



An Incredible AEP Experience

by Greg Ollick Sr.

I recently had the pleasure of working with the Interacoustics engineering team, along with several other experienced e3 equipment reps, on the development of the latest version of software for the Eclipse AEP (Auditory Evoked Potential) system. Our goal was to make the Eclipse two channel clinical AEP system faster and easier to use for clinicians who were used to performing ABR, ECoChG and VEMP tests with other makes and models. We wanted to incorporate all of the features that would make this system one of the most efficient AEP products on the market today.

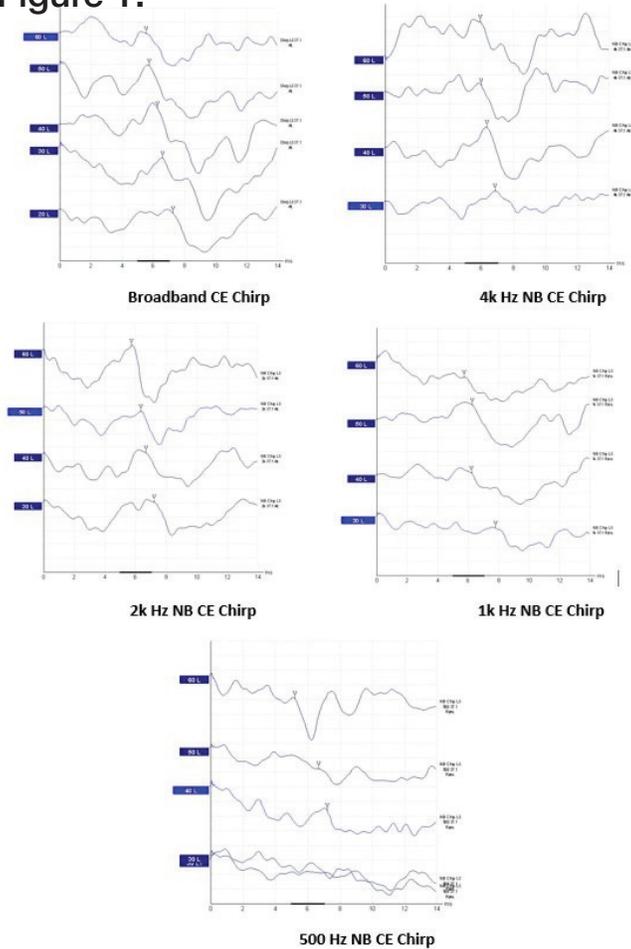
The Eclipse already had several outstanding features, including CE Chirp Stimulus and the simultaneous collection of two waveforms (A&B) in the background during the recording of every AEP response. The CE Chirp saves time because it produces a higher amplitude and more well-defined

wave 5 for broadband and frequency-specific stimulus, and the test results are remarkable. This is an incredible feature that anyone doing threshold ABR testing for frequency-specific hearing acuity should consider. I collected the responses shown below very quickly while I was setting up and manipulating the Eclipse AEP app. (See Figure 1 on next page)

I was able to collect these threshold ABR responses for broadband, 4k, 2k, 1k, and 500 Hz stimuli in about 20 minutes! I would never have been able to record this level of quality data in that short a timeframe with any other device.

The A,B memory feature also saves time because you seldom have to collect a second waveform to prove repeatability. It's already done for you in the background during every recording. Simply click

Figure 1.



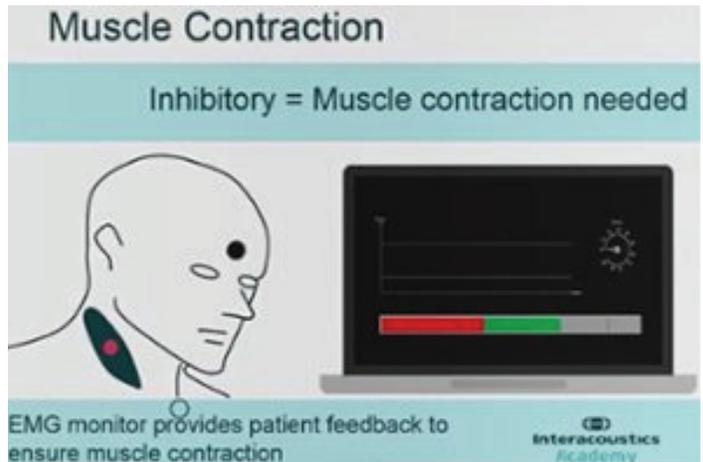
on the A,B icon and the two waveforms appear and can be superimposed on the original to show repeatability.

As a result of our collaboration, the latest version of the Eclipse AEP software (version 4.5.1.4) has these additional time-saving features:

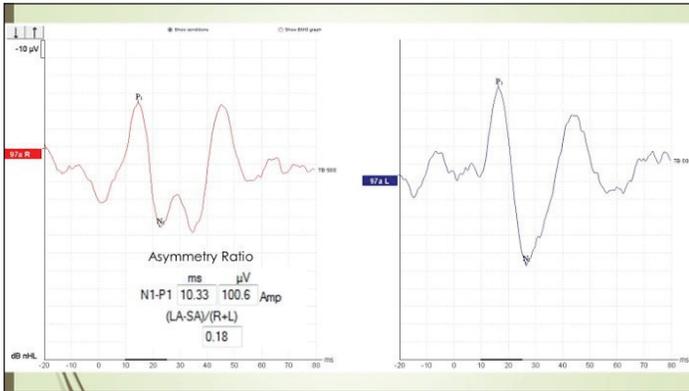
- The ability to collect data and mark/analyze waveforms at the same time.
- Split-screen display of waveforms during collection and analysis.
- The latency norm for any wave (I,III,V) is displayed on the waveform temporarily when you mark each wave (Big help).

- All previous test sessions on the same patient can be viewed from the collection screen.
- Easy one-click utility to change rep-rate or stimulus frequency while testing.
- Color bar graphs are displayed during data collection showing waveform repeatability, residual noise floor and response confidence.
- Stimulus intensity, rep rate, stimulus polarity and stimulus type/frequency are automatically displayed as tags on each waveform.
- The pre-amp gain and display scaling can be easily manipulated from the collection screen.
- The report layout is user-customizable.
- The software now incorporates user-customizable report templates (test conclusions).
- The ability to add/average waveforms.
- An automatic calculation of asymmetry ratio is displayed during analysis of VEMP data.

Interacoustics has received FDA clearance for VEMP testing, and the new system has an available (optional) EMG monitor. This feature does not require the placing of any additional electrodes; it's completely automatic and very easy to use. An external monitor can even be attached so that the patient can see the colorful and easy-to-understand EMG bar graph during their head-turns.



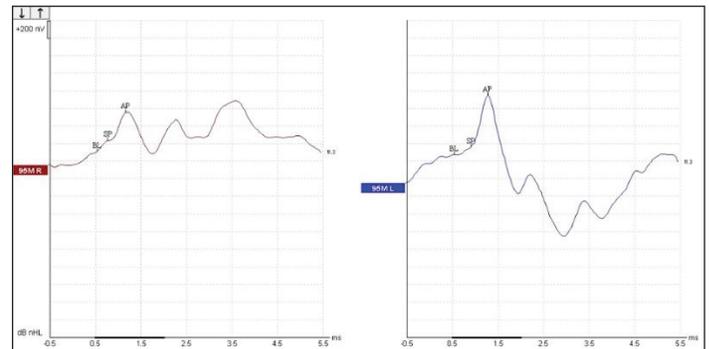
This optional feature also includes EMG scaling (or ratification). It eliminates the false-positive cVEMP test results that can be caused by the patient using more or less effort in the head turns needed to contract the SCM during the cVEMP recordings. See the cVEMP waveforms and calculated asymmetry ratio below.



cVEMP with Asymmetry Ratio

Cleaner Signal Processing, Faster Sampling Rate, Better Digital Filtering and More Noise Immunity combine to make the new Eclipse an exceptional AEP device with cleaner recordings obtained faster than ever before. The waveforms below are ECoChG data on the new Eclipse. These are some of the clearest and most repeatable

responses I've seen - collected easily and quickly using only TipTodes.



ECoChG with TipTodes

The new Interacoustics Eclipse two channel clinical AEP system is now one of the leading AEP systems on the market - set to become a standard of the industry.

About the Author

Greg Ollick Sr., M.A. had been in the audiometric instrumentation business in New Jersey, opened an equipment distribution and service office in Atlanta, Georgia in 1978 and continued to grow the business by acquiring new product lines. In 1988, Greg Sr. officially launched e3 Med-Acoustics and expanded the operation to include all of Georgia, Alabama, southern Mississippi and Louisiana.