

AUDIOLOGICAL EVALUATION
TEST DATE: November 10, 2010

HISTORY

Name: Mark Melon

Age: 5 years 1 month

Reason for visit: Hearing evaluation

Hearing history: Mark presents with a history of not passing recent school screenings and is seen today for a full evaluation of his hearing. Mark's mother reports that he passed his newborn hearing screening after multiple attempts. Mark did not receive an additional hearing screening until the start of kindergarten, at which time he did not pass a school hearing screening in both ears. On October 20, 2010, Mark did not pass a follow-up screening by the Seattle Schools audiologist.

Middle ear history: Mark's mother reports that he had several ear infections as a young child, but none within the last few years.

Family history of hearing loss: Mark has a paternal cousin with congenital hearing loss.

Developmental progress: Mark's mother reports that she has to repeat things for Mark to understand, but wonders if he is just not paying attention. She reports no concerns about his speech/language development or articulation.

School: Mark is in kindergarten at Cascade Elementary in the Seattle School District; the school audiologist is Sarah Smith.

Medical home: Mark lives with his parents in Seattle and is followed by Dr. Steven Smith at Cascade Pediatrics.

TEST RESULTS

Behavioral Assessment

Procedure: conditioned play audiometry (CPA): 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:

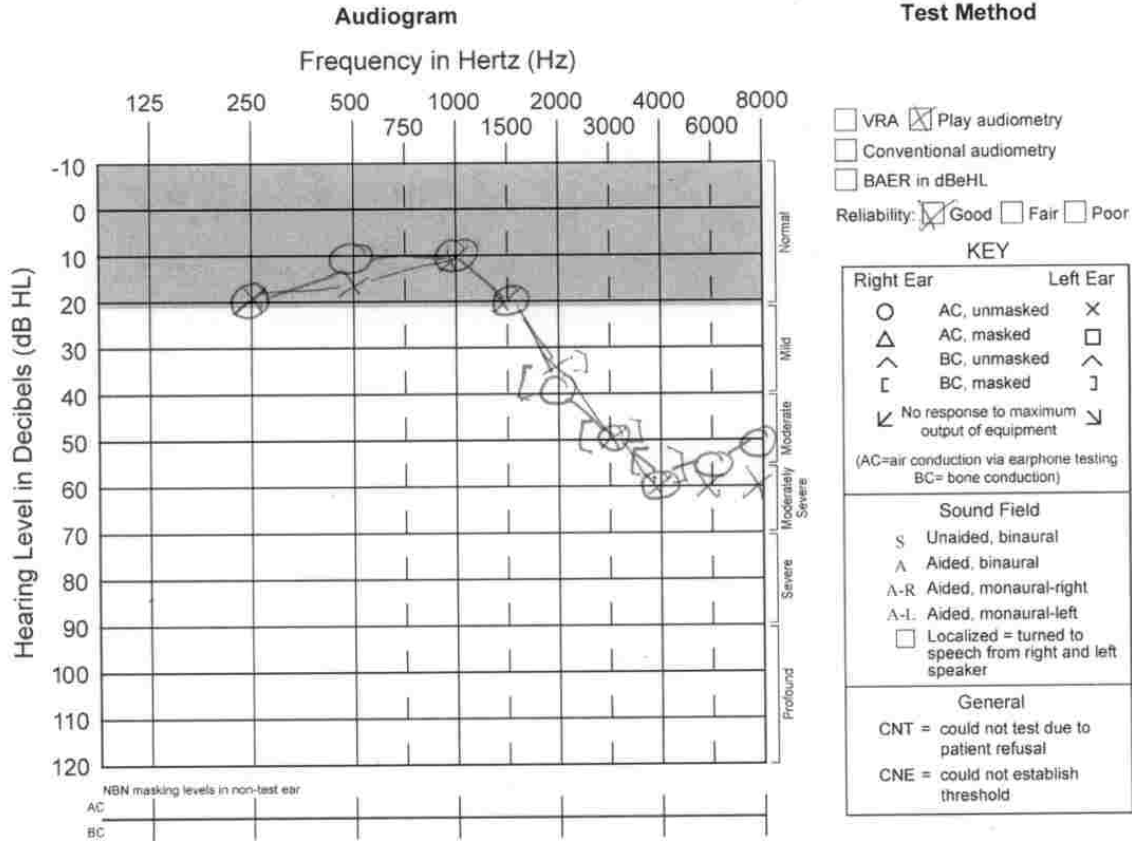
PT.NO: U2256554

NAME: MELON, MARK

DOB: 10-10-2005

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	Speech awareness threshold	Speech reception threshold	Speech recognition			
	dB HL	dB HL	% correct	dB HL	word list	noise/babble
Right		25	88%	65	WIPI	
Left		25	82%	65	WIPI	
Soundfield			50%	50	WIPI	45
Aided						
Aided						

Speech Recognition testing

Procedure: Mark's ability to recognize speech was evaluated using recorded words from the WIPI word list presented in each ear at a comfortable loudness level as well as in soundfield at a conversational level (50 dBHL) in noise, with multi-talker babble presented from the opposite speaker at 45 dBHL, resulting in a + 5 dB SNR.

Results: listed in the table above.

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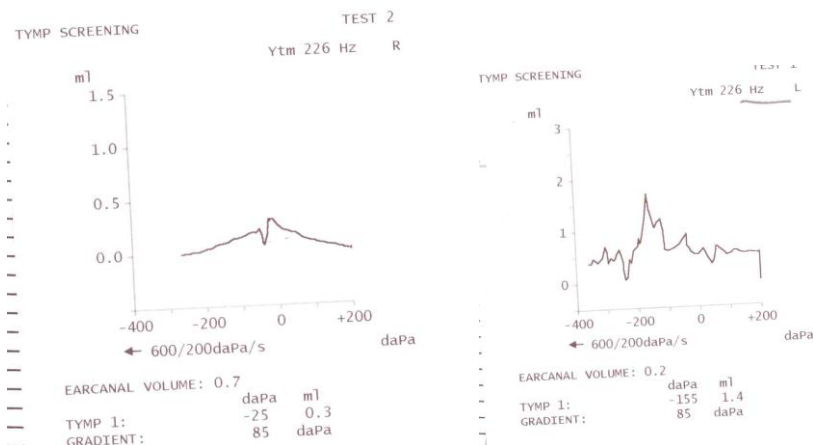
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Immittance and Otoscopy

Procedure: Tympanometry measures the function of the outer and middle ear systems. Tympanometry was conducted using a 220 Hz probe tone.

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

Results:



Outcome Measure: Parents’ Evaluation of Aural/Oral Performance of Children (PEACH)

Measure: Mark’s mother filled out the PEACH questionnaire, a list of 13 questions designed to evaluate a child’s listening challenges and receptive communication using a 5-point scale.

Expected range: Quiet=75-100; Noise=60-100 , Overall=70-100

Results: Quiet= 80; Noise= 50, Overall=70

ASSESSMENT

Mark demonstrates a moderate high frequency sensorineural hearing loss in both ears. Specifically, he demonstrates behavioral hearing thresholds within the normal hearing range of 0 to 20 dBHL in both ears from 250 to 1500 Hz and he demonstrates hearing thresholds of 40 to 60 dBHL in both ears from 2000 to 8000 Hz. Masked bone conduction testing indicates no significant air-bone gap, consistent with a hearing loss that is sensorineural in nature in both ears. He has normal outer/middle ear function in both ears on tympanometry, also confirming that the hearing loss is sensorineural. Mark shows good ability to discriminate words presented in quiet at a comfortable loudness level (65 dBHL) in each ear, however, he does make some errors in words that contain /s/ and /sh/ as the final sound in the word. When speech is presented at a conversational level (50 dBHL) from one speaker along with noise (multi-talker babble at 45 dBHL) from the opposite speaker, he shows fair to poor ability (50%) to understand speech; this measure is thought to simulate typical listening situations in school and in noisy settings in the community. These findings are supported by Mark’s mother’s responses on the PEACH questionnaire, indicating that she reports significant communication challenges particularly in noisy settings. Today’s results are consistent with his recent school hearing screenings. The age of onset and etiology of Mark’s hearing loss is unknown.

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RECOMMENDATIONS

The impact of a Mark's permanent hearing loss was discussed with Mark's mother, Marion, was counseled regarding the diagnosis of a permanent hearing loss and its implications on Mark's speech and language development, and learning. It was discussed that children with hearing loss benefit from early identification and support services. Marion identified that the family goals are for Mark to use listening and spoken language for his primary communication; therefore, hearing technology is recommended to maximize Mark's auditory access, communication, and learning.

Hearing loss:

1. It is recommended that Mark's hearing be monitored closely with hearing evaluations every three months, until hearing has been determined to be stable and then yearly, thereafter.
2. The etiology of Mark's hearing loss is unknown at this time and his parents are advised to pursue additional testing in the future including a CT/MRI scan of the ear, and genetic testing. For these evaluations, he is referred to Seattle Children's Otolaryngology Clinic (206-987-2105).
3. It is recommended that Michael be referred to an Otolaryngologist for medical clearance for hearing aids. Mark will be seen by Dr. Jay Rubinstein, at UWMC Otolaryngology for this evaluation.
4. Mark demonstrates some speech articulation issues. It is recommended that he be evaluated by speech/language specialists at his school to get a more detailed evaluation of his skills and determine if he could benefit from speech/language therapy.

Hearing Technology:

5. It is recommended that Mark be fit with binaural hearing aids. At the conclusion of this appointment, bilateral earmold impressions were taken. Mark will return to this clinic within the next month for his initial fitting with earmolds and hearing aids.
6. It is recommended that Mark have access to a remote mic/FM-DM system in school to help him hear the teacher above the classroom noise. This recommendation will be forwarded on to the educational audiologist in the Seattle School District along with specific recommendations for receivers and audioshoes that will be compatible with the hearing aids that will be ordered.

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Sandy Stone
 Graduate Audiology Student

cc: parents (Mary and Mike Melon)
 primary care physician (Steven Smith @ Cascade Pediatrics)
 otolaryngology (Dr. Jay Rubinstein @ UWMC Otolaryngology)
 school audiologist (Mary Matthews @ Seattle Schools Audiology)

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