

NEURO-AUDIO

Clinical ABR & OAE Analyzer, Screening Audiometer



- Auditory EP (ABR, VEMP, ASSR, ECoG) and OAE testing in one unit
- Complete solution: screening, diagnostics, research
- High quality of recording
- Both manual and automatic test control



Neurosoft

HEARING
DIAGNOSTICS

AUDIOMETRY
OAE
ABR

NEURO-AUDIO

NEW STANDARD IN AEP

Neuro-Audio is the most comprehensive AEP diagnostic device on the market. It is also a diagnostic OAE device and a screening audiometer. It is designed to meet the most stringent requirements of today and is ready for the future. It can be easily adapted for daily clinical routine (including newborn hearing screening and follow-up diagnostics) or for advanced cutting-edge research.



15

YEARS IN AUDIOLOGY

CLINICAL APPLICATION

OAE

DPOAE, TEOAE, SOAE

AEP

ASSR

cVEMP, oVEMP

AABR, ABR, eABR

MLR, LLR (CAEP), ECoChG

Cognitive ERP (P300, MMN)

PTA



“Working with the Neuro-Audio system is working with a very user-friendly system. The system is robust and open, which creates many opportunities in order to obtain reliable responses. The service and willingness of the people from Neurosoft to improve their system is certainly an asset”.

Robby Vanspauwen, PhD, Clinical Scientist (Vestibular Research), Dept. for Otorhinolaryngology, Sint-Augustinus Hospital, European Institute for ORL, Antwerp, Belgium

ABR

CLINICAL APPLICATION

- Objective audiometry (hearing threshold search using wave V as the indicator).
- Neurology (identification of pathologies in the VIII cranial nerve and auditory pathways of the brainstem).
- Fitting of a cochlear implant (electrically evoked ABR).

CALCULATION OF RESIDUAL NOISE AND FMP (KNOWING WHEN TO STOP)

During recording it's recommended to rely on objective parameters of the response. The residual noise (RN) value helps you determine when to stop averaging. Fmp value indicates presence or absence of a response. Our software calculates these values automatically and shows their reference values. It provides confidence in your results.

WIDE RANGE OF POSSIBILITIES FOR WAVEFORM ANALYSIS

Superimpose ABR waveforms for visual assessment of reproducibility. Just place markers to see the latencies, intervals and amplitudes in analysis tables. Compare results with reference values on the latency/intensity chart. This will improve your efficiency.

OPTIMIZED STIMULUS (CHIRP)

The Chirp and Chirp-LS stimuli are designed with a cochlea model in mind (frequency rises with time) to maximize the evoked response. That's why they are optimal for hearing screening and hearing threshold search (wave V is up to twice the size of a click response). Chirp-LS is optimized to be efficient at any stimulus intensity, so it saves your time.

WEIGHTED AVERAGING FOR HIGH-QUALITY RECORDING

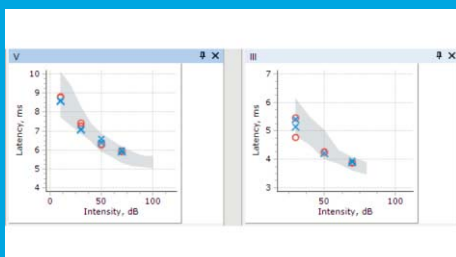
The weighted averaging maintains the steadily high record quality even in the condition of a noisy patient (for example, a lot of movements and muscle activity). As a result the waveform morphology is improved and the residual noise is decreased. It allows saving your time and recording non-sedated ABR from young children.

MINIMIZATION OF MAINS INTERFERENCE

The unique adaptive notch filter (and high harmonic filter) together with the "minimize interference" feature (stimulation rate "jitter") allow recording clear waveforms even with low-quality mains and absence of a shielded room. It saves you time and money.

AUTOMATIC HEARING THRESHOLD SEARCH

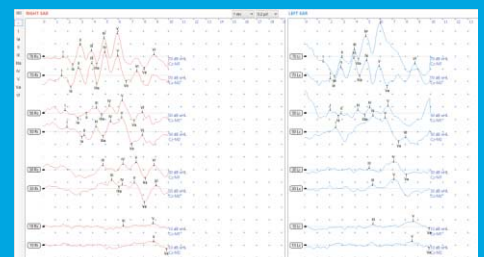
Our software has automatic hearing threshold search protocol. Also you can manually select the list of intensities used during the test which can be modified on the fly. It increases ease of use.



ABR latency/intensity chart



Comparison of Click and Chirp ABR waveforms



Dual displays with unlimited waveforms

VEMP

CLINICAL APPLICATION

Diagnostics of saccular/utricle and inferior/superior vestibular nerve function in patients suffering from dizziness.

EMG SCALING OF WAVEFORMS

To facilitate comparison of the results obtained from left and right sides, Neuro-Audio software has the feature of scaling the recorded waveforms by averaged EMG. This ensures confidence in results.

PEDIATRIC VEMP (EMG HISTOGRAM)

It is very difficult for children to sit still during the whole test. That's why the unique function was designed especially for them – recalculation of the recorded VEMP responses with the specified EMG range (that can be modified after recording at any time). All sweeps that don't fall in the required EMG range are automatically rejected. It saves your time considerably.

HIGH STIMULATION LEVEL

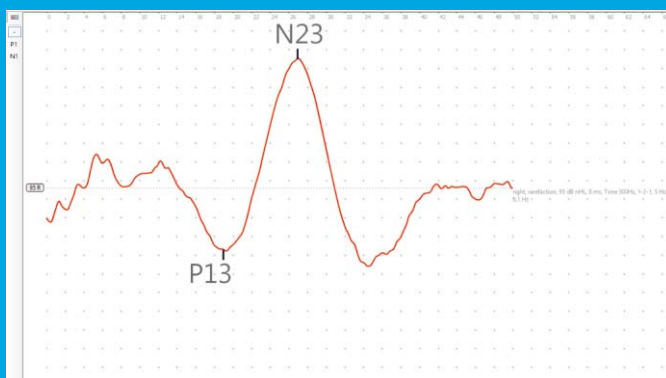
VEMP is generated in response to loud stimulus. That is why the maximum stimulus intensity is of great importance for this test. Neuro-Audio can stimulate up to 100 dB nHL with clicks and up to 110 dB nHL with tone bursts (for insert earphones). For bone conduction testing the unique bone vibrator amplifier (purchased separately) can be used to stimulate up to 80 dB nHL.

AUTOMATIC VEMP RATIO CALCULATION

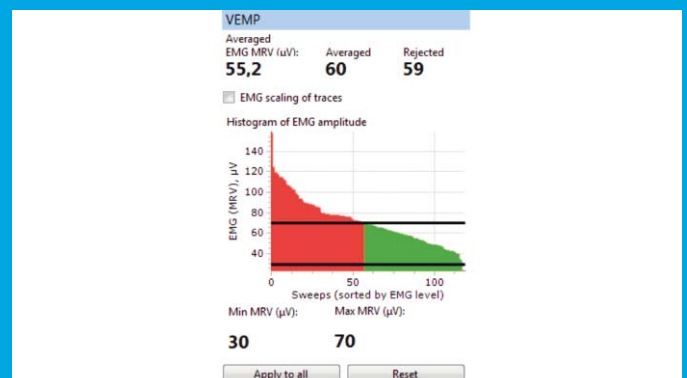
The VEMP ratio (asymmetry between ears) is calculated by the Neuro-Audio software automatically, and the value is displayed on the screen and in the report to be printed. Just place two markers on the waveform.

FULL SET OF VEMP PROTOCOLS

By default Neuro-Audio software includes the comprehensive list of VEMP protocols, including cervical and ocular VEMP tests (cVEMP and oVEMP) and bone conduction VEMP test with bone vibrator amplifier (purchased separately). This streamlines your workflow.



Normal cVEMP response



VEMP analysis panel

AEP

AABR, MLR, LLR/CAEP,
ERP, ECochG

CLINICAL APPLICATION

- Newborn hearing screening (AABR).
- Diagnostics of Ménière's disease/endolymphatic hydrops (ECochG).
- Objective test of sound/speech recognition in the auditory pathway from the ear to the cortex before/after hearing aid fitting (CAEP, cognitive ERP).

FULL SPECTRUM OF AEP: FROM SCREENING TO RESEARCH

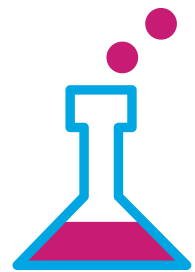
Neuro-Audio can be used to record auditory evoked potentials for newborn hearing screening (AABR) as well as other diagnostic and research purposes. The software includes predefined protocols for all AEP types in order to increase your performance. If you perform AEP research studies, you can fully customize all the hardware and software settings. You are free to experiment!

AABR: FAST & OBJECTIVE HEARING SCREENING

Just place the electrodes on a patient and start the AABR test. It only takes a few minutes to get simple "Pass"/"Refer" result. The test can be performed for patients of all ages and even when a patient is asleep.

ECochG: CALCULATION OF SP/AP AREA RATIO

Besides SP/AP amplitude ratio calculation, Neuro-Audio software calculates SP/AP area ratio. Just place three markers on the response waveform. The area ratio calculation makes ECochG significantly more sensitive to diagnose Ménière's disease (according to John Ferraro).



FOR DIAGNOSTICS
AND RESEARCH



Normal ECochG response

NEUROSOFT AUDIOLOGY PRODUCT LINE

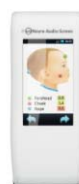
Neuro-Audio



Audio-SMART



Neuro-Audio-Screen



aScreen



APPLICATION

Clinical ABR&OAE analyzer

Diagnostic/screening ABR&OAE and middle ear analyzer

Diagnostic/screening ABR&OAE analyzer

OAE screening

TESTS

ABR, MLR, LLR, ECoChG, VEMP, ASSR, P300, MMN, PTA, TEOAE, DPOAE, SOAE

Tympanometry, AR, AR decay, ETF, TEOAE, DPOAE, ABR

TEOAE, DPOAE, AABR, ABR

TEOAE, DPOAE

HARDWARE

PC-based

Portable standalone

Portable standalone

Portable smartphone-based



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