

Science **made** smarter

As a full line  
supplier we can  
provide you with  
products & services  
that will help you  
in your daily  
workflow

# A complete solution

for the balance clinic



  
**Interacoustics**

Audiometry

Tympanometry

ABR

OAE

Hearing Aid Fitting

**Balance**  


# Vestibular Investigation

## Prevalence of Vertigo

More than 40% of patients will experience dizziness or vertigo that is serious enough to go to a doctor.

An estimated 65% of individuals over age 60 experience dizziness or imbalance.

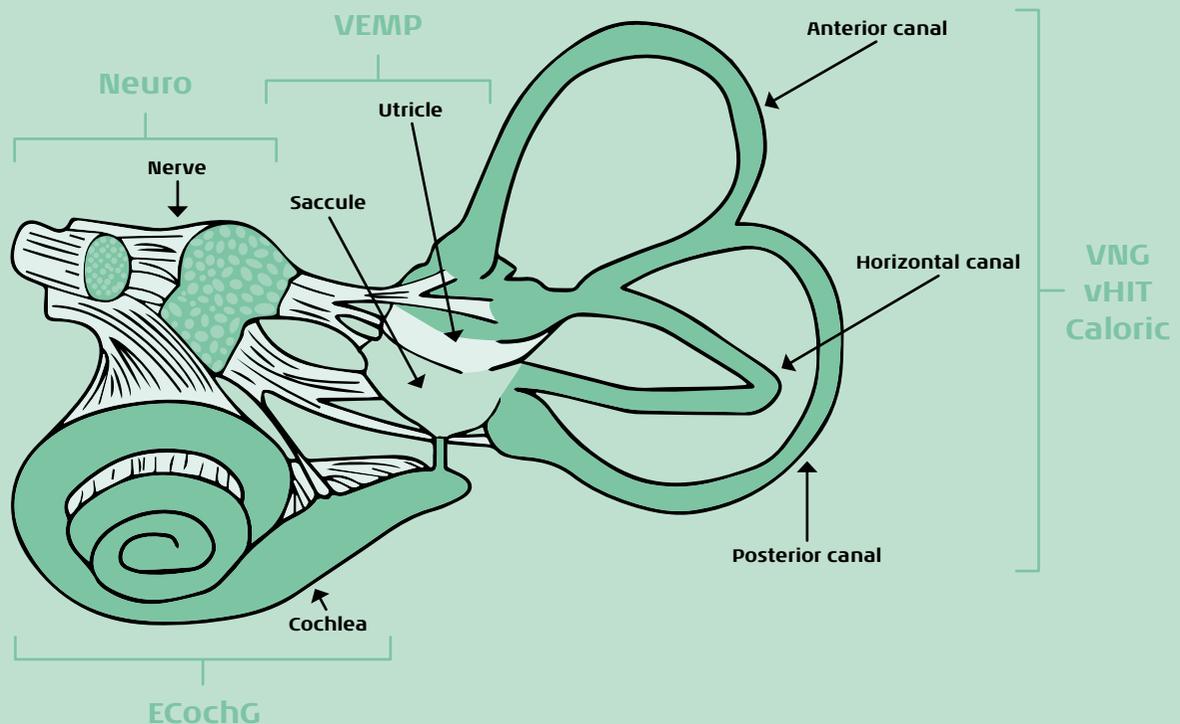
The incidence of vertigo will increase with today's longer life expectancies.

The need for efficiency in a balance clinic will increase in order to handle the increased patient load.

The vestibular system is housed within the inner ear and shares connections with the hearing (auditory) system.

If one of the vestibular organs is affected by illness, it is not unusual that the other vestibular organs are affected, too.

It is common for a "dizzy" patient to also have hearing loss and/or ringing or buzzing in the ears. Similarly, a problem with the balance system may also cause abnormal eye movement as the brain tries to decipher why it is receiving inappropriate information.



# PRE- Examination

**Obtaining otoscopy, tympanometry and audiometry information is essential prior to balance assessment. Interacoustics offers a variety of options for these tests.**

## **Video Otoscopy**

Otoscopy is a fundamental part of your practice prior to any audiological evaluation. It may determine alternative strategies during the patients examination. The Viot™ video otoscope is a compact instrument for otoscopy and medical documentation. Data can be printed in your custom templates with further test data.

## **Tympanometry**

Analyzing the middle ear is an essential part of the pre-examination. Interacoustics offers a wide range of tympanometers. Wideband Tympanometry is considered one of the biggest revolutions in the industry for decades. Multiple tympanograms from 226 Hz to 8kHz in one click makes it much easier to detect and differentiate between middle ear pathologies.

## **Audiometry**

A hearing loss may be a good indication if something is wrong in the outer or inner ear. Hence, performing audiometry is a vital part of the initial examination. Depending on clinic needs, our portfolio ranges from basic screening to highly clinical audiometers.



Workflow steps:

# Initial Vestibular Examinations

## Identify Nystagmus

### Look for BPPV

### Screen for Vestibular Neuritis

### Observe Utricular Function

Observation of eye movements is a necessary technique for clinical assessment of dizziness and balance disorders. Simple tests can be quickly completed using a video goggle for

measuring nystagmus, such as in BPPV (Micromedical VisualEyes™ VE505) or checking for low VOR gains, such as in vestibular neuritis (EyeSeeCam Video Head Impulse Test). These instruments can be used to screen for many disorders and provide a faster and easier way to decide whether you need to do VNG or Rotary Chair testing.

Video Frenzel or  
EyeSeeCam Video  
Head Impulse test  
for the initial  
vestibular  
examination



Video Frenzel - Superior video quality



EyeSeeCam Video Head Impulse test. A simple USB connected goggle and a laptop make this test easy to complete in any clinical setting.



By courtesy of Dr. Leonel Luis

# Advanced Vestibular Examinations

## Oculomotor & Caloric Testing

VNG (VE525), including caloric testing and Rotary Chair are the gold standards for differentiating peripheral from central vestibular abnormalities and for evaluating bilateral weaknesses. The advanced stimuli for oculomotor testing and large "full field" LCD screen allow you to accurately assess all patients, including children. The streamlined protocols, normative data and real time analysis save you significant time, allowing you to complete more necessary tests in less time.

## Rotary Chair Testing

The gold standard for a bilateral weakness is rotational chair testing. Rotational chair testing is often better tolerated with difficult to test populations compared to caloric stimulation. Children are a prime example, as they are easily tested in the rotary chair. Rotary chair testing can also be performed on patients with middle ear pathologies for which caloric testing is not possible. Rotary chair testing provides information on compensation of unilateral weaknesses and can be used to monitor vestibular conditions over time.



## VEMP testing

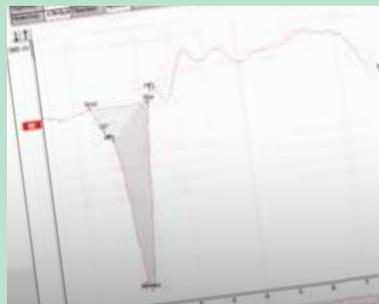
Vestibular evoked myogenic potentials are evoked responses that provide additional information about the vestibular system. cVEMP and oVEMP tests, when utilized with other vestibular tests, can be used to improve differential diagnosis.

## oVEMP

The Ocular Vestibular Evoked Myogenic Potential (oVEMP) is an evoked potential measured from the inferior oblique muscle and is used to test the integrity of the utricle and its afferent pathways through the superior vestibular nerve. The oVEMP response provides information to assist in the diagnosis of disorders such as Superior vestibular neuritis and Superior Semicircular Canal Dehiscence (SSCD).

## cVEMP

The Cervical Vestibular Evoked Myogenic Response (cVEMP) is an evoked potential measured from the sternocleidomastoid (SCM) muscle and is used to test the saccule and its afferent pathways as the inferior vestibular nerve. It is used to diagnose saccular hydrops/ Ménière's disease, SSCD and inferior vestibular neuritis.



Unique ECoChG Area Ratio Calculation implementation. #

## Patient Monitor

A correct contraction of the SCM muscle is essential for a reliable cVEMP recording. The patient monitor provides information about the test time and contraction of the SCM muscle.

## EMG Scaling - a reliable result

EMG scaling (amplitude normalization) corrects for differences in EMG activity throughout the test allowing for a more reliable final result.

## Neuro

An auditory evoked neurological test is a measure of the integrity and function of the 8th (vestibulocochlear) nerve. It is useful in identifying asymmetries in function and retrocochlear lesion abnormalities and pathologies.

## ECoChG

Electrocochleography (ECoChG) is a measure of the electrical potentials of the cochlea. The ECoChG is primarily used to diagnose Ménière's disease, particularly Cochlear Hydrops. By using the area calculation the sensitivity of detecting Ménière's disease is increased (Ferraro et al., 2009).



# Advanced Therapy

## **vHIT advanced 6 canal testing**

The vHIT is able to provide VOR gain measurements in all 6 semicircular canals as well as identify the presence of catch up saccades in the compensation process. This can provide additional treatment and follow up information.



# The balance clinic



**ABR, ECoChG**



**Rotational Chair**



**Audiometry/Wideband Tympanometry**



**VEMP**



**vHIT**



**vHIT (six canals)**



**VNG**

# A variety of our products for balance assessment



## Micromedical VisualEyes™ 505

### Video Frenzel

- Provides ideal conditions for fixation-free observation and recording of eye movements
- Simultaneous display of patient movement and eye movement
- Multiple USB goggle solutions are available, top or side mounted binocular goggles or front mounted monocular goggles



## Micromedical VisualEyes™ 525

### Vestibular and Oculomotor Analysis

- Rapid data transfer and real time analysis in Spontaneous Nystagmus, Positional, Dix-Hallpike and bithermal/monothermal Caloric test protocols.
- Create your own protocols with the template designer
- Industry leading eye tracking and analysis algorithms
- Synchronized eye and waveform video play back
- Detailed oculomotor testing and analysis
- Full field of view visual stimuli
- Software-generated stimuli, including multiple patterns and images for a variety of patient populations
- Combination goggle for both occluded and non-occluded view



## EyeSeeCam

### Video Head Impulse Test (vHIT)

- Quick and objective measurements of the vestibular ocular reflex (VOR)
- Exceptionally light-weight goggle
- Switchable camera R/L eye
- Superior data analysis, including Velocity regression, instantaneous gain and median gain
- Efficiently assesses all six semicircular canals
- Auto-stop impulse counter
- Optional fixation light always on

## Eclipse

### Neuro

- Automated latency calculation
- Latency data
- Residual Noise calculation
- Bayesian Weighting

## Eclipse

### EcochG

- Unique area ratio and AP/SP calculation
- Default protocols for EcochG testing
- TM-starter kit included

## Eclipse

### VEMP

- EMG-scaling compensates uneven left and right muscle tonus - a reliable result
- Instant visual feedback of EMG tonus
- increased quality
- Automated VEMP ratio calculation for easy evaluation



## Aqua Stim

### Caloric Water Irrigator

- An external water tank eliminates the need for a drain or water supply in the examination room.
- 30°C cold and 44°C warm irrigations
- LED illumination and start button in handle



## Air FX

### Caloric Air Irrigator

- Otosopic handle with illumination and magnification
- Cooling and heating ability: 20°C to 50°C
- Lighted and magnified otoscope
- Self-contained cooling ability
- Integrated with the Interacoustics VNG
- software VN415 / VO425 v. 7.06 or later



## Orion

### Rotary Chair

- Ideal for evaluation of the Vestibulo Ocular Reflex (VOR) function.
- Space-saving design with fully reclining back rest and leg support - ideal for caloric and positional testing
- Gold Standard for bilateral vestibular lesions
- Pediatric friendly

# Science made smarter

## **Interacoustics is more than state-of-the-art solutions**

Our mission is clear. We want to lead the way in audiology and balance by translating complexity into clarity:

- Challenges made into clear solutions
- Knowledge made practical
- Invisible medical conditions made tangible and treatable

Our advanced technology and sophisticated solutions ease the lives of healthcare professionals.

We will continue to set the standard for an entire industry. Not for the sake of science. But for the sake of enabling professionals to provide excellent treatment for their millions of patients across the globe.

[Interacoustics-us.com](http://Interacoustics-us.com)

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