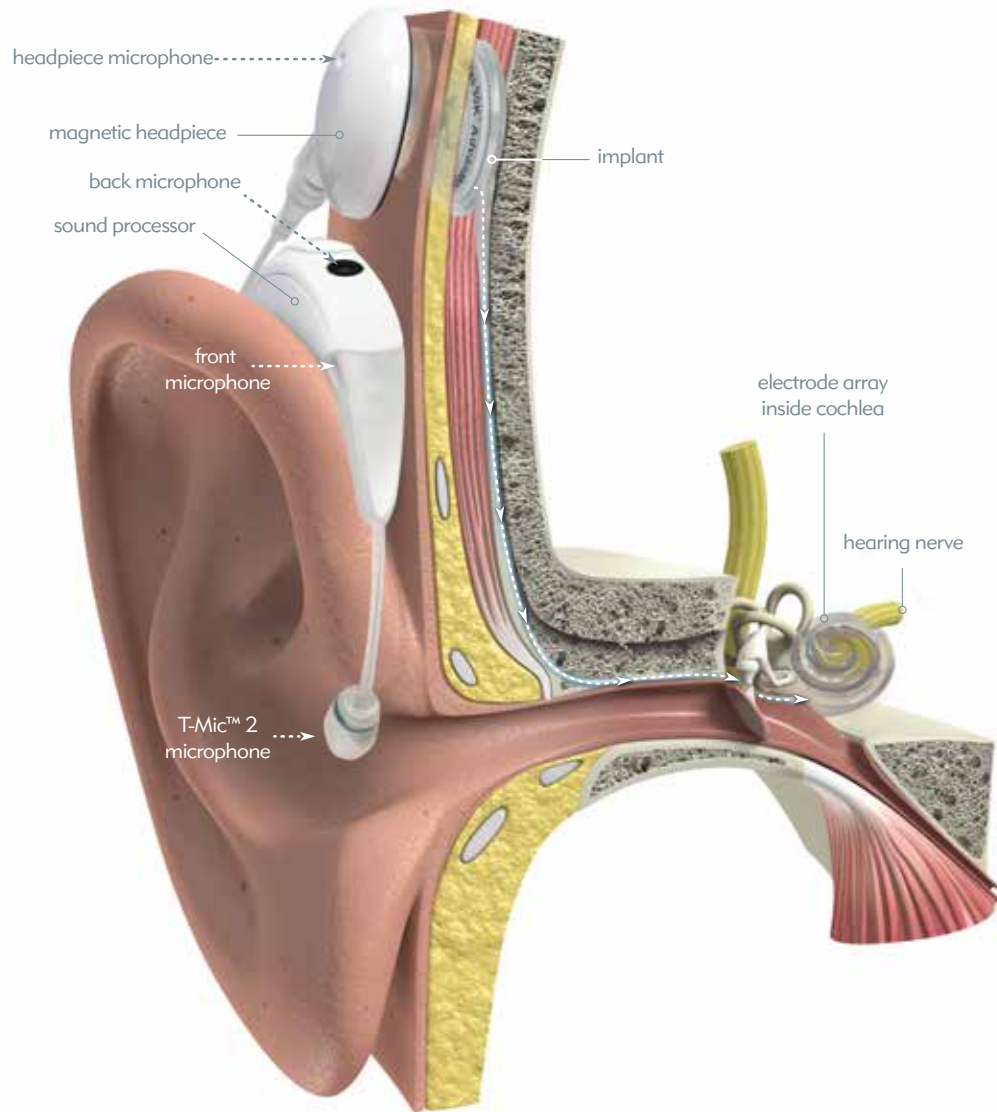
— Elizabeth Booth, AB recipient

"You want your child to have a fair chance in this world and I feel like she now has the opportunities we always intended her to have. We look forward to her being included in the hearing world, which to us is as simple as participating in family conversations, playing with our friends' children, and attending neighborhood schools."

— Lisa Cunningham, mother of AB recipient Liliana

How does a CI Work?

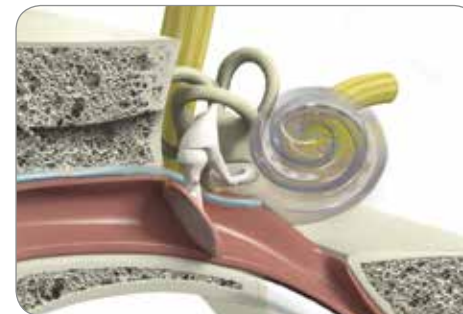
Cochlear implants help people with significant hearing loss. This type of hearing loss occurs when the very tiny hair cells in the inner ear (cochlea) have become too damaged or are completely missing. When this happens, sound — even sound amplified by a hearing aid — cannot be properly delivered to the brain.



The external components capture environmental sounds as well as speech and music.



They process these sounds so they can be transmitted across the skin to the implant. The implant then passes the signals along to the electrode array.



The individual electrodes then deliver these signals to the hearing nerve where they travel to the brain and are perceived as sounds.

The entire process, from capturing sound to processing it in the brain, occurs so rapidly that the user hears sound as it happens.



What can Cochlear Implant Users or Parents Expect?

As each cochlear implant user is unique, no one can predict exactly how much benefit you or your child will receive from a cochlear implant, because many individual factors contribute to the outcomes.

- Some biological factors include age at implantation, amount of previous hearing, duration of deafness, and health of the inner ear and hearing nerve.
- While biological factors may present limitations to hearing potential, it is possible to move beyond these limitations through individual effort. A cochlear implant user's brain is trained as he or she practices listening. Therefore, post-operative rehabilitation and educational support, as well as personal and family commitment, are key success factors.
- It takes technology to bring sound to the damaged auditory system, and therefore implant design and sound processing are also important factors. The advanced technology and flexibility of the HiResolution™ Bionic Ear System are intended to help each person reach their highest hearing potential so every AB cochlear implant user can hear their best.

Why do People get Cochlear Implants?

Significant hearing loss can make people feel cut off from the hearing world. They miss the everyday sounds normal hearing people take for granted and can feel isolated and left out.

People get cochlear implants because they want to hear their best, be independent, and feel included. They want to take part in conversations, hear their children or grandchildren talk, listen to music, or simply enjoy the sounds of nature. They want to be confident that they can hear in all listening situations, even in noisy environments.

Parents choose cochlear implants for their children because they want them to hear the sounds of life. They want to provide their children with the opportunity to learn to listen, talk, and communicate freely and independently. They want their children to participate fully in the world of sounds that surrounds them.





What Makes the HiResolution™ Bionic Ear system special?

Advanced Bionics has made major breakthroughs in the science of delivering sound through a cochlear implant. With the HiResolution Bionic Ear System, AB offers the most **sophisticated technology** and the **highest-resolution sound** for hearing that more accurately mimics a normal-hearing ear. AB gives users the incredible opportunity to hear the details that make the world of sound so rich—the voices of loved ones, the whisperings of nature, the harmonies and melodies of music, and much more..

In 2009, the hearing healthcare industry changed forever. Advanced Bionics began working with Phonak, bringing together the most advanced cochlear implant and hearing instrument technologies into one family. AB is recognised as the **innovation leader in the cochlear implant industry**, with our pioneering development of the first fully waterproof sound processor, advanced bilateral and bimodal technology, and other groundbreaking advances that help users hear their best.

To learn more about Advanced Bionics and the HiResolution™ Bionic Ear System, we invite you to visit our website: [AdvancedBionics.com](https://www.advancedbionics.com), or contact your local Advanced Bionics representative. A dedicated team will be there to answer your questions.

What is your next step?

Anyone who thinks a cochlear implant may benefit them or their child should talk to their ENT doctor or audiologist. If appropriate, their hearing health professional will refer them to a cochlear implant centre. There, a team of cochlear implant professionals will determine through a detailed assessment whether a particular individual will benefit from a cochlear implant. The assessment will include communication and psychological assessments, educational assessments for children and, of course audiological and medical examinations.

This brochure is designed to help potential candidates, friends, and family understand the benefits of cochlear implantation and ultimately help them decide whether cochlear implantation is right for them. For more help, join [HearingJourney.com](https://www.hearingjourney.com), the largest online cochlear implant community. HearingJourney.com is a great place to chat, laugh, and share stories with cochlear implant users, candidates, their families and friends, and hearing health professionals around the world.