

physio sensing



PHYSIOSENSING RANGE TECHNOLOGY

Balance | Feet Pressure Map | Posturography | Virtual Reality | Visual Biofeedback

powered by

sensingfu+ure

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We design, develop and implement medical devices in a unique synergy between Engineering and Health.


Specialists in technology for force and pressure platforms with wide applications in physical and vestibular rehabilitation.


Software with powerful balance & pressure analysis tools, oriented to the health professional and the patient.

Over 11 years of experience and certified by the ISO 13485 standard for medical devices and the ISO 9001 standard for the quality management system.

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sensingfu+ure
a greater step



version 2.0 revision date: 05.2021

Our numbers

15

Developed projects and technologies

31

Countries with our technology

11

Years of experience in the development of technological medical devices



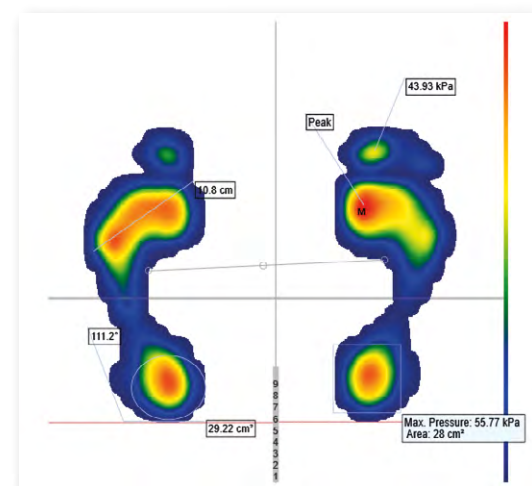
PhysioSensing Range Technology

1. Balance

Balance control consists of controlling the body center of mass over its limits of stability. Clinical balance assessment can help assess fall risk and/or determine the underlying reasons for balance disorders. The benefits of using force plates in balance assessment comes from their ability to measure center of pressure (CoP).



2. Feet Pressure Map

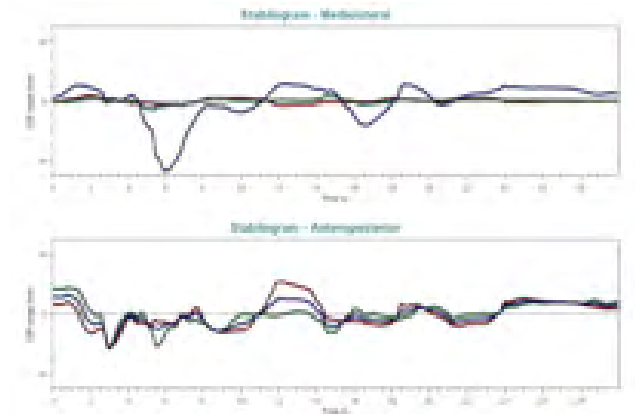


Foot Pressure Mapping is a method of measuring pressures on the surface of the foot during standing or walking. Static and dynamic baropodometric analysis are performed on a baropodometric platform, through which the pressure exerted by the feet from standstill and during walking is being measured.



3. Posturography

Computerized posturography systems utilize force platforms to measure the sway of a patient by determining the movements of the instantaneous Center of Pressure (CoP). The CoP data collected can be visualized through a statokinesigram and stabilogram.



4. Virtual Reality

In the recent decade, Virtual Reality (VR) has become generally accepted as a therapeutic tool for neurological patients. VR involves real-time simulation and interactions between sensory, motor and cognitive channels. VR can be set up to be strongly immersive, in that the environment appears real and three-dimensional. VR provides an ideal environment to study the balancing strategies.

5. Visual Biofeedback

Visual Biofeedback (VB) is a rehabilitation method that can be used during static balance training, offering the patient visual information on the position of the center of gravity within the range of stability as the patient stands on a plate. VB stimulates motivation, proprioceptive information to the patient, simulates the body movements and provides valuable information for the health professional.

Pressure Plate

Light and portable device.
The most accurate and cost
effective way for
balance & pressure
assessment and
training.

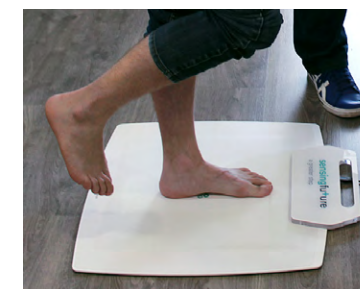
PhysioSensing allows you
to evaluate your clinical
practice and make it
objective and quantified
in a clinical report.



Technology

- 1 cm² sensor
- 1600 sensors
- Baropodometric plate

Balance evaluation and training



Technical Specifications



CE Medical Device Class I according to directive 93/42/EEC

Type	Portable
Size (Length x Width)	61 x 58 cm
Thickness	1 cm
Weight	4 kg
Active Surface	40 x 40 cm
Sensors number	1600
Sensor size	1 x 1 cm
Sensor type	Resistive
Sensor life time	more than 1 000 000 actuations
Maximum pressure (each sensor)	100 N/cm ²
Temperature range	from 0°C to 60°C
Connection/power	USB
Frequency	100 Hz ~100 acquisitions/second

PC Requirements

CPU Processor	i3, Quad-Core, with 2GHz avoid Ultra Low Power "U" series of CPU
RAM	4 GB
USB Ports	2.0 or 3.0
Operating System	Windows 7, 8, 10 (32 or 64-bit)

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

Compatible Software

Physiosensing
Balance Software

Physiosensing
Podo Software

Virtual Reality
Libra VR Clinic

Accessories

Carry Bag



59 x 63 x 6 cm

Foam



40 x 40 x 8 cm
18 kg/m³ density

Force Plate

Normalized stabilometric platform for postural rehabilitation.

Fundamental technology to clinical practice of balance disorders.

Extreme precision of the CoP and high sensitivity level



Technology

- 3 load cells
- Stabilometric plate
- In accordance with French Association of Posturology.



Technical Specifications



CE Medical Device Class I according to directive 93/42/EEC

Size (Length x Width x Height)	53 x 46 x 3,5 cm
Thickness	1,2 cm
Weight	7,8 kg
Material	Aluminium AU4G
Maximal load	128 kg
Non linearity	< 0,2 %
Resolution	900 points/Kg
Hysteresis	< 0,2 %
Sampling rate	Adjustable from 5 Hz to 40 Hz
Analogic / Digital conversion	16 bits
Platform computer interface	USB
Power supply	USB cable

PC Requirements

CPU Processor	i3 with 2GHz
RAM	2 GB
USB Ports	2.0 or 3.0
Operating System	Windows 7, 8, 10 (32 or 64-bit)

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


Balance evaluation and training

Compatible Software

- Physiosensing Balance Software
- Virtual Reality Libra VR Clinic


Accessories

Foam



40 x 40 x 8 cm
18 Kg/m3 density

Dynamic Balancing Plate



Used on top of the platform to perform dynamic ML or AP Balance.

Podo Software

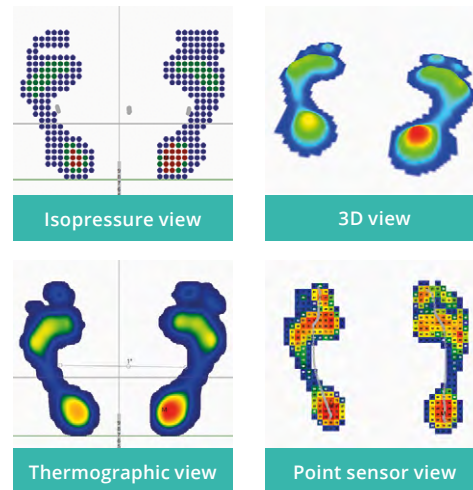
Static and dynamic baropodometric analysis

Static & Postural Analysis

Analyse your plantar pressure map distribution in a single (static) image or during a defined time.

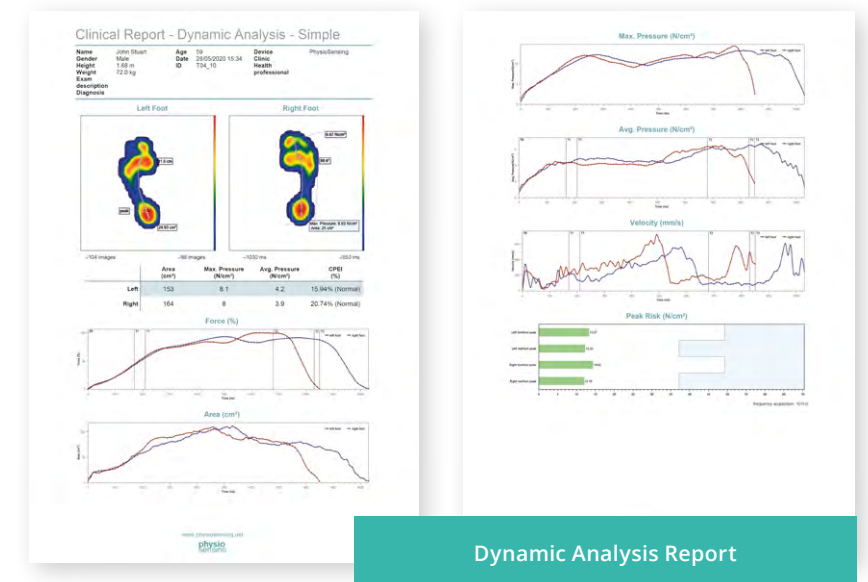


- Static mapping with center of pressure
- Max, Average pressure calculations
- Weight distribution
- Measuring possibilities (length, angle, pressure, area)
- Exam comparison
- Statokinesigram and Stabilogram

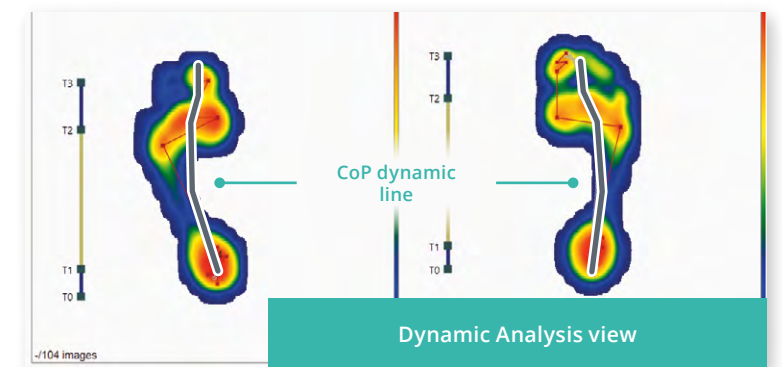
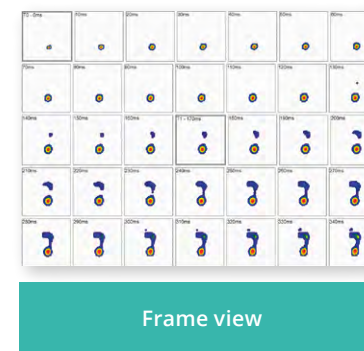


Dynamic Analysis

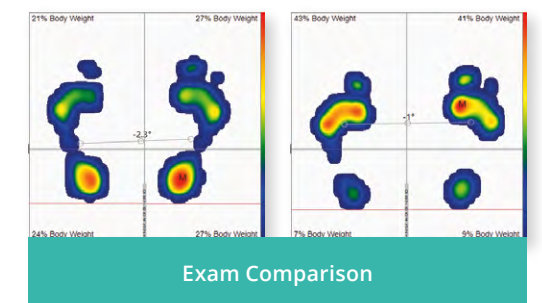
Analyse your plantar pressure distribution on the platform during a one or four gait cycle



Dynamic Analysis Report



- Frame view
- CPEI
- CoP line
- Force, Area, Pressure, velocity Graphs
- PEAK risk
- Gait Cycle Phases



Exam Comparison



✓ Compatible Plates



Pressure Plate

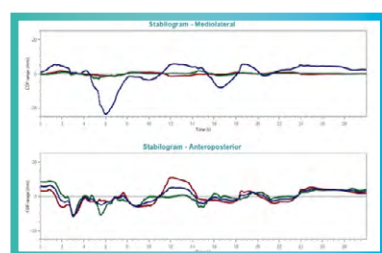
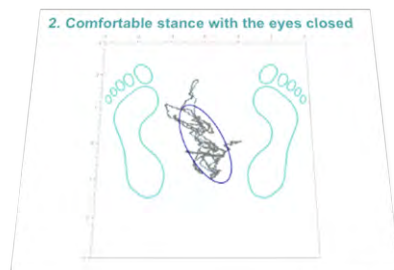
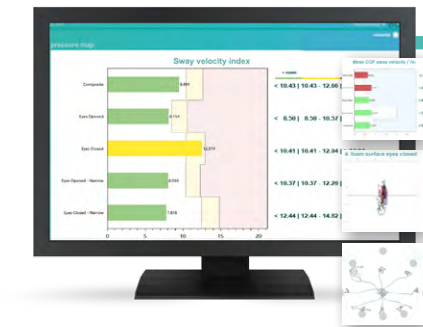
⊕ General Features

- Clinical Reports with normative Data
- Report
- Patient Management
- Database Export (Excel, PDF)

Balance Software

Powerful Balance
assessment & training tool

NEW
VERSION '21



Balance Assessment Protocols

mCTSIB- Modified Clinical Test of Sensory Interaction on Balance & Romberg Test

This protocol allows the static balance measurement in four sensorial conditions: stable surface and open eyes; stable surface and closed eyes; surface instable and eyes open and surface instable and eyes closed.

Body Sway

Use Body Sway to create a personalized posturography. Define initial conditions and obtain CoP variation, ML and AP variables over time. It also includes more than 30 parameters derived from a posturographic examination including Fourier analyses.

LOS - Limits of Stability

Perhaps the most used protocol for balance assessment. This protocol quantifies the directional control and the maximum distance that the patient can reach with its center of pressure in 8 different directions.

Fall Risk

Use Fall Risk to measure the static balance in four conditions: comfortable stance with eyes open and eyes closed, narrow stance with eyes open and closed. After performing, the value of the sway velocity index appears and provides a fall risk prediction.

Rhythmic Weight Shift

Use the Rhythmic Weight Shift protocol to evaluate the transfer capacity of the center of pressure rhythmically in the sagittal and anteroposterior plane, at three different velocities.

Unilateral Stance

Use this protocol to measure the balance in four conditions: left foot lifted up with eyes open, left foot lifted up with eyes closed, right foot lifted up with eyes open and right foot lifted up with eyes closed.

Balance Error Scoring System

The BESS protocol allows the measurement of postural stability with eyes closed in three different positions on two types of surface (firm and unstable): two feet together, unipodal and tandem position.

Static Analysis*

This protocol allows the plantar pressure distribution analysis on the sagittal and anteroposterior planes of a single pressure image, dividing the pressure image into four quadrants.

Weight Bearing Squat*

This protocol allows observation of weight distribution in the sagittal plane with the patient standing up with different knee flexion angles (0°, 30°, 60° and 90°).

Sit-to-Stand*

Use this protocol to quantify the ability of the patient to lift from a sitting position to a standing position as quickly as possible, in three trials.

Total Balance Pro* new

Use this protocol to analyse the balance integration through six parameters - proprioception, vestibular & visual input, postural stability, lower limb strength, reflexes & response time and motor control.

* Not available in Force Plate

Balance improvement training

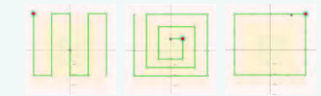
In the Sagittal and Anteroposterior exercises, the patient must reach the balance position in the sagittal plane or in the anteroposterior plane.



In the Spiderweb, Tunnel, Dots pattern and Bars pattern exercises the goal is to keep a balance position despite the visual stimulus.



In the exercises Route Bars, Route Spiral, Route Square and Route Maze the goal is to go through the routes within its boundaries with the center of pressure, following the red dots.



In the exercises Square, Circle, Eight and Spiral, the patient must reach all the dots disposed in the form indicated in the name.



In the Follow the Point and Moving Route exercises, the goal is to reach the moving red point and follow it within its tolerance margin.



✓ Compatible Plates







Pressure Plate



Force Plate

+ General Features

-  Clinical Reports with normative Data
-  Report
-  Patient Management
-  Database Export (Excel, PDF)

New amazing feature in Balance Software 21!

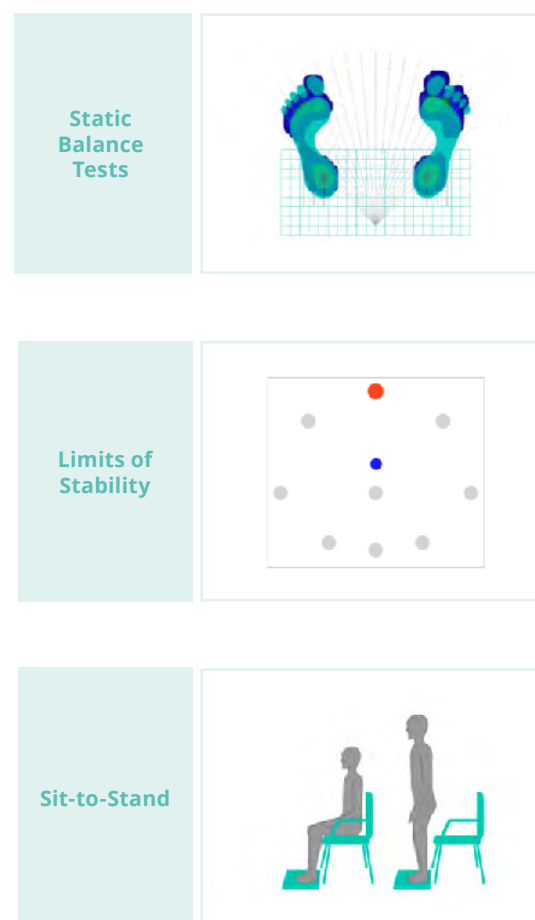
A perfect combination of the best balance indicators.

Analyse your balance integration through six key indicators:

1. proprioception
2. vestibular & visual input
3. postural stability
4. lower limb strength
5. reflexes & response time
6. motor control

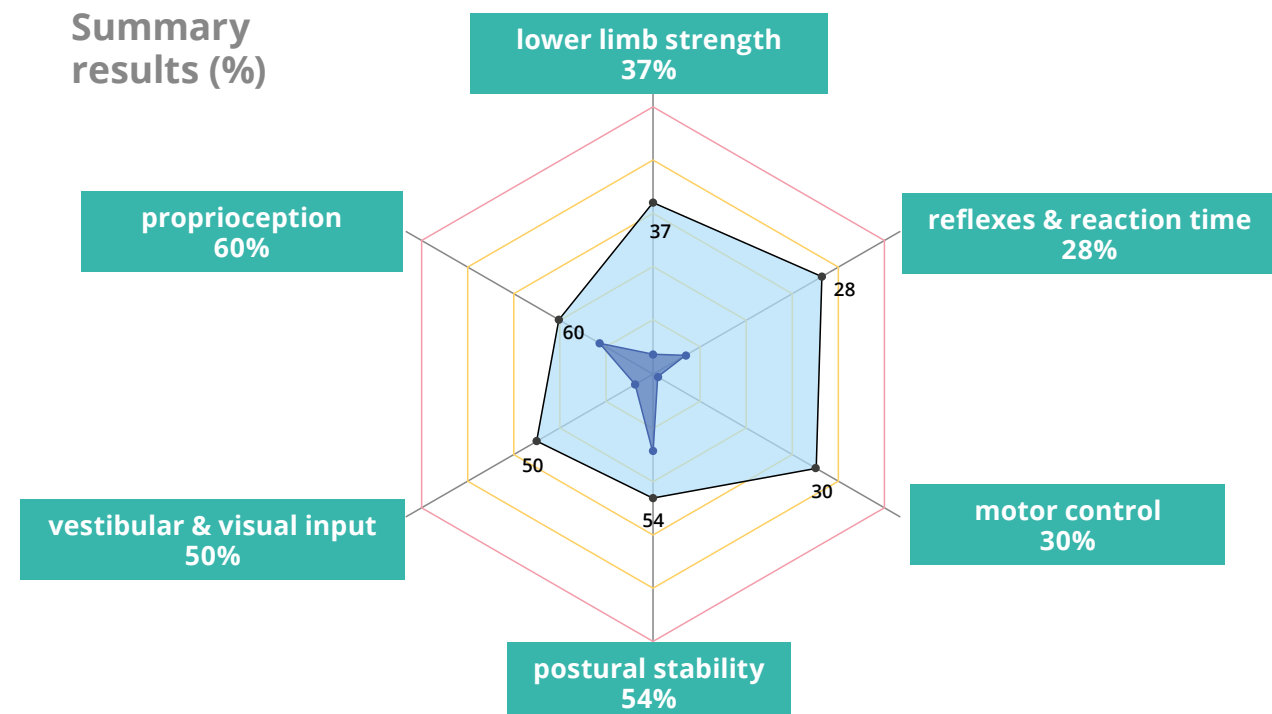
Total Balance Pro

- 1 Perform 3 consecutive assessment protocols: Static Balance, Limits of Stability and Sit to Stand



- 2 Then a graph is generated with the indication of 6 areas of clinical intervention

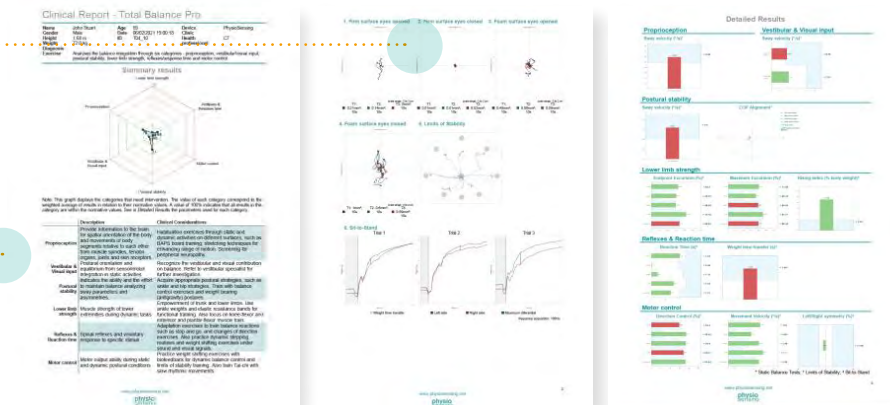
Summary results (%)



- 3 In the end, a clinical report can be generated with all measurements details

Detailed results with more than 20 variables which you may analyze more deeply

Detailed description of each variables and Clinical Considerations you may follow



Balance Software 21

NEW DESIGN AND FEATURES



my PhysioSensing

New interface

Designed for a better experience

Training solutions and Manuals

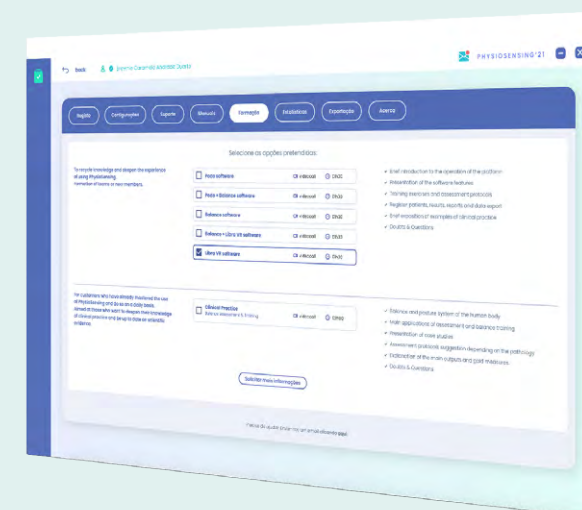
To inspire and promote evidence-based clinical practice experience

Statistics

Your own data highly customizable

Database Export

All data highly customizable in Excel



Virtual Reality Libra VR Clinic

A high-end virtual reality based system, designed for vestibular, balance and oculomotor disorders. Therapy becomes controlled, high customized and trackable.

Immersive stimuli

Exciting and engaging virtual worlds train the patient brain

Enhanced therapy

Through digital technology

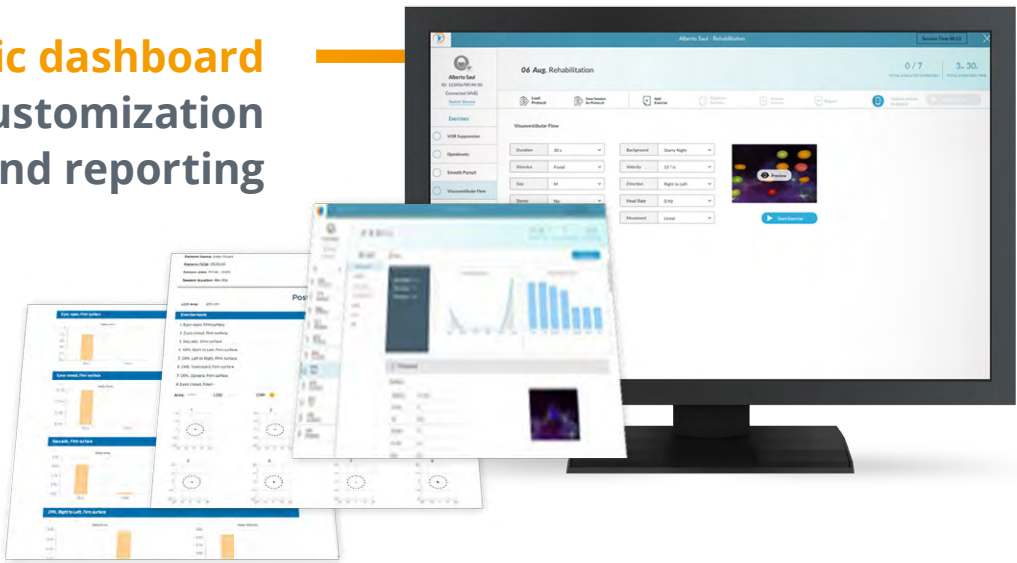
Monitored tracking

Allows for assessing and adjusting exercises

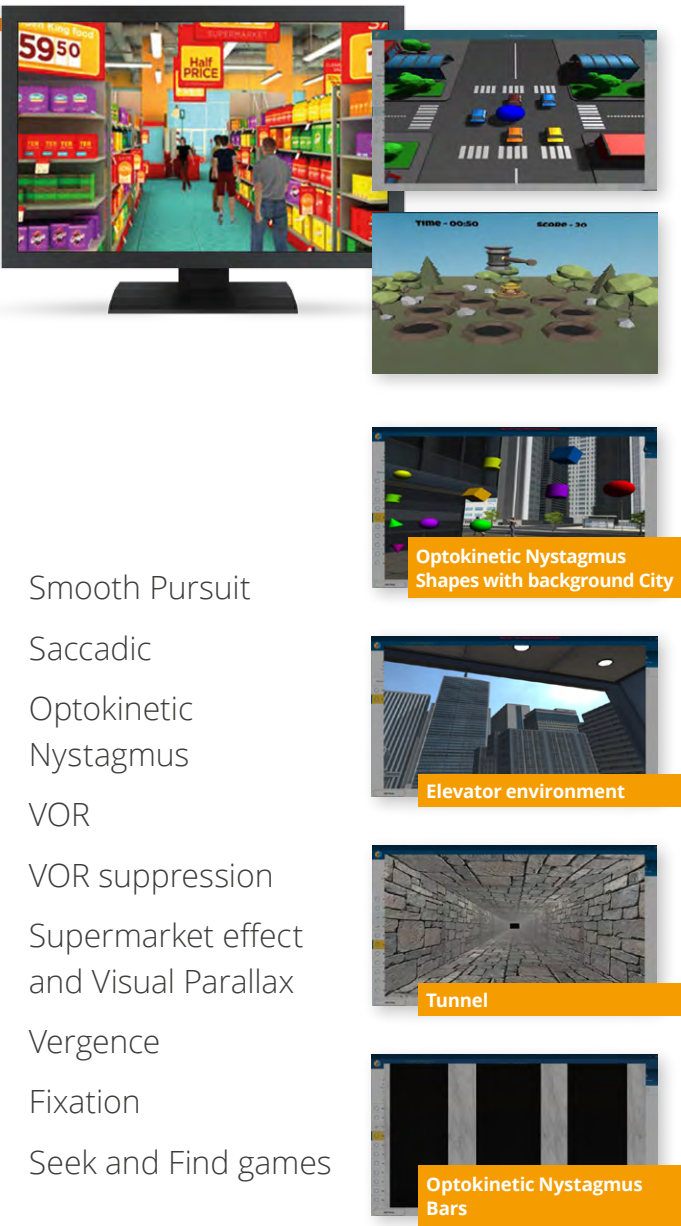
Evidence-based and approved

Scientifically backed to meet therapists' needs

Clinic dashboard provides customization and reporting



Virtual Reality to deliver immersive virtual reality stimulation and exercises including:



- › Smooth Pursuit
- › Saccadic
- › Optokinetic Nystagmus
- › VOR
- › VOR suppression
- › Supermarket effect and Visual Parallax
- › Vergence
- › Fixation
- › Seek and Find games

Optional

Platform for posturography and balance games

Compatible Plates



Pressure Plate



Force Plate

Required hardware

Virtual Reality Goggles - Oculus Rift S	
Computer	
CPU Processor	i5, Quad-Core, with 3.30 GHz
RAM	8 GB
USB Ports	3.0
Operating System	Windows 10 (64-bit)
Display	DisplayPort 1.2 or Mini DisplayPort 1.2
Graphics Card	NVIDIA GTX 1050Ti or better VR Ready graphics card
It is mandatory to have the minimum requirements to guarantee proper functioning of the system	

Plate Comparison



	Pressure Plate	Force Plate
Portability	● ● ● ● ●	● ● ● ● ●
Dimensions Length x Width x Height	61 x 58 mm x 1 cm	53 x 46 x 3,5 cm
Weight	4 Kg	7,8 Kg
Technology	1600 resistive sensors	3 load cells
Type	Baropodometric Plate	Stabilometric Plate
CoP accuracy	● ● ● ● ●	● ● ● ● ●
Feet pressure map	Yes	No
If you valorize more	Feet Pressure Map	CoP Path, velocity, Area; AP&ML components
Software compatibility	<div>● Podo Software</div> <div>● Balance Software</div> <div>● Virtual Reality Libra VR Clinic</div>	<div>● Balance Software</div> <div>● Virtual Reality Libra VR Clinic</div>

If you have doubts, we advise which is the best platform for you. [Ask us!](#)

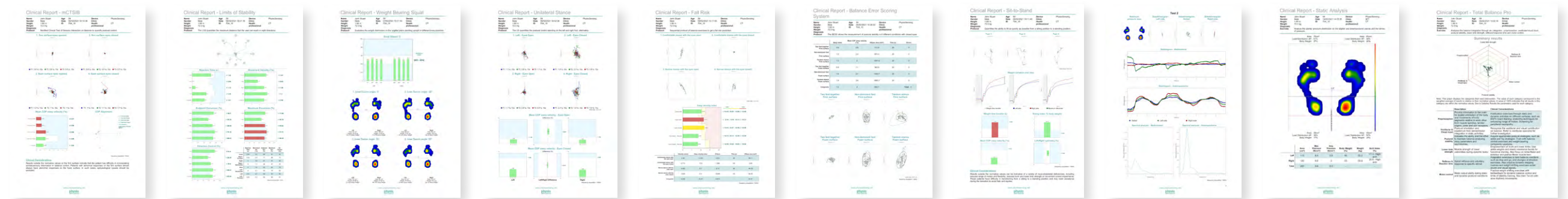
Software Comparison

	Podo Software	Balance Software
Balance Assessment Protocols (mCTSIB, LOS, RWS, WBS, US, FR, BESS, Sit to Stand, RT, Body Sway-Posturography)		✓
Balance Training Exercises (Sagital & Anteroposterior, Visual Stimulus, Static Figures, Static Paths, Random Static, LOS Training, Moving target, Follow me)		✓
Static Analysis * This feature only works with Pressure Plate	✓	✓ *
Postural Analysis	✓	
Dynamic Analysis (gait)	✓	
Balance games		✓

Balance Assessment Applications

PhysioSensing balance protocols suggestions

Balance Assessment / Protocols



	mCTSIB Modified Clinical Test of Sensory Interaction on Balance & Romberg Test	LOS Limits of Stability RWS Rhythmic Weight Shift	WBS Weight Bearing Squat	US Unilateral Stance	Fall Risk	BESS Balance error Scoring System	Sit-to-Stand	Body Sway	Static Analysis	Total Balance Pro
Neurological	• • • • •	• • • • •	• • • • •	• •	• • •	• • •	• • • • •	• • •	• •	• • • • •
Lower Limbs and Spine Rehab	• •	• • •	• • • • •	• • •	• •	• •	• • • •	• •	• • •	• • •
Vestibular Disorders	• • • • •	• • • • •		• •	• • •	• •	• •	• • • • •		• • • • •
Sports		• • • •	• • • •	• • • • •		• • • • •	• •	• • •	• • • • •	• •
Ageing	• • • •	• • • •	• •	• •	• • • • •	• •	• • • •	• •	• • • •	• • • •
Podiatric								• • • •	• • • • •	

Clinical Practice

We share with you some scientific evidence that supports and inspires for better clinical practice every day

PODIATRIC
Plantar pressure assessment can be used by the physical therapist in the evaluation and management of adult and pediatric patients with a wide variety of foot and lower-extremity disorders associated with the neurological, integumentary, and musculoskeletal systems.

Plantar Pressure Assessment

SIT TO STAND
Stroke fallers rise from or sit down on a chair more slowly, with an obviously asymmetric BW distribution in their legs, and have a significantly lower rate of rising in force and show a much greater COP sway in the mediolateral direction.

The Sit-to-Stand Movement in Stroke Patients and Its Correlation With Falling

STROKE
This study shows that force platform with visual feedback technique is an effective approach for post-stroke balance training as it results in better locomotor abilities.

Post-stroke balance training: Role of force platform with visual feedback technique

physio sensing

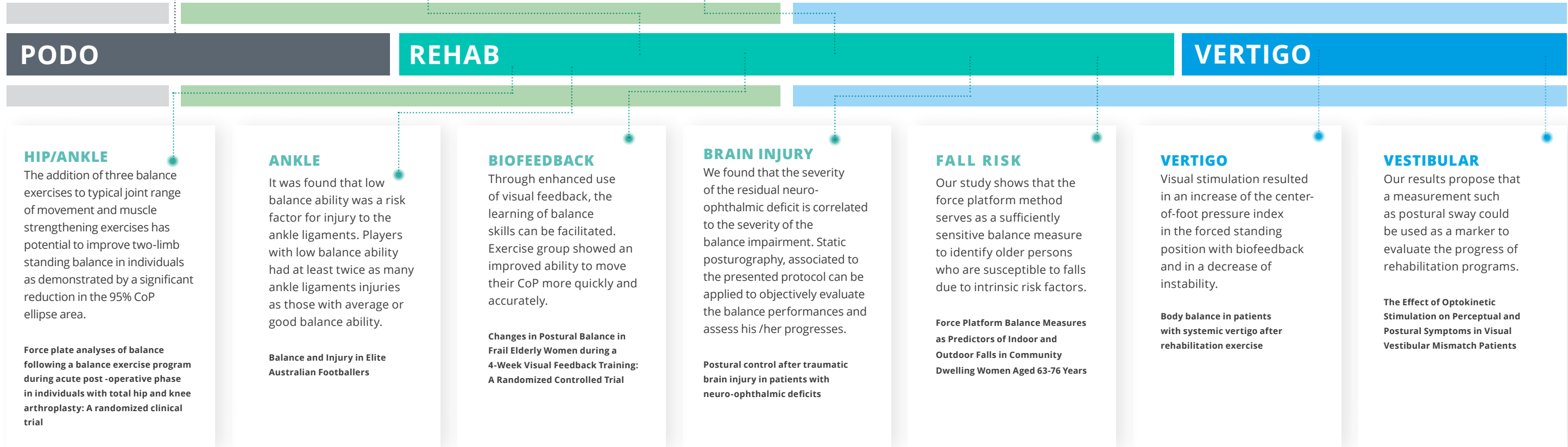
FALL RISK
Several fall risk factors contribute to a fall, being most of them related to the person physical capabilities as mobility, balance control, and muscle strength. The exercises are monitored with two wearable inertial sensors and a pressure platform for mobility, strength and balance assessment.

A Technological Solution for Supporting Fall Prevention Exercises at the Physiotherapy Clinic

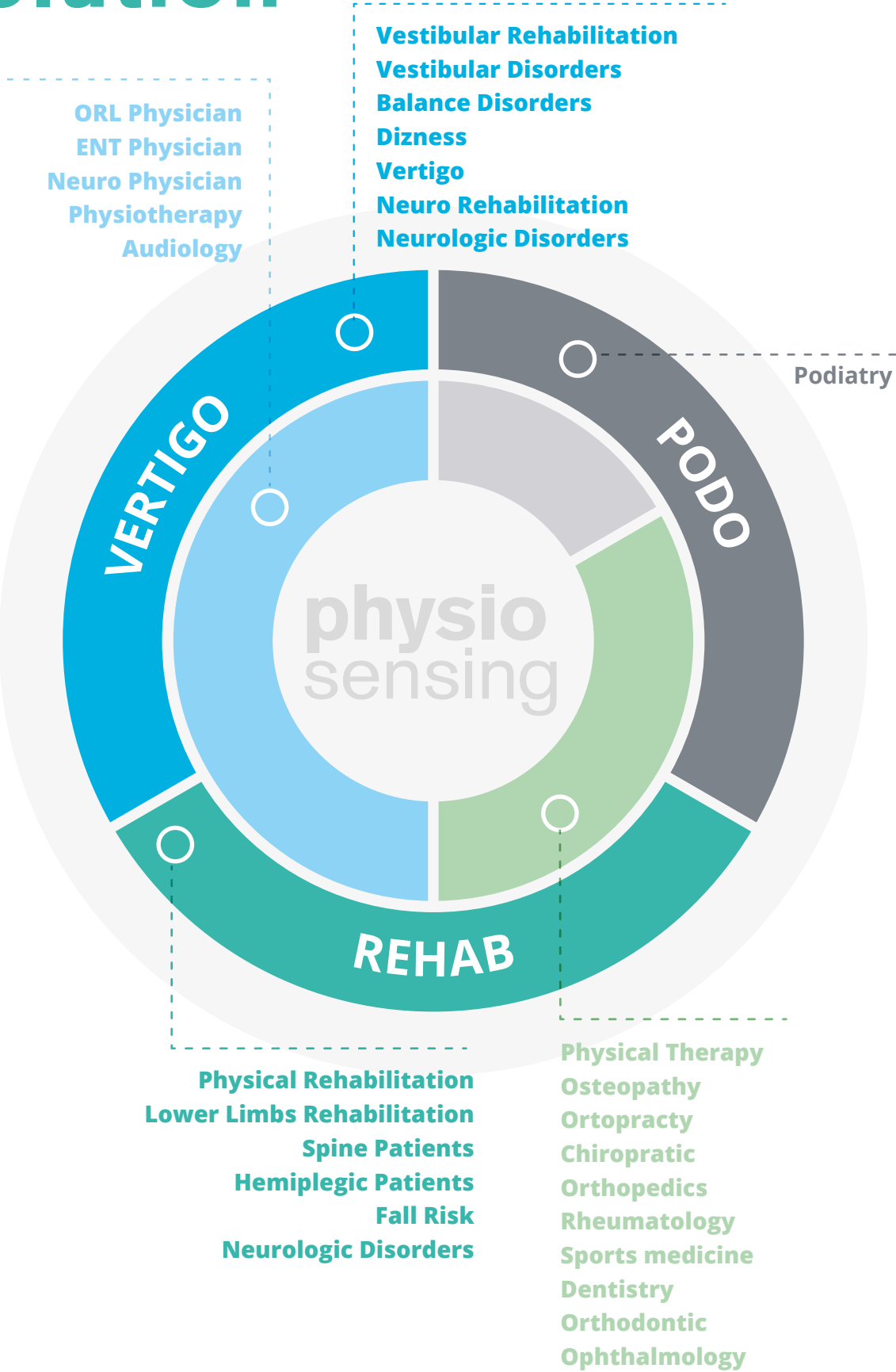
physio sensing

BALANCE IMPROVEMENT
This suggested some influence of aquatic therapy in the standing balance for older adults with upper limb disability and that they do not loose balance even shortly after an aquatic session.

Immediate Effects of Aquatic Therapy on Balance in Older Adults with Upper Limb Dysfunction: An Exploratory Study



Define your solution



Devices can be used together or separately.
Choose the best setting.

I	Pressure Plate + Podo Software		PODO
II	Pressure Plate + Balance Software		REHAB
III	Pressure Plate + Balance Software + Podo Software		REHAB
IV	Pressure Plate + Balance Software + Virtual Reality Libra VR Clinic		VERTIGO
V	Force Plate + Balance Software		VERTIGO
VI	Force Plate + Balance Software + Virtual Reality Libra VR Clinic		VERTIGO
VII	Virtual Reality Libra VR Clinic		VERTIGO

+ Additional equipment

Mobile Solution A
Suitable for laptop computer. Adjustable height.



Mobile Solution B
Suitable for laptop or desktop computer. Possibility to add a larger monitor. Adjustable height.



Static Solution A
Suitable for wall mounting. You can have a laptop or desktop computer and even adapt a larger monitor.



Improve your business

how does PhysioSensing improve your business?

Your financial results are directly proportional to the quality of the clinical practice you provide to your clients (patients). Having equipment like PhysioSensing allows constant evaluation and monitoring of the patients. A well-done assessment with PhysioSensing requires you to understand important variables widely described in scientific evidence and to evolve as a health professional, to another level of clinical practice well above and different from your competition. A good diagnosis and the guarantee of good progress are crucial to make your customers happy, to keep them coming back and for them to recommend you. Yes, PhysioSensing is not for everyone, it is for those who want to go further. If you don't have time to study, learn and evolve, PhysioSensing is probably not for you.

8 reasons to trust us

1

Our know-how

We are great experts in what we do and we have a deep understanding of pressure and force instrumentation, stabilometry and baropodometry.

2

Scientific Evidence

Everything we do is based on literature and scientific evidence. It is the scientific articles that inspire us to new developments.

3

The guaranteed quality

Did you know that since our existence we still have no replacements for manufacturing defects?

4

Medical Certification

Yes, PhysioSensing is a medical device. Every year we are audited under the ISO 9001 (Quality Management) and ISO 13485 (Medical Devices) standards. All of our internal processes are in compliance with the requirements specified by the standards so that your product reaches you immaculate in your hands.

5

Technical Support and Doubts

We reply to support requests within 24 hours. Whether it is some question you need to clarify, support for installation or some issue with the software for us to solve.

6

Customers on all continents

The world spins around in 24 hours and the PhysioSensing brand is always watching the sun too. We are present on all continents and ship worldwide.

7

Warranty

We give our customers a 2-year warranty with complete confidence. Does everyone give you a 2-year warranty?

8

Constant evolution

This is our critical success factor that has allowed us to grow. We either evolve or die.

differentiation



Differentiation

We know how to listen! Did you know that our first customers came to us because we listened to them while others ignored them? That challenge that you have at hand, that problem that you want to solve, that variable that you would like to measure, but cannot. We don't sell merchandise, we sell you progress.



Financing

Because financing is always important, We suggest some ways to financing the PhysioSensing purchase:

1. From your own pocket as an investment in your progress.
2. Add PhysioSensing to your organization's budget list. If it's not in time for this year, book it now for next year's budget.
3. Make a fundraiser.
4. Ask for a donation. There is always someone who wants to help.
5. Apply for funded programs or other support provided by your country's government.
6. Renting or Leasing. We have a solution for that, just ask us. Reduce your investment risk and pay PhysioSensing with positive monthly Cash Flow. Choose the term and amounts that are comfortable for you.



Monetization

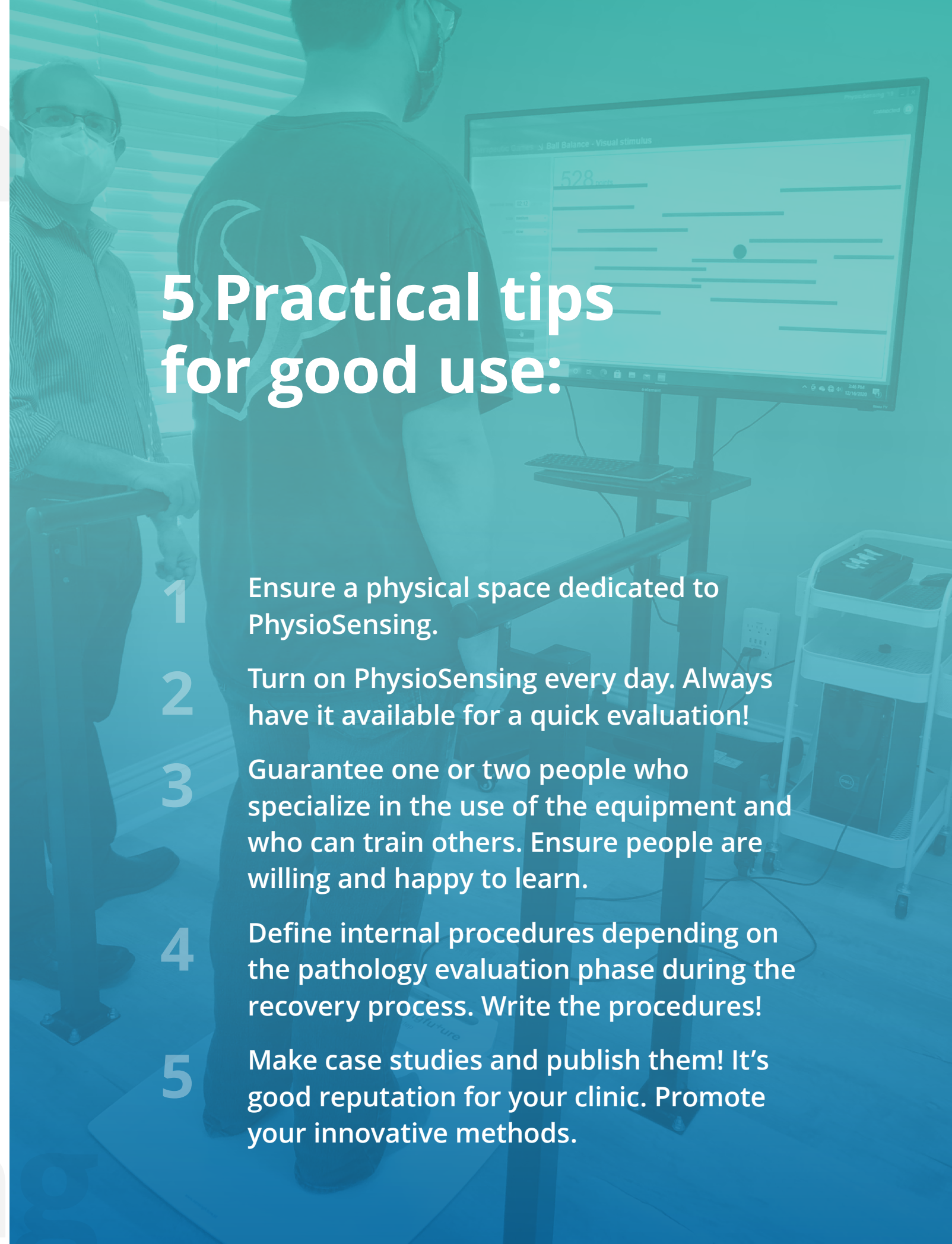
We leave you some ideas on how you can profit from your investment:

1. Create specific programs and include PhysioSensing with other procedures. Charge for it. (Example: Fall Risk Program)
2. Charge for specific assessments at a low cost. (Example: LOS evaluation)
3. Partner with insurance companies and say you have assessment and monitoring equipment. They will refer more users to you.

financing monetization

5 Practical tips for good use:

1. Ensure a physical space dedicated to PhysioSensing.
2. Turn on PhysioSensing every day. Always have it available for a quick evaluation!
3. Guarantee one or two people who specialize in the use of the equipment and who can train others. Ensure people are willing and happy to learn.
4. Define internal procedures depending on the pathology evaluation phase during the recovery process. Write the procedures!
5. Make case studies and publish them! It's good reputation for your clinic. Promote your innovative methods.



Training

Why PhysioSensing Training?

Whenever we stop growing, we die. In other words, if we don't evolve, we are outdated. Investing in equipment alone is not enough. You have in your hands a device based on scientific evidence and with it an unique opportunity to specialize in an area so important as human balance. It is these advances that take you to the next level in your clinical practice. Come and learn with us!

We give a training certificate.

Our Specialist



Cláudia Tonelo

Our specialist Cláudia Tonelo has a background in Biomedical Engineering. She is our product specialist with more than 8 years of experience, responsible for the scientific component of PhysioSensing and its development and innovation. She specialized in the field of stabilometry and baropodometry. We have a database with more than 200 scientific articles, master's and doctoral theses that are the support of PhysioSensing's know-how. Every year she supervises 2 master's degrees students in biomedical engineering based on stabilometry and baropodometry fields.

Training solutions

To recycle knowledge and deepen the experience of using PhysioSensing.

Podo software

videocall 01h00

Podo + Balance software

videocall 01h30

Balance software

videocall 01h00

Balance + Libra VR software

videocall 01h30

Libra VR software

videocall 01h00

Clinical Practice

Balance Assessment & Training

videocall 02h00

For customers who have already mastered the use of PhysioSensing and do so on a daily basis. Aimed at those who want to deepen their knowledge of clinical practice and be up to date on scientific evidence.

- ✓ Brief introduction to the operation of the platform
- ✓ Presentation of the software features
- ✓ Training exercises and assessment protocols
- ✓ Register patients, results, reports and data export
- ✓ Brief exposition of examples of clinical practice
- ✓ Doubts & Questions

- ✓ Balance and posture system of the human body
- ✓ Main applications of assessment and balance training
- ✓ Presentation of case studies
- ✓ Assessment protocols suggestion depending on the pathology
- ✓ Explanation of the main outputs and gold measures.
- ✓ Doubts & Questions

training

— Need help
choosing
the right
solution?

How does the system works?

What is the right platform for me?

I want to see the clinical reports
it provides.

Which is the best protocol for
what I want to do?

**ask
us**

- ✓ Technical and scientific advice
- ✓ Demonstration
- ✓ Quotation
- ✓ Redirect to our distributor
- ✓ Technical support
- ✓ Training program & Webinars
- ✓ Product Innovation and scientific projects
- ✓ Large scale production and OEM's
- ✓ Projects and public tenders

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