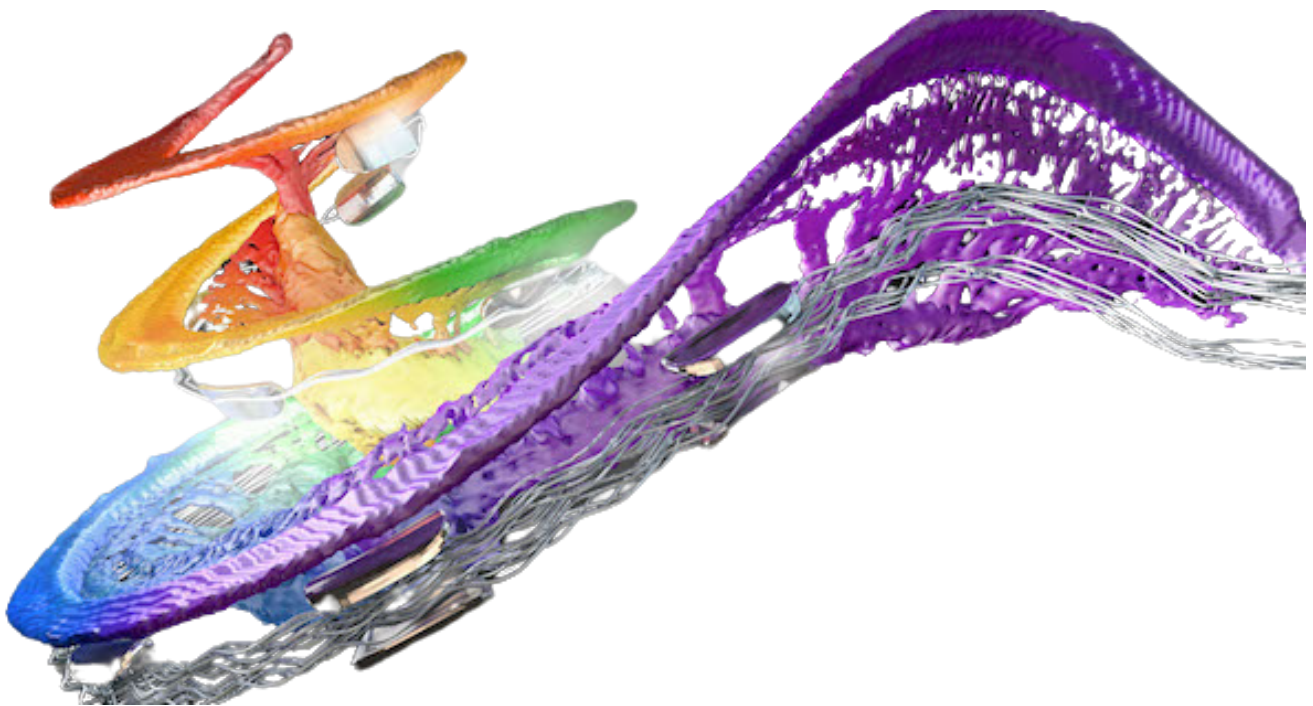




PARENT & PATIENT HANDBOOK

FOR COCHLEAR IMPLANTATION



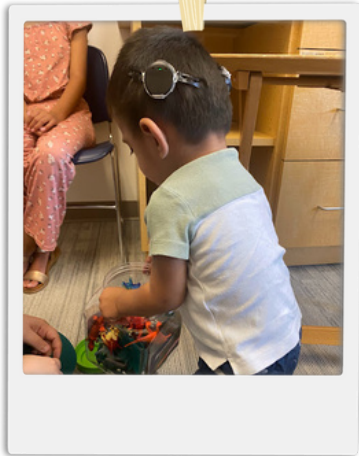


TABLE OF CONTENTS

Common Questions	2
CI Roadmap	6
Surgical Questions	8
CI Follow-Up Questions.....	11
Treatment Plan.....	14
Required Vaccinations.....	16
CI Checklist.....	17
Auditory-Verbal Therapy.....	18
Resources	19
Sample Parent Letter - Infant.....	20
Sample Parent Letter - SSD	21
Sample Parent Letter - Progressive HL.....	22
Glossary of Terms.....	23

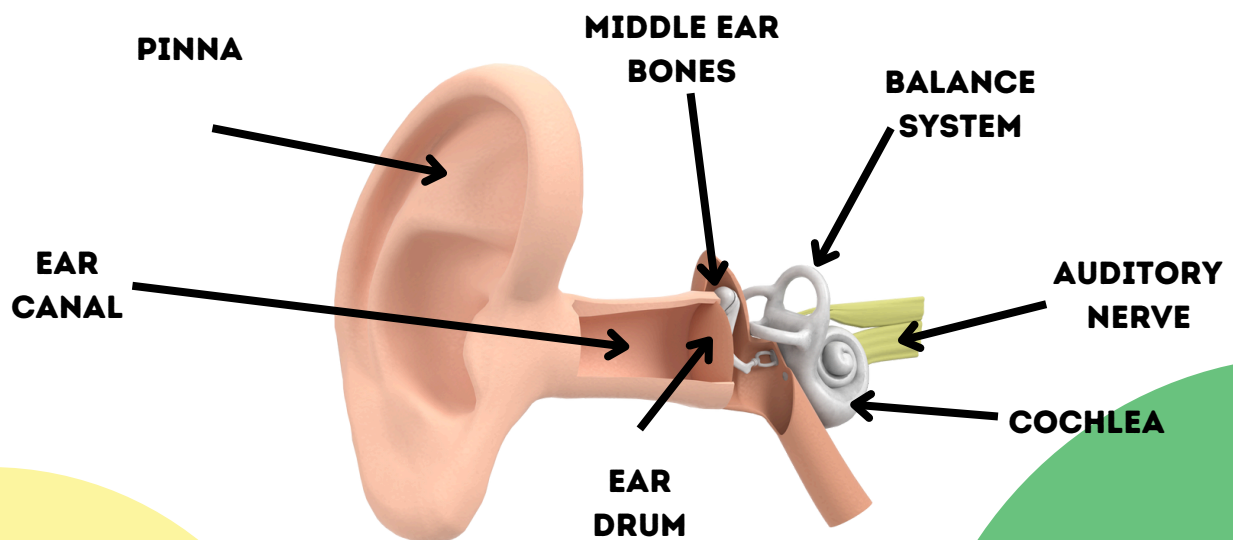
COMMON QUESTIONS

How does the ear work?

The ear is made up of 3 parts: the outer, middle, and inner ear. The part of the ear we can see is the outer ear, known as the pinna. The outer ear also includes the ear canal and the ear drum. The middle ear is an air-filled space behind the ear drum and contains three of the smallest bones of the body. The inner ear contains the fluid-filled hearing organ known as the cochlea, the balance organ and the auditory nerve begins in the inner ear.

Sound waves create vibration causing the ear drum to vibrate. These vibrations are sent through each part of the ear causing the bones of the middle ear to vibrate and the fluid in the cochlea to also vibrate. Within the cochlea are sensory hair cells. When these hair cells are moved by the vibration of sound, they stimulate the auditory nerve turning the vibration into signals the brain can understand as sound or speech.

In children with severe to profound hearing loss, the hair cells or part of the auditory nerve are damaged, preventing the sound signals from being transmitted to the brain. This is called sensorineural hearing loss.



What is a cochlear implant?

A cochlear implant is a medical device made up of two parts: the internal electrode array and the external sound processor. The electrode array is surgically inserted into the hearing organ of the inner ear, the cochlea. The external sound or speech processor is worn on the ear and head.

Sound is received by the microphones on the external processor and filtered by the processor and coded into signals. These signals are transmitted to the internal electrode array through the skin by the coil to the internal receiver. The receiver then turns these signals into electrical signals that the electrode array sends to the auditory nerve and up to the brain.

The cochlear implant has been around for over 30 years and was initially designed for bilateral severe to profoundly hearing-impaired persons to communicate more easily. Thanks to extensive research and evolving technology, the cochlear implant has become an option for single-sided deafness, bilateral severe to profound hearing loss and even patients with mild to moderate sloping to severe to profound hearing loss.

Cochlear implants are recognized by the American Medical Association (AMA) and the American Academy of Otolaryngology Head and Neck Surgery (AAO-HNS) as an approved medical procedure for children as young as 9 months of age. Cochlear implants were approved by the Food and Drug Administration (FDA) in the mid-1980s and are covered by insurance companies, Medicaid, Medicare, and Vocational Rehabilitation. There are now more than 700,000 individuals worldwide who have received cochlear implants.



After my child receives a cochlear implant, will they be able to hear and talk like normal hearing children?

Once your child receives a cochlear implant, they will be able to hear sound that they were previously unable to hear with hearing aids. Although your child will hear more sounds, your child will need to be trained to use and understand these sounds.

Receiving a cochlear implant is simply the first step in a long process. Your child will only learn the meaning of sounds and words through intensive rehabilitation. The degree of success your child will have in developing listening and speech skills cannot be predicted, however, with proper auditory training and therapy, your child will have the best chance of being a successful implant user.

When your child is not wearing their sound processor, they have significant hearing loss.

How do I know if my child is a cochlear implant candidate?

Before receiving an implant, each child is carefully evaluated by the PENTA Cochlear Implant Team to determine if an implant is appropriate. There are many factors that are considered when determining if your child is a cochlear implant candidate. There are audiological considerations and medical considerations. The following are typically required for cochlear implantation:

- Normal CT/MRI
- Hearing loss in the severe to profound hearing loss range binaurally at 9 months or older
- For single-sided deafness, severe to profound hearing loss in the poorer ear for ages 5 or older
- Hearing aids are not providing sufficient benefit for patient to develop speech/language
- Patient and/or family demonstrate compliance with medical recommendations and follow-up

Although these are general guidelines, each child receives a thorough and individualized evaluation to determine candidacy.

How does the CI evaluation work?

The cochlear implant evaluation is completed by a team of people to determine candidacy. The team includes the ENT providers (MD and Nurse Practitioners), the Audiologists, and you as the parent. PENTA will complete a medical evaluation and audiological testing to determine candidacy. The medical evaluation is organized by the medical doctor and/or nurse practitioner and will include at least the following:

- Health status established by ENT provider with referrals to specialist as needed (i.e. ophthalmology, etc.)
- Imaging (CT/MRI)
- Immunizations

The audiological testing completed by the audiologist will include at least the following:

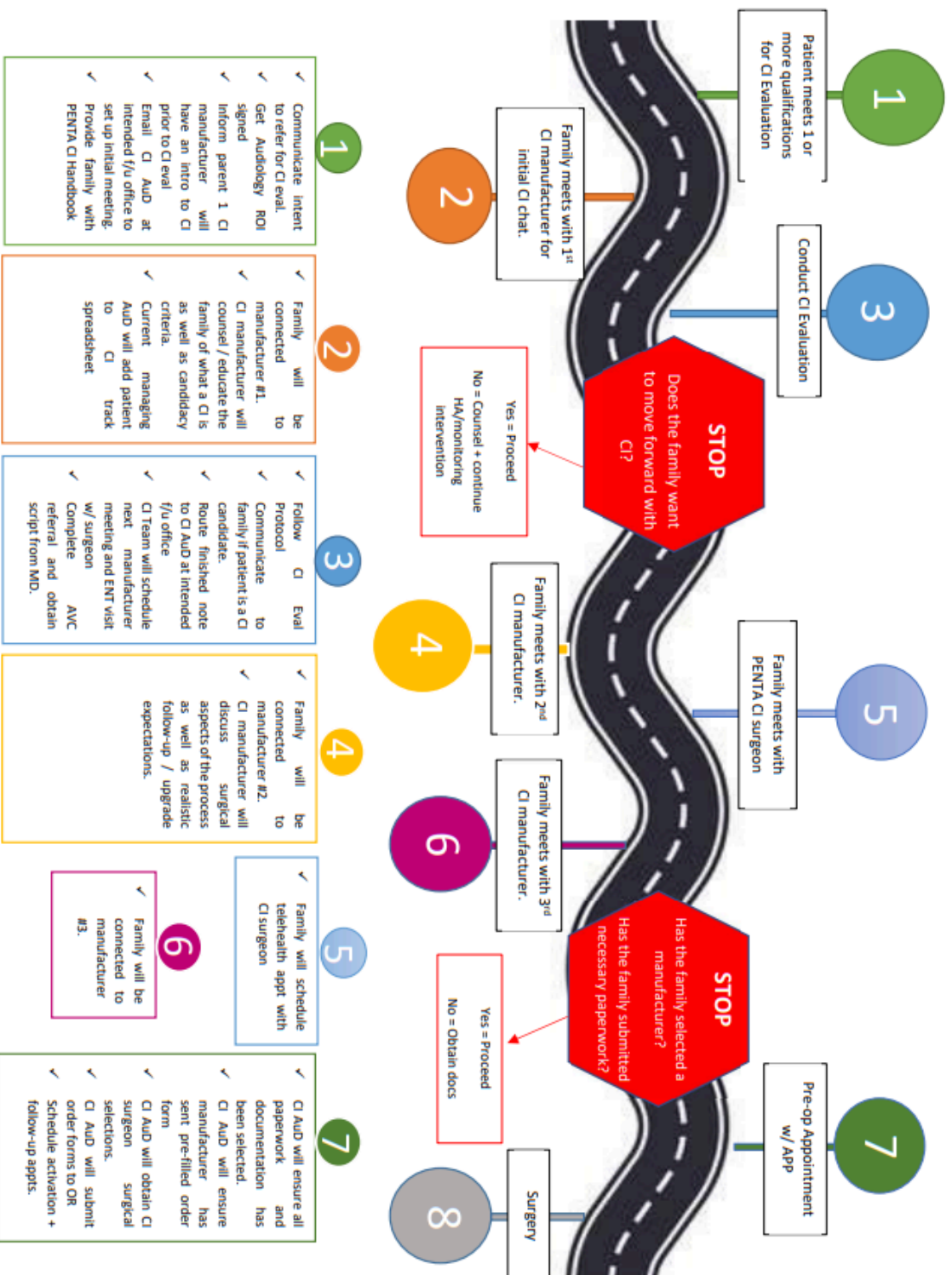
- Unaided hearing test - ABR or behavioral hearing test
- Hearing aid trial – patient is fit with appropriately programmed hearing aids.
- Aided hearing test – hearing test with hearing aids on
- Questionnaire – to gain knowledge on how child is hearing at home or school

As parents, guardians and/or caregivers, your involvement, compliance with recommended follow-up and goals set for your child are also included in determining cochlear implant candidacy. The cochlear implant process is a lifelong journey and your participation and presence in the initial stages are extremely important.

Based on results from the medical work-up, audiological testing and your goals for your child, your child's candidacy will be determined.

Please see the CI candidate roadmap on the next page.

PENTA COCHLEAR IMPLANT CANDIDATE ROADMAP



What can cause my child to not be a candidate for CI?

There are many reasons why a child may not be a cochlear implant candidate. Here are some of the most common reasons:

- MRI reveals absent cochlear nerve
- CT reveals absent/insufficient formation of the inner ear or cochlea
- Aided testing scores do not meet FDA or insurance requirements for CI
- Non-compliance to medical recommendations
- Multiple missed/no-show follow-up appointments



SURGICAL QUESTIONS

What does the surgery involve?

Cochlear implant surgery usually takes from 1-2 hours per side. During the operation, the internal device is placed under the skin and the electrode array is implanted into the inner ear (cochlea). Implant surgery is usually performed in the hospital with same day discharge. Your surgeon will guide you on post-surgical care information.

How safe is surgery?

Cochlear implants are recognized by the American Medical Association (AMA) and the American Academy of Otolaryngology Head and Neck Surgery (AAO-HNS) as an approved medical procedure for children. They are approved by the Food and Drug Administration (FDA).

In general, the surgical procedure is not considered dangerous or particularly painful. As with any surgical procedure, patients and their families should be aware that there are risks associated with anesthesia. A very small percentage of patients may experience some postoperative effects such as inflammation or bleeding at the surgical site, numbness or stiffness around the ear, tinnitus or ringing in the implanted ear, injury or stimulation of the facial nerve, taste disturbance, dizziness, or fluid leak from the cochlea which could result in meningitis.

When will I find out what time surgery will be and if my child will be able to eat prior to surgery?

The Pediatric ENT of Atlanta surgery coordinator team will call you the day before your child's surgery with arrival times, feeding instructions and surgery procedures.

How do I prepare my child for surgery?

The PENTA team wants you and your child to feel as relaxed as possible on the day of your child's operation. If any questions or concerns arise between your visit with the physician and the day of surgery, please contact us at 404-255-2033.

What is the step-by-step process for the day of surgery?

1. The day of surgery you will report to your designated surgery center and check-in.
2. After registering, you will be taken to a room where your child will change into hospital clothes, have vital signs taken, and be evaluated by an anesthesiologist.
3. After the final examination, the child may be given an oral sedative. The patient will then be transported to the operating room for the procedure.
4. It will be approximately 1-2 hours per ear for surgery. It will take additional time for pre-operative set-up and recovery.
5. During the time your child is in surgery, you may go to the cafeteria or wait in the Day Surgery waiting room.
6. After surgery your child will be taken to the recovery room where he/she will remain for approximately 1 hour.
7. Prior to leaving the hospital, you will be given a backpack that will have the external sound processor and parts needed for the cochlear implant system. The entire backpack and all its components will be brought by you to the initial activation appointment with the Audiologist.

Will I be notified of my child's progress during surgery?

You may request the nurse give you periodic updates during surgery so that you will know how the surgery is going. After surgery, the physician will speak with you to inform you of how the surgery went, post-operative care and answer questions you have.

How will my child look after surgery?

The internal electrode will not be visible after surgery. It is possible your child's hair would have been shaved in the area where the incision was made if needed. The bandage that is placed over the incision at the end of surgery will remain on the head overnight and will be changed the next day.

The bandage will remain on your child's head for several days. After the incision behind the ear heals, a slight bump may remain. This is covered by your child's hair depending on the length of hair.

How long is the recovery period?

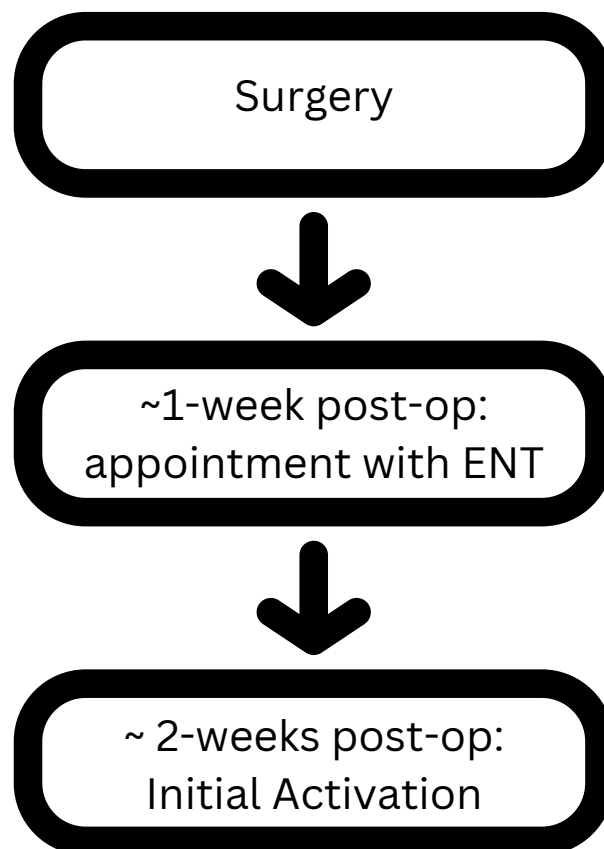
Typically, kids bounce back from cochlear implant surgery very quickly. Usually, it involves a week at home to allow the incision site to heal. Children usually return to school after one week, however, physical activity should be limited for three weeks.

CI FOLLOW-UP QUESTIONS

What kind of follow-up occurs after surgery?

One week after surgery, your child will see an ENT provider who will inspect the incision site. At this appointment, they will check your child's incision area and remove any steri-strips from the site. Please allow about 1 hour for this appointment.

Approximately two weeks after your child's surgery, you will have an appointment with the Audiologist for an "Initial Activation/Stimulation" to turn the cochlear implant system on. You will need to bring the backpack you received on the day of surgery to this appointment. Prior to this appointment, the audiologist will assist you in meeting with the manufacturer to introduce you to the cochlear implant kit in the backpack you received and prepare your cochlear implants processors for the initial stimulation appointment.



What should I expect at the Initial Stimulation?

Each implant must be specifically programmed or “mapped” for each individual patient. Our audiologist will program the device. Programming the device includes ensuring the internal electrode array is making good contact with the inner ear. This is called checking impedances. Once the impedance test is completed, the audiologist will select the appropriate method for mapping the cochlear implant based on your child’s age. This involves working with your child to develop a unique set of stimulation levels for the electrode array. In other words, we determine the levels of power required by the cochlear implant to stimulate the nerve and be perceived, or heard, by your child’s brain.

Every child reacts differently to the initial stimulation. Some children cry, some children laugh and others do not give any physically observed indication they are hearing. There is no way to predict how your child will react or respond on the first day, however, with continued use and therapy, most children begin to show some indication they are hearing.

Initial maps or programs for the cochlear implant are soft so the child or their brain does not become overwhelmed by sound. Our pediatric trained audiologists have gone through extensive training and education to appropriately map and program your child’s cochlear implants.



How often does my child need to be mapped?

During the first few months, your child will need to be seen by the audiologist often. The current tentative appointment schedule is as follows and covers the initial year with a cochlear implant:

- Initial Activation (2 hours)
- 1st Follow-up – 2 weeks after initial stimulation (1 hour)
- 2nd Follow-up – 1 month after 1st follow-up (1 hour)
- 3rd Follow-up – 3 months after 2nd follow-up (1 hour)
- 4th Follow-up – 6 months after 3rd follow-up (1 hour)

More follow-up appointments are scheduled if needed and depends on use of the cochlear implant, recommendations by the auditory-verbal therapist and patient age.

Does the PENTA Cochlear Implant Team communicate with my child's teachers and other educational professionals?

The PENTA CI audiologists work closely with each child's school during the evaluation process and after implantation. All available audiological records are provided if a medical records release is on file. The audiologist and educational professionals work together to help your child succeed with their cochlear implant.

Will insurance pay for my child's cochlear implant?

Cochlear implantation is covered by most insurance policies as well as Medicaid. Our insurance specialists will work to secure confirmation that your plan covers the device and procedure prior to surgery. You may be responsible for a portion of the costs. Depending on your benefits, you may need to meet a deductible.

TREATMENT PLAN FOR CHILDREN RECEIVING COCHLEAR IMPLANTS

The protocol for a given child is designed based on procedures recommended by the manufacturer of the cochlear implant and the age and level of participation of the child.

Stage 1 – Initial Contact & Assessment

- Establish care with ENT
- Initial audiological evaluation
- Referral for CI evaluation

Stage 2 – Preoperative Selection & Assessment

- Medical Evaluation to include imaging (MRI/CT) and referral to specialists as needed
- Hearing Aid Trial
- Cochlear Implant Evaluation
- Referral to Auditory-Verbal Therapist
- Referral to GA Department of Health/Department of Education Resources
- Meet with Cochlear Implant Manufacturers
- Meet with Cochlear Implant Surgeon
- Device Selection
- Pre-op appointment
-

Stage 3 – Surgery, Recuperation, and CI Kit Introduction

- Surgery
- 1-week post ENT appointment
- Meet with CI manufacturer to learn about CI kit.

Stage 4 – Initial Stimulation and Mapping/Programming

- Initial Stimulation – 2-hour appointment
- Meet with CI manufacturer about connectivity and accessories.

Stage 5 – Aural Rehabilitation/Auditory-Verbal Therapy

Training is a long-term process for children. Children with cochlear implants are encouraged to enroll in formal auditory training to learn to listen and make use of sound provided by the cochlear implant. We recommend the following facilities:

- The Atlanta Speech School
- Auditory-Verbal Center

Stage 6 – Postoperative Evaluations and Follow-Up Visits

Periodic evaluations are made of the child's performance with the cochlear implant and its effect on communication abilities. Evaluations include medical, audiological and speech perception assessments. During these intervals, adjustments are made to the cochlear implant as necessary to maintain or improve performance with the device.

The initial year, your child will have a minimum of 4-6 follow-up appointments. Once a stable map/program has been established, your child will follow-up every 6 months or annually depending on your child's age.

REQUIRED VACCINATIONS PRIOR TO COCHLEAR IMPLANTATION

Proper documentation of up-to-date immunizations and vaccinations should be provided to PENTA for submission to your insurance company. Most insurance companies require vaccinations for cochlear implant candidacy.

Please ensure that your child's immunizations are current and up to date. The CDC recommends pneumococcal vaccination for all children, including those with cochlear implants. The following are the pneumococcal vaccination recommendations from the CDC for patients with cochlear implants:

- Children younger than 2 years old with cochlear implants should receive PCV13 according to the Childhood Immunization Schedule.
- Older children with cochlear implants who may not have received the PCV13 when they were an infant or newborn, may need to receive the PCV13.
- Children 2 years or older with cochlear implants should also receive PCV20 or PPSV23.

Talk to your child's doctor about when your child should get these vaccines. Learn more about what everyone should know about the pneumococcal vaccination on the CDC website (see resource page). Children should get all recommended doses of pneumococcal vaccines at least 2 weeks before cochlear implant surgery. This will provide the maximum protection both during and after surgery. Children already up to date on these vaccines do not need extra doses before surgery. If you have any questions regarding immunizations or vaccines, please contact your child's cochlear implant surgeon.

COCHLEAR IMPLANT CHECKLIST

The following is required to submit to insurance for approval for cochlear implantation. All items must be submitted or completed prior to surgery date being scheduled.

- ☐ Establish care with CI surgeon
- ☐ Complete imaging (CT/MRI)
- ☐ Provide a copy of updated immunizations
 - The child should be up to date on all immunizations required by the pediatrician.
 - It is recommended that children undergoing cochlear implant surgery receive the meningitis (pneumococcal) vaccine in addition to ones required by pediatrician
- ☐ Write a parent letter
 - The parent letter explains to insurance why the family would like to pursue a cochlear implant for their child.
 - This can include difficulties the patient has with current hearing aid technology, academic concerns, etc.
 - The letter should include a statement about being committed to attending appointments and taking care of equipment.
 - The parent letter can be typed or handwritten but MUST include a handwritten signature
- ☐ Auditory Verbal Intake (see next page for more information)
- ☐ Hearing aid trial
- ☐ Complete unaided and aided testing with Audiologist
- ☐ Complete age-appropriate questionnaire with Audiologist
- ☐ Fill out Release of Information forms for other specialists

AUDITORY-VERBAL THERAPY/INTAKE

Atlanta Speech School

Address: 3160 Northside Pkwy NW, Atlanta, GA 30327

Phone: (404) 233-5332

- The Atlanta Speech School is both a functioning school and a clinic offering therapy services such as speech and auditory verbal therapy.
- The Katherine Hamm Center is a segment of the Speech School specifically created for partnering with families of children who are deaf or hard of hearing to develop strong foundations for communication and reading through listening and spoken language.
- For children aged birth to five years who utilize hearing devices.
- Therapy services are offered to both children who attend the school and children who do not.
- Auditory Verbal Therapy is typically one hour per week with both the child and parent.

Auditory Verbal Center

Address: 1901 Century Blvd NE #20, Atlanta, GA 30345

277 Martin Luther King Jr. Boulevard Suite 104, Macon, GA 31201

Phone: (404) 633-8911

- The Auditory-Verbal Center is a provider of comprehensive Auditory-Verbal Services to infants, children, adults, and their families. Through the auditory verbal approach with the help of Listening and Spoken Language Specialists, their goal is to teach children with mild hearing loss to profound deafness to listen and speak WITHOUT the use of sign language or lip reading.
- Teletherapy is offered for families who cannot make the drive to the clinic.

RESOURCES

Cochlear Implant Manufacturers

Advanced Bionics
www.advancedbionics.com

Cochlear Americas
www.cochlear.com

Med-El Corporations
www.medel.com

Hearing Loss & Therapy Resources

American Academy of Audiology
(AAA)
www.audiology.org

Georgia Babies Can't Wait
<https://dph.georgia.gov/babies-cant-wait>

Atlanta Speech School
www.atlantaspeechschool.org

Georgia Center for Deaf and Hard of
Hearing
www.gcdhh.org

Auditory Verbal Center
www.avchears.org

Georgia Hands & Voices
https://www.gahandsandvoices.org/about_us.html

Immunization/Vaccine Resources

Childhood Immunization Schedule
https://www.cdc.gov/vaccines/hcp/imz-schedules/child-adolescent-age.html?CDC_AAref_Val=https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html

Pneumococcal Vaccine
<https://www.cdc.gov/pneumococcal/vaccines/cochlear-implants.html>

SAMPLE PARENT LETTER - INFANT

Date

Dear Sir or Madam:

We are writing this letter on behalf of our son/daughter, -----, who has a profound bilateral hearing loss and is presently a candidate to receive his/her ----- cochlear implants. We would very much like for ----- to receive approval for this device and are anxious to move forward with surgery.

We strongly believe that bilateral implants will afford ----- increased opportunities to live in his/her community, surrounded by those who are able to hear normally, without significant modifications. We are hopeful that bilateral cochlear implants will allow him/her to learn to listen and speak, and one day attend the school of our choice and participate in any activity that interests him/her, without the need for specialized accommodations. With --- profound hearing loss he/she is unable to hear us talk to him/her, nor can he/she hear music or other environmental sounds, and we are concerned that he/she will not be able to fully connect with the world. This causes anxiety as a parent, knowing that we cannot fully communicate with our child. Cochlear implants would provide ----- with not only access to sound, but also the ability to talk, learn and grow alongside his/her peers without limitations.

His/her family is fully committed to seeing ----- excel with his/her implant and his/her well-being is an absolute priority to me. We will continue to work on developing ----- ability to hear and speak. We will continue to meet with ----- Auditory Verbal therapist until it is no longer necessary. We are fully aware that in order to receive the full benefit of the cochlear implant, much time and energy is required. This is a sacrifice that we gladly make for our child. We will continue to take care of his/her equipment and follow up for his/her cochlear implant mapping visits.

Thank you for your consideration.

Sincerely,

SAMPLE PARENT LETTER - SSD/UNILATERAL CI

Date

Dear Sir or Madam:

We are writing this letter on behalf of our son/daughter, -----, who has a profound unilateral hearing loss and is presently a candidate to receive his - ---- cochlear implant. We would very much like for ----- to receive approval for this device and are anxious to move forward with surgery.

We strongly believe that the cochlear implant will afford ----- increased opportunities to live in his community, surrounded by those who are able to hear normally, without significant modifications. We are hopeful that the cochlear implant will allow him/her to attend the school of our choice and participate in any activity that interests him/her, without the need for specialized accommodations. While ---- is able to detect sound with one ear, the cochlear implant will allow him to excel much further, opening up greater access to sound and its sources. With his/her hearing loss, ----- is unable to locate where sound is coming from and becomes anxious when unable to find us. He/she also has significant difficulty understanding his/her teachers when there is background noise, especially in the classroom and when playing with other children. A cochlear implant would provide ----- with a not only a sense of sound location, but also a true sense of security.

His/her family is fully committed to seeing ----- excel with his/her implant and his/her well-being is an absolute priority to me. We will continue to work on developing ----- ability to hear and speak. We will continue to meet with ----- Auditory Verbal therapist until it is no longer necessary. We are fully aware that in order to receive the full benefit of the cochlear implant, much time and energy is required. This is a sacrifice that we gladly make for our child. We will continue to take care of his/her equipment and follow up for his/her cochlear implant mapping visits.

Thank you for your consideration.

Sincerely,

SAMPLE PARENT LETTER - PROGRESSIVE HEARING LOSS

Date

Dear Sir or Madam:

We are writing this letter on behalf of our son/daughter, -----, who has a severe to profound bilateral hearing loss and is presently a candidate to receive his/her ----- cochlear implant(s). We would very much like for ----- to receive approval for this device and are anxious to move forward with surgery.

We strongly believe that a cochlear implant will afford ----- increased opportunities to live in his/her community, surrounded by those who are able to hear normally, without significant modifications. We are hopeful that the cochlear implant will allow him/her to attend the school of our choice and participate in any activity that interests him/her, without the need for specialized accommodations. While his/her hearing aids allow him to hear some sounds, the cochlear implant will allow him to excel much further, opening up greater access to sound and its sources. With --- severe to profound hearing loss he/she is unable to understand what his parents, teachers and friends say, and he/she is very anxious in background noise when he cannot comprehend conversations. We are concerned that he/she will not be able to maintain social relationships or reach his/her academic potential as the hearing loss continues to progress. Cochlear implants would provide ----- with not only improved access to sound, but also a true sense of confidence and security with his/her hearing.

His/her family is fully committed to seeing ----- excel with his/her implant and his/her well-being is an absolute priority to me. We will continue to work on developing ----- ability to hear and speak. We will continue to meet with ----- Auditory Verbal therapist until it is no longer necessary. We are fully aware that in order to receive the full benefit of the cochlear implant, much time and energy is required. This is a sacrifice that we gladly make for our child. We will continue to take care of his/her equipment and follow up for his/her cochlear implant mapping visits.

Thank you for your consideration.

Sincerely,

GLOSSARY OF TERMS

American Sign Language (ASL) – A language which is communicated by signs, expressions and gestures, rather than spoken words. ASL is a unique language with its own grammar, syntax, differing significantly from written or spoken English

Assistive Listening Devices (ALDs) – products designed to aid hearing impaired persons to clarify speech and reduce the effects of background noise.

Auditory-Oral Education – educational approach with the goal of incorporating all available hearing to acquire speech and oral language.

Auditory-Verbal Therapy – individual therapy with parent as primary facilitator to teach children with hearing technology to develop language and listen with their devices.

Behavioral Observation Audiometry (BOA) – type of hearing test where the audiologist watches the child's face and changes in behavior in response to sound to determine what the child can hear. These behaviors can include, widening of eyes, changes in sucking behavior or stilling.

Cochlea – fluid-filled, bony inner ear structure where sound vibrations are converted to electrical impulse signals that are sent to the auditory nerve and up to the brain. This is also where a cochlear implant electrode array is inserted.

Cochlear Implant (CI) – a surgically implanted device that replaces the function of the damaged inner ear or cochlea to deliver electrical impulse signals to the auditory nerve and up to the brain.

GLOSSARY OF TERMS

Conditioned Play Audiometry (CPA) – type of hearing test for children where they are conditioned to engage in a listening game to determine hearing ability. The child is typically taught how to drop a block in a bucket or place a peg on a board only when they hear the sound.

Decibel (dB) – a unit of measurement for the intensity of a sound or loudness

Electrodes/Electrode Array – internal portion of the cochlear implant system that is surgically implanted into the inner ear or cochlea. The electrode array contains a number of electrode contacts that stimulate the auditory nerve to convey different frequencies.

Frequency – property of sound we interpret as pitch. Sound is vibration and how fast or slow that vibration occurs per second is interpreted as frequency or pitch. For example, low pitch sounds like the hum of the air conditioning are slower sound vibrations than a dog whistle that is high pitch and creates faster sound vibrations.

Initial Stimulation/Activation – cochlear implant appointment in which the cochlear implant system is activated or turned on. This appointment takes places 2-4 weeks after surgery and can take 1 to 2 hours to complete including initial testing and mapping or programming of each cochlear implant.

Mapping/Programming – adjustments to the cochlear implant to optimize patient's access to sound and speech.

Residual Hearing – usable hearing of a person with hearing loss.

GLOSSARY OF TERMS

Sensorineural hearing loss – hearing loss as a result of damaged sensory hair cells located in the inner ear or cochlear or hearing loss as a result of an abnormal auditory nerve preventing the normal transmission of sound to the brain.

Speech/Sound Processor – the external portion of the cochlear implant system that receives sound from the environment by the microphones and codes that signal to be received by the internal electrode array and delivered to the auditory nerve and up to the brain.

Speech Perception Testing – different word and sentence tests presented in quiet and/or in noise to measure your child's speech understanding.

Temporal Bone – part of the skull where the structures of the ear are found.

Total Communication – communication approach that utilizes both spoken language and American Sign Language simultaneously.

Tympanometry – measurement of the movement of the middle ear system to determine ability to transmit sound to the inner ear.

Transmitting Coil – external portion of the cochlear implant system housing the magnet that receives signals from the sound processor and transmits it to the internal electrode array through the skin.


Visual Reinforcement Audiometry – type of hearing test where children are conditioned to make head turns toward the sound source and are reinforced for correct responses with the use of visual stimulation such as flashing lights or toys.

NOTES



A series of horizontal lines for writing, spanning the width of the page.

NOTES



A series of horizontal lines for writing, spanning the width of the page.



LOCATIONS

Atlanta

5461 Meridian Mark Rd.
Suite 130
Atlanta, GA 30342

Marietta

355 Tower Road
Suite 201
Marietta, GA 30060

Alpharetta

3300 Old Milton Pkwy
Suite 275
Alpharetta, GA 30005

Atlanta Speech School

3160 Northside Pkwy NW
Atlanta, GA 3327

Scheduling: 404-591-1884

Email: audiology@childrensent.com