

med·wave[®]

TRANSFORMING EAR ANALYSIS

The Gentle Digital Middle Ear Analyzer

PLAI[®]
INSIDE



med·wave®

TRANSFORMING EAR ANALYSIS

Introducing med·wave® The Gentle Digital Middle Ear Analyzer. Quick. Non-invasive. Objective.

Middle ear analysis today is performed with tools that present several disadvantages. Acoustic couplers must be inserted in the external ear canal. Tip size and shape must be selected and tested exactly before positive and negative pressure can be applied. This type of testing can last minutes. Alternatively, an otoscopy—a visual, not a functional ear exam—is performed.

Although it may be fast, results are subjective and cannot be compared with other data.

med-wave® introduces a new, non-invasive and objective middle ear analysis method, and the innovative test technology takes only seconds. Middle ear evaluation is based on patented PLAI® methodology.

The device performs a multi-frequency test using a probe that sends chirp signals from 100 to 3000 Hz that are then analysed at frequencies from 100 to 1500Hz covering both adult and pediatric needs.

med wave® processes the data collected and compares them with its proprietary database of pathologies in order to offer quick, painless, objective assessment of ear health status.



" At a young age, I was diagnosed with cholesteatoma, a benign recurring middle ear disease that led to infinite trips to the doctor and several ear surgeries. What I really hated were the ear tests.

I shed a lot of tears as a child because they hurt, they felt invasive, and they were slow because the doctor had to repeat the exam several times.

As I grew up, I thought that it must be possible to make this testing equipment more friendly and less invasive. And this why I founded NeuraniX, to bring more user- and patient-friendly test equipment to diagnose and monitor hearing diseases"

FILIP E.A. MOENS
NEURANIX FOUNDER AND CEO

WHY SPECIALISTS AND PEDIATRICIANS CHOOSE **med.wave**



QUICK

The device is easy to handle, quick, and simple to use: the test is completed in less than 2-3 seconds per ear.



NON-INVASIVE

Patients remain comfortable: the test is non-invasive and painless even when the ear is sensitive or inflamed.



OBJECTIVE

Testing is accurate, repeatable and objective in both analysis and suggestions for diagnosis.



Using such an innovative device has never been so easy

Touchscreen

The operator uses the touchscreen to control every function in the various phases of examination, diagnosis, and test reporting for a smooth and ideal workflow.

User interface

Easy to use even when performing examinations in upright position.

Handy, lightweight, easily portable

med-wave® is easy to carry from one place to the next for testing anytime, anywhere.

med-wave® Report

Reports can be download right after taking the exam, or in the export section.

Compare exams

View multiple examinations performed on the same patient over time to monitor the healing process.

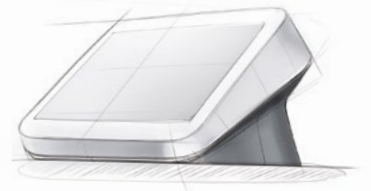
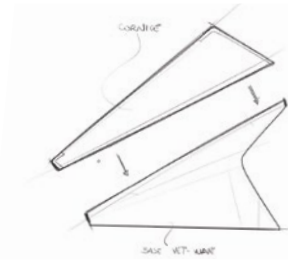


Safety

PLAI® methodology requires no changes of the pressure in the ear.

High sensitivity and specificity

To ensure complete diagnosis to be used in research and screening.



Design

Innovative streamlined touchscreen design
Guarantees ergonomics and hygiene.



Prepared for the future

For adaptation to ongoing development and improved features in the future.



Pressure Less Acoustic Immittance The med-wave® device is based on patented proprietary Neuranix PLAI® technology

Probe

Testing starts automatically as soon as occlusion in the external ear canal is sensed.

The first instrument with Pressure Less Acoustic Immittance methodology



PRESSURE LESS ACOUSTIC IMMITTANCE

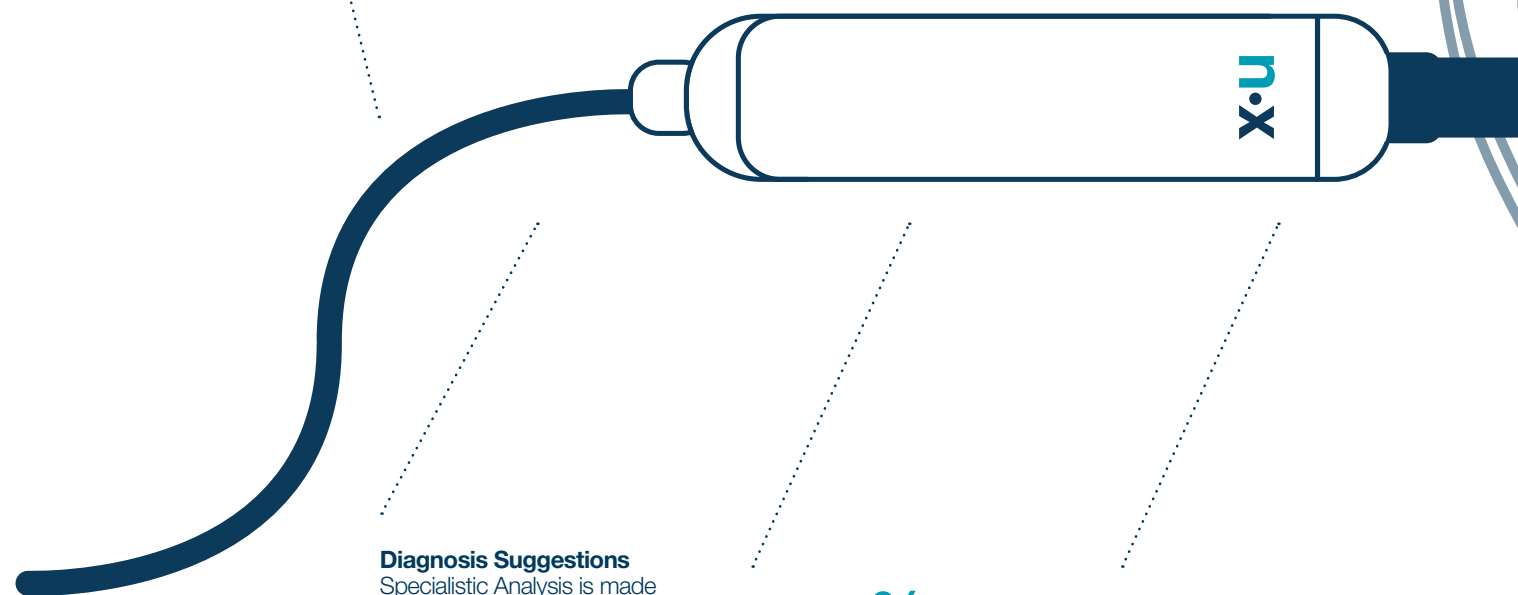
PLAI® impulse.

The only device that uses multifrequency chirp stimulation from 100 to 1500 Hz.

Patented Technology

PLAI® (Pressure Less Acoustic Immittance) is patented Neuranix methodology developed with the Ferrara CNR National Research Center.

PLAI® is redefining middle ear analysis. No pressure. No stress.



Diagnosis Suggestions

Specialistic Analysis is made easier by statistical algorithms that provide useful indications in those cases evaluated in a primary pediatric setting.

87% CA

CA (Classification Accuracy)

The accuracy of classification is the percentage of cases classified correctly.

Extremely simplified approach

for the operator lets even personnel without much experience conduct quick, accurate testing.

Simplicity.

PLAI® methodology lets device complexity be reduced significantly. No pressure pump system is required to change the pressure in the external ear canal, which also reduces machine downtime risks while improving patient safety.

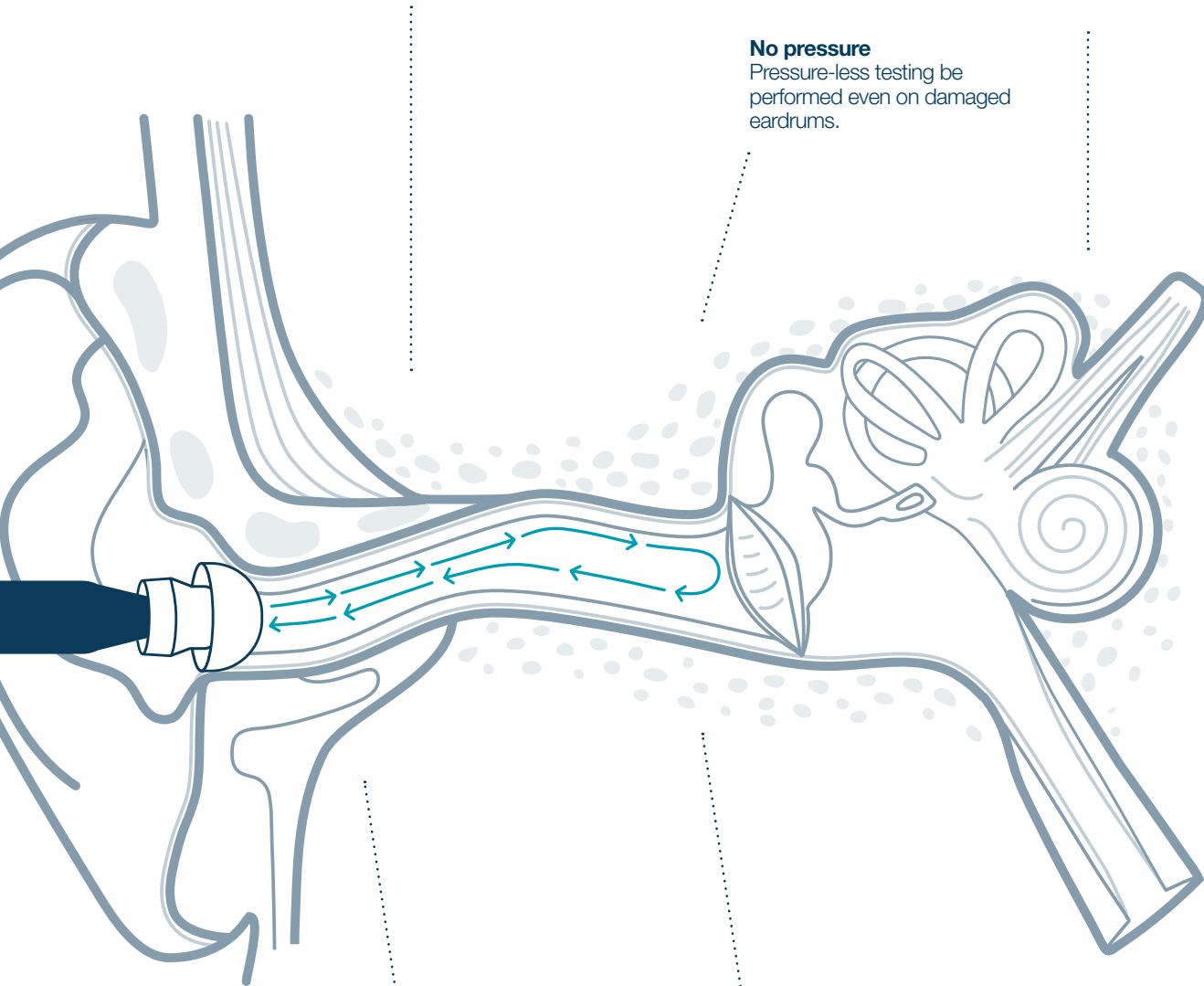
Test execution speed

amounts to just seconds. No need to check the pressure seal or probe positioning problems that reportedly arise in 21% of cases.*

*White paper: "Pros and cons of traditional tympanometry: the Customer's Voice"-
Dr. Flavia Sorrentino – Dr. Marco Greggio,
September, 2022

No pressure

Pressure-less testing be performed even on damaged eardrums.



Non-invasive is synonymous with serenity for patients, family members, and operators. Serenity is a top priority for us.

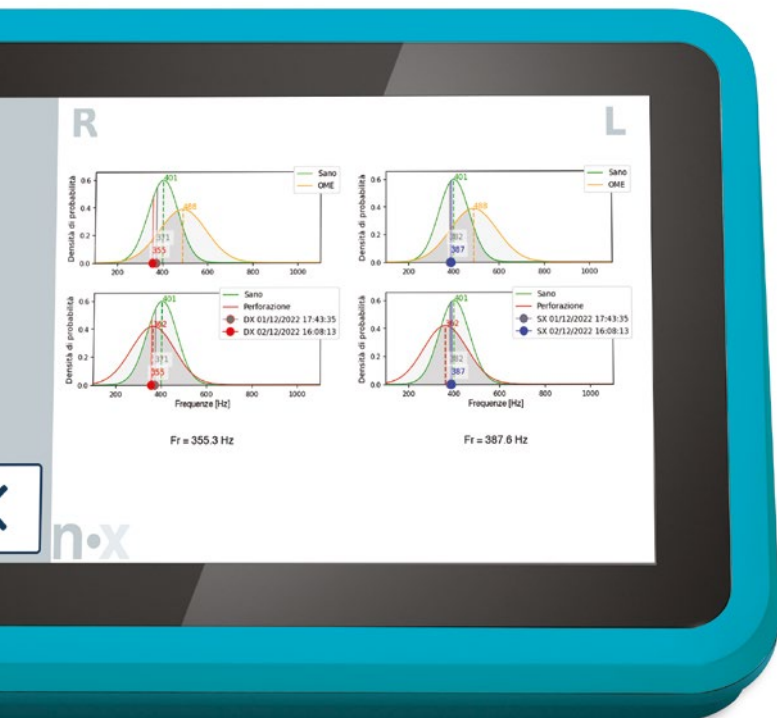
**94%
AUC**

AUC (Area Under Curve)

A statistical evaluation parameter developed through clinical trials that quantifies the capacity to recognize the average presence of otitis.

When best indicated for use by doctors and patients:

- Audiological assessment**
 med-wave® can be used during routine examinations to assess eardrum and middle ear status
- Pediatric assessment**
 med-wave® collects data under normal pediatric patient conditions. In subsequent case of suspected pathology, it lets pediatricians compare new exams with previous tests saved in the database.
- Inflammation**
 med-wave® permits non-invasive eardrum and middle ear status assessment. Subsequently it indicates worsened or improved conditions following pharmacological treatment.
- Suspected perforation**
 Thanks to the absence of painful changes in pressure, med-wave® testing poses no risk when perforation is suspected after otoscopic evaluation, accurately indicating whether perforation is present or not.



Suggested diagnosis

Device examination results and diagnosis suggestions are displayed in graph form. med-wave® provides indications on the condition of the ear, distinguishing between values compatible with healthy ear, otitis media, and tympanic membrane perforation.

Patient monitoring

Patient measurements taken over time help monitor pathology and the healing process.



SCS[®]

The best way for safe, quick, and reliable testing

PLAI® methodology and the med-wave® device are breakthroughs in middle ear status assessment.

The development of a system that guarantees acoustic immittance without requiring positive or negative changes in eardrum pressure makes all the difference in the world for sensitive patients.

Experienced practitioners discourage performing tympanometry on subjects after eardrum surgery, even on those with only suspected lacerations. No such restrictions apply to med-wave®, which is safe and reliable for these types of patient.

Testing speed is crucial with children because their attention span and willingness to sit still is limited. This makes med-wave® the ideal solution for pediatric use. Just a few seconds per ear and it's all over! Reliability also means speed, safety, objectivity. med-wave® is all of the above.





SCC[®]

The best choice for:



PEDIATRICS

med-wave® is the Gentle Digital Middle Ear Analyzer that allows testing to be performed with unprecedented ease. Similar to normal otoscopy the external ear canal is closed simply and then the device emits signals. Test results are obtained in seconds.

The resonance frequency shown on the display falls into the areas of normality, potential otitis or suspected perforation. This allows therapy or referral to a specialist to be suggested with unparalleled simplicity. Used over a period of time, med-wave® enables previous measurements to be compared with the later ones for objective monitoring of the healing process and variations in treatment dosage based on the additional information obtained.



ENT DOCTORS

The complexity of the diagnostic instruments of the past was due to previously unsurpassable technical limits.

The med-wave® device permits the improvement of the efficiency of the ward in investigating tympanic status during both routine check-ups and acute phases in more patient-friendly manner.

The device can also be easily sanitized and has no mechanical components or positive/negative pressure systems. This reduces the transmission of infection. Clinical and portable diagnostic use is ensured by lightweight, compact design that does not compromise the efficiency or completeness of function.



AUDIOLOGISTS

In both pediatric and adult applications, the operator doing the fitting needs to know that a common cold or eustachian tube clogging will not invalidate the hearing test or demand further hearing aid adjustments.

In just seconds, med-wave® lets healthcare providers check the functionality of the subject's tympanic membrane before proceeding or suggest a visit with a specialist for further verification.



DATA SHEET

PROBE SIGNAL

Sweep from 100 to 3000 Hz

TYPE OF TEST AVAILABLE

Tympanometry. Results from PLAI® methodology. Acoustic impedance examination.

DISPLAY

Type: TFT display with complete angle of vision

Size: diagonal 10.1", 218 mm x 137 mm

Resolution: HD 1280 X 800 Pixels – WXGA

LANGUAGE

Multi-language interface

INTERFACE

No. 2 Type A USB ports for SW updates, calibrations and exports of reports via USB pen drive (included)

DIMENSIONS

32 x 22 x 13 cm (WxDxH)

WEIGHT

1.7 Kg

POWER SUPPLY

Main unit: 12V DC, 2.5A

External adapter: 100-240 Vac 50/60 Hz 0.6-0.3 Arms medical grade, in conformity with IEC 60601-1, IEC 60601-1-2 standard

STANDARDS APPLICABLE

Electric safety: IEC 60601-1

EMC: IEC 60601-1-2

PARTS INCLUDED

Main unit

Probe

Medical grade power supply unit

Accessories box with ear tips,

USB pen drive

STORAGE AND USE

Temperature: 10°C - 40°C

Humidity: 35% ÷ 45% (winter)

- 50% ÷ 60% (summer)







Neuranix is an innovative company that develops and produces diagnostic devices for pathologies of the middle ear.

The holder of various patents in audiology for the development of the med-wave® device, Neuranix bases its technology on PLAI® Pressure Less Acoustic Immittance methodology.

neuranix

TRANSFORMING AUDIOLOGY DIAGNOSTICS

med-wave®

TRANSFORMING EAR ANALYSIS

med-wave.com

Registered office:

Neuranix Srl

Via Coroglio 57

80124 Napoli (NA)

Italia

Headquarters:

Neuranix Srl

Via Talierno 7/A

30037 Gardigiano di Scorzè (VE)

Italia

Tel: +39 041 8479035

info@neuranix.com

