

A young child with light hair is crawling on a light-colored wooden floor. The child is wearing a white long-sleeved shirt with a green graphic on the front and brown corduroy pants. A cochlear implant processor is visible on the child's left ear. In the background, a woman is sitting on a brown sofa, looking towards the camera. A yellow teddy bear is on a coffee table to the right. The scene is brightly lit, suggesting an indoor living space.

MED⁹EL

FIRST STEPS

Parent's Guide to a Cochlear Implant System

So you've just learned your child has hearing loss. Whether that hearing loss is hereditary or entirely unexpected, we understand that this is a challenging and emotional time for you. You may be entering unfamiliar territory with countless questions, but rest assured... there is a solution for your child.

More than half of the people who use our implants received them as children, so we're dedicated to designing cochlear implants (CIs) that look to the future and are suited for even the youngest child. We know your child has unique needs, and we're here to help you best meet those needs.

This guide has been designed to give you insights into what life with a cochlear implant is like so you can support your child every step of the way. We encourage you to get your whole family involved. You'll soon see that your child's life will not be so different from what you might have once imagined.

In this brochure, we'll have a look at how hearing works and what sensorineural hearing loss is. You'll learn about cochlear implant systems, what they are, and how they can help. We'll discuss the benefits of early implantation and give you a glimpse into the process of receiving an implant, from assessment to rehabilitation.

We'll finish by talking about what's ahead for your child—communication, an education, and anything you can imagine.

LET'S GET STARTED.

HOW DOES HEARING WORK?

SOUND AND THE EAR

Knowing how hearing works will help you to better understand hearing loss and how cochlear implants can overcome it.

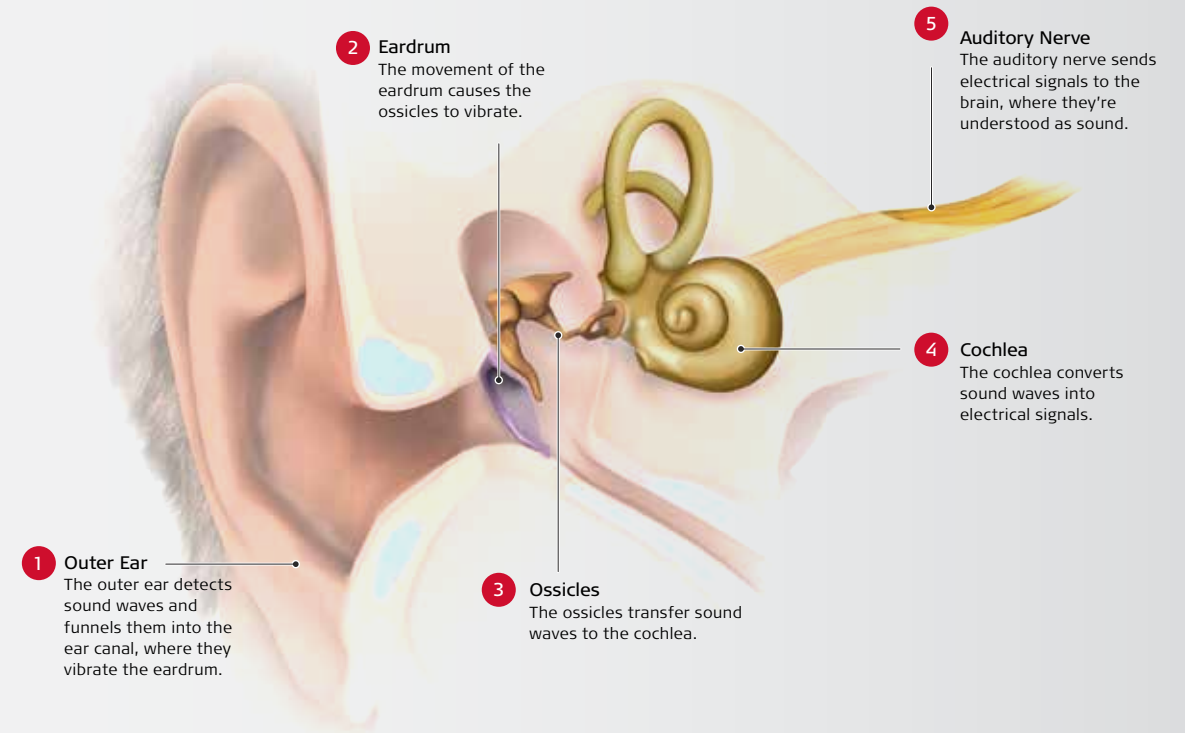
First, let's take a closer look at the ear:

The ear is made up of three parts—the outer ear, middle ear, and inner ear.

The outer ear is the part you can typically see, plus the ear canal.

The middle ear contains the smallest bones in the human body, the ossicles, which help carry sound from the outer ear to the inner ear.

The inner ear houses the cochlea, a snail-shaped, fluid-filled organ about the size of a pea. All of these parts work together to detect sound waves and change them into signals that the brain can understand as sound.



? How common is hearing loss?

Hearing loss is the most common disability present at birth, and it's also the most common sensory disorder. Worldwide, approximately 32 million children have sensorineural hearing loss. Because hearing loss is so prevalent, universal hearing screening programs have been implemented in countries all over the world, and resources in many communities are dedicated to improving the lives of children and adults with hearing loss.^{1,2}



Want to learn more?
Check out our video
library at medel.com.

DIAGNOSIS OF HEARING LOSS

TESTS ARE QUICK, SIMPLE & PAINLESS

In many countries, hospital Newborn Hearing Screening Programs check the hearing of all infants. This is a short and painless examination of the auditory pathways performed a few hours after birth. If an infant was not screened in such a program, parents are usually the first to suspect a hearing problem.

Typical Signs of Hearing Loss

- Child does not react to loud sounds
- Child is unable to detect where a sound is coming from
- Child may start to babble, but soon stops
- Babbling does not develop into understandable speech
- Child does not react to voices, especially when he or she is not being held
- Child does not follow commands or misunderstands directions
- Child may start acting frustrated



Otoacoustic Emission (OAE) screening with the Otoport device

Hearing Tests

A variety of different methods are available to test your child's hearing. The audiologist will choose a method that is best suited for your child's age. Usually, hearing tests performed on newborns and babies use objective measuring methods which do not require the active participation of the baby. This can, for example, be Otoacoustic Emission (OAE) screening or an Auditory Brainstem Response (ABR). All of these tests are quick, simple and painless and are performed while the baby is asleep. Older children can participate more actively in behavioral hearing tests. Parents can stay with their child while the hearing test is being carried out.

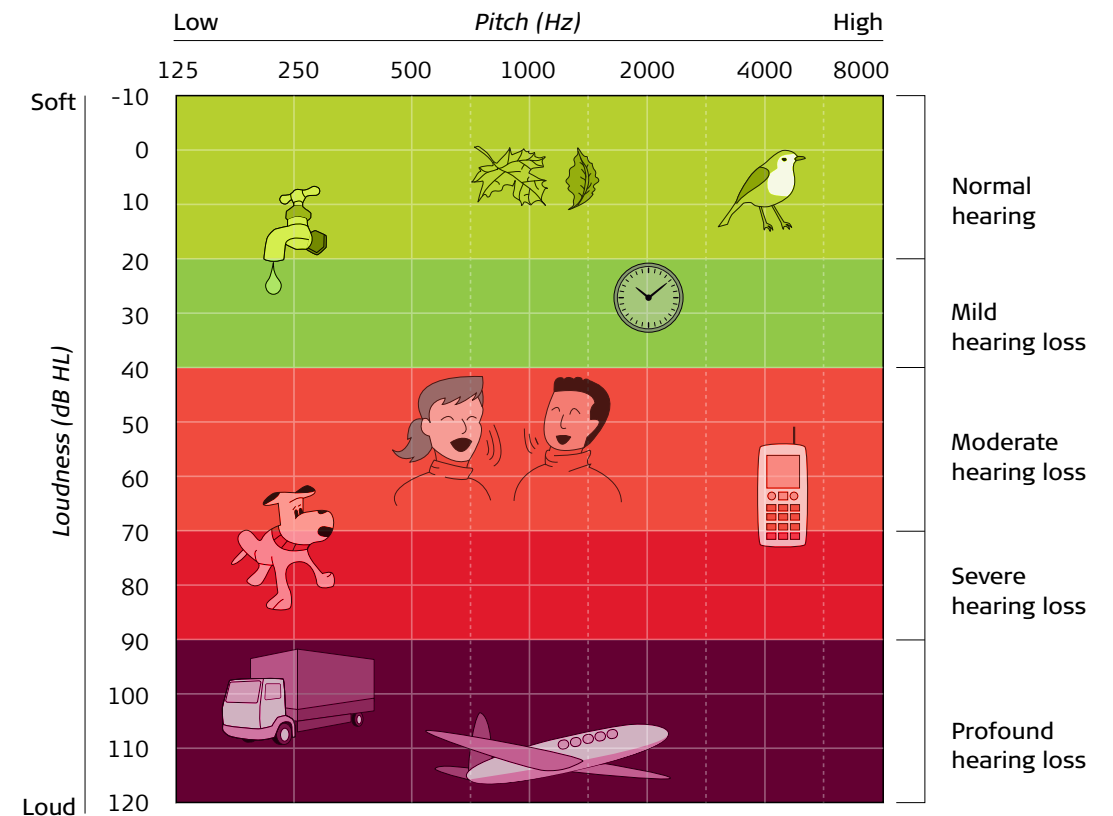
THE AUDIOGRAM

UNDERSTANDING WHAT IT MEANS

An audiogram is a graph that shows if your child has a hearing loss, and if so, which type and degree of hearing loss he or she has. The audiologist measures the loudness level at which your child can hear different sounds at different pitches. The softest sound your child is able to hear is called the hearing threshold.

The loudness level of sounds, also shown as hearing level on the audiogram, is measured in decibels (dB). Frequency is measured in hertz (Hz).

A child's average normal hearing ranges between 0 and 20 dB HL (dB Hearing Level). If the hearing thresholds are outside this range, the child is considered to have hearing loss. A child with a hearing loss at 40 dB HL, for example, may not be able to hear certain speech sounds. The degree of loss is determined by the severity, e.g., mild hearing loss, moderate hearing loss, severe hearing loss, profound hearing loss. It is important to be familiar with the details of your child's audiogram so that you can detect any changes in his or her hearing without delay. We recommend that you keep dated copies of your child's audiograms.



A child's average normal hearing ranges between 0 and 20 dB HL (dB Hearing Level).



Conductive Hearing Loss

Any condition in the outer or middle ear that prevents the ear from conducting sound properly is known as a conductive hearing loss.

This can be due to a blockage in the outer ear or ear canal, ear infection, or other problems.

Conductive hearing loss is usually mild or moderate in nature. In some cases, conductive hearing loss is temporary and can be treated with medication or with surgery.

If a conductive hearing loss is irreversible, many people can benefit from a hearing aid or bone conduction system. Common causes of conductive hearing loss in children include buildup of earwax or middle ear infections (otitis media).



Sensorineural Hearing Loss

Sensorineural hearing loss results from missing or damaged hair cells in the cochlea. This type of hearing loss is usually permanent and can worsen over time. Sensorineural hearing loss can be mild, moderate, severe or profound.

Treatment options for mild to severe sensorineural hearing losses usually are traditional hearing aids. For the treatment of severe or profound sensorineural hearing loss, cochlear implants are often recommended.

Single-Sided Deafness

Single-sided deafness, or SSD, is defined as profound hearing loss in one ear and normal hearing or mild hearing loss in the opposite ear.

Treatment options for SSD include CROS hearing aids, bone conduction hearing aids, bone conduction implants and some cochlear implants.



Mixed Hearing Loss

A mixed hearing loss is a combination of conductive and sensorineural hearing losses. It results from problems in both the outer/middle and inner ear.

Treatment options may include medication, surgery, or hearing aids.



Neural Hearing Loss

A problem that results in the absence of or damage to the auditory nerve can cause a neural hearing loss. Neural hearing loss is profound and permanent. Hearing aids and cochlear implants cannot help because the nerve is not able to pass on enough sound information to the brain.

TYPES OF HEARING LOSS

Experts distinguish between different types of hearing loss, depending on the part of the ear that is affected.



You may have learned from your child's newborn hearing screening that she has a kind of hearing loss known as sensorineural hearing loss (SNHL).

What is SNHL and what causes it?

Sensorineural hearing loss (SNHL) is the result of damage in the inner ear. For those with SNHL, hair cells in the cochlea are either damaged or missing, or the auditory nerve is damaged. Children who have mild SNHL have difficulty hearing quiet sounds and find that even loud sounds seem muffled. Children with severe-to-profound SNHL aren't able to hear very loud sounds.

Causes

Approximately half of children born with hearing loss have genetic hearing loss. Other common causes are genetic syndromes, infections such as meningitis, and complications during pregnancy or birth. Hearing loss that occurs during childhood can be caused by infections or even by medications that are necessary and life-saving—but harmful to the ear.¹

Treatment

Although sensorineural hearing loss is usually permanent, children who fall within candidacy guidelines can be treated successfully with **cochlear implants**. Your child's audiologist will be able to determine if your child is a CI candidate. Cochlear implants have been routinely implanted in children since 1980. On the next few pages, we'll have a look at what cochlear implants are and how they help children like yours to hear.



What's the difference between a CI system and a hearing aid?

Whereas a hearing aid amplifies sound, a cochlear implant directly stimulates the inner ear. Hearing aids are suitable for people with mild-to-profound hearing loss. Cochlear implants, however, can help children like yours who have a profound hearing loss.

WHAT IS A COCHLEAR IMPLANT SYSTEM?

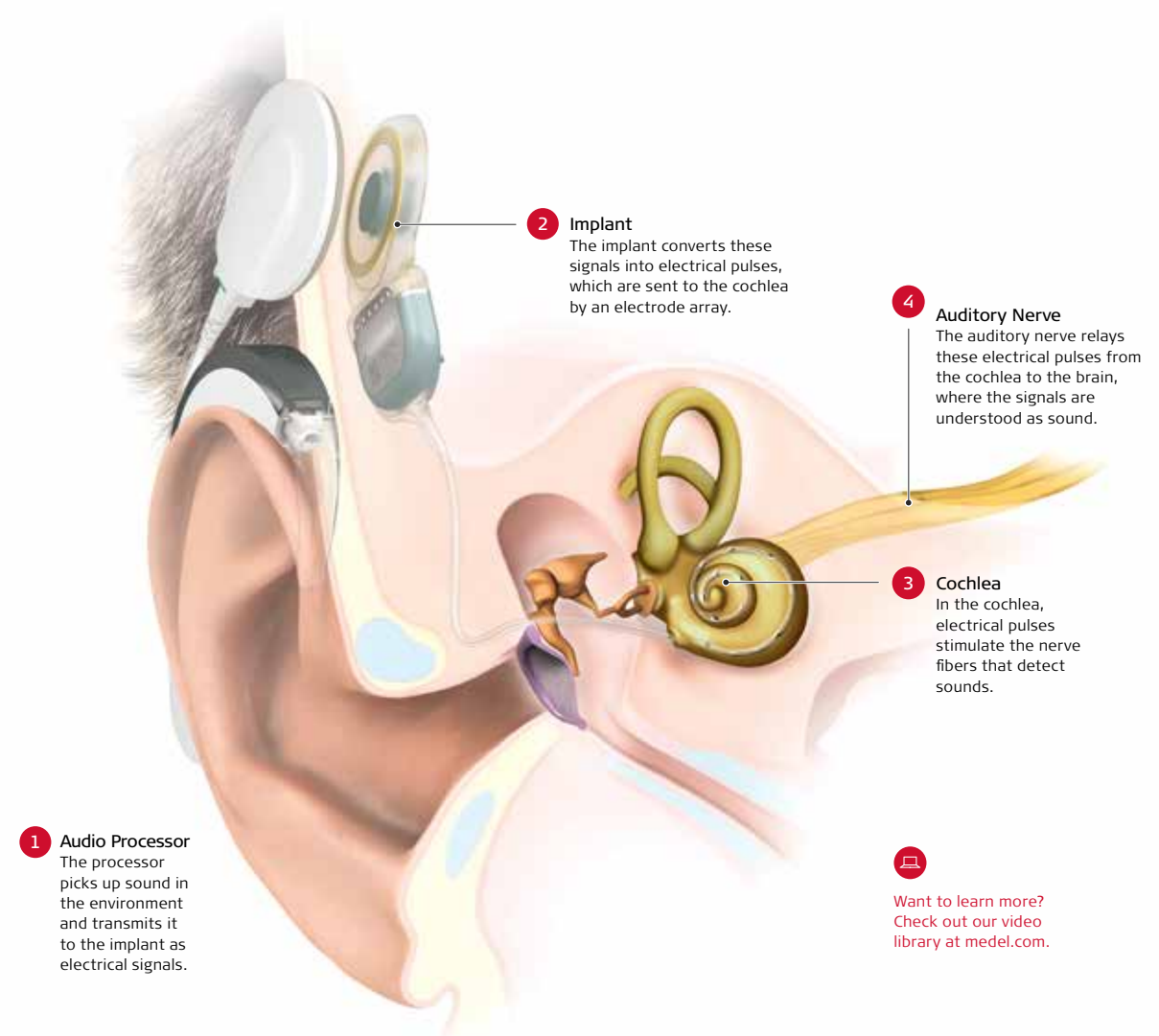
A HEARING LOSS SOLUTION

For some children born with hearing loss, hearing aids don't provide enough—or any—benefit. This is often where cochlear implants come in. You might be somewhat familiar with hearing aids, but what is a cochlear implant and how does it work?

A cochlear implant is a medical device that replicates the sense of hearing. It can give people with hearing loss access to sound by bypassing the non-functioning parts of the ear and electrically stimulating the cochlea.

A cochlear implant system has two main components—an external audio processor and an internal cochlear implant. A MED-EL audio processor is worn either on or off the ear, depending on the model your family chooses. The audio processor is the part that your child will handle every day and may come to think of as his or her “ear.”

The audio processor is connected to the implant by a magnet. The implant is placed just under the skin during a surgical procedure. After surgery, the implant won't be noticeable to your child or others.



Want to learn more?
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STARTING EARLY

The widespread implementation of newborn hearing screening programs has contributed to a decrease in the average implantation age. Research has consistently shown that early implantation is associated with better listening and spoken language development, as well as academic success.^{4,8}

A child's auditory system is most receptive to sound input in the first few years. Access to sound in early childhood contributes to the development of the brain and, in turn, many different types of skills. Numerous factors affect speech and language development, but if your child receives an implant early enough, it's quite possible that he or she will be able to learn language at a rate similar to that of peers without hearing loss.^{4,6,8,11}

What if, for any reason, your child is unable to receive a cochlear implant during these formative language-learning years? Children who receive CIs later typically experience less favorable outcomes from those who receive them earlier, but children whose implantation is delayed can still benefit from a CI.⁵



? What is the ideal age for implantation?

Most hearing professionals agree that a child should receive a cochlear implant before the age of 24 months to achieve the best possible outcome. Your child's doctor will be able to discuss any considerations that could affect the optimal implantation age for your child.^{3,4,5,6,7}

* In the USA, cochlear implants are approved for use in children beginning at 12 months of age

Early Intervention

Early intervention means acting without delay to treat your child's hearing loss. If your child has an irreversible hearing loss that cannot be otherwise remedied, it is vital to get hearing instrumentation as soon as possible. During the first few months, infants learn to understand a variety of sounds around them. They can very quickly distinguish between human speech and other environmental sounds. The first two years are especially important for language acquisition. Children with hearing loss cannot develop these abilities later on.

The younger a child's age when receiving a hearing device, the easier it will be for him/her to learn to hear and speak. A baby's brain is better able to process new information than that of older children, and when children are provided with a hearing device at a very young age, they often develop spoken language quickly and can "catch up" with other children born with normal hearing.^{4, 5, 6}



0-3 months

- Reacts to loud and sudden sounds (wakes up, scares, startles)
- Recognizes a parent's voice
- Reacts in response to a familiar voice (quiets, smiles)
- Looks around to see where a new sound is coming from
- Smiles when spoken to
- Makes pleasure sounds, coos, chuckles
- Uses specific crying patterns (e.g., hunger-cry)



3-6 months

- Experiments with own voice, babbles
- Pays attention to music
- Discriminates between sounds, friendly/angry voices
- Localizes sound source/voice
- Recognizes own name
- Uses different cries, stops crying when spoken to



6-9 months

- Babbling is more varied
- Listens attentively to music/singing
- Reacts to own name
- Understands simple verbal requests
- Recognizes names of some common objects



9-12 months

- Uses exclamations
- Speaks first words (dada, mama, bye-bye)
- Follows simple commands
- Understands simple questions (Where is the ball?)



12-18 months

- Says one-word sentences
- Says and understands up to 20 words
- Understands more new words every week
- Enjoys nursery rhymes
- Comprehends simple questions
- Uses words rather than gestures to express wants and needs



18-24 months

- Uses 2-3 word sentences
- Follows simple commands
- Understands simple questions
- Enjoys being read to
- Understands more complex sentences
- Points to body parts when asked



2-3 years

- Speaks in simple sentences
- Says and understands 200+ words
- Follows simple tasks when asked
- Points to the right picture in a book when asked



3-4 years

- Speaks clearly enough that people outside the family usually can understand him or her
- Uses sentences of four or more words in length
- Speech and understanding improve considerably

The most vital period for **hearing development** in a child's life occurs in the first two years.



A BRIGHTER FUTURE

So how will a cochlear implant change your child's life?

The most fundamental benefit your child will gain with a cochlear implant is the ability to communicate with family, friends and classmates. Whether your child relies on listening and spoken language, sign language, or both, a cochlear implant can help with the development of speech and language skills. Strengthening these skills will help your child learn, grow, make friends and perform well in school. Early access to sound is an important factor in building vocabulary skills, which form the foundation for reading and overall academic success.^{4,5,8,9,10,11}

What changes might you observe as your child grows up? Parents of children who have received CIs report that after implantation their children have higher self-esteem, enjoy more rewarding interactions with their family, and participate more actively in school. Each child is different, but no matter what their strengths and weaknesses are, using a cochlear implant can improve quality of life.

TWO EARS ARE BETTER THAN ONE

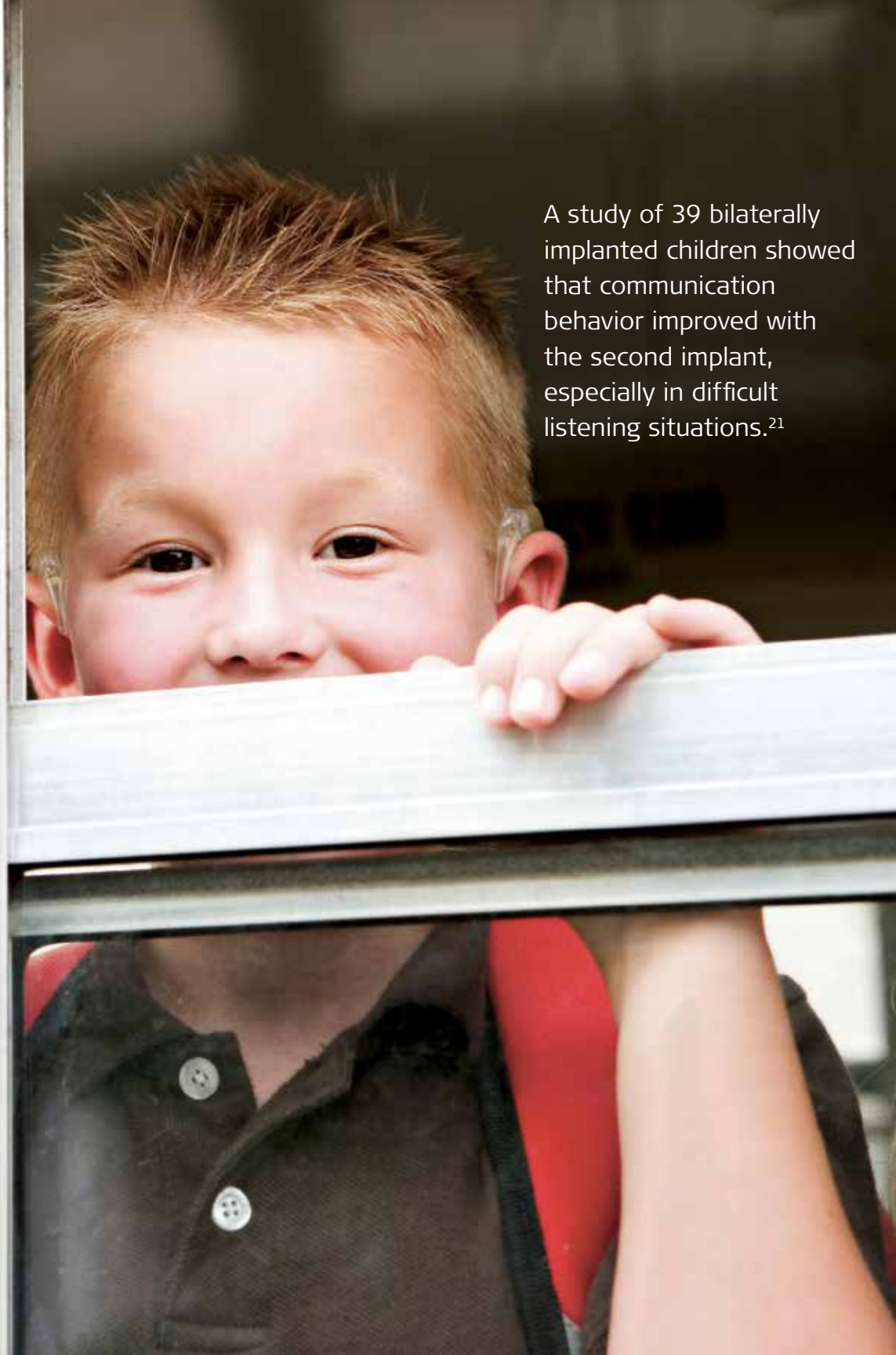
If your child has hearing loss in both ears, you might be wondering how much difference a second cochlear implant would make. Research has shown that children who use two cochlear implants often fare better than children with one CI.¹²

A second cochlear implant can make it possible for your child to localize sound. Knowing which direction sounds are coming from, a child is much more likely to develop better language skills, focus more easily on important sounds, and stay safe.¹²

Once your child is in school, using two cochlear implants can help him concentrate on the teacher's voice and tune out distracting background noise. For anyone, listening with two ears requires less mental effort than listening with one ear. Unsurprisingly, parents of children with two cochlear implants have reported that their children are less tired at the end of a school day.

? What is the best time to get a second implant?

Opinions differ, but receiving both implants at the same time is generally better than waiting to receive the second. Receiving both implants at once could help your child learn language faster, spend less time overall in surgery, and have to make fewer hospital visits and follow up appointments. Talk to your doctor about any considerations that could affect the ideal implantation time for your child.¹³



A study of 39 bilaterally implanted children showed that communication behavior improved with the second implant, especially in difficult listening situations.²¹

WHAT TO EXPECT

Assessment

Generally, children undergo a trial period using hearing aids before referral for implant candidacy. After referral, a clinician will check that there are no contraindications that would make a CI unsuitable for your child. All of these tests are painless and non-invasive; some can even be performed while your child is sleeping.

Implantation

Surgery typically lasts from 1–3 hours and is performed under general anesthesia. Your child will most likely be up and about the day after implantation. The duration of his hospital stay could last from one to several days, depending on local practice.

First Fitting

About four weeks after implantation, your child will receive the audio processor during a session called an initial activation session. During this session, an audiologist will program and activate the audio processor. Activation day is often an emotional one for families since it may be the first time their child is able to hear. Keep in mind that learning to hear with a CI is a process; sounds will become clearer and more understandable over time as your child progresses through rehabilitation.



Rehabilitation

Rehabilitation is the process of learning to hear with a cochlear implant. During rehabilitation, your child will work with a specialist on listening and spoken language skills. Participating in rehabilitation is essential to success with a CI. Over the next few pages, we'll take a look at rehabilitation and discuss how it can contribute to your child's progress.

LIFE WITH AN IMPLANT

STEPS TOWARD SUCCESS

What is Rehabilitation?

Rehabilitation is the process of training the brain to understand sound with a cochlear implant. Think of a cochlear implant as an instrument for accessing sound. As with any instrument, learning how to use it will take motivation and a lot of practice. While participating in rehabilitation, you will learn strategies for making this practice as effective and fun as possible. You'll be given guidance on how you can help foster your child's communication skills at home.

The rehabilitation program will be designed by a specialist (i.e., speech-language pathologist or teacher of the deaf/hard-of hearing) and sessions will most likely be held in your home, a clinic, or at school. For the first few years after your child receives his CI, his specialists will play pivotal roles in guiding communication development. As your child grows and becomes more independent, he will be able to help make decisions about his own rehabilitation program.

To develop your child's communication skills and make the most of the CI, your child should start participating in rehabilitation as soon as the hearing loss is identified. Rehabilitation goals will be established by you and your child's specialist, and will evolve based on your child's progress and needs.



You can expect therapy goals to fall into one or more of the following five skill areas:

- **Auditory:** From your child's first fitting, he'll begin establishing an awareness of sound, recognizing sounds and associating them with people and things in the environment.
- **Speech:** Once your child has expanded his awareness of sound and has started babbling, the focus will shift toward learning how to talk and being understood by others.
- **Language development:** Your child's auditory and speech skills will form the foundation for learning more complex language skills. As rehabilitation progresses, your child will learn new words, grammatical structures, and even how to tell a story.
- **Communication management:** Your child will sometimes encounter situations that make communication challenging. During rehabilitation sessions, he'll learn strategies for overcoming these obstacles.
- **Practical and technical:** On activation day, you'll receive some basic information about how to operate and take care of your child's audio processor. As he or she gets older, your child will learn how to use assistive listening devices to further improve listening experience at school and beyond.

Partnering With Your Child's Specialist

Practice communication strategies and techniques whenever possible. One of the most important ways you can help your child succeed is to reinforce rehabilitation goals at home. How can you do this? Cooperate closely with your child's CI team. Ask which skills you can work on with your child at the various stages in development. Write down your questions as they arise, and bring a short list to your child's appointments.⁸

Your Role

Children spend more time with their parents than with any specialist, so **you will have the greatest impact on your child's communication and development.** All children need to hear a lot of language before they can learn to speak.

Your Child's Progress

Some days, you might wonder if your child is progressing quickly enough. Keep in mind that rehabilitation is a process and that every child is different. Success with a cochlear implant depends on many factors: your family's expectations and motivation, your interactions with your child, and your child's participation in rehabilitation. While it's difficult to predict exactly how well your child will do with a CI, we can assure you that actively participating in a goal-driven rehabilitation program is the most likely way to improve communication skills and quality of life.



How can I help my child to become as independent as possible?

Make sure that your child's language skills and functional skills are assessed regularly by a professional. We encourage you to build on these assessments with your own observations and notes. By tracking your child's progress, you can continually identify learning opportunities and work towards new goals.¹⁸

LEARNING FOR A LIFETIME

You might be wondering how your child's cochlear implant will affect educational opportunities. Does hearing loss affect his ability to learn and succeed in school? What kind of school can he or she attend? Although no one can predict exactly how well any child will do in school, there are several factors that are likely to help your child thrive.

Most aspects that influence your child's overall experience with a CI will also contribute to overall performance in school. With early implantation, dedication to rehabilitation, and the support of key individuals, most children with cochlear implants go to school and learn in much the same way that other children learn.

Many children with CIs go to mainstream schools. As your child gets older and gains experience with the CI, he or she may not need much classroom support. The recommendations of your child's CI team as well as your own observations will guide you in deciding which placement is the best option.^{14,15}





How can you help your child to be successful in school?

First, reach out to your child's team of specialists. We encourage you to request a meeting with the teacher before the school year starts and to communicate often. Make sure someone at school understands how to check the audio processor for proper functioning and how to change the batteries. After fitting appointments, inform the school professionals about any changes to your child's audio processor MAP, or program, which might affect your child's hearing. Your child's teacher may have a lot of experience with cochlear implants—or none—but by talking regularly, you can address most concerns together.⁸

As with any child, your child's needs will change as he or she grows up. In preschool, the teacher can provide support by encouraging communication skills, removing noise-related distractions from the classroom, and monitoring the audio processor for optimal functioning. As your child advances through school and classes become more challenging, teachers should make sure to provide the support he or she needs to continue to do well.¹⁶

Speech-language pathologists/teachers of the deaf and hard-of-hearing can reinforce what your child is learning in school by incorporating new vocabulary and themes from your child's classroom. They can also inform the mainstream teacher about any communicative challenges your child is facing.⁸

Finally, we encourage you to explore **assistive listening device (ALD)** options. ALDs can help your child listen more easily and concentrate better in otherwise noisy or distracting classrooms. The school may already be equipped with ALD technology. But if you're not sure, discuss with your school's team of specialists. An ALD is an important tool that can help your child from school-age through his or her adult life.



Children With Multiple Special Needs

If your child has a hearing loss as well as an additional disability, you may be wondering how much benefit he or she will receive from a cochlear implant. What's ahead? What do you and your family need to know to reinforce your child's development?

Of children with sensorineural hearing loss, up to 40% have additional developmental disabilities. As the number of children with complex needs who receive cochlear implants has grown, we've become better equipped to predict how these children can benefit from a CI. Although such children do face some additional challenges, a CI can still improve their quality of life.^{17,18,19}

Families often report that their children experience benefits beyond speech and language. The most common improvements that parents observe are their child's increased awareness of environmental sounds and spoken language, the development of speech skills, the ability to express their wishes, and better engagement at home and in school. Studies suggest that even for those with complex needs, cochlear implantation can lead to advanced outcomes like better speech. Rest assured that regardless of any delays your child has, there are still significant gains to be made toward enhancing quality of life.¹⁷

The individualized rehabilitation plan that your child receives after activation will take into account the degree of hearing loss, age at implantation, strengths and weaknesses, and other factors. By monitoring any difficulties your child might have, your team of specialists can recommend tailored rehabilitation strategies for improved access to sound and – more importantly – a better and more independent life.



IT'S ALL POSSIBLE

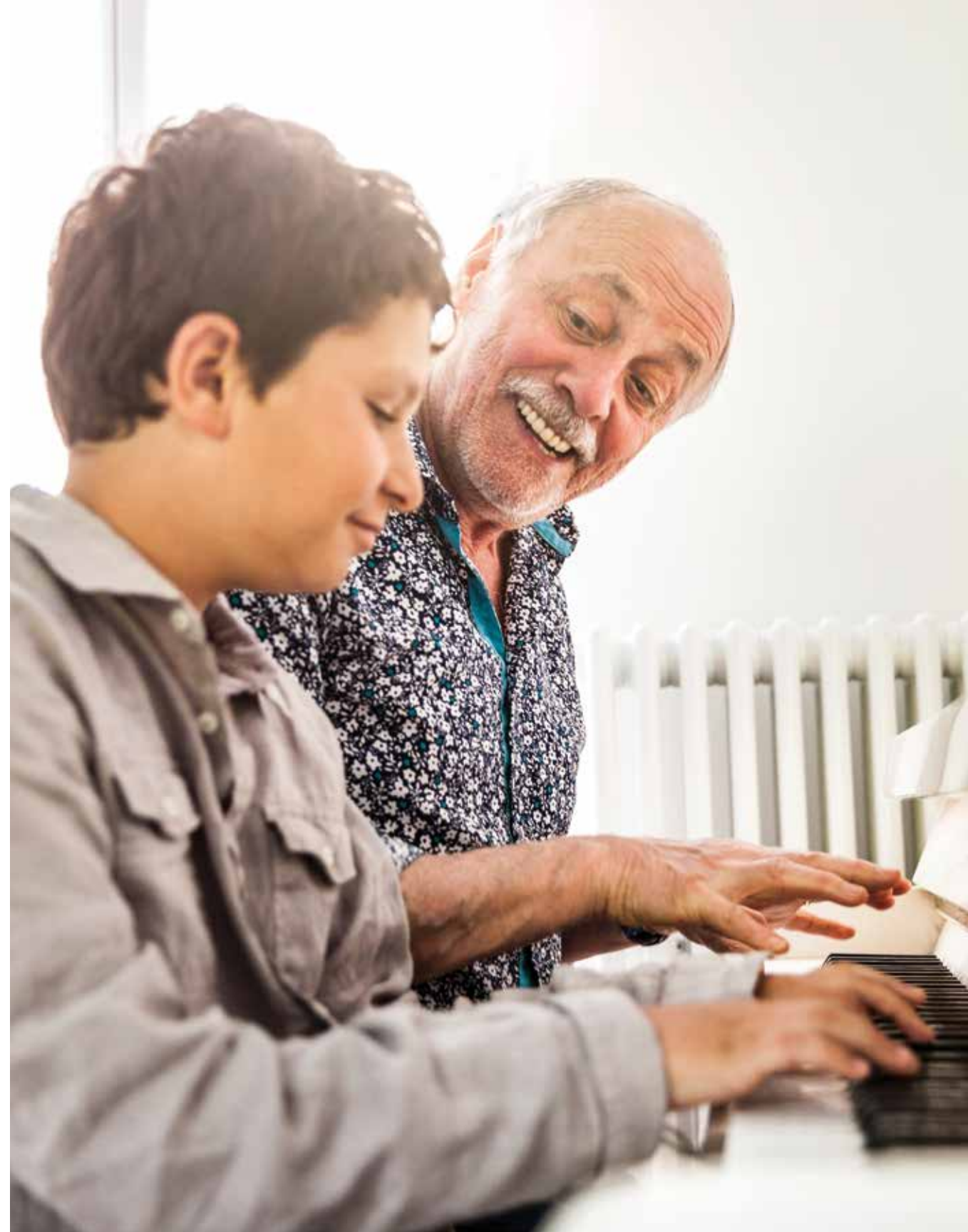
Music

Music will be an important component of your child's rehabilitation program, but it can also be a transformational and fun part of your child's daily life. Musical activities help promote communication and overall development. When you sing and listen to music with your child and encourage him or her to respond to it, you help develop social, emotional, and cognitive skills as well as listening, speaking, and language abilities. You don't need to have any musical training to be able to help your child enjoy music.⁸

Not sure where to start? Try humming, clapping, singing, and dancing along to a song, and try to get your child to do the same. Help him or her recognize and imitate the melody, rhythm, and tempo. Start early and practice often. If you're having fun, your child probably will too! For ideas, we encourage you to check out our rehabilitation resources—all designed by MED-EL rehabilitation specialists. Or enlist the help of your child's specialists - they'll be glad you asked!

? Will my child be able to enjoy music?

Your child's listening habits and attitudes about music will depend on many factors, such as age at implantation, participation in a rehabilitation program, and your family's interests. Many children with CIs like music and even play instruments, although some children are naturally more interested than others in music. Research has shown that children are more likely to enjoy music if their families prioritize and appreciate musical activities.²⁰



Sports

You might be wondering how your child's CI will affect his or her ability to play sports. Whether your child wants to play football, compete in track and field, or simply climb a tree, don't worry, having a CI will not stop him or her. Like any child, yours should take a few precautions and always protect his or her head. Make sure he or she wears a helmet while riding a bicycle or playing sports that typically require a helmet.

Accessories

To ensure that your child's CI doesn't interfere with the ability to take part in sports, MED-EL offers accessories for all of our audio processors. Waterproof audio processor covers can be used in fresh-, salt-, and chlorinated water so your child can hear friends and a lifeguard's whistle wherever he or she swims.

WaterWear for
MED-EL Audio Processors



As a parent, you want to do everything you can to help your child prepare for the future. As a family-owned company, we're doing everything we can to improve quality of life for children with hearing loss, now and in the future. With an unwavering focus on research and development, we provide cochlear implant systems that are designed for reliability and lifelong hearing quality.

Since our founding more than 25 years ago by engineers Ingeborg and Erwin Hochmair, MED-EL has been pioneering innovation in the field of cochlear implants. We're dedicated to supporting your family as you make the transformative decision to get a cochlear implant. We encourage you to contact us with any questions that arise during your child's hearing journey.

From your child's first fitting to her first job and beyond, MED-EL will be there for your family.



WE'RE HEAR FOR YOU.

Rehabilitation Products and Services

MED-EL's BRIDGE to Better Communication program was developed to help educators, rehabilitation professionals, implant users and parents BRIDGE the gap between implantation and the rapid development of improved listening and spoken communication skills. The program consists of a variety of products, resources and materials for adult and pediatric habilitation, assessment, and device management.



www.medel-bridge.com

A Network of Support

HearPeers is an online community of MED-EL hearing technology users, family members and professionals who actively support one another throughout the journey to optimal hearing.



www.hearpeers.com

GLOSSARY

Anatomy of the Ear

Auditory Nerve - The nerve that sends impulses from the inner ear to the brain.

Cochlea - The hearing organ in the inner ear.

Ear Canal - The passageway between the outer ear and the eardrum.

Eardrum - A thin layer of tissue between the outer and middle ear; also known as the tympanic membrane.

Hair Cells - Cells in the inner ear that change sound waves into nerve impulses.

Inner Ear - The part of the ear made up of the cochlea and the balance system.

Middle Ear - The part of the ear that includes the ossicles and the eardrum.

Ossicles - The three tiny bones in the middle ear—the malleus, incus, and stapes.

Outer Ear - The part of the ear that is normally visible; known as the pinna. It collects sound waves and directs them through the ear canal.

Audiology

Acquired Hearing Loss - Hearing loss that develops after birth.

Audiogram - A graph that represents the results of a hearing test.

Audiologist - A healthcare professional who treats people with a hearing loss or ear disorder.

Audiology - The science of hearing which is concerned with the diagnosis and rehabilitation of auditory and communication disorders.

Audiometry - A series of tests given by an audiologist that assesses hearing and middle ear function.

Auditory - Of or related to hearing.

Auditory Brainstem Response (ABR) - A test that checks the functioning of auditory pathways by measuring the brain's response to sounds.

Binaural Hearing - Hearing with both ears.

Bilateral Implantation - Having two hearing implants, one in each ear.

Congenital Hearing Loss - Hearing loss that's present from birth.

Decibel (dB) - A unit used to measure the intensity of a sound.

ENT - The branch of medicine that concerns the ear, nose, and throat.

Frequency - The pitch of a sound; measured in hertz (Hz).

Hearing Threshold - The softest sound that can be heard at any given frequency; indicates the degree of hearing loss.

Otology - The branch of medicine that concerns the ear and conditions of the ear.

Otologist - A physician who specialises in the treatment of ear conditions.

Prelingual Hearing Loss - Hearing loss that's present at birth or that occurs in early childhood before a child learns language.

Postlingual Hearing Loss - Hearing loss that occurs after a person learns language.

Rehabilitation - Specialized, post-implantation training for the development of listening, speaking, and other communication skills; sometimes referred to as habilitation.

Residual Hearing - Hearing that is measurable, usable, and present in varying degrees.

Sound Intensity - Relates to the intensity of a sound; measured in decibels (dB).

Sound Localization - The act of identifying where a sound is coming from.

Speech Frequencies - The range of frequencies most important for hearing and understanding speech, from 250 to 6000 Hz.

Vestibular System - A system in the inner ear that informs your sense of balance.

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