

YOUR GUIDE TO

Living and Hearing

WITH A COCHLEAR IMPLANT



MED  **EL**



Living and Hearing as Never Before

During the first few months of hearing with your cochlear implant, you'll probably experience a wide range of emotions, both positive and negative. You'll experience the exhilaration of exploring the world of sound, and those closest to you will revel in your progress and joy.

However, there may be times when certain listening situations are still difficult, and will require some practice and patience.

Listening with a cochlear implant is indeed a journey. As you take steps along the way, you may choose to seek assistance from friends and family, or even professionals who can help smooth your path to a successful hearing experience.

Starting strong

Like many CI recipients, you may feel you've been given an opportunity to 'start again.' You're ready to move beyond your habit of nodding when you only hear part of a conversation, or pretending you've followed a conversation when you actually missed a key word. As you begin to approach life with renewed confidence about managing conversations and overcoming difficult listening situations, it's helpful to have a 'toolkit' of hearing tactics. These tactics include listening exercises, relationship management advice, knowledge of available assistive technologies, and other tips and tricks that can help you stay strong in your hearing journey.

Family and relationships

When you get a cochlear implant, it could become a life-changing event that affects your partners, family, and friends. Those closest to you can be your best allies, if their expectations are in sync with the goals you and your CI team are working to achieve. An involved family member or friend can greatly speed up your progress simply by explaining what sounds you are hearing. There are also some great listening exercises you can do in the comfort of your own living room.

However, there's no doubt that other people's expectations can put unnecessary pressure on you, and your relationships could possibly endure considerable strain in the early months following switch-on. Your partners may feel unwanted if you no longer need the constant support and interpretation they provided before implantation, creating confusion and guilt. This period of emotional adjustment is usually a temporary "bump in the road" that smooths out over a brief period of time.

Many CI centers encourage recipients to involve people close to them, asking them to attend rehabilitation sessions, participate in listening exercises at home and find other ways to be part of your progress. As they experience more of what you are experiencing, family and friends learn what to expect from a cochlear implant, and how they can best help in your rehabilitation.





Simple Listening Practice at Home

Life doesn't hold back, and you shouldn't either! Immediately after switch-on, you should get started learning to listen with your cochlear implant.

Don't waste any time in beginning to do these sample exercises with your spouse, a close friend or a family member:

1. Follow along as your friend reads a passage in a book. Ask your reader to stop at certain words, so you can speak the words out loud. After this exercise, have him/her randomly read any sentence in a paragraph, so you can guess which sentence it was.
2. Without relying on speech-reading, have someone voice:
 - Names of people you know
 - Simple sentences: "How are you?" or "Nice to meet you."
3. Listen to basic "read-along" children's books available on CDs or cassettes at the library. Work up to more challenging literature as your training progresses.
4. Listen to public radio. Talk shows are a good source of practice on the road – because they often deal with current news – giving you clues about the topic of conversation.
5. Try talking to a close friend or family member on a speaker phone. Listening via the speaker phone will allow your spouse or partner to clarify anything you miss. Be sure to prompt your caller before you begin - "speak slowly and clearly... use short sentences... stay on topic, etc."

See *Using the Telephone* on the next page for some telephone training tips.

take it all in...

After you get switched on, get out and about!

Go to restaurants, for walks, to a movie, out shopping – do anything you can do to "take it all in." Getting into everyday life strengthens your chances for a successful CI experience.

Life may sound strange and confusing at first, but you can't begin to learn how to use your new auditory skills unless you immerse yourself in sound.

85% of MED-EL recipients are able to use a standard or mobile telephone¹.

Using the Telephone

The telephone is integral to communication at home, in the workplace, and in social environments.

As a cochlear implant recipient, you can maximize telephone use through specific training, either with a phone “buddy” or a trained therapist.

Practice the following ideas with your buddy, pacing yourself for the best possible results. Also be creative with some ideas of your own!

LEVEL one

- Practice positioning the telephone receiver over the microphone on the audio processor. Using a speakerphone can be useful.
- Discriminate between different telephone tones.
- Practice hellos and good-byes, gender identification and caller identification.
- Ask your buddy to use a telephone “code” to answer simple questions you ask, such as “Yes-Yes,” “No,” and “I Don’t Know.” Codes are helpful if you are not yet able to use the phone well. The number of syllables provide a clue to the answer of the question.
- Practice simple conversational techniques:
 - Use prepared conversations with written text, like a section in a children’s book or from a newspaper
 - One-item questions – “Did you go by train?”

¹ Adams JS, Hasenstab MS, Pippin GW, Sismanis A. (2004). Telephone use and understanding in patients with cochlear implants. *Ear Nose Throat J.*;83(2):96, 99-100, 102-3.



LEVEL two

- Practice conversational techniques:
 - “Either/Or” questions – “Did you go by bus or car?”
 - Closed-set (limited set) questions – “Which day do you want to go?”
 - Open-set questions with a clue – “Where do you want to go?”

LEVEL three

- Progress from simple to more complex conversations with random sentences.
- Use a range of speakers with random sentences.
- Try different types of telephones - landlines and mobile phones, with a speakerphone.
- Practice in different listening environments.
- Work through interactive exercises such as making an appointment or ordering a take-out dinner.



How do I Choose a Phone?

Cochlear implant users can follow the same guidance offered to hearing aid users. CTIA --The Wireless Association -- has many excellent resources on selecting a cell phone on its website.

Always try a wireless phone with your cochlear implant before you make a purchase.

The Federal Communications Commission (FCC) defines hearing aid compatibility for wireless devices. Cell phones must be tested to see if they comply with the FCC's definitions.

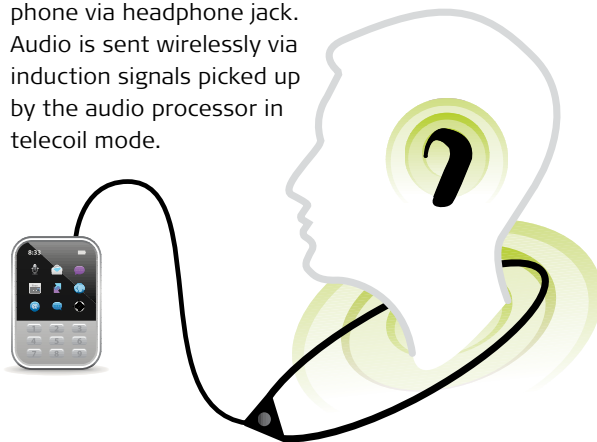
Cell phones rated M3 or M4 (M stands for microphone) meet FCC requirements and are likely to generate less interference for someone using a cochlear implant. M4 is the better of the two ratings.

Cell phones rated T3 or T4 (T stands for telecoil) meet FCC requirements and are likely to be usable with the telecoil in the cochlear implant sound processor. T4 is the better of the two ratings.

Cell phones rated both M4 and T4 provide the best compatibility with hearing technology. MED-EL's OPUS 2 processors have a built-in telecoil.



A telecoil neckloop is connected directly to the phone via headphone jack. Audio is sent wirelessly via induction signals picked up by the audio processor in telecoil mode.



Using the Telecoil Feature with the Telephone

A telecoil is a special circuit inside the audio processor designed to pick up electromagnetic signals. These magnetic signals – or induction signals – are wirelessly transmitted to the audio processor by using an assistive listening device (neckloop or silhouette), or by directly using the telecoil on the phone.

Assistive listening devices (ALDs) are great tools for learning to use the telephone because they minimize any background noise, helping you focus more on listening through the phone. By using a telecoil accessory (like a neckloop), you can take advantage of the wireless connectivity that can provide a much clearer sound. Look at the visuals on the right for some various setups that use the telecoil function.

Using a telecoil-equipped phone, audio is delivered directly to the audio processor that is in telecoil mode.



A Bluetooth®-enabled phone wirelessly communicates with a Bluetooth neckloop. Audio is sent wirelessly via induction signals picked up by the audio processor in telecoil mode.





Listening to Music

Like learning any skill, music appreciation takes practice. Some CI recipients say they have improved their appreciation of music simply through dedicated practice in listening to music.

You might try focusing more on the rhythm of music by listening to songs you knew well before you lost your hearing. It seems the brain and its memory of the sound of music prior to hearing loss can help fill in the missing information.

You can also use trial and error, making note of specific songs you like better than others. Try a selection by a soloist that features a quiet guitar and drum accompaniment with a clear and simple beat. At first, such simple orchestration may sound better through your CI than symphonic music without lyrics that uses many instruments playing complex melodies at the same time.





CI recipients who seem to have the best music perception have devoted time to “train their brains” to hear music. Many of them report that musical appreciation seems to improve considerably after 6-12 months of CI use.

Tips for Music Listening

Keep these tips handy to help you fully realize your music listening experience. Congratulate yourself every time you practice and make progress!

1. Make sure the sound quality is good (MP3 players, CDs, and adequate volume control – since too much volume will distort the sound).
2. Choose a comfortable environment (quiet, relaxing, no echo).
3. Use headphones or a direct connect system.
4. Start with a simple piece (solo, not ensemble, repetitious). You might look on the Internet by typing “piano solo” or “guitar solo” into your search engine.
5. Select something familiar. Music you listened to before you lost hearing can be easier to understand – the brain helps fill in the gaps.
6. Find music with a strong beat (rock, hip-hop, etc.).
7. Broaden your musical tastes (classical, pop, country, rock, folk, etc.).
8. Engage your sight and use visual cues (watch live music or music DVDs to help identify rhythm and beat).
9. Find the lyrics. Type the title and “lyrics” into a search engine, or try and find a performance of the song or instrumental piece at www.youtube.com.
10. Talk with other cochlear implant recipients.
11. Use trial and error by sampling different styles and practice identifying sounds and instruments.
12. Learn to play an instrument, join a community chorus or church choir, or take music therapy.
13. Have fun and *don't give up!*



Using direct-connect with an audio cable



Using a telecoil neckloop



Using telecoil directly with a telephone



Using direct-connect with ear-level receiver

Using Assistive Listening Devices

There are times when additional technology is useful for an even more improved listening experience – such as hearing a performance, a teacher in the classroom, or even to provide a quieter more personal hearing experience from your television, iPod, or telephone.

Assistive Listening Devices (ALDs) are hearing products that are designed to bring sound closer to the listener. They can be used with or without hearing devices (hearing aids, cochlear implants) to overcome certain effects that may compromise a listener's experience – such as background noise, distance from the speaker, or poor room acoustics.

ALDs can be used in theaters, classrooms, conference rooms, places of worship, museums, theme parks, and even your own home. These devices can offer greater ease of hearing (and therefore reduced stress and fatigue) and provide an even more enjoyable listening experience.

Wireless Accessories

A **telecoil** is a special circuit inside the audio processor designed to pick up electromagnetic signals. These signals – or induction signals – are wirelessly transmitted to the audio processor by using either a neckloop, silhouette, or induction loop systems.

Bluetooth is a low-power, short range technology that wirelessly connects cell phones (or MP3 devices, PDAs, computers, etc.) to a compatible receiver. Some receivers can be connected directly to the audio processor or is used with a headset or telecoil accessory.

Direct-Connect Accessories

Ear-level receivers (commonly called FM receivers) are direct-link devices connected directly to audio processor(s). Once the transmitter is activated, the audio processor will automatically receive the sound signal.

MED-EL provides a variety of **audio cables** that works with the majority of audio devices (iPods, FM systems, PDAs, etc.).

Maximizing Listening and Communication

When you find yourself in a “less than optimal” listening situation, one of these strategies can help:

Location, Location, Location

- Try to avoid rooms with poor acoustics, and arrange meetings in rooms with less reverberation.
- Arrive at meetings early, so you can get an optimal seat close to the speaker, but far away from a wall.
- Ask the speaker to speak in an area with good lighting so that you can easily use your speech reading skills (and observe facial expressions, gestures and body language).
- When you're in a restaurant or other public place, request a quiet location and sit with your back to a window or light source, so you can see the speaker's face more clearly.
- If someone is talking to you from a distance or another room, go there or ask the person to come to you.
- Request that a microphone or assistive listening device be available at meetings.

Guide Your Speaker

- Ask people speaking to you to talk clearly and naturally, without shouting or exaggerating. You may need to request that they stop eating, smoking, or covering their faces while talking to you to gain clarity.
- To aid your understanding, don't hesitate to ask your speaker to repeat or rephrase a statement. Repeat back what you heard to be sure you understood correctly.
- Try to relax. Becoming tense often results in missing important information and making more mistakes.



Stay on Topic

- Understanding speech while discussing a familiar topic is much easier for most people. Try asking a family member or co-worker for key words about the topic.
- Before going to a movie or the theater, read reviews in advance to familiarize yourself with the plot.
- Try to identify the ideas being discussed rather than understanding every word. Use information from the speaker to get the gist of what is being said.
- When someone is giving you important information, ask him or her to write down the crucial parts for you.
- Summarize what you have heard to ensure that you have understood the message correctly.
- If you enter a group in the middle of a conversation, ask someone to sum up what's already been discussed.



Auditory Rehabilitation

Nothing is most important to realizing the benefits of having a cochlear implant than auditory rehabilitation therapy. Improvements following initial programming sessions tend to happen quickly, but further improvements can surface for many months and even years. The involvement of your family and friends in the therapeutic process greatly enhances success.

You can expect therapy programs to include some or all of the following components:

- Counseling
- Auditory training, including analytic skill development
- Communication skills training
 - Conversational techniques - Repair strategies
 - Assertiveness training - Interpersonal skills
 - Coping mechanisms
- Voice therapy
 - Articulation - Voice and resonance
 - Rhythm - Timing
- Speech production training
- Speech reading
- Guidance
 - Information on the auditory system and hearing loss
 - The effects of hearing loss on communication
 - The impact of background noise and poor listening conditions
 - The importance of visual input, audiovisual integration and attending behavior
 - The impact of talker differences and social conditions
 - Benefits and limitations of speech reading
 - Benefits and limitations of assistive devices
 - The use of community resources
 - Self-help groups

Depending on individual needs, therapy goals may include:

- Development of realistic expectations
- Systematic auditory and auditory-visual training
- Communication skills training

Helping Your CI Team Help You

"After you've received your audio processor, that's when the work begins" is a phrase you often hear at CI user group meetings. Whether it's more or less true for you depends on you as an individual, the situation, and your goals and abilities. CI systems and rehabilitation techniques have progressed rapidly since the early days of implantation. Today's CI teams include a range of professionals who can help you maximize CI use.

Feedback from you is essential in helping your CI team create the best program to meet your needs.

- What can you hear?
- What sounds do you recognize?
- What would you like to be able to hear?
- What are different situations like, and how important are these situations to you?
- Are there speakers/voices that are easier than others to understand?
- How would you rate the sound quality?

tips FOR YOUR CLINIC VISIT:

- Try to take notes; it is often difficult to recall everything you're told during a clinic visit.
- Use a variety of descriptions; give the clinician as much information as possible as you try to describe a particular sound or sound quality.
- Read your user manual and become familiar with your cochlear implant system.
- Experiment with the controls of your audio processor, so you can get a feel for what they can and cannot do in different situations.
- Share your hopes and ambitions for your hearing with your clinicians.





Care and Maintenance

Cleaning the Audio Processor

Use a damp cloth to gently clean the exterior of your audio processor; do not clean the external parts in or under water. Try to prevent water from running into the audio processor at the connectors, controls or the battery pack. The battery contacts are delicate, so they should not be touched unnecessarily. If the contacts need to be cleaned, use a cotton swab and a small amount of cleaning alcohol. Gently wipe dry after cleaning.

Note: Do not try to open the control unit of your audio processor. Doing so will void the warranty.



Drying the Audio Processor

MED-EL recommends that you dry your audio processor with a drying kit on a daily basis, preferably overnight. The frequency of drying is dependent on the environmental humidity. For example, high atmospheric humidity or perspiration may increase the need for frequent drying.

The drying kit provided with your audio processor should be used as follows:

- Thoroughly wipe the external parts of your audio processor with a tissue and let dry completely.
- Ensure that the drying kit is completely dry before placing the audio processor inside of it.
- Activate the desiccant and place it into the kit.
- Place your audio processor into the drying kit, close the lid, and begin the cycle by pressing the On/Off button.
- After use, the activated desiccant should be kept in the carefully closed kit to prolong its life. The desiccants should be stored out of reach of children.

hearLIFE

MED-EL is committed to enriching the lives of people with hearing loss through innovative, leading-edge technology and medical science. Our goal is to provide a whole new world of hearing and a whole new way of living, never forgetting that people and relationships are at the heart of everything we do.

For a list of cochlear implant audiologists by state, visit www.medel.com. Email us at implants-usa@medel.com or call us toll free at 888-633-3524 for more information.

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