



Habilitation Outreach for
Professionals in Education

HOPE Note

The Newly Implanted Preschooler



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While cochlear implantation is available for children as young as 12 months of age, some children receive implants at a later time. These children have an excellent opportunity to catch up to their hearing peers, especially if they receive a habilitation program that takes into account their auditory and language experiences prior to implantation. The following HOPE Note addresses considerations for designing a comprehensive intervention plan for newly implanted preschool aged children.

Among the many variables affecting anticipated performance with a cochlear implant, length of deafness can be considered to be one of the most influential. Children that receive cochlear implants in the preschool years, ages 3 to 5, have experienced an extended period of deafness that challenges their development of spoken language skills, but does not preclude it. Because the preschool aged implant recipient may have had more visual than auditory access to the world as a way to catalogue previous experience and learning, the task of speech and hearing professional is three-fold: developing listening skills for accruing new information auditorily, creating links to information stored previously as visual input, and overlaying structured listening tasks with a naturalistic approach to auditory and language skill development as quickly as possible.

Developing Auditory Skills

It is generally recommended that young children who receive cochlear implants have the opportunity to develop

listening skills in naturalistic exchanges in a manner that follows auditory development in hearing youngsters. As their length of deafness increases, however, this natural approach must be supplemented by a more systematic development of listening skills.

Because **detection** of speech and environmental sounds is one of the immediate outcomes of implantation, there is no need to "train" this rudimentary skill. The interventionist will want to make links between new auditory perceptions and the child's knowledge base. If a child alerts to a sound, it should be identified.... "That's an airplane, I hear it too!" In this way, sound awareness is reinforced, rather than individually targeted. **Pattern perception** is an auditory skill that allows a child to differentiate between sounds, words, and sentences based on suprasegmental cues such as duration, syllable number or sentence length. This is a skill that can be readily observed after implantation and the speech and hearing professional can use a child's existing vocabulary and language base to develop this ability. Age appropriate listening games and activities are recommended for this type of skill development especially when content or theme based classroom materials are incorporated. Nursery rhymes and fingerplays are excellent tools for developing patterning skills for the preschool aged cochlear implant recipient.

The auditory skill of **segmental identification** requires that the child

Hear now. And always



hear more than patterns of syllables or intonation. For the preschooler using a cochlear implant, utilizing Learning to Listen Sounds (see Estabrooks reference) for familiar objects and actions may be one technique for bridging to real word usage by combining suprasegmental and segmental features that provide optimum contrast between words. These Learning to Listen Sounds can also offer the young child opportunities for vocal play that are developmentally appropriate given the child's hearing age.

The highest level of auditory skill, **auditory comprehension**, demonstrates that the child can process and respond to information presented through listening only. Children should be encouraged to use listening for comprehension especially in routine situations in which the context and form of the language are known to the child. Encouragement for functional listening at all levels of auditory skill development will serve to reinforce the utility of listening in gaining information about the world. Pretend play activities such as having a tea party or giving baby a bath, are excellent vehicles for expanding functional listening skills into natural language contexts.

A Developmental Model

When developing lesson plans for young children with cochlear implants, the educational professional can feel confident that his or her knowledge of normal language development is the best pattern for setting auditory and spoken language goals. Children that receive implants at young ages have been found to acquire speech and spoken language benchmarks in much the same sequence as children with normal hearing. Just as with a younger child, babbling and vocal play are noted as children become auditorily aware of their voices, jabbering is observed as children identify rhythms and intonation of conversation and songs and words develop as children match words and phrases with experiences and objects. By using a developmental model as a guide, the educational professional can easily pair auditory stimuli with age appropriate toys and activities to achieve spoken language goals both in natural and structured settings. The opportunity to infuse listening into classroom themes and vice versa is ever present.

Links to Information Acquired Prior to Implantation

The school-based professional will not want to overlook the store of world and language knowledge that the child acquired before implantation. While it is not recommended

that systematic transfer of visual language and world knowledge to an auditory representation be undertaken, there is utility in helping create listening links to previously acquired speech, language and world knowledge. This may be best accomplished in the preschool classroom combined with one-on-one intervention including parent demonstration as often as possible. In this way, new auditory skills can be developed and practiced in the context of familiar vocabulary, language and content. Conversely, acquired auditory skills may be practiced when introducing new themes. As the child becomes successful, generalizations to information gathering through audition may be facilitated.

Related Resources

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.

Cochlear Ltd. (2003). *Listen Learn and Talk*, Tapes 2 and 3: "Toddlers Talk" and "Children Chatter". Australia. To order, visit the HOPE Education and Rehab section of the Cochlear Online Store: www.cochlear.com/shop.

Cochlear Americas. (2004). *(Re)Habilitation Factors in Cochlear Implant Resource Guide*. Englewood, CO. To order, visit the HOPE Education and Rehab section of the Cochlear Online Store: www.cochlear.com/shop.

Estabrooks, W. (1998). *Cochlear Implants for Kids*. Washington, D.C.: AG Bell Publications.

Moog, J., et al. (2003). *Teaching Activities for Children who are Deaf and Hard of Hearing: A Practical Guide for Teachers*. St. Louis: Moog Center Publications: St. Louis. Available through publications@moogcenter.org.

Nevins, M.E., & Chute, P.M. (1996). *Children with Cochlear Implants in Educational Settings*. San Diego: Delmar Learning.

Pollack, D., Goldberg, D., & Caleffe-Schenck, N. (1997). *Educational Audiology for the Limited Hearing Infant and Preschooler: An Auditory-Verbal Program* (3rd ed.). Springfield, IL: Charles C. Thomas Publisher Ltd.

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