Welcome to this Live e-Seminar!

We will begin at the top of the hour. Thank you for joining us!

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Reaching Benchmarks of Performance
HOPE Specialists: Ashley S. Garber, MS CCC-SLP and Mary Ellen Nevin, Ed.D.

Introduction
Cochlear America’s Commitment to Educational Outreach

Agenda

- What are Benchmarks?
- General Expectations
- Adapting Benchmarks
- Case Examples
- Summary/Question and Answer

Benchmark Auditory Behaviors for Children with Cochlear Implants

- In the twenty years that performance data have been gathered on children with cochlear implants, trends of auditory achievement have emerged

What is a Benchmark?

- A benchmark auditory behavior is one that, all things being equal, can be expected within a certain time period after implantation
- Benchmark behaviors don't just appear; they are skills that need to be developed
How are Benchmarks Used?

• Benchmarks are used to monitor progress of a particular child against group trends
• Challenges to meeting benchmarks are often identified at the time of candidacy
• Knowledge of benchmarks allows the speech and hearing professional to be vigilant with regard to a child’s potential to maximize the benefits of the implant
• Discrepancies between expectations based on candidacy profile and actual outcomes require further investigation

Caveats on the Use of Benchmarks

• The simple use an implant alone will not guarantee a particular performance outcome
• One cannot conclude that the child is not meeting benchmark behaviors if no auditory opportunity has been provided
• Particular benchmarks will appear as a result of targeting and practicing specific auditory skills

Benchmarks for Children Implanted by Age Two

Moog, 2003

• Factors affecting a child’s potential to reach benchmarks include: normal intelligence, consistent implant use, appropriate MAP, no speech/language issues
• Consider that these guidelines were developed based on a group of children enrolled in a small instruction, auditory-oral program

Almost Immediately after Activation

Moog, 2003

Children

• detect speech sounds across all frequencies
• detect the Ling 6 Sounds
• detect a variety of environmental sounds

0-4 Months after Activation

Moog, 2003

• Children seem to be intent on listening; because they are very young it is difficult to assess what they are truly understanding
• This phenomenon parallels the stages of normal development in which children process auditory input for a period of time before spoken language output is observed

4-6 Months after Activation

Moog, 2003

Children:

• identify at least 35-50 words (mostly nouns and verbs) in closed sets in structured listening lessons
• use some single words to express their needs and wants in routine and naturalistic contexts
• name most of the items or actions they understand
• produce recognizable approximations (matching syllable contour and a vowel or a consonant) of modeled words
1 Year after Activation

Children:
- identify 75-100 words (nouns, verbs, early prepositions and adjectives) through objects or pictures in closed sets of four
- produce many of the words identified in closed sets
- develop understanding of early two word combinations (noun-noun, noun-verb, verb-noun)
- produce some early two word combinations in lesson setting
- use single words and some common expressions to communicate thoughts and ideas in routine and natural settings

Moog, 2003

15-18 Months after Activation

Children
- experience an explosion in language
- learn vocabulary incidentally
  - Increase in total vocabulary to more than 250 words
- comprehend simple 3-4 word sentences
- use a variety of two word combinations across all contexts

Moog, 2003

2 Years after Activation

Children:
- possess a vocabulary of more than 500 words—too many to count
- comprehend a variety of simple sentences and questions
- use 4-6 word sentences to communicate in all contexts

Moog, 2003

Learning with a Cochlear Implant

- After a period of "learning to listen" children have sufficient skills to transition to "listening to learn"
- As they listen to learn, each child’s development will become more idiosyncratic, suggesting a need for individualized goals and support

Adapting the Benchmarks

- Children implanted at older ages
- Children utilizing sign language
- Teenagers
- Special populations

Adapting Benchmarks to Different Populations
**Children Implanted at Older Ages**

- The extent to which auditory skills were acquired prior to implantation will influence the rate of progression toward benchmark behaviors
  - Good experience with hearing aids
  - Limited auditory access
- The richness of the child's language base may influence the ease with which the child uses auditory information to access that language
  - Visual language base
  - Limited language exposure
- Depending on previous auditory experience, habilitation may be more structured than natural

**Children Utilizing Sign Language**

- The relative emphasis that is given to spoken or signed communication after implantation influences the rate and ultimate achievement of benchmark auditory behaviors.
  - Targeting particular auditory skills will lead to benchmarks
  - Auditory skills can still be encouraged even if sign communication remains the vehicle for content instruction. Additional time to reach benchmarks and a long period of “learning to listen” should be expected

**Teenagers – Auditory Background**

- For these users, language development has already occurred so new auditory information can be easily applied to known concepts
- Rapid achievement of auditory benchmarks can be expected
- While teens may quickly demonstrate identification and comprehension abilities, fine discrimination skills may need to be a focus of habilitation
- Once accustomed to new auditory input, these users will continue to “listen to learn”

**Teenagers – Limited Auditory Experience**

- Transition to listening with the cochlear implant may be difficult
- Structured, targeted auditory practice will be necessary to facilitate auditory development in specific contexts
- It is critical for listening activities to be highly motivating and lead to immediate success
- The focus will likely remain at the “learning to listen” stage for these teens

**Special Populations**

- Children with cognitive delays will experience slower acquisition of auditory skills
- Children with non-cognitive delays should have equal access to the acquisition of auditory skills, but language/speech skills will be affected for those children with motor issues
- Success with the implant may be measured less by the achievement of auditory comprehension benchmarks than by improvements in sound awareness and identification
  - connectedness to the environment
  - improved interaction, quality of life

**Pages From Our Case Files**
Andy

• 4 year old child using an implant for 3 years
• Received amplification soon after identification at birth
• Typically developing youngster with age appropriate cognitive and motor milestones
• Participating in preschool program with hearing children

Benchmark Achievement - Andy

• Consistent use of amplification prior to implantation and intact cognitive/developmental skills suggested high expectations to be appropriate
• Achieved benchmarks faster than the pace mentioned above
• Early transition from “learning to listen” to “listening to learn”

Brittany

• 8 year old child using an implant for 2 years
• Prior to implantation, she was a steady language learner relying on sign and speech-reading to supplement the information she received from her hearing aids
• Currently in her first year in an auditory oral classroom

Benchmark Achievement - Brittany

• Consistent history of hearing aid use, but incomplete auditory access suggested that benchmark behaviors could be achieved
• Achievement of benchmarks mentioned above is expected to be slower
• Will spend more time “learning to listen” before accruing sufficient skills to rely on “listening to learn”

Summary

• Years of data collection have led to the identification of auditory trends or benchmark behaviors for children who use cochlear implants
• Appropriate consideration of the benchmarks should enable the speech/hearing professional to have high, but realistic expectations for a given child
• Challenges to success identified at the time of candidacy will influence expectations for meeting benchmarks
• Discrepancies between expectations at candidacy and actual performance signal a need for a case review by all speech and hearing professionals involved

Other resources

• Cochlear Implant Resource Guide
  – Expectations following activation
  – Considerations for sign users
• AuSpLAn
• Children with Cochlear Implants in Educational Settings (Nevins & Chute, 1996)
  – Children with learning challenges
  – Children implanted at later ages
Online Sessions – 2006

• Visit www.cochlear.com/HOPE
• Upcoming sessions:
  
  **Monday, December 12, 2pm ET**
  Audiology and Teachers (or Therapists) Working Together
  Betsy Moog Brooks, MS CED and Roxanne Aaron, MA CCC-A, FAAA
  The Moog Center for Deaf Education, St. Louis, MO

  **Thursday January 5, 3pm ET**
  Assessing Spoken Language, Its Role in Teaching More Effectively
  Jean Sachar Moog, MA
  Director, The Moog Center for Deaf Education, St. Louis MO

  **Thursday January 19, 4pm ET**
  When the Going Gets Tough: Shifting Perspectives on Performance Outcomes
  HOPE Specialists: Mary Ellen Nevins, Ed.D and Ashley S. Garber, CCC-SLP
  (Follow-up Chat January 31)

Would you like to participate in in-depth discussion?

• New this year, Cochlear Americas is offering live chat sessions for selected online topics
• Speakers are available for real time question and answer
• All past presentations are archived and can be accessed prior to chat for topic review
• Next up..

  **Monday, January 9, 3:00-3:45 pm ET**
  Live Q&A: Technology to Maximize Hearing in Children (archived session)
  Ginger Grant, MS CCC-A Cochlear Americas

Contact Cochlear

• Cochlear’s website
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