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PERFORMANCE BENEFITS AND COSTS FOR CHILDREN USING COCHLEAR IMPLANTS AND HEARING AIDS

The value of cochlear implants as an established clinical option for profoundly hearing impaired adults and children has been supported by significant research results over a number of years which has clearly established the benefits available (U.S. National Institutes of Health Consensus Statement 1995). Benefit has traditionally been considered as the direct impact of the cochlear implant procedure on speech perception, or in the case of children, on the use of that auditory information to develop understandable speech and to acquire a knowledge of language.

As a consequence of continuing research to improve hardware and speech processing strategies, mean scores on open-set tests of monosyllables or sentence materials for implanted adults using the cochlear implant alone without lipreading have continued to show an upwards trend. In response to the increased mean scores in quiet, perception tests in background noise are now being used as a more accurate direct measure of the potential benefits of cochlear implants to severely-to-profoundly hearing-impaired candidates.

Consideration should also be given to indirect benefits, such as reduction in the stress of listening and lipreading, improved performance at work, enhanced opportunity to maintain speech, or in children to develop speech which is understandable to the general community, and the social effects of reducing the isolating effects of profound deafness. Measurement of indirect benefit can be combined with an analysis of the costs of the procedure, enabling evaluation of the implant procedure from a cost-utility standpoint, and a comparison of outcomes using other technologies such as hearing aids.

This study will present data on direct and indirect benefits for hearing-impaired children using Nucleus cochlear implant systems, and compare this data with benefits shown for similarly hearing impaired children using hearing aids. The significance of these results to cost-effective delivery of services will be discussed.

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