HearYourWay

The Cochlear™ Nucleus® Implant System

Your guide to a lifetime of better hearing for your child.

Cochlear®

Lexie Z. – Nucleus recipient

We will be there for your child today and every day.

You want your child to experience what every child enjoys in life. The same independence. The same self-confidence. The same opportunities the world surprises us with every day. We understand it is stressful when you learn your child has hearing loss. You think about everything your child could and should be hearing.

The journey your family is about to embark on is a nerve-wracking one—the decisions you make will be life-changing. We'll be with you and your child every step of the way.

Our goal is to make sure you feel confident about your child's future with a Cochlear™ Nucleus® System. As part of our promise to help children "Hear now. And always," we are committed to helping your child achieve their best hearing experience every day. This means providing innovative hearing solutions and support throughout his or her entire hearing journey—today and into the future.

First things first.

You'll need time to make important decisions about your child's hearing future, and we're here to help you navigate the options. Your child is unique and their hearing solution should be, too. We can help your child hear better with more choices of wearing options, wireless connections and personalized services.

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Pearson H. – Nucleus recipient

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If you have questions, we have experts that are ready to assist you! Learn about the process, our products, technology and company from our highly skilled Concierge team.

Email: Concierge@Cochlear.com
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Hearing loss can happen to anyone at any time.

An estimated two to three of every 1,000 children in the United States are born deaf or hard of hearing and more lose their hearing later during childhood.[1]

Hearing and hearing loss

Every child is unique, and so is a child's hearing loss. To help you understand the possible hearing solutions for your child, you should know how the ear works, how hearing loss is diagnosed, degrees and the different types of hearing loss. With the right technology and a little bit of hard work, your child's hearing loss doesn't have to get in the way of his or her ability to learn and live like other children.

We hear with our brains, not our ears

Sound enters through our ears but is processed and understood by the brain. Children with hearing loss have the same listening potential as children born with normal hearing. If they are given access to sound through technology and sufficient exposure to spoken language, their brains can learn to listen, too.

> "During her activation, we noticed an immediate difference. We had one of those YouTube moments where she clapped her hands and started laughing. At that moment, we knew we made the right decision for her. It means so much to know your child can hear."
>
> Mother of Natalie S. – Nucleus recipient

Natalie S. – Nucleus recipient

How hearing works is amazing.

One of the first steps in understanding the treatment options available for your child's hearing loss is to understand more about how hearing works and the degrees of hearing loss.

How hearing works

Hearing is the process of sound traveling through the outer, middle and inner ear. Each section contains many different parts, which work together to allow you to hear.

Parts of the ear:

- **Outer ear** – consists of the outer part that you can see *(the pinna)* and the ear canal.
- **Middle ear** – consists of the eardrum and three tiny connected bones *(ossicles)*, which are often referred to as the malleus, incus and stapes.
- **Inner ear** – contains the snail-shaped cochlea and the hearing nerve, as well as semicircular canals that help with balance.

Each part of the ear plays a critical role in transmitting sound. Natural hearing depends on them working together. If there is a problem anywhere in the process, the result may be hearing loss.

How natural hearing works

1. Sound travels down the ear canal to the eardrum.
2. The movement of the eardrum makes the tiny bones in the middle ear vibrate.
3. These vibrations are transmitted to the inner ear *(cochlea)*.
4. Tiny sensory hair cells in the cochlea pick up the vibrations and transmit signals to the brain where they are interpreted as sound.

Understanding hearing loss may be a good place to start.

It may be difficult to determine whether your child is experiencing hearing loss, especially if they cannot communicate yet.

Knowing and understanding signs of hearing loss

Infant or toddler:

- Does not react to loud sounds
- Does not seek out or detect where sound is coming from
- Has stopped babbling and experimenting with making sounds
- Still babbles but is not progressing to more understandable speech
- No reaction to voices, especially when being held

School-aged child:

- Does not follow simple commands, such as "get your shoes" or understand simple directions
- Easily frustrated or experiences communication breakdowns
- Falling behind with speech and communication skills
- Depends heavily on lip-reading
- Exhausted at the end of the school day due to constant concentration just to understand speech

Types of hearing loss

Sensorineural hearing loss – occurs when the inner ear, or hearing nerve, is damaged or not working properly. This type of hearing loss is permanent and can be genetic or caused by diseases, exposure to noise, certain kinds of medication and the natural aging process.

Conductive hearing loss – occurs when sound is not passing through the outer or middle ear to reach the inner ear.

Mixed hearing loss – a combination of a conductive and a sensorineural hearing loss.

Degrees of hearing loss

Mild hearing loss – your child may hear speech, but soft sounds are hard to hear such as a whisper or the consonants on the end of words like "shoes" or "fish."

Moderate hearing loss – your child may hear speech from another person speaking at a normal level but will have difficulty understanding what is said. Your child might hear the vowels within a sentence but will not hear the consonants. This makes sentence comprehension almost impossible.

Severe hearing loss – your child may hear little to no speech of a person talking at a normal level and only some loud sounds. Very loud sounds, such as a car horn, wouldn't likely be startling or scary in the same way it would to a child with normal hearing.

Profound hearing loss – your child will not hear any speech and only very loud sounds. He or she will likely feel the vibrations of only the loudest of sounds.

How hearing is tested

A person of any age can be given a hearing test, even newborns.

Hearing specialists, or audiologists, use tests including otoacoustic emissions *(OAE)* or auditory brainstem response testing *(ABR)* to determine if hearing loss is present. These tests are performed with a small probe that is painlessly inserted into a child's ear while they are asleep or awake, and hearing measurements are taken.

For older children, visual reinforcement audiometry *(VRA)* and conditioned play audiometry *(CPA)* are used. Both tests require a child to behaviorally respond to sounds and often incorporate fun activities.

All newborns should have a hearing screening before being discharged from the hospital.

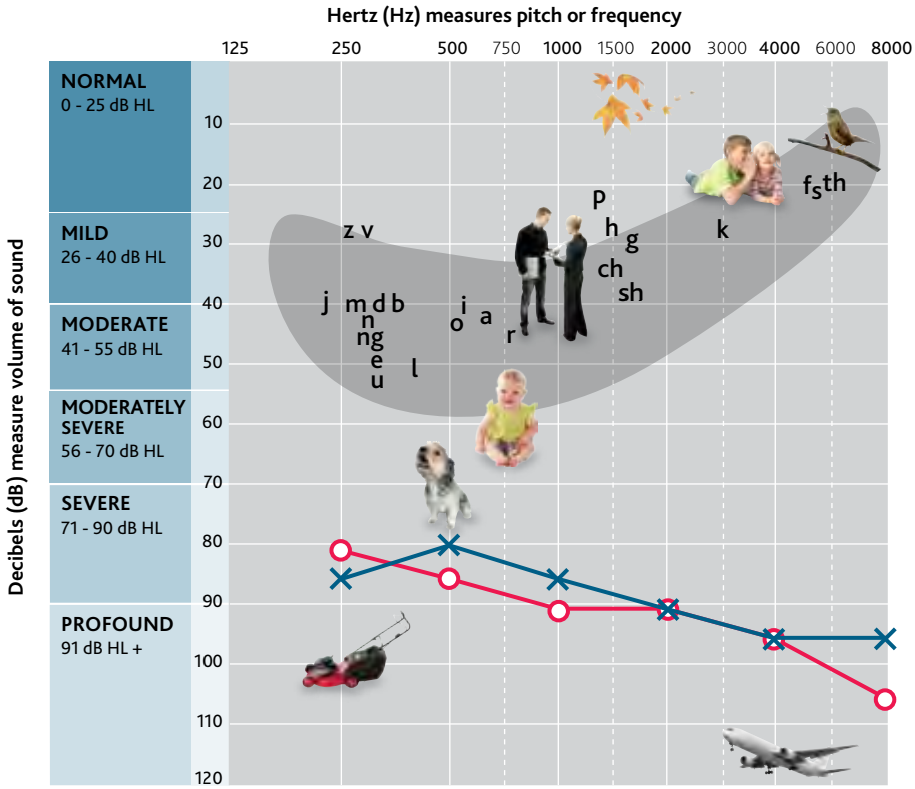
Every state and territory in the United States has established an Early Hearing Detection and Intervention *(EHDI)* program to identify every child born with a permanent hearing loss before three months of age and to provide intervention services before six months of age.[2] For more information, visit **www.cdc.gov/ncbddd/hearingloss/ehdi-programs.html**

Understanding the audiogram

During hearing tests, audiologists record information onto an audiogram, which is a visual illustration that shows your child's hearing ability. It records the softest sound your child can hear, or hearing threshold. It shows the pitch, or frequency, which is measured in hertz *(Hz)* and the volume of sound in decibels *(dB)*.

The audiologist will plot your child's hearing loss using **"X"** for the left ear in blue, and **"O"** for the right ear in red. A normal hearing person can detect very soft sounds at 20 dB or less, like a whisper, to a very loud sound of 120 dB, like an airplane. The "speech banana" represents where vowels and consonants fall on the audiogram. Your child needs access to these sounds in order to understand speech and learn to talk.

This audiogram illustrates a child with severe to profound hearing loss in both ears.



Consonants and vowels are spoken at frequencies that fall within the highlighted area, known as the "speech banana."

The pictures represent sounds at typical volume and frequency levels.

In this example, the sounds above the red and blue lines cannot be heard.

Milestones for learning to listen and speak

Understanding hearing and speech development milestones can be helpful. Use these guidelines to better understand your child's progress.*

Age	Hearing and Understanding	Speech and Language
Birth – 3 Months	• Startles to loud sounds • Quiets or smiles when spoken to • Seems to recognize a caregiver's voice and quiets if crying • Increases or decreases sucking behavior in response to sound	• Makes pleasure sounds *(cooing)* • Cries differently for different needs • Smiles when sees parent
4 – 6 Months	• Moves eyes in the direction of sounds • Responds to changes in the tone of your voice • Notices toys that make sounds • Pays attention to music	• Babbling sounds more speech-like with many different sounds, including /p/, /b/ and /m/ • Vocalizes excitement and displeasure • Makes gurgling sounds when left alone and when playing with you
7 Months – 1 Year	• Enjoys games like peek-a-boo and pat-a-cake • Turns and looks in the direction of sounds • Listens when spoken to • Recognizes words for common items like "cup," "shoe," "juice" • Begins to respond to requests *("Come here," "Want more?")*	• Babbling has both long and short groups of sounds such as "upup" and "bibibibi" • Uses speech or non-crying sound to get and keep attention • Imitates different speech sounds • Has one or two words *(bye-bye, dada, mama)* although they may not be clear
1 – 2 Years	• Points to a few body parts when asked • Follows simple commands and understands simple questions • Listens to simple stories, songs and rhymes • Points to pictures in a book when named	• Says more words every month • Uses one- to two-word questions *("Where kitty?")* • Puts two words together *("more cookie")* • Uses many different consonant sounds at the beginning of words

** Milestones according to American Speech-Language-Hearing Association. Available at http://www.asha.org/public/speech/development/01/*

Early intervention matters.

Providing your child access to sound when hearing loss is first detected is very important. It can help lay the foundation for fundamental language and social skills to help your child be successful in school and society later in life.

In fact, research shows that children whose hearing loss is identified and treated early are best able to develop speech, language, cognitive and social skills ahead of later-identified children.[2]

Hearing and speech therapy at an early enough age can also help children develop listening and verbal skills in a manner similar to their hearing peers. Spoken language emerges almost naturally.[3]

Early intervention resources

Early Hearing Detection and Intervention *(EHDI)* state programs:

www.cdc.gov/ncbddd/hearingloss/ehdi-programs.html

Alexander Graham Bell Association for the Deaf and Hard of Hearing:

www.AGBell.org

The National Center for Hearing Assessment and Management:

www.InfantHearing.org

American Speech-Language-Hearing Association:

www.ASHA.org

Your child's success with their hearing progress starts at home

There are many factors that can influence how well your child progresses with hearing, speaking and learning to use any hearing technology. One of the most important factors is how you engage with and encourage your child to use their technology at home. You are your child's first, and most important, teacher. Below are ways you can help your child get the most from their hearing solution.

It is important that your child wear his or her hearing technology as much as possible to ensure consistent access to sound.

Encourage your family members, including siblings, to provide a positive attitude toward your child's hearing technology. This will help develop confidence in wearing the hearing device.

Your voice is one of the most important sounds to your child, so talk to them—all the time. Narrate your actions and speak to them as much as possible. Ask your child to repeat things or answer questions to increase learning opportunities and give you an idea of their progress in developing speech.

Building your child's team.

A team of trained experts will need to be involved in your child's hearing health care. Identify and build strong relationships with these professionals since they will be there to support you and your child at every step of the journey. Here are descriptions of some of the key team members.

Pediatrician

Once hearing loss is suspected, your child's pediatrician typically refers you to a doctor who specializes in hearing loss. Your child's pediatrician will continue to oversee your child's overall health.

Audiologist

The audiologist is likely to be the first professional you encounter and possibly the one who gives you the initial news regarding your child's hearing loss. Throughout your child's life, the audiologist will also be the professional who evaluates, programs and manages the hearing solution*(s)*. Many audiologists specialize in a specific area, such as pediatrics or cochlear implants. Make sure your child's audiologist is well trained in cochlear implants and all advanced hearing technology.

Otolaryngologist

Upon diagnosis of hearing loss, your child will be referred to an ear, nose and throat physician (ENT or otolaryngologist) or one who specializes in childhood ear and hearing problems. The otolaryngologist's initial role will be to determine the underlying problem causing the hearing loss.

Early Intervention Specialist

This professional is typically someone with an educational background. This specialist will help you manage your observations and concerns about your child, and give you information and support regarding future educational needs.

Speech-Language Pathologist *(SLP)*

This professional will evaluate the impact of your child's hearing loss on speech/language development and monitor progress over time. You may also work with a listening and spoken language specialist *(LSLS)* who will help you teach your child to listen and talk.

Learn about possible hearing solutions for your child.

Selecting the most appropriate hearing technology is critical to your child's hearing success. Your audiologist and physician will work closely with you and your family to determine the best hearing solution for your child, and we're here to help you navigate the options. We want to help your child have access to the world of sound and live life to the fullest.

If your child has severe to profound hearing loss, your clinician will recommend a hearing aid trial before moving on to another technology, such as a cochlear implant.

What are hearing aids?

Hearing aids are small electronic devices that capture sound and make it louder. Any remaining sensory hair cells in the cochlea are stimulated to transmit this sound information to the hearing nerve and on to the brain.

The most common type of hearing aid used for children is the behind-the-ear design, also called a BTE. This type of hearing aid hooks over the top of your child's ear and rests behind it. Your child may also benefit from using an earmold that fits in your child's ear canal that carries the sound and helps keep the hearing aid in place.

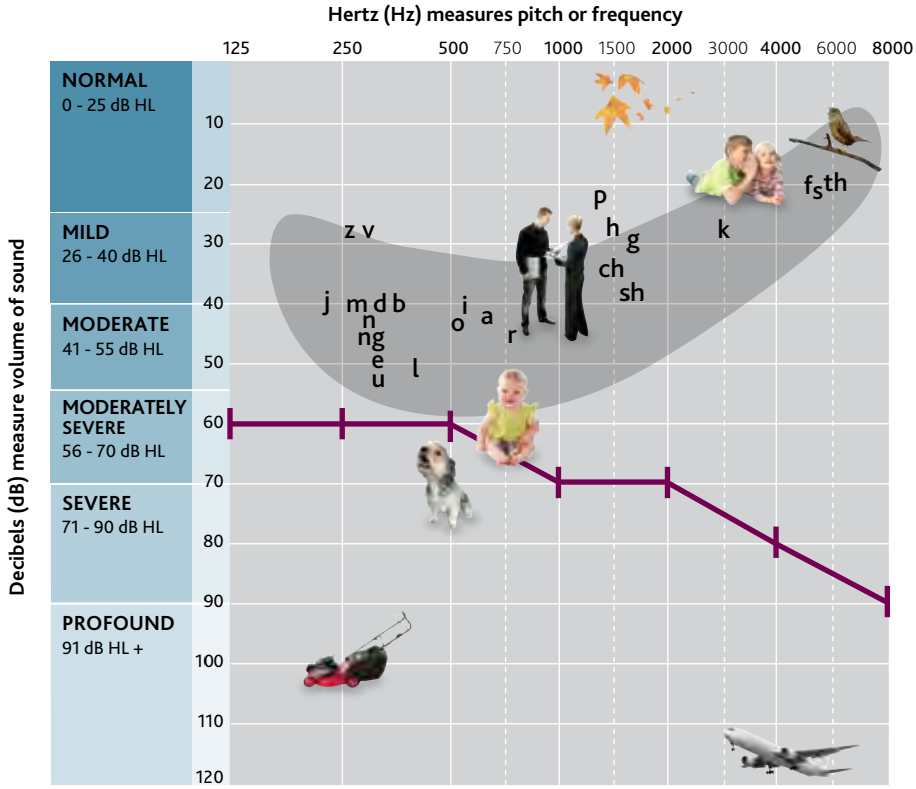
Will your child benefit from hearing aids?

Typically, a hearing aid helps mild to moderate hearing loss in one or both ears. If your child has severe to profound hearing loss, hearing aids might not be enough to understand sounds and learn speech.

After the initial fitting of hearing aids, the audiologist will work with you and your child to closely monitor progress. If your child is not benefiting from hearing aids, or is not progressing as much as you and your audiologist expect, a cochlear implant may be the best solution to provide access to sound.

Behind-the-ear hearing aid

This audiogram illustrates a child with severe to profound hearing loss wearing bilateral hearing aids.



Consonants and vowels are spoken at frequencies in the spectrum of sound that fall within the highlighted area, known as the "speech banana."

Pictures represent the sounds you can typically hear at different volume and frequency levels.

The purple line represents the levels the child can hear using bilateral hearing aids. Sounds below the purple line can be heard, while sounds above the purple line are missed.

> "His language scores are better than normal hearing kids. He has the language of an eight-year-old, and he is only four."
>
> Mother of Patrick H. – Nucleus recipient

What are cochlear implants?

Cochlear implants are widely recognized as an established treatment for children with severe to profound hearing loss.[4*]

These surgically implanted electronic devices help make sounds louder and clearer by bypassing the damaged portion of the inner ear and stimulating the hearing nerve directly, similar to natural hearing.

The Cochlear Nucleus Implant System offers behind-the-ear and off-the-ear external sound processor options to best meet your child's hearing preference.

Advantages of cochlear implants for your child

Research and decades of experience demonstrate that cochlear implants provide improved:

- Auditory awareness of sounds at levels within the normal range of hearing[5]
- Speech understanding, sound clarity and language skills[5]
- Hearing in noise[6]
- Quality of life[6]
- Educational outcomes[7]

Many factors contribute to hearing with a cochlear implant. Practice, patience and positivity. This trio of ingredients mean everything in achieving your child's individual goals. Set realistic expectations with the audiologist, and schedule regular appointments to check progress and make adjustments to improve your child's hearing experience.

Cochlear implants are designed to help your child develop speech[8]

Parents commonly seek cochlear implantation for their child because they want them to hear and speak like children with normal hearing. Learning language by listening and speaking can be important to your child's future success in school.

Clinical studies show children who are implanted early can learn to speak faster than those implanted later in life. In fact, performance scores in children implanted younger are closer to scores of normal hearing children.[9]

Criteria to qualify for a cochlear implant:

Children *(12-24 months)*:

Profound sensorineural hearing loss in both ears and limited benefit from hearing aids in both ears.

Children *(2-17 years)*:

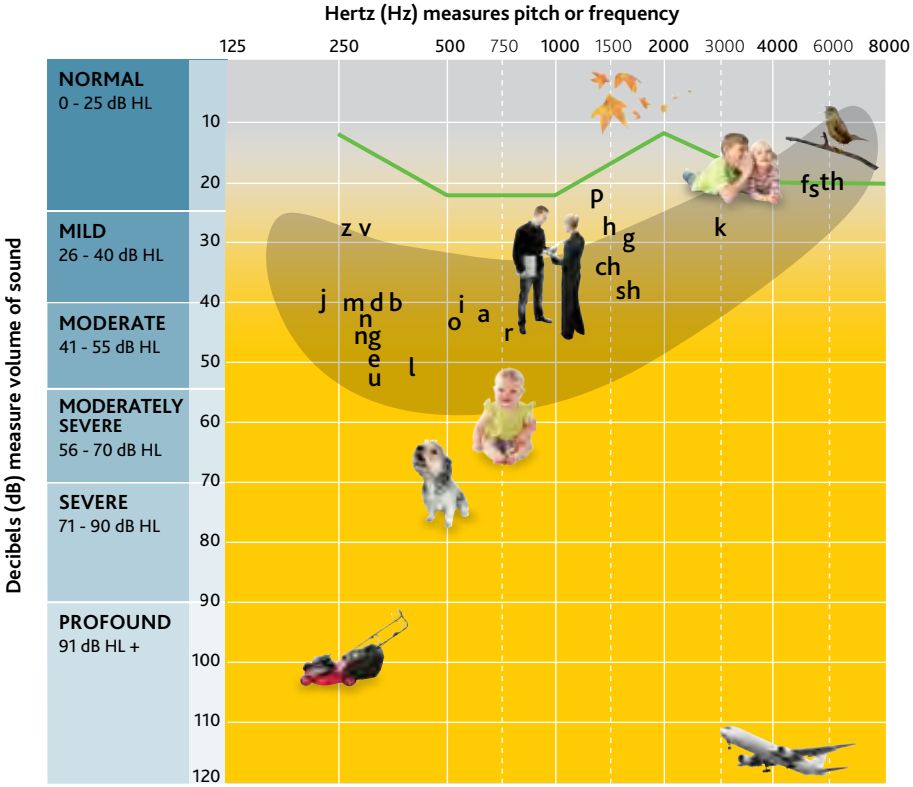
Severe to profound sensorineural hearing loss in both ears with limited benefit from hearing aids. To qualify, speech test scores while using hearing aids need to be less than 30% correct.

** Cochlear implants are approved in the United States for children 12 months and older.*

Will your child benefit from cochlear implants?

Children with severe to profound hearing loss use cochlear implants to access sounds they are missing from hearing aids.* The audiogram below indicates sounds your child may have access to with a cochlear implant.

This audiogram illustrates an example of a child's hearing with bilateral cochlear implants.



For many patients, cochlear implants:

- Provide access to missing sounds *(yellow area)*
- Provide sound clarity[5]
- Improve hearing in noise[6]
- Help your child understand speech and learn to talk[5]

The pictures represent sounds at typical volume and frequency levels.

In this example, the sounds below the green line can be heard.

Consonants and vowels are spoken at frequencies in the spectrum of sound that fall within the highlighted area, also known as the "speech banana."

** Cochlear implants are FDA approved in the United States for children 12 months of age and older. The Hybrid L24 Implant is approved in the United States for adults 18 and older.*

We understand you want your child to reach their full potential and live a full life. We want that, too. That's why we continually deliver industry-leading breakthroughs. The Cochlear Nucleus Implant System features a wide range of options designed to meet your child's individual hearing needs and provide unparalleled hearing performance—today and always.

Cochlear Nucleus System components:

Nucleus Profile Implant

1. Magnet
2. Computer Chip
3. Electrode Array

Nucleus Profile Implant

Nucleus 7 Sound Processor

1. Coil with Magnet
2. Sound Processor
3. Battery

Nucleus 7 Sound Processor

The Cochlear Nucleus Implant System—innovative technology for your child's best hearing performance

We are continually advancing our technology in an effort to provide your child with the best possible hearing experience. These innovations are applied to the components of our Nucleus Implant System, which is designed to benefit your child not only today, but for their lifetime as part of our promise to help them "Hear now. And always."

There are two main components of the Nucleus System:

- **External sound processor** – includes options to best fit your child's lifestyle and hearing preferences:
  - Kanso Sound Processor *(off-the-ear)*
  - Nucleus 7 Sound Processor *(behind-the-ear)*
  - Nucleus 7 Sound Processor with Hybrid™ Hearing* *(behind-the-ear with an acoustic component)*
- **Internal implant** – features a variety of electrode arrays to match your child's hearing needs

Cochlear Hybrid Hearing*

If your child can hear some sounds, but struggles to hear other sounds like whistles and birds chirping, Cochlear Hybrid Hearing* may be able to help. It works by amplifying the low-frequency sounds your child may hear after cochlear implant surgery, while providing access to the high-frequency sounds they are missing for a richer hearing experience. Hybrid Hearing consists of an acoustic component that is attached to the end of the Nucleus 7 Sound Processor and is compatible with any of our Nucleus Electrodes.

How a cochlear implant works

1. Microphones on the sound processor pick up sounds, and the processor converts them into digital information.
2. This information is transferred through the coil to the implant under the skin.
3. The implant sends digital sound signals down the electrode into the cochlea.
4. The hearing nerve fibers in the cochlea pick up the signals and send them to the brain, which is understood as sound.

** The Acoustic Component should only be used when behavioral audiometric thresholds can be obtained and the recipient can provide feedback regarding sound quality. The Cochlear Nucleus Hybrid acoustic component is not compatible with the Kanso Sound Processor.*

Your child can experience clearer sound—in both ears.

Ears work as a team, and hearing with both can give your child better understanding in noise, speech recognition and the ability to detect where sounds are coming from.[10]

Binaural hearing *(hearing with two ears)*

Hearing with two ears provides clear advantages, such as helping your child hear more clearly and better understand speech.[10] The two work together to allow your child to pinpoint where a sound is coming from and hear better in noise, whether it's a car coming down the street or friends cracking jokes on the other side of the school cafeteria.

Hearing with both ears is called *binaural hearing* and can be achieved with two hearing aids, a hearing aid and cochlear implant or two cochlear implants.

Consult your hearing health specialist about all the options for helping your child hear with both ears.

Bimodal hearing *(cochlear implant + hearing aid)*

Bimodal hearing combines the benefits of a hearing aid *(acoustic hearing)* with a cochlear implant *(electric hearing)* by fitting one on each ear. With bimodal hearing, a cochlear implant provides your child sound clarity, while using a hearing aid in the other ear may continue to enhance your child's hearing satisfaction and comfort. With bimodal hearing, your child may find that understanding speech is easier and they're able to enjoy a more complete hearing experience, especially in noisy environments.

If your child benefits most from bimodal hearing, you can rest easy knowing that the Cochlear Nucleus Implant System works with any hearing aid to enhance your child's hearing experience.

For a premium bimodal experience, you may want to consider the world's only smart bimodal hearing solution for your child. This configuration works with a Nucleus 7 Sound Processor and a compatible ReSound hearing aid,* and allows children to stream sound directly into both ears at once from a compatible Apple® device. If your child does not have an Apple device or does not want to use the Made for iPhone connectivity, they can still take their bimodal experience to the next level using our True Wireless™ accessories to simultaneously send sound to both ears.

Bilateral cochlear implants *(two cochlear implants)*

If the hearing loss has progressed in both ears to where a bimodal configuration is not helping your child understand sound and speech, bilateral cochlear implants may be a good solution.

Whether it is with one cochlear implant or two, hearing sounds in both ears is important to provide your child's brain with enough stimulation to understand conversations and communicate effectively.

> "Binaural hearing provides you with the ability to tell where sounds are coming from and to understand speech in noisy environments. It allows you to take advantage of brain mechanisms that can separate the speech you want to hear from other sounds in the area."
>
> Ruth Litovsky, Ph.D. – Professor of Communication Disorders, University of Wisconsin, Director, Binaural Hearing Lab, Waisman Center

**Compatible ReSound hearing aids can be found at www.Cochlear.com/US/Nucleus7Compatibility.*

As you begin to learn more about all the different cochlear implant devices available for your child, there are a few things to keep in mind.

Consider the following when choosing a cochlear implant for your child

Implant reliability

Since the implant is designed to last your child's lifetime, reliability is very important. Cochlear reports its reliability data according to international standards measured in terms of Cumulative Survival Rate *(CSR)*. We pride ourselves on not just making a reliable implant today, but on having the best long-term reliability, too. In fact, our Nucleus Implants are the most reliable implants in the industry.[11-13]

Hearing performance

You want your child to have the best hearing experience in every listening environment. The Nucleus System, with our third generation SmartSound® iQ* technology, can help your child experience better hearing, even in noisy situations. And, only Cochlear has True Wireless accessories that allow your child to have sound sent directly into the sound processor in some of the most difficult listening environments, like school and the car.

Customization options for favorite activities

The highly-durable Nucleus System helps your child enjoy everyday activities— listening to music, talking on the phone, playing sports and even swimming—with minimal disruption. We offer personalization through sound processor wearing options, accessories and battery choices so your child can be ready for life's adventures.

Upgrades and access to future technology

Your decision impacts your child today and for a lifetime. As part of our promise to help your child "Hear now. And always," we design our implant systems to provide access to future technology without the need for additional surgery. As the market leader in cochlear implants, we continue to invest millions of dollars in research and development so you can have added peace of mind that your child will have access to the latest and most advanced technology for a lifetime of better hearing.

Company reputation

We understand what an important decision this is for your family. We want you to feel confident that the company you choose will be there for your child long term. As the industry pioneer and global leader, we have helped more than 450,000 people worldwide enjoy the gift of sound, and we continue to earn their trust every day. Talk with your hearing health care providers, speak with a Concierge and connect with parents about their experiences with Cochlear. We want you to feel confident that your child's hearing is well looked after.

Ongoing support and service anytime, anywhere

Cochlear strives to be a partner to you and your child for a lifetime of hearing. We know you will have questions along the way, and we will be there to answer them. In addition, we have multiple tools and personalized resources that can be tailored to your child's needs over time.

We also have resources for your child's audiologist like Cochlear Link, which allows your child's sound processor to be serviced and back to you the next day.** This means less time off-air for your child and quicker access to sound.

** SNR-NR, WNR and SCAN are approved for use with any recipient ages six years and older, who is able to 1) complete objective speech perception testing in quiet and in noise in order to determine and document performance 2) report a preference for different program settings.*

***Valid MAP required and some warranty restrictions may apply for next business day service.*

Chapter 2:

- Implants and Electrodes
- Number One in Implant Reliability
- MRI Safety
- Sound Processing Technology
- Hybrid Hearing

If you have questions, we have experts that are ready to assist you! Learn about the process, our products, technology and company from our highly skilled Concierge team.

Email: Concierge@Cochlear.com
Phone: 1 866 922 9211

We lead the way with innovations to improve your child's hearing performance now and for a lifetime.

The Cochlear difference

We continue to create industry-leading breakthroughs, which is why more people choose Cochlear than all other hearing implant companies combined.[1,2] Now, we want to change your child's life, too.

The Cochlear Nucleus System—the smart choice

The Nucleus System includes unique components and innovative technology designed to provide your child with their best hearing performance. These features include:

- Implants designed for a lifetime with unprecedented reliability[3-5]
- Broad range of implants and electrodes to fit your child's hearing needs
- Perimodiolar electrodes that are closest to the nerve for optimal hearing performance
- Most active electrode contacts in the industry* for accessing the full spectrum of sound
- SmartSound iQ** with SCAN designed to mimic natural hearing for easier listening
- Hybrid Hearing† uses the natural low-frequency hearing your child may have after surgery, while providing access to the high-frequency sounds they're missing
- Sound processors that are easy to use

Based on manufacturers specification collateral.

*** SNR-NR, WNR and SCAN are approved for use with any recipient ages six years and older, who is able to 1) complete objective speech perception testing in quiet and in noise in order to determine and document performance 2) report a preference for different program settings.*

†The Acoustic Component should only be used when behavioral audiometric thresholds can be obtained and the recipient can provide feedback regarding sound quality.

Cochlear is the

MOST CHOSEN

hearing implant company[1]

Advanced implant design for improved performance

All our implants are designed to last a lifetime with performance and preservation of the cochlear structures in mind.* The Nucleus Implant body is placed under the skin as is the electrode array, which consists of 22 active contacts that follow the natural curve of your child's cochlea. This stimulates the hearing nerve directly for your child's best hearing.

Our implant and electrode portfolios provide:

- Best long-term implant reliability record for added peace of mind[3-5]
- *(22)*** active contacts for maximum frequency coverage along the hearing nerve
- Perimodiolar electrodes that are inserted closest to the hearing nerve for optimal hearing performance
- Thin electrode arrays to protect the delicate structures of your child's cochlea
- Easy to remove magnet to ensure safety, comfort and MRI Compatibility now and in the future

The right implant for your child

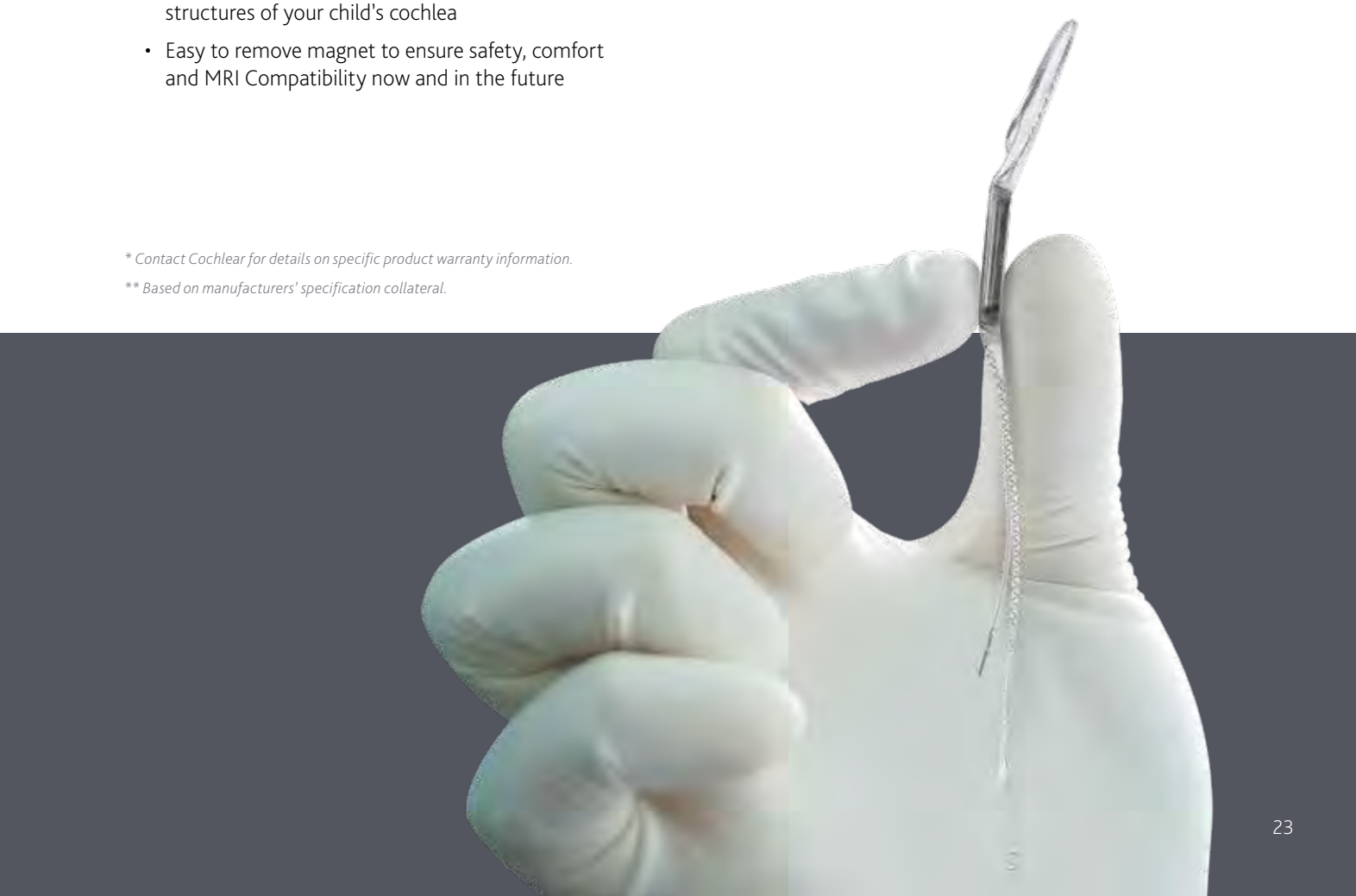
The anatomy of the cochlea can vary from person to person. That is why we provide a broad range of implants and electrodes allowing your child's surgeon to choose the best one for your child's type of hearing loss, cochlea anatomy and the surgeon's preference.

In addition to having the industry's thinnest electrodes,** we also offer exclusive perimodiolar electrodes that are inserted closest to the hearing nerve for optimal hearing performance.

The Nucleus Profile Implant expands our large implant portfolio by providing the thinnest implant available.[6-8] The importance of this thin implant is that it follows the curvature of the head for the potential of a better cosmetic outcome and less time in surgery. The Profile Implant also has a higher impact resistance—up to 2.5 joules—for added durability.

** Contact Cochlear for details on specific product warranty information.*

*** Based on manufacturers' specification collateral.*



Electrode placement in the hearing zone is important for hearing performance

Our electrodes are placed where nerve stimulation is most effective—in the hearing zone—which is the area closest to the hearing nerve where your child needs stimulation to access the full range of sound.[9,10]

Clinical research shows that deeper insertion beyond the hearing zone can be associated with deterioration in performance due to pitch confusion at the tip of the cochlea as well as damage to the delicate cochlear structures.[10,11]

Providing the full spectrum of sound for your child

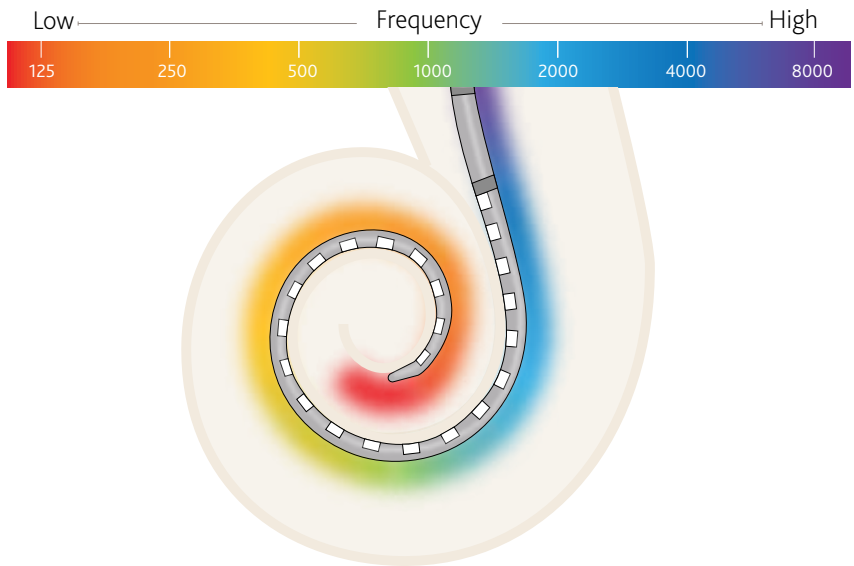
With natural hearing, the brain understands pitch based on where stimulation happens inside the cochlea.

- Higher pitches are stimulated at the bottom, or base, of the cochlea
- Lower pitches are stimulated at the top, or apex, of the cochlea

When a cochlea and the sensory hair cells are damaged or not working properly, not all the pitches are available. This is where the role of the electrodes comes into play.

The electrodes are designed to bypass the damaged sensory hair cells and stimulate the hearing nerve directly to provide the full spectrum of sound. The more active contacts and channels in the cochlea, the more your child will have access to a full range of sound. Cochlear provides the most active sequential electrodes* or contacts—22 to be exact—to help provide a richer, more full hearing experience.

22 electrodes for greater sound resolution



** Based on manufacturers specification collateral.*

Designed to provide the optimal rate of stimulation to the hearing nerve

Rate is how fast the electrical impulses are sent to the hearing nerve. Like all working nerves, there are active and resting phases. Thus, the idea of "faster is better" isn't always the case. The hearing nerve can only handle so much stimulation at one time. To maximize your child's hearing performance, we design our implants to deliver efficient stimulation rates, while still providing the appropriate amount of information.

Perimodiolar electrodes are placed closest to the hearing nerve, which is the area of the cochlea you want to stimulate to maximize the hearing outcome.[12-16]

Implant innovations designed for optimal hearing performance

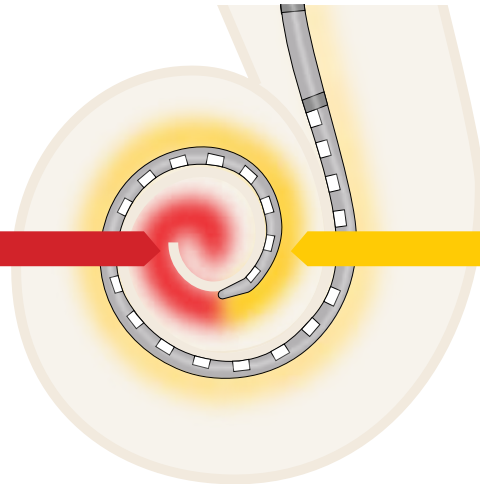
The Cochlear Nucleus Slim Modiolar Electrode is our latest implant innovation and is based on our strong scientific foundation and experience with our previous generations of electrodes. With the Slim Modiolar Electrode, we combined the benefits of a thin electrode with optimal positioning in the cochlea to provide your child with their best hearing performance.

The Nucleus Slim Modiolar Electrode is:

- Positioned closest to the hearing nerve for optimal hearing performance[12-15]
- The world's thinnest full-length perimodiolar electrode* designed to protect the structures of the cochlea[17]

With Cochlear, you will have the peace of mind that the surgeon has electrode options designed to provide your child's best hearing performance and fit his or her personal hearing needs.

Cochlear electrode insertion depth matters



Beyond the Hearing Zone

Risk of trauma to delicate cochlear structures and possible pitch confusion.[10,11]

Hearing Zone

Cochlear's electrodes are designed for insertion in the hearing zone—up to 450° into the cochlea—for optimal electrical stimulation.[9,10]

** Measurements according to manufacturers' electrode specifications.*

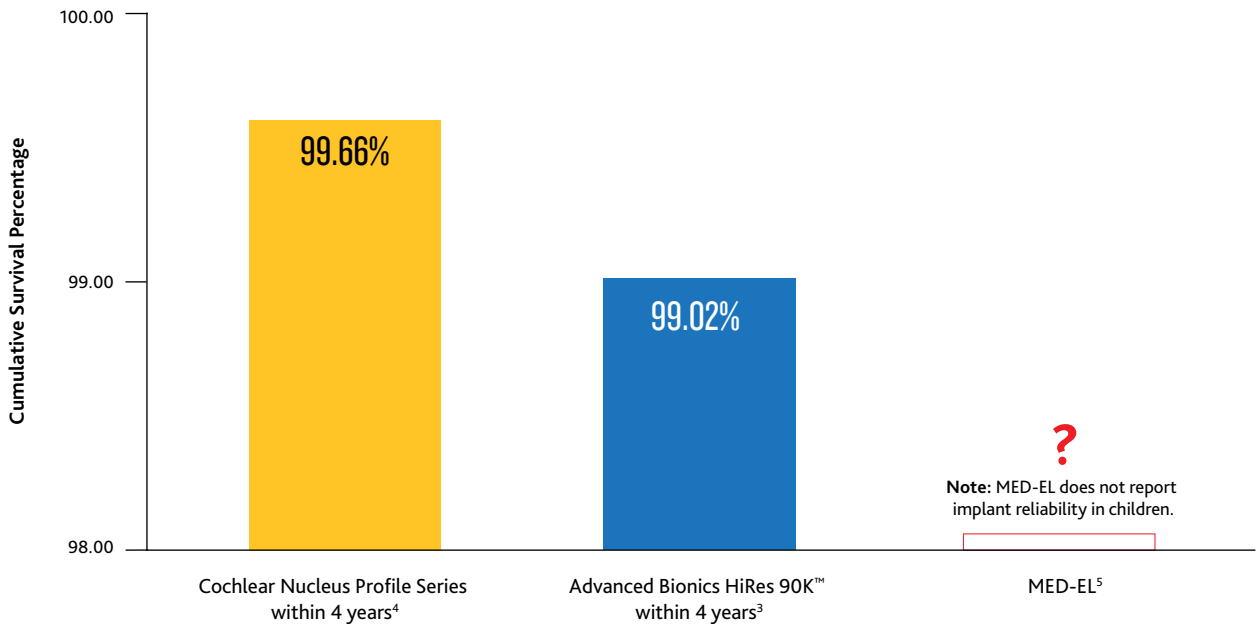
We want you to feel confident they will always hear their best.

Cochlear is #1 in reliability[3-5,18]

Implant reliability is just as important as hearing performance. Cochlear has the best long-term reliability record in the industry, so you can have the added peace of mind that your child's implant will continue to work for years to come. The performance of our implants is one of the reasons why Cochlear is the industry's most chosen hearing implant company.[1,2]

#1 Most Reliable Implant for Children[3-5,18]

Latest generation implant reliability in children[3-5,18]



Implants designed with MRI safety in mind— today and always.

97% of radiology professionals surveyed do not recommend MRI scans for patients with magnets in their body[19]

Magnetic Resonance Imaging *(MRI)* is a diagnostic medical procedure that provides a detailed image of the internal organs and tissues. If your child ever needs an MRI, you can rest easier knowing he or she will be able to have an MRI with the Nucleus Implant System. Our Nucleus Implants are designed for easy magnet removal for both safety and comfort for MRIs up to 3.0 Tesla. Our Nucleus Implants are also approved for an MRI of 1.5 Tesla with the magnet in place using our MRI Kit.*

Safety with MRIs matters

Because MRIs use powerful magnets, there are risks in keeping the internal cochlear implant magnet in place during an MRI, including pain and discomfort.[20,21] That is why we believe the gold standard is to remove the magnet—an MRI-safety feature of our implants for more than 20 years. The strength of MRIs will continue to increase as the technology advances. You can rest assured that our removable magnet design will continue to be MRI safe well into the future.

** The following Nucleus Profile and Freedom implants are approved for MRI for up to 3.0T with the magnet removed and 1.5T with magnet in place with use of the Cochlear Nucleus Implant Bandage and Splint Kit: Nucleus Profile: CI512, CI522, CI532; Nucleus CI24RE: CI422, CI24REH, CI24RE(CA), and CI24RE(ST).*

Cochlear Nucleus Sound Processors work hard to make hearing easier for your child.

The Nucleus Sound Processor portfolio features our latest technology to help your child hear their best, including:

- Dual microphones that help filter out background noise
- Automatic sound processing to help make hearing easier
- Data logging to help provide key usage information to your child's audiologist
- Made for iPhone compatibility—a first for cochlear implants[22]
- 2.4 GHz True Wireless connectivity

Our Nucleus Sound Processors are designed to provide your child's best hearing experience in any situation.

 Maneh S. – Nucleus recipient

Our advanced technology makes hearing easier—especially in noise.

Two synchronized microphones help filter out background noise

Having more than one microphone on the sound processor can help your child focus on what they want to hear, especially in noisy environments.[23]

Our Nucleus Sound Processors feature dual-microphone zoom technology designed to help filter out background noise and optimize your child's hearing experience. The two synchronized microphones work together to reduce sound from behind and to the sides so your child can hear more of what he or she wants.

Speech in noise
Hear conversation in noisy surroundings

Speech
Helps to hear speech more clearly

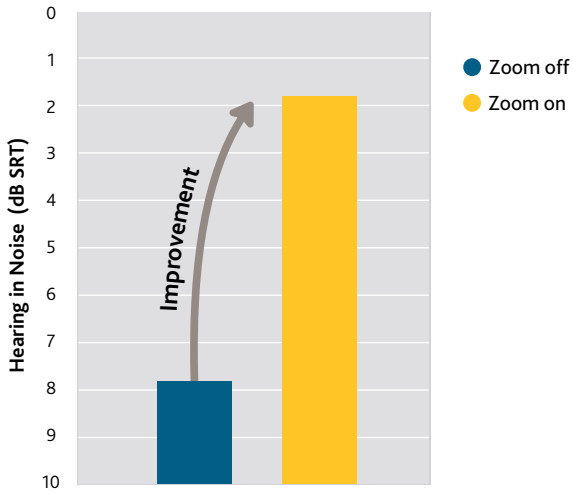
Noise
Hear comfortably in noisy situations

Wind
Hear comfortably in the windy outdoors

Quiet
Appreciate soft sounds in quiet environments

Music
Enjoy listening to music

Hearing performance in noise comparison[23]



100% of recipients showed improved hearing in noise with dual-microphone zoom technology[23]

Our innovative SmartSound iQ* with SCAN technology is designed to replicate natural hearing by capturing sound and automatically adapting to your child's environment without the need to make manual adjustments. SmartSound iQ also has special programs that automatically help diminish background noise and wind noise for a better and more comfortable hearing experience, similar to noise cancellation headphones.

How it works:

1. The dual microphones capture and filter sound.
2. The industry's first automatic scene classifier, SCAN, analyzes the surroundings and identifies the listening environment as one of six scenes.
3. SmartSound iQ* then automatically optimizes the sound and adjusts the setting for that scene to provide your child's best hearing.

In addition to the automatic features of SCAN, the Nucleus 7 Sound Processor features ForwardFocus** which could help an older child hear better in challenging environments. Once enabled by the clinician, your child can simply switch on ForwardFocus through the Smart App to decrease noise coming from behind and to help them focus on face-to-face conversation.

** SNR-NR, WNR and SCAN are approved for use with any recipient ages six years and older, who is able to 1) complete objective speech perception testing in quiet and in noise in order to determine and document performance 2) report a preference for different program settings.*

***ForwardFocus can only be enabled by a hearing implant specialist. It should only be activated for users 12 years and older who are able to reliably provide feedback on sound quality and understand how to use the feature when moving to different or changing environments. It may be possible to have decreased speech understanding when using ForwardFocus in a quiet environment.*

Enhance your child's musical experience.

Music plays a big role in communicating, connecting and bonding, especially with young children. If your child has significant hearing loss and qualifies for a cochlear implant, playing music and singing with your child may be even more important in helping them learn to speak.

Research shows that the perception of music and speech are connected not only through pitch, but also through rhythm. The combination of singing at home and taking part in supervised musical activities, including rhythmic exercises and visual cues, might be the best way to optimize spoken language skills, underlying cognitive functions and improve quality of life for early-implanted children.[24]

Our Nucleus Sound Processors include a Smart Sound iQ* Music Program that is specifically designed to help enhance your child's musical experience by filtering out unwanted noise in the same way natural hearing works.

To help enhance your child's enjoyment of listening to music with the Nucleus System, we offer a dedicated rehabilitation program for music as part of our Communication Corner website.

www.Cochlear.com/US/CommCorner

** SNR-NR, WNR and SCAN are approved for use with any recipient ages six years and older, who is able to 1) complete objective speech perception testing in quiet and in noise in order to determine and document performance 2) report a preference for different program settings.*

You don't have to remember everything for your child—our sound processors do it for you.

Data logging provides important information to your child's audiologist

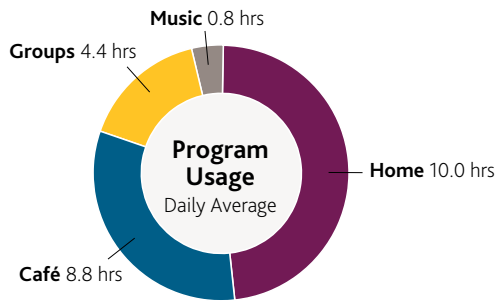
Life is busy. Some days it's tough to remember to communicate all the important details. Children are the same way with what they remember to share with their parents, or they may be too young to tell you how they are hearing. That's why our sound processors feature innovative data logging technology that records detailed usage information. Your child's audiologist can pull this information and review the data for trends and important information that will show him or her how your child is using the system. This can guide the audiologist in making any adjustments—all to make sure your child is hearing their best even when you are not with them.

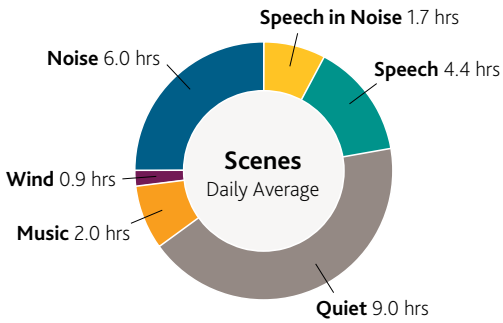
Your child's audiologist will have access to:

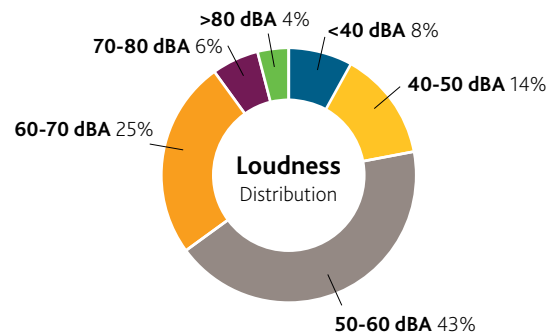
- Number of hours per day the cochlear implant is used
- Different sound environments your child experiences during their day
- Loudness levels while in use

There is also a special feature of the Nucleus Smart App, called the Hearing Tracker, which is available with the Nucleus 7 Sound Processor and gives you direct access to your child's personalized usage information. This gives you an idea of how often your child is hearing sound throughout the day, even when you are not with them. You can learn more about the Hearing Tracker in Chapter 4.

> "With data logging, having that extra information is helpful. It's what you put in your toolkit as a clinician. The information it gives us is so valuable."
>
> Hilary Gazeley, Au.D., CCC-A, F-AAA – Koss Cochlear Implant Program







Automatic features make our sound processors easy to use.

Your child won't miss a beat with our Nucleus Sound Processors. Automatic features make it easier for your child to take advantage of every opportunity while at home, school or on the go.

 Phoebe S. – Nucleus recipient

Automatic features of Nucleus Sound Processors include:

AutoOn – turns on the device when you connect the battery, making it easy for your child to use and have instant access to sound.

AutoFM – enables the Nucleus 7 Sound Processor to detect the FM signal* when in range and automatically connect without your child or teacher needing to do it manually.

What are FM systems?

Children with hearing loss often use an FM system at school, which is a wireless system that transmits sound to a hearing aid or cochlear implant sound processor through a receiver. Your child's teacher wears a microphone that transmits sound to your child's sound processor, which helps improve hearing in learning environments and ensures important lessons are not missed.

The Nucleus Sound Processors are designed to be compatible with FM systems and also ensure your child hears their best in and out of the classroom. In fact, we considered the best ways to connect to FM systems at school while retaining size, comfort and security of your child's sound processor throughout the day.

The Nucleus 7 Sound Processor connects with FM systems using the Phonak Roger™ 20 receiver, which can be easily and securely placed on the sound processor while at school to help provide your child's best hearing. The receiver conveniently fits between the sound processor and battery for a seamless wearing experience.

The Kanso Sound Processor is compatible with any FM system when using the Mini Microphone 2+.

> "When we learned that Phoebe was profoundly deaf, it was scary not knowing whether she would ever be able to hear. We tried to find a solution to help her so she could have that rich, full life. Don't let a diagnosis rob you of that time and that joy, because there are solutions and there is hope."
>
> Mother of Phoebe S. – Nucleus recipient

** All Nucleus Sound Processors are compatible with FM systems. Only the Nucleus 7 Sound Processor comes equipped with AutoFM.*

Special features help you know your child has access to sound.

Visual confirmation your child's sound processor is working

Just like you refer to the lights in your car to verify all the key components are functioning, our sound processors have multicolored lights and alerts that tell you and other caregivers if certain features are working. These visual indicators are easy to notice, provide important diagnostic information about your child's sound processor and give you peace of mind that the equipment is working properly.

These features confirm:

- If the coil is off or the sound processor is not connected
- If the sound processor battery is low
- If the AutoFM is working and detecting an FM signal*
- If sound is being received from microphones or an audio source

Kanso Sound Processor

Nucleus 7 Sound Processor

Audio confirmation

We also offer a Monitor Earphone Adaptor that's designed specifically for the Nucleus 7 Sound Processor and allows you to listen and confirm that sound is coming into your child's sound processor for added reassurance.

Monitor Earphone Adaptor and Monitor Earphones

**AutoFM is available with the Nucleus 7 Sound Processor only.*

Your child can use their natural hearing with the Nucleus 7 Sound Processor with Hybrid Hearing.*

Hybrid Hearing can provide a richer hearing experience

If your child can hear some low-frequency sounds like thunder, but misses high-frequency sounds like consonants that help distinguish between words, the Nucleus 7 Sound Processor with Hybrid Hearing may be able to help. Hybrid Hearing can amplify the low-frequency hearing they may have after surgery, while providing access to the high-frequency sounds they're missing. Hybrid Hearing is compatible with our broad Nucleus Electrode portfolio.

The best of two technologies

Cochlear Hybrid Hearing is a combination of two proven technologies. The first technology is acoustic amplification like a hearing aid. An acoustic component can be attached to the end of the Nucleus 7 Sound Processor to amplify the low-frequency natural hearing your child may have after cochlear implant surgery. At the same time, our innovative Cochlear Implant technology provides access to the high-frequency sounds they are missing—all in one convenient device.

Cochlear Hybrid Hearing—combining the best of both technologies

Nucleus 7 Sound Processor

Nucleus 7 Sound Processor with Hybrid Hearing*

Behind-the-ear hearing aid

** The Acoustic Component should only be used when behavioral audiometric thresholds can be obtained and the recipient can provide feedback regarding sound quality. The Cochlear Nucleus Hybrid acoustic component is not compatible with the Kanso Sound Processor.*

Richard C. – Nucleus recipient

Chapter 3:

- Wearing Configurations
- Colors
- Retention Options
- Batteries
- Waterproof Hearing

If you have questions, we have experts that are ready to assist you! Learn about the process, our products, technology and company from our highly skilled Concierge team.

Email: Concierge@Cochlear.com
Phone: 1 866 922 9211

Wear your way today and every day.

Your child has a choice of wearing options that fit their personality and lifestyle.

Megan H., Kristen C., Lexie Z. & Dylan H. – Nucleus recipients

Nucleus System Sound Processors

Kanso
Sound Processor

Nucleus 7
Sound Processor

Nucleus 7 Sound Processor
with Hybrid Hearing*

Sound processors to fit your child's needs

The Cochlear Nucleus System offers a choice of sound processors that are designed to provide your child's best hearing experience and address his or her style preference. With off-the-ear and behind-the-ear sound processor options, your child can hear the way they want.

These options include:

- **Kanso Sound Processor** – off-the-ear solution that is discreet and easy to use
- **Nucleus 7 Sound Processor** – behind-the-ear solution that is Made for iPhone
- **Nucleus 7 Sound Processor with Hybrid Hearing*** – behind-the-ear solution that amplifies the natural low-frequency hearing your child may have after surgery, while providing access to the high-frequency sounds your child is missing

Wearing options to fit your child's personality

The Nucleus System offers a robust standard package and choices of accessories to customize their hearing experience.

Customize your child's Nucleus System with:

- Colors to match your child's personal style
- Retention options to help secure the sound processor on the ear
- A choice of batteries to ensure your child never goes without hearing
- Water accessories to help your child swim underwater with confidence

** The Acoustic Component should only be used when behavioral audiometric thresholds can be obtained and the recipient can provide feedback regarding sound quality. The Cochlear Nucleus Hybrid acoustic component is not compatible with the Kanso Sound Processor.*

Justin P. – Nucleus recipient

The Nucleus 7 Sound Processor is the smallest and lightest behind-the-ear solution available[1] that also conveniently connects directly with compatible Apple devices to enhance your child's hearing experience.

The Nucleus 7 Sound Processor with Hybrid Hearing* amplifies the natural low-frequency hearing your child may have after surgery, while providing access to the high-frequency sound for a richer hearing experience.

** The Acoustic Component should only be used when behavioral audiometric thresholds can be obtained and the recipient can provide feedback regarding sound quality. The Cochlear Nucleus Hybrid acoustic component is not compatible with the Kanso Sound Processor.*

The Nucleus 7 Sound Processor—designed for comfort and wearability.

The Nucleus 7 is the smallest and lightest behind-the-ear sound processor available,[1] making it comfortable for even the smallest ears. And, thanks to new chip technology, your child can enjoy a full, active day with a long battery life.[2]

Batteries

We provide a choice of standard and rechargeable batteries so you have the flexibility to manage your child's power use all day, no matter where you are.

Choices include:

- A standard disposable battery *(lasting up to three days)**
- Compact and standard rechargeable batteries *(lasting up to 30 hours)**

Innovative and convenient battery chargers

USB Charger – charge your child's sound processor anywhere you are with the convenient USB charger that plugs into any standard USB 2.0 or higher power source.

Y Charger – easy to use Y Charger that connects to the battery the same way as the sound processor and can charge two batteries at the same time.

Colors

The Nucleus 7 Sound Processor comes in a range of five hair-matching colors to help it blend in.

Black **Brown** **Grey** **Sand** **White**

Retention options

Retention options give you added peace of mind during activities. Nucleus 7 Sound Processor options include:

Hugfit™ – made of a light, soft, clear material that easily connects to the Nucleus 7 Sound Processor and helps comfortably secure the sound processor to even the smallest ears.

Snugfit – helps tighten the sound processor on the ear. The Snugfit comes in three convenient sizes to fit your child's ear *(small, medium and large)*.

Koala Clip – allows you to attach the sound processor to your child's clothing if your child won't keep the sound processor on their ear. This is sometimes a beneficial option for very small children.

Earmold Adaptor – attaches to an earmold to help stabilize and keep the sound processor on the ear.

Compact and Standard Rechargeable Batteries **Standard Disposable** **USB Charger** **Y Charger** **Hugfit** **Koala Clip**

**Battery life may vary by individual.*

The Kanso Sound Processor is our off-the-ear solution that provides the same hearing performance as our behind-the-ear options.[3] It is simple to use and designed to be so discreet and comfortable your child may even forget they're wearing it.

Maneh S. – Nucleus recipient

The Kanso® Sound Processor—discreet and easy to use.

The Kanso Sound Processor has an all-in-one design that gives you the choice for your child to hear their best without anything on the ear. It is the smallest and lightest[3-5] off-the-ear sound processor available and is designed to fit against the curvature of your child's head for added comfort, security and peace of mind.

Batteries

The Kanso Sound Processor comes with disposable batteries that help keep your child on air all day.*

Retention options

We provide retention options to help you keep the sound processor securely on your child's head, especially during physical activities and sports.

Kanso Sound Processor retention options include:

- **Long Safety Line with Alligator Clip** – can attach to your child's clothing**
- **Short Safety Line with Hair Clip** – a more discreet retention option
- **Cochlear Headband** – an optional accessory that holds the sound processor in place

Colors

The Kanso Sound Processor comes in a range of eight color options so you can choose the shade that best matches your child's hair color for the perfect blend.

Chocolate Brown | Copper Brown | Golden Blonde | Sandy Blonde

Black | Slate Grey | Silver | White

675 Disposable Batteries

Long Safety Line with Alligator Clip**

Hair Clip

Short Safety Line

** Battery life may vary by individual.*

*** Retention lines longer than the Safety Line (standard length) are not recommended for use by children as they may present a risk of strangulation.*

Nucleus System contents.

The Nucleus System includes the following as standard features:

- Choice of sound processors
- Remote control
- Built-in 2.4 GHz True Wireless technology
- Built-in telecoil
- Two standard rechargeable batteries
- One package of zinc air batteries
- Standard tamper-resistant battery cover *(Kanso only)*
- Battery holder
- Package of microphone protectors *(Kanso only)*
- Microphone cover *(Nucleus 7 only)*
- Battery charger *(appropriate for chosen sound processor)*
- Zephyr Dry & Store®
- Everyday case
- 5-year "No Questions Asked" warranty*

You also have a choice of four accessory options to help you and your child personalize their system to fit their lifestyle. These choices include our True Wireless and Aqua+ accessories** and Plus One. Our Plus One option lets your child live with the sound processor for up to a year before making a decision on a final accessory choice.

Additional items can also be ordered by your child's audiologist:

- Monitor Earphone Adaptor and Monitor Earphones
- Tamper-resistant Earhook
- Kaci the Koala

*Terms and conditions apply.

**The Nucleus Aqua+ and Aqua Accessory are IP68 rated and approved for use with rechargeable batteries and are not approved for use with the acoustic component. The Nucleus 7 Sound Processor is water-resistant without the Nucleus Aqua+ accessory to level IP57 of the International Standard IEC60529 when used with rechargeable batteries. The Kanso Sound Processor is water resistant to level IP54 of the International Standard IEC60529. The Kanso Sound Processor with the Aqua+ is water resistant to level IP68 of the International Standard when used with LR44 alkaline or nickel metal hydride disposable batteries.

Your child can soak, splash and swim—just like their friends.

We understand how important learning to swim is to you and your child. Children are drawn to water. They love to swim, cannonball into the pool and splash with their friends.

Nucleus Sound Processors have an impressive water resistance rating, making them sweat-proof and splash-proof, even in high humidity. The Nucleus 7 Sound Processor also has an innovative nano-coating, which provides the ultimate protective barrier against water damage so your child can play in and out of the water without missing out on all the fun.

As for surfing, snorkeling and swimming underwater, the Nucleus Aqua+ accessories transform the Nucleus 7 and Kanso Sound Processors into waterproof solutions, so your child can experience all the fun in the water like everyone else.

Nucleus Sound Processors with Nucleus Aqua+ Accessories

Nucleus 7 with Aqua+*

Nucleus Kanso with Aqua+**

Swim **Snorkel** **Surf** **Rain** **Bath** **Sweat** **Humidity**

** The Nucleus 7 Sound Processor with Aqua+ is water resistant to level IP68 of the International Standard IEC60529. This water protection rating means that the sound processor with the Aqua+ can be continuously submerged under water to a depth of 3 m (9 ft and 9 in) for up to 2 hours. This water protection only applies when you use a Cochlear Standard Rechargeable Battery Module or Cochlear Compact Rechargeable Battery Module.*

*** The Nucleus Aqua+ for Kanso is IP68 rated and approved for use with alkaline and nickel metal hydride batteries. The Nucleus Kanso Sound Processor is water-resistant without the Nucleus Aqua+ for Kanso accessory to level IP54 of the International Standard IEC60529.*

If you have questions, we have experts that are ready to assist you! Learn about the process, our products, technology and company from our highly skilled Concierge team.

Email: Concierge@Cochlear.com
Phone: 1 866 922 9211

Chapter 4:

- Smartphone Compatibility
- True Wireless Technology and Accessories
- Remote Controls

You and your child can experience the convenience of our exclusive wireless technology.

Your child can connect to the people they love and the world around them conveniently from a smartphone.

Bringing sound closer—no strings attached

Cochlear Nucleus Sound Processors can help extend your child's hearing experience, improve their ability to hear and enjoy hearing every day by letting them connect wirelessly to all their favorite devices. They can watch TV, talk on a smartphone and hear speech—all without the constraints of wires or bulky neck-worn components.

Made for iPhone

Conveniently stream phone calls, video, music and entertainment from compatible Apple devices directly to your child's Nucleus 7 Sound Processor.

Nucleus Smart App

Available for the Nucleus 7 Sound Processor when using your compatible Apple or Android™ device, the Nucleus Smart App lets you monitor, manage and control your child's hearing experience to ensure your child is hearing their best.

True Wireless 2.4 GHz technology

Provide your child the option to hear more clearly in challenging situations by streaming sound from any of our True Wireless accessories directly to the sound processor.[1]

Remote Controls

Change simple settings or adjust your child's programs from the pocket-sized Remote Control that comes with your new Nucleus System.

Made for iPhone | iPad | iPod

A seamless connection to life—from a smartphone.

Only cochlear implant sound processor that is Made for iPhone[2]

The Nucleus 7 Sound Processor is the industry's only cochlear implant sound processor that can stream sound directly from your child's favorite Apple devices.[2] He or she can enjoy their favorite movies, TV shows, apps, music—even a FaceTime® call from family on the other side of the world—with audio streamed directly to the sound processor.

Designed for outstanding sound quality

Made for iPhone hearing devices are designed to provide outstanding sound quality while fitting seamlessly into your child's lifestyle. With sound streamed directly to your child's Nucleus 7 Sound Processor, he or she can enjoy clearer audio to help make listening easier.[3]

Convenient control of your child's hearing, directly from your smartphone

With the Made for iPhone connectivity, you can check battery life, change volume and programs and start streaming simply by using the Accessibility menu on your iPhone.® This can be very convenient, especially if you have a younger child who doesn't manage their own device.

If you or your child use an Android™ device or any other smartphone, you can stream phone calls and music directly to the Nucleus 7 Sound Processor by using the True Wireless™ Phone Clip.

Take control with the Nucleus Smart App.

Designed specifically for the Nucleus 7 Sound Processor, the Nucleus Smart App allows you to monitor and manage your child's hearing experience conveniently from the palm of your hand.

There is so much you can do directly from your iPhone to manage your child's hearing experience. However, there are even more convenient and helpful features in the Nucleus Smart App.

Whether you have an iPhone or Android™ device, the Nucleus Smart App provides you with a convenient way to track, tailor and personalize your child's hearing experience directly from your smartphone.

With the Nucleus Smart App, you can quickly and easily:

- Get help finding your child's sound processor if they misplace it
- Access your child's personalized hearing information with the Hearing Tracker
- Change your child's programs
- Start wireless streaming
- Fine tune your child's hearing experience by adjusting Master Bass, Volume and Treble
- Set up notifications to alert you if the coil is off

GET IT ON Google Play

Download on the App Store

Control and adjust your child's settings

First for iPhone. First for Android.™

The Nucleus Smart App is available for compatible Apple and Android™ devices.

Find My Processor feature can save you time and worry

We all know children often misplace things or forget where they put them. This can become even more worrisome for parents when it comes to their child's hearing device. With the Nucleus Smart App, you can locate your child's lost Nucleus 7 Sound Processor using GPS functionality that tells you the last location the sound processor had contact with your compatible smartphone. This feature of the Nucleus Smart App can give you added peace of mind and assurance that your child's access to sound is just as important to us, as it is to you.

Check your child's sound processor use with the Hearing Tracker

The Nucleus Smart App includes the Hearing Tracker feature, which provides you with direct access to important information and helps reassure you that your child is hearing, especially when you aren't with them.

This information includes:

- Time when the coil is off *(no access to sound)*
- Time in speech

The Hearing Tracker information along with the built-in data logging functionality of the sound processor help you and your child's audiologist troubleshoot and make adjustments to ensure your child is achieving their best hearing.

Locate a lost Nucleus 7 Sound Processor

View your child's personalized hearing information with the Hearing Tracker

Adjust your child's hearing with our convenient wireless remote controls.

Advanced Remote Assistant

Available only for the Kanso Sound Processor, the full-featured Advanced Remote Assistant helps you monitor and manage your child's hearing so you can personalize their hearing experience. A full color LCD screen makes troubleshooting and navigating the Kanso System a breeze.

Key features:

- Simple or advanced user modes
- View the sound processor's status
- View and change programs and volume
- Status indicators and alerts for battery life, accessories, coil connectivity and telecoil use
- Start streaming
- Troubleshoot problems

Advanced Remote Assistant

Put control of hearing in your own hands.

Remote Controls

The Remote Controls let you manage your child's hearing at the push of a button, discreetly and simply. With its small size, you can conveniently attach it to your keychain or put it in your pocket.

The Kanso Sound Processor and the Nucleus 7 Sound Processor each have a unique, compatible Remote Control.

Key features:

- Change volume/sensitivity
- Switch programs
- Start streaming
- Use the telecoil
- Included with your System

Nucleus 7 Remote Control

Kanso Remote Control

Experience True Wireless™ freedom— no strings attached.

Our True Wireless accessories can bring sound even closer to help your child hear better in noisy situations. Only Cochlear can give your child this wireless freedom without the need to wear anything around their neck.

Bring your child closer to sound

Children can never have too many hearing experiences. Having sound sent directly to your child's sound processor can be very helpful in providing clearer sound, especially when it's noisy. When your child is not using the Made for iPhone functionality, your child can still experience the benefits of direct sound with our True Wireless accessories. These accessories can help your child hear better during everyday activities, such as family movie night, playing videos with friends or learning in the classroom.

The True Wireless accessories include the Mini Microphone 2+, the TV Streamer and the Phone Clip. These accessories are designed to help your child hear better in noisy situations. Only Cochlear provides this wireless freedom without the need to wear anything around the neck. For added convenience, the True Wireless accessories are compatible with both the Nucleus 7 and Kanso Sound Processors.

Wireless freedom, connected dependability

Our True Wireless accessories utilize the same 2.4 GHz wireless protocol that Bluetooth® and Wi-Fi devices depend on. It's a robust, time-tested, dependable technology that sets the standard for wireless connectivity. This helps provide a clear, secure connection without the interference and signal drops your child might experience with other wireless systems.

Easy to pair, easier to use

To use the accessories, simply press the pairing button and power up your child's sound processor. Within seconds, they're connected. That's it! Once paired, you can easily turn your child's accessories on and off with the push of a button.

Mini Microphone 2+

TV Streamer

Phone Clip

The Mini Microphone 2+ brings sound closer to your child wherever they are.

Hear more clearly no matter where they are.

Mini Microphone 2+

Mini Microphone 2+

Stream speech and music directly into the sound processor to give your child the freedom to hear better in noisy situations.[1*] Whether being pushed in the stroller, riding in the car, being coached at swim practice or frolicking on the playground, your child may hear more clearly through all the clutter. In fact, a clinical study found that Cochlear Implant recipients using the Mini Microphone 2+ actually outperformed a group of normal hearing listeners without the assistance of a remote microphone over a distance of approximately ten feet in noise.[4*]

It's lightweight and portable so it can be used anywhere. Your child can even plug it into another sound device, such as a portable music player or computer, to listen to their favorite songs, and to watch videos and movies.

The Mini Microphone 2+ is also an affordable alternative to a school's FM system. The teacher simply clips it on, and your child can hear the lessons with greater clarity. Unlike FM Systems that typically stay in the classroom, the Mini Microphone 2+ can be used at home, after school and throughout the day while on the go.

Key features:

- Directional microphone for one-on-one conversations and omni-directional microphone for use in large groups
- Up to 11 hours of talk time on a single battery charge
- Recharges in three hours with included charger
- Connects with other personal electronics via plug-in
- Range of over 80 feet with clear line of sight
- FM connectivity
- Built-in telecoil
- Pairing button status indicators
- Low battery light indicator

**Clinical study of adults.*

Connect with those who are most important—wirelessly.

Phone Clip

From a very early age, your child wants to talk on the phone just like you. When your child is ready for their own smartphone, the Phone Clip provides a convenient hands-free connection to friends, family and their favorite music. It uses Bluetooth®-enabled wireless technology to stream calls, audio books, music videos and more—directly to your child's sound processor.

The Phone Clip can be used when your child is not using the Made for iPhone connectivity built into the Nucleus 7 Sound Processor, has a different smartphone—including an Android™ device—or prefers the Kanso Sound Processor.

Key features:

- Up to six hours of talk time and 80 hours of standby time
- Call reject and transfer, last number dialed and voice dial functions
- Range of up to 23 feet
- Simultaneous connection to two Bluetooth® devices
- Quality stereo sound when streaming music
- Private and secure connection

Phone Clip

Your child can talk on the phone and listen to music—**hands free.**

 Olivia M. – Nucleus recipient

Your child can tune in to their favorite shows with family and friends.

TV Streamer

Imagine your child enjoying stereo sound that goes from your TV right into the sound processor, all without having the volume too high for other people in the room. The TV Streamer is perfect for family movie night or when your child is playing a favorite video game.

Key features:

- Range of up to 23 feet
- Set so your child can hear audio devices in addition to the sounds around them
- Pair with as many Nucleus Sound Processors as desired
- Install and forget it—always stays paired

TV Streamer

TV time can be family time.

Keiran U. – Nucleus recipient

If you have questions, we have experts that are ready to assist you! Learn about the process, our products, technology and company from our highly skilled Concierge team.

Email: Concierge@Cochlear.com
Phone: 1 866 922 9211

- Our Lifetime Commitment
- Personalized Services
- Recipient Stories
- Connect with Others
- Our History and Mission

Chapter 5:

Our commitment to your child lasts a lifetime.

You're covered with the most comprehensive warranty in the industry

Nucleus Sound Processors are built on a very durable titanium foundation. However, we understand that things can happen, especially with an active child. When they do, you won't have to worry because Nucleus Sound Processors and the Remote Assistant come with a no-questions-asked 5-year warranty.*

Your child can have access to future technology for a lifetime of better hearing

As part of our promise to help your child "Hear now. And always," we design our implant systems to allow access to technology upgrades as they become available, without the need for additional surgery. As the global leader in cochlear implants and with our large investment in research and development, our priority is to continue to bring advanced technology to your child for a lifetime.

Terms and conditions apply.

One implant. Five sound processor upgrades. Unlimited possibilities.

Holly T. – Nucleus recipient

"My Cochlear Implant allowed me to attend mainstream schools, University and pursue a career in corporate law. It has allowed me to make my own choices and live the life I want to live."

Holly T. – Nucleus recipient

Holly was our first pediatric recipient of the commercially available Cochlear Nucleus Implant System. A great example of our promise of "Hear Now. And always," she received her implant at four years of age and still enjoys the benefits of the latest sound processor advancements.

Then Holly lived in a world of silence after contracting meningitis at the age of four.

1987 Holly's mother wanted her to have a more normal childhood and a better future, so eight months later *(just before turning five)* Holly received a Nucleus Cochlear Implant.

1988 Holly started school and attended mainstream schools for 13 years, from kindergarten to 12th grade.

1989-1999 Holly took advantage of the latest technology by upgrading to three new sound processors.

2000 Holly graduated from high school in the top two percent of students in the state.

2004 Holly upgraded to the newest sound processor.

2007 Holly graduated from a university with first class honors in law and also upgraded to the newest sound processor.

2015 Holly upgraded to the Nucleus 6 Sound Processor and saw first-hand the benefits of the True Wireless accessories.

Now Holly is a successful lawyer and lives a full life with her husband and young daughter.

Future Holly has the option to take advantage of new technology as it becomes available.

Care your way means support when and where you need it.

Cochlear strives to be your child's partner for a lifetime of better hearing. We are committed to answering your questions, providing fast and convenient service and helping your child get the most from their cochlear implant today and into the future. Here's how:

Enjoy personalized services and information with the Cochlear Family

Cochlear Family is a program designed to help guide your family on this amazing hearing journey. By activating your free membership, you'll have personalized access to tips, tools and resources to help your child get the most out of their hearing experience. You'll connect with other Cochlear Family members, and you'll enjoy the peace of mind that comes from knowing we're with you and your child every step of the way.

Anytime, anywhere access to important information with myCochlear

As part of the Cochlear Family membership, you and your child will have access to a convenient online resource called myCochlear. Your family's myCochlear account provides information about your child's specific device, including warranty and upgrade information, troubleshooting tips, special promotions and discounts. It's a one-stop shop for all things Cochlear and is available 24/7.

Cochlear Concierge can answer your questions

A team of experts is ready to answer your questions and assist you in learning about the process, our products, technology and company.

Call 1 877 897 4474 or
email Concierge@Cochlear.com

Fast service for repairs and replacements with Hear Always and Cochlear Link

Your clinic and Cochlear want to make sure your child experiences sound uninterrupted, which is why we partnered on the exclusive Hear Always program.

Hear Always ensures expedited replacement of your child's sound processor if he or she is ever without sound. The Hear Always program works in conjunction with Cochlear Link, our secure, cloud-based software, which allows the audiologist to share your child's hearing profile directly with us. This allows us to load your programs on your sound processor immediately after repair, so we can ship it back to you the next day—all without a trip to your audiologist, saving you time and money.

Robust rehabilitation resources available on the Communication Corner

The Communication Corner is our extensive rehabilitation website that provides materials and activities for all levels and ages to help improve your child's listening and communication skills. It includes a range of practice tools, as well as an assessment that provides guidance on where to start and which program is best for your child.

Visit **www.Cochlear.com/US/CommCorner**

You are not alone. Read other families' stories.

Justin P.

Justin was born happy and healthy, and developed just like any other kid. He hit all his milestones, learning to crawl, sit, stand, walk and talk at all the right times. We couldn't wait to see what life had in store for him. We knew his future was bright.

When Justin was three years old, we started noticing he wasn't responding to us and other family members. He had trouble figuring out where sounds were coming from, and his speech started to decline. It was devastating, because it seemed like it was completely out of the blue. We had no idea what was going on. Justin was eventually diagnosed with auditory neuropathy, a hearing disorder in which the inner ear detects sound, but has a problem sending it from the ear to the brain. Although Justin's diagnosis was the first time we had heard of it, we knew there had to be a solution.

Justin's ENT gave us two options—hearing aids and cochlear implants. We decided to try hearing aids first, but knew right away they weren't the answer we were looking for. Justin hated wearing them, and it seemed like he was hearing a lot of feedback. After three days, we stopped using them and went back to the doctor to learn more about cochlear implants.

The thought of Justin undergoing what seemed like major surgery was very scary. We were nervous, worried, you name it. But, after watching all the YouTube videos of kids with cochlear implants, we felt the benefits outweighed the risks. So, we went for it, and we're so glad we did.

We did a lot of research into cochlear implant companies, and ultimately decided on Cochlear for several reasons. The first was because Cochlear didn't feel like a company, it felt like a family. We love the Made for iPhone technology with the Nucleus 7 Sound Processor because it could seamlessly integrate into our everyday lives. At the same time, we love the Kanso Sound Processor, because it's discreet and sits off his ear. He doesn't even realize it's on, and it stays hidden under his hair. To top it all off, the science behind their implants and electrodes was very impressive.

Looking back at all the fears we had, we see now that they are gone. We can't tell you how much he has progressed from activation. We know Justin will grow up and go to college, and he'll be able to hear and understand everything and speak normally. Our only regret is not getting it done sooner!

– Justin's parents

Justin P. – Nucleus recipient

Phoebe S.

When we found out we were having a little girl, we were so excited. You imagine what life will be like for your child, a life filled with opportunities and no limits. Then, when you learn your child has hearing loss, you're overcome with fear and uncertainty. Your world crumbles. It's scary not knowing if your child will ever be able to hear. This is how we felt when we discovered Phoebe was profoundly deaf.

We knew we wanted to find a solution to help Phoebe. Immediately we started doing our research and met with many families going through the same situation to learn more about cochlear implants. We wanted a company who was going to provide the best hearing experience and support our daughter for a lifetime. We believed Cochlear was the best choice.

Now Phoebe has the Kanso Sound Processor for both ears and it is great! She can choose whether or not to show everyone that she has cochlear implants. The Kanso Sound Processors adjust automatically to the environment around her so she can hear her best. She is in second grade and does really well in school. In group projects, her teacher tells us she is a strong contributor, her ideas are flowing and she does not hold back. Phoebe loves to dance and perform onstage. She listens to music and takes piano lessons. She loves the water and can stay in there for hours with her brothers and cousins. We put her Kanso Sound Processors in the Aqua+* and she doesn't have to miss out on the conversation around her. Hearing helps keep her safe.

Phoebe is living life with no limits. She can be whatever she wants to be and do anything she sets her mind to. She says she would like to be a doctor someday. We are excited to discover who she is going to become.

– Phoebe's parents

**The Nucleus Aqua+ and Aqua Accessory are IP68 rated and approved for use with rechargeable batteries and are not approved for use with the acoustic component. The Nucleus 7 Sound Processor is water-resistant without the Nucleus Aqua+ accessory to level IP57 of the International Standard IEC60529 when used with rechargeable batteries. The Kanso Sound Processor is water resistant to level IP54 of the International Standard IEC60529. The Kanso Sound Processor with the Aqua+ is water resistant to level IP68 of the International Standard when used with LR44 alkaline or nickel metal hydride disposable batteries.*

Phoebe S. – Nucleus recipient

Michael L.

When Michael was just three months old, we squeezed a squeaky ball next to his head, and he didn't react. We took action right away. We were so glad we did. The following morning we took him to a friend who was a specialist and learned Michael had bilateral severe to profound hearing loss. From there, he had hearing aids up until 14 months, but we knew we needed a more powerful solution. We were anxious at first and apprehensive about surgery, but we always liked the analogy that if people need glasses to see, people need hearing aids to hear.

During high school, he was on the debate team where his cochlear implants helped when there were a lot of people talking in a forum. He played team sports like football and basketball and was treated just like any other teammate. His love for competition has been a great outlet for him.

Cochlear has been fantastic with customer support from day one. It's refreshing that with their support hotline, you know someone will pick up promptly. They really go out of their way. These implants are phenomenal in that they will allow for miraculous outcomes for your child. If you want the best for your child, you absolutely have to pick the Cochlear Implant.

– Michael's parents

"Even though most of my friends text today, I love talking on the phone. I also love rap music. I've actually come to love music because of my Cochlear Implants."

Michael L. – Nucleus recipient

Michael L. – Nucleus recipient

It all started with a very personal story.

Over 450,000 people worldwide hear today because one man listened to his heart.

Over 35 years ago, Dr. Graeme Clark set out to help those who couldn't hear. This became his life's passion for a very personal reason—his father was deaf.

Dr. Clark grew up experiencing firsthand the challenges of hearing loss and dreamed at a very early age of "fixing ears." And that's exactly what he accomplished when he invented the world's first multi-channel cochlear implant in 1978. Since that first small miracle, more people have chosen Cochlear than all the other hearing implant companies combined.[1,2]

Today, we work with over 2,000 of the top hearing professionals around the world. And, we have more than 100 active research partners in 20 countries to keep the breakthroughs coming.

From creating the world's first Hearing Hub campus to developing revolutionary new products, our commitment and mission never stray from our promise—to help your child "Hear now. And always."

Ever since Dr. Clark's invention of the first multi-channel cochlear implant, we've remained committed to providing you with innovative hearing solutions and unsurpassed customer service to help your child "Hear now. And always."

COCHLEAR'S MISSION

WE HELP PEOPLE HEAR AND BE HEARD.

WE EMPOWER PEOPLE TO CONNECT WITH OTHERS AND LIVE A FULL LIFE.

WE HELP TRANSFORM THE WAY PEOPLE UNDERSTAND AND TREAT HEARING LOSS.

WE INNOVATE AND BRING TO MARKET A RANGE OF IMPLANTABLE HEARING SOLUTIONS THAT DELIVER A LIFETIME OF HEARING OUTCOMES.

Megan H., Lexie Z. and Callie Z. – Nucleus recipients

If you have questions, we have experts that are ready to assist you! Learn about the process, our products, technology and company from our highly skilled Concierge team.

Email: Concierge@Cochlear.com
Phone: 1 866 922 9211

- Steps to Getting a Cochlear Implant
- Choosing a Cochlear Implant
- Glossary of Terms

Chapter 6:

Your journey to better hearing is worth every step.

You may be as excited as you are hesitant. At first, it may seem daunting, and the idea of considering a surgical procedure would worry any parent. That's completely understandable. Remember how much your child could benefit from this technology. We want you and your child to feel comfortable every step of the way. And, we will be right there with you.

1. Visit a Hearing Implant Specialist for a hearing test

Your child will first need to be evaluated by an audiologist who is well trained in cochlear implants and all advanced hearing technologies. Assessments often include medical and audiological evaluations as well as X-rays or an MRI scan. If your child qualifies, the cochlear implant team will discuss benefits and risks with your family and schedule the surgery once insurance approval is obtained.

Your insurance plan may require something called "pre-authorization" for certain services. If needed, your audiologist or physician may help obtain pre-authorization of coverage on your child's behalf. Your audiologist may also submit the necessary paperwork to your insurance company for approval. For more information, visit **www.Cochlear.com/US/Insurance**

If you need assistance navigating the insurance approval process or help with an appeal if the claim has been denied, we offer individual insurance support. Contact **Cochlear OMS Insurance Support at 800 633 4667 option 4 or email OMS@Cochlear.com**

2. Choose the best cochlear implant device for your child

All cochlear implants are designed to restore access to sound in a similar fashion, yet there are noticeable distinctions between the devices.

Make sure to ask the right questions before choosing the best device for your child. Think beyond today and consider what you want for your child well into the future. You may also want to think beyond the product itself, and remember that Cochlear will provide the support your child deserves for a lifetime.

3. Outpatient surgery

We understand the thought of surgery is intimidating, yet it's necessary to provide your child access to sound with a cochlear implant. Fortunately, the cochlear implant procedure is fairly routine and is performed under general anesthesia. The risks of the implant surgery are typically low, and you can speak with your surgeon about any concerns or questions. Most children are up and about the very next day.

4. Activating the Nucleus Implant System

After a three to four week healing period, you will have an appointment with your child's audiologist to activate the cochlear implant. This is the day your child will start to hear sound through the device. You should set realistic expectations for this day as every child's activation experience is unique. Your child's audiologist will program the sound processor by setting appropriate volume and pitch levels. This is the beginning of a series of programming sessions that your child will have over the first few months to fine-tune the device for optimal hearing.

5. Ongoing care

To help ensure your child is hearing their best every day, take good care of the device by following the instructions in the new System Kit, including changing out the microphone protectors as directed as well as using the Dry & Store® dehumidifier every night. We also have many "how to" videos available on myCochlear, a 24/7 online service portal, and our Customer Service team will be happy to answer any questions you have along the way.

We understand, though, that things can happen. And when they do, we offer the industry's most comprehensive 5-year "no questions asked" warranty* as well as a one-time loss replacement for added peace of mind.

6. Learning to listen and talk

Just as with any surgery, rehabilitation is critical to your child's success and will continue to be important while growing up. For additional support, we offer robust rehabilitation programs through The Communication Corner that can be tailored to your child's needs at every learning level and age group.

Register for The Communication Corner at **www.Cochlear.com/US/CommCorner** and share the information with your child's speech therapist and audiologist.

> "Knowing how much it was going to help her was worth every fear we had with surgery day. She did really well after surgery. She bounced right back."
>
> Mother of Nora T. – Nucleus recipient

** Terms and conditions apply.*

The Nucleus System includes unique features for your child's best hearing

Choosing the best cochlear implant for your child is important. Life-changing, in fact. To make an informed decision, you'll want to understand your options. The information provided below highlights the unique benefits of the Nucleus System for your child.

Sound Processor Features

Feature	Benefit	Why It Matters
Made for iPhone Connectivity	Control your child's hearing experience and stream sound directly from a compatible iPhone to your child's sound processor*	Made for iPhone technology provides the convenience of direct streaming to the sound processor from a compatible iPhone for a rich hearing experience.
Nucleus Smart App	Control and monitor your child's Nucleus 7 Sound Processor using a compatible smartphone	You can personalize and monitor your child's hearing experience conveniently with devices you use every day.
Smallest Sound Processors	Smallest and lightest sound processors available[1]	The size of the sound processor can impact how visible and comfortable it is on your child's ear.
Long Battery Life	50% longer battery life than the previous generation behind-the-ear sound processor[2]	The Nucleus 7 Sound Processor provides improved battery life[2] compared to the previous generation behind-the-ear sound processor.
Kanso Sound Processor	A discreet, off-the-ear sound processor that is also smart and simple	Kanso is a comfortable, easy to use, off-the-ear hearing solution that features our innovative sound processing technologies designed to provide your child with their best hearing experience.
Hybrid Hearing**	Designed to provide a richer hearing experience by using your child's low-frequency natural hearing with cochlear implant technology	Combines advanced cochlear implant technology with the amplification of a hearing aid to use the natural hearing your child may have, while restoring access to the high-frequency sounds they're missing.
Sound Processor Options	Options for your child to hear their best and fit their lifestyle	Choice of sound processors to best fit your child's preferences and lifestyle, while providing proven hearing performance.
SmartSound iQ†	Innovative sound processing for better hearing performance	The sound processor is designed to block background noise to help your child hear their best in noisy environments.
Automatic Scene Classifier *(SCAN)*	Improved hearing in many environments	Makes it easier to hear in noisy situations by automatically identifying the environment and optimizing the sound without the need for manual adjustments, just as natural hearing does.[3]
Visual Alert Lights	Confirmation that your child's sound processor is working	Let you know if everything is working as it should be, giving you reassurance that your child is not without sound.
Data Logging	Tracks how your child uses the sound processor every day	Records how the sound processor is being used in order to provide information to your audiologist to help improve your child's hearing experience.
Built-in Telecoil	Connects to your phone and looped systems	Helps amplify the signal from a phone or a looped system to help your child hear what is being said.
5-Year Warranty‡	Industry's most comprehensive warranty	Our "no questions asked" 5-year warranty provides you with reassurance in the event something happens with your child's equipment.

** The Nucleus 7 Sound Processor is compatible with iPhone 7 Plus, iPhone 7, iPhone 6s Plus, iPhone 6s, iPhone 6 Plus, iPhone 6, iPhone SE, iPhone 5s, iPhone 5c, iPhone 5, iPad Pro (12.9-inch), iPad Pro (9.7-inch), iPad Air 2, iPad Air, iPad mini 4, iPad mini 3, iPad mini 2, iPad mini, iPad (4th generation) and iPod touch (6th generation) using iOS 10.0 or later.*

*** The Acoustic Component should only be used when behavioral audiometric thresholds can be obtained and the recipient can provide feedback regarding sound quality. The Hybrid L24 Implant is approved in the US for adults ages 18 and older for unilateral use only.*

† SNR-NR, WNR and SCAN are FDA approved for use with any recipient ages six years and older, who is able to: 1) complete objective speech perception testing in quiet and in noise in order to determine and document performance; and 2) report a preference for different program settings.

‡ Terms and conditions may apply

Implant Features

Feature	Benefit	Why It Matters
Industry-leading Implant Reliability	Implants designed to last a lifetime*	Provides peace of mind and confidence. Cochlear has higher reliability than any other implant on the market.[4-6]
Most Active Contacts in the Electrode	Improved spectral resolution	We provide the most active sequential contacts *(22)*** so your child may hear different pitches and the full spectrum of sound.
Optimized Rate of Stimulation	Sending the right speed of stimulation to your child's hearing nerve	During sound delivery, the nerve fibers in the inner ear must rest briefly before receiving additional stimulation. Continuing to deliver stimulation during the resting period results in wasted power consumption. Cochlear's electrodes are designed to send the right speed of stimulation for the desired sound while minimizing wasted power.
Electrode Array Options are the Industry's Thinnest[7] and Closest to the Hearing Nerve	Protecting the delicate cochlear structures and providing optimal hearing performance	Electrode diameter and placement in the Hearing Zone is precise and protective of the delicate structures within the cochlea.[8,9] With this precise placement, we optimize nerve stimulation and avoid unnecessary damage.[9,10]
MRI Compatibility	Designed to provide the safest and most effective MRI image with a removable magnet	If not removed when having an MRI, the cochlear implant magnet can cause pain and discomfort along with a compromised MRI image.[11,12] We designed our implants with an easy-to-remove magnet aiming to provide the best comfort possible while still receiving the most effective MRI image.
Profile Implant	Thin implant that follows the natural curvature of the head	A thin implant provides a better cosmetic outcome, is comfortable and could mean less time in surgery.

Accessories

Feature	Benefit	Why It Matters
True Wireless Technology	Sound can be wirelessly streamed directly to your child's sound processor	Having speech and sound streamed directly to your child's sound processor without the need to wear anything around the neck can allow your child to hear more clearly and take advantage of learning opportunities in a variety of settings.[13 †]
Water Resistant and Waterproof	Your child can hear while swimming or playing underwater	Our Nucleus 7 and Kanso Sound Processors are water resistant and can be waterproof when used with the easy-to-use Nucleus Aqua+ accessories.[‡]
Remote Controls	Remote management of your child's hearing	Manage settings and programs without the need to touch the sound processor so your child doesn't go without sound.

** Nucleus Implants include a 10 year warranty. Conditions and terms apply.*

*** Based on manufacturers specification collateral.*

† Data gathered using the N6 Sound Processor.

‡ The Nucleus 7 Sound Processor with Aqua+ is water resistant to level IP68 of the International Standard IEC60529. This water protection rating means that the sound processor with the Aqua+ can be continuously submerged under water to a depth of 3 m (9 ft and 9 in) for up to 2 hours. This water protection only applies when you use a Cochlear Standard Rechargeable Battery Module or Cochlear Compact Rechargeable Battery Module. The Nucleus Aqua+ for Kanso is IP68 rated and approved for use with alkaline and nickel metal hydride batteries. The Nucleus Kanso Sound Processor is water-resistant without the Nucleus Aqua+ for Kanso accessory to level IP54 of the International Standard IEC60529.

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Glossary of important terminology.

Acquired deafness: A severe to profound hearing loss that develops later in life.

Audiogram: A graph obtained during a hearing test that illustrates a person's hearing in each ear, indicating the degree and type of hearing loss.

Audiologist: A professional who treats individuals with a hearing impairment.

Auditory: Relating to hearing.

Auditory brainstem response *(ABR)*: An objective test used to check the function of auditory pathways by measuring the brain's electrical response to sounds. ABR assessments are commonly used in newborn hearing screenings because the child does not need to react to sounds.

Bilateral hearing: Using the same hearing technology in both ears, either with two hearing aids or two cochlear implants.

Bimodal hearing: Using a hearing aid in one ear and a cochlear implant in the other ear.

Binaural hearing: Using both ears to hear sounds.

Binaural/Bilateral hearing loss: Hearing loss affecting both ears.

Congenital hearing loss: A hearing loss that is present at birth.

Intensity: The loudness of a sound measured in decibels *(dB)*.

Frequency: The pitch of a sound measured in Hertz *(Hz)*.

Hearing threshold: The softest sound that a person can hear at a specific frequency. Hearing thresholds are displayed on an audiogram to show an individual's hearing loss.

Localization: The ability to determine where a sound comes from.

Otolaryngologist: A physician who treats ear, nose, sinus and throat disorders and diseases.

Otologist: A physician who specializes in treatment of ear problems.

Perimodiolar: Close to the hearing nerve.

Pre-lingual deafness: Deafness that occurs at birth or early in childhood before learning to speak.

Post-lingual deafness: Deafness that occurs after language acquisition.

Rehabilitation: Specialized training for people with hearing loss to help them learn to speak and understand language through listening. For a child who has never heard or spoken, this is sometimes called habilitation.

Residual hearing: The amount of remaining hearing that a person has after experiencing a hearing loss.

Sensorineural hearing loss: Occurs when there is damage to the inner ear, cochlea or the nerve pathways to the brain. This type of hearing loss is the most common and is usually permanent.

Speech frequencies: The range of frequencies most important for hearing and understanding speech span from 250 to 6,000 Hz.

Speech therapist: A specialist who can assess, diagnose and treat children or adults with communication or swallowing disorders.

Unilateral hearing loss: Hearing loss in one ear.

You have many hopes and dreams for your child like any parent. Technology will advance, and we will continue to create industry-leading breakthroughs that change lives, including your child's.

The sounds of the world are there for you and your child to go explore—today and throughout your child's life.

Hear now. And always

We would like to give a special thank you to all the Cochlear Implant recipients and their families who have shared their pictures and stories in an effort to help others who are going through their own hearing journey.

Hear now. And always

As the global leader in implantable hearing solutions, Cochlear is dedicated to bringing the gift of sound to people with moderate to profound hearing loss. We have helped over 450,000 people of all ages live full and active lives by reconnecting them with family, friends and community.

We aim to give our recipients the best lifelong hearing experience and access to innovative future technologies. For our professional partners, we offer the industry's largest clinical, research and support networks.

That's why more people choose Cochlear than any other hearing implant company.

As your partner in hearing for life, Cochlear believes it is important that you understand not only the benefits, but also the potential risks associated with any cochlear implant or Hybrid implant. You should talk to your hearing healthcare provider about who is a candidate for a cochlear implant or a Hybrid implant. Before any surgery, it is important to talk to your doctor about CDC guidelines for pre-surgical vaccinations. Cochlear implants and Hybrid implants are contraindicated for patients with lesions of the auditory nerve, active ear infections or active disease of the middle ear. Cochlear implantation and Hybrid implantation are surgical procedures, and carry with them the risks typical of surgery. You may lose residual hearing in the implanted ear. Electrical stimulation may result in some side effects, including ringing in the ear, stimulation of the facial nerve; in rare cases this may cause pain. Though rare, it is possible that additional surgery may be required at some point to resolve complications with a cochlear implant or Hybrid implant. Information contained in this document is provided as a guide only, and does not constitute medical advice from Cochlear. Please consult with your health care provider for all applicable medical questions. For complete information about risks and benefits of cochlear implantation, please refer to the Nucleus Package Insert available at www.Cochlear.com/US/NucleusIndications

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The Nucleus 7 Sound Processor is compatible with iPhone X, iPhone 8 Plus, iPhone 8, iPhone 7 Plus, iPhone 7, iPhone 6s Plus, iPhone 6s, iPhone 6 Plus, iPhone 6, iPhone SE, iPhone 5s, iPhone 5c, iPhone 5, iPad Pro (12.9-inch), iPad Pro (9.7-inch), iPad Air 2, iPad Air, iPad mini 4, iPad mini 3, iPad mini 2, iPad mini, iPad (4th generation) and iPod touch (6th generation) using iOS 10.0 or later. The Nucleus Smart App is compatible with iPhone 5 (or later) and iPod 6th generation devices (or later) running iOS 10.0 or later. Apple, the Apple logo, FaceTime, Made for iPad logo, Made for iPhone logo, Made for iPod logo, iPhone, iPad Pro, iPad Air, iPad mini, iPad and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc., registered in the U.S. and other countries. Information accurate as of February 2018.

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