

ROLE OF PARENT QUESTIONNAIRES IN ASSESSING AUDITORY SKILL DEVELOPMENT

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OUTLINE

- Reliability of parent report
- Auditory questionnaires for 0-3 years of age
- Colorado Home Intervention Program (CHIP)
- LittleEARS
- Auditory Skills Checklist
- Future directions

BENEFIT OF PARENT REPORT

- Used to assess early language development of young children
- Advantages¹:
 1. Access to parents' knowledge
 2. Cost-effective and time-efficient
 3. Not limited by factors that may affect performance during formal testing
- Parent involvement in therapeutic intervention

VALIDITY OF PARENT REPORT

- Parent questionnaires have been shown to be “suitable and reliable screening tools with high validity,” Grimm and Doil (2000)²
- In language development data³:
 - Can provide data that’s more representative of infant and toddler language lab samples
 - Less subject to situational influences of language sampling and structured tests

CONCERNS WITH PARENT REPORT³

- What if the parent misunderstands the instructions or misperceives or misreports child's ability?
- Decisions should be corroborated by clinical assessment(s)
- “When a crucial hypothesis is being tested, one that will affect the course of future work, it is wise to have confirming evidence of more than one type.”

AUDITORY SKILLS QUESTIONNAIRES

- To determine hearing abilities of DHH children
- Can track progress over time for the same child
- Comparison to typically hearing peers
- Can help determine gaps for therapeutic intervention
- Help caregivers understand a child's abilities

AUDITORY SKILLS QUESTIONNAIRES

- IT-MAIS
- ELF
- PEACH
- LittleEARs
- Auditory Skills Checklist (ASC)

COLORADO HOME INTERVENTION PROGRAM (CHIP)

- A statewide, family-centered, in-home early intervention program that serves DHH infants and toddlers, birth to age three, and their families
- Follow child's learning and growth through the program
- Administer developmental questionnaires regularly
- Usually every 6 months



CHIP ASSESSMENTS

Demographics form

Auditory skills
questionnaire

Child development
questionnaire

Language assessment

Play assessment

Vision assessment

Parent needs
questionnaire

Videotaped/transcrib
ed language sample

COLORADO HOME INTERVENTION PROGRAM (CHIP)

- Several years' data from this program was used for our research
- Children with bilateral HL aged 6 – 36 months
- Normal cognition
- Did not control for age of intervention, type of therapeutic intervention, maternal level of education, hearing loss configuration, progressive hearing loss

DETERMINING DEGREE OF HEARING LOSS

Based on the better ear PTA at .5k, 1k, and 2k Hz

Normal: < 26

High frequency: >30 dB at 2k, 3k, and 4k Hz

Mild: 26 - 40

Moderate 41 - 55

Mod-severe 56 - 70

Severe-prof NR on ABR

Severe 71 - 90

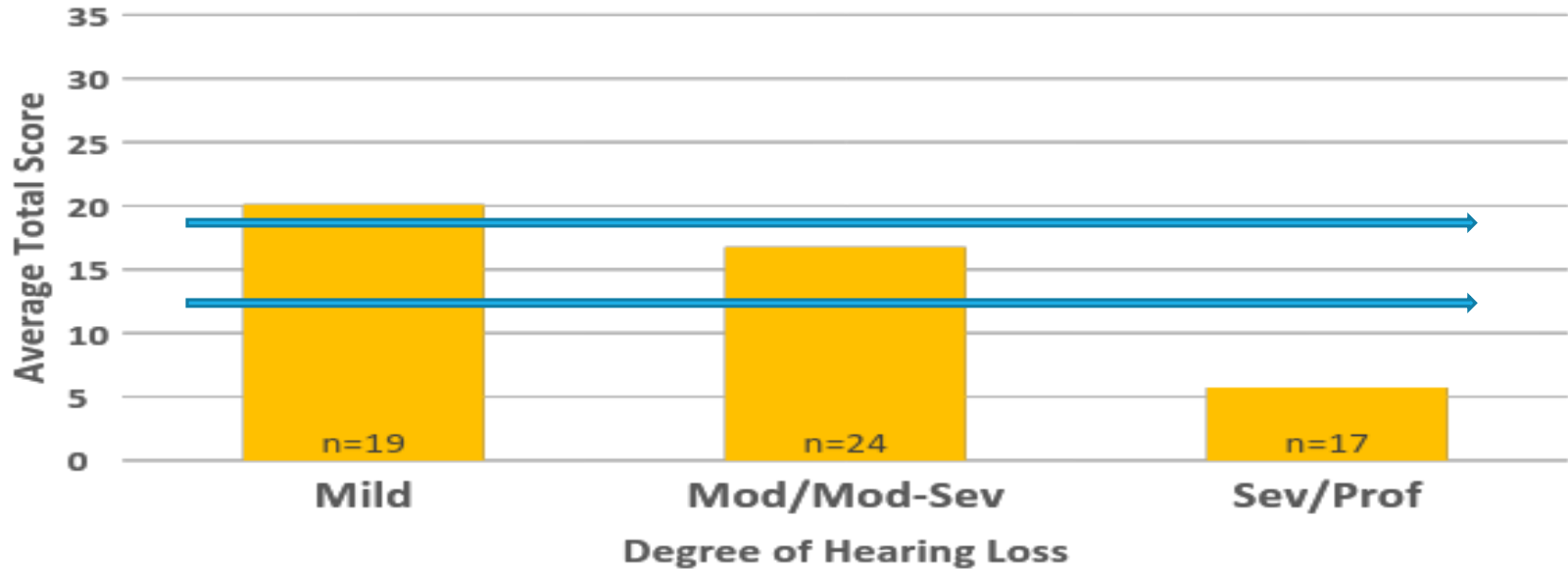
Profound > 90

LITTLEARS

- Aims to provide information to clinicians concerned with the progress of infants and toddlers with normal hearing or with infants who need f/u after NBHS⁴
- 35 “yes/no” questions to capture the receptive, semantic, and expressive behaviors and milestones of a **normally hearing** infant or toddler
- Follows children over time

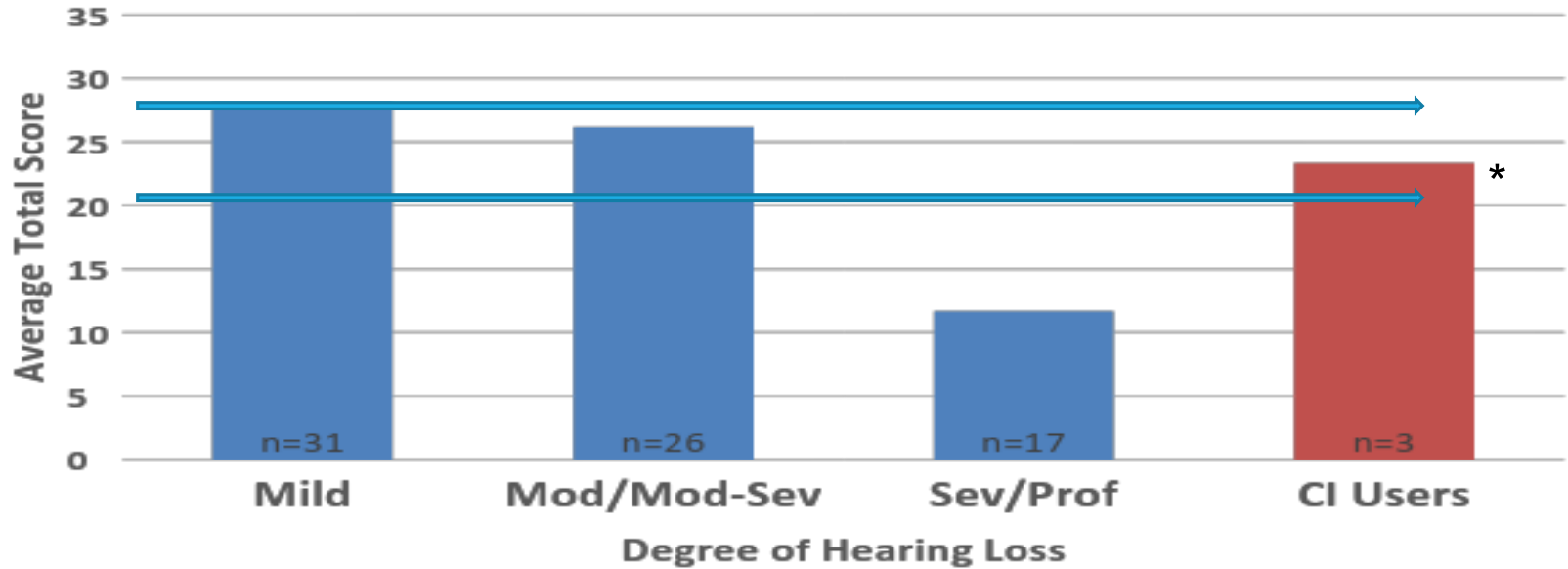
AVERAGE TOTAL SCORES

8 Months



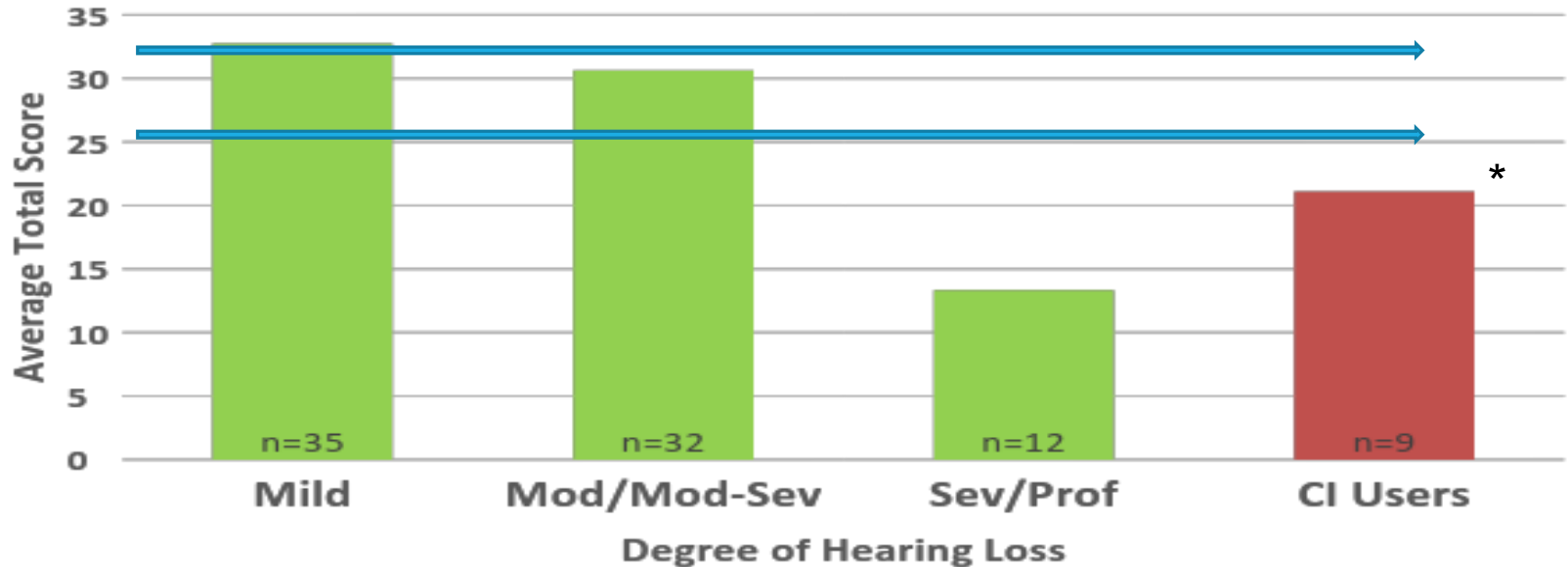
AVERAGE TOTAL SCORES

15 Months



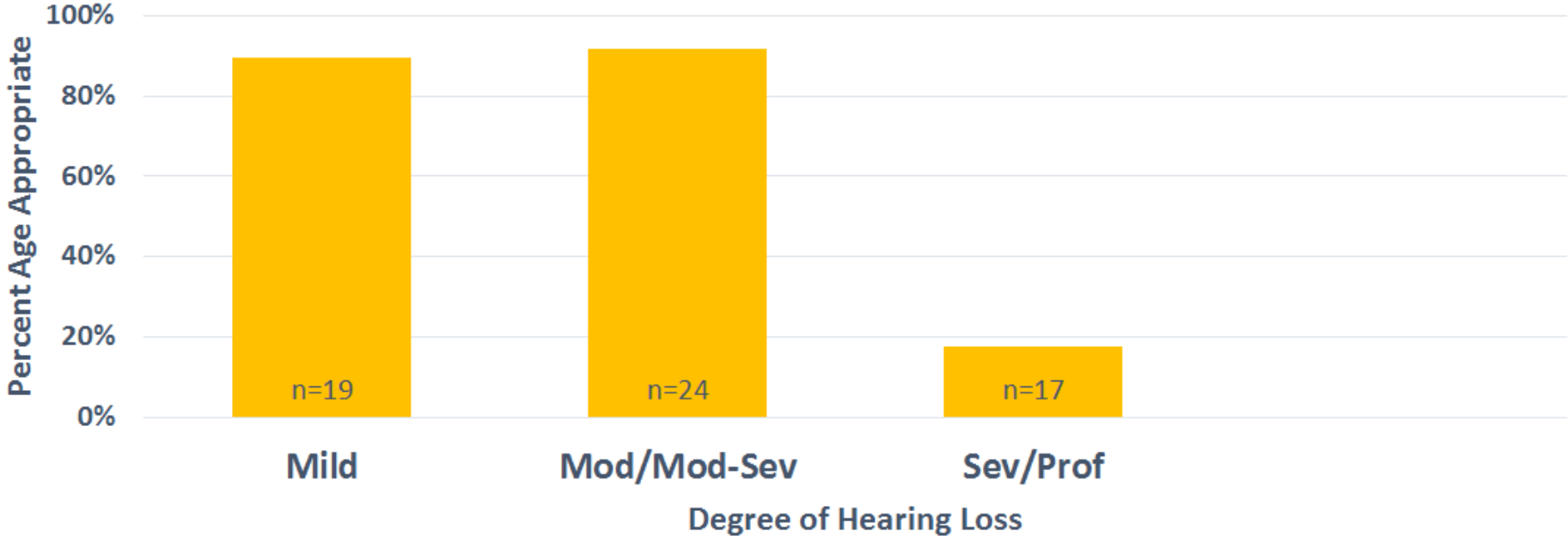
AVERAGE TOTAL SCORES

21 Months

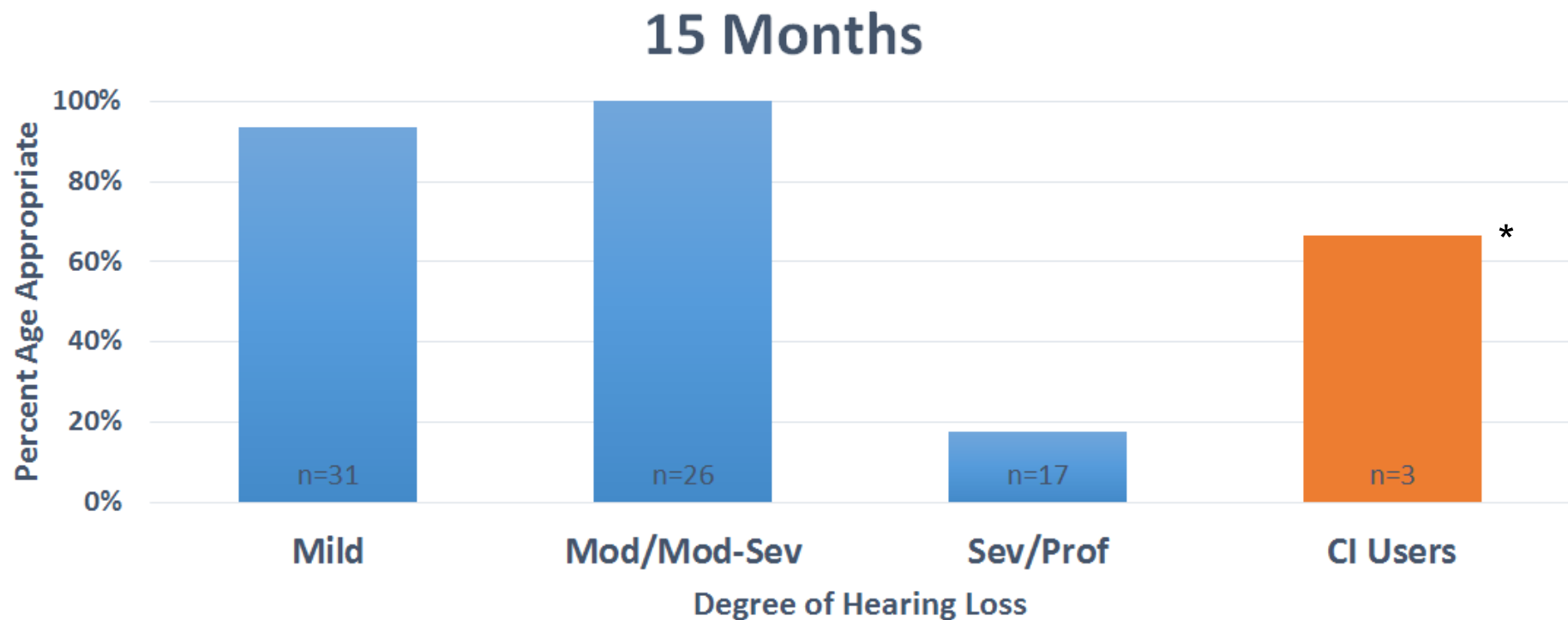


Percent of Children with Age-Appropriate Scores

8 Months

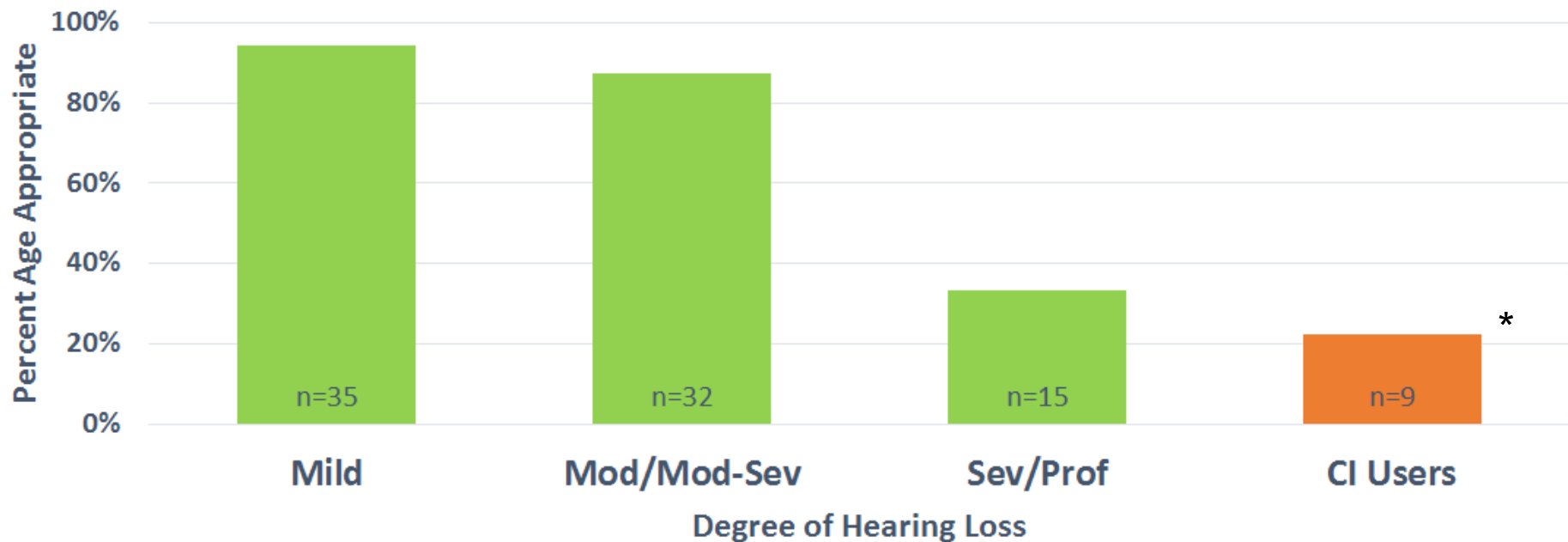


Percent of Children with Age-Appropriate Scores



Percent of Children with Age-Appropriate Scores

21 Months



LITTEARS CONCLUSIONS

- As hearing loss increases total scores and age appropriate scores decrease
- For mild to moderate-severe hearing loss subjects:
 - Similar scores
 - As children age, total scores increase
 - Most children aged 15 months appear to have acquired the majority of the skills

THE AUDITORY SKILLS CHECKLIST⁵

Date of Visit: _____ Name: _____

Amplification Device: _____ Date of Birth: _____

Amplification Date: _____ Identification Number: _____

S = has skill E = emerging skill D = doesn't have skill

DETECTION			
Does your child...	H	E	O
1 wear the amplification device during his/her waking hours?			
2 use body language to indicate when something is heard (ie. Turn head, and/or eye widening, quiet, stop action, changes facial expressions)?			
3 show awareness (turns to the sound source, alerts or quiets in response to loud sounds) of loud environmental sounds (ex. dog barking)?			
4 show awareness of soft environmental sounds (ex. microwave beep, clock ticking)?			
5 show awareness of voices, spoke at typical loudness levels?			
6 detect the Ling Six Sounds (M, AH, OO, E, SH, S)?			
7 detect the speaker's voice when background noise is present?			
8 search to find out where a sound is coming from?			
9 localize correct sound source (to the direction the sound is coming from)?			

DISCRIMINATION			
Does your child...	H	E	O
10 discriminate the voice of a speaker talking and sounds in his/her environment?			
11 discriminate different types of environmental sounds (ex. dog barking versus a telephone ringing)?			
12 discriminate a speaker using a soft voice (whisper) and a loud voice (conversational level)?			
13 discriminate a person singing (ex. "Happy Birthday") from a person having a conversation?			
14 discriminate family members voices (ex. Dad's voice versus Mom's voice versus a sibling's voice)?			
15 discriminate minimal pair words (similar sounding words such as pat, bat, and mat)?			
16 discriminate similar sounding phrases and sentences (ex. "How old are you?" versus "How are you?")?			

Auditory Skills Checklist

S = has skill E = emerging skill D = doesn't have skill

IDENTIFICATION			
Does your child...	H	E	O
17 identify his/her name when called?			
18 identify an item with an associated sound (ex. a train goes choo choo)?			
19 identify one-syllable words versus two and three-syllable words (ex. ball vs. hobbit vs. computer)?			
20 understand if the speaker is happy, angry, or surprised by the change in their vocal tone?			
21 identify or recognize commonly used words (writes from child to child)?			
22 identify the Ling Six Sounds (M, AH, OO, E, SH, S)?			
23 identify familiar songs (ex. "Happy Birthday", "Toy Story Spidee", "Old McDonald")?			

COMPREHENSION			
Does your child...	H	E	O
24 follow one-step directions (ex. "Get your shoes")?			
25 follow two-step directions (ex. "Get your shoes and open the door")?			
26 follow three-step directions (ex. "Get your shoes, open the door, and walk outside")?			
27 have an auditory memory for #___ items (ex. being able to remember food, apple, cup, and shoe would be 4 items)?			
28 have an auditory memory for phrases/sentences (ex. "The girl jumped over the fence to get the ball")?			
29 auditory sequence a story with ___ 3 events, ___ 4 events, ___ 4 events (ex. "I went to the store. I went to the store. I went to the store. I went to the store. I went to the store.")?			
30 understand the question forms ___ What, ___ Where, ___ Who, ___ Why, ___ When (ex. "Where is the dog?", "Who broke the cup")?			
31 understand concepts in phrases and sentences (ex. in, under, between, in front)?			
32 understand the use of negatives in phrases and sentences (ex. no, not, no more)?			
33 understand frequently heard phrases/sentences (ex. "Brush your teeth and get ready for bed")?			
34 acquire information incidentally through audition alone?			
35 understand most of what is said through audition alone?			

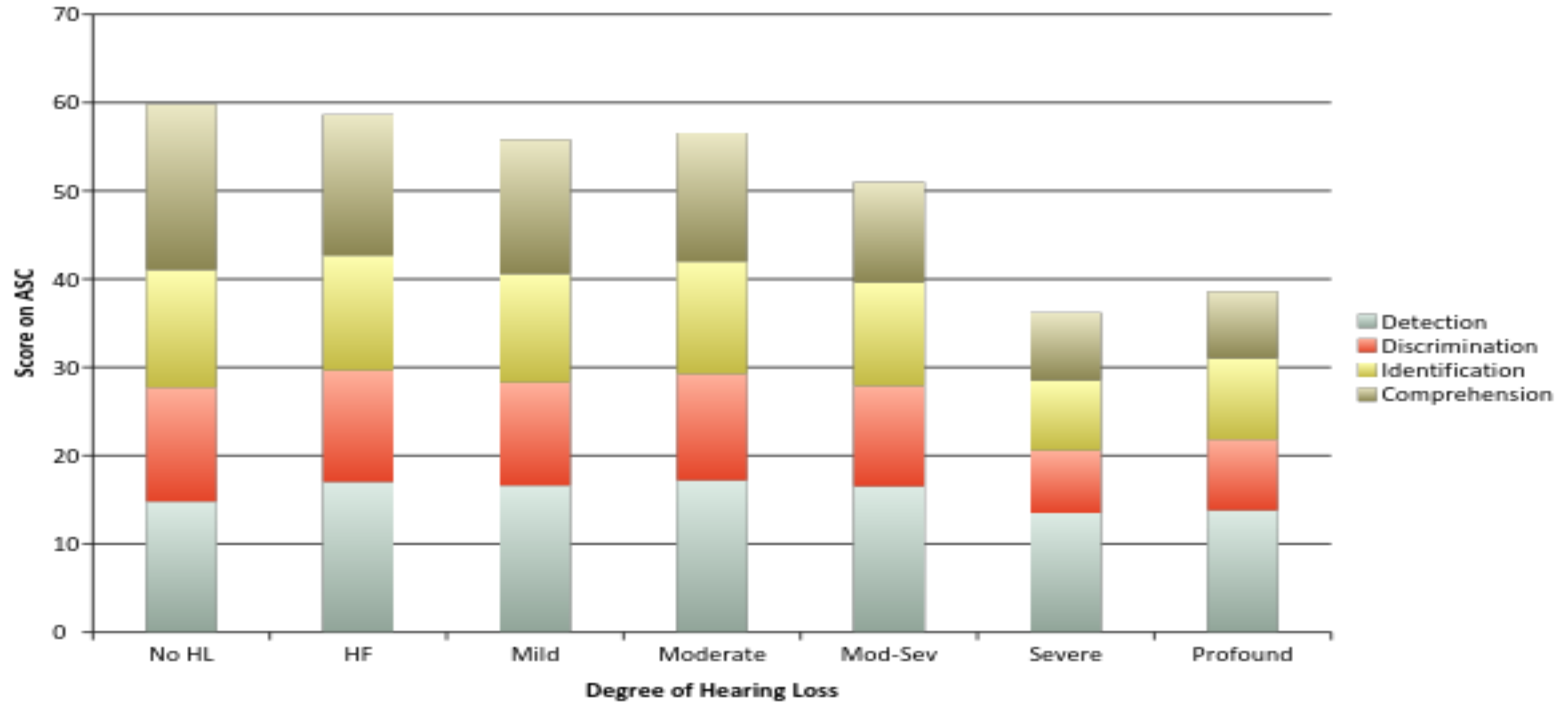
ASC SUBJECTS

- Over 200
- Aged 24-36 months
 - Previous research showed no differences between 24-27 month age range and 33-36 month age range

Degree of Hearing Loss	Number of Subjects
No hearing loss* 6	30
High frequency	13
Mild	59
Moderate	56
Moderate-Severe	15
Severe	19
Profound (CI)	25

ASC RESULTS

Subscale Scores on the ASC



ASC CONCLUSIONS

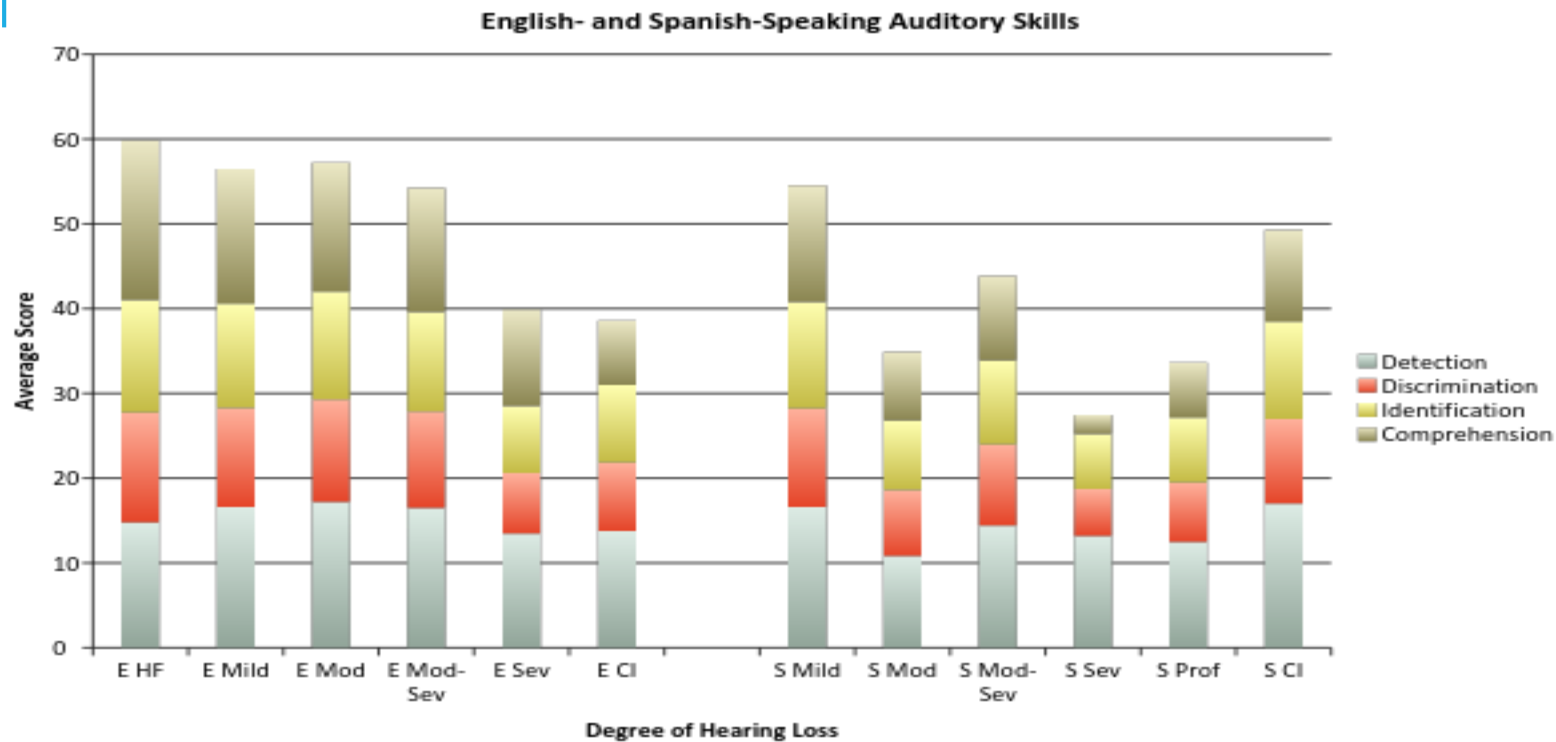
- Typically developing children achieve the highest scores overall
- As hearing loss increases, scores on the ASC decrease
- Children with high frequency through moderate-severe degrees of hearing loss have similar total scores on the ASC
- All children do better on the basic skills than they do on the higher-order skills

Difficulty



- Detection
- Discrimination
- Identification
- Comprehension

ASC ENGLISH VS. SPANISH



SUMMARY

LittleEARs

Mild to moderate-severe hearing loss subjects:

As they age, total scores increase

Most at 15 months appear to have acquired the majority of the skills

As hearing loss increases total scores decrease

Children with up to moderate-severe degrees of hearing loss have similar total scores

ASC

Typically developing children achieve the highest scores overall

All children do better on the basic skills than they do on the higher-order skills



FUTURE DIRECTIONS

- Reliability/validity of parent report
- Analysis of other questionnaires
- Comparison with other auditory questionnaires

THANK YOU



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