

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



# Auditory Brainstem Response Protocol and Wave Characteristics

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## General protocol for recording ABR in infants

- ❑ Sleep (or sedated): Consider the baby's nap time; Consider
- ❑ Before sleeping: Acoustic Immittance and OAEs (If agitated?)
- ❑ Before feeding: Apply electrodes, Dry diaper
- ❑ Sleep in a car seat (or parent holding); for check up
- ❑ Disposable electrode pads
- ❑ Electrode leads, Two channel preparation
- ❑ 1 None-Inverting, 2 Inverting, 1 Ground
- ❑ 3 K Ohm; 1 K Ohm
- ❑ Click (70 dB nHL); TB 2 KHz; TB 500 Hz
- ❑ Alt (check both polarity); Rate 27.7 or 45.1 Hz
- ❑ 10-12 ms; 15 ms; 20 ms
- ❑ Threshold (20 dB; 30 dB)



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3.5 year old Girl

Morphology of cABR  
 Peaks, Troughs, Slopes  
 Repeatability  
 Threshold of wave V

# Maturational Issue (Preterm, Term, 6-month-old)

### 35-36 weeks

	Mean	Median	Standard deviation
Wave I	1.81	1.82	0.09
Wave III	4.74	4.75	0.20
Wave V	7.14	7.24	0.34
Interpeak I-III	2.89	2.92	0.25
Interpeak I-III	2.41	2.47	0.28
Interpeak I-V	5.33	5.39	0.31

### 39-40 weeks

	Mean	Median	Standard deviation
Wave I	1.79	1.80	0.09
Wave III	4.56	4.57	0.22
Wave V	6.90	6.96	0.33
Interpeak I-III	2.77	2.80	0.21
Interpeak I-III	2.42	2.30	0.61
Interpeak I-V	5.08	5.14	0.31

### 37-38 weeks

	Mean	Median	Standard deviation
Wave I	1.79	1.76	0.09
Wave III	4.62	4.62	0.20
Wave V	7.05	7.11	0.28
Interpeak I-III	2.83	2.81	0.20
Interpeak I-III	2.42	2.39	0.22
Interpeak I-V	5.23	5.23	0.24

### 6-month-old

	Mean	Median	Standard deviation
Wave I	1.70	1.74	0.12
Wave III	4.37	4.37	0.19
Wave V	6.50	6.55	0.27
Interpeak I-III	2.65	2.60	0.20
Interpeak I-III	2.16	2.14	0.18
Interpeak I-V	4.81	4.83	0.26

TEACH A COURSE

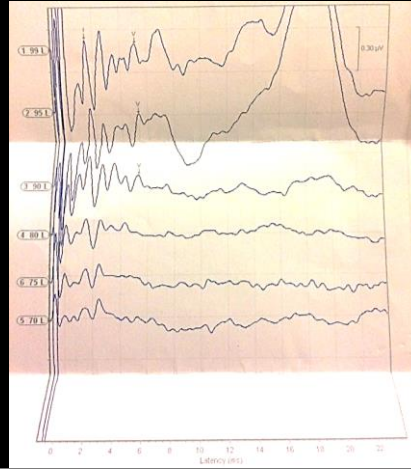
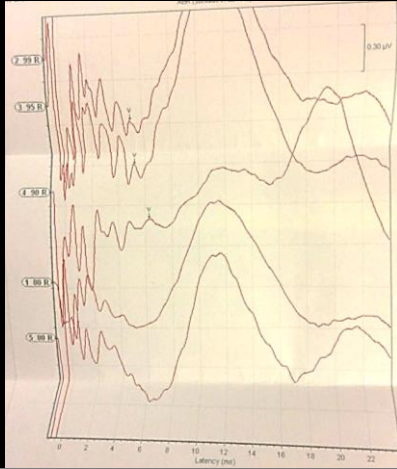
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The image displays a clinical setup for an infant. On the left, a 19-month-old boy is lying down with EEG electrodes attached to his forehead and ears. On the right, there are two graphs. The top graph is a Tympanogram showing results for both ears (Right and Left). The bottom graph is an Auditory Brainstem Response (ABR) waveform showing waves I, III, and V for both ears, with peak latencies marked.

19-month-old Boy  
Speech delay

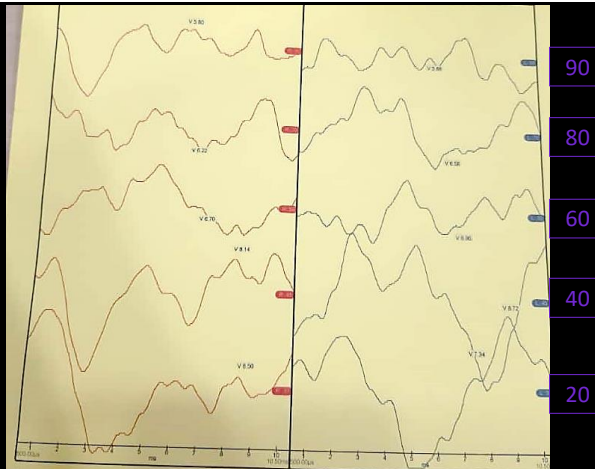
Tympanometry (Probe fit)  
OAE (Probe fit)  
ABR (Sleep, Impedance)  
Normal hearing up to 20 dB nHL





Practice 1  
 Girl; 10 months old; OAE Present

- Repeatable Sinusoidal
- No reliable click ABR
- Both Polarity
- Suspected wave V
- Time window



Practice 2  
 Boy; 24 months old; OAE DNT

- Bad morphology
- No repeatability
- Latency/Intensity variation

# ABR (Lessons for the Best Recording and Interpretation)

**Lesson 1.** Protocol and Parameters (Subject, Stimulus, Recording)

**Lesson 2.** Morphology (not Sinusoidal, repeatable, no reversal with changing polarity)

**Lesson 3.** Consider Peaks and troughs, latencies (absolute and relative) and changing with intensity (LIF)

**Lesson 4.** Starting rule (60-70 dB nHL; 15-20 step at high levels; and 10down-5up near threshold) Clinical Judgment and Stopping rule (less sweeps at high levels; and more sweeps near threshold)

**Lesson 5.** Refer to specialist, Cross-check, Follow-up



Thank You!