



Habilitation Outreach for
Professionals in Education

HOPE Note

Auditory Skill Development



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Auditory performance with a cochlear implant can be described using four broad categories of auditory skill. In younger children, development of auditory skills occurs in a more naturalistic fashion in which all skills are targeted simultaneously. For older children development of auditory skills may be more linear and systematic. The following HOPE Note provides information on the hierarchy of auditory skill development that is essential for assessing current ability, targeting intervention goals and providing habilitation to children with cochlear implants.

A number of researchers and interventionists have proposed models of auditory skill development. While there may be some differences between and among models, it may be sufficient to consider five major stages of auditory skills development for children who use implants.

- **Detecting** or hearing a sound without knowing what made the sound or what it means. This is generally the first listening behavior observed after implantation.
- **Patterning** or differentiating between sounds based on the patterns of those sounds. For example, a child may be able to tell the difference between sounds that are long versus those that are short or a one-syllable word versus a polysyllabic word.
- **Discriminating** or determining if two auditory stimuli are the same or different. This auditory skill is

not one specifically designated for instruction, rather it is used as a tool to compare and contrast listening targets.

- **Identifying** or repeating what has been heard or selecting a word from a group of choices. This listening skill is supported by a good vocabulary and language base.
- **Comprehending** or processing spoken language and responding to it appropriately. For example, a child who answers a question through listening alone is demonstrating auditory comprehension.

Acquiring Auditory Skills

One may view the development of auditory skill from either of two perspectives: a top down, wholistic perspective or a bottom-up, building block perspective.

Top-Down Approach: Considered the more naturalistic of the two perspectives, listening skills are both the process and the product of easy communication between young child and caregiver. Auditory access provided by the cochlear implant gives young, severely to profoundly deaf children the greatest potential to develop auditory skills in a naturalistic, but facilitated manner. This most parallels skill development in hearing children in which auditory skills (and the language development that follows from their



acquisition) are facilitated but not specifically taught. Input by the adult caregiver or speech and hearing professional is abundant and purposeful; the child absorbs language through listening as part of overall cognitive development.

Bottom-Up Approach: Children who are somewhat older and/or who have learning challenges in addition to deafness may benefit from more directed listening experiences in which specific auditory skills are introduced and practiced until mastered. This is no less a path to auditory comprehension, but it generally requires more detailed planning and systematic presentation to the child. The rate at which a child develops auditory skills will depend on a number of factors, some of which are within the control of the school-based professional while others are not. Some children benefit from a period of directed listening early on in the process and transition to more natural skill development once auditory access has been “jump started.”

Language and Listening

There is a complex relationship between listening and language such that advanced auditory skills may be observed in the context of simplistic language, and complex language forms will dictate a return to previously acquired auditory skills. In some circumstances, the development of auditory skills is hampered by limitations in vocabulary and incomplete language learning that occurred prior to implantation. When this is the case, as in older children receiving implants, it is incumbent upon the speech and hearing professional to monitor absolute auditory skill development (using assessments that take a child’s language ability into account) in order to determine auditory progress with the device. Regardless, the interventionist will work toward moving auditory skills along a continuum with the ultimate goal of having audition contribute to subsequent language learning.

Related Resources

Caleffe-Schenck, N. (2006). *An Auditory Approach: Focus on Children with Bilateral Cochlear Implants*. HOPE Online Library. Available at www.cochlear.com/HOPE.

Cochlear Americas. (2005). *Getting Started--For Pediatrics featuring Nancy Caleffe-Schenck* (FUK 054) (CD-Rom, Free). To order, call Cochlear Americas 800.523.5798 and ask for Customer Service.

Chute, P., & Nevins, M.E. (2006). *Developing Auditory Skills: Thinking Outside the Box in School Professionals Working with Children with Cochlear Implants*. San Diego: Plural Publications.

Erber, N. (1982). *Auditory Training*. Washington D.C.: AG Bell Publications.

Madell, J. (2006). *Maximizing Listening and Learning*. HOPE Online Library. Available at www.cochlear.com/HOPE.

McClatchie, A., & Therres, M.K. (2003). *Auditory in AuSpLan: Auditory, Speech and Language: A Manual for Professionals Working with Children Who Have Cochlear Implants or Amplification*. Children’s Hospital and Research Center at Oakland. Available at www.agbell.org.

Moog, J., Biedienstien, J., & Davidson, L. (1995). *Speech Perception Instructional Curriculum and Evaluation (SPICE)*. St. Louis, MO: Central Institute for the Deaf.

Nevins, M.E., & Garber, A.S. (2005). *Getting Started with Auditory Skills*. HOPE Online Library. Available at www.cochlear.com/HOPE.

Nevins, M.E., & Garber, A.S. (2005). *CLIC-IT! Creating Listeners in the Classroom - Ideas for Teaching*. HOPE Online Library. Available at www.cochlear.com/HOPE.

Pollack, D., Goldberg, D., & Caleffe-Schenck, N. (1997). *Educational Audiology for the Limited Hearing Infant and Preschooler: An Auditory-Verbal Program*. Springfield, IL: Charles C. Thomas.

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