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The FLOAT - Product Presentation

2022 / RSM

System Overview

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The FLOAT can support movements of subjects and objects in a 3-dimensional space. It ensures full safety with a dynamic fall protection.

Key Functionalities

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Permanent dynamic fall prevention

Horizontal Assistive Force (HAF)

Damping (Horizontal Resistive Force)

Motion impulse (Perturbation)

Key Specifications

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Maximum body weight support:	200 lbs / 90 kg (adjustable any time)
Patient weight:	44–440 lbs / 20-200 kg
Patient height:	3 ft - 6.6 ft / 100-200 cm
Maximum speed:	4.5 mph / 7.2 km/h
Rotation about the z-axis:	360° endless
Recommended space requirements (LxWxH):	33ft x 10ft x 10ft / 10m x 3m x 3m
Operating conditions temperature:	50–95 °F / 10–35 °C
Relative air humidity:	30 – 75 %
Power Supply:	230 ± 10% VAC, 16A

3D vs 2D Difference - Functional

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	3D FLOAT	2D Systems
Activities of daily living 	Real 3D exercises for walking, no forces and restrictions while walking in 3D space	Mainly walking in one direction. Limitations to walking outside of vertical line
Exercises  	Possible in all directions, including ball games, avoiding obstacles, slalom, side steps etc.	Mostly in x-direction including stairs (z-direction)
Perturbations 	In both x and y horizontal directions, e.g. walking against resistance, perturbations from the side for balance training etc.	Only in forward/ backwards directions, includes walking against resistance
Stairs climbing 	Yes, multidirectional, depends on height of room	Yes, in x-direction, depends on height of room
Including other equipment 	Treadmills, balance plates, balls, cones etc. easier to apply and use	Can be used as long as they are in the vertical line underneath the track
Posture support	Yes (x and also y direction possible)	Yes (x-direction)

Benefits for All Stakeholders

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Patient

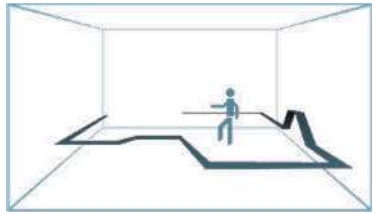
- ✓ Training of ADL
- ✓ Training at their physical limit
- ✓ Standing position and support for posture
- ✓ Minimal risk and high confidence

Therapist

- ✓ Free choice of tools and felxible training
- ✓ Free access to patient
- ✓ Lower physical stress
- ✓ Focus on therapy and patient

Hospital

- ✓ Cost efficient, fewer therapists for patient support
- ✓ Effective rehabilitation of locomotion function
- ✓ Positive image through innovative therapy tool
- ✓ Saves space and used in existing rooms with other tools



Typical Exercises with the FLOAT

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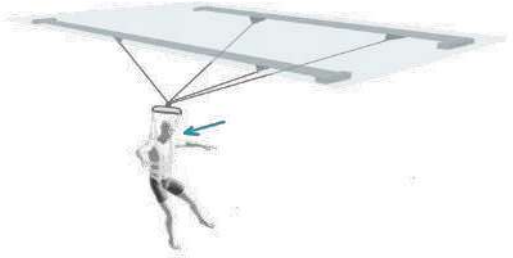
1.

2.

3.

4.

1. Straight line walking
2. Curved walking
3. Sit-to-stand
4. Balancing
5. Perturbation
6. Obstacle avoidance
7. Dual task



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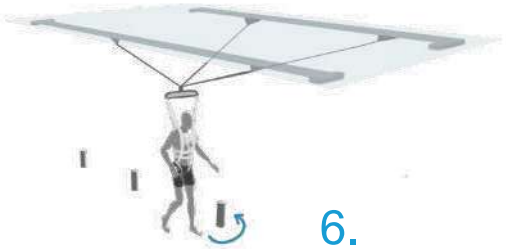

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Safety First – Fall Protection

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- The FLOAT follows the patient in 3 dimensions in the room
- If the patients falls the FLOAT will gently save the patient
- The FLOAT is permanently monitored by sensors:
  - If a sensor exceeds a safety threshold the exercise is stopped
- Core function of the FLOAT – fall protection:
  - If the speed in vertical direction exceeds a critical threshold over a certain distance the fall protection steps in and protects the patient from falling

Horizontal Forces

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Horizontal Assistive Forces:

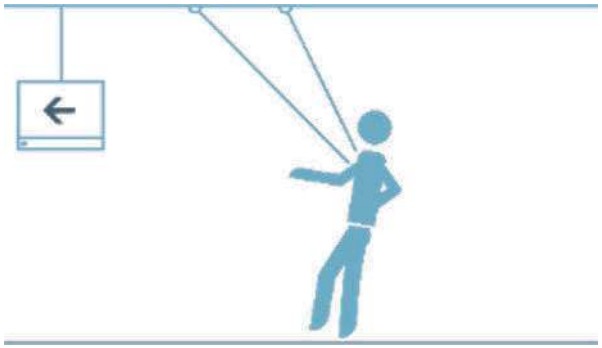
- Support natural gait and posture during training
- Add assist to help completing a difficult activity

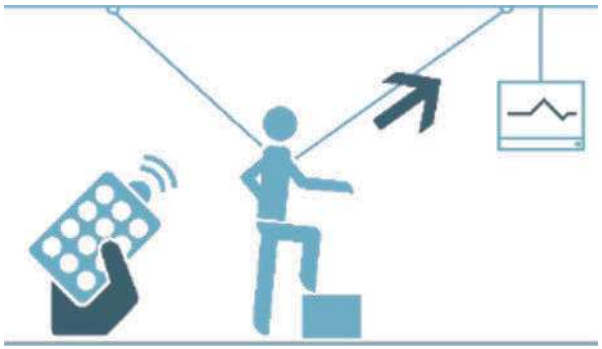
Horizontal Resistive Force:

- Increasing propulsive ground reaction force
- Improving muscular strength and endurance

Reduced Sensitivity:

- For exercises with steps or stairs





Special Funtions - Perturbations

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Most falls do not occur when standing still
but occur while walking and turning and by slipping, tripping or being disturbed by an external force.

Reactive Postural Control involves activation of postural adjustments after an external disturbance is encountered

Safely practice reactive postural control and recovery strategies

System Components

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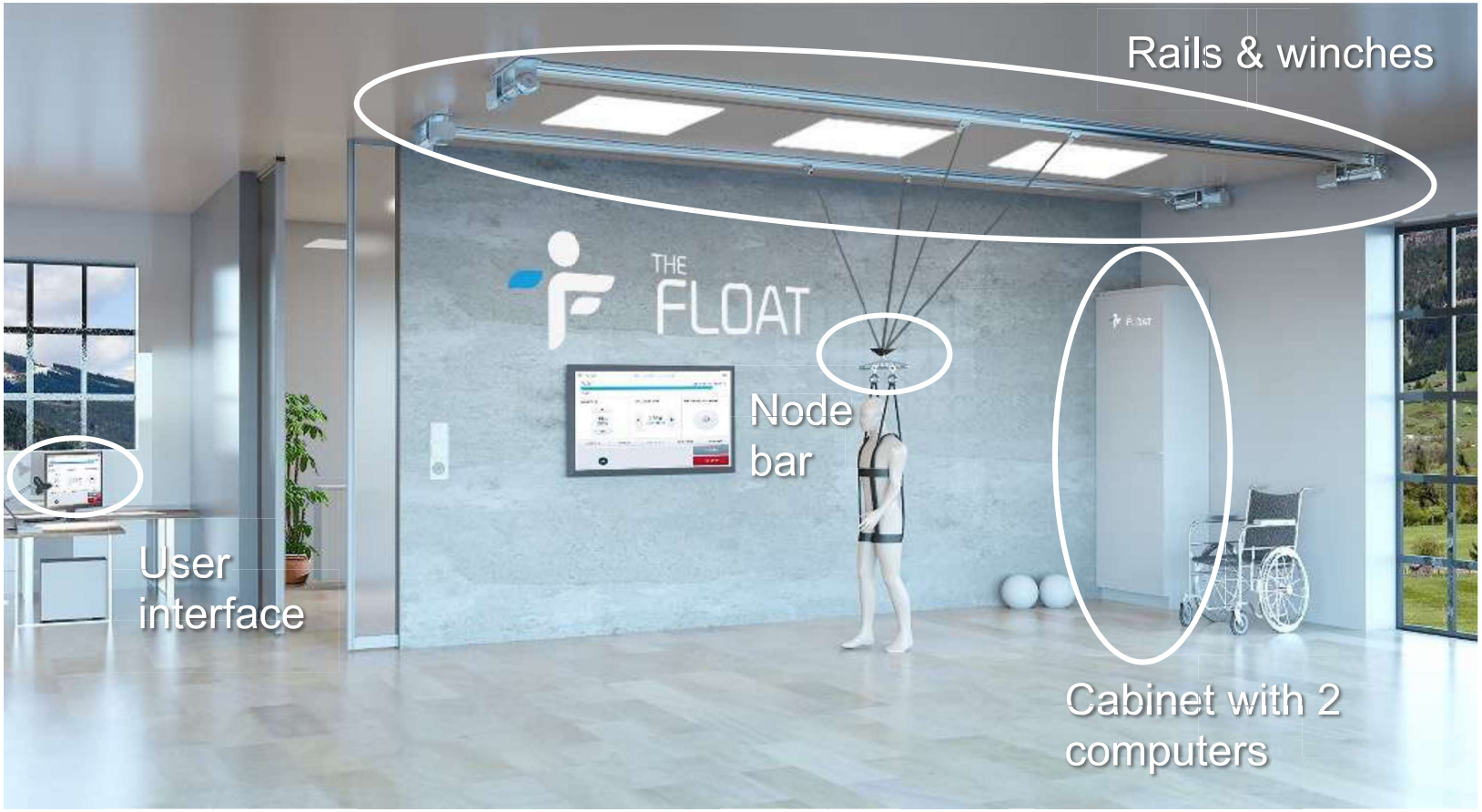

Components - Cabinet PC

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GUI and application PC

Control PC

Components - User Interface

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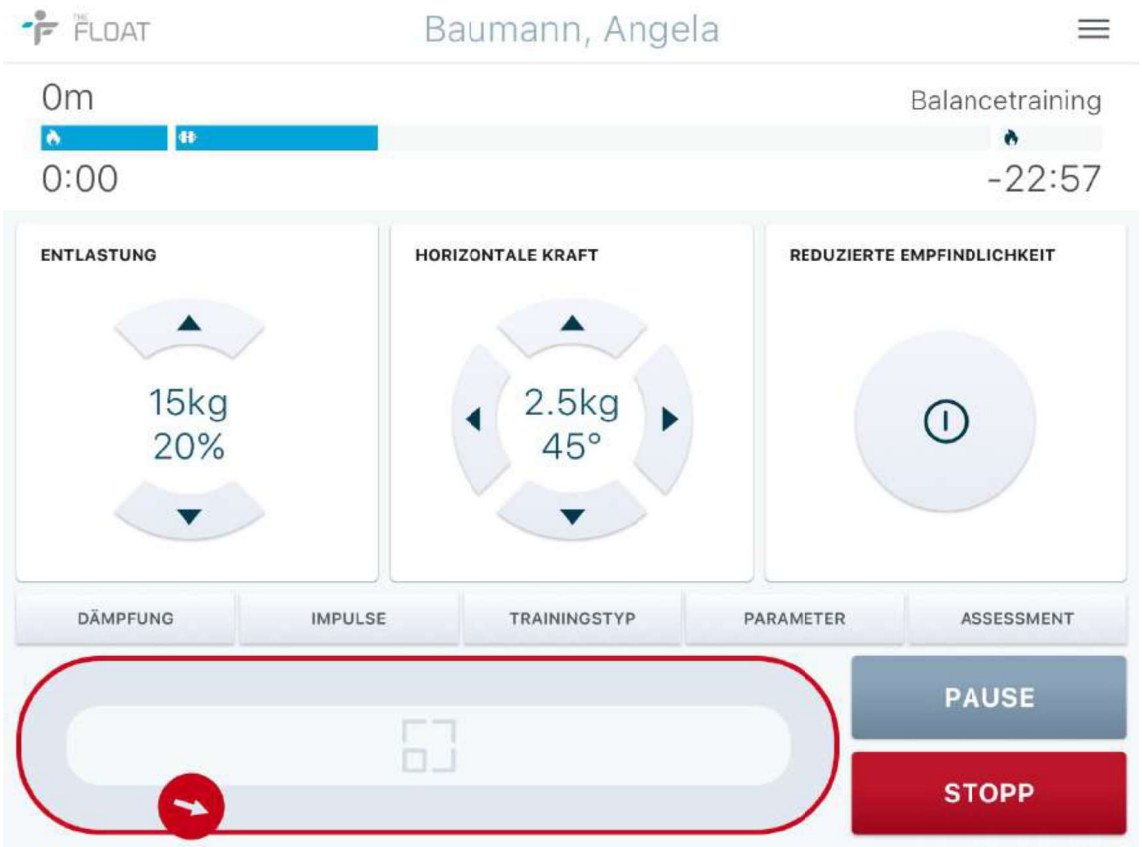

- Intuitive graphical user interface (IEC 62366)
- Choice of control

Start – Patient Database

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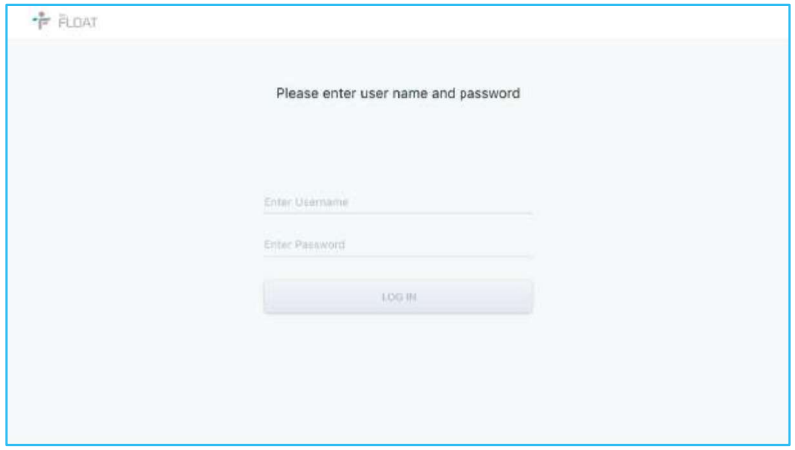
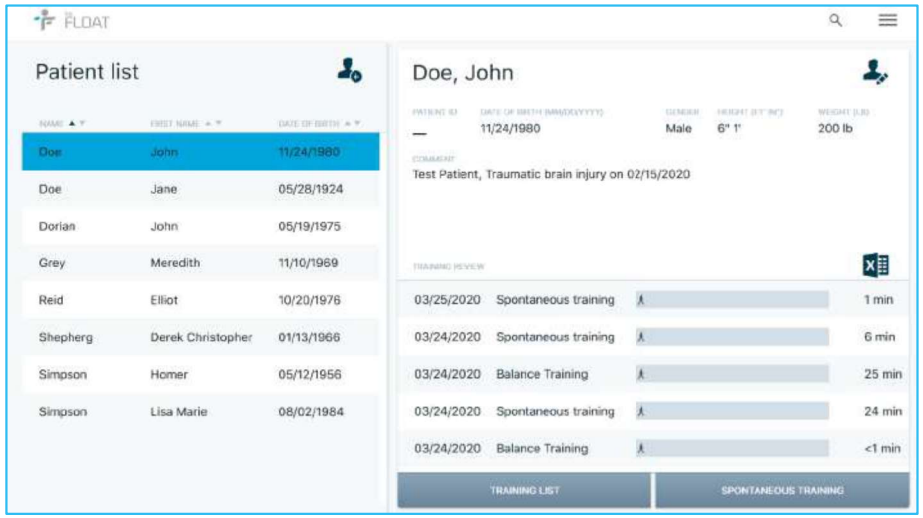
Login with Password



Patient database:

- repeat earlier training,
- adapt
- or develop a new training



Start Training

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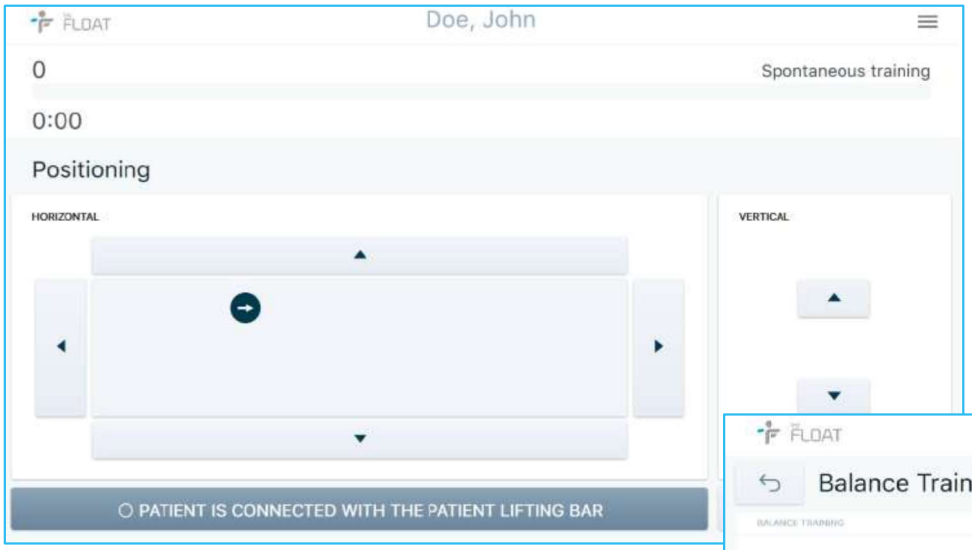
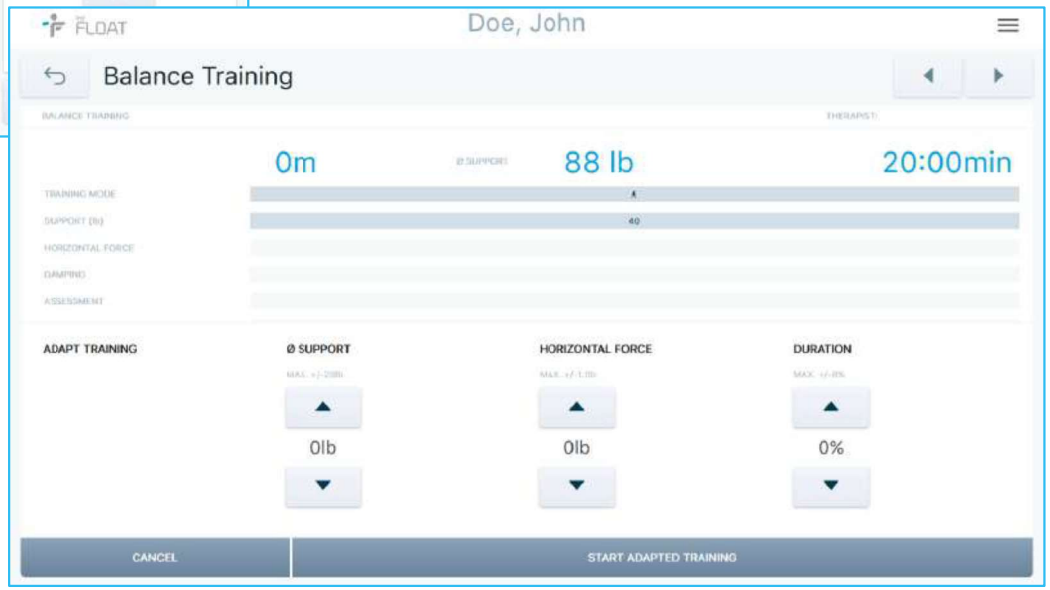
Position to the patient



Adapt training, if necessary



During Training

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All important function on one screen. Key functions all available with remote control.

Flexible and Safe – Virtual Wall

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The “Virtual Wall” allows to restrict the space for free movement.

Special Functions

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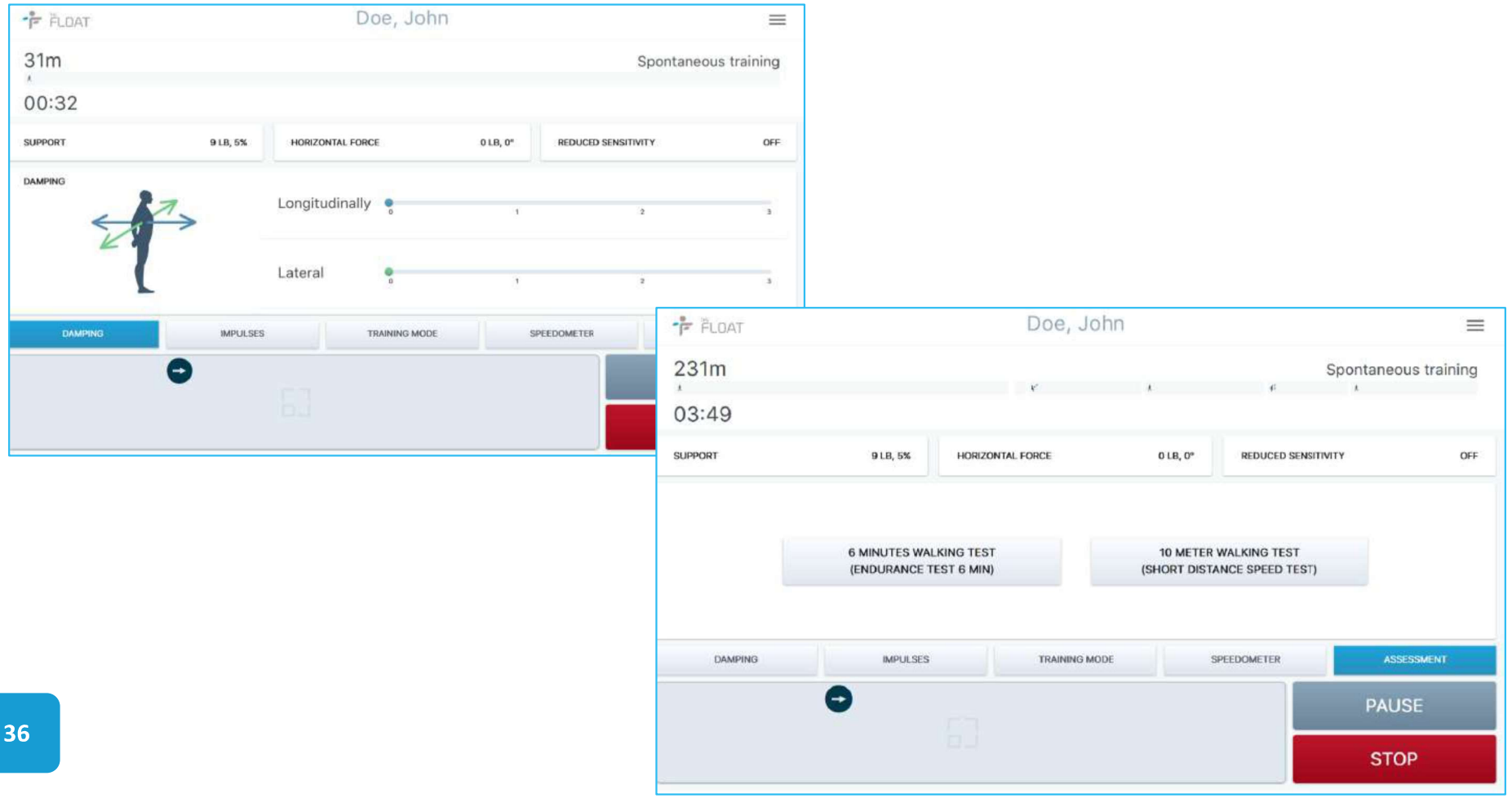
Intuitive use – also for tasks or tests.



End the Training

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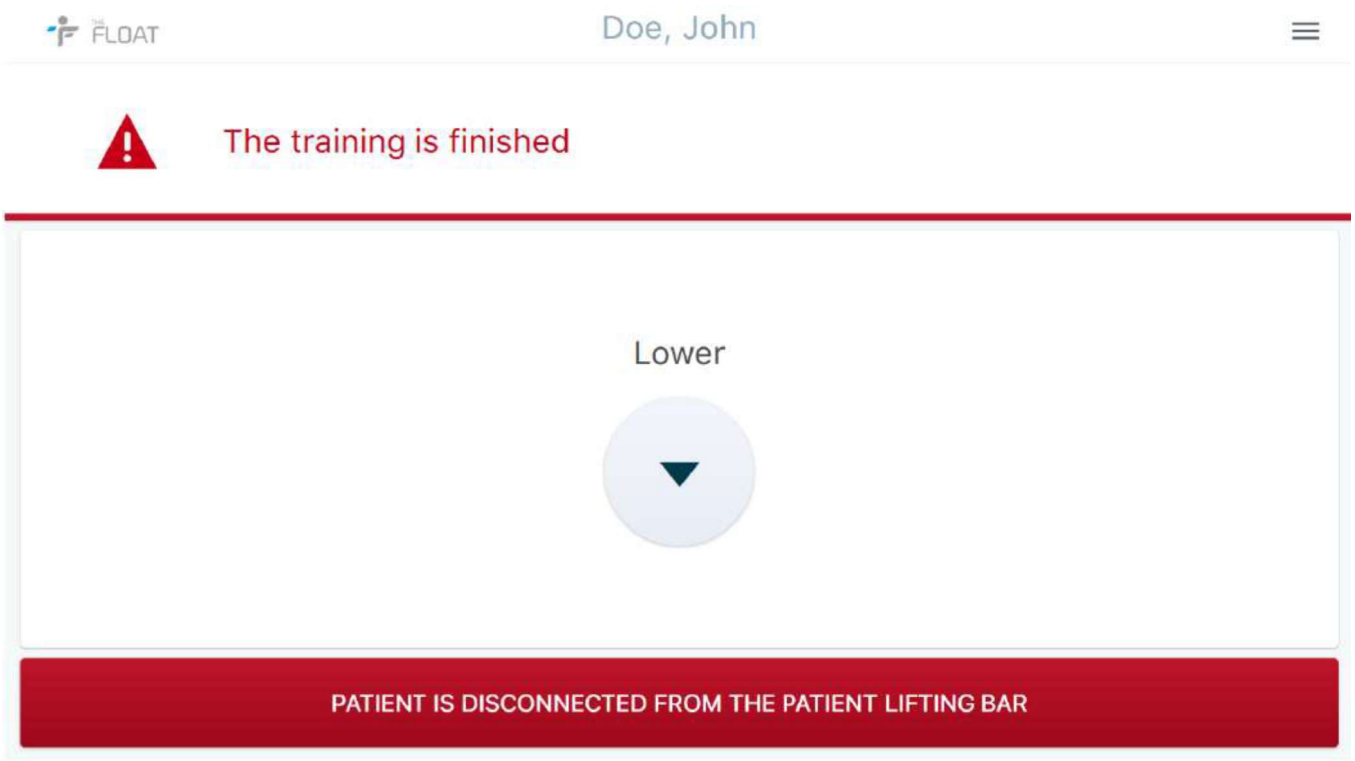
- Simple and fast usage
- Functionally oriented – no complex screens
- Defined access rights for administrators and therapists



Result

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- Overview
- Available as pdf
- Patient history available in Excel
- Optional data interface for real-time data (mostly for research)

Agenda

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System Overview

3D Exercises

Installation

Components

Virtual Reality

References

Virtual Reality Module

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The VR system is an add-on that is fully compatible with the FLOAT and can be installed separately any time.

VR - Concept

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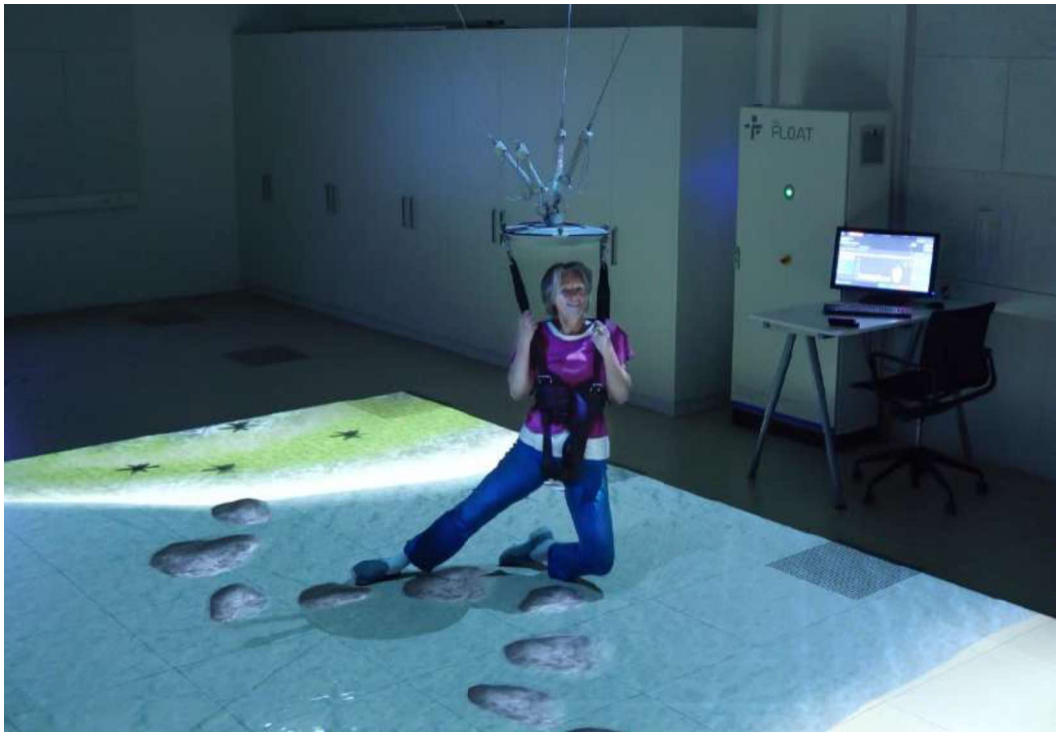
- Created by neurologists to specifically promote ADL's
- Easy setup and operation, fully compatible with The FLOAT software
- 6 different VR games with varying level of difficulty to enable progress.
- Realtime visual and audio feedback of error and success
- Large training area 24 ft by 6 ft.



VR - Games

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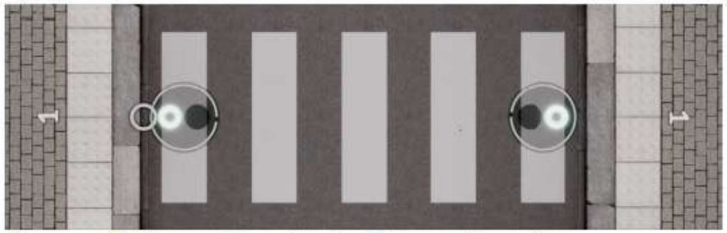
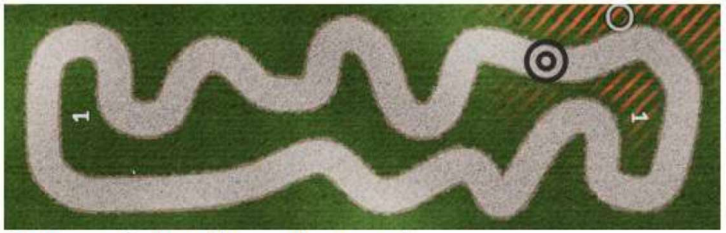
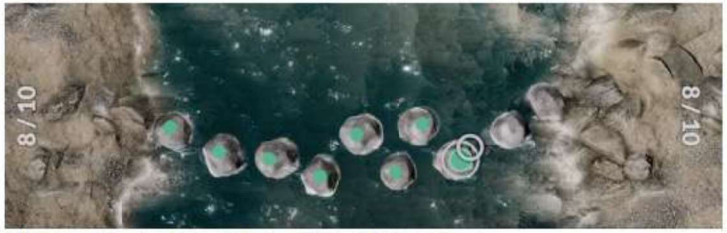


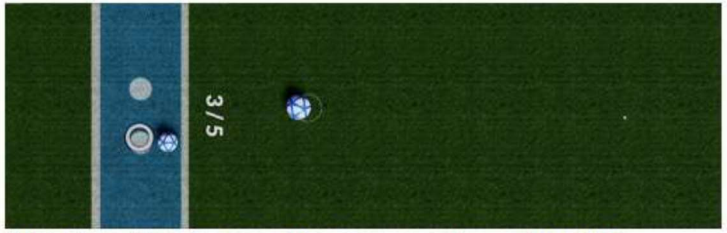
Crosswalk: Cross the street under a given time



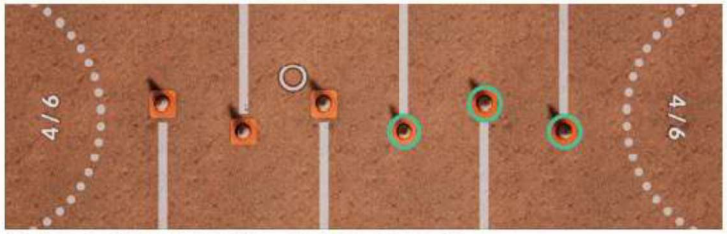
Parkour: Follow the parkour path



River: Reach the other side of the river



Sidestep: Step to the side and stop the rolling ball



Slalom: Complete the slalom exercise


Walk: Go around obstacles to reach the target

Reha-Stim Medtec Group

- Reha-Stim Medtec is a privately owned group of companies dedicated to the development of modern rehabilitation devices for arm and gait training that assist therapists in their daily work and help patients to regain their ability to move
- Founded in 1999 by Prof. Dr. Stefan Hesse. After the merge with Yourehab AG in 2017, RSM has expanded its product portfolio with the FLOAT, as well as in 2019 with the Sprintex slat-belt treadmills.
- Today over 500 medical facilities using Reha-Stim products on five continents
- Our mission is to develop scientifically based rehabilitation devices that effectively assist therapists in providing better patient outcomes

www.reha-stim.com | info@reha-stim.com | +1 857 233 6581

Installed Base

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The FLOAT:

- Currently 12 systems installed and additional units under contract
- Since 2013 in permanent use
- Several studies at the Balgrist in Zürich/Switzerland
- Boston (motion lab) & Orlando (hospital) in the USA

Neuro-Motor Rehabilitation Hospital
National Health Service
Rome

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NEUROSCIENZE
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Olympic Training
Center
Switzerland

Der Balgrist

1st Ranked University in U.A.E.
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