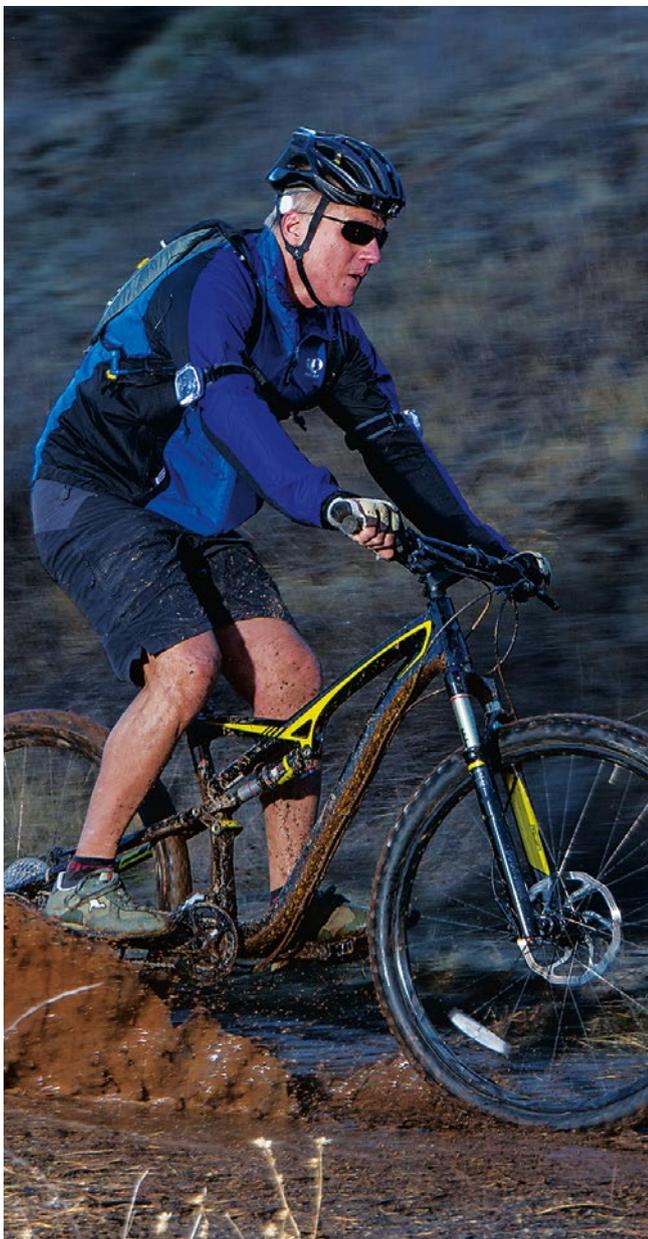


Cochlear implants business

Advanced Bionics is committed to creating high-quality, reliable cochlear implant systems that our recipients can depend on each and every day.



Advanced Bionics is a global leader in advanced cochlear implant systems. A cochlear implant is an electronic device that allows people with significant or complete hearing loss to hear the world around them. Unlike hearing aids, which amplify sound, cochlear implants bypass the damaged part of an ear and send electrical signals directly to the brain via the hearing nerve.

Represented in over 50 countries, Advanced Bionics works in close cooperation with surgical clinics and hearing care professionals. We invest more than 25% of sales in research and development, providing state-of-the-art technology, reliable products, and expert service to support recipients every step of the way on their journey to hearing.

Advanced Bionics began working closely with Phonak following its acquisition by the Sonova Group in 2009. This close collaboration gives us a unique advantage by bringing together the most innovative cochlear implant and hearing instrument technologies.

New products

While a cochlear implant's effectiveness lies in transforming an acoustic signal into an electrical stimulus, Advanced Bionics products are also able to optimize the acoustic signal itself – helped by Phonak's long-term expertise in intelligent, adaptive programs that analyze the sound environment, recognize difficult listening situations, filter the voice or sound that is most important, and send it to either or both ears for a more natural hearing experience.

The Phonak Naída™ Link bimodal hearing solution, first introduced in May 2016, gives cochlear implant recipients access to all these advanced features when they use a cochlear implant for one ear but wear a hearing aid in the other. More than 40% of cochlear implant recipients are in this category and, until now, they would have been fitted with separate solutions for each ear, sometimes from different manufacturers, fitted by different professionals, with settings and programs that needed separate manual adjustment and control by the user.

The Naída Link is the only hearing aid designed to treat sound in the same way as the Naída CI sound processor. The two constantly and automatically adjust themselves and each other, sending sound and control signals to either or both ears as the listening situation requires. Research shows that this gives a proven advantage for clear, comfortable hearing in noise, compared to using a cochlear implant with any other hearing aid.¹

Like all Naída CI sound processors, the Naída Link hearing instrument connects automatically with all Phonak wireless accessories to let recipients use phones, televisions, media players, and the Roger suite of wireless microphones.

In the coming year, Advanced Bionics will further expand its Naída Link portfolio with the launch of a CROS solution. This is designed for the many recipients who have complete hearing loss in both ears, but can only receive reimbursement for one cochlear implant. The CROS device, worn on the opposite ear, picks up sound and sends it wirelessly to the Naída CI sound processor – which is the only sound processor capable of operating in this way. Powered by Phonak’s Binaural VoiceStream Technology™ the CROS solution works automatically to give recipients a clear, detailed listening experience. In noisy places, it “zooms in” on speech coming from the front. If someone is speaking from the opposite side of the implanted ear, the CROS device sends the voice to the Naída CI sound processor and the recipient is able to hear the speech without having to turn the head.

In September 2016, Advanced Bionics introduced the new HiRes™ Ultra cochlear implant. Built on proven HiRes electronics, the new implant is 30 % thinner than the previous generation, with a lower profile that makes it ideal for recipients of all ages. It exceeds the industry standard for physical impact resistance and can go through 1.5T MRI scans with its magnet left in place. It also includes the HiFocus™ Mid-Scala electrode, designed to protect the delicate structures of the cochlea and preserve residual hearing.

To be able to enjoy music and natural sounds with a cochlear implant depends crucially on accurate coding in the electrical impulses of the sound’s physical parameters: intensity, frequency, and time. The new HiRes Ultra relies on HiResolution™ Bionic Ear System technology for its unique capability to steer 16 current sources independently. For the recipient, this means a better ability to distinguish different pitches, with a more accurately timed and natural hearing experience, resulting in a better appreciation of music with HiRes technology than with other implant systems.^{2,3}

Market access

There are around 1,300 clinics worldwide that perform cochlear implant surgery; Advanced Bionics is currently represented in approximately two-thirds of these. Our goal is to be present in every clinic, and to reach that goal we have established a program of close engagement and active, evidence-based dialog with surgeons and audiologists through our team of clinical specialists. We put strong emphasis on education and training of our staff, so that they can sustain peer relationships with clinical decision-makers.

The synergies between Advanced Bionics and Phonak go beyond R&D: it also benefits from Phonak’s strong position in the hearing aid market segment for severe-to-profound hearing loss. There are well over a million people who currently wear Naída or other Phonak high-power hearing aids. Of this group, a significant number will develop a level of hearing loss for which a traditional hearing instrument is no longer sufficient and will thus become potential cochlear implant candidates. They will also already be aware of the sophisticated features of Phonak hearing aids that are also available in the Naída CI processor, the Naída Link bimodal solution, and our range of wireless accessories. This puts us in a unique position to further expand our market.

The Sonova Partner Program fosters partnerships between hearing instrument retailers and cochlear implant clinics for the optimal treatment of people with significant hearing loss. It provides a seamless transition for those who are moving from Phonak hearing aids to a cochlear implant by ensuring that they retain the personal service of their trusted, local expert, along with the familiar Phonak look and feel, while benefitting from the functionality of the Naída CI technology. The program allows the cochlear implant clinic and the hearing care practice to concentrate on providing the services that are most appropriate to each, while recipients gain the benefit of expert care and technology upgrades from both. The Sonova Partner Program has been successfully introduced in several European countries including Germany, where we have already built up a network of 100 Certified Partners with positive impact both on earnings and referrals.

eSolutions

Advanced Bionics provides a range of eSolutions and digital resources to help recipients along their journey to hearing, but we also offer eSolutions for hearing care professionals and cochlear implant professionals. One recent example is our customized version of the InSuite solution from DocCirrus: this practice management software integrates, through the Cloud, all aspects of care for a cochlear implant recipient across the range of professionals who provide that care. This includes routine functions such as scheduling, documentation, prescription, secure storage of patient data, billing, and so on – but it also provides a platform for training and support, as well as telehealth services such as online video consultation. Just as the Sonova Partner Program links the institutions, InSuite links the data and actions that help smooth the hearing journey.

We continue to provide a range of tablet and smartphone apps that offer recipients support, information, and interesting ways to practice listening, build skills, or learn how to get the best out of their hearing technology. Our Hearing Journey™ online forum has recently been redesigned to provide an enhanced experience with online resource aimed at new and existing members. The site's gives community members an informative channel to chat, learn, and share their stories in a welcoming and secure environment.

- 1 Veugen LC, Chalupper J, Snik AF, van Opstal AJ, Mens LH. (2016) Matching automatic gain control across devices in bimodal cochlear implant users. *Ear and Hearing* (2015 Dec 10, epub ahead of print).
- 2 Mirza S, Douglas S, Lindsey P, Hildreth T, Hawthorne M. (2003) Appreciation of music in adult patients with cochlear implants: a patient questionnaire. *Cochlear Implants International* 4(2):85–95.
- 3 Quick A, Koch DB, Osberger MJ. HiResolution with Fidelity 120 sound processing: listening benefits in CII and HiRes 90K implant users. Presentation at the Conference on Implantable Auditory Prostheses, Lake Tahoe, CA, July 15–20, 2007. [Available upon request]



Focus on follow-up care

“Nice to see you,” says Dr. Shankar Medikeri to Deekshit and shakes hands with the five-year-old. The boy and his mother have traveled to the doctor’s ENT clinic in Bangalore; Medikeri is the surgeon who checks the settings of the sound processor in Deekshit’s cochlear implant once a year. It sounds like the doctor is having a spontaneous conversation with his young patient, but this short chat is also a test. Dr. Medikeri seems happy with Deekshit’s language development: “He understands well and speaks clearly.”

This renowned surgeon has been one of Advanced Bionics’ partners in India for many years and he has placed a good number of the brand’s implants. He conducts live-streamed operations at universities and trains colleagues in im-

plant surgery. Dr. Medikeri admires Advanced Bionics’ technology, its personalized service and its human approach. “The decision to go for an implant is something that will stay with a patient for the rest of their life,” says Medikeri. “So everything has to be right.”

Advanced Bionics is represented in more than two-thirds of the private clinics in the country. “Personal contact with doctors and patients is really important to us,” explains Vinod Nadig, Director of Advanced Bionics India. “We also put a lot of emphasis on follow-up care.” Advanced Bionics conducts vocational training workshops for doctors and audiologists, and patients and their families also receive an introductory session on how to look after and clean the sound processor. State support for cochlear implant use is still not available in every area of the country; regional authorities have the last word. “Indian children will often get their implant very late,” notes Nadig regretfully.

Deekshit was lucky, receiving his cochlear implant at the age of two. That the boy can speak so well is down to his mother’s dedication; she has grown used to giving a running commentary on whatever she is doing. “I’m building a tower,” announces Prabha Reddy as she plays. “Now, I’m making some rice,” she says as she is cooking. Then she asks the five-year-old, “Shall we clean the implant together?” Deekshit nods; it is a weekly ritual between son and mother. The boy takes off the sound processor of his cochlear implant and watches attentively as his mother dabs the fragile components clean with a soft cloth.

“I’m so glad we decided to have the operation,” says Reddy and picks up Deekshit. “This way, he has a chance to lead a completely normal life.”



The mother knocks the spoon against the saucepan as she stirs and asks her son, "Hear that? That's what metal sounds like!" Five-year-old Deekshit nods – he is wearing an Advanced Bionics cochlear implant. The constant training at home is paying off – the boy can understand speech well and speaks clearly.