



AT THE FOREFRONT

UChicago
Medicine

Your Guide to Adult Cochlear Implantation

Information Presentation

**Prepared by The Comprehensive
Ear and Hearing Center**

Welcome!

From the entire University of Chicago adult cochlear implant team, we want to thank you for visiting with us as you begin your journey towards cochlear implantation. We hope this presentation provides you and your family important information to help navigate this process, which understandably can seem overwhelming at times



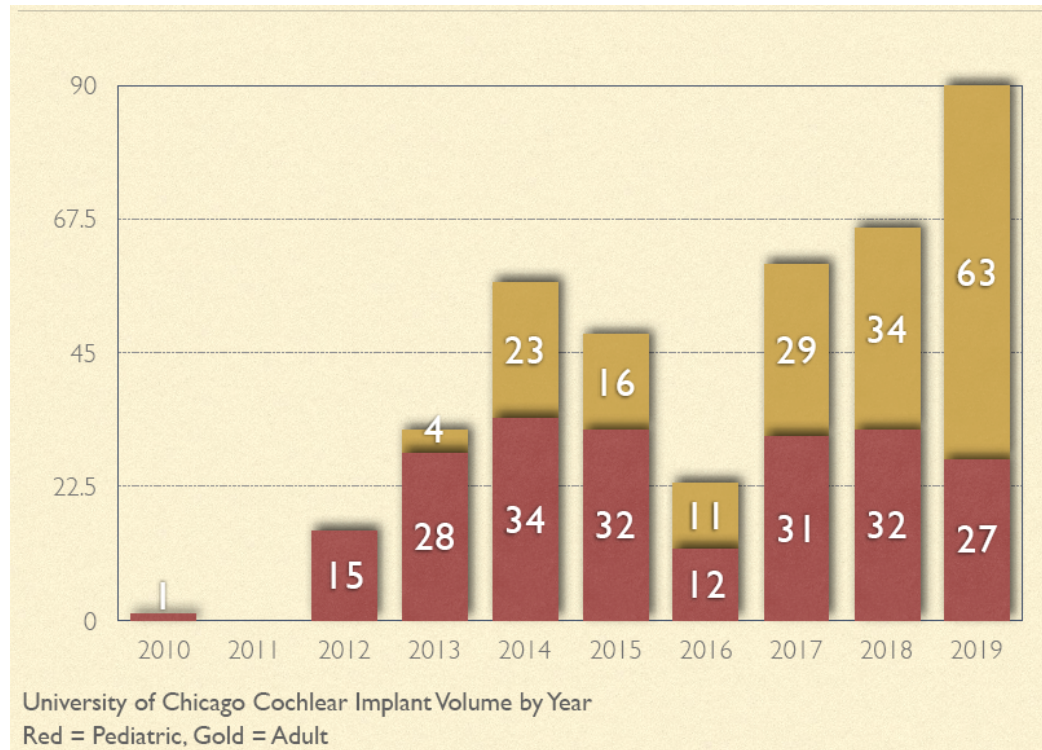
Why chose University of Chicago?

When considering a cochlear implant (CI), patients and their families should consider that the implant process is the start of a lifetime relationship with the institution and CI team where the surgery is performed

Patients can feel confident that the University of Chicago CI program is outstanding. We routinely treat even the most complex cases, serving as one of the most *comprehensive and experienced* CI teams in the Chicagoland region

Why chose University of Chicago?

Our program is undergoing tremendous growth and this is a credit to the collective efforts of our wonderful team! Volume is only one indicator of excellence, but it is an important component because this volume generates *experience*





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INTRODUCTION

What is a cochlear implant (CI)?

CIs are used to restore inner ear hearing when traditional hearing aids are not enough

It can be thought of as a “bionic ear”

A CI consists of two parts:

1. Internal device: this is implanted by your surgeon and consists of a magnet, receiver, and special electrode which is threaded into the cochlea to stimulate the hearing nerve directly
2. External device: this is worn over the ear and contains a microphone, processor, and magnet, which sends the signal to the internal device

What is a cochlear implant (CI)?

This is an example of what an external device looks like:



What is a cochlear implant (CI)?

Some companies also offer a device that can be worn “off the ear”



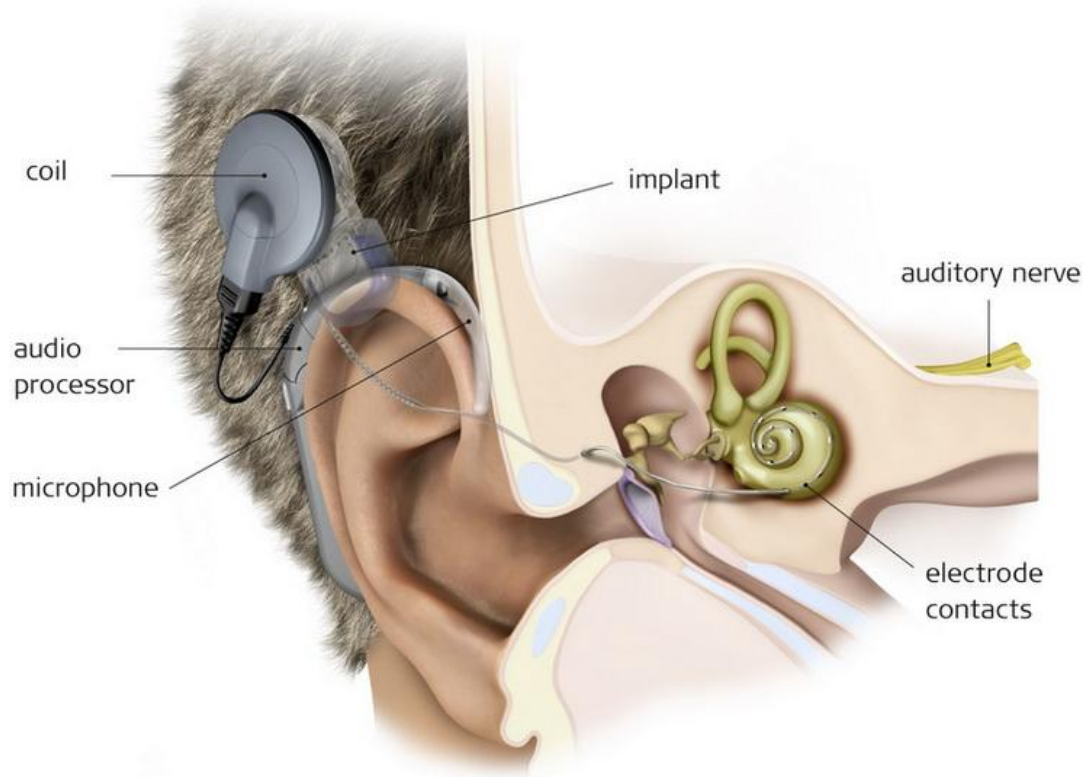
What is a cochlear implant (CI)?

Here is an example of an internal device (under the skin):




What is a cochlear implant (CI)?

Here is an illustration of both components in place:



What is a cochlear implant (CI)?

We offer all three devices from US FDA approved manufacturers:



Advanced Bionics logo: **AB** ADVANCED BIONICS
POWERFUL CONNECTIONS

Welcome to the world of powerful connections.

Cochlear logo: **@** Cochlear

Diagnosis and treatment ▾ Products and accessories ▾ Ongoing care and support ▾ Your Cochlear stories 🔍

Hear now. And always
Hearing connects us to our world. To small everyday wonders and to the people and experiences we love.
[Watch now >](#)

The banner features a photograph of a woman and a young girl in a dance studio, both in a split leap pose. The background is a bright window with a blue archway.





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EVALUATION

Evaluation Process

You will meet with a CI surgeon and an audiologist

There are no painful or invasive tests during any evaluation

Evaluation (Audiologist):

- Review prior hearing tests (audiograms)
- Test hearing with and without your current hearing aids, in conditions with and without background noise
- Test speech understanding (word discrimination)
- Administer hearing quality of life assessments
- Review available CI devices from various manufacturers
- Discuss realistic expectations and outcomes

Evaluation Process

Evaluation (Surgeon):

- Perform a detailed medical history and a thorough examination with a focus on the ears
- Assess the anatomy of inner ear structures with a CT scan or MRI, if this has been done prior. If not, a CT scan or MRI may be ordered by your surgeon
- Discuss the surgery and associated risks and benefits
- Evaluate your vaccination status and review vaccination recommendations
- Review reports of hearing assessments from the audiologist
- Discuss realistic expectations and outcomes

Evaluation Process

One strength of our program is the collaborative relationship between our team members

We will reviews all assessments to provide what we believe is the best recommendation for each patient

In general, our team will only offer a CI if we collectively agree that it is likely to result in a **major** improvement in your hearing—not just subtle improvement



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CANDIDACY

Candidacy

Traditionally, patients with bilateral, severe sensorineural (inner ear) hearing loss who no longer get adequate benefit from traditional hearing aids are candidates

Candidacy is also expanding to patients with hearing loss in only one ear, as well as those who still have some residual, low-frequency (bass-tone) in their ears

Depending on your performance on the hearing tests, you may qualify for implantation. There are certain “cutoffs” for performance, i.e., you have to perform “**poorly**” enough to qualify. Medicare/Medicaid and the vast majority of private insurance carriers will cover cochlear implantation if the scores meet these cutoffs

Candidacy



ABSOLUTE contraindications

Only a few, rare instances where implantation is not possible:

- Absence of cochlea
- Absence of a cochlear nerve



RELATIVE contraindications

- Active ear disease or infection
- Severe malformations of the cochlea
- Significant medical comorbidities or an inability to safely tolerate general anesthesia
- Significant psychiatric conditions that would limit proper device use
- Poor psychosocial environment where a patient is isolated and unable to practice communication
- Unwillingness to participate in follow-up or rehabilitation process



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SURGERY

Surgery

Surgery is performed under general anesthesia

Typically 1-2 hours (per ear)

Done as an outpatient, meaning you can go home later in the day

There is typically not major downtime or pain

During surgery the device will be tested to make sure it is working properly



Surgery

What are risks of surgery?

- Bleeding around the device
- Infection
- Device failure
- Device extrusion/exposure
- Imbalance/dizziness
- Possible loss of some or all natural (or residual) hearing if present before surgery in the ear implanted
- Change or alteration of taste
- Facial nerve weakness or paralysis
- Meningitis (rare, but the reason for the vaccination recommendations)
- Leakage of brain (cerebrospinal) fluid
- Risks from general anesthesia; depending on your medical comorbidities, pre-operative testing/clearance may be requested from your primary provider or other specialists
- Failure to improve or gain adequate benefit from the device

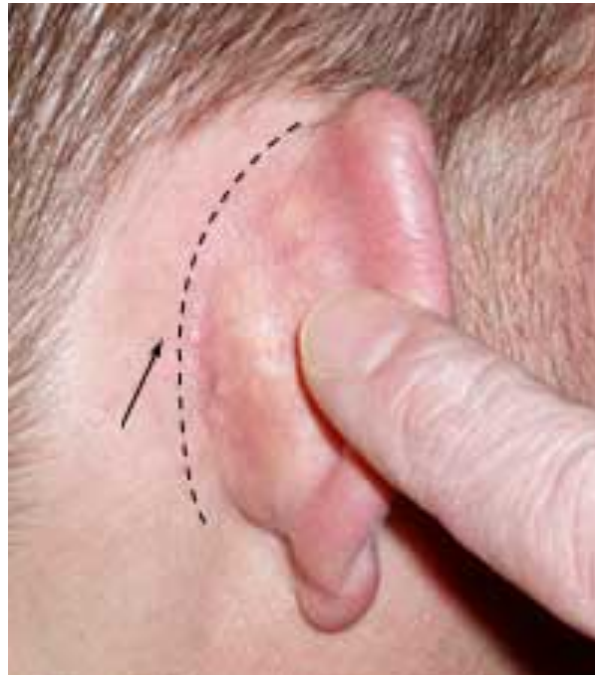
Surgery

Your surgeon will review these risks with you in more detail, but in general these risks are quite rare and the surgery is well tolerated

Surgery

A small, C-shaped incision is made behind the ear. This allows access to the mastoid bone to place the implant

Only a small amount of hair may needed to be shaved from this area, if any



Surgery

When you wake up, you will have a gauze pressure dressing over the ear. You can remove this in 1-2 days





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RECOVERY

Recovery

Pain is usually minimal; often times Tylenol or Ibuprofen is all that is needed, rarely will a short course of stronger pain medication be required

You will be prescribed a short course of antibiotics to take to help prevent infection

Some symptoms you might notice after surgery include:

- Numbness of the outer ear (auricle), which is a result of the incision behind the ear
- Dizziness/imbalance for a few days
- Stiffness/soreness of the neck
- Some pain or soreness when chewing
- Change in taste or a dry mouth
- Popping, fullness, or pressure sensation in the ear (from blood or fluid that collects in ear)

Recovery

1-2 weeks after surgery, you will have your first-post-operative visit with the surgeon to assess the wound's healing

Please notify your surgeon if any of the following occur before your visit:

- Persistent, bright red bleeding from the wound
- Significant swelling/bruising over the wound
- Signs of infection, such as high fever, redness of wound, drainage that is yellow-green or foul smelling
- Signs that the incision is coming apart or breaking down
- Extreme pain that is not relieved with medication
- Persistent, clear fluid leaking from nose
- Persisting dizziness or vertigo that is so severe it limits mobility or ability to tolerate food/drink





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ACTIVATION

Activation

This is the day you've been waiting for! It is important to realize your device **will not** be activated immediately after surgery. This is to allow proper time to heal and swelling to go down

2-4 weeks after surgery, you will return to have the device activated with your audiologist

The initial speech you hear through the implant may sound unnatural. It is hard to predict what you will experience, but for many this is often an exciting day!

Please do not get discouraged with the sound quality at your activation.
This will only get better with time and continued practice! *Remember*, you are learning how to hear again in a totally new way!

Activation

To activate your device, the external speech processor has to be “mapped” or programmed for you to hear sound

With computer software, the electrodes of the implant are stimulated. You will hear a series of “beeps” and the audiologist will measure your response to these sounds to determine levels that are loud but comfortable





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FOLLOW-UP

Follow-up

During the first few months of hearing with your implant, reprogramming or “mapping” is done numerous times with your audiologist. As your hearing and understanding with the CI improves, fewer reprogramming visits are needed, and many patients can be spaced out to annual visits

We have a skilled speech-language pathologist with specialized training in **aural rehabilitation** (auditory therapy). Aural rehab can improve the benefit you receive from your cochlear implant through systematic auditory training, reduce frustration from communication breakdowns by training on communication strategies and environmental modifications specific to your lifestyle and goals, track your progress, assist your audiologist with customized “mapping,” and reduce the overall impact of your perceived hearing difficulties in daily life

Aural rehab appointments can often be scheduled the same day as your ENT or audiology visits to minimize travel to our center

Follow-up

Your surgeon will periodically assess the wound and your performance, but most of your early follow-up will be with your audiologist

As you begin your post-implantation journey, **it is important to wear the implant all day, every day!** Try and have others read books, magazines, and newspapers aloud to practice listening. Many also enjoy listening to audiobooks, while you follow along reading. Ask your audiologist and speech-language pathologist for other ways or ideas that you can learn and practice at home





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Thank you!