Stony Brook University Medical Center improves the lives of our patients, families, and communities, educates skilled healthcare professionals, and conducts research that expands clinical knowledge.

As Long Island's premier academic medical center, Stony Brook serves as the region's only tertiary (high-level) care center and Level I Trauma Center. It is home to the Stony Brook University Cancer Center, Heart Center, and the Center for Perinatal and Neonatal Intensive Care.

To learn more about Stony Brook University Medical Center and its many services, call **(631) 444-4000**, or visit ***www.StonyBrookMedicalCenter.org***

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The Cochlear Implant Program

Providing Advanced Hearing Technology and Expert Care

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A cochlear implant is an advanced technology that improves hearing for people with severe or profound hearing loss when hearing aids are no longer helpful. The goal of Stony Brook's Cochlear Implant Program is to improve the hearing and overall quality of life of our patients.

The Stony Brook Cochlear Implant Team

Stony Brook University Medical Center is one of the few medical centers in the region that performs cochlear implantation. The Stony Brook team is composed of highly trained healthcare professionals working together to provide comprehensive treatment and care.

David Schessel, MD, PhD, is an expert in ear and skull-base surgery, and has successfully performed numerous cochlear implants on both children and adults. Our audiologists have more than 25 years of combined cochlear implant experience. The speech-language pathologist and social worker possess the expert skills necessary to perform comprehensive evaluations before and after surgery. All are essential members of the Cochlear Implant Team, dedicated to helping people improve their lives by giving them access to advanced hearing technology and expert care.

David Schessel, MD, PhD is board certified in Otolaryngology and Neurotology. He performs cochlear implantation for pediatric and adult patients, and specializes in a broad range of otolaryngolic (ear, nose, and throat) conditions. Dr. Schessel has specific expertise in neurotology, a clinical subspecialty within the field of otolaryngology that focuses on the neurology and neurosurgery of the ear.

What is a cochlear implant?

The cochlea is the snail-shaped part of the inner ear that is filled with fluid and contains thousands of tiny hair cells. People with severe to profound sensorineural hearing loss have damage to these tiny hair cells. This prevents the ability to generate the electrical nerve signals needed to carry messages to the brain, a process necessary to hear sound. A cochlear implant is a device designed to replace the damaged cochlear hair cells by stimulating the hearing nerve directly.

The cochlear implant has external and internal parts. The internal portion has a small electronic box (receiver/stimulator) with a wire and electrodes attached (electrode array). The electrode array is surgically implanted into the cochlea and the receiver/stimulator is secured under the skin, behind the ear.

The external portion consists of a speech processor and headpiece, and can be worn behind the ear and on the head.

How does a cochlear implant work?

A microphone captures incoming sound and sends it to the speech processor, where the sound is translated into a distinctive electrical code. The coded information is sent back to the headpiece and transmitted across the skin to the receiver/stimulator and electrode array. The electrodes stimulate the auditory nerve fibers, causing electrical impulses to be delivered to the brain, where they are interpreted as meaningful sound.

Who can benefit from a cochlear implant?

Adults and children as young as one-year-old may qualify for a cochlear implant if they have severe or profound sensorineural hearing loss in both ears.

Should I get one cochlear implant, or two?

There is no simple answer. Bilateral (one implant for each ear) cochlear implants can improve speech understanding in the presence of background noise and assist in locating the direction of a sound. Even though having two implants is better than one, it is not twice as good. Whether to get one or two ears implanted is a personal choice that will be discussed during your evaluation.

What happens before the surgery?

Your audiologist will evaluate your hearing both with and without hearing aids. Assessment of lip-reading skills and other specialty hearing tests may also be performed. The surgeon will perform a medical evaluation that may include an x-ray, blood work, and an electrocardiogram (EKG). All children and some adults receive a speech and language evaluation. In all cases, a social worker is available for family or financial counseling.

What can I expect from the surgery?

Surgery is performed under general anesthesia and takes about three hours. Most people go home on the same day and resume normal activities within a week. Complete healing at the implant site may take several weeks.

What follow-up is necessary?

The speech processor is initially fit several weeks after the surgery. The recipient and audiologist work together to program the electrodes and make a map that is set into the processor. Regular sessions are needed as the patient learns to adapt to the new sound. Aural habilitation/rehabilitation sessions are provided for adults who may need training.

For children, speech and language progress is monitored closely, comparing their performance before and after the implant. Our cochlear implant specialists maintain close contact with the child's school, including visits when necessary.

How much will my hearing improve after the implant?

The success rates for cochlear implants are very high. Thousands of people have received cochlear implants, and almost all have achieved higher levels of performance than before implantation. However, it is difficult to predict the exact outcome for each person. Success depends on factors such as duration of deafness and age at implantation.

Adults whose deafness developed after they acquired spoken language attain the highest levels of success. Most of these individuals will regain the ability for verbal communication. A large percentage will be able to use the telephone after consistent implant use.

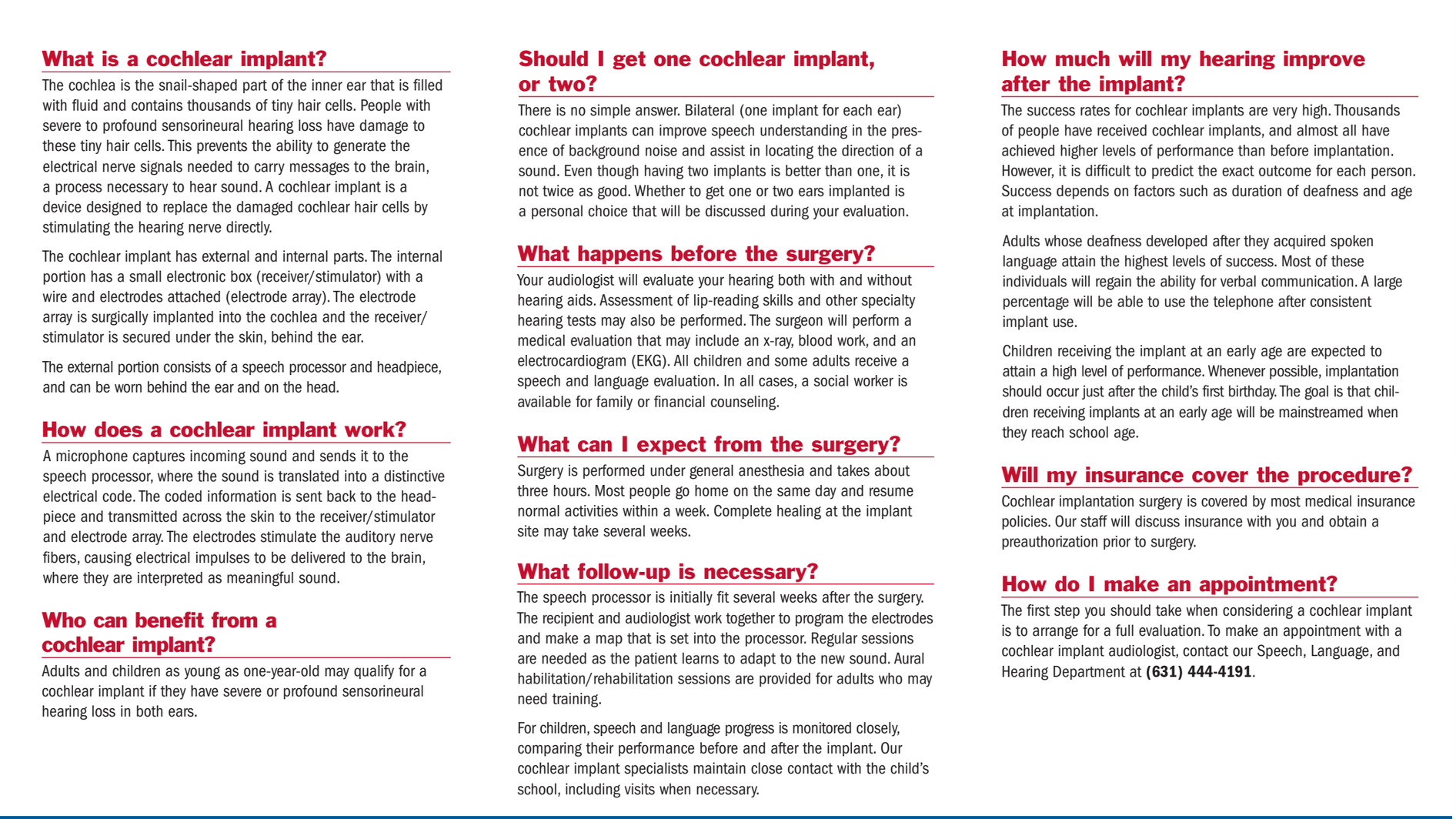
Children receiving the implant at an early age are expected to attain a high level of performance. Whenever possible, implantation should occur just after the child's first birthday. The goal is that children receiving implants at an early age will be mainstreamed when they reach school age.

Will my insurance cover the procedure?

Cochlear implantation surgery is covered by most medical insurance policies. Our staff will discuss insurance with you and obtain a preauthorization prior to surgery.

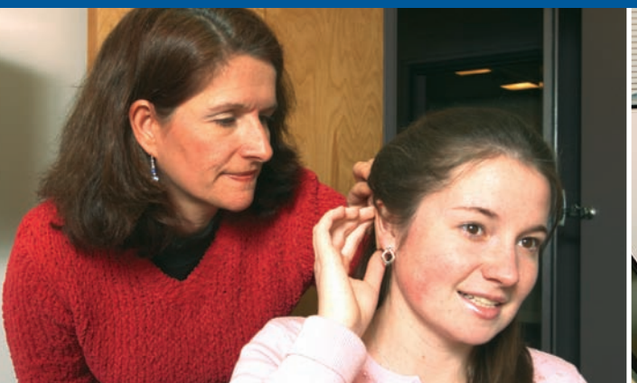
How do I make an appointment?

The first step you should take when considering a cochlear implant is to arrange for a full evaluation. To make an appointment with a cochlear implant audiologist, contact our Speech, Language, and Hearing Department at **(631) 444-4191**.



Dr. Schessel and audiologist, Dr. Melissa Hoffmann, review results of hearing tests.

Audiologist, Dr. Mary Bradley, with Courtney Galano at a follow-up visit.



Audiologist Jay Levenberg and Cheryl Dukes during a mapping session.

Patient Georgiana Wood and her mother, JoAnn.