How Do I Prepare For A Student With A Cochlear Implant: Having A Child Who Is Deaf or Hard of Hearing In The Classroom

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Hearing Implant Program (HIP)
Head and Neck Institute
Cleveland Clinic
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From the University of Iowa
Begins August 23, 2010
&
Section Head, Otology
Begins January 2011
Agenda

- Audiology – The Foundation of It ALL!
- Know Your Speech Acoustics
- Room Acoustics
- Acoustic Modifications/Accommodations
- Instructional Modifications/Accommodations
- When To Refer
- Some Bilateral CI Recommendations
- Resources: Cochlear Implants
  Auditory-Based Teaching
Auditory-Based Teaching Does **NOT** Merely Mean Putting An Acoustic Hoop In Front of Your Mouth!
<table>
<thead>
<tr>
<th>Communication Options/&quot;Opportunities&quot;</th>
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<tbody>
<tr>
<td>• Auditory-Verbal</td>
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<td>• Auditory/Oral</td>
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<tr>
<td>• Cued Speech</td>
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<td>• Verbotonal</td>
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<tr>
<td>• (Simultaneous Communication)</td>
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<tr>
<td>• Total Communication</td>
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<tr>
<td>• Manual Communication</td>
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<tr>
<td>- MCE/Sign Systems</td>
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<tr>
<td>- ASL (Bi-Bi)</td>
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</table>
It’s ALL about communication!
Swing, Swing

Good girl, Trixie, you said "swing"

What Good is saying "swing" if you can't say "push"
<table>
<thead>
<tr>
<th>Audiology</th>
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<tbody>
<tr>
<td>The Foundation of Auditory-Based Intervention</td>
</tr>
<tr>
<td>&amp;</td>
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<tr>
<td>The KEY to auditory “success”</td>
</tr>
</tbody>
</table>
Keep in mind the need for:

Aggressive audiologic management
Pay Attention to Acoustics

• Positioning in the Therapy Space/Classroom
• Use of FM/IR Systems
• Acoustic & Instructional Modifications/Accommodations
• Know your “Speech Acoustics”
Ling Six (Seven) Sound Test

Consider “NO SOUND” as the 7th Sound

ah (/a/)
oo (/u/)
ee (/i/)
sh
s
m

(Rosemarie Drous, Formerly of the Helen Beebe Speech & Hearing Center)

(Ling & Ling, 1978)
# Ling Six Sound Test

## Distance for Detection/Identification

<table>
<thead>
<tr>
<th>Sound</th>
<th>1’</th>
<th>3’</th>
<th>6’</th>
<th>9’</th>
<th>12’</th>
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<td>Audiology Recommendations</td>
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<td><strong>Because – every dB counts!</strong></td>
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<tr>
<td><strong>Unaided Testing</strong></td>
<td><strong>CI/HA Testing</strong></td>
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<tr>
<td>Right Ear</td>
<td>CI-Only</td>
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<td></td>
</tr>
<tr>
<td>Left Ear</td>
<td>CI &amp; HA</td>
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<tr>
<td><strong>Aided Testing</strong></td>
<td><strong>HA-Only (if possible)</strong></td>
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<tr>
<td>Binaural</td>
<td>Bilateral CIs</td>
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<tr>
<td>Right HA</td>
<td>Both CIs</td>
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<tr>
<td>Left HA</td>
<td>Right CI-Only</td>
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<tr>
<td></td>
<td>Left CI-Only</td>
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*Cleveland Clinic*
FM/s (IR) – NON-NEGOTIABLE!
• **Aggressive assessment**, including unaided & aided thresholds, speech perception measures, acoustic immittance

• **Aggressive management of sensory aid/s**, earmold acoustics
  – parents should complete daily listening checks

• **FM /IR system/s in conjunction with CI/s and/or HA/s.**
I Have A Student In My Classroom With a Hearing Loss/Cochlear Implant/ Hearing Aids/ FM/IR System

HELP!!!
The Big Three!

- **Noise** (Internal & External Sources)
- **Distance** (Stay Within “Earshot”)  
- **Reverberation** (“Bouncing” Sound Waves)
Preferential Seating Is NOT Enough!
Signal-to-Noise Ratio (SNR)

Relationship of the intensity of the speech / instructor’s signal to the intensity of the unwanted signal (noise)

Should be a positive number (+15 to +25)
FM/s/IR – NON-NEGOTIABLE!
CI/s In The Classroom

Still need **FM/IR** technology to improve the SNR

*CCF HIP Recommendations:*

- **Soundfield/personal FM** – *NOT DIRECT CONNECT* -- for toddlers, preschoolers, early elementary school-age/those who are non-reliable reporters!!!

- Use **boom mic** or **collar mic** *(stop using lavalier mics – unless omnidirectional)*

- **Pass around** the **hand-held microphone**

- Position **speaker/s toward’s student’s CI EAR**
CI/s In The Classroom

ACOUSTIC MODIFICATIONS/ACCOMMODATIONS

- **Acoustic tile/ceiling**
- **Carpet** (hypoallergenic)
- **Tennis balls/Hypoallergenic sound treatment** (“Quiet Feet”) on chair/table legs
- Drapes/Shades/Window Treatment and
- **Close windows** & the **classroom door**!
CI/s In The Classroom

- Use **captioning**
- Use **computer patch cords**
- Help transfer **PA system messages**
- Older students may need **CART** (Computer Assisted Real-Time Transcription) or **C-Print (NTID/RIT)** or **CAN** (Computer Assisted Notetaking) and
- Use a **buddy system** (especially for safety drills & field trips)
CI/s In The Classroom

TEACHING MODIFICATIONS/ACCOMMODATIONS

- Use blackboard/overhead projectors
- Reduce distance between teacher/child
- Provide lip-/speechreading cues
- Pre-teach/Pre-tutor
  and
- Use a clear, appropriately loud voice
CI/s In The Classroom

- **Small class size** helps!
- Leave detailed **NOTES for substitute teacher**
- **In-service** ALL school personnel (lunchroom workers, school bus drivers, all teachers – including the special teachers in art, music, gym/PE, computer classes, etc.) ... 

See: *Preschool/Kindergarten Placement Checklist for Children Who Are Deaf and Hard of Hearing* (DeConde Johnson, Beams, & Stredler-Brown)
Cl/s In The Classroom

- Beware of **Static Electricity** & **Strong Magnetic Fields** -- *caution*:
  - plastic slides
  - ball rooms
  - magnets in science lab/museums, etc.
When to Refer

• **Decreased speech perception** abilities from previously demonstrated skills
• **Decreased speech production** abilities from previously demonstrated skills (notably vowel “slippage”)
• Any report of “**unusual**” stimulation – pain, buzzing, on-off, among others
• Parent, teacher, therapist **report** &
• **Minimal progress** over a period of time
"Therapy and Educational Guidelines for Bilateral Cochlear Implantation"
By Nancy Caleffe-Schenck, M.Ed., CCC-A, Cert. AVt

- Getting Started
  - Laying the Foundation
    - Core Concepts
    - Therapy and Educational Tips
    - Activities for Auditory Comprehension
  - Unique Considerations for Bilateral Implantation
    - Simultaneous Implantation
    - Sequential Implantation
    - Therapy and Teaching Tips for Sequential Implantation
      - Listening With Both Implants

(see Kuhn-Inacker et al., 2004)
Bilateral CI Therapy Guidelines

Auditory Rehabilitation Therapy Guidelines for Optimizing the Benefits of Binaural Hearing

By Leo De Raeve

- Introduction
- Auditory Training for Binaural Hearing Skills
  - Training with Softer Sounds & Speech
  - Speech Perception Training with Background Noise
    - Training Localization
    - Examples of Localization Training Activities
- Influence of Time-Delay Between Implant Procedures on Rehabilitation
  - Sequential Stimulation/Implantation
  - Simultaneous Stimulation/Implantation
    - Incidental Learning
    - In the Classroom
- Conclusion
biblerr@ccf.org

dmgoldberg@adelphia.net

&

goldbed@ccf.org
“Great Stuff”

- St. Gabriel’s Curriculum
- Cottage Acquisition Scales for Listening, Language, & Speech (CASLLS) www.sunshinecottage.org
- Oh Baby, Baby, Kick Those Legs and Hello Hands www.avc-atlanta.org
- Learn To Talk Around the Clock www.LearnToTalkAroundTheClock.com
- My Baby and Me (Moog Center for Deaf Education)
- Boys Town Handouts www.babyhearing.org
- Beginnings www.ncbegin.org
- Baby Talk (Central Institute for the Deaf)
- John Tracy Clinic www.jtc.org
St. Gabriel’s Curriculum
For the Development of Audition, Language, Speech, Cognition
(2001; 2005)
Compiled by J. Tuohy, J. Brown, & C. Mercer-Moseley
Examples from the **Audition** category:

- Indicates when hearing aids/cochlear implants/FM system are not working
- Identifies the Ling 6 Sounds at close range
- Identifies the Ling 6 Sounds at 1, 2, 3 meters
- Selects one item by name, using toys/pictures (Show me the **dog**. Get your **shoes**.)
- Identifies one item in the **middle** of a sentence (Put the **duck** in the water)
- Comprehends and expresses an action sentence by using toys/pictures (He’s climbing the ladder.)
Examples from the **Audition** category:

- **Comprehends subject-verb sentences** – subject is constant
  - The baby is **eating**.
  - The baby is **crawling**.

- **Selects two items** using toys/pictures
  - Give me the **ball** and the **shoe**.
  - Get your **shoes** and your **hat**.

- **Comprehends sentences** using props, with one subject – one verb
  - The **boy** is **sleeping**.
Cottage Acquisition Scales for Listening, Language, & Speech (CASLLS)

Developed by Elizabeth Wilkes

Criterion-referenced scales
(Pre-Verbal; Pre-Sentence; Simple Sentence; Complex Sentence; Sounds and Speech)
Oh Baby, Baby, Kick Those Legs And Hello Hands

By Mary Ann Costin, Cert. AVT

Auditory-Verbal Center, Inc.
1750 Century Circle, Suite 16
Atlanta, GA 30345
www.avc-atlanta.org
$15.00
Learn To Talk Around the Clock: 
A Professional’s Early Intervention Toolbox 

By Karen Rossi 
- Thematic Units 
- Video 
  - (available from A.G. Bell) 
  - www.LearnToTalkAroundTheClock.com
My Baby and Me:
A Book About Teaching
Your Child To Talk

By Betsy Moog Brooks
(available from the Moog Center for Deaf Education)
MY BABY’S HEARING: Boys Town National Research Hospital/NIDCD Handouts

- Getting Started
- Keep It Short and Simple
- Respond to Your Baby’s Communication
- Follow Your Child’s Lead
- Talk About What Interests Your Baby
- Comments on Objects, Actions, and Problems
- Affirm to Support Turns and Stretch
- Everything Can Be a Toy
- What Is Its Name?

- What Does It Look Like, Feel, and Taste Like?
- What Do I Hear?
- How Do I Feel?
- How Can I Find Out What I Want to Know?
- How Can I Stretch My Ideas?
- Let Me Explore
- Accomplishing Daily Routines
- Play IS Learning
<table>
<thead>
<tr>
<th>HOPE Notes</th>
<th>(from Cochlear Americas by Nevins &amp; Garber)</th>
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<tbody>
<tr>
<td>- Auditory Skill Development</td>
<td>- Children from Homes With Spoken Languages Other Than English</td>
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<tr>
<td>- Spoken Language Development</td>
<td>- The Experienced Cochlear Implant User: Preschool</td>
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<tr>
<td>- Assessment Measures</td>
<td>- The Experienced Cochlear Implant User: School Aged and Teen</td>
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<tr>
<td>- Performance Outcomes</td>
<td>- Cochlear Implants and Special Populations</td>
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<tr>
<td>- The Newly Implanted Infant/Toddler</td>
<td>- Speech Development for Children With Cochlear Implants</td>
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<td>- The Newly Implanted Preschooler</td>
<td>- Vocabulary Development for Children With Cochlear Implants</td>
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<td>- The Newly Implanted School-Age Child</td>
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<tr>
<td>- The Newly Implanted Teenager</td>
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</tbody>
</table>
• Listening Room from Advanced Bionics (HearingJourney.com)
• Cochlear Implant Compass Cards: Programs 1, 2, and 3
• Listening Games for Littles (2nd edition with CD) David Sindrey
Workbook for Parents of Children who are Newly Identified as Hard of Hearing

By Melanie Sisson

Unit 1: Types of Hearing Loss
Unit 2: The Adjustment Process
Unit 3: Social and Communication Implications of Hearing Loss
Unit 4: Early Intervention and Education Laws
  Unit 5: Hearing Aids
  Unit 6: Hearing Aid Styles
  Unit 7: FM Systems
Unit 8: Measuring Hearing Aid Benefit
Unit 9: Communication Options
  Unit 10: Cochlear Implants
  Unit 11: Glossary/References
Network of Educators of Children with Cochlear Implants (NECCI)

Long Island Hearing & Speech Society
430 Lakeville Road
New Hyde Park, NY 11042
516-437-8822 (Tel/Fax)
718-470-4605 (TTY)
email: sposter@lij.edu
www. Northshorelij.com/NECCI
Manufacturer:

- COCHLEAR AMERICAS
  13059 E. Peakview Avenue
  Centennial, CO  80111

(877) 883-3101

www.cochlear.com
www.cochlearamericas.com
Materials from Cochlear Corp.

* An Educator’s Guide to the Nucleus Cochlear Implant System
* HOPE Notes
* HOPE e-news
• Hear We Go: A Rehabilitation Resource for Teenagers/Preteens (CD)
• Sound and WAY Beyond (CD for Adults & Teens)
• CI Resource Guide: Meeting Children’s Needs At School
• Ready, Set, Go... Sound Advice Series CD
• Making the Most of Your Nucleus CI Sound Advice Series CD
LISTEN LEARN AND TALK

An auditory habilitation program for infants & children under 4 years of age

(from COCHLEAR AMERICAS)
**Listen Learn and Talk**

**Book** – Includes the following information:

*Auditory Habilitation Theory*

*Auditory Habilitation Practice* (with TONS of recommendations for teaching experiences)

**Appendix**

(Scales of Development and Assessment Tools; Glossary; & Bibliography and References)

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**VIDEOTAPES:**

- **Babies Babble**
  - 0 to 15 months
  - (26 minutes, 15 seconds)

- **Toddlers Talk**
  - 16 to 30 months
  - (24 minutes, 45 seconds)

- **Children Chatter**
  - 31 months to school age
  - (29 minutes, 30 seconds)
More Resources

Getting Started – For Parents
DVD
What to Expect at Your Child’s Hook-Up

Start Listening: A Guide to Pediatric Rehabilitation
Nucleus Accessories and Assistive Listening Devices

Plus

“Getting Started … Practical Tips for Parents”
HOPE = Habilitation Outreach for Professionals in Education

One more example of Donna Sorkin’s VISION

Online Seminars for Educational and Early Intervention Professionals

www.cochlear.com/HOPE
Manufacturer:

- ADVANCED BIONICS Corporation
  25129 Rye Canyon Loop
  Valencia, CA  91355
  818.362.7588/800.678.2575
  800.678.3575 (TT)
  800.678.2575
  661.362.1518 (FAX)
  www.advancedbionics.com
  www.BionicEar.com
  info@advancedbionics.com
  www.cochlearimplant.com
Materials from Advanced Bionics

Educator’s Guide

The Guide to Cochlear Implants:
For Parents and Educators
The Adventures of Bionic Buddy
Loud and Clear/Strategies - newsletters
SoundWaves/Bionic Beat - newsletters
The Link Between Silence and Sound (VT)

Tools for Schools

Making the CONNECTION (adolescents & adults)
Hearing Your Life Rehabilitation Software
(adults & adolescents)
Six Sound Speech Test/Tips for Teaching/Ling & Spondee cards

THE LISTENING ROOM
(www.HearingJourney.com)
Manufacturer:

• MED-EL Corporation
  2511 Old Cornwallis Road, Suite 100
  Durham, NC  27713
  (888) 633-3524 (V/TT)
  (919) 572-2222 (V/TT)  (919) 314-3009
  (FAX)  
  med_el_corp@compuserve.com  
  www.medelus.com
MED-EL Materials

- How A Cochlear Implant Works (VT/CD)
- Educator’s Guide/CD
- LittleEars Auditory Questionnaire
- Common Objects Token (COT) Test by Geoff Plant & Alessandra Moore
- Checklist of Auditory Communication Skills by Nancy Caleffe-Schenck
- EarGear (Basic, Standard, & Deluxe Kits)
- EARS: Evaluating Auditory Responses to Speech
- Listening is Fun! (CD/Guidebook)
- My LittleEars Diary
- Picture Perfect Preschool by Alisa Beard & Patricia Parekh
- Murat Reader Series
- KidTrax
- TeenTrain

Cleveland Clinic
CI Videotapes

- **Cochlear Implants: A Choice for Listening**
  Montgomery County Public Schools (MD)

- **Teaching the Kids With High-Tech Ears**
  Seaver/Creative Services, Inc.

- **Sound and Fury** - Aquarius Health Care Videos

- **Sound and Fury: Six Years Later** – Aronson Films

- **Bringing Sound To Life** by M.E. Koch
Abby Gets a Cochlear Implant

By

M. Riski

www.abbygetsacochlearimplant.com
CI Books:

- Wired For Sound by B. Biderman
- Cochlear Implantation For Infants and Children by G. Clark, R. Cowan, & R. Dowell
- Cochlear Implants For Kids edited by W. Estabrooks
- Speech and Language Benefits of Cochlear Implantation (The Volta Review 2002 monograph) edited by R. Miyamoto & S. Chin
CI Books:

- Effectiveness of Cochlear Implants and Tactile Aids For Deaf Children: The Sensory Aids Study at CID by A. Geers & J. Moog
- Children With Cochlear Implants in Educational Settings by M.E. Nevins & P. Chute
- **The Parents’ Guide to Cochlear Implants** by P. Chute & M.E. Nevins ***
- **School Professionals Working with Children with Cochlear Implants** by P. Chute & M.E. Nevins ***
- Bridge to Sound With a “Bionic” Ear by C. Farley
CI Books:

- Hear Again: Back to Life With a Cochlear Implant by A. Romoff
- Cochlear Implant: Auditory Training Guidebook by D. Sindrey
- Cochlear Implants: A Handbook by B. Tucker
- CHATS: The Miami Cochlear Implant, Auditory & Tactile Skills Curriculum by K. Vergara & L. Miskiel
- Cochlear Implants by S. Waltzman & N. Cohen
- Cochlear Implants: Fundamentals & Applications by G. Clark
- Cochlear Implants in Children: Ethics and Choices by J. Christiansen & I. Leigh
More CI Books:

- Learning to Hear Again With a Cochlear Implant: An Audiologic Rehabilitation Curriculum Guide
- Better Communication and Cochlear Implants: A Personal Journal

by D. Wayner & J. Abrahamson
A-V Videotapes

- **Listen to This I & II**
  W. Estabrooks, K. MacIver-Lux, L. Katz, & M. De Melo

- **The ABC of AVT: Analyzing AVT**
  W. Estabrooks & R. Schwartz

- **I Can Hear-I & II**
  Natural Communication, Inc.

- **Why We Can Hear & Speak**
  Natural Communication, Inc.

- **Do You Hear That?**
  VOICE for HI Children

- **Listen/Hear/Ecoute**
  VOICE for HI Children
More A-V Resources
(W. Estabrooks)

- Auditory-Verbal: Theory and Practice
- Auditory-Verbal Therapy for Parents and Professionals
- 50 Frequently Asked Questions About Auditory-Verbal Therapy
- Cochlear Implants for Kids
- We Learned to Listen
- Songs for Listening! Songs for Life
- The Six-Sound Song
- The Baby is Listening
- The ABCs of AVT: Analyzing Auditory-Verbal Therapy
More A-V Resources

- **Learning to Listen**  P. Vaughan
- **Literacy Learning for Children Who Are Deaf or Hard of Hearing**  L. Robertson
- **Practical Aural Habilitation**  P. Srinivasan
- **Aural Habilitation: The Verbal Foundation of Learning in Hearing Impaired Children**  D. Ling & A. Phillips
- **25 Ways to Promote Spoken Language in Your Child With a Hearing Loss**  A. Mangiardi
biblerr@ccf.org
dmgoldberg@adelphia.net
&
goldbed@ccf.org