



Habilitation Outreach for  
Professionals in Education

# HOPE Note

## Cochlear Implants and Special Populations



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Increasingly, children with special needs in addition to hearing loss are receiving cochlear implants and using them to develop auditory skills beyond those first believed possible for children with challenges in addition to deafness. The following HOPE Note discusses considerations for identifying and setting realistic expectations for working with children in these groups to assist them in reaping the benefits of implant technology.

In the early years of cochlear implantation, candidacy criteria required that a child present with no complicating developmental or medical factors beyond profound deafness. As the benefits of the cochlear implant were documented, however, cochlear implant centers across the country began considering the possibilities that auditory access might afford children with a variety of special needs. As with any child, all aspects of a medical and developmental profile are considered along with auditory history, family support and educational placement in order to best predict that child's potential outcome with a cochlear implant. At the time of candidacy, special needs can be categorized into two broad groups that will aid the professional in counseling parents and setting realistic expectations: children with physical challenges and those with cognitive challenges.

### Children with Special Physical Needs

A small number of children experience medical conditions that complicate implant candidacy because of the risks of surgery. Other children present with developmental conditions that require modifications to rehabilitation activities. In both these circumstances, however, the potential for auditory skill development is not necessarily limited. For example, children with cerebral palsy may experience physical/motor difficulties that will not affect their ability to process auditory information, but may affect their ability to develop expressive language through speech. On the other hand, children with visual impairment may require particular approaches to rehabilitation that accommodate their sensory needs, but will make clear auditory gains. Performance outcomes for these children will be the result of factors similar to other implant recipients: age at implantation, duration of deafness, family cooperation, educational support and auditory profile. Thus, early implantation for this group should yield gains in listening skills that will, in turn, support the near normal development of spoken language skills.

## Children with Factors that May Limit Auditory Potential

Other cochlear implant candidates present with known factors that complicate their potential for auditory skill development. Examples include cognitive delays, and identified language processing disorders or learning disabilities. In these cases, movement through development hierarchies may be slower than for other children that do not experience such complications. Regardless, it is likely that the majority of children who receive cochlear implants will, at a minimum, develop auditory skills beyond those that would have been possible with hearing aids. In fact, many professionals have found that once auditory progress has been made, the rehabilitative focus can shift toward the other area of challenge.

## Vigilance for Later Appearing Circumstances

With implant recipients now including children 12 months of age, the possibility that a child who appeared to be an "ideal" recipient at activation may manifest complicating factors in subsequent development cannot be discounted. Certain social/cognitive disorders (e.g. autism and Asperger Syndrome) do not become evident until approximately 2 years of age. In addition, many learning disabilities are not identified until a child reaches school age. For this reason, long-term performance expectations may need systematic adjustment to reflect new diagnostic information and are best set on a child-by-child and stage-by-stage basis.

## Measuring Success

Any given child's performance with a cochlear implant cannot be predicted. That being said, children who wear their implants for all waking hours will receive their own personal benefit from the device, and can all be considered successful users. For some children this may mean age level communication skills. For others it will mean improvements in sound awareness that allow for play with a wider variety of toys and improved social experiences that make a tremendous difference in the quality of their lives. In all cases, rehabilitation will focus on utilizing the child's strengths to maximize growth in the auditory domain.

## Related Resources

Chute, P. & Nevins M.E. (2006). *School Professionals working with Children with Cochlear Implants*. San Diego: Plural Publications.

Cochlear Americas. (2004). *(Re)Habilitation Factors in Cochlear Implant Resource Guide*. Englewood, CO. To order these materials visit [www.cochlear.com/HOPE](http://www.cochlear.com/HOPE) and view the Online Store.

Goldberg, D. & Perigo, C. (2006) *Auditory Learning and Cochlear Implantation for the Young Child with Multiple Disabilities*. Audiology Online archived session, HOPE Online Library. Available at [www.cochlear.com/HOPE](http://www.cochlear.com/HOPE)

Nevins, ME and Garber, AS (2005). *Benchmarks of Performance for Children with Cochlear Implants*. Audiology Online archived session, HOPE Online Library. Available at [www.cochlear.com/HOPE](http://www.cochlear.com/HOPE)

Perigoe, C. & Perigoe, R. (2004). Multiple Challenges – Multiple Solutions: Children with Hearing Loss and Special Needs. *The Volta Review*. Vol 104, Number 4. AG Bell Publications.

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