Highly skilled surgeons and audiologists bring advanced hearing technology to adults and children at University of Wisconsin Hospital and Clinics and American Family Children’s Hospital. Our multidisciplinary cochlear implant team has extensive experience in routine, as well as complex, cases in both adult and pediatric patients.

We strive to provide children, adults and their families superior assessment and management services for severe to profoundly deaf persons. We offer patient and family education before, during and after the implantation to ensure the best hearing outcome in all cases.

Our team compiles all data and collaborates to develop individualized treatment plans. This unique team approach facilitates the best possible outcome for patients choosing cochlear implantation.

**TREATMENT STRATEGIES**

A thorough evaluation by a cochlear implant audiology specialist and ENT surgeon determines whether the patient is a candidate for implantation.

We offer two major types of cochlear implants:
- Cochlear Corporation Nucleus
- Med-El

Our team of experts assists each patient to choose the most appropriate device.

The surgical procedure is completed under general anesthesia and typically performed on an outpatient basis.

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**CLINICAL AND BASIC SCIENCE RESEARCHERS** seek to expand the knowledge of the outcomes, technology and physiology for the benefit of people who use cochlear implants.
**ADULT AND PEDIATRIC COCHLEAR IMPLANT PROGRAM**

**Decision-making**—Patients and families are involved in every step of the decision-making process and ultimate treatment plan.

**Follow-up care**—Following implantation, patients learn how to properly decode the electronic signal and process speech through a series of visits with our cochlear implant audiology experts.

**Patient Seminars**—We offer evening patient and family seminars to answer questions about the technology and provide updates on device improvements.

**Day With the Experts**—This annual energetic event, held in late spring, is an opportunity for patients and providers to meet, network and build community with cochlear implant recipients and their families. Anyone interested in cochlear implantation is welcome to attend.

**COMMON QUESTIONS**

What is a Cochlear Implant?

A cochlear implant is a highly technical medical device designed to bypass nonfunctioning areas of the inner ear by sending electrical stimulation directly to the auditory nerve, where it is then interpreted as sound by the brain.

The device provides the potential for useful hearing sensation and improved communication ability for people who have severe to profound sensorineural hearing loss in both ears. A cochlear implant has both internal and external components.

The internal device is surgically implanted under the scalp. In addition, it has a multiple channel electrode that is placed into the inner ear which accepts, decodes and sends an electrical signal to the brain.

The external device of the cochlear implant consists of a microphone/receiver and a speech processor which rests on the ear like a hearing aid and has a small extension that is held on to the scalp with a magnet. This extension is called the antenna coil. The external device receives sound, converts the sound into an electrical signal and sends it to the inside part of the cochlear implant.

Who are candidates for cochlear implants?

- Adults—18 years old or older
- Children—infant to 17 years of age

Both adults and children who are referred for implantation must meet a defined set of criteria to be considered for cochlear implantation.

Criteria:

- Bilaterally profound or severe to profound sensorineural hearing loss
- Receive little to no benefit from appropriately fitted hearing aids
- Have no medical contraindications to surgical procedure
- Are medically able to undergo general anesthesia and surgery
- Use spoken language as their primary mode of communication
- Have strong motivation and family support

**How does a Cochlear Implant work?**

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**EARLY INTERVENTION AND COCHLEAR IMPLANTATION**

The ability to detect sound is critical to a child’s ability to learn speech and language.

The absence of sound can have profound effects on speech and language development as well as the educational achievements of hearing impaired children.

Given the potential impact on a child’s life, it is critical that hearing loss in children be detected early. Early referrals to the cochlear implant team are crucial to maximize the potential benefit obtained from the cochlear implant.

**LEADERSHIP AND INNOVATION IN PATIENT CARE**

Members of our cochlear implant team are internationally renowned and actively engage in ongoing investigations to improve the treatment of patients with hearing loss. The results of this research are readily translated into best practices at UW Health.

Ruth Litovsky, PhD, manages an internationally recognized laboratory investigating the effect that bilateral cochlear implants have on the ability of patients to hear speech and localize sounds.

Samuel Gubbels, MD, FACS, is director of an investigational team that focuses on the development of regenerative medical therapies for hearing loss.

Dr. Litovsky and Gubbels are collaborating on new approaches for evaluating patients’ success with multiple treatments for hearing rehabilitation, using a state-of-the-art “eye tracker.” Results of this work will lead to improvement in our ability to individualize hearing rehabilitation.

**Clinical Trials**

Clinical trials are research studies conducted to find a better way to prevent, diagnose and treat a disease. Doctors learn about the effectiveness of new treatments or devices through participation in structured clinical trials.

The UW Health Cochlear Implant Program is actively involved in clinical trials related to hearing loss. Currently, our clinic is participating in a national study for a novel (recently FDA approved) device called the “Hybrid,” which combines a cochlear implant with a hearing aid.

**Advocacy**

We are an organizational member of the American Cochlear Implant Alliance (ACIA). The ACIA is a nonprofit organization created with the purpose of eliminating barriers to cochlear implantation by sponsoring research, driving heightened awareness and advocating for improved access to cochlear implants for patients of all ages across the United States.

UW Health Cochlear Implant Director Samuel Gubbels, MD, FACS, is the ACIA Wisconsin State Champion. State Champions monitor the Affordable Care Act roll out in each state to proactively protect coverage of cochlear implantation.

For a complete list of publications from our surgery faculty, please view their bios on surgery.wisc.edu.

Remarkable People. Remarkable Results.