



## Early Expectations for a Child with a Cochlear Implant

Families often have many emotions about their child's cochlear implant (CI). One common feeling is of uncertainty. Parents are unsure of what changes they will see and when their child might talk. Surgery and being fitted with external equipment begins the process. The first use of the activated implant is awareness of sounds. Family members can be very involved in helping a child develop a range of listening skills. As a child increases his listening and understanding, his speech skills can expand.

### Mapping

The sounds transmitted through a CI are not the same as those heard with a hearing aid. A child's brain needs practice recognizing these new sensations as sound. How quickly a child uses his CI depends on many factors including when he was deafened, when the loss was diagnosed, the time between diagnosis and implantation, the amount of hearing provided by hearing aids and the cause of the hearing loss. All these factors and more impact a child's recognition and understanding of new sounds.

After implant surgery there are several follow-up appointments to program or MAP it. When the CI is first activated a child might become very quiet or his vocalizations may increase. He may not yet be attentive to other voices or sounds. These varied beginning responses are a natural part of the listening process but parents often worry that the implant is not working. Learning to listen takes time and the family can feel assured that few or no responses can be typical at the start.



After the initial mapping is complete, most children visit their audiologist every 3-4 months. The audiologist can suggest expectations for the child's responses. Families, teachers and therapists can help document their observations of how the child is meeting those expectations. Parents can also request additional appointments at any time if their child's responses change unexpectedly.

### Listening

A child with a CI discovers and uses sound through the same developmental steps as a child with typical hearing. During the first three months after the implant is activated, parents may notice spontaneous reactions when certain sounds are heard. A child might look up or startle slightly. Then the child may begin to search for the sound as he looks in the direction of what he hears.

A child learns to listen from parents talking, singing and pointing out sounds. Parents might use "bye, bye" "uh oh" and other sing-song words in addition to typical speech. Sounds from the microwave, musical toys, water running or an airplane overhead are examples of natural events that can be part of early listening. A family's enthusiasm and interest in sounds can encourage a child to be aware and become excited about many sounds around him.

The developmental stages for listening are detection, discrimination, identification and comprehension.

### Detection

The first level of listening is an increasing awareness of sound. A child might now show interest or reactions to an increasing amount of sounds. Parents can call attention to different sounds and search with their child for sound sources to encourage increased “detection”.

### Discrimination

The next level of auditory development is noticing differences between sounds. A child now might repeat “mmm” after someone says “yummy”. He does not yet understand the meaning of sound but he is able to “discriminate” between sounds.

### Identification

Identification involves making associations with sounds. A child now might look toward the door when knocking occurs. He may not yet know that the sound indicates Grandpa is at the door but he is able to “identify” the source of the sound.

### Comprehension

Understanding what is heard is a more complex skill developed after detection, discrimination and identification. A child now shows he knows the meaning of some sounds or words. If he gets the shoes when asked to do so and tries to put them on, he “comprehended” what was said!

As a child advances through these stages, families can create multiple listening opportunities throughout the day. Parents can use many ways to help a child become a better listener. Suggestions appropriate for babies and preschoolers include:

1. Play together and talk in play. Use words, make sounds for motions and invent noises for toys.
2. Enjoy songs, rhymes and acting out familiar verses. Encourage him to participate with you.
3. Read books. Use voice inflection and demonstrate many levels of speech and types of sounds.
4. Talk about what he is doing. When he is watching you, describe what you are doing too.
5. Listen and move to music. Explore turning on and off toys and objects that make sounds.

6. Point out sounds occurring both indoors and outdoors and especially for things he enjoys.
7. Pause first to give your child time to think about and then react to sounds and speech.

### Talking

Early expectations for a child with an implant include increased attention, listening and communication. A child’s hearing or CI age can be measured in weeks and months. With much daily experience, special services and ongoing support, the goal is for a child’s listening skills to eventually match his chronological age. Together with their speech and hearing team, parents can guide their child through systematic and successful experiences first in listening and then in speech. Learning to be a listener is complex skill and the first fun step using a CI! Then comes talking!