

CHAMP[™]

COCHLEAR HYDROPS ANALYSIS
MASKING PROCEDURE

*Advanced Technology
Options for
the Navigator PRO
AEP System*

New Technology from the Industry Leader

*Taking Patient Care
To a New Level*

 *Stacked*[™]
ABR

CHAMP[™] COCHLEAR HYDROPS ANALYSIS MASKING PROCEDURE

A New Tool to Assist in the Assessment of Cochlear Hydrops

Meniere's disease consists of the idiopathic syndrome of cochlear hydrops characterized by episodic vertigo, tinnitus, fluctuating hearing loss, and the sensation of aural fullness or pressure. Cochlear hydrops is associated with an undermasking phenomenon that can be observed during specialized ABR data collection using click stimuli mixed with a special type of high-pass masking noise and presented at a certain level. It is hypothesized that cochlear hydrops alters the response properties of the basilar membrane which results in reduced masking effectiveness of high pass noise on the ABR to click stimuli. This results in the undermasking phenomenon. There are several measures of an undermasked component that are used in the assessment of Meniere's disease/cochlear hydrops. This innovative procedure, CHAMP, was developed in cooperation with the inventor, Manuel Don, Ph.D. at House Ear Institute.¹

Measures of the Wave V latency change caused by the addition of the high pass masking noise are used in combination with amplitude measures to assess the presence and characteristics of an undermasked response. These data are compared to normative values to assist with analysis.

CHAMP Technology Training

Bio-logic, in conjunction with our continuing education partners and faculty, offers a practicum seminar series for all customers who purchase CHAMP. These CEU accredited training courses are offered bi-monthly at Bio-logic's Audiology Centers for Excellence.

To utilize the normative data for CHAMP, greater attention to precise patient preparation and optimal data collection techniques are critical. These practices are covered extensively in the practicum. It is highly recommended that all customers attend the CHAMP practicum. For more detailed information or to reserve a space in the practicum please call Bio-logic's Audiology Centers for Excellence at 877-223-2368.



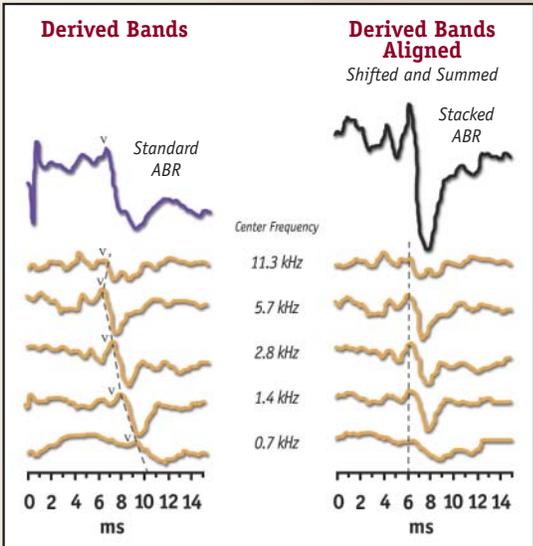
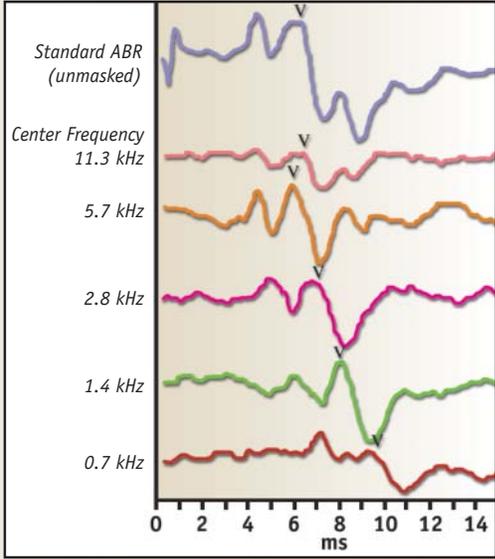
A New Tool to Assist in the Assessment of Auditory Nervous System Abnormalities

Standard ABR measures have been used by clinicians as a tool to assist in the assessment of auditory nervous system abnormalities for the past 25 years. Stacked ABR is a modification of standard ABR. It involves collection of data using click stimuli mixed with high-pass masking noise, calculation and alignment of derived band waveforms and calculation of the Stacked ABR.

Developed in cooperation with the inventor, Manuel Don, Ph.D. at House Ear Institute², the stacked auditory brainstem response test procedure displays activity from virtually all auditory nerve fibers rather than just a subset.

Generating the Stacked ABR requires the derived-band and Stacked ABR methods. A click stimulus is used to activate the whole cochlea and the resulting response is separated into five frequency bands by using high-pass masking. The ABRs representing these five frequency bands are called derived-band ABRs and are used in constructing the Stacked ABR.

The Stacked ABR is constructed by time shifting the derived-band waveforms so that the peak latencies of wave V in each band coincide and then adding together these shifted derived-band waveforms. The Stacked ABR amplitude reflects the synchronous activity of essentially all activated neural elements in the auditory nerve. The elimination of any significant amount of this neural activity by an abnormality will result in a reduction in the Stacked ABR amplitude. Obtaining the derived bands, stacking the ABR and interpreting the data is automated.



Screening for Auditory Nervous System Abnormalities

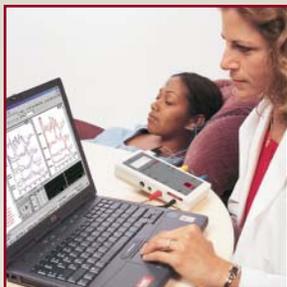
MRI	ABR
<ul style="list-style-type: none"> • Relatively expensive • Not available everywhere • Uncomfortable, and anxiety producing test for some patients • Cannot be used on patients with implanted metal devices or materials 	<ul style="list-style-type: none"> • Much less expensive • More widely available • More comfortable than MRI • Can be used on patients with implanted metal devices or materials

Stacked ABR Technology Training

Bio-logic, in conjunction with our continuing education partners and faculty, offers a practicum seminar series for all customers who purchase Stacked ABR. These CEU accredited courses are offered bi-monthly at Bio-logic’s Audiology Centers for Excellence.

To utilize the normative data for Stacked ABR, greater attention to precise patient preparation and optimal data collection techniques are critical. These practices are covered extensively in the practicum. It is highly recommended that all customers attend the Stacked ABR practicum. For more detailed information or to reserve a space in the practicum please call Bio-logic’s Audiology Centers for Excellence at 877-223-2368.

Leading the Way in Technology and Education



AEP

Standard auditory evoked potentials including ABR, ECochG, MLR, ALR, P300, VEMP and EABR



M.A.S.T.E.R.*

Multiple Auditory Steady-State Evoked Response Technology (ASSR)



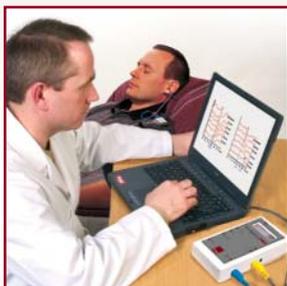
Stacked ABR™**

Advanced technology option in AEP to assist in the assessment of auditory nervous system abnormalities



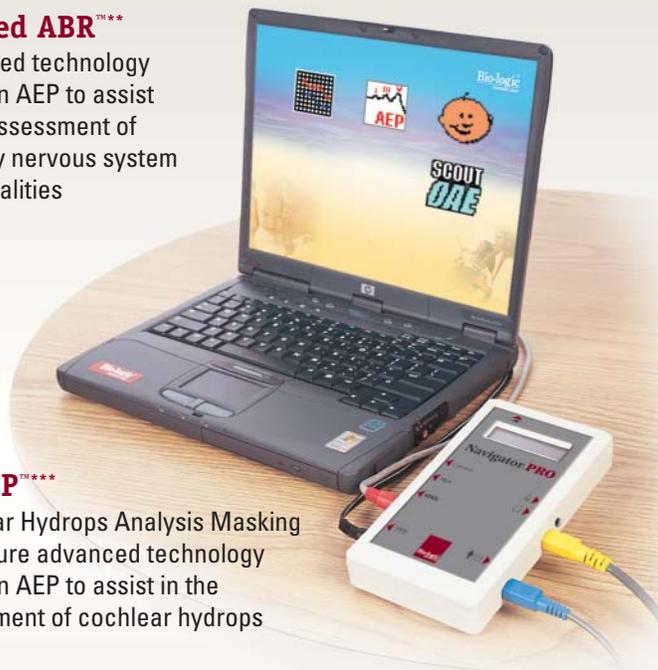
ABaer®

Infant hearing screening system – automated ABR, or OAE or both!



CHAMP™***

Cochlear Hydrops Analysis Masking Procedure advanced technology option in AEP to assist in the assessment of cochlear hydrops



SCOUT®

Full range otoacoustic emission test capability including DPOAE, TEOAE and SOAE

* Developed in cooperation with Sasha John, Ph.D. and Terence W. Picton M.D., Ph.D. at Rotman Research Institute of Baycrest Centre, Toronto, Ontario, Canada. Patent Number: 6602202.

** Developed in cooperation with Manuel Don, Ph.D. at the House Ear Institute. Patent Numbers: 6080112 and 6264616B1

*** Developed in cooperation with Manuel Don, Ph.D. at the House Ear Institute. Patent applied for.

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591-NPBRO1 Rev A

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