Science **made** smarter

Balance Rehabilitation Solutions

Balance progression **made** motivating

Virtualis is a new member of the Interacoustics portfolio of rehabilitation solutions

Interacoustics

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

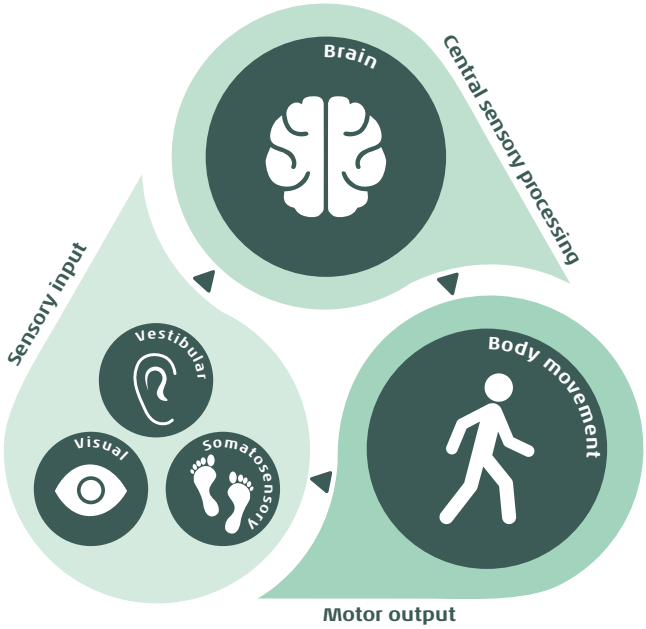
Balance control is key

The goal of the balance system is to keep the body and vision stable

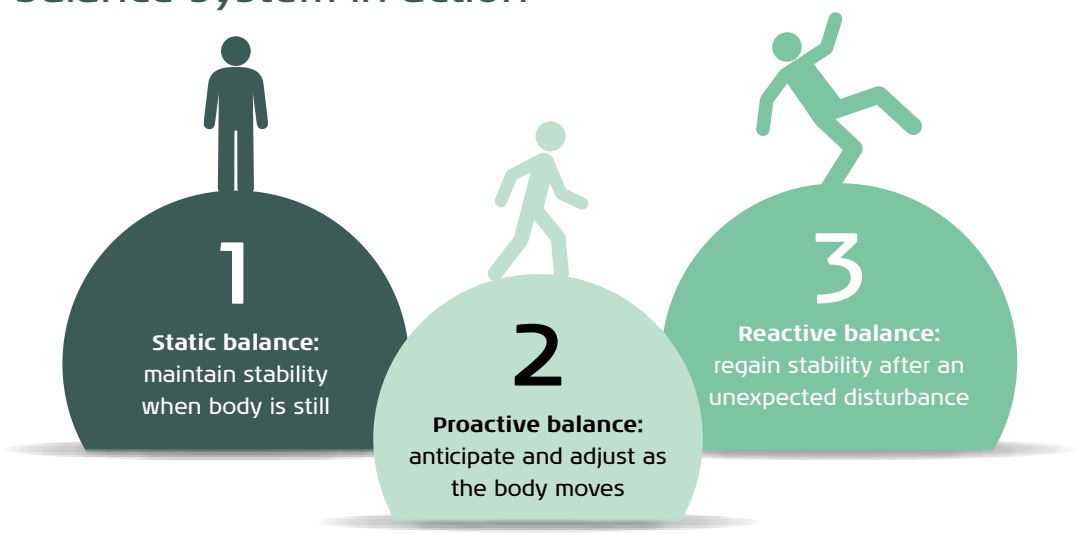
When the brain processes input from the three sensory systems, it sends signals to the body to coordinate movement.

A disorder in the balance system could be one or a combination of:

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



The balance system in action



Challenges in patient rehabilitation

Clinicians often face multiple challenges when rehabilitating patients. This may impact the progression to improve the patient's daily functioning goal.

21% of patients complete their home exercise program [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]

Challenge
Rehabilitation is complex

Results in
Limited access to specialized care for objective and personalized balance rehabilitation

Challenge
Unclear link to activities of daily living

Results in
Lack of patient motivation which can be amplified by fear of falls

Challenge
Safely challenging patients at appropriate intensity level

Results in
Slow rehabilitation with inability to safely push patients beyond their limits

[1] Simek, E. M., McPhate, L., & Haines, T. P. (2012). Adherence to and efficacy of home exercise programs to prevent falls: a systematic review and meta-analysis of the impact of exercise program characteristics. Preventive medicine, 55(4), 262-275.
[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

DATA is an objective process to first diagnose and assess a patient's balance disorder, followed by tailored training to promote adaptation, substitution and habituation for patient rehabilitation.

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.

Introducing virtual reality-based balance rehabilitation

Virtual reality allows you to objectively personalize patient training for efficient and motivating progression

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

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

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

Tailor your balance rehabilitation solutions to your patients' needs

BalanceVR

PhysioVR

The power of rehabilitation with virtual reality

- Fully immersive, no visual reference in peripheral view.
- Simulated real-life training modules promoting adaptation, substitution and habituation.

Module examples:
SVV, Target Tracking,
Optokinetics, Supermarket

MotionVR (+) (OH)

BalanceVR Premium (+) (OH)

PhysioVR Premium (+) (OH)

...Combined with a MotionVR dynamic force plate

- CDP (Computerized Dynamic Posturography) for full functional balance assessment.
- Dynamic 360 degree force plate to simulate real-life surface and stimulate the full balance system, including the otoliths.

Module examples:
SOT, ADT, MCT, LOS,
Motion Program, SkiVR

StaticVR

BalanceVR Smart

PhysioVR Smart

...Or with a StaticVR force plate

- Static posturography force plates for basic functional balance assessment.
- Force plates with objective data on balance control for tailored balance training.

Module examples:
CTSIB, LOS, LOS Rehab,
BirdVR

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.

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 and treat BPPV.

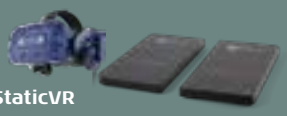
Orion Chair
To diagnose bilateral vestibular losses and assess central compensation.

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.

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



StaticVR
Static posturography platforms for basic functional balance assessment.

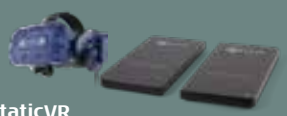
VORTEQ™ Assessment
Functional VOR assessments (DVA and GST).

T — Train

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

BalanceVR, PhysioVR
Extensive personalized balance training.

MotionVR
Balance training using 360 degree dynamic platform.



StaticVR
Portable static balance training.

TRV Chair
Repositioning chair to diagnose and 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.

Interacoustics.com

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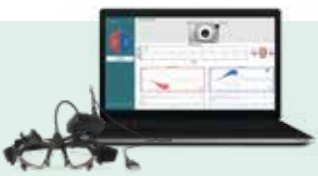
VIRTUALIS

Rehabilitate balance disorders with the Virtualis solutions, which are a part of the Interacoustics balance portfolio.

Go online to explore our full product range

Related products



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

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