Learning to Hear
A Parent's Guide to CI Rehabilitation
If you’re reading this, it means you are deciding on whether your child should receive a cochlear implant. We know making this decision can be a big step, but you’re not alone. Tens of thousands of parents each year choose a cochlear implant for their child.

A cochlear implant can give your child the ability to hear sound. The next step is helping them understand what these sounds mean. Understanding sounds gives your child the chance to build listening and speaking skills that they will use throughout their life.

There are techniques and activities that can help your child develop these skills. Hearing professionals call this “rehabilitation.”

This brochure is an introduction to cochlear implant rehabilitation. It will give an overview of how you can best support your child’s hearing, both before and after receiving their cochlear implant.
Rehabilitation means training the brain to understand the sound signals from a cochlear implant, and using these to develop listening, speaking, and communication skills. Rehabilitation will help develop communication skills from the most basic levels to more advanced skills.

In the same way that learning a new language takes practice, learning how to use a cochlear implant will take motivation and practice. Together with your child’s rehabilitation specialists, you will learn a variety of strategies for how to help your child develop communication skills in a structured environment and in day-to-day life. This way, you can give your child a wealth of experiences that will build communication skills.

What is Rehabilitation?
Building a Foundation of Sound
A Network of Professionals

As your child starts hearing with a cochlear implant, you will likely meet many different professionals. Each will have a different background and speciality, and they all work together to give your child the best hearing possible.

Here are some of the different professionals you might meet:

Audiologist
An audiologist is the person who performs hearing evaluations, cochlear implant assessments, hearing-related counselling, educational consultation, some rehabilitation activities, and programs your child's audio processor.

Speech & Language Pathologist/Therapist
A SLP/T tests your child's speech and language skills before they receive an implant, and then works with you and other professionals to make sure your child's cochlear implant is working as well as it can. They will monitor your child's progress over time, work with you to develop your child's skills, and help to answer your communication-related questions.

Teachers
Your child's teachers will be key for your child's development simply because they will spend so much time together during the school day. Teachers will learn about your child's hearing skills within the classroom. They will pass this information on to you and other hearing professionals, so you can make adjustments and support your child's growth in the classroom.

Parents and family
As family, you will be the foundation of your child's support system. You will be the ones who your child will communicate with most and who your child will rely upon most. That means you'll be in the centre of your child's rehabilitation. You will need to work with all of your child's hearing professionals, letting them know about your child's progress, developing goals, and making important decisions for your child.

Areas of Rehabilitation

Generally speaking, rehabilitation activities are typically focused on these categories:

Auditory Development
Auditory rehabilitation helps your child to build their listening skills. This starts with having awareness of sound. It then progresses to distinguishing between different sounds, recognising sounds, and understanding the meaning of sounds such as spoken words.

Speech Development
Once your child has started developing an awareness of sound, they will also begin to hear the sounds that make up speech. Developing their speech skills includes learning to say vowel and consonant sounds, and combining these sounds into patterns that form words.

Language Development
Language development means building your child's vocabulary and incorporating it into words and sentences. Language skills are important for your child's communication and are the foundation of developing reading and writing skills. As they grow, they will learn more complex skills like appropriate grammatical structures, understanding chronological organisation, and telling stories.

Communication Management
Your child will likely experience situations where it is difficult to communicate and be understood. Communication management skills will help teach your child ways to be independent in conversation and overcome any obstacles that might come up.

Practical and Technical Guidance
This means making sure that your child's cochlear implant system is always working well, and helping you to be comfortable managing its different parts. You will get information about the different parts, troubleshooting, and basic upkeep like changing batteries. Then with time, your child's medical professionals will give you information about more advanced technologies, like assistive listening devices (ALDs), that can further support your child's hearing.
You can help your child to develop communication skills even before receiving a cochlear implant. The strategies and activities below are ones that you can use in the days, weeks, or months leading up to your child’s implantation.

**Meaningful Interactions**
Make every interaction a meaningful one. Get your child’s attention before you start communicating, and give non-verbal information like smiles and nods as you talk. When your child tries to communicate with you, or with other people around them, make sure that someone responds. By seeing that interactions are meaningful, your child will be more motivated to have back-and-forth communication with people around them.

**Build Routines**
Interact with your child in a similar way each day. This builds routines, and routines help your child to better understand what’s going on. By starting to build routines before your child receives a cochlear implant, you are helping your child to experience predictable activities. This can help to lay the foundation for good listening behaviour after implantation. After your child starts hearing with their cochlear implant, they will begin to pair the new sounds and speech with the already-learned routines.

**Singing With Your Child**
Singing with your child can bring you closer together, and will also help them develop listening and language skills. Before the cochlear implantation, hold your child close to your body so they can feel the song’s rhythm through vibrations. Then, after the implantation, sing the same songs. This will help your child to learn the sounds and spoken language of these songs they already know.

**Involve Your Family**
It can help to teach your child’s siblings and grandparents—anyone close to them—about cochlear implants. Because your family will likely play a big role in your child’s social life, having a support network that understands their cochlear implant, and knows how to properly communicate with them, will help them learn more easily. You could explain what a hearing implant is, and how it works. Or, give them information similar to what is in this brochure.
After receiving a cochlear implant, your child should wear their audio processor whenever they’re awake. This is because the audio processor may be the only way your child can hear sound, so without it rehabilitation would not be effective. Meaningful exposure to sound, during all waking hours, is what’s necessary for your child to properly develop communication skills.

### Talk About Everything
Talk about what you are doing, while you are doing it. Talk about what your child is doing, while doing it. If you are getting dressed, talk about the different items of clothing and how you are putting them on. If you are eating a meal, talk about the different foods, what they taste like, and the utensils that are used. The goal should be to expose your child to a wide range of words used in daily life. This will give them the best opportunities to hear speech and develop the skills they need to use it.

### Singing Songs
Just like you sang to your child before the implantation, sing after implantation. Singing gives your child the chance to listen to spoken words paired with the melody and harmony and musical flow that doesn’t exist in most normal speech. Sing the same songs that you did before their implantation, because this will give your child a chance to hear the words that go with a familiar rhythm or melody. As they learn these songs, introduce new ones so that they can keep developing their skills.

### Reading Books
Books are a fantastic resource for language skills. Start by reading along with your child for a short period of time, and point out which pictures are paired with spoken words. As your child’s listening skills develop, start to read for longer and longer periods of time and introduce new books to help them learn about different themes.

### Clinic and Home, Combined
Because your child will spend only a few hours per week or month with these specialists, even the best rehabilitation specialist can’t completely help your child to grow. That means it’s up to you to extend rehabilitation activities into your child’s day-to-day life. Ask your child’s specialists about what they are doing with your child and what you can do to support this at home.

### The Best Environment for Hearing
Language often develops in places where there are lots of extra sounds floating around. These environments can have a big impact on how well your child learns from any given listening experience. The best way to help your child get the most out of these experiences is by making the important sounds easy to hear.

#### At Home
At home, the best listening environment is one where there’s minimal background noise. Background noise is any sound that doesn’t directly involve who or what your child is communicating with. It could range from the TV to water running, the hum of electronics like fans or washing machines, or outside noises like traffic or a lawn mower.

You can help by minimising these noises: turn off appliances when they aren’t in use, or close windows or doors to block outside noise.

Noise can also happen when sounds echo off hard surfaces like wooden or tiled floors, windows or hard tables. Use soft fabrics like carpets, curtains, rugs, or pillows to reduce echoes and make it easier for your child to hear the important sounds like speech.

#### At School
At school, it’s also important to have as little background noise as possible. Your child will likely be in different rooms throughout the day, from classrooms to the dining hall or gym, so it can be difficult to make each room an ideal room for listening.

There are a few ways you can help to overcome this. First, talk with your child’s teachers. Explain that your child has a hearing loss and uses a cochlear implant. Ask the teacher to have your child seated near the teacher’s desk or podium and, wherever possible, reduce unnecessary background noise. Assistive listening devices can make it easier for your child to hear their teacher’s voice, because they can send the teacher’s voice straight to your child’s audio processor.
Throughout your child’s rehabilitation, the most important part is setting reasonable expectations. Each and every child will progress differently. There are many factors that influence how well your child’s skills will develop. These have to be considered individually for each child.

Because of this, it is important to keep in contact with your child’s audiologist and rehabilitation specialists. Tell them how your child is doing at home, and ask them how your child is doing in the clinic. By comparing this information you can learn what your child has already achieved and what skills are left to develop.

Ask your rehabilitation specialists which activities your child can do outside of the clinic, like at home or at school. This will help your child get the best opportunities to learn and develop listening and speaking skills throughout their life.

What to Expect From Rehabilitation

MED-EL has the widest and most comprehensive range of rehabilitation resources for cochlear implant recipients.

We know that one size doesn’t fit all. That’s why we’ve developed so many different resources to meet the different needs of our recipients. They can be used independently of each other, and allow your child to progress at their own pace. This means that you and your child’s rehabilitation specialists can choose the best activities to fit your child’s individual needs.

The Best Rehabilitation for Your Child

You can start today, with online games or free downloadable activities:

- Free brochures and printable resources: www.medel.com/rehabilitation
- Interactive listening games: www.medel.com/soundscape
- Smartphone apps: www.medel.com/listening-apps
- Blog articles from our rehabilitation specialists, posted weekly: www.medel.com/blog

Rehabilitation resources are also available through your child’s clinic. These range from CDs and other musical listening activities to illustrated story books and checklists that you can use to chart your child’s hearing development. For more information about which resources are right for your child, talk with your specialists or MED-EL representative.

Download

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Glossary of Common Rehabilitation Terms

Articulation: The pronunciation of sounds and words.

Assessment: Procedures and tests that identify someone's skill level, strengths, weaknesses, and needs for rehabilitation.

Audition: Being able to perceive sound.

Babbling: Producing sounds that repeat the same syllable (like “ba-ba”) or similar syllables (like “ba-ma-ba-ma”).

Body language: Gesturing, making facial expressions, or body movements to communicate without using words.

Consonants: Letters and sounds that are made by closing the throat, mouth or lips. B, F, M, and T are examples of consonants.

Communication: Having a conversation, or exchanging information, with other people.

Consonant-like sounds: A baby’s first sound, which sounds like babbling and includes consonants that are not yet perfectly spoken.

Delay: When someone’s skill level is below what’s expected for their chronological age.

Diagnosis: Identifying the cause of an existing condition. This is done through assessment, evaluation, and interpretation of someone’s clinical presentation and history.

Environmental sounds: Sounds that aren’t speech, like the telephone ringing, birds chirping, or traffic noise.

Gesture: Moving a part of the body to communicate. Pointing at an object is a gesture.

Goals: The measurable outcomes of therapy or rehabilitation.

Hearing loss: A partial or complete inability to hear sound.

Implicit or Incidental learning: Learning something without being told or shown its meaning directly.

Jargon: When an early talker uses sounds and syllables which sound like speech, but isn’t understandable and may be meaningless.

Language: The comprehension and expression of meaningful communication that follows a set of rules. It includes speech, gesture, reading, and writing.

Spoken language: Verbal communication that uses understandable language.

Syllable: A unit of a word that gives each word its rhythm. For example, there are three syllables in computer (com-pu-ter) and two in water (wa-ter).

Rehabilitation: Intervention, therapy, or treatment that focuses on developing a given skill or skill set.

Pre-verbal stage: When babies and infants interact with their environment through babbling, jargon, gesture, or vocalising instead of verbally using real words.

Phoneme: The shortest unit of sound that can be recognised, like /k/ or /l/. Phonemes are the building blocks of syllables and words.

Utterance: All the sounds that are said before pausing or stopping speaking.

Vocalisation: Any sound a person produces.

Vowels: Sounds that can be made without closing the throat, mouth, or lips. A, E, I, O, and U are all vowels.