CHARLOTTE INSTITUTE OF REHABILITATION

Department Of Therapies – Audiology Services 1100 Blythe Boulevard Charlotte NC 28203 704/355-4430

Distortion Product Otoacoustic Emissions and Evoked Potential Report

Name: History #:

Account #:

Wulf, Matthew 0004135745

Date of Birth:

December 3, 1997

Date of Test:

December 1, 2004

Referring Dr:

Kristen Strange

History:

Matthew Wulf, age 6, was seen for diagnostic hearing testing with sedation in the Post Anesthesia Care Unit at Carolinas Medical Center. Anesthesiology personnel administered the sedation. Matthew presents a history of neonatal adrenal leukodystrophy. His mother reported previous ABR testing, completed at 8 months of age, indicated a severe hearing loss, bilaterally. Previous test results were not available to this examiner at that time of testing. Matthew currently wears bilateral hearing aids in conjunction with a FM system. Mrs. Wulf reported that recent behavioral hearing testing suggested unaided responses in the moderate hearing loss range. Currently, Matthew receives occupational, physical and speech therapy services. The purpose of today's testing was to re-evaluate overall hearing ability.

Test Protocol:

Brainstem Auditory Evoked Response testing (BAER) was completed using broad band click stimulus via insert earphone and bone oscillator. This provides information primarily about high frequency hearing ability in the 1000 - 4000 Hz range. The stimulus was presented with a rarefacting polarity at a rate of 27.7 clicks / second. A one-channel electrode montage (Fz - Ai) was used for testing. Auditory Steady State Evoked Response (ASSR) testing was also completed using tonal stimuli from 500 through 4000 Hz.

Otoacoustic Emissions testing was completed using tonal (DPOAE) stimuli. The stimulus was presented through a probe placed in the ear canal, and a microphone in the probe recorded the emission. For DPOAE testing criterion for PASS (normal emission) is a response level at least 6 dB above the noise floor for at least 4 frequency points.

Tympanometry was completed to assess middle ear function.

Test Results:

With click stimulus, repeatable responses were elicited down to an intensity level of 80 dBnHL, bilaterally, with a questionable Wave V response at 70 dBnHL, bilaterally. The latencies of Waves III and V were significantly delayed, bilaterally. With bone conduction stimulation, no repeatable response was elicited with a 65 dBnHL stimulus (equipment limit). ASSR testing was also completed for the frequencies of 500, 1000, 2000 and 4000 Hz. Those results suggested physiologic thresholds as shown below:

	500 Hz	1000 Hz	2000 Hz	4000 Hz
Left ear	70 dB HL	80 dB HL	80 dB HL	80+ dB HL
Right ear	80 dB HL	70 dB HL	80 dB HL	80 dB HL

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