



# Cochlear Implant

Patient and Family Education

This teaching sheet contains general information. If you have any additional questions, please speak with the office nurse at (813) 262-1330.

## What is a cochlear implant?

A cochlear implant is a small surgically implanted hearing device that provides stimulation to the auditory (hearing) nerve in the inner ear/cochlea. This allows children with a severe to profound hearing loss, who do not receive useful auditory information with traditional hearing aids, to regain a useful sense of hearing to improve ability to communicate.

## How does a cochlear implant work?

Cochlear implants have external (outside) parts and internal (surgically implanted) parts that work together to allow the child to perceive sound or useful auditory information.

- **External part:** The external parts include a microphone, a speech processor, and a transmitter. The microphone looks like a behind-the-ear hearing aid. It picks up sounds—just like a hearing aid microphone—and sends them to the speech processor. The speech processor is housed with the microphone behind the ear. The speech processor is a computer that analyzes and digitizes the sound signals and sends them to a transmitter worn on the head just behind the ear. The transmitter sends the coded signals to an implanted receiver just under the skin.
- **Internal part:** The internal (implanted) parts include a receiver/stimulator with an electrode. The receiver is just under the skin behind the ear that connects with the external part with a magnet. The receiver takes the coded electrical signals from the transmitter and delivers them to the array of electrodes that have been surgically inserted into the cochlea. The electrodes stimulate the fibers of the auditory nerve, and the sensation of sound is then perceived by the brain.

## How long will it take to recover?

Surgery is outpatient in most instances and takes 1.5 hrs to perform. Children can usually go back to when they no longer need prescription pain medicine. The dressing comes down 1-2 days after surgery. Mild swelling is normal after surgery and the ear may protrude for 1-2 weeks after this procedure, this resolves with time. Intermittent dizziness or light-headedness may last for up to 1 week after surgery. Children do not hear when they wake up from surgery from the device, it will get activated in our office a few weeks after surgery when healing is complete.

## What are the risks of a cochlear implant surgery?

Risks of this procedure are small but include bleeding, infection, numbness or taste disturbances. Any ear and mastoid surgery can theoretically have a risk to damage hearing, balance, facial nerve function, or cerebral spinal fluid leak but this is exceedingly rare (<1%). A facial nerve monitor is used for additional safety throughout the operation. A small risk exists the device could malfunction requiring removal/replacement in the future.

## How can I take care of my child?

1. **Pain:** Over the counter Tylenol and Motrin are great medications for ear surgery. Your child's surgeon may prescribe an additional prescription medication in certain instances.
2. **Wound Care:** Keep dressing on for 24-48hrs post op. Blood tinged drainage from the incision is normal and expected after ear surgery. Place ointment given over incision 2-3 times daily for 7 days. After that, aquaphor ointment can be placed over incision 2-3 times daily until first post op appointment. Sutures are dissolvable.
3. **Activity:** No vigorous activity for 3-4 weeks. Your child may shower 48 hours after surgery. Do not submerge head/wound underwater.
4. **Swelling:** Have your child sleep with their head elevated on 2-3 pillows to keep swelling down.
5. **Post-Op Appointment:** A follow up appointment should be made in our office for 2-3 weeks after surgery. You will first meet with a pediatric audiologist to turn on the cochlear implant and then the pediatric ENT surgeon. This appointment typically takes about 30 minutes.

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Adapted from American Speech-Language-Hearing Association