Hear Your Way

The Cochlear™ Baha® Implant System

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

Cochlear®

Eila B. – Baha 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 has to offer. We understand it is stressful when you learn your child has hearing loss. You may feel overwhelmed, but there are people who have been right where you are. Answers, information and support are available to help you make the best decisions for your child.

The journey your family is about to embark on is an exciting one, and the decisions you make will be life-changing. We'll be with you and your child every step of the way, supporting and cheering you on.

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

We are your partner in this journey.

We know you'll have questions along the way, and we'll be there to answer them. In the meantime, this Resource Guide will arm you with key information about understanding your child's hearing loss, Baha Implant solutions and Cochlear's commitment to service and support.

Your child is unique and their hearing solution should be, too. With the Cochlear Baha Implant System, we can help your child hear better with more choices of wearing options, wireless connections and personalized services.

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Alexander F. – Baha recipient

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If you have questions, we have experts who 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

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. Your child's hearing loss doesn't have to get in the way of the 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 similar listening potential as children born with normal hearing. If they are given access to sound through technology and sufficient spoken language exposure, their brains can learn to listen, too.

> "We are as sure as can be that Sixten is helped by the Baha device. We clearly noticed a difference in Sixten's mood—he perked up and was more attentive when he had the Baha on."
>
> Mother of Sixten G. – Baha recipient

Sixten G. – Baha 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 types and degrees of hearing loss.

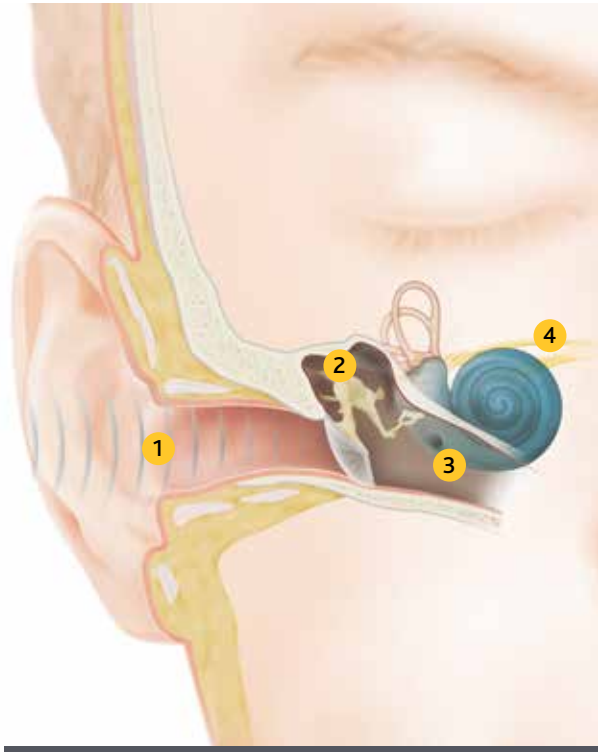
How hearing works

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 your child 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 hammer, anvil and stirrup.
- **Inner ear** – contains the snail-shaped cochlea and the hearing nerve, as well as semicircular canals that help with balance.

Each of these parts of the ear play a critical role in transmitting sound. Your child's 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

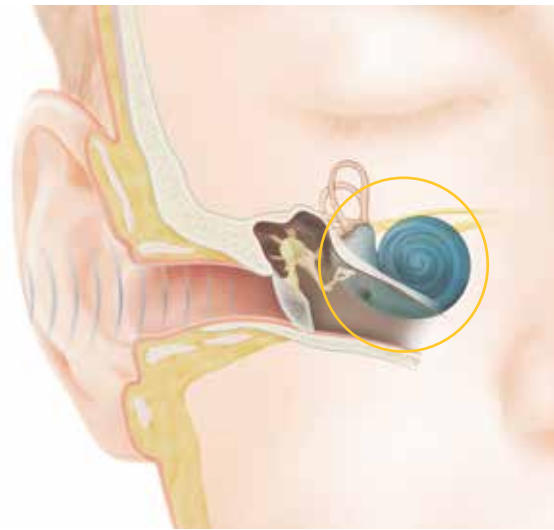
1. Sound travels down the ear canal to the eardrum.
2. The movement of the eardrum makes the tiny bones in the middle ear vibrate.
3. These vibrations are transmitted to the inner ear *(cochlea)*.
4. Tiny sensory hair cells in the cochlea pick up the vibrations and transmit signals to the brain where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

Types of hearing loss.

Hearing loss can be classified into different types, depending on which part of the ear is damaged.

Sensorineural hearing loss

Sensorineural hearing loss occurs when the inner ear *(cochlea)* or hearing nerve is damaged or does not work properly. With sensorineural hearing loss, sounds are not only softer, but difficult to understand—especially when it is noisy.



Common causes include:

- Congenital hearing loss
- Aging
- Exposure to loud noise
- Head trauma
- Genetics
- Ménière's disease
- Adverse reaction to medications

Treatment options include:

- Hearing aids
- Cochlear implants

Single-sided deafness

Sensorineural hearing loss can occur in one or both ears. If the loss is in one ear, it is often referred to as unilateral hearing loss or single-sided deafness. This is when there is little or no hearing in one ear, but normal hearing in the other ear.

Common causes include:

- Viral infections
- Ménière's disease
- Adverse reaction to medications
- Head or ear injuries
- Many other unknown reasons

Treatment options include:

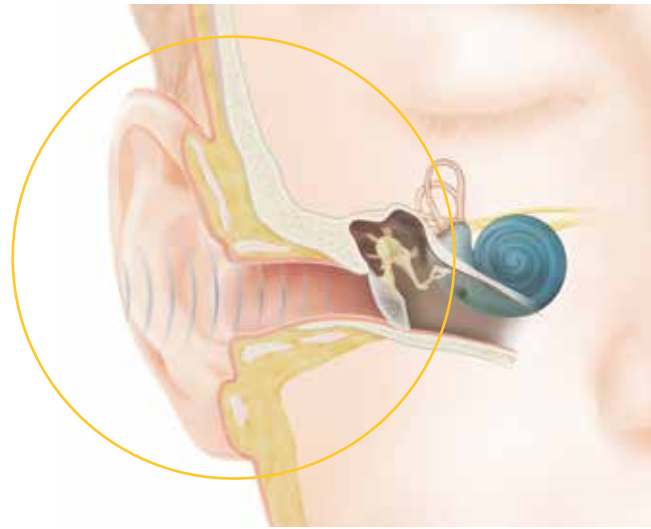
- CROS hearing aids
- Bone conduction implants

Conductive hearing loss

Conductive hearing loss occurs when damage to the outer ear or middle ear blocks sound vibrations from reaching your child's inner ear, or cochlea. With this type of hearing loss, ears may feel plugged and speech may sound muffled, especially if there is a lot of background noise.

Common causes include:

- Malformations at birth such as Microtia and Atresia
- Syndromes such as Down, Goldenhar and Treacher Collins
- Chronic mastoiditis or middle ear infections
- Skin growth or cyst *(cholesteatoma)*
- Draining ears
- Chronic ear infections
- Previous ear surgeries
- Benign tumors



Treatment options include:

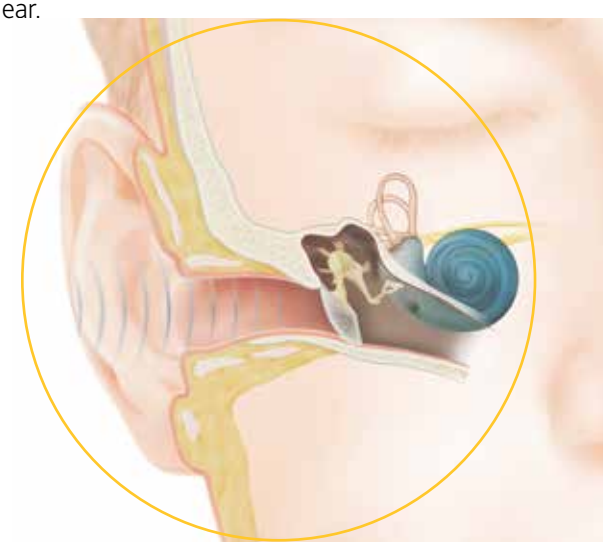
- Medication
- Surgery
- Hearing aids
- Bone conduction implants

Mixed hearing loss

Mixed hearing loss refers to a combination of conductive and sensorineural hearing loss. This means there may be damage in both the outer or middle ear and in the inner ear.

Common causes include:

- Any of the causes of conductive hearing loss plus any of the causes of sensorineural hearing loss



Treatment options include:

- Medication
- Surgery
- Hearing aids
- Bone conduction implants

Learn about possible hearing solutions for your child.

Degrees of hearing loss

Mild hearing loss

Your child may hear speech, but soft sounds are hard to hear, such as whispers 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.

Treating your child's hearing loss

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 based on their type and degree of hearing loss. Hearing solutions include:

Traditional hearing aids

Hearing aids are small electronic devices that capture sound and make it louder through amplification. Typically, a hearing aid helps those with mild to moderate hearing loss in one or both ears. Some children are not able to wear hearing aids due to conditions like Microtia and Atresia or if the hearing aids aggravate existing conditions, such as draining ears.

CROS hearing aids

Contralateral Routing of Signal *(CROS)* hearing aids are designed to help those who are deaf in one ear. They require the user to wear two hearing aids behind or inside each ear and work by picking up sound on the "bad side" and transmitting it with a wire or wireless signal to the normal hearing ear.

Cochlear implants

Cochlear implants help children with severe to profound hearing loss in both ears. They work by bypassing the damaged portion of the inner ear and stimulating the hearing nerve directly.

Bone conduction implants

Bone conduction implants work by bypassing the damaged middle and outer ear and sending clearer and more crisp sound directly to the inner ear using bone conduction.[2] Bone conduction implants are a stable, long-term, yet flexible solution compared to other non-surgical options.[3-5]

Middle ear surgery

Middle ear surgery is a reversible treatment option that may be considered to address problems with the tiny bones in the middle ear or to address chronic middle ear fluid. If you are considering middle ear surgery for your child, he or she can try a bone conduction system beforehand risk-free. That way, you'll know the options before making the final decision for your child.

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 visual response 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.[6] For more information, visit **www.cdc.gov/ncbddd/hearingloss/ehdi-programs.html**

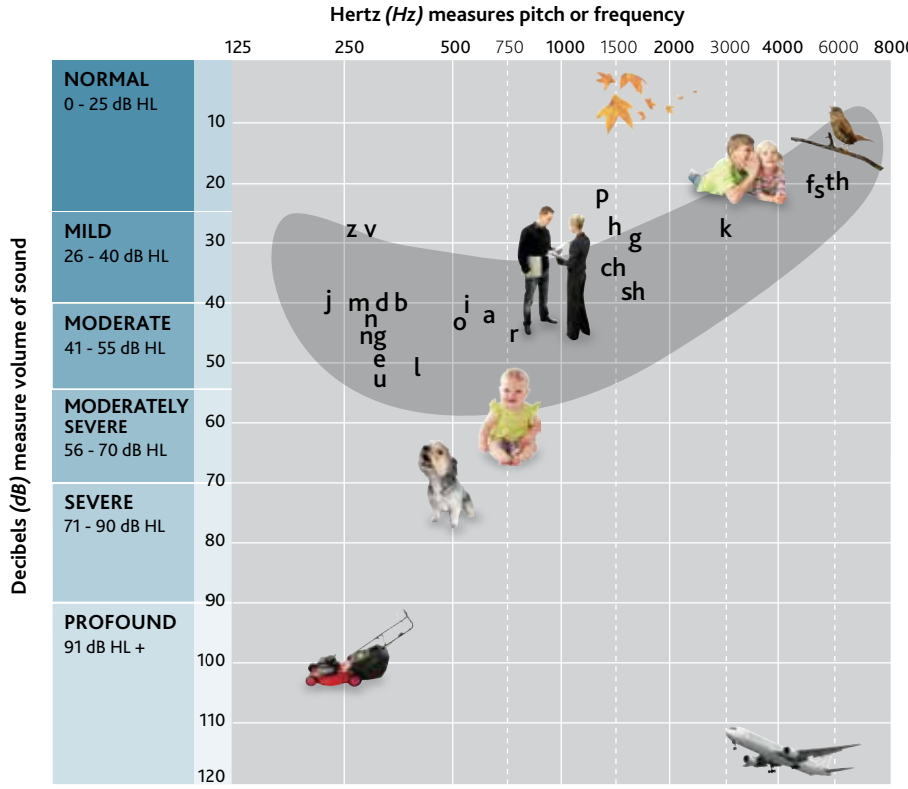
Understanding the audiogram.

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 thresholds. It shows the pitch or frequency, which is measured in hertz *(Hz)* and the loudness in decibels *(dB)*.

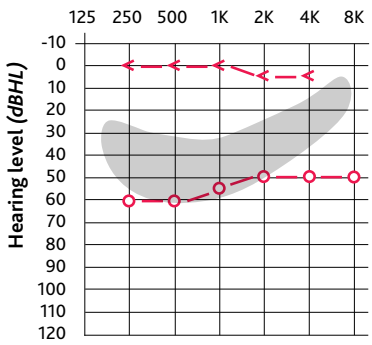
A person with normal hearing can detect very soft sounds at 20 dB or less, like a whisper, to a very loud sound at or above 120 dB, like an airplane.

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

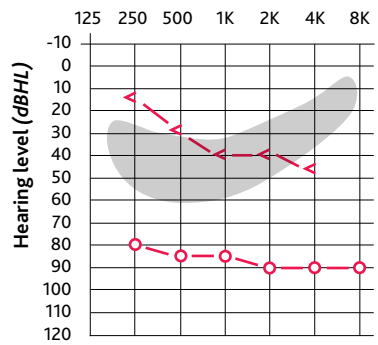
Pictures can represent the sounds your child can typically hear at different volume and frequency levels.



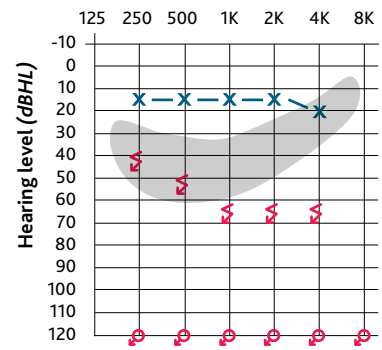
The audiologist will plot your child's hearing loss using **"X"** or **">"** for the left ear in blue, and **"O"** or **"<"** for the right ear in red. If your child is a candidate for a bone conduction implant, his or her audiogram may look like one of the following:



Conductive hearing loss – Right ear



Mixed hearing loss – Right ear



Single-sided deafness *(SSD)*
Left ear *(normal hearing)*,
Right ear *(hearing loss)*

Is your child a candidate for a bone conduction implant?

The Baha System can be fitted to infants and children in need of hearing amplification through bone conduction if their hearing loss meets the recommended criteria. Patients should have sufficient bone quality and quantity to support successful implant placement. Until the bone is sufficiently developed a child can benefit from using the Baha Softband or Baha SoundArc with a Baha 5 Sound Processor to have access to sound. The FDA and Health Canada have cleared/approved the Baha System for implantation in children aged five years and older.

When the audiologist tests your child's hearing, they identify the air-bone gap. The air-bone gap is determined by the difference (or gap) between results of air conduction and bone conduction tests.

Baha System candidacy selection criteria

Conductive hearing loss:

Studies suggest that candidates with an air-bone gap of more than 30 dB SNHL will experience significant advantages from the Baha System, compared to using an air conduction *(AC)* hearing aid.[7-9]

Mixed hearing loss:

Studies suggest that candidates with an air-bone gap of more than 30 dB SNHL derive greater benefit from a Baha System than a hearing aid.[10] Those with a mild-to-moderate sensorineural component in their hearing loss are suitable candidates.

Single-sided deafness:

The level of hearing in the good ear should be assessed. Candidates with normal hearing in their good ear may benefit from the Baha System.[11]

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 caregiver 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 direction of sounds • Responds to changes in 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 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 wlater-identified children.[6]

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.[12]

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

Knowing and understanding the signs of hearing loss

Infant or toddler:

- No reaction 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 has not progressed to more understandable speech
- No reaction to voices even when being held
- Ear is missing or malformed at birth

School-aged child:

- Does not follow or understand simple commands
- Is easily frustrated or has communication breakdowns
- Is falling behind with speech and communication skills
- Cannot identify where sound is coming from
- Depends heavily on lip-reading
- Is exhausted from constant concentration just to understand speech

Unlike hearing aids, Cochlear Baha Bone Conduction Implant Systems are covered by many insurance plans and typically Medicaid.* Contact your insurance plan or local Hearing Implant Specialist to determine eligibility.

*Coverage for Medicaid recipients varies according to state specific guidelines.

Building your child's team.

A team of trained experts will be involved with your child's hearing health care. It is important to identify and build strong relationships with these professionals 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 monitor 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)* that are best for your child. Many audiologists specialize in a specific area such as pediatrics or hearing implants. Make sure your child's audiologist is well trained in advanced hearing technology, including hearing implants.

Otolaryngologist

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

Early Intervention Specialist

This professional is typically someone with an educational background. This specialist will also 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.

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.[13]

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.[13] The two work together to help your child pinpoint where 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 hearing implant, or two hearing implants. Consult with your Hearing Implant Specialist about all the options for helping your child hear their best with both ears.

Bimodal hearing *(hearing aid + hearing implant)*

Bimodal hearing combines the benefits of a hearing aid in one ear and a hearing implant in the other ear. With bimodal hearing, a hearing implant provides your child with sound clarity, while using a hearing aid in the other ear may continue to enhance hearing satisfaction and comfort. The Baha Bone Conduction System works with all hearing aids to provide the benefits of 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.

Bilateral implants *(two hearing 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 hearing implants may be a good solution.

Whether it is with one hearing 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

The proven natural pathway to better hearing for your child.

The ability to hear better and enjoy life. This is what we want for your child. And, it's why we continue to create industry-leading breakthroughs.

The Baha System—Small. Smart. Powerful.

Innovation is the basis of how we create our products. We are continually advancing our technology to provide the best possible hearing experience today and into the future. These innovations are applied to the components of our Baha Implant System so your child can benefit from our industry-leading technology not only today, but for their lifetime. This is part of our promise to help them "Hear now. And always."

There are three main components of the Baha Implant System:

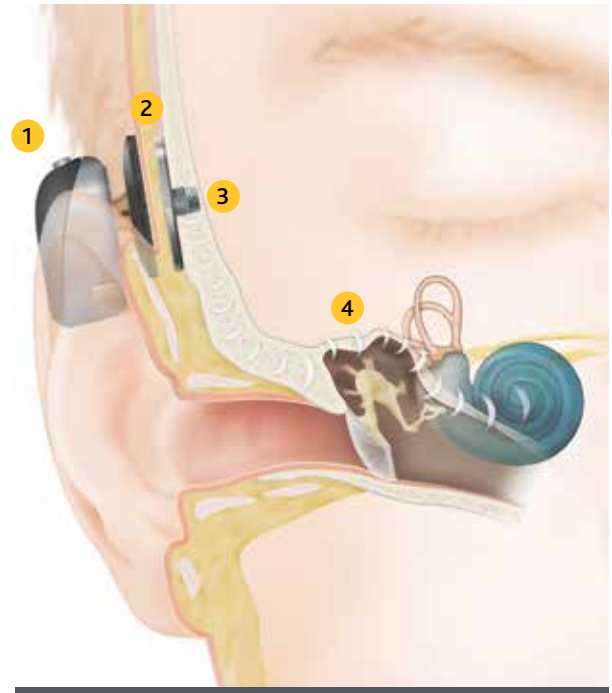
- **External sound processor** – includes three options to best fit your child's hearing needs throughout their lifetime
- **Connection between sound processor and implant** – choice of magnet or abutment
- **Internal implant*** – features proven long-term reliability and sound transmission[14]

Baha 5 Sound Processor

Baha Attract Magnet

Baha BI300 Implant

Baha DermaLock™ Connect Abutment



How the Baha Attract System works

1. The sound processor picks up sound vibrations from the environment.
2. The sound processor passes the sound vibrations to the attached external magnet that attracts to the internal magnet.
3. The sound vibrations are transferred through the magnetic attachment to the small titanium implant inserted in the bone behind the ear.
4. The sound vibrations are then sent directly through the bone to the inner ear *(cochlea)* where they are converted into electrical impulses by tiny hair cells inside the cochlea. These impulses travel to the brain, allowing your child to perceive sound naturally.

**In the United States and Canada, the placement of a bone anchored implant is contraindicated in children below the age of five.*

Will your child benefit from the Baha Bone Conduction Implant System?

You may be wondering if a Baha System is right for your child. Ask yourself these questions and if you answer "yes" to any of them, then your child may be a good candidate.

- Was your child born with Microtia and/or Atresia *(malformed ears or ear canals)*?
- Was your child born with Down Syndrome, Treacher Collins or Goldenhar Syndrome?
- Does your child have draining ears?
- Does your child have trouble getting sufficient loudness when using hearing aids?
- Does your child battle feedback or distorted sound quality when using hearing aids?
- Does your child suffer from sore or irritated ears due to hearing aids?
- Is your child deaf in one ear?

Advantages of bone conduction implants for your child

Research and decades of experience demonstrate that the Baha Implant System may help your child:[15-19]

- Hear better, even in noisy situations
- Enjoy a clean, more natural sound because bypassing the damaged part of their ear may reduce the amount of amplification needed to help them hear better
- Hear sounds as if they are coming from both sides
- Become more aware of their surroundings, increasing his or her ability to hear important sounds
- Engage in conversations more easily because they no longer need to keep turning to use their 'good' ear

If your child is too young *(under the age of five)* or is not yet ready for an implant, we offer a choice of other solutions such as the Baha Softband or SoundArc as a first step to hearing.

Baha Softband is an ideal choice for babies and toddlers

Baha SoundArc is an effective and stylish alternative for young children

Baha Attract System connects the sound processor via a magnet

Baha Connect System connects the sound processor via an abutment

Better hearing shouldn't be something your child needs to grow into.

Every child deserves to hear the world around them. Learning to communicate begins early, well before your child sounds out "ma-ma" or "da-da" for the first time.

If your child is diagnosed with conductive hearing loss, mixed hearing loss or single-sided deafness, it is important to seek treatment as early as possible. Acting now will give your child every opportunity to fulfill their hearing potential.

Criteria to qualify for a bone conduction implant:

Children *(0-4 years)*: Do not yet qualify for an implant. However, the Baha Softband, which is a non-surgical solution, is available for babies and toddlers, and the Baha SoundArc is available for older children.

Children *(5 years and older)*: May qualify for an implant depending on the type and degree of hearing loss. For children who are not yet ready for an implant, the Baha SoundArc may be a good solution.

The first step to better hearing

The Baha Softband and SoundArc solutions are designed specifically for children who are not yet ready or eligible for an implant *(under the age of five)*. Both Softband and SoundArc provide young children with the hearing performance and amplification they need to facilitate language development on par with their hearing peers.[20]

As your child grows, it's natural to progress from a non-surgical solution to an implantable solution. An implant improves the transmission of sound and ensures children can benefit from consistent and reliable access to hearing.[21]

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 using 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.

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

Consider the following when choosing a bone conduction implant for your child

Hearing performance

You want your child to have the best hearing experience in every listening environment. The Baha System, with our 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 Baha System helps your child enjoy everyday activities—listening to music, talking on the phone, playing sports and hanging out with friends—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. With a selection of wireless accessories, Made for iPhone technology and Smart Apps, your child can listen at school, connect to the world and have fun.

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 hearing 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 not only for your child, but your family as well. 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.

Bella P. – Baha recipient

Chapter 2:

- State of the Art Implant
- Sound Processor Options
- Sound Processing Technology

If you have questions, we have experts who 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

Hear your way with industry-leading hearing performance.

Your child deserves to hear their best. Cochlear leads 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] In fact, over 150,000 people worldwide have benefited from bone conduction implant technology, and thanks to the latest innovations, that number will only continue to rise.

The Cochlear Baha Implant System

The Baha System includes unique components and innovative technology designed to provide your child with their best hearing performance. Some of the Baha 5 System features include:

- Has proven, long-term reliability and provides better sound transmission compared to non-surgical solutions[3,4]
- A choice of sound processor power capabilities to meet your child's individual hearing needs
- Sound processors that automatically adjust to make hearing easier
- Two types of Baha Systems, Attract and Connect, designed to help your child hear and communicate with confidence

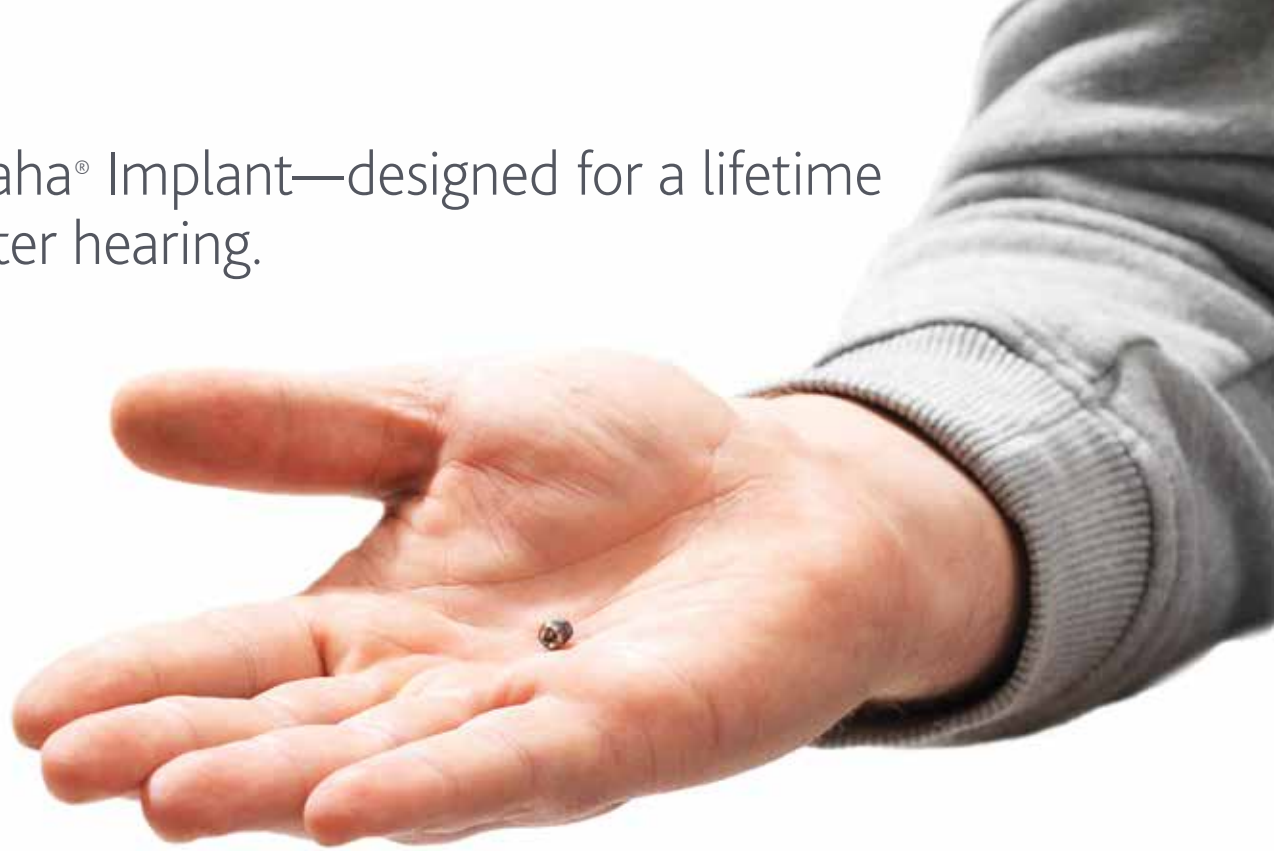
** In the United States and Canada, the placement of a bone anchored implant is contraindicated in children below the age of five.*

Cochlear is the

MOST CHOSEN

hearing implant company[1]

The Baha® Implant—designed for a lifetime of better hearing.



Consistent and reliable access to hearing

The Baha Implant, which is inserted into the bone, is the strong foundation of every Baha System. The Baha BI300 is Cochlear's latest titanium implant featuring TiOblast™ surface technology, which is designed and tested for long-term reliability and better sound transmission compared to other systems.[3,4] The TiOblast™ surface technology is designed to promote faster and stronger osseointegration, or integration between the bone and the implant. The BI300 Implant is backed by clinical research demonstrating an excellent reliability rate at 99%, which means that the implant will remain stable for years to come.[5-8]

Should your child's hearing needs change over time, the Baha Implant offers added flexibility to upgrade to a new sound processor without the need for additional surgery. This allows your child to take advantage of Cochlear's continued advancements in technology.

**This study was based on the implant survival rate. Multiple factors contribute to rates of survival, including but not limited to, implant design and surgical technique.*

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

Our smartest sound processors yet

The Baha Sound Processor portfolio features our latest technology to help your child hear their best.

- Small, smart, powerful sound processors designed to meet your child's hearing needs today and into the future
- 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 bone conduction implants
- 2.4 GHz True Wireless connectivity

The power your child needs to hear the sounds they're missing

Because your child's hearing needs are unique and may even change over time, he or she will need options for today and the future.

The Baha 5 System is the first bone conduction system to offer three head-worn sound processors, each one designed to meet a different level of hearing loss. From the smallest to the most powerful, you'll have peace of mind knowing that Cochlear offers your child smart choices for a lifetime of better hearing.

The Baha 5 Sound Processors—Small. Smart. Powerful.

 Seraphine S. – Baha recipient

Baha 5

Baha 5 Sound Processor for hearing loss up to 45 dB SNHL*

"Incredibly small" is what many people say when they first see the Baha 5 Sound Processor. And it's true. The award-winning Baha 5 Sound Processor is the smallest bone conduction sound processor available,[9] and is full of advanced hearing technologies designed to help your child hear better than ever before.

Destiny G. – Baha recipient

**SNHL means sensorineural hearing level.*

Baha 5 Power

Baha 5 Power for hearing loss up to 55 dB SNHL

If your child has a greater degree of hearing loss—up to 55 dB—the Baha 5 Power Sound Processor is designed to give him or her the amplification needed to hear in different listening environments. While smart on the inside, the sound processor also features on-device functionality for ease of use and peace of mind.

Baha 5 SuperPower

Baha 5 SuperPower for hearing loss up to 65 dB SNHL

Created for children with a substantial degree of hearing loss—up to 65 dB—the Baha 5 SuperPower Sound Processor is the industry's first head-worn super power bone conduction solution. The actuator and microphones on the behind-the-ear sound processor are separated by a cable into two different units to allow for maximum sound power potential.

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. Often times, children forget 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 show 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.

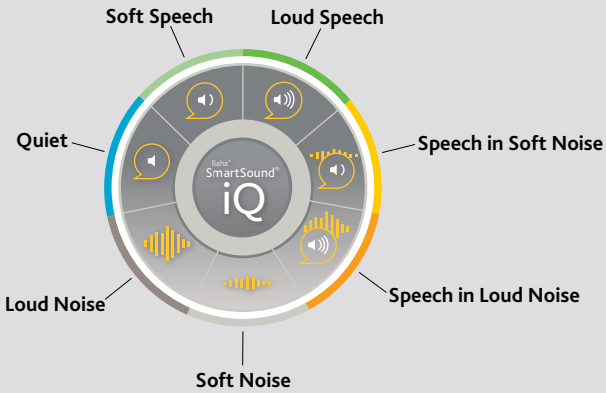
Your child's audiologist will have access to:

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

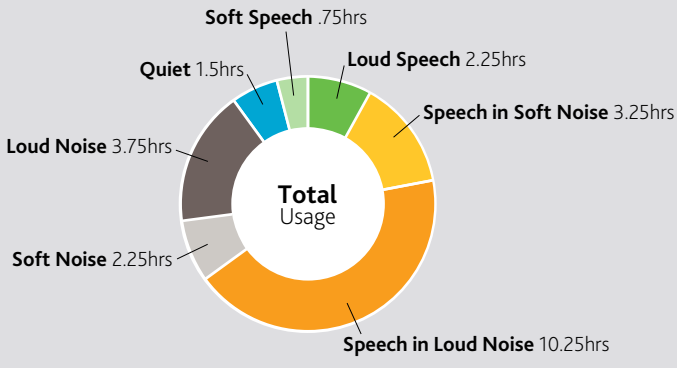
There is also a special feature of the Baha 5 Smart App that gives you direct access to your child's personalized usage information. This gives you an idea of how many hours your child used each program and how many hours they've streamed accessories, even when you are not with them. You can learn more about the Baha 5 Smart App 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

Baha SmartSound® iQ Programs:



Time in noise and speech:



Sound processors that adjust automatically—like natural hearing.

Your child is constantly moving into different listening environments, and you want his or her sound processor to adapt to each of them—effortlessly.

Two, synchronized microphones help filter out background noise

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

Our Baha Sound Processors feature dual-microphone zoom technology designed to 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.

Automatic sound processing makes hearing easier

Our innovative SmartSound iQ® technology is designed to duplicate your child's natural hearing by capturing sound and automatically adapting to the environment, without the need to make manual adjustments.

How it works:

1. The dual microphones first capture and filter sound
2. The industry's first automatic scene classifier analyzes your child's current surroundings and identifies the listening environment as one of seven common scenes.
3. SmartSound iQ then automatically optimizes the sound and adjusts the setting for that scene to provide your child's best hearing, without the need for manual adjustments to the sound processor

The seven SmartSound iQ environments help your child hear better in all situations:

Speech in loud noise
Have a conversation in noisy surroundings

Speech in soft noise
Chat after dinner while the dishwasher is running

Loud speech
Make lively conversations more comfortable

Soft speech
Enjoy a child's soft whispers

Soft noise
Reduce the hum of background noise

Loud noise
Hear comfortably in noisy situations

Quiet
Appreciate soft sounds in quiet environments

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

Visual confirmation your child's processor is working

Just like you refer to the lights in your car to verify all the key components are functioning, our Baha 5 Power and SuperPower Sound Processors have lights 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 sound processor battery is low
- If the sound processor is not connected

The Baha 5 Sound Processor does not include indicator lights due to its small size *(20% smaller than all other comparable sound processors)*.[14]

Baha 5 Power

Baha 5 SuperPower

Ensure your child's sound processor is working with the Baha Test Rod

The Baha Test Rod easily attaches to your child's sound processor and when placed against your head, allows you to confirm the sound processor is working properly. The Test Rod is included with your child's Baha System and is small enough to take with you wherever you go.

Baha Test Rod

Use the Baha Test Rod to confirm your child's sound processor is working.


MÉXICO

Mario S. – Baha recipient

Chapter 3:

- One Implant. Two Systems
- Non-surgical Solutions
- Consistent and Reliable Access to Sound
- Colors
- Retention Options
- Batteries

If you have questions, we have experts who 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

Baha Implant System and Sound Processor options.

Baha 5 | Baha 5 Power | Baha 5 SuperPower

One Implant. Two Systems.

Today, there are two types of Cochlear Baha Systems—the Baha Attract System and the Baha Connect System. Both offer exclusive Cochlear technology designed to help your child hear and communicate with confidence.

If your child is too young *(under the age of five)* or not ready for surgery, the Baha Softband or Baha SoundArc can be first steps to hearing as they do not require an implant.

Wearing options to fit your child's personality

The Baha System offers a robust standard package and choices of accessories to customize your child's hearing experience.

Customize your child's Baha System with:

- Colors to match your child's personal style
- Retention options to help secure your child's sound processor
- A choice of batteries to ensure your child never goes without hearing *(Baha SuperPower only)*

Your child's direct connection to hearing.

The Baha Connect System

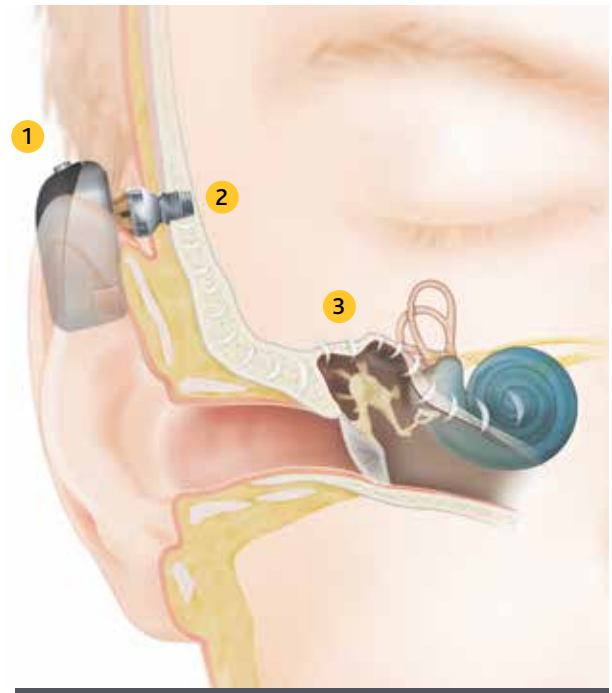
The Baha Connect System uses a small abutment that offers a direct connection between the implant and sound processor designed to maximize hearing performance. It is a straightforward and easy to use hearing system that requires some daily care. The sound processor simply snaps on, and the abutment comes in different lengths to fit your child's needs and is there to hold the sound processor in place.

Dermalock™ technology

Unlike conventional systems, the Baha Connect System abutment features state of the art Dermalock™ technology with a unique surface coating and concave shape that preserves the hair and skin around the abutment. These abutments were designed specifically for better cosmetic outcomes. In addition, surgery time is reduced and many people heal in just a few days.[1]

Safe for MRI*

The Baha Connect System is designed with a high level of MRI compatibility *(up to 3.0 Tesla)*. All you need to do is remove your child's Baha Sound Processor prior to the procedure. The implant and abutment can remain in place.



How the Baha Connect System works

1. The sound processor picks up sound vibrations from the environment.
2. The sound vibrations are transferred through an abutment to a small titanium implant inserted in the bone behind the ear.
3. The sound vibrations are then sent directly through the bone to the inner ear *(cochlea)* where they are converted into electrical impulses by tiny hair cells inside the cochlea. These impulses travel to the brain, allowing your child to perceive sound naturally.

*Prior to receiving an MRI, please consult with your clinician about proper precautions.

Your child's invisible link to hearing.

The Baha Attract System

The Baha Attract System uses internal and external magnets that attract to one another and are the invisible link between the implant and sound processor. It is a comfortable, easy-to-use and care for hearing system. The sound processor simply connects to the sound processor magnet to hold it in place.

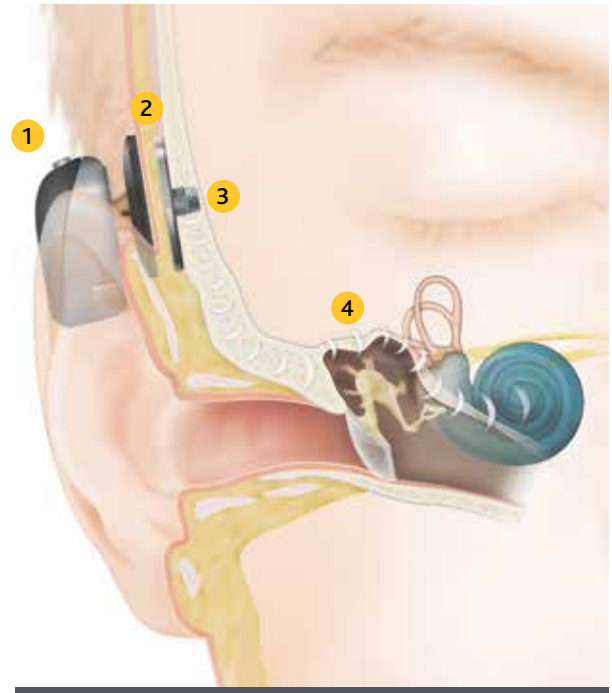
Magnets designed for comfort and lifestyle

The Baha Sound Processor magnets are available in different strengths to suit your child's individual needs and lifestyle. Skin and hair thickness may impact your child's required magnet strength. Together with your child's surgeon, a comfortable sound processor magnet will be chosen that provides firm retention. This is important for optimal hearing outcomes.

For added comfort and performance, the sound processor magnet features a unique Baha SoftWear™ Pad that adapts comfortably to the shape of your child's head and distributes pressure evenly across the surface.

Designed with MRI safety in mind*

Magnetic Resonance Imaging *(MRI)* is a diagnostic medical procedure that provides a detailed image of the internal organs and tissues. The internal magnet in the Cochlear Baha Attract System is approved for up to 1.5 Tesla. Please inform your child's doctor or MRI technician of their system's internal magnet upon scheduling an MRI appointment. For MRI scans above 1.5 Tesla, a simple procedure to remove the magnet may be necessary.



How the Baha Attract System works

1. The sound processor picks up sound vibrations from the environment.
2. The sound processor passes the sound vibrations to the attached external magnet that attracts to the internal magnet.
3. The sound vibrations are transferred through the magnetic attachment to the small titanium implant inserted in the bone behind the ear.
4. The sound vibrations are then sent directly through the bone to the inner ear *(cochlea)* where they are converted into electrical impulses by tiny hair cells inside the cochlea. These impulses travel to the brain, allowing your child to perceive sound naturally.

**Prior to receiving an MRI, please consult with your clinician about proper precautions.*

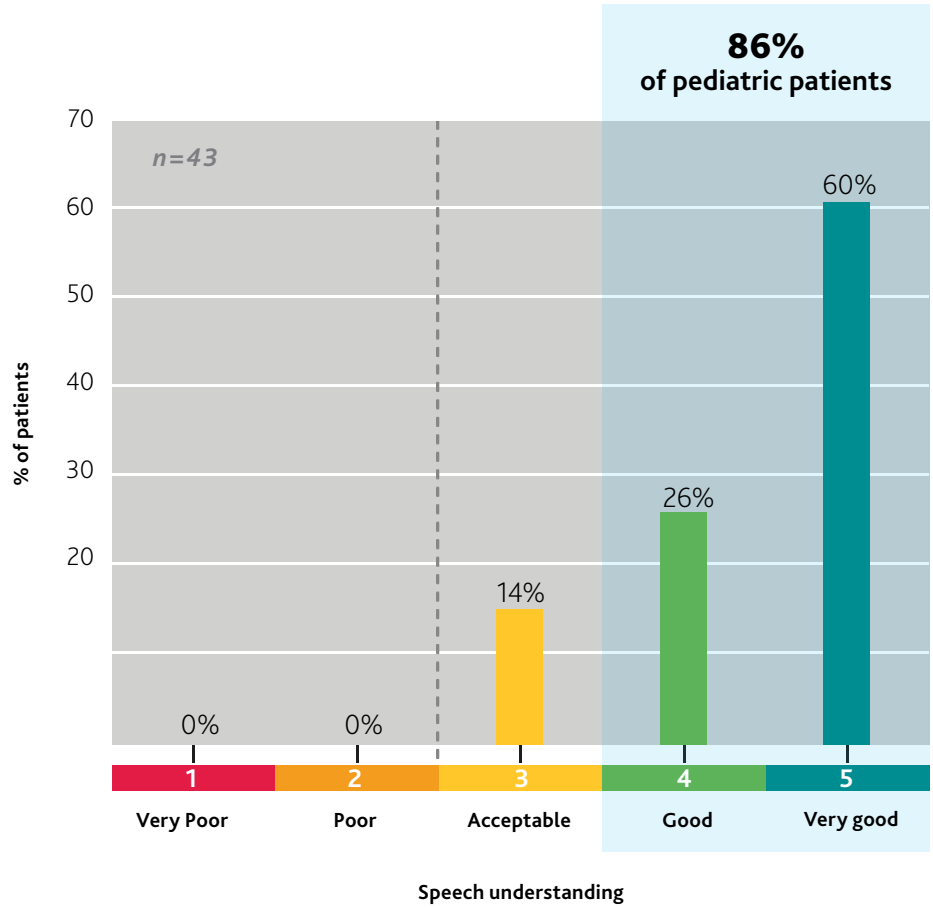
Designed for optimal pressure distribution and comfort

The Baha Attract Sound Processor magnets are designed to provide adequate retention and to provide the appropriate amount of pressure over the contact skin area. In fact, the internal implant magnet and external magnet have been designed to be similar in size in order to distribute the pressure evenly across the skin.

The sound processor magnet is designed to increase comfort with a soft material on the skin-contact surface using slow-recovery foam which is known as the Baha SoftWear™ Pad. Your child's audiologist will provide their recommendation of the best magnet strength to use with the SoftWear Pad to help ensure the best retention and comfort for your child.

Excellent speech understanding

In a post-market follow-up, 86% of the pediatric patients* using a Baha Attract System rated their speech understanding to be good or very good, with 100% rating it as acceptable or better.[2]



*In the follow-up, the pediatric group included all patients aged 20 years and under. In the United States and Canada, the placement of a bone anchored implant is contraindicated in children below the age of five.

Your child's first steps to better hearing.

The Baha Softband and SoundArc are designed to provide children under the age of five* with the hearing performance and amplification they need to facilitate language development.[3] Both solutions are designed to provide the same benefits and hearing performance, and will work with one or two Baha 5 Sound Processors.

Baha Softband

The Baha Softband is a comfortable and easy-to-wear headband designed specifically for babies and toddlers. It is an introduction to bone conduction hearing that allows your child to experience the benefits of the Baha System without surgery.

Unlike other headbands, the Softband uses the Baha Softwear Pad, which conforms to the head using soft foam to give greater comfort while providing sound to your child's ear.

The Baha Softband is available in a variety of fun colors and patterns, and features a built-in safety release.

Colors:

Baha Softband

1. Adjustable strap
2. Safety release
3. Baha SoftWear Pad
4. Connects to all Baha 5 Sound Processors

** In the United States and Canada, the placement of a bone anchored implant is contraindicated in children below the age of five.*

Baha SoundArc

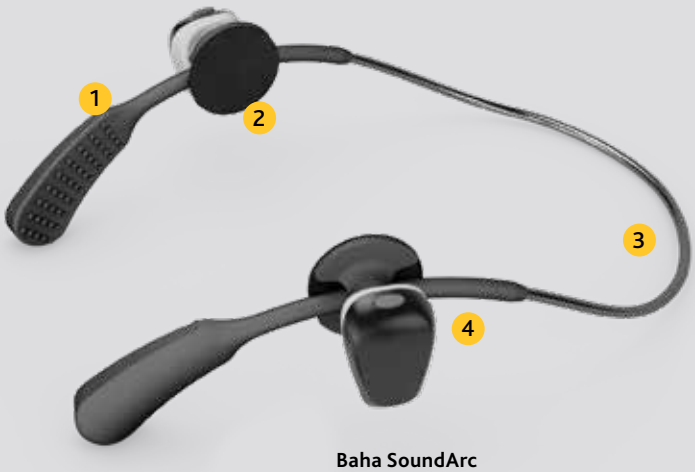
The Baha SoundArc is an alternative to the Softband that lets your child hear like never before. It has a modern look that kids will love. It's lightweight, practical and, like a pair of sunglasses, easy to put on and take off. It fits securely and comfortably in place, so it is great for active kids.

The SoundArc comes in several sizes, is adaptable to fit different shaped heads and sizes and has a variety of soft colored tips so your child can match their hair, mood and clothes.

Colors:

Grey Brown Turquoise Pink Green

As your child grows, it's natural to progress from a non-surgical solution to an implantable solution. An implant improves the transmission of sound and ensures children can benefit from consistent and reliable access to hearing.[4]



Baha SoundArc

1. Soft silicone tips
2. Baha SoftWear Pad
3. Adjustable spring band
4. Connects to all Baha 5 Sound Processors

Transitioning your child to a Baha Implant System.

If your child already wears a Baha Softband or SoundArc, it might be time to start considering the transition to the Baha 5 Implant System. For children ages five and older who qualify, the natural progression from a non-surgical solution to the Baha Implant System helps to improve the transmission of sound and helps ensure your child can benefit from consistent and reliable access to hearing for life.[4*]

5 Reasons to transition to the Baha Implant System:

1. Has proven long term reliability and provides better sound transmission than compared to non-surgical solutions.[5,6]
2. Provides more discretion than the Softband for old children and may give them an increased level of confidence with their peers.
3. The implant system and procedure are covered by many insurance plans including Medicaid.**
4. Offers a choice of sound processor power options to meet your child's hearing needs today and in the future.
5. Includes a new Baha 5 Sound Processor so your child can continue to use their current sound processor as a backup device.

"Once you see the difference that it's made on your child, it's so worth it. It's not a long surgery and it's not a long recovery."

Emily G. - mother of Baha recipient

*In the United States and Canada, the placement of a bone anchored implant is contraindicated in children below the age of five.

**Coverage for adult Medicaid recipients varies according to state specific guidelines. Contact your insurance provider or hearing implant specialist to determine your eligibility for coverage.

Josh G. – Baha recipient

Baha 5 and Baha 5 Power wearing options and accessories.

Colors

Baha 5 and Baha 5 Power Sound Processors come in a range of color options. Choose the color that is best for your child.

Black **Brown** **Copper** **Silver** **Blonde**

Baha 5

Baha 5 Power

Batteries

The Baha 5 and Baha 5 Power Sound Processors come with disposable batteries that help keep your child on air all day.*

Retention

We provide a retention accessory to help keep your child's sound processor securely on the head, giving you added peace of mind, especially during physical activities and sports:

- **Safety Line** – can attach to your child's clothing**

Disposable Batteries

Safety Line**

Included with your child's new Baha System Kit, you have the choice of one True Wireless accessory.

*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.

Baha 5 SuperPower wearing options and accessories.

Colors

The Baha 5 SuperPower Sound Processor comes in four colors. Choose the color that is best for your child.

Carbon **Mocha** **Maize** **Smoke**

Baha 5 SuperPower

Batteries

We offer a choice of rechargeable batteries so you have the flexibility to manage your child's power use throughout their day.*

Retention options

We provide these retention options to help your child keep their sound processor on the ear, giving you added peace of mind, especially during physical activities and sports:

- **Earhook+** – secures the sound processing unit in place behind your child's ear in an under-the-ear configuration. The Earhook+ comes in two sizes and is adjustable
- **Snugfit** – helps to tighten the sound processor on the ear. The Snugfit comes in three convenient sizes to fit your child's ear *(small, medium and large)*
- **Litewear™** – provides more comfort and less weight on the ear by having the sound processor or battery worn on the body instead of behind the ear
- **Mic Lock** – this secures the sound processor comfortably on your child's ear with a light, clear band

Compact and Standard Rechargeable Batteries

Earhook+

Snugfit

Litewear

Mic Lock

*Battery life may vary by individual.

Jillian V. and Andrea M. – Baha recipients

If you have questions, we have experts who 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 Technologies 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 with our Made for iPhone and True Wireless technologies.

Made for iPhone | iPad | iPod

Bringing sound closer—no strings attached

Cochlear Baha Sound Processors can help you 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 sound processor.

Baha 5 Smart App

Easily monitor, manage and control your child's hearing experience to ensure they are hearing their best. You can check device use information and even find a lost sound processor.

True Wireless 2.4 GHz Technology

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

Remote Control

Change simple settings or adjust your child's programs from the palm of your hand.

A seamless connection to life—all they have to do is listen.

Thanks to Made for iPhone compatibility, your child can connect to the people and entertainment they love as they stream phone calls, videos and music directly to their Baha 5 Sound Processor.

Only bone conduction implant sound processor that is Made for iPhone[1]

The Baha 5 Sound Processors are the industry's only bone conduction implant sound processors that can stream sound directly from your child's favorite Apple® devices.[1] 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 sound processor, he or she can enjoy clearer audio without struggling to understand what is being said.

Conveniently control your child's hearing, directly from your smartphone

With the Made for iPhone connectivity, you can check the battery life, change volume and start streaming simply by using the Accessibility menu from your favorite Apple® device. 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 other smartphone, you can stream phone calls and music directly to the Baha Sound Processor by using the True Wireless™ Phone Clip. You can also control the device with the wireless Remote Control.

Take control with the Baha 5 Smart App.

Quickly and easily monitor and manage your child's hearing experience from your smartphone.

There is so much you can do directly from your smartphone to manage your child's hearing experience, however, there are even more convenient and helpful features in the Baha 5 Smart App.

From your Apple® or Android™ device you can quickly and easily:

- Get help finding your child's sound processor if they misplace it
- Monitor battery life
- View your child's personalized hearing information, including the number of hours they are using each program and streaming wireless accessories
- Save custom settings for your child's favorite locations*
- Change your child's programs
- Start wireless streaming
- Adjust the volume, treble and bass

Download on the App Store

GET IT ON Google Play

Control and adjust your child's settings

Remote Control

If you don't have a smartphone, you can still change simple settings or adjust your child's programs from the palm of your hand using the convenient Remote Control.

**Not available with the Baha 5 Smart App on Google Play.*

Get help finding a lost sound processor

We all know that children often misplace things or forget where they put them. With the Baha 5 Smart App, you can locate your child's lost sound processor. This feature tells you how close you are to the lost sound processor and gives you added peace of mind that your child having access to sound is just as important to us, as it is to you.

Check your child's sound processor use

The Baha 5 Smart App provides you with direct access to important information about how your child is using their device and helps reassure you that your child is hearing, especially when you aren't with them. This information, along with the built-in data logging functionality of the sound processor, help you and your child's audiologist troubleshoot and make adjustments so your child can achieve their best hearing.

Locate a lost Baha 5 Sound Processor

View your child's personalized hearing information

Adjust your child's hearing with our wireless remote control.

Remote Control

The Remote Control is an all-in-one device that puts you in control of your child's hearing. With this small-sized remote, you can easily change your child's settings, make adjustments and be confident your child is getting the most out of their device. With a large, easy-to-read LCD display, the Remote Control always lets you know what settings your child is in. If your child has two sound processors, you can monitor and control both devices simultaneously with just a click of a button.

Key features:

- Shows program settings, volume, etc.
- Monitor battery status on your child's sound processor
- Start streaming from other wireless accessories
- Controls multiple sound processors
- Key lock functionality
- Easy to pair
- Clear and simple display
- Easy to use buttons

Remote Control

Easily control your child's hearing in the palm of your hand.

Lucy F. – Baha recipient

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 wireless freedom without the need to wear anything around their neck.

Bring your child closer to sound

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 video games with friends or learning in the classroom.

The True Wireless accessories, include the Mini Microphone 2+, the TV Streamer and the Phone Clip, and can bring sound closer 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 all Baha Sound Processors.

Wireless freedom

The Baha 5 Sound Processors are equipped with proprietary 2.4 GHz wireless technology which is similar to the 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.

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.

Mini Microphone 2+

Stream speech and music directly to the sound processor to give your child the freedom to hear better in noisy situations. Whether being pushed in the stroller, riding in the car, being coached at practice or running on the playground, your child will hear more clearly through all the clutter.

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, watch videos or a movie.

The Mini Microphone 2+ is also an affordable alternative to a school's FM system. 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 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
- Connect with other personal electronics via plug-in
- Range of over 80 feet
- FM connectivity
- Built-in telecoil
- Pairing button status indicators
- Low battery light indicator

Mini Microphone 2+

They can hear their best no matter where they are.

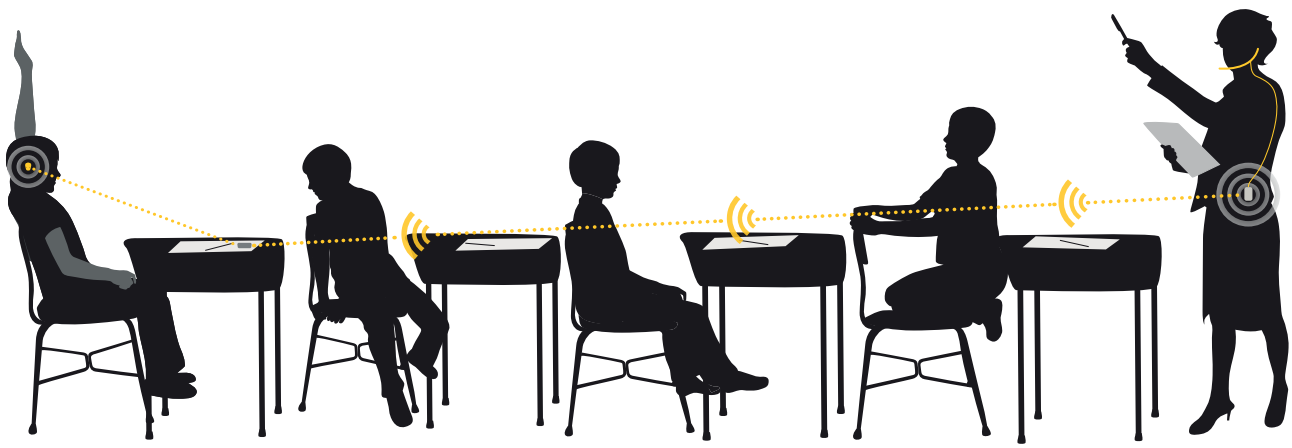
Bella P. – Baha recipient

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 hearing implant sound processor from a receiver. Your child's teacher wears a microphone that transmits sound directly to your child's sound processor, which helps improve hearing in learning environments and ensures important lessons are not missed.

The Baha 5 Sound Processors are designed to ensure your child hears their best in and out of the classroom. 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. Connecting to FM systems is accomplished by using the Mini Microphone 2+. Your child can simply connect the FM system receiver to the Mini Microphone 2+ and place it on their desk to hear the lessons with greater clarity.

Give your child a front row seat in the classroom with the FM-compatible Mini Microphone 2+.



A hands-free connection to your child's friends, family and their favorite music.

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 Made for iPhone connectivity or has a different smartphone—including an Android™ device.

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

Talk on the phone and listen to music – **hands free.**

Your child can tune into 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
- Your child can easily hear both audio devices and sounds around them
- Pair with as many Baha Sound Processors as desired
- Install and forget it—always stays paired

TV Streamer

TV time can be family time.

Camille M. – Baha recipient

If you have questions, we have experts who 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.

Access to future technology for a lifetime of better hearing

Technology is always advancing. Continuing to develop innovative hearing solutions to help your child hear better is part of our promise to your family. That's why we design our implant systems to allow access to sound processor technology upgrades as they become available without the need for additional surgery. With the Baha 5 or Baha 5 Power, your child can upgrade to a more powerful sound processor. With all the Baha 5 Sound Processors, your child has the option to change from the Attract to Connect with an additional surgery. As the global leader in hearing 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.

Maribel's story. The first US Baha recipient

Maribel U. was born without ears, yet she can hear thanks to the Baha Implant she received in 1983. At just eight years old, she was the first person in the United States to experience hearing with the Baha System. Since that remarkable day, Maribel's life has never been the same. A violinist during childhood and active in sports, she credits the Baha System with helping her take risks and enjoying the same opportunities all the other kids were experiencing. Today, Maribel enjoys life with her husband and children, and feels blessed to be working to help support her family. And, with newer technology upgrades, she is hearing more than she ever dreamed possible. This is yet another example of our lifetime commitment to you.

One implant. Several sound processor upgrades. Unlimited possibilities.

Maribel U. – Baha recipient and Dr. Anders Tjellström

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. As such, we are committed to answering your questions, providing fast and convenient service and helping your child get the most from their Baha System today and into the future.

Here are a few of the tools and personalized resources we've developed to help your family along this exciting journey:

Enjoy personalized services and information with the Cochlear Family

Being a partner to you and your child throughout their hearing journey is very important to us. It is so important that we made it our promise: "Hear now. And always." We've created programs and resources to provide information and tips that are tailored just for your child. That's what you will have access to as part of the Cochlear Family program membership.

Anytime, anywhere, access 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 with the Hear Always program

We want your child to experience life uninterrupted, which is why we created the Hear Always program, an exclusive program to expedite service if you ever experience an issue with your child's sound processor. The Hear Always program works hard to significantly reduce the time your child is without sound.

Rehabilitation resources available on the Communication Corner

The Communication Corner is our extensive rehabilitation site that provides materials and activities at all levels and ages to help improve your child's listening and communication skills. The website includes a range of practice tools and 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.

Manny W.

"Manny was born with bilateral microtia *(no ears)* and atresia *(no open ear canals)*. He has worn bilateral Bahas since he was born—first on a Softband and later through surgically implanted abutments. He is pretty much completely deaf without his Bahas but can hear very well with them on.

When Manny was 18 months old, I was a lead parent volunteer for the Wisconsin Children's Hearing Aid and Cochlear Implant bill. During this process, I learned many things about hearing and hearing aids, including the importance of introducing music at an early age to encourage listening and present different sounds. This was the first time we started putting Manny in music and dance classes, and he has loved it ever since! Manny is now nine years old and is in his third year of dance and has even been asked to join his dance studio's competitive dance team next year.

Manny recently upgraded to bilateral Baha 5 Sound Processors. He really enjoys streaming music directly from his iPad® into his Baha 5s and dancing around the house! It is really quite an interesting sight because he is thoroughly getting his groove on, but I can hardly hear it!

In addition to dancing, Manny enjoys playing baseball, basketball and riding bikes with his two brothers. We have learned to accommodate his sports and activities with his Baha through a number of techniques ranging from using helmets to creating special communication cues.

Without his Baha 5 Sound Processors, Manny would have a much different life. I am thankful each and every day for the gift of sound the Baha provides. I am thankful that this hearing has enabled a passion for music and dance, as it brings enjoyment not only to Manny, but also to others."

—Manny's mother

 Manny W. - Baha recipient

Andrea M.

"I was born with normal hearing, and like many infants, suffered from frequent ear infections. At 18 months old, I received tubes in my ears, but was left with a mild hearing loss in both ears after I had them removed. When I was eight years old, I underwent my first surgery to fix the issue causing the hearing loss, but it failed to take. After a second opinion, and a second surgery, it was discovered that my left stapes—a middle ear bone—had disintegrated, which made the second surgery unsuccessful. When I went in for a routine post-op checkup, the doctor explained that I experienced sudden left-side nerve damage, and as a result, lost my hearing in that ear.

For the next nine years, I faced everyday struggles with single-sided deafness in school, home and outside environments. However, I refused to let my hearing loss impact my career choice or academic pursuits. I chose to go to a large university—The University of Michigan—and study nursing. As I entered my senior year, I realized having a hearing deficit in a medical profession and in a hospital setting was physically and mentally exhausting. I had been aware of the Baha System for many years, but I was concerned about the surgical nature of the solution. While at a routine six-month appointment, I tested the product and decided to go for it.

I underwent surgery in May 2016, and my Baha 5 Sound Processor was fitted in August 2016. The most memorable moment of my fitting was when my mom whispered in my deaf ear, and I could hear! I couldn't believe it. Following my hearing loss, I never thought I would experience that again.

My world has definitely changed since receiving the Baha System. I can hear little things I forgot existed, engage in large discussions, and hear more sounds in social and nursing settings."

—Andrea M.

Andrea M. - Baha recipient

Isabella W.

"We found out about Isabella's hearing loss at her first ENT appointment when she was four years old. Looking back from that moment, I suddenly realized all the signs we missed along the way. We looked at the paperwork from her newborn hearing screening. It indicated she failed the hearing test in her right ear three times. We didn't remember anyone in the hospital mentioning that to us. Our minds went back to all those times we called to her and she didn't respond. How could we not have seen this?

After the ENT appointment, I asked Isabella if she could hear out of her left ear, and she said yes. I asked if she could hear out of her right ear, and she said no. When I asked why she never told me, she said, "I did Mom. You called me, and I told you I couldn't hear you." I had to smile, yet felt a heavy sadness. She had told me, and I was the one that didn't listen!

We learned that with Isabella's type of hearing loss, conventional hearing aids were not going to help. But there was something that would—the Baha Implant System.

We had to wait until Isabella turned five years old; however, she was able to use a Baha Softband until the surgery and heard better right away.

I worried about something being implanted in my daughter's head. I worried what her friends would say if they did each other's hair. But I was more worried about her not being able to hear. Just before Isabella's fifth birthday, we found out about the magnetic Baha Attract System, which was more discreet and involved less daily care than the abutment system.

The Baha Attract System is the best thing to ever happen to our daughter. Isabella was well below the curve before it, whereas now she is reading more than most of the kids in her class and has become much more outgoing. It's amazing how a little piece of equipment has given her so much more confidence. It really was the light at the end of the tunnel for us. The future is bright for Isabella. She excels in everything she does, and hearing loss is not a weakness or handicap, it's just something that she has."

—Isabella's mother

Isabella W. - Baha recipient

Connect with others who have been where you are and want to help.

Connect with the Cochlear community

At any point during your family's journey, you may want to connect with others who have gone through the process and are now hearing what they couldn't before. There is a large community of people who have been where you are and want to support you and share their stories.

www.Cochlear.com/US/CochlearConnections

What it means to be a member of the Cochlear Family

We are a family. One that's united by sound. Bound by a common experience that is anything but common.

We are the people who can now hear what we couldn't hear before thanks to a company founded more than 35 years ago.

We are the people who place our trust in Cochlear. We share our dreams with the surgeons, audiologists and therapists who help make them come true. And we share them with those at Cochlear who make us the promise of "Hear now. And always."

We care for one another. We look out for one another. We support one another. We are united by sound and connected by Cochlear. We are the Cochlear Family.

Dr. Graeme Clark

Dr. Anders Tjellström

Cochlear started with a very personal story.

Over 450,000 people worldwide hear today because of Cochlear.

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 Dr. Clark accomplished when he invented the world's first multichannel cochlear implant in 1978. It was then that he made history. He also made it possible for thousands of people to hear their children, their friends and families.[1]

Dr. Clark's invention eventually evolved into our Cochlear Nucleus® Cochlear Implant System. We then expanded our hearing implant solutions with the Cochlear Baha System.

When Dr. Anders Tjellström, and his team of experts pioneered the world's first bone conduction implant over 40 years ago, it opened up a whole new world of hearing to those suffering from conductive hearing loss, mixed hearing loss and single-sided deafness. Since then, the technology has helped change the lives of more than 140,000 people worldwide; and thanks to the latest innovations in bone conduction hearing, that number will only continue to rise.

Today we work with over 2,000 hearing professionals around the world and with more than 100 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 main focus—to help you "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.

Antonia C. – Baha recipient

If you have questions, we have experts who 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 Baha Implant System
- Why Choose the Baha Implant System
- Glossary of Terms

Chapter 6:

Your child's journey to hearing is worth every step.

You may be excited, yet 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 learn through 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

If you haven't already met with a Hearing Implant Specialist, then now is the time. Your child will complete a hearing test to find out if he or she can benefit from a Baha System. If it's determined your child is a good candidate, they'll get to test the sound processor and hear the difference first. That's one of the best things about a Baha System—your child can try it first before deciding to move forward.

To find a Hearing Implant Specialist in your area, visit **www.Cochlear.com/US/Appointment**

2. Obtain insurance approval

Unlike hearing aids, Baha bone conduction implant systems are covered by many insurance plans and typically Medicaid.*

Your insurance plan may require something called "pre-authorization" for certain services. If needed, your child's audiologist or physician may help obtain pre-authorization of coverage on your behalf. Your child's audiologist will also submit the necessary paperwork to your insurance company for approval.

Visit Cochlear's Insurance Resource Center for more information at **www.Cochlear.com/US/Insurance**

The hearing implant team will discuss benefits and risks with you and your child and will schedule the surgery typically after insurance approval is obtained. 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 Insurance Support at
1 800 633 4667 Option 4
or email OMS@Cochlear.com

**Coverage for Medicaid recipients varies according to state specific guidelines. Contact your insurance provider or hearing implant specialist to determine your eligibility for coverage.*

3. Choosing the best device for your child

All bone conduction 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. Think beyond today and consider what you want for your child well into the future. You also want to think beyond the product itself and remember that Cochlear will provide the support your child deserves for a lifetime.

4. Outpatient surgery

We understand the thought of surgery is intimidating, yet it's necessary to provide your child access to sound with a bone conduction implant. Fortunately, the procedure is fairly routine, typically lasting less than an hour, and is performed under general anesthesia. The risks of the implant surgery are typically low, and most children are back to their normal activities within a few days.

To provide you with added peace of mind, go to **www.Cochlear.com/US/CochlearConnections** to find others who have been through this exact same experience. They will often tell you that the worries they had themselves about the surgery were greatly diminished by the hope and benefits that the hearing implant now provides their child.

5. Fitting appointment

This is the moment you have been waiting for. After the recommended healing period *(up to 12 weeks)*, your child will visit the audiologist to receive their new sound processor. They'll adjust the settings to match his or her needs and will show your family how it works. And that's it! Your child will be ready to start their new hearing experience.

6. Ongoing care

Over the next several months after fitting, your child may benefit from appointments with the audiologist to adjust and fine tune the sound processor's programs to help ensure optimal hearing performance.

You and your child will also need to follow the guidelines provided for care and maintenance, which vary based on device. We offer many "how to" videos on myCochlear, and our Customer Service team can help answer questions you may have.

7. Rehabilitation

Just as with any surgery, rehabilitation is critical to your child's success. Cochlear offers robust rehabilitation programs through The Communication Corner that can be tailored to your child's needs.

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

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

Choosing the best bone conduction 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 Baha Implant System for your child.

Sound Processor Features

Feature	Benefit	Why It Matters
Sound Processor Options	Your child's hearing needs may change over time and will need options for today and the future	The Baha 5 System is the first bone conduction system to offer three head-worn sound processors, each one designed to meet a different level of hearing loss.
Made for iPhone Connectivity	Easily control and stream sound to your child's sound processor from your Apple® device	Made for iPhone technology provides the convenience of direct streaming to the sound processor from your Apple® device.
Baha 5 Smart App	Control and manage your child's hearing using your smartphone	You can personalize and monitor your child's hearing experience conveniently with devices you use every day.
True Wireless Technology	Wireless streaming to your child's sound processor	Having speech and sound wirelessly 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.
Remote Control	Remote management of your child's hearing	You are able to manage your child's settings and programs without the need to touch the sound processor.
SmartSound iQ	Innovative technology for better hearing performance	The sound processor blocks background noise to help your child hear their best in noisy environments.
Automatic Scene Classifier	Easier hearing in noise for your child	The automatic scene classifier analyzes your child's current surroundings and identifies the listening environment as one of seven common scenes.
Visual Alert Lights	Confirmation that your child's Baha 5 Power or Baha 5 SuperPower 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 child's audiologist.
FM Compatibility	Give your child a front row seat in the classroom with the FM-compatible Mini Microphone 2+	The Mini Microphone 2+ is 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.
Try it First, Then Decide	Your child has the unique advantage of hearing the difference	A Hearing Implant Specialist can help your child demo sound processor with a Softband or SoundArc.

System Features

Feature	Benefit	Why It Matters
One Implant. Two Systems	Choose between two Baha Systems to best fit your child's hearing needs	Both the Baha Attract and the Baha Connect Systems offer unique Cochlear technology designed to help your child hear and communicate with confidence.
Baha SoundArc and Softband	Your child has the option of two different head -worn non surgical solutions for the introduction to sound	The Baha SoundArc and Softband solutions are designed to provide children under the age of five with the hearing performance and amplification they need to facilitate language development on par with their hearing peers.[1]
Stable and Reliable Implant	Improves the transmission of sound and ensures children can benefit from consistent and reliable access to hearing throughout their life[2]	The Baha BI300 is Cochlear's latest titanium implant featuring TiOblast™ surface technology, which is designed and tested for long-term reliability and better sound transmission compared to other systems.[2,3]
Baha Attract System	Uses internal and external magnets that attract one to another to offer an invisible link between the implant and sound processor	The Baha Attract System is a comfortable and easy to use hearing system that requires some daily care. The Baha Attract Sound Processor magnets are available in different strengths to suit your child's individual needs and lifestyle.
Baha Connect System	Uses a small abutment that offers a direct connection between implant and sound processor designed to maximize hearing performance	The Baha Connect System is a straightforward and easy to use hearing system that requires some daily care. The sound processor is easy to handle and simply snaps on to the abutment to hold it in place.
Dermalock™ Abutment Technology	Unique surface coating and concave shape that preserves the hair and skin around the abutment	The Baha Connect System abutment features state of the art Dermalock™ technology, which helps reduce surgery time, and most people heal in just a few days.[4]
MRI Compatibility*	Providing a safe and effective MRI image	Our Baha Attract System was designed for the internal magnet to be conditional up to 1.5 Telsa. For scans above 1.5 Telsa you may need to have a simple procedure to remove the magnet. With the Baha Connect System you will need to remove the sound processor prior to the MRI scan.

**Prior to receiving an MRI, please consult with your clinician about proper precautions.*

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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 loss impairment.

Auditory: Relating to hearing.

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

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

Binaural hearing: Using both ears to hear sounds.

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

Conductive hearing loss: Sound cannot travel through the outer or middle ear because of malformation, chronic ear infections, benign tumors or other factors. This condition may be treatable depending on the cause.

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 is 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.

Mixed hearing loss: Refers to a combination of conductive and sensorineural hearing loss. This means there may be damage in both the outer or middle ear, as well as the inner ear.

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

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

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.

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

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

Single-sided deafness: Sensorineural hearing loss can occur in one or both ears. If the loss is in one ear, it is often referred to as unilateral hearing loss or single-sided deafness. This is when there is little or no hearing in one ear, but normal hearing in the other ear.

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

Sudden deafness: Hearing loss that occurs seemingly overnight. Often times, it may be difficult to identify a specific cause.

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 Baha 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 a Baha procedure.

You should talk to your hearing healthcare provider about who is a candidate for a Baha. Before any surgery, it is important to talk to your doctor about CDC guidelines for pre-surgical vaccinations. Baha is contraindicated for patients with inadequate bone quality or quantity to provide stability and support for the implant, or in patients who will be unable to maintain and clean the skin around the abutment. In the U.S., use of the implanted fixture is also contraindicated in children under age 5 years.

Baha implantation is a surgical procedures carries with it the risks typical of surgery. All surgical procedures include an element of risk, and it is impossible to guarantee success. The device may fail to osseointegrate for a number of reasons, including physiological and surgical issues as well as traumatic impact to the implant site. On rare occasions the skin around the abutment may become inflamed from a mild infection or the skin may grow back towards its original thickness.

For complete information regarding the risks and benefits of a Baha procedure, please refer to the Instructions for use for the Baha implant available at www.Cochlear.com/US/BahaIndications.

Views expressed by Cochlear recipients are those of the individual. Consult your hearing health provider to determine if you are a candidate for Cochlear technology. Outcomes and results may vary.

The Cochlear Baha 5 Smart App is available on App Store and Google Play. For compatibility information visit www.Cochlear.com/Compatibility.

Cochlear Baha 5 sound processors are compatible with iPhone, iPad and iPod touch. For compatibility information visit www.Cochlear.com/Compatibility.

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