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Perspectives on Deafness With Autism: Changing How We Think

Deafness with Autism: What You Need to Know - *A Psychological Perspective (Part 2)*

Perspectives on Deafness With Autism: Changing How We Think

Autism Spectrum Disorder: Overview of Symptoms & Treatment - *A Psychological Perspective (Part 1)*

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AUTISM & HEARING LOSS: WHAT YOU NEED TO KNOW

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Outline

- Overview of autism spectrum disorder (ASD)
- Prevalence of ASD & hearing loss
- How to identify ASD in children with hearing loss
- Screening tools
- How to discuss concerns with families
- Beneficial services for children with hearing loss & ASD
- Cochlear implant outcomes in children with ASD

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Autism Spectrum Disorder

- Autism spectrum disorder is marked by:
  - Extreme unresponsiveness to other people – deficits in social-emotional reciprocity
  - Severe communication deficits
  - Highly rigid and repetitive behaviors, interests, and activities
- Symptoms must be present in multiple settings
- Symptoms appear early in life, before age 3
- Symptoms must cause clinically significant impairment in social, occupational, or other areas of functioning

Features of Autism Spectrum Disorder

- **Extreme unresponsiveness to other people**
  - Lack of responsiveness or interest in people
    - Abnormal social approach
    - Failure of normal back and forth conversation
  - Impairment in nonverbal behaviors
    - Poor eye contact
    - Deficits in understanding and use of gestures
    - Lack of facial expressions
  - Failure to develop peer relationships
  - Lack of spontaneous seeking to share things with others
  - Lack of social or emotional reciprocity

Features of Autism Spectrum Disorder

- **Severe communication deficits**
  - Delay, or total lack of, development of spoken language
  - Impaired ability to initiate or sustain a conversation
  - Odd use of language
    - One common speech peculiarity is *echolalia*, the exact echoing of phrases spoken by others
    - Another is *pronominal reversal*, or confusion of pronouns

Features of Autism Spectrum Disorder

- **Highly rigid and repetitive behaviors, interests, and activities**
  - Stereotyped or repetitive motor movements or use of objects (e.g., lining up toys, echolalia)
  - Strong attachment to particular objects (e.g., plastic lids, buttons)
  - Inflexible adherence to specific, nonfunctioning routines or rituals
  - "Self-stimulatory" behaviors (e.g., may include jumping, arm flapping, rockling)

Red Flags for ASD

Autism Handout

Visit Autism Society of America
http://www.autism-society.org/

- Information & Resources
  - Parents
  - Professionals
  - Advocates
  - Individuals with ASD

Prevalence of Autism & Hearing Loss

Autism

- According to the CDC, approximately 1 out of 68 children in the US
- Males have a greater likelihood than do females of developing ASD
  - Ratio is as high as 5:1 (1 in 42 boys; 1 in 189 girls)
- Over 2 million individuals in the US are affected by ASD

Hearing Loss

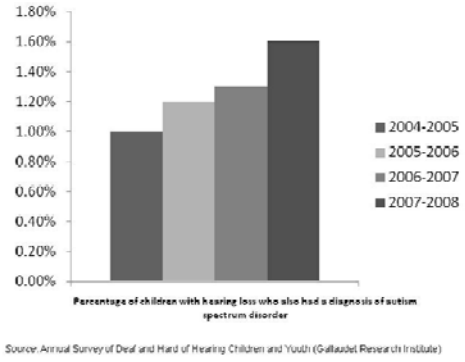
- Approximately 1 to 3 children per 1000 are born with a hearing loss (CDC, 2013)

Prevalence of Dual Diagnosis: Autism & Hearing Loss

- **1-6% of children who are deaf also have ASD**
- Rosenhall et al., 1999
  - 1.6% unilateral
  - 7.9% mild to moderate
  - 3.5% profound
- Gallaudet Research Institute (2009)
  - 1 in 59 children with hearing loss receive services for ASD
- Jure et al., 1991
  - 5.3 % of deaf students

Increases in Dual Diagnosis

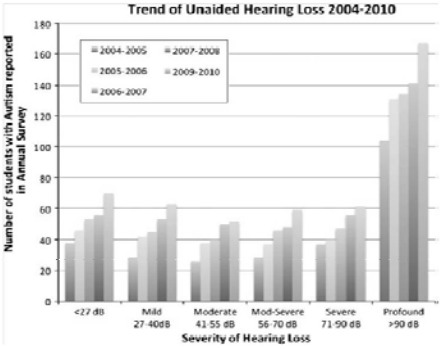
Figure 1. Increasing Rate of Dual Diagnosis of Hearing Loss and ASD Among Deaf and Hard of Hearing Children



Source: Annual Survey of Deaf and Hard of Hearing Children and Youth (Gallaudet Research Institute)

The Effect of Hearing Severity on ASD Diagnosis

- Data from the 2004-2010 Annual Survey of DHH Children and Youth
- 37,828 deaf and hard of hearing children
- **39.9% of all deaf children had an additional disability**
- Significant difference in the severity of hearing loss for children with ASD
- **Disproportionate number of profoundly deaf children having a co-existing diagnoses of ASD (35.4%)**

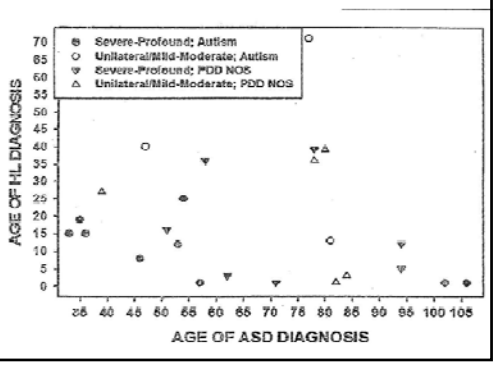


Source: Deaf Children with Autism Spectrum Disorders (Szymanski et al., 2012)

Szymanski et al. (2012) J Autism Dev Disord. 42, 2027-2037

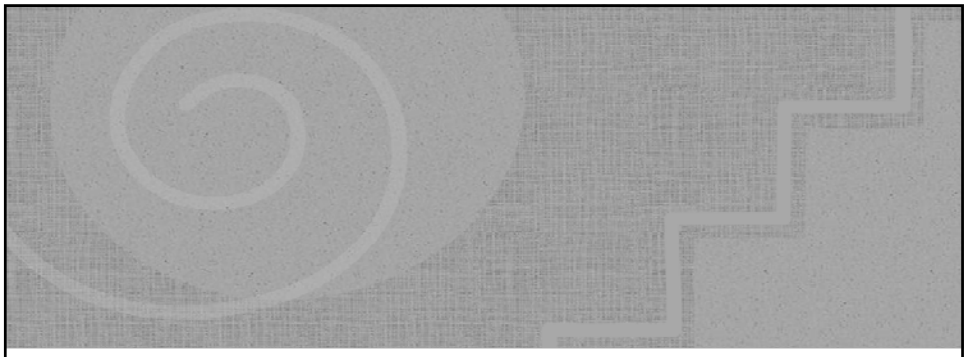
Delayed Diagnosis of ASD in Children with Hearing Loss

- Co-occurrence of hearing loss and ASD may lead to delayed or missed diagnosis (Jure et al., 1991; Roper et al., 2005).
- Families have reported a time lag of **18 months to 15 years** between diagnoses, especially when a hearing loss is identified first
- Recent study showed a 41 month delay between diagnoses (Meinsen-Derr et al., 2014)
  - Early Ages of ASD diagnosis
    - More severe HL
    - More severe ASD symptoms
    - Not correlated with:
      - Etiology
      - Amplification (age or type)
      - Nonverbal IQ
      - Language abilities



Challenges with Identifying ASD in Children with Hearing Loss

- Emotional state of parents – coping with initial diagnosis (Myck-Wayne et al., 2011)
- Provider difficulty addressing concerns with family
- Communication impairments are inherent in both disorders (Easterbrooks & Handley, 2005)
- Difficulty testing individuals (Rosenhall et al., 1999)
  - Behavioral difficulties --- negatively impact hearing testing
  - Cognitive delays
  - No ASD screening and diagnostic procedures for children with hearing loss



HOW TO IDENTIFY ASD IN CHILDREN WITH HEARING LOSS

ASD & Hearing Loss: Relationship

Deafness	Deafness/ASD

• Relationships
  • Appropriate eye contact
  • Enjoys touch (hugs, kisses)
  • Joint attention/theory of mind (may be delayed)
  • Enjoys being around other children– attempts to play with others
	• Relationships
	  • May not make or sustain eye contact
	  • Pulls away from hugs
	  • Deficits in theory of mind (taking another person's point of view)
	  • Appears disconnected from others
	  • Difficulty with turn-taking

Creedon, M.P. (2006). Autism and Sight or Hearing Loss. The Diagnostic Challenges of Dual Diagnosis. *Autism Advocate.*

ASD & Hearing Loss: Communication

Deafness	Deafness/ASD

• Communication
  • Uses gestures or pointing
  • Seeks to communicate with others
  • Uses facial expressions to communicate
  • Has difficulty with language, but spontaneously attempts to communicate
	• Communication
	  • Problems with pre-linguistic communication (pointing)
	  • Child may take person's hand to an object to indicate need or may become agitated
	  • May not communicate feelings through facial expressions or signs
	  • Exhibits echolalia (may be in sign language)

Creedon, M.P. (2006). Autism and Sight or Hearing Loss. The Diagnostic Challenges of Dual Diagnosis. *Autism Advocate.*

ASD & Hearing Loss: Behavior

Deafness	Deafness/ASD

• Behavior
  • Has preferences
  • Accepts changes
  • May experience externalizing behavior problems
	• Behavior
	  • Difficulty with transitions/refuses to change
	  • May avoid or prefer certain lights, smells, tastes, and textures
	  • Self-injurious behaviors (head banging)
	  • Exhibits self-stimulating behaviors (rocking, humming)

Creedon, M.P. (2006). Autism and Sight or Hearing Loss. The Diagnostic Challenges of Dual Diagnosis. *Autism Advocate.*

SCREENING TOOLS

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Psychological Assessments

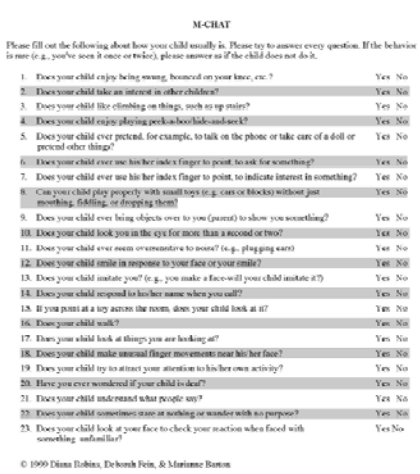
Screening Tools

- **Modified Checklist for Autism in Toddlers (M-CHAT)**
- Autism Spectrum Screening Questionnaire (ASSQ)
- Social Communication Questionnaire (SCQ)
- **Parents Evaluation of Developmental Status (PEDS)**
- Ages and Stages Questionnaire (ASQ-3)

Diagnostic Measures

- *Autism Diagnostic Interview- Revised (ADI-R)*
- ***Autism Diagnostic Observation Schedule (ADOS)***

Modified Checklist for Autism in Toddlers (M-CHAT)



M-CHAT

Please fill out the following about how your child usually is. Please try to answer every question. If the behavior is rare (e.g., you've seen it once or twice), please answer as if the child does not do it.

1.	Does your child enjoy being swung, bounced on your knee, etc.?	Yes No
2.	Does your child take an interest in other children?	Yes No
3.	Does your child like climbing on things, such as up stairs?	Yes No
4.	Does your child enjoy playing peek-a-boo/hide-and-seek?	Yes No
5.	Does your child ever pretend, for example, to talk on the phone or take care of a doll or pretend other things?	Yes No
6.	Does your child ever use his/her index finger to point, to ask for something?	Yes No
7.	Does your child ever use his/her index finger to point, to indicate interest in something?	Yes No
8.	Can your child play properly with small toys (e.g. cars or blocks) without just mouthing, fiddling, or dropping them?	Yes No
9.	Does your child ever bring objects over to you (parent) to show you something?	Yes No
10.	Does your child look you in the eye for more than a second or two?	Yes No
11.	Does your child ever seem oversensitive to noise? (e.g., plugging ears)	Yes No
12.	Does your child smile in response to your face or your smile?	Yes No
13.	Does your child imitate you? (e.g., you make a face-will your child imitate it?)	Yes No
14.	Does your child respond to his/her name when you call?	Yes No
15.	If you point at a toy across the room, does your child look at it?	Yes No
16.	Does your child walk?	Yes No
17.	Does your child look at things you are looking at?	Yes No
18.	Does your child make unusual finger movements near his/her face?	Yes No
19.	Does your child try to attract your attention to his/her own activity?	Yes No
20.	Have you ever wondered if your child is deaf?	Yes No
21.	Does your child understand what people say?	Yes No
22.	Does your child sometimes stare at nothing or wander with no purpose?	Yes No
23.	Does your child look at your face to check your reaction when faced with something unfamiliar?	Yes No

- Ages 16-18 months
- 5-10 minutes to complete
- Scoring
  - A child fails when 2 or more critical items are failed
    - Numbers: 2,7,9,13,14,15
  - Or when any three items are failed

Scoring MCHAT for Children with Hearing Loss

Critical Items

2. Does your child take interest in other children?

7. Does your child ever use his/her index finger to point, to indicate interest in something?

9. Does your child ever bring objects over to you to show you something?

13. Does your child imitate you (e.g., you make a face- will your child imitate it?)

14. Does your child respond to his/her name when you call?

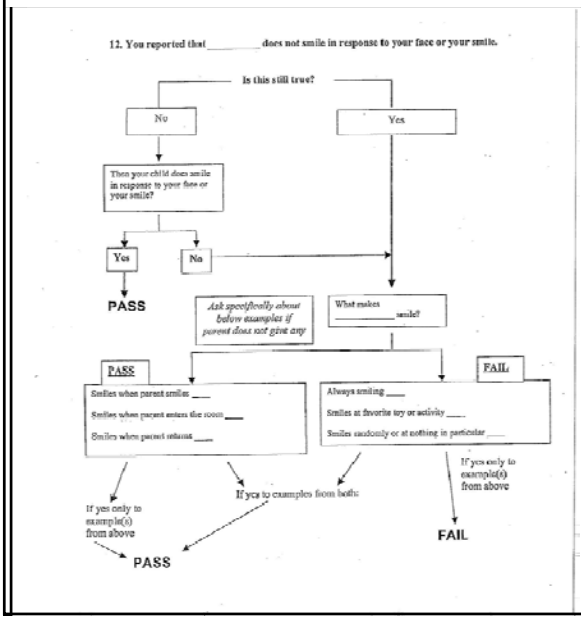
15. If you point at a toy across the room, does your child look at it?

Other Items

20. Have you ever wondered if your child is deaf?

21. Does your child understand what people say?

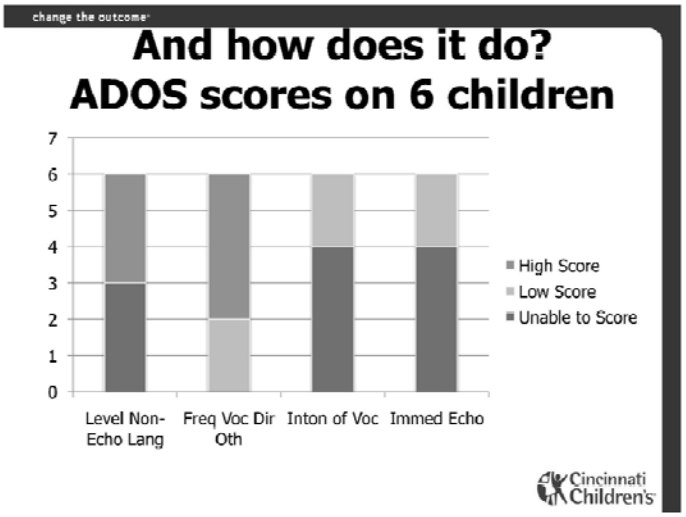
MCHAT: Follow-Up Interview



Autism Diagnostic Observation Schedule (ADOS)

- Semi-structured assessment of :
  - Communication
  - Social Interaction
  - Play (imaginative use of materials)
- 5 modules
  - Toddler Module – Children between 12 and 30 months of age who do not use phrase speech
  - Module 1 – Children 31 months and older who do not consistently use phrase speech
  - Module 2 – Children of any age who use phrase speech, but are not verbally fluent
  - Module 3 – For verbally fluent children and young adolescents
  - Module 4 – For verbally fluent adolescents and adults
- Scores are compared with cutoff scores to yield one of three classifications: *autism, autism spectrum, or non-spectrum*

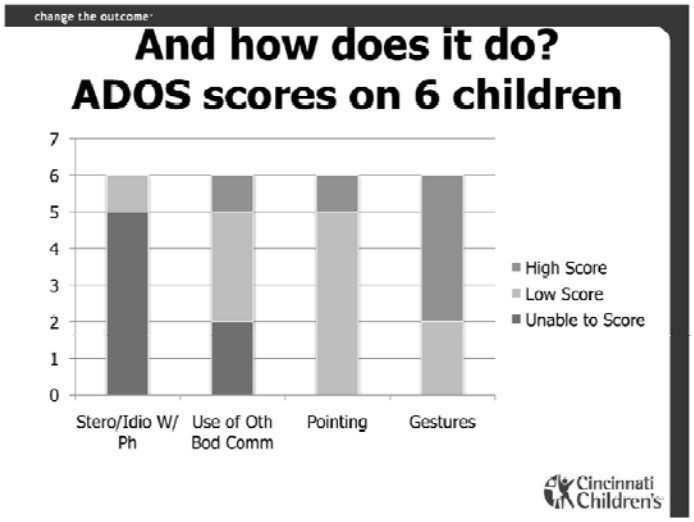
Use of ADOS in Children with Hearing Loss



Sample:
- 4 Profound (CI)
- 2 Moderate (HA)

Wiley, S., Meinzen-Derr, J. & Gustafson, S. (2013). Autism spectrum disorders in children who are deaf/hard of hearing. Presented at EHDI Conference

Use of ADOS in Children with Hearing Loss



Wiley, S., Meinzen-Derr, J. & Gustafson, S. (2013). Autism spectrum disorders in children who are deaf/hard of hearing. Presented at EHDI Conference

Use of ADOS in Children with Hearing Loss

- Meinsen-Derr, J., Wiley, S., et al., 2014
  - 24 children with dual diagnosis
  - Children completed comprehensive autism evaluation, including ADOS
  - Mean age of hearing loss diagnosis: 14 months
  - Mean age of autism diagnosis: 66.5 months
  - 41 months between ASD and hearing loss diagnosis
  - 67% had severe-profound hearing loss
  - 58% had received a cochlear implant
  - 38% used speech as their mode of communication
  - 33% of children who had a CI used some form of augmentative communication (PECS system)

Meinzen-Derr et al. (2014). Autism spectrum disorders in 24 children who are deaf or hard of hearing. *International Journal of Pediatric Otorhinolaryngology, 78,* 112-188.

Parents' Evaluation of Developmental Status (PEDS)

PEDS RESPONSE FORM

- Birth to age 8
- 10 questions
- Elicits parents' perspectives
  - Sleeping
  - Eating
  - Vision
  - Hearing

DISCUSSING CONCERNS WITH FAMILY

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Talking to Parents About your Concerns

- American Academy of Pediatrics
  - Recommends screening all children between the ages of **18 and 24 months**
  - Recommends treatment to start when autism diagnosis is suspected, rather than when a formal diagnosis is made
- Your Role as a Hearing Health Professional
  - When you think the child has a developmental delay --- speak up!!
  - Trust your instincts
  - You are not trying to make a decision on the child's diagnosis--- you are trying to help the family get the child screened & begin early intervention services
  - Have a list of referrals and resources that the family may use
  - Remember you are another pair of eyes– you might be the first person to bring up concerns to the family

Preparing for the Conversation

- Things to do before you have the conversation
  - Document all your observations and concerns
  - If you are unsure – ask another provider that is working with the child
    - Visit Autism Speaks website to view side by side comparisons of children with and without ASD
  - Ask how the child is doing in school – are there any concerns?
  - When was their last pediatrician appointment? Were any concerns expressed?
  - Think about your discussion in advance – how will you approach the conversation
  - Role play with a team member (Remember this might be the first time the family is hearing a concern)

Tips on Expressing Your Concerns

- Be sensitive & choose your words wisely
  - Stay away from using the word "normal"
- Be careful with the tone of voice
- Do a lot of listening
- Start with positives – things that the child has been able to do successfully (be specific)
- Pick a characteristic that may be an early sign
  - For example: eye contact
  - My concern is …
  - I'm worried about how this might impact his/her overall development and learning…
  - The reason I am bringing this up is because….

Tips on Expressing Your Concerns

- Remain objective
  - I observed ….
  - I understand you might not see some of these behaviors at home, but when he/she is here I see…
- Use any information from screening questionnaires or developmental milestone chart
  - By 4 years he/she should be able to…
- If a family starts expressing their concerns, STOP, and listen to them
  - Validate their thoughts and feelings
- Maintain ongoing communication to build trust and rapport with the family

Goal of Conversation

- Early detection
- Recommend a developmental screener
  - Developmental Pediatrician
  - Psychologist
- Provide family with resources for children with developmental delays
- Make sure they are already enrolled in your local early intervention program (under 3 years) or public school (over 3 years)

BENEFICIAL SERVICES

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Interdisciplinary Approach to Treatment

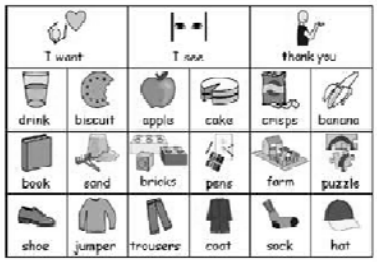
- **Speech therapy**
- Occupational therapy
- **Behavioral therapy**
- Social Skills training
- Music Therapy
- Possible medication management (for related co-morbid diagnoses)
- Dietary Interventions
  - Gluten-free
  - Casein-free
- Parent support services

Interdisciplinary Approach to Treatment

- Collaboration among providers (Wiley et al., 2013; EHDI Conference):
  - Communication between therapists, educators, & medical professionals
  - Understanding the impact of 2nd diagnosis
  - Agreement on recommendations to the family
- Parents requested a conference-type setting to facilitate interdisciplinary communication

Speech Therapy

- Non-verbal language skills
  - Use of gestures
  - Basic signs
  - PECS (picture exchange communicaiton system)
  - Electronic talking devices
  - iPads or other alternative devices
- Speech pragmatics
  - Training on suitable speech context
- Conversational skills
  - How to have a back and forth conversation
- Concept skills
  - Understanding of abstract ideas, as they relate to communication



Overcoming Severe Language Delays

- Many parents of children with autism have been told that if their child isn't speaking by age 4 or 5, he/she isn't likely to ever do so
- Current study published in *Pediatrics* (2013)
  - Most children do go onto acquire language skills
  - 535 children, ages 8 to 17, diagnosed with ASD and with severe language delays at age 4
  - 47% became fluent speakers
  - 70% could speak in simple phrases
  - Children who developed language had higher IQs and lower social impairment
  - Stereotyped behavior/repetitive interests and sensory interests were not associated with delayed speech acquisition

Wodka, E., Mathy, P., & Kalb, L. (2013). Predictors of phrase and fluent speech in children with autism and severe language delay. *Pediatrics, 131,* 1128-1134.

Behavior Therapy

- Applied Behavior Analysis (ABA)
  - The Early Start Denver Model (ESDM)
  - Pivotal Response Therapy (PRT)
  - Verbal Behavior therapy
- Play Therapy Approach
  - Floortime
  - Relationship Development Intervention (RDI)

Behavioral Intervention is the most effective method of addressing the needs of those who have ASD

"Intensive" intervention is needed – defined as **25-40 hours per week for 1 to 3 years** – may help improve behavior, cognition, and language skills

Applied Behavior Analysis (ABA) - Gold Standard

- ABA is the use of techniques and principles to bring about meaningful change in behavior.
  - Positive reinforcement (e.g., use of rewards) – increase behavior
  - Punishment (e.g., time-out, removal of toys) – decrease behavior
- *ABA is considered the standard of care for ASD*
  - ***Improvements in communication, social relationships, play, self-care, school, and employment***
- Goal: Reduce inappropriate behavior while increasing communication and increasing social behavior
- Focuses on changing the environment as opposed to variables that are beyond direct control
  - Learners day is structured to provide many opportunities – to acquire and practice skills in both structured and unstructured situations

What can you do in your practice?

- Visual Schedules & Predictable Routines
- Identify functional language targets --- core vocabulary
- Be creative with your assessments & therapy sessions
- Collaborate with other providers working with child
- Make sure that the "listening" piece of the puzzle is not missed
- Be sensitive to the challenges of raising a child with developmental disabilities
- Help connect parents with resources in the community

Resources

- Autism Society of American - http://www.autism-society.org/
- Center for Autism and Related Disorders - http://www.centerforautism.com/
- Autism Speaks - http://www.autismspeaks.org/
  - Video glossary
  - Developmental Milestone Map
- Center for Disease Control – http://www.cdc.gov/ncbddd/actearly/index.html
- Cochlear Implant Online – http://cochlearimplantonline.com/site/autism-hearing-loss

COCHLEAR IMPLANT OUTCOMES IN CHILDREN WITH ASD

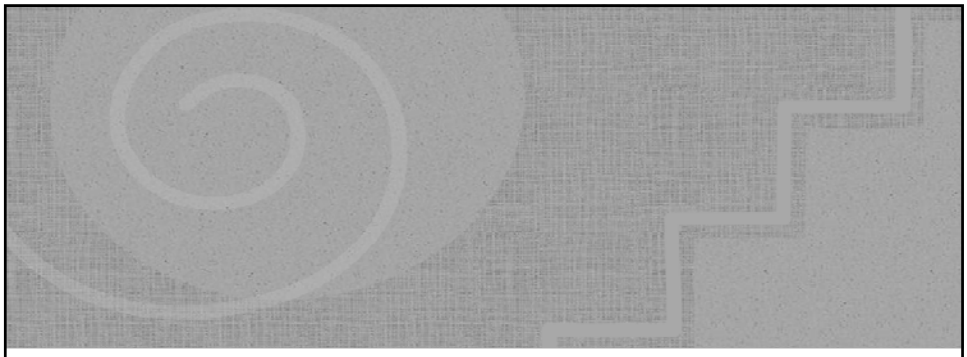
Research in Children with Cis and ASD

- A decade ago:
  - 5-8% of children with cochlear implants had a co-morbid diagnosis
- Today:
  - 27-46% of children implanted how a developmental disorder (Pyman et al., 2000; Wiley et al., 2004)
  - Gallaudet Research Institute: 30-40% of children with hearing loss
- Why the increase?
  1. Early pediatric CI clinical trials tended to exclude children with other conditions
  2. Development of physiologically based techniques using electrical stimulation to evoke compound action potential (ECAP); stapedius reflex (ESR)
  3. Newborn hearing screening – earlier implantation

Johnson, K.C. & Wiley, Susan. (2009). Cochlear Implantation in Children with Multiple Disabilities. In Eisengerg, L.S. Clinical Management of Children with Cochlear Implants.

ASD in Children with Cochlear Implants

- Donaldson, Heavner, and Zwolan (2004)
  - 1.7% of their population (n=7)
  - 3 of four children showed improvements in auditory skills development and receptive vocabulary
  - One child implanted at 4 years achieved 100% recognition of familiar sentences by 24 months post-CI & significant growth in spoken language
  - 9 year old child showed a 25% improvement in word recognition by 6 months post-CI & some growth in expressive vocabulary



LONGITUDINAL OUTCOMES OF CHILDREN WITH MULTIPLE DISABILITIES FOLLOWING COCHLEAR IMPLANTATION

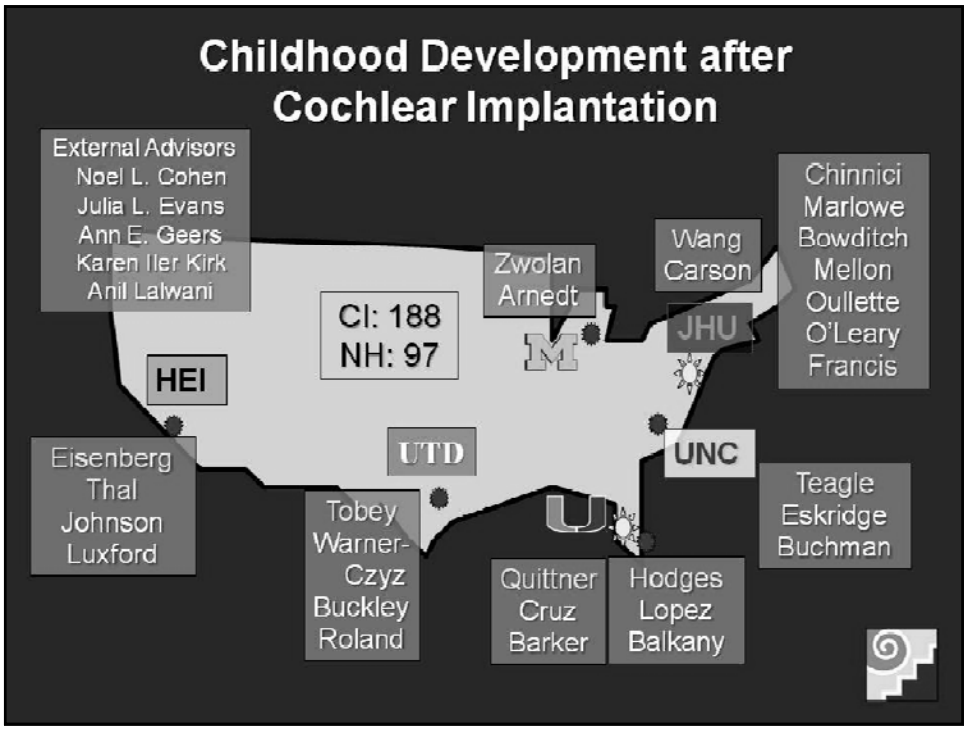
Cruz, I., Vicaria, I., Wang, N., Niparko, J., Quittner, A.L., & CDaCI Investigative team. (2012). Language and Behavioral Outcomes in Children with Developmental Disabilities using Cochlear Implants. *Otology & Neurotology, 33,* 751-760.

Childhood Development after Cochlear Implantation

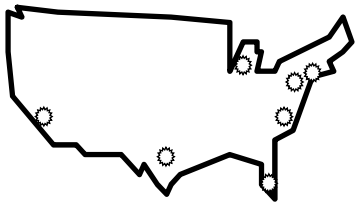
NIDCD RO1 DC04797

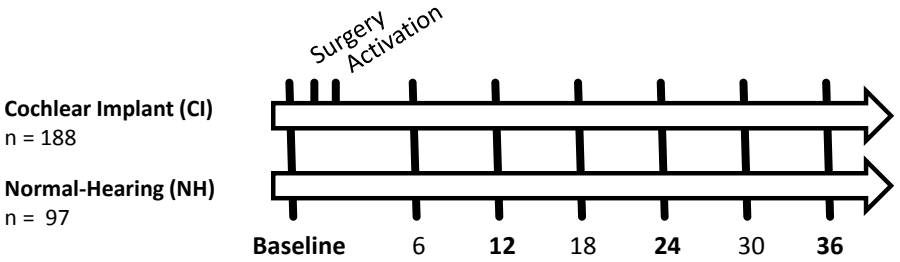
Study Aims

- To evaluate language and behavioral outcomes in deaf children receiving cochlear implants with developmental disabilities (AD) in comparison to a large, national cohort of deaf children with no additional diagnoses (CI)
  - H1: Lower receptive and expressive language compared to typically developing children prior to cochlear implantation
  - H2: Slower rate of growth in oral language skills over three years
  - H3: Higher rates of behavior problems
  - H4: Decrease in behavior problems post-implantation



Childhood Development after Cochlear Implantation





Demographics

Child	CI (n=157)	AD (n=31)
Age (months)	26.3 (14.4)	28.0 (14.7)
Gender		
Male	48% (76)	45% (14)
Female	52% (81)	55% (17)
Ethnicity		
Non-Hispanic	78% (122)	74% (23)
Hispanic	19% (30)	23% (7)
PTA4 (better ear)	104.06 (16.32)	110.56 (16.17)*

Parent	CI (n=157)	AD (n=31)
College Graduate	48% (76)	52% (16)
Income > $100,000	16% (25)	19% (6)

*p <.05

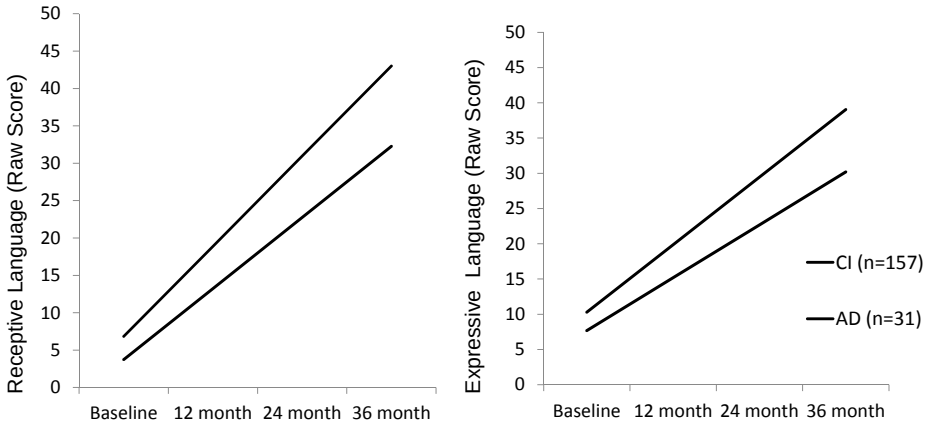
Method

- Diagnoses included:
  - Attention Deficit Hyperactivity Disorder (ADHD; n=12)
  - Pervasive Developmental Disorder/Autism (PDD; n=8)
  - Learning Disability (LD; n=7)
  - Cerebral Palsy (CP; n=4)
- Reynell Developmental Language Scales
  - Well-validated language scale for children ages 1 to 7
  - 2 subscales: Verbal Comprehension, Expressive Language
- Child Behavior Checklist
  - Internalizing Behavior Problems: Emotional Reactivity, Anxious/Depressed, Somatic Complaints, Withdrawn
  - Externalizing Behavior Problems: Attention Problems, Aggressive Behavior
- Multilevel modeling techniques were used to predict oral language and behavior problems

Baseline Group Differences

- Oral Language
  - No overall group differences on receptive or expressive language ($p>.05$)
  - Only children with ADHD had language scores that were similar to typically developing deaf children
  - Children with pervasive developmental disorders had the lowest language scores prior to implantation
- Behavior Problems
  - No overall group differences on internalizing or externalizing behavior problems ($p>.05$)
  - Children with CP had higher rates of externalizing behavior problems

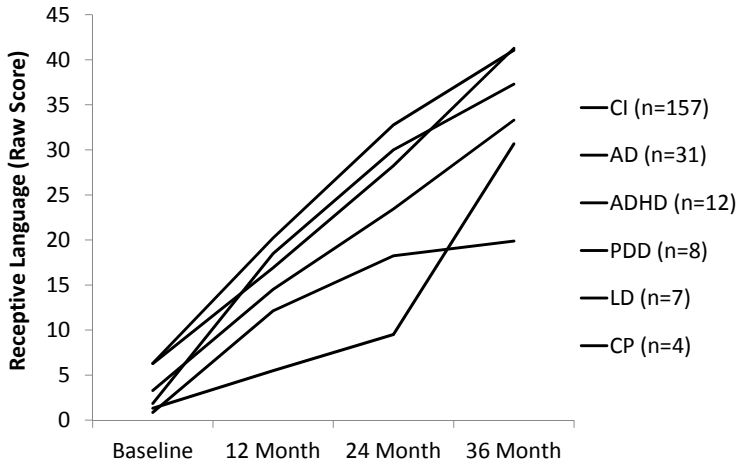
Growth Trajectories: CI vs AD



Receptive Language: Children in the AD group improved by 9.5 points each year compared to 12.06 points for the Deaf group.

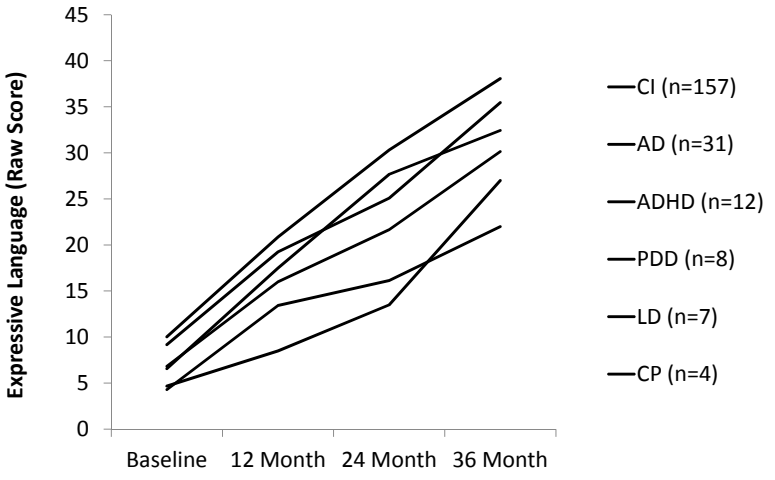
Expressive Language: Children in the AD group improved by 7.3 points each year compared to 9.58 points for the Deaf group

Receptive Language Over Time by Diagnosis



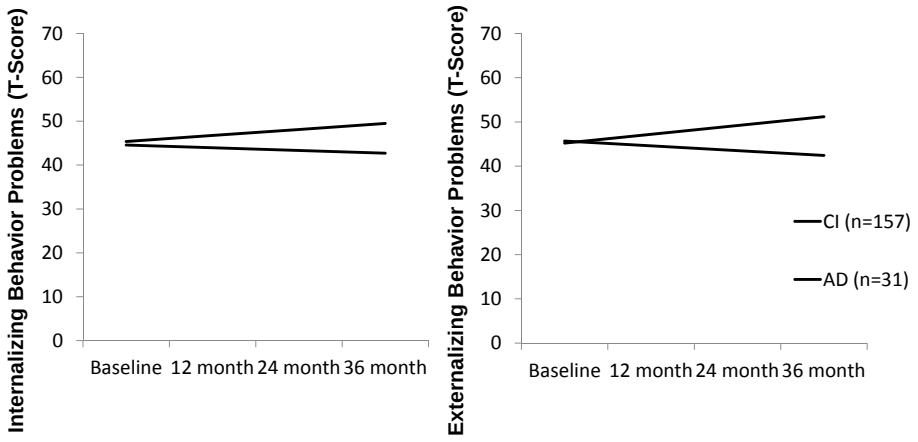
Children with PDD improved by an average of 6 points each year (β = -5.93, p <.01).

Expressive Language Over Time by Diagnosis

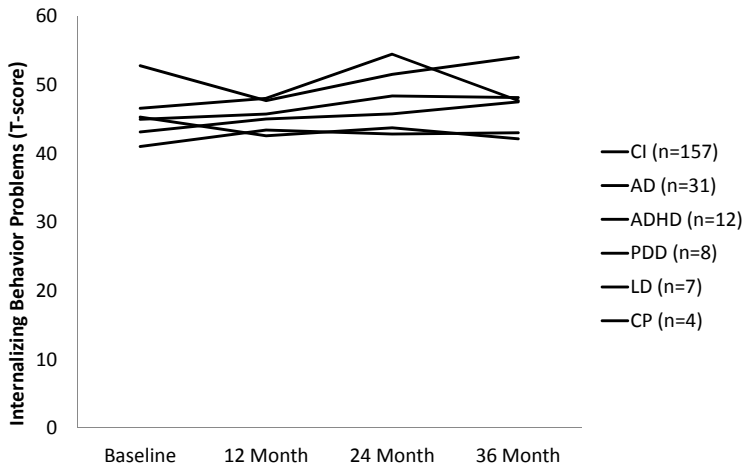


Children with PDD improved by 5.5 points (β = -4.05, $p \leq .01$)

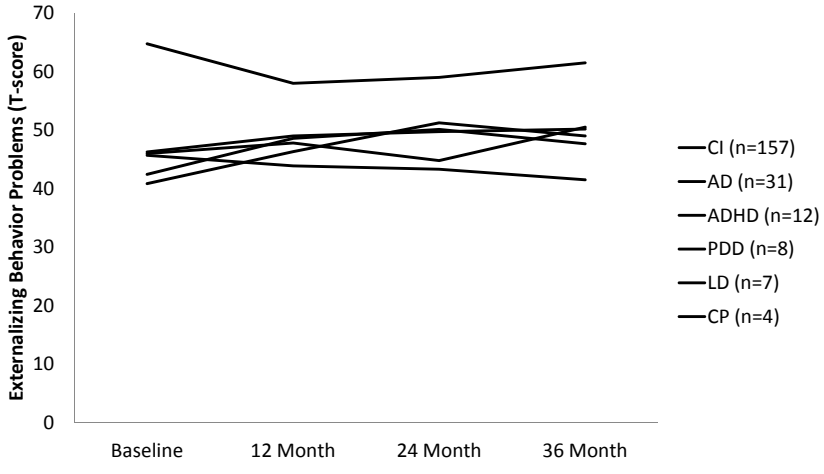
Change in Behavior Problems Over Time



Internalizing Behavior Problems Over Time by Diagnosis



Externalizing Behavior Problems Over Time by Diagnosis



Typical group: Decreased by 1 point each year (
ADHD: Increased by 3 points each year (β = 3.14, p <.02)
PDD: Increased by 4 points each year (β = 4.08, p <.01)

Discussion

- Language development was slower for children with developmental disabilities compared to typically developing, deaf children using CI's
  - Children with PDD/Autism progressed at half the rate as typically developing CI children
- Behavior problems decreased in the typically developing CI children and increased for children with additional disabilities
  - Externalizing behavior problems *increased* for children with ADHD and PDD – *decreased* for children with CP and LD
- Future studies should continue to evaluate the benefits of cochlear implantation in children with multiple disabilities
- In summary, children with developmental disabilities benefit from cochlear implantation
  - Cochlear implant teams should focus on counseling families to develop realistic expectations of benefit

Summary

- Autism spectrum disorder is marked by:
  - Extreme unresponsiveness to other people – deficits in social-emotional reciprocity
  - Severe communication deficits
  - Highly rigid and repetitive behaviors, interests, and activities
- 1-6% of children who are deaf also have ASD
- Disproportionate number of profoundly deaf children have a co-existing diagnoses of ASD (35.4%)
- Although there are no validated instruments for children with hearing loss, several measures have now been used with this population
- Interdisciplinary approach to treatment is ideal for children with dual diagnosis (behavior therapy, occupational therapy, speech therapy)
- Children with autism using CIs show improvement in both auditory and language measures; however, progress is slower than typically developing children

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Write down something new that you learned from today's presentation.

Perspectives on Deafness With Autism: Changing How We Think

Deafness with Autism: *A Music Therapy Perspective*

May 6, 2014 • 12:00 p.m. Eastern/9:00 a.m. Pacific