

AUDIOLOGICAL EVALUATION TEST DATE: September 9, 2013
HISTORY

**Name:** Noah Nottingham

**Age:** 7 years 8 months

**Reason for visit:** hearing evaluation due to parent concerns

**Hearing history:** Noah has passed previous hearing screenings both at his pediatrician and at school over the past few years. By parent report, he had a full hearing assessment at 18 months of age at Seattle Children's and he showed normal hearing. In addition, his parents report that he passed a newborn hearing screening at birth.

**Middle ear history:** Noah has a negative history of ear infections. He does have a history of impacted cerumen (ear wax). His family uses regular irrigation to keep his ear canals clear.

**Family history of childhood hearing loss:** unknown; Noah was adopted.

**Medical history:** Noah has received a number of evaluations at CHDD and has received a diagnosis of ADHD and static encephalopathy and alcohol exposed, as well as significant impairments in language.

**Developmental progress:** Noah's parents have some concerns about Noah's responses to verbal communication as he needs frequent repetition and takes a long time to process information.

**Medical home:** Noah lives with his family in Stanwood and is followed by Dr. Julian Davies at UW Pediatrics-Roosevelt.

TEST RESULTS
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**Behavioral Assessment**

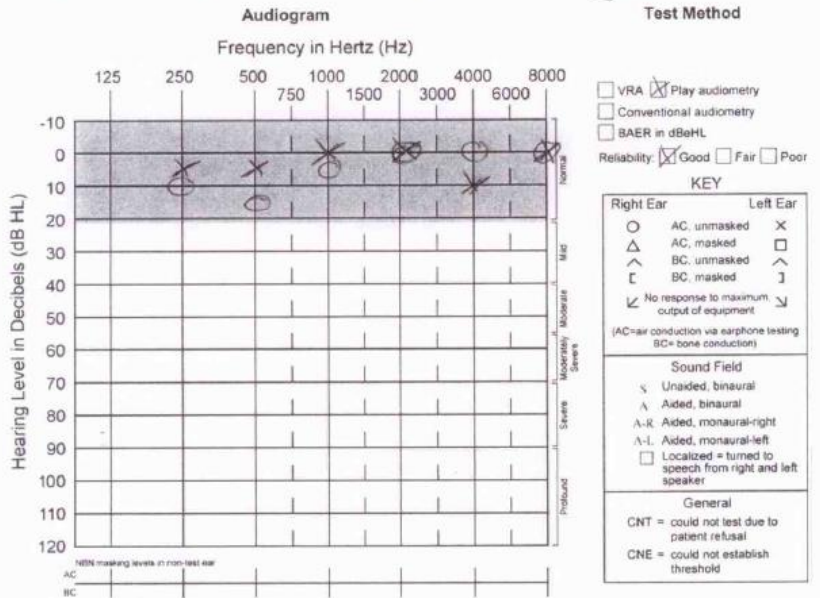
**Procedure: conditioned play audiometry:** a child is taught to respond to auditory stimuli by playing a game such as putting a peg in a board. Threshold is determined as the lowest decibel (dB) level at which the child responds a minimum of two times. Testing was completed using a test assistant in the test room with the child. A judgment of the reliability of the child's responses is noted on the audiogram.

**Normal range:** Normal hearing is defined as thresholds of 0-20 dBHL

**Results:**

<p><b>PT.NO:</b> U3311771</p> <p><b>NAME:</b> NOTTINGHAM, NOAH</p> <p><b>DOB:</b> 12-23-05</p>	<p><b>UW Medicine</b></p> <p><b>Pediatric Audiology, Box 357920</b></p> <p><b>Center on Human Development and Disability (CHDD)</b></p> <p><b>University of Washington Medical Center</b></p> <p><b>Seattle, WA 98195</b></p> <p style="text-align: right;"><b>Page 1 of 3</b> <b>Date: 09-09-13</b></p>
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Name Noah Hinman Date 9-9-13 Examiners Mandi Powell  
 Hospital Number U3311771 DOB 12-23-05 Age: chronological 7y8m corrected \_\_\_\_\_



Test Method  
 VRA  Play audiometry  
 Conventional audiometry  
 BAER in dB HL  
 Reliability:  Good  Fair  Poor

KEY

Right Ear	Left Ear
○ AC, unmasked	× AC, masked
△ AC, masked	□ BC, unmasked
∧ BC, unmasked	∧ BC, masked
⌈ BC, masked	⌋
↙ No response to maximum output of equipment	↘

(AC=air conduction via earphone testing  
 BC=bone conduction)

Sound Field  
 S Unaided, binaural  
 A Aided, binaural  
 A-R Aided, monaural-right  
 A-L Aided, monaural-left  
 Localized = turned to speech from right and left speaker

General  
 CNT = could not test due to patient refusal  
 CNE = could not establish threshold

	Speech awareness threshold	Speech reception threshold	Speech recognition			
	dB HL	dB HL	% correct	dB HL	word list	noise/babble
Right						
Left						
Soundfield			100%	50	PBK	—

**Speech recognition testing in quiet and in noise**

**Procedure:** Noah's ability to understand speech was evaluated using recorded words from the PB-K word list presented at an average conversational level (50 dBHL) in soundfield in quiet; he was able to recognize 100% of the words in this condition. In addition, his ability to understand sentences in noise was evaluated using the BKB-SIN test, in which sentence stimuli are presented at a conversational level with varying levels of multi-talker babble. An age-adjusted SNR (signal to noise ratio) was calculated from these measures and Noah demonstrates a 3.2 dB SNR loss, indicating a mild SNR loss for his age.

**Results:** listed in the table above

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UW Medicine

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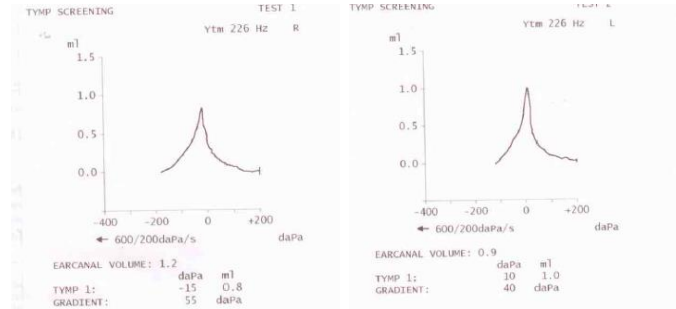
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**Immittance and Otoscopy**

**Procedure:** Tympanometry measures the function of the outer and middle ear system. Tympanometry was conducted using a 220 Hz probe tone. On otoscopic inspection, the ear canals were determined to be clear bilaterally.

**Normal range:** Normal compliance values are indicated by values greater than .1ml., and peak pressure from -200 to +100daPa.

**Results:**



**ASSESSMENT**

Noah has normal hearing and normal outer/middle ear function in both ears. Specifically, he demonstrates behavioral hearing thresholds of 0 to 15 dBHL across the frequency range of 250 to 8000 Hz, indicating normal hearing in both ears. He has normal outer/middle ear function in both ears, as indicated by tympanometry measures. Noah demonstrates excellent ability to understand speech at a conversational level in quiet and shows mild difficulties in understanding speech in noise.

**RECOMMENDATIONS**

- Hearing can change throughout childhood: screen hearing yearly from age 4 to age 16 at regular well-child visits and in public school according to national health guidelines.
- If there are continued concerns regarding Noah’s auditory processing, consider a formal evaluation of his skills. Clinics in the area that provide these evaluations are the Northwest Auditory Processing Clinic and Evergreen Speech and Hearing Clinic.

Lisa Mancl, M.S., CCC-A  
 Pediatric Audiologist, Clinical Preceptor  
 206-598-9344, [lmancl@uw.edu](mailto:lmancl@uw.edu)

Karen Kass  
 Graduate Audiology Student Clinician

Cc: Parents (Nancy and Nate Nottingham), primary care physician (Dr. Julian Davies @ UW Pediatrics-Roosevelt)

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