

physio
sensing

new

Otoneuro System

**Therapy platform
for vestibular
rehabilitation**

**UNIFYING BALANCE.
TOTAL VESTIBULAR CARE.**

*Thinking about
everyone in the world
who suffers from
balance disorders*



powered by
sensingfu+ure

physio
sensing

Otoneuro System

Otoneuro System combines force plate posturography, an inertial sensor, and immersive VR into one software driven workflow. Clinicians assess VOR, visual-vestibular integration, cervical proprioception, and postural control, then deliver targeted, engaging therapy with automated reports to track progress.

INERTIAL
SENSOR



VR HEADSET



Designed
for strong
clinical
decisions



PRECISE FORCE PLATE

CLINICAL APPLICATIONS

Functional VOR Assessment & Training

Measure VOR with Dynamic Visual Acuity and Gaze Stabilization tests, identify asymmetries, and perform adaptation exercises to improve gaze stability and reduce oscillopsia.

Visual-Vestibular Integration & Motion Sensitivity

Use optokinetic stimuli within posturography to reveal sensory conflict and visual dependence, then habituate safely in VR scenarios tailored to motion-provoked symptoms.

Cervicogenic Dizziness & Proprioceptive Control

Quantify cervical joint position error with an inertial sensor to profile neck proprioception deficits and tailor head-neck repositioning tasks with real-time feedback.

Postural Control & Sensory Reweighting

Objectively assess static/dynamic balance, establish baseline measures and improve clinical decision making. Choose between different exercises to train balance, targeting postural alignment, weight transfer ability, directional control, limits of stability and sensory integration under progressively complex VR environments.

Product **Name:**
PhysioSensing Otoneuro System

Who is this solution for:

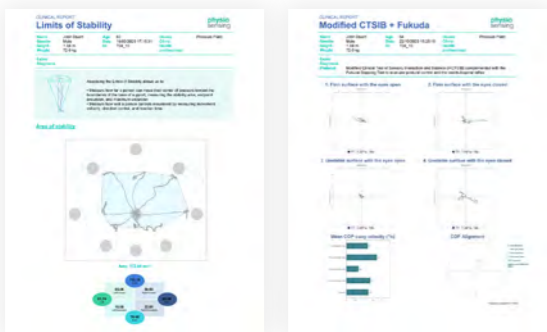
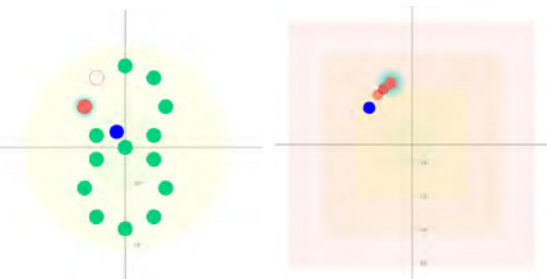
- › Otoneurologists & Neurologists
- › ENT/Otolaryngology clinics
- › Audiologists
- › Vestibular physiotherapists & rehab specialists
- › Rehabilitation medicine & neurology services
- › Private clinics and balance centers
- › Universities & research groups

Field of application:

- › Vestibular assessment and rehabilitation (clinical & research)
- › Balance and fall-risk profiling in neurological/otologic conditions

Main **applications**


- › Quantifying dizziness / imbalance with force-plate
- › Posturography with optokinetic stimulation
- › Functional VOR testing and training (DVA/GST)
- › Detect sensory dependences
- › Cervical proprioception (JPE) assessment and retraining
- › Sensory reweighting and balance training delivered with or without VR environments.

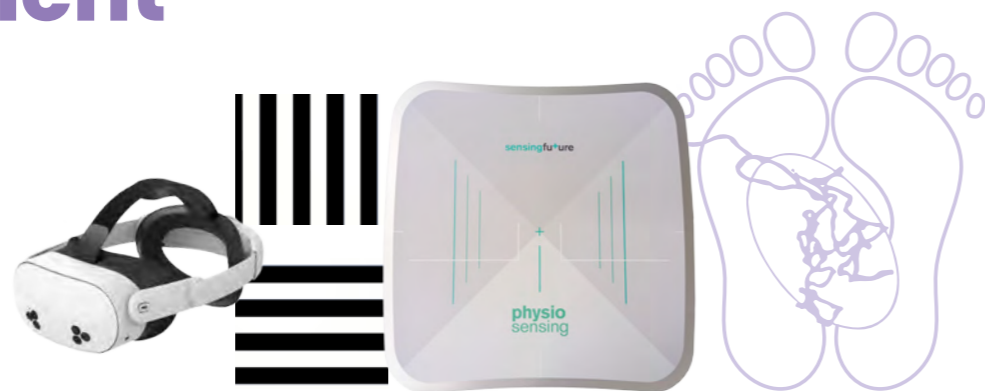


Otoneuro System Assessment

Visual-Vestibular Integration

➤ Optokinetic Test

 with or without VR

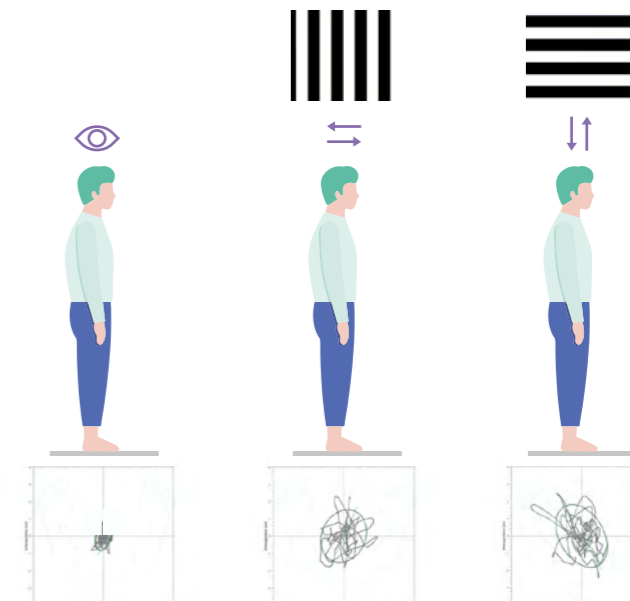


HOW

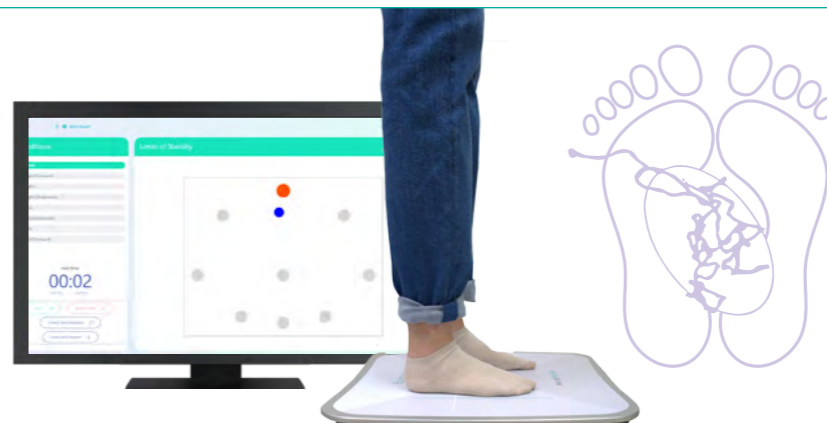
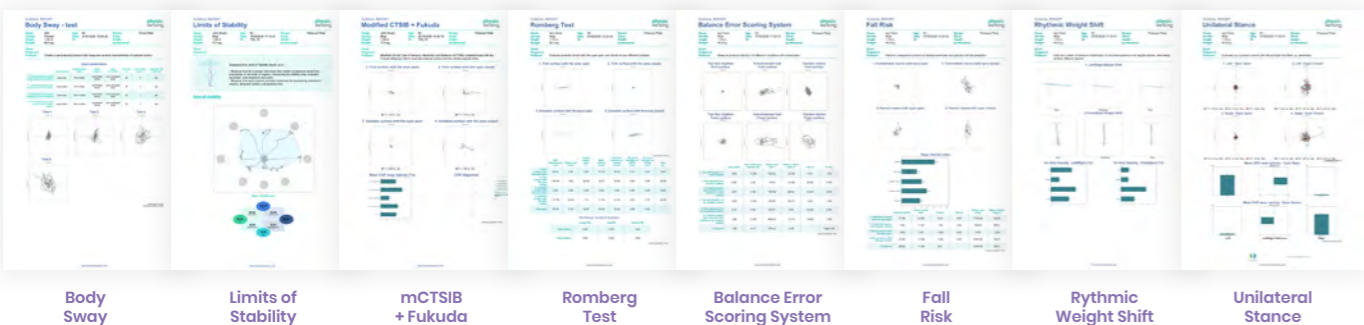
Posturography with visual conflict stimulus using optokinetic bar patterns in different directions.

WHY

Evaluate visual dominance in postural control.



Balance Assessment Protocols



HOW

Using a force plate.

WHY

Assess and measure balance in multiple sensory conditions and motor tasks.

Vestibular Ocular Reflex (VOR)

- **PTT** – Perception Time Test
- **DVA** – Dynamic Visual Acuity
- **GST** – Gaze Stabilization Test

workflow

PPT

Stational visual acuity baseline

DVA

Determines the loss of visual acuity at a fixed speed

GST

Determines the maximum head movement before visual acuity drops



HOW

Using an Inertial Sensor.

WHY

Allows you to understand the loss of visual acuity when there is head movement.



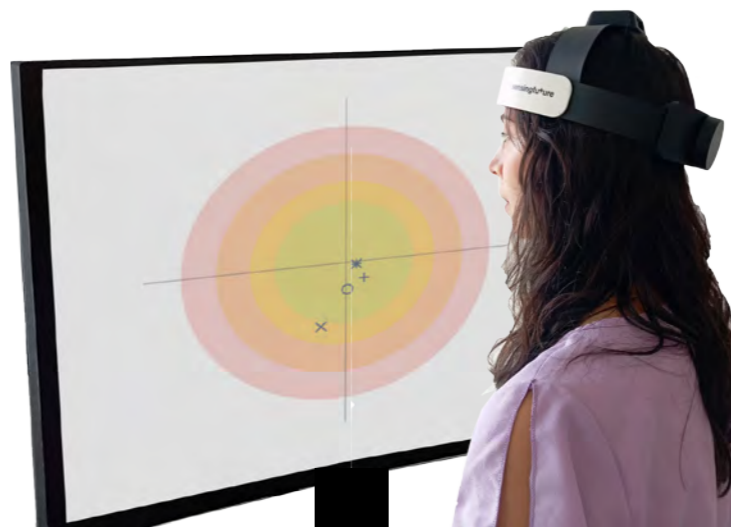
Cervical Proprioception

- **JPE** – Cervical Joint Position Error Test



HOW

Seated with trunk stabilized, with inertial sensor. With eyes closed, the patient returns to neutral position after head movement.



WHY

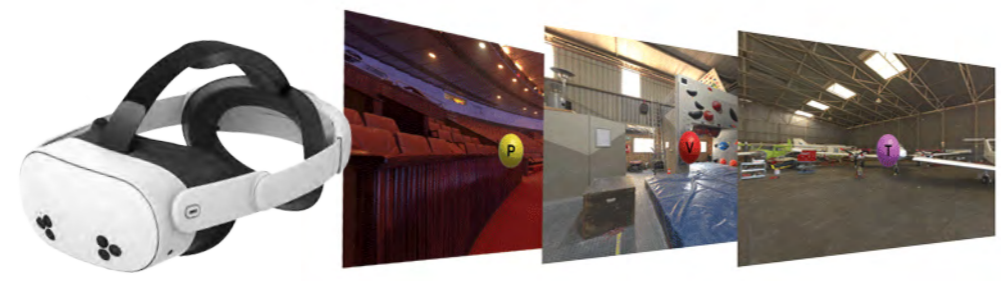
Identify associations between instability and dizziness symptoms.

Otoneuro System Treatment

VOR and Oculomotor

VR with or without VR

- > Saccades
- > Smooth Pursuit
- > Vergence
- > Fixation
- > VOR and Oculomotor Exercises



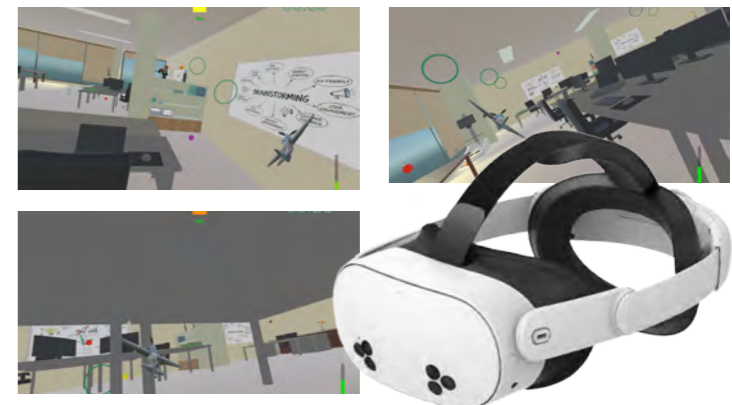
This module focuses on improving the Vestibulo-Ocular Reflex (VOR) and oculomotor control, essential for gaze stability, visual tracking, and spatial orientation.

Vestibular Rehabilitation VR Game COMING SOON

> Head Flight

VR using VR

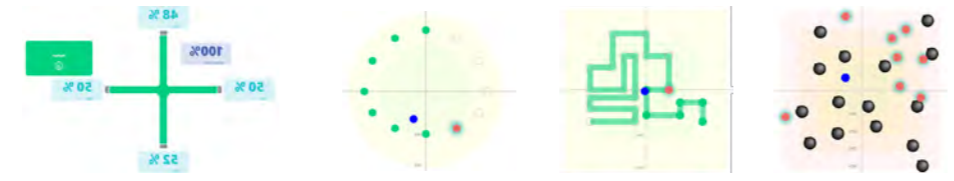
This module uses virtual reality goggles for interactive head-controlled flight exercises. By guiding an aircraft through head movements, patients train gaze stability, vestibular adaptation, and motion tolerance in an engaging, dynamic environment.



Balance

using Force Plate

- > Balance and Stability
- > Figure and Paths
- > Random Points
- > Protocol Training
- > Load Charts



Five groups of exercises to train balance, targeting postural alignment, weight transfer ability, directional control, and the limits of stability. Each group includes exercises with varying levels of difficulty and can be adapted to different therapeutic goals.

HD Busy Environments COMING SOON

VR using VR

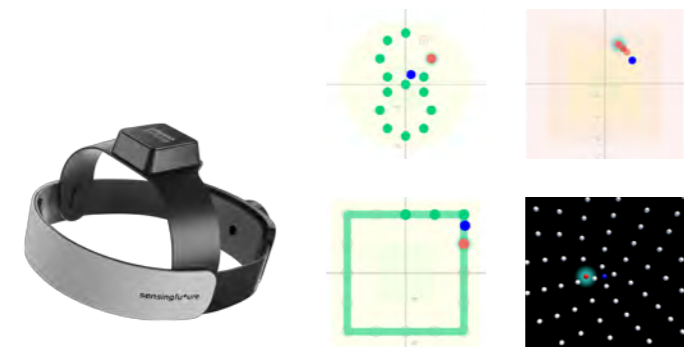


This module exposes patients to high-definition videos with complex visual scenes to promote vestibular habituation and visual desensitization, helping them better tolerate motion and busy environments in daily life.

Cervical Proprioception

using Inertial Sensor

- > Figure and Paths
- > Random Points
- > Visual Stimulus



This module enhances head-body coordination through targeted neck movement and feedback exercises, improving sensorimotor control, reducing dizziness, and restoring postural stability.

Habituation Exercises

VR with or without VR

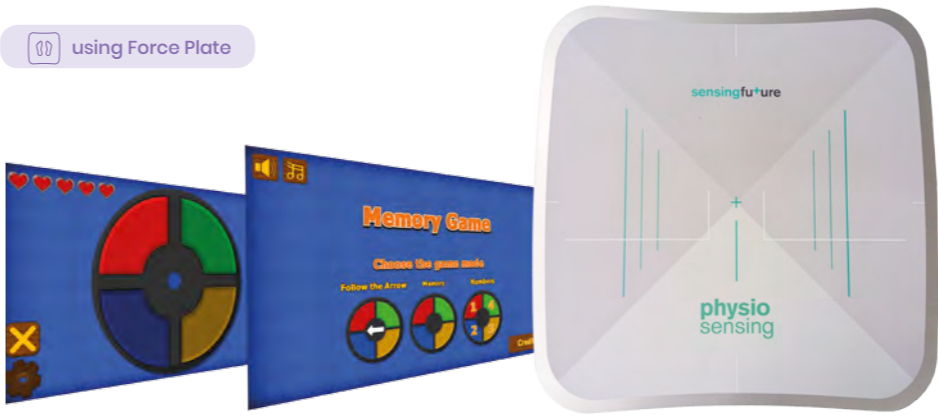


Exercises in this category are designed to reduce vestibular-related symptoms by repeatedly exposing the patient to movements or visual environments that provoke dizziness. Exercise can be performed in virtual environments with varying levels of complexity, visual contrast, and motion speed, depending on the therapeutic goals and the patient's level of tolerance.

- > Visual Stimulus
- > Optokinetic Stimulation (Bars and Tunnel)
- > VOR Supression (VR only)
- > HD Videos 360° (VR only) (real world busy environments)

Balance Games

using Force Plate



- > Pong & Ball Balance
- > BART
- > 2D Game
- > Slime Pong & Slime Run
- > Break Your Balance
- > Space Sway
- > Motor-Cognitive Game
- > Memory Game



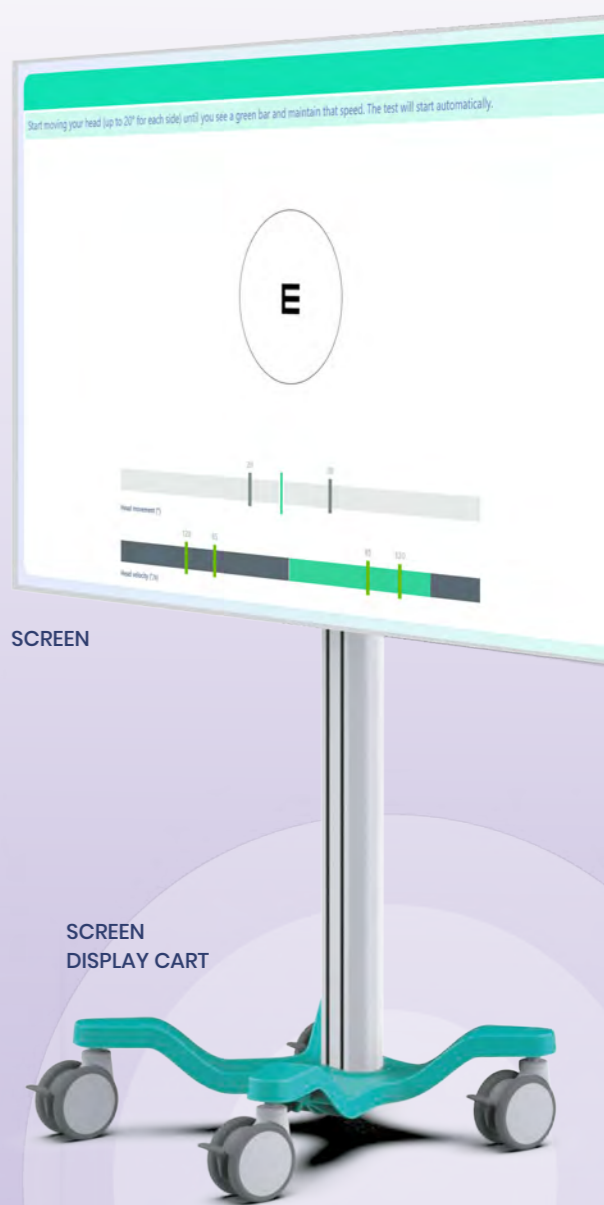
This module uses immersive serious games and force platform training to make balance rehabilitation engaging and functional. It integrates cognitive tasks and weight-shifting exercises to improve coordination, dual task performance, and real life movement control.

Otoneuro System Setup

MEDICAL STATION



PATIENT STATION



TECHNICAL SPECIFICATIONS

FORCE PLATE

Size (Length x Width x Height)	55 x 55 x 3 cm
Weight	8.5 kg
Thickness	1,5 cm
Material	Aluminium AU4G
Minimum load	20 kg
Maximum load	250 kg
Sampling rate	100 Hz
Analogic / Digital Conversion	24 bits
Platform Computer interface	USB
Power supply	USB cable

INERTIAL SENSOR

Size (Length x Width x Height)	(20.5 up to 25) x 18.4 x 13 cm
Strap head size	53 up to 63 cm
Weight	200 g + cable 90 g
Sensor type	3-axis accelerometer, magnetometer, and gyroscope
Material	PLA and TPU
Sampling rate	100 Hz ~ 100 acquisitions/second
Sensor computer interface	USB
Power supply	USB cable
Cable lenght	5 m

SCREEN

Screen size	165.1 cm (65")
Resolution	4K Ultra HD (3840 x 2160)
Refresh Rate	144 Hz
Connectivity	HDMI

VIRTUAL REALITY HEADSET (Meta Quest 3 S)

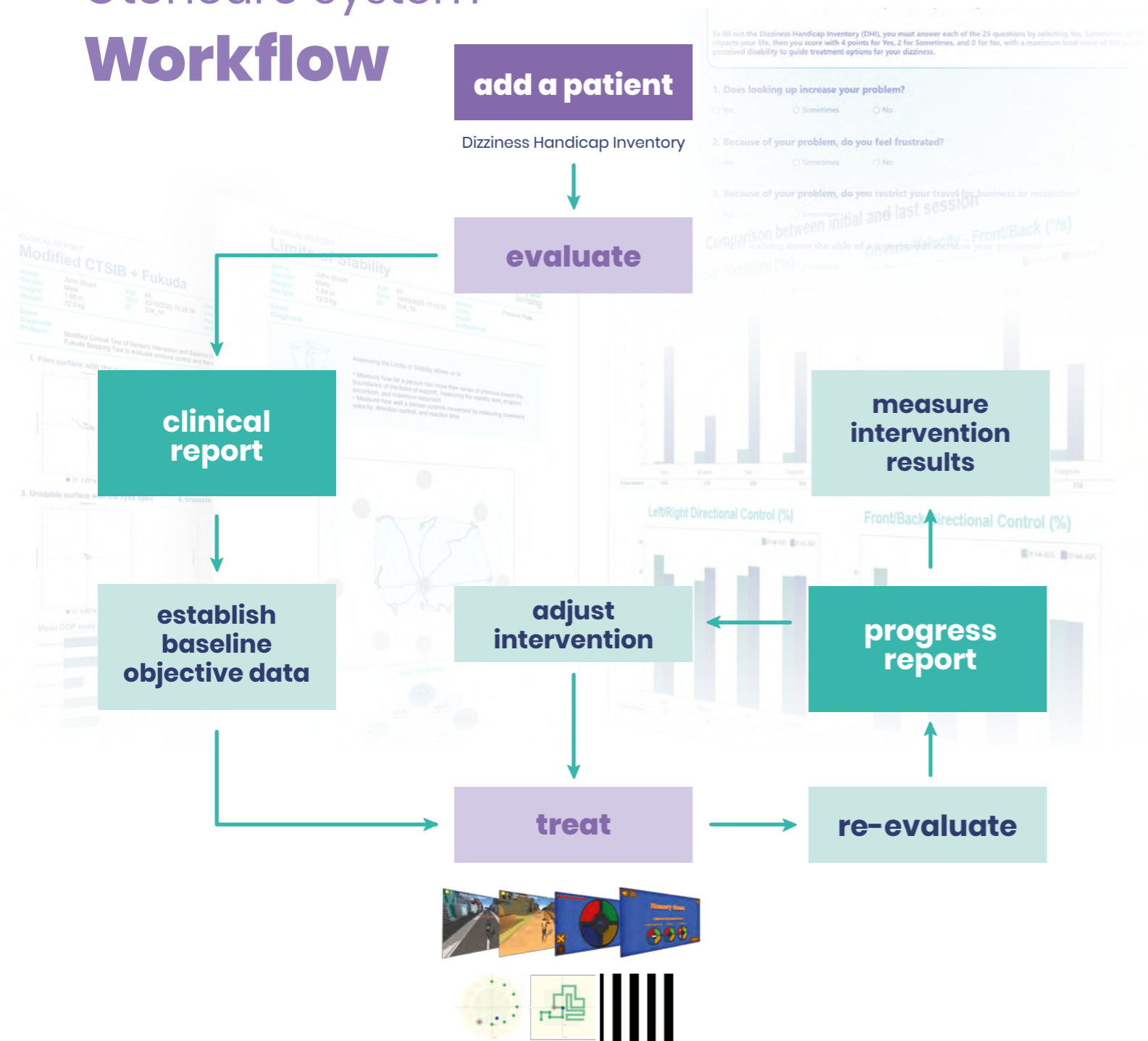
Size (Length x Width x Height)	(26 up to 33) x 21 x 13 cm
Strap head size	48 up to 68 cm
Weight	727 g + cable 223 g
Optics	Fresnel lenses
IPD range	58-68 mm (hardware adjustable)
Resolution	1832 x 1920 (per eye)
Field of view	96° horizontal and 90° vertical
Refresh rate	120 Hz
Wi-fi	Wi-Fi 6E
Headset battery life	~2.5 hours (18W power adapter included)
Controller's battery	AA batteries
Cable lenght	5 m

PC MINIMUM REQUIREMENTS

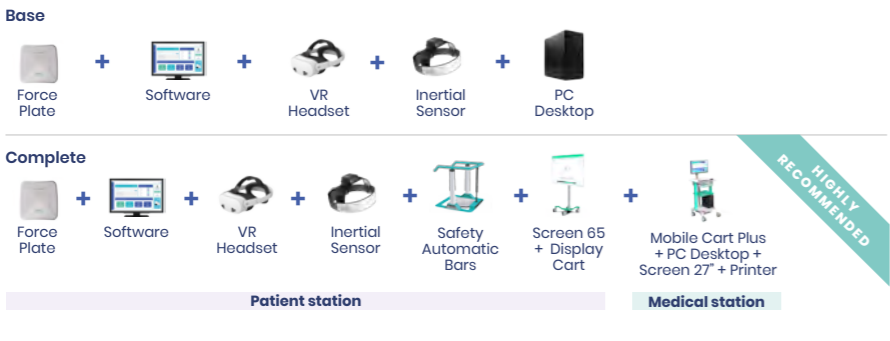
It is mandatory to have the minimum requirements to guarantee proper functioning of the system

Processor (CPU)	Intel i5, 2.5GHz (6 Performance-cores) Avoid 'U' or 'G' versions of processors
RAM	16 GB
Graphic Card	8 GB
USB Ports	Minimum 1 USB 3.0 port, 4 USB 2.0 or 3.0 port and 2 HDMI or DP
Operating System	Windows 10 or 11 (64 bits)
Recommended Screen Resolution	1920 x 1080 px (16:9 aspect ratio)

Otoneuro System Workflow



CONFIGURATIONS



REGULATORY

CE Medical Device Class I

According to Medical Device Regulation (MDR) EU 2017/745 of the European Parliament

Standards applied:
ISO 13 485

UDI - DI number:
05600717927079

Warranty: **2 years**

why choose OTONEURO SYSTEM?

True all-in-one
Assess, treat, and report — unify force plate, Inertial Sensor, and VR in one platform, reducing complexity, costs, and training time.

Functional VOR tests
DVA and GST — quantify gaze stability in seconds, and show patients measurable improvements they can feel in daily life.

Optokinetic tools for visual motion intolerance
Reveal visual dependence, provoke symptoms safely in VR, then habituate progressively to restore confidence in busy, real-world environments.

Cervical proprioception quantified via inertial sensor
Measure joint position error precisely, target head-neck control, and reduce cervicogenic dizziness that undermines balance and rehabilitation outcomes.

Objective posturography with proven clinical utility
Capture sway metrics and document fall risk, and communicate progress clearly to patients.

VR therapy
Essential modules for vestibular rehab. Deliver engaging, repeatable sessions that boost adherence.

VOR
A category of exercises that target VOR. Help your patient keep their vision clear during everyday activities like walking, reading or turning their head, empowering them to move through life with confidence.

Embedded DHI & Clinical History profiling
Correlate subjective symptoms with objective findings, triage faster and tailor rehabilitation pathway.

Automated, comparative reports for outcomes and research
One-click summaries and objective metrics, and data export.

One workflow
No juggling multiple systems

Backed by PhysioSensing's relentless innovation
Rapidly evolving features, responsive support, and a roadmap shaped by clinicians who treat dizziness every day.