AMERICAN COCHLEAR IMPLANT ALLIANCE

Research. Advocacy. Awareness.

Position Paper: Pediatric Habilitation Following Cochlear Implantation

ABOUT US

The American Cochlear Implant Alliance (ACI Alliance) is a non-profit, 501(c)3 whose mission is to advance the gift of hearing by cochlear implantable prosthetic hearing implants through research, advocacy and awareness. The membership includes those who provide intervention (e.g., ENT surgeons, audiologists, speech-language pathologists), other professionals on implant teams (e.g., educators, psychologists, researchers), parents of children with cochlear implants, and other advocates. For more information: **www.acialliance.org.**

This document defines appropriate speech/language habilitation services for children following cochlear implantation. It provides a rationale based upon state-of-the-art research and clinical findings. Speech-language habilitation for children after cochlear implantation falls under the definition of "habilitative services" crafted in 2010 by the National Association of Insurance Commissioners. It defines habilitation, in part, as:

"Health care services that help a person keep, learn, or improve skills and functioning for daily living. Examples include therapy for a child who isn't walking or talking at the expected age."

RATIONALE

Recommendations are not based upon a single factor; but rather on evidence from five domains of knowledge and practice that reinforce one another and provide a compelling rationale. These are:

1. Independent research studies of children with cochlear implants have documented that, on average, these children receive one to two (1)-hour speech/language habilitation sessions per week (Dettman et al., 2013; Dornan et al., 2010; Rhoades, 2001). These findings apply to children who develop spoken language in synchrony with their hearing peers as well as those who demonstrate "catch up" growth. Domain: Clinical Outcomes Research

2. When a child with hearing loss demonstrates a delay in spoken language relative to his/her chronological age, the amount of habilitation time needed to close the gap is directly proportional to the delay. In other words, if a child receives amplification at 18 months, clinical experience suggests that it takes about three years of habilitation to achieve speech and language skills equivalent to a hearing peer (Flexer and Richards, 1998). Domain: Clinical Management Reports

3. Deafness causes a child's brain to re-organize in the absence of consistent auditory input. Without sound, areas of the brain designated as auditory centers are assigned to other sensory modalities, such as vision or touch. After stimulation of the auditory cortex of the brain via cochlear implants, there is urgency in providing rich and consistent auditory-based habilitation. Only limited time is available within the sensitive period of cortical development to intervene with habilitation (Gordon et.al.,2011; Kral, 2013; 2011; Sharma, Nash, & Dorman, 2009; Sharma & Campbell, 2011). Domain: Neuroplasticity Research

4. To achieve maximum benefit from cochlear implants, children need ongoing, consistent habilitation, rather than episodic services occurring as a result of a limited number of sessions allowed in a given benefit year. Experts in pediatric communication endorse the notion that professionals must use evidence and clinical decision making to individualize recommendations for each child (Bailes, Reder, & Burch, 2008). Major changes occur in children's communication skills over a period of four years—the last 2 years involve the most "catch up growth" (Lin, Niparko, & Francis 2009.). Domain: Habilitation Best Practices

5. When analyzed over a lifetime, children who are denied the benefits of cochlear implantation have demonstrated a dramatically disproportionate shortfall in quality of life relative to other disease states (Lindemark, Norheim, & Johansson, 2014). The negative economic impact of lifelong hearing loss, referred to as "societal cost of deafness," is reduced dramatically when interventions such as cochlear implants and appropriate follow-up habilitation are provided (Mohr et al., 2000; Lin, Niparko & Francis, 2009). The savings to society may be as high as one million dollars over the lifetime of an individual born with severe/profound hearing loss (Mohr et al., 2000). Domain: Health Economics Research

RECOMMENDED HABILITATION STANDARD

Based upon the published evidence reviewed above, 50 to 100 (1) hour speech/language habilitation sessions are recommended per year for pediatric cochlear implant users. Helping a child learn to understand and utilize the hearing benefit provided by a cochlear implant is a complex process that requires expertise and specialized training. Because of this, speech/language habilitation should be provided by a professional who is knowledgeable about the hearing and listening needs of the child with a cochlear implant. In order to obtain optimal outcomes, such habilitation typically involves provision of service and coordination by all professionals involved in a child's care. As each child is unique, health care providers will make individual recommendations as part of their management of the child. Some children may require fewer habilitation sessions, while others may require more.

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