



---

### **Cochlear Implant Team Members:**

Dr. Darren Leitao MD FRCSC – Cochlear Implant Surgeon (Pediatric)

Dr. Jordan Hochman MD FRCSC – Cochlear Implant Surgeon (Adult)

Justyn Pisa AuD – Coordinator - Surgical Hearing Implant Program

Kristy Mackie MSc, Daniela Stangerlin AuD, Jacob Sulkers MSc – Central Speech and Hearing Clinic

---

### **What is a Cochlear Implant?**

A cochlear implant is an electronic device that partially restores hearing in people who have severe hearing loss and who do not benefit from conventional hearing aids. A processor behind the ear captures and processes sound signals, which are transmitted to a receiver implanted into the skull behind the ear. The receiver relays the information to the inner ear (cochlea).

*Patients need to commit to the required time and training to become effective cochlear implant users*

Results vary from person to person and most find that cochlear implant improves both communication and quality of life. Patients often report:

- Improved ability to recognize common environmental sounds
- Improved ability to hear speech without reliance on visual cues
- Improved speech reading ability
- The ability to detect soft sounds
- The ability to locate where sounds are coming from

---

### **What Can I Expect from Surgery?**

The cochlear implant procedure is performed while you are under general anesthesia and takes approximately three hours. The ear, nose and throat surgeon makes an incision behind the ear and forms a slight depression in the mastoid bone, where the internal device rests. The surgeon then creates a small hole in the cochlea and threads the electrode array along the nerve of hearing. The incision is closed so that the internal device is beneath the skin. Most people feel well enough to return home the day of surgery, however, some patients require an overnight stay at the hospital following surgery.

Generally regular Tylenol or Tylenol #3 (with codeine) is all that is needed for pain control. You may be provided either or both an antibiotic and oral steroid. After surgery, you may experience some nausea or dizziness

---



*There are significant risks associated with surgery.  
They are infrequent (less than 1%) but very important to consider.*

### **Facial Nerve Injury**

The facial nerve is the nerve that controls the muscles of the face. In order to insert the cochlear implant electrode, the surgeon needs to remove the bone immediately over the facial nerve.

### **Dizziness**

The vestibular system (your “balance centre”) is located deep inside the ear and is connected to the cochlea (you “hearing centre”). The vestibular system helps you to keep your balance, and tells you whether you are moving or standing still.

### **Meningitis**

The cochlea directly communicates with the brain. The hole needed to insert a cochlear implant presents an opportunity for an infection to access the brain. Because there is a risk of meningitis, your surgeon will ask you to ensure you have received vaccinations against the most common organisms associated with meningitis (Hemophilus influenza and Streptococcus pneumoniae).

### **Change in Taste in the Mouth**

The chorda tympani nerve is a nerve that controls taste centres on the front of your tongue. This nerve travels through the ear, very close to the facial nerve.

### **Device Failure**

The cochlear implant is an electronic device and can fail. If this occurs, a new device can be implanted.

### **General Anesthesia**

There are risks associated with getting a general anesthetic. Surgery under general anesthetic is very common, and is a standard practice for most major surgery. These risks are dependent on your general health. The anesthetist will discuss these with you before surgery.

### **Bleeding & Wound Infection**

The surgical area is closed with stitches (a small permanent scar may result) and the head is bandaged, hence slight bleeding may occur post-surgery. Infection most commonly occurs at the incision site, and can cause pain, fever, inflammation or drainage from the wound. Patients who experience these side effects after surgery may require additional medical intervention or antibiotic treatment to resolve bleeding and infection complications.



*Have your doctor contact the cochlear implant surgeon to discuss any of the issues below.*

### **Magnetic Resonance Imaging (MRI Scan)**

A Cochlear implant contains a magnet located under the skin. MRI (magnetic resonance imaging) scans involve creating magnetic fields and then use the information to create a “picture”. Magnets are not permitted in the MRI scanner. This is because these objects can move. This can injure the device, surrounding skin or hearing nerve. Certain cochlear implants are compatible with lower strength scanners. Before any imaging, it is important to remind your doctors and nurses that you have a cochlear implant.

### **Cautery during surgery**

Cautery is a surgical tool used by surgeons to control bleeding during surgery. Cautery works by using electrical currents. Because the cochlear implant contains metal, it may attract the electrical current. Hence, monopolar cautery is not advised for surgery on the head and neck after cochlear implant surgery. Certain types of cautery (“bipolar” cautery) are acceptable if at least 1cm away from the device.

### **Traveling with your cochlear implant**

Metal detectors and security scanners in airports will not damage the implant or sound processor. However, individuals with a cochlear implant passing through security metal detectors may activate the detector alarm. It is advised that patients carry their “Patient Emergency Identification Card” with them at all times.

Cochlear implant users may also hear a distorted sound caused by the magnetic field around the security scanner door or hand-held scanning wand. Turning off the sound processor before passing through security screening will ensure that those sounds are not too loud or uncomfortable, should they occur.

---

### **Post-Operative Instructions**

- Avoid water over the incision (cut) until 7 days following surgery
- No heavy lifting or exercising for 6 WEEKS.
- The ear may continue to ooze and bleed slightly for 14 days.
- **Washing and showering first 2 weeks following surgery:**
  - Place a cotton ball with Vaseline gently in the ear
  - Remove immediately after showering
  - Cover the ear with a plastic sandwich bag when washing hair
- See the adult ENT Clinic (G2) 14 days after surgery for staple/suture removal

*Should you experience a problem at night or during the weekend, please present to the Health Sciences Centre Emergency Department Immediately.*

---



*Activation of your cochlear implant will occur approximately four to six weeks after surgery.*

At this appointment, the external components of the device can be activated and programmed according to your needs. There is no ability to use the device until activation. The typical cochlear implant fitting schedule includes the following steps:

---

**Initial Stimulation** - This is when you will be given the external components and your device will be activated. We will do some testing of your internal device and create your first map.

**Day 2** – A follow-up to your initial stimulation, we will repeat some of the testing on the internal device and go over all the accessories provided in your equipment kit.

**Week 1** – Regular follow-up to fine-tune your map.

**Week 2** – Regular follow-up to fine-tune your map.

**Week 4** – You get a break during your 3rd week of CI use and don't have to return to the clinic until Week 4, where regular follow-up mapping is done. It may seem repetitive by now, but small adjustments can make big changes with sound quality and speech understanding.

**3 Month** – Regular mapping. Often at this appointment speech perception testing in the sound booth is attempted in order to obtain baseline results to track progress over time.

**6 month** – Regular mapping, equipment check and speech perception testing in the sound booth.

**9 month** – This is an optional appointment, for those who feel extra guidance/mapping is needed.

**Annual** – Once you have reached your annual mark, you will no longer need frequent mapping. You will be contacted for an annual appointment for full mapping and speech perception testing to ensure optimal settings are maintained. You are free to contact the clinic any time and as often as necessary should there be equipment or sound issues.

For more information on the activation process, please contact the Central Speech and Hearing Clinic:

Phone: 204-275-7436  
Email: [info@centralspeech.ca](mailto:info@centralspeech.ca)

Unit 2 – 1325 Markham Road  
Winnipeg, Manitoba R3T 4J6