Science **made** smarter

BalanceVR

Vestibular rehabilitation **made** immersive

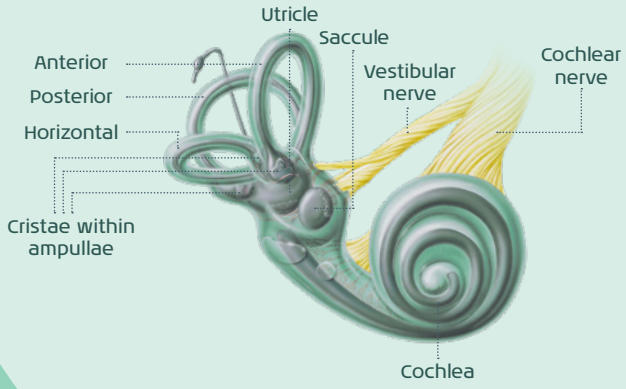
Immersive VR with a suite of vestibular assessment and training modules

Interacoustics

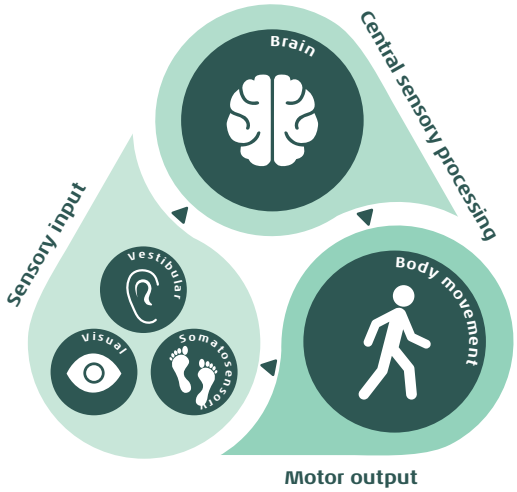
Audiometry | Tympanometry | ABR | OAE | Hearing Aid Fitting | **Balance**

Balance control is key

The vestibular system is a critical component of the body's balance system, providing sensory input that stabilizes posture and maintains clear, steady vision during movement

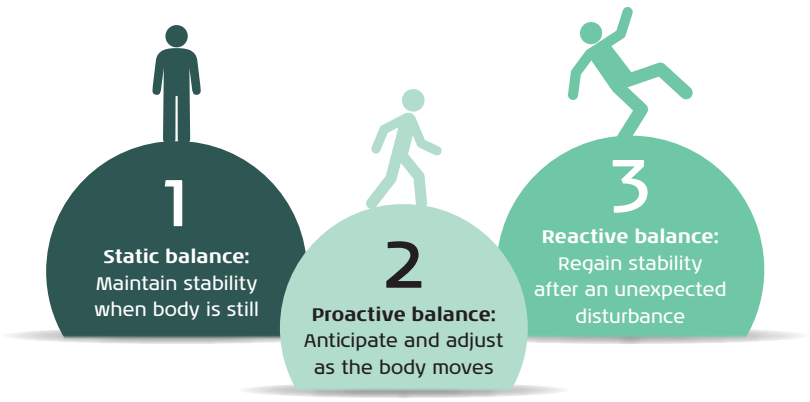


The balance system in action



When the vestibular system does not work correctly, patients can develop balance disorders. A disorder in the balance system could be:

- Decreased function in one or more sensory systems.
- The brain cannot process information correctly.
- The body does not have coordinated movement.



Challenges in patient rehabilitation

Clinicians often face multiple challenges when diagnosing patients. This may impact where the patient starts their rehabilitation and how they progress towards their daily functioning goals.

Referrals to physical therapy following peripheral vestibular disorders is only 0.5%. [1]

1 in 3 above 65 years of age have at least 1 fall every year and vestibular dysfunction is found in 61% of fallers [2, 3]

3 Challenges

Complex rehabilitation needs
Limited access to specialized care for objective and personalized vestibular rehabilitation.

Unclear link of patient's symptoms to test results
Normal or inconclusive diagnostic findings can delay timely initiation of vestibular rehabilitation.

Limited functional progress
Patient may require multiple follow-up visits to accurately identify the source of persistent symptoms.

1. Dunlap, P. M., Khoja, S. S., Whitney, S. L., & Freburger, J. K. (2020). Predictors of Physical Therapy Referral Among Persons With Peripheral Vestibular Disorders in the United States. Archives of physical medicine and rehabilitation, 101(10), 1747–1753. https://doi.org/10.1016/j.apmr.2020.04.016
[2] Risk Factors and Number of Falls as Determinants of Quality of Life of Community-Dwelling Older Adults, Journal of GERIATRIC Physical Therapy, P. Pérez-Ros etl. al., 2018.
[3] Donovan J, De Silva L, Cox H, Palmer G, Semciw AI. Vestibular dysfunction in people who fall: A systematic review and meta-analysis of prevalence and associated factors. Clinical Rehabilitation. 2023;37(9):1229-1247.

Diagnose, assess, train, and re-assess

The DATA model is a framework for care that uses patient-specific objective data to support clinical decision-making for intervention and follow up.

D

Diagnose

Test to make a clinical diagnosis based on results.

A

Assess

Assess to understand how the patient functions in daily activities with the diagnosis.

T

Train

Train to improve the patient's function in daily activities.

A

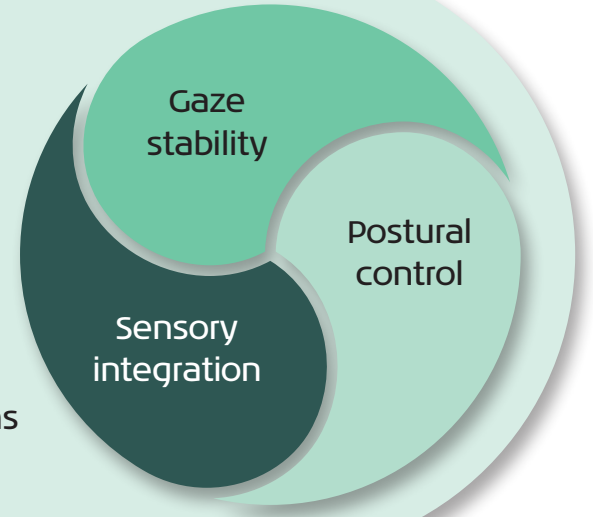
Assess

Re-assess the patient's progression and function in daily activities during and after training.

Assessing function to guide training

Assess

A diagnosis doesn't always reflect how a patient is functioning in their daily activities. Performing functional assessments of gaze stability, sensory integration and postural control are essential to understand how the patient is functioning with their disorder or to uncover the reason for ongoing symptoms when diagnostic tests appear normal.



Training

3 common balance rehabilitation strategies:

Adaptation occurs when the direct system is improved.

Substitution occurs when one system that is stronger replaces another system that is not functioning as well.

Habituation occurs when the system is desensitized.

Training programs are guided using information from the diagnostic test and functional assessment results. Adaptation, substitution and habituation strategies help patients restore everyday function.

Introducing virtual reality-based balance rehabilitation

VR allows you to objectively assess your patient's function while personalizing training programs for efficient and motivating progression

Virtualis
by Interacoustics

A study on virtual reality showed 73% increase in patient motivation and 98.4% completion of 4-6 weeks training program [4]

Research shows that patients who receive physical therapy within 3 months of dizziness onset have 86% less falls over the next 9 months [5]

Personalized
Based on the data from objective assessments, the clinician can deliver tailored training programs that address the patient's specific difficulties in daily living.

Motivating
Patients are fully immersed and engaged in their training plan with the simulated, real-life environments they recognize from activities of daily living.

Efficient
The clinician can use real time feedback to tailor the training intensity mid-session and safely push patients to their limits. Performance data is transferred across modules and sessions to further enhance clinician efficiency.

[4] Heffernan, A., Abdelmalek, M., & Nunez, D. A. (2021). Virtual and augmented reality in the vestibular rehabilitation of peripheral vestibular disorders: Systematic Review and meta-analysis. Scientific Reports, 11(1). https://doi.org/10.1038/s41598-021-97370-9.
[5] Marmor S, Karaca-Mandic P, Adams ME. Use of Physical Therapy and Subsequent Falls Among Patients With Dizziness in the US. JAMA Otolaryngol Head Neck Surg. 2023;149(12):1083-1090. doi:10.1001/jamaoto.2023.2840

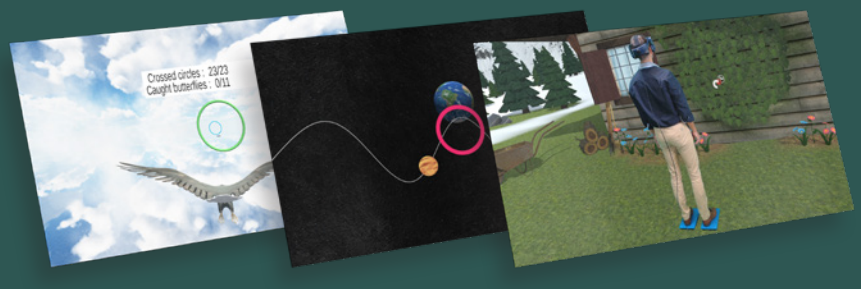
The power of vestibular rehabilitation with BalanceVR

Through VR-based vestibular rehabilitation, the BalanceVR solutions help patients return to their best quality of life.

Targeted rehabilitation with BalanceVR is specifically designed for assessing and training vestibular disorders. Essential assessment modules include Cervical Range of Motion and Subjective Visual Vertical to objectively assess patient function, guide initiation of training programs and monitor progress over time. Progressive training modules, such as Optokinetic, Target Tracking and CrowdVR, provide efficient and motivating training.

An interactive adventure
BalanceVR's engaging software motivates and monitors patient progression, transforming vestibular training into an interactive and motivating adventure.

Combine with a static or d
to elevate your assessme



Rehabilitation with objective postural control data

Expanding your assessment capabilities
The StaticVR offers a variety of functional postural control assessments such as CTSIB and Limits of Stability (LOS). This provides a solid foundation for functional assessments with crucial postural control data delivered by the posturography force plates.

Personalized training experiences
With the two independent force plates and training modules such as LOS Rehab and BirdVR, you have the opportunity to deliver personalized training while collecting real-time objective performance data.

StaticVR's two independent static force plates

ynamic force plate
nt and training

Computerized Dynamic Posturography and dynamic rehabilitation

The MotionVR provides a complete functional balance assessment package, featuring the CDP assessments: Sensory Organization Test (SOT), Adaptation Test (ADT), and Motor Control Test (MCT). You can use the objective data from these assessments to develop personalized training programs for your patients.

Safely push patients to their limits
You can customize training sessions with simulated real-life surfaces and instant force plate adjustments to optimize intensity progression. By using real-time objective feedback, you can challenge your patients and maximize the efficiency of each session in clinic.

MotionVR's dynamic 360-degree force plate

Tailor your rehabilitation solutions to your patients' needs

BalanceVR Premium

BalanceVR

The power of vestibular rehabilitation with virtual reality

- Immersive virtual reality experiences that simulate real-life environments, and include head movements to stimulate the vestibular system
- Assess and train vestibular disorders
- Training modules promote adaptation, substitution, and habituation strategies

Module examples: Cervical ROM, Optokinetics, DVA Rehab, Target Tracking

Module examples: SOT, ADT, MCT, Motion Program, BirdVR

Combined with MotionVR for dynamic rehabilitation

- Dynamic 360-degree force plate that simulates real-life surfaces
- Instant force plate adjustments to optimize training intensity and progression
- Computerized Dynamic Posturography (CDP) for full functional balance assessment
- Training of functional rehabilitation including static, proactive and reactive balance

BalanceVR Smart

PhysioVR Premium

...Or with StaticVR for postural control rehabilitation

- Two independent force plates for personalized foot placement
- Static posturography force plates that measure Center of Pressure for functional balance assessment and training
- Training of functional rehabilitation including static and proactive balance

Module examples: LOS, Dynamic Analysis, LOS Rehab, Weight Bearing

PhysioVR

The power of comprehensive rehabilitation with virtual reality

- Progressive training to support therapeutic goals
- Assess and train balance, neurological, and musculoskeletal disorders
- Training to enhance dual-task performance, muscle strength, reflexes, and limb mobility
- Training diverts attention to increase patient compliance
- All BalanceVR modules included

Module examples: Rod and Frame Test, BowVR and Catch the Ball

PhysioVR Smart

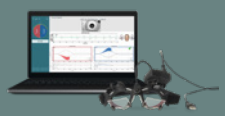
SOT: Sensory Organization Test, ADT: Adaptation Test, MCT: Motor Control Test, LOS: Limits of Stability, CTSIB: Clinical Test for Sensory Interaction on Balance, SVV: Subjective Visual Vertical, Cervical ROM: Cervical Range of Motion.

A complete DATA-driven balance clinic for improved quality of life

D — Diagnose

Test to make a clinical diagnosis based on results.

VisualEyes™
Videonystagmography test to diagnose peripheral versus central vestibular disorder.



EyeSeeCam vHIT
To determine function of vestibulo-ocular reflex (VOR).

TRV Chair
Repositioning chair to diagnose BPPV.

Orion Chair
To diagnose bilateral vestibular losses and assess central compensation.

Aqua Stim, Air Fx
To diagnose the side and extent of peripheral vestibular loss.

A — Assess

Assess to understand how the patient functions in daily activities with the diagnosis.

BalanceVR, PhysioVR
Immersive VR for vestibular and comprehensive assessments.

MotionVR+
Computerized Dynamic Posturography (CDP) system for full functional balance assessment.

StaticVR
Static force plates for postural control assessments.

VORTEQ™ Assessment
Functional VOR assessments (DVA, GST and fvHIT™).

T — Train

Train to improve the patient's function in daily activities.

BalanceVR, PhysioVR
Vestibular and comprehensive training.

MotionVR
Balance and comprehensive training using 360 degree dynamic force plate.

StaticVR
Static force plates for postural control training.

TRV Chair
Repositioning chair to treat BPPV.

A — Assess

Re-assess the patient's progression and function in daily activities during and after training.

Flexible use of products across DATA solutions.

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.

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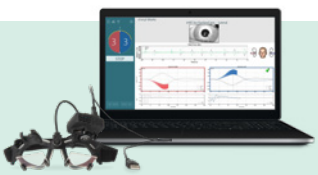
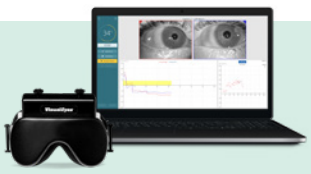


EyeSeeCam vHIT
Video Head Impluse Test



VisualEyes™ 525
Complete VNG solution for balance assessment

TRV Chair
Diagnosing and treating Benign Paroxysmal Positional Vertigo (BPPV)

Product specifications
All technical and hardware specifications concerning all products can be downloaded from our website.

FSC www.fsc.org MIX Paper | Supporting responsible forestry FSC® C134617

Interacoustics

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