REF **Supermarket Scrolling**

CE Class I Medical Device

User manual

Distribution mode

Available for direct download at
http://virtualisvr.com/espace-client/
Use under license

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1. GENERAL

1.1. Description

SUPERMARKET SCROLLING software is an immersive 3D simulation based on virtual reality technology that immerses a person in a digitally created artificial world.

Supermarket scrolling is used to rehabilitate balance disorders.

The patient scrolls linearly through a supermarket aisle. They must control their position using right foot and left foot support to avoid obstacles. Visual stimuli can be configured with objects, shelves, signs and grids on the floor and ceiling.

1.2. Indications

Balance disorders. Vestibular pathologies.

1.3. Contraindications

Epileptic patients, children under 15 years of age, pregnant women.

1.4. Software field of application

Software for rehabilitation of balance disorders.

1.1. Intended user

Healthcare professionals: physiotherapists; occupational therapists; neuropsychologists; ENT doctors; neurologists; PMR doctors (physical medicine and rehabilitation), etc.

Research Centers: CNRS, CHU, INSERM, etc.

1.1. Warnings and caution

Immersion in Virtual Reality is a powerful tool, especially for stimuli that can-induce sensory conflicts.

WARNING

These stimulations can potentially cause certain disorders: vagal discomfort, epileptic seizures, migraines, vomiting, malaise, dizziness, syncope etc.

This type of re-education must be approached progressively, particularly in Virtual Reality where the stimulation is "powerful".

The contraindications are identical: Mainly epilepsy and migraines.

RECOMMENDATION

As postural reactions can be spectacular, we STRONGLY recommend that you place the patient in a secure environment and stay close to him/her throughout the session to anticipate any loss of balance or discomfort caused by the use of virtual reality.

RECOMMENDATION

It is also recommended to increase the duration and intensity of stimulation very gradually after an initial short session to ensure the patient's tolerance to this type of type of stimulation

Motion sickness is treated by "habituation", so you need to recreate the symptoms experienced during transport.

WARNING

It is essential to stop the session when the first symptoms appear, generally "sweating".

Define a working area of about 3m² to allow for risk-free movements.

Take a 10-to-15-minute break every 30 minutes of use.

It would be counterproductive to take into account the fact that some motivated patients may wish to go further. It's up to the professional to "dose" immersion so as not to provoke neurovegetative symptoms. This type of symptom can intensify in the hour following the session.

Nor can Virtualis be held responsible for any disturbances suffered by patients during or use of their software.

The accessories required to use the software may emit radio waves that can interfere with the operation of nearby electronic devices. If you have a pacemaker or other implanted medical device, do not use the product until you have taken advice from your doctor or the manufacturer of your medical device.

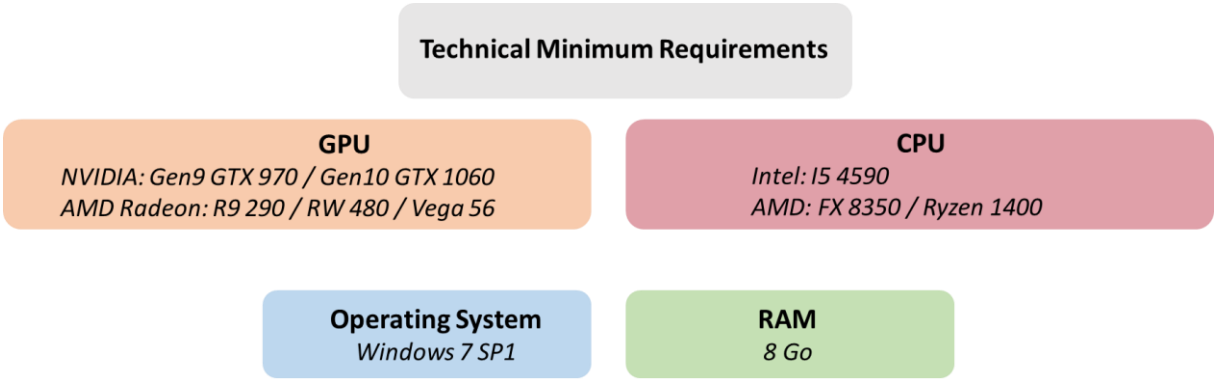
Any serious incident should be notified in writing to qualite@virtualisvr.com

1.2. Hardware and minimum configuration requirements

Hardware required to use the system:

- VR Ready PC
- VR System: HTC VIVE, HTC VIVE Pro or compatible system
- Lighthouse bases (HTC VIVE tracking)
- StaticVR or MotionVR platform

In order to install and use our virtual reality applications, we recommend a configuration equal to or higher than the system requirements:



1.3. Required accessories

StaticVR or MotionVR force platform, VR headset optional or TV screen (for use in screen mode).

2. Software use

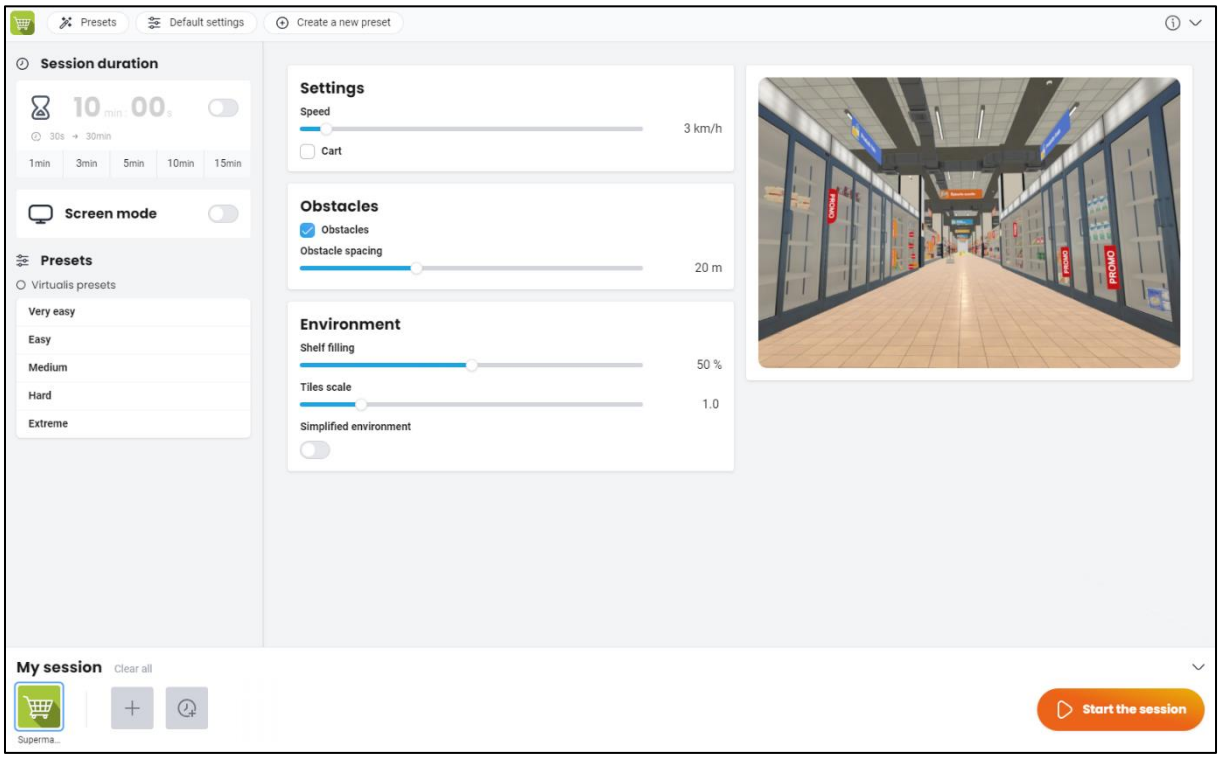
2.1. Patient setup

Patient standing on the StaticVR or MotionVR force platform, VR headset optional (software can be used in "screen mode").

RECOMMENDATION

The medial malleolus of the patient's feet should be centered directly over the center horizontal line of the force platform.

2.2. Session settings



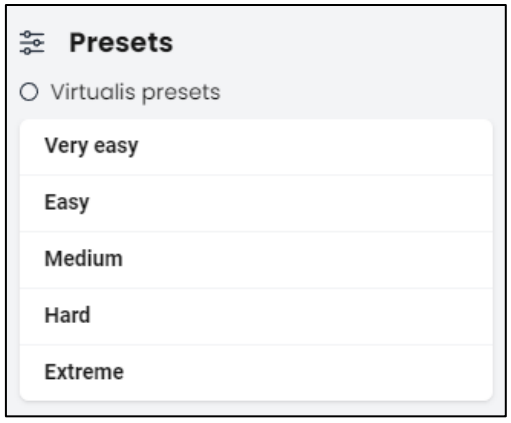
2.2.1. Screen mode

This software can be used in "**screen mode**", in which case the VR headset is not required.

RECOMMENDATION

Make sure you have two monitors connected to your computer so that you can display both the settings screen and the session content.

2.2.2. Presets



5 different protocols are available. They correspond to different levels of difficulty, from "**Very easy**" to "**Extreme**".

Each protocol comes with specific settings.

The variable settings for this module are as follows:

2.2.3. Settings

Speed:

Modifies the environment's scrolling speed.

Value: 0 to 50 km/h.

Cart:

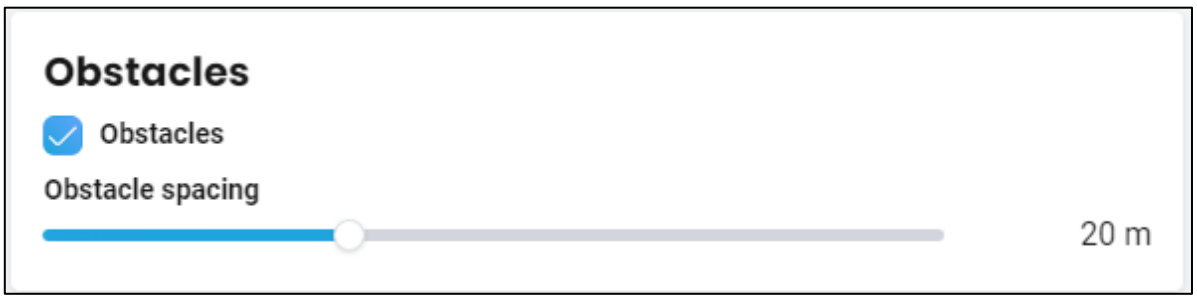
If this option is selected, a cart appears in front of the patient.

Unlocks the “Cart height” setting.

Cart height:

Value: 100 to 140 cm.

2.2.4. Obstacles



Obstacles:

If this option is activated, obstacles appear in front of the patient. They must shift their center of pressure to avoid them.

Unlocks the “Obstacle spacing” setting.

Obstacle spacing:

Value: 5 to 50 m.

2.2.5. Environment

Shelf filling:

Modifies the quantity of products and tags shown on the shelves.

Value: 0 to 100 %.

Tiles scale:

Value: 0.2 to 5.0.

Simplified environment:

Activating this option limits the visual information shown on screen.

2.3. Session

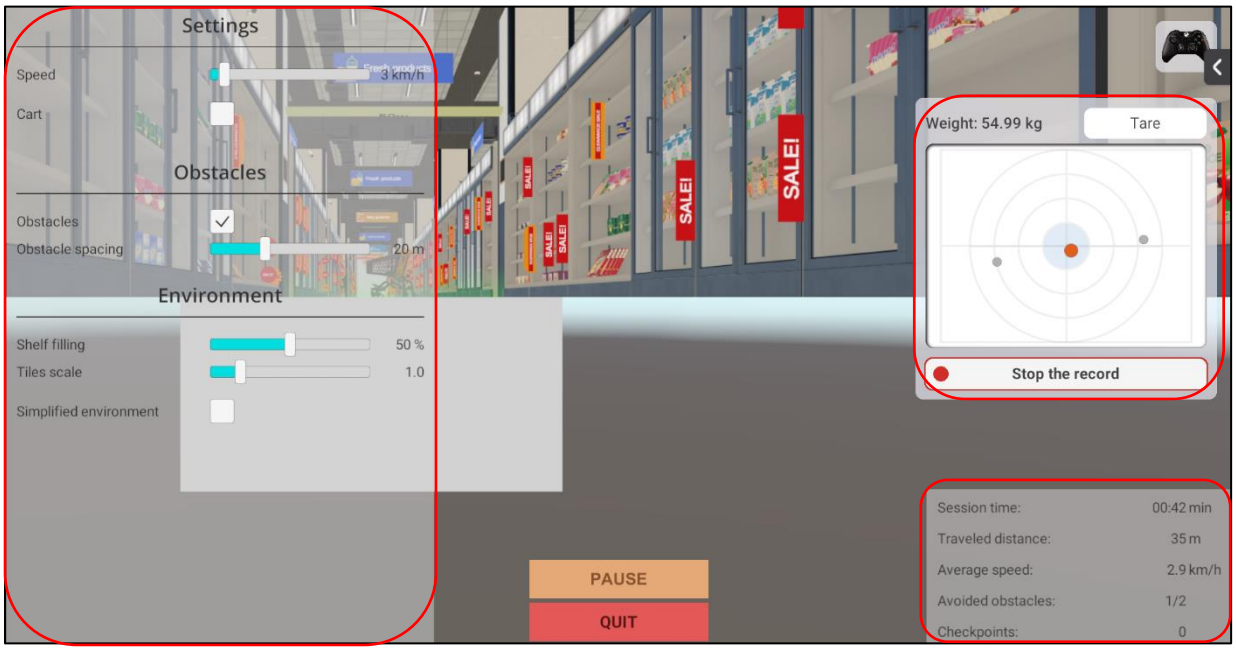
Once the presets have been selected, launch the virtual interface by selecting the "**Start the session**" button at the bottom right of the screen.

2.3.1. Force platform tare and recording

Once the software has been launched, click on the "**Tare**" button on the force platform (StaticVR or MotionVR) **before letting the patient step up onto it**.

1. Help the patient onto the force platform.
2. Click on « **Start a recording** » to record the patient's statokinesigram during the session.

User interface:



During the session, you can adjust parameters from **the left side of the screen**. They aren't visible to the patient.

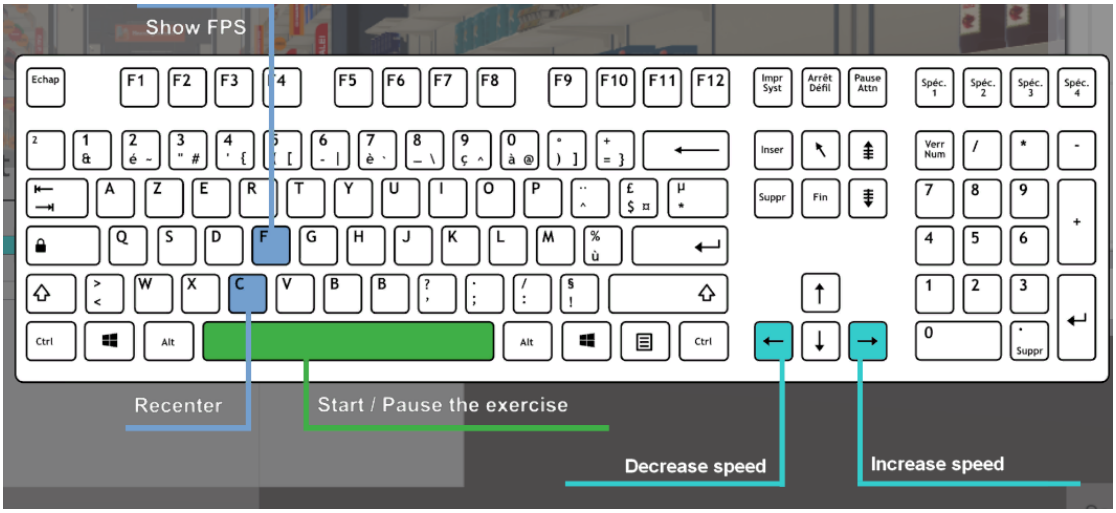
In the bottom right of the screen, the user can view the session's duration, the distance covered, the average speed, the number of obstacles avoided, and the number of checkpoints crossed in real time.

Patient interface:

The patient must move their center of pressure to avoid obstacles (if obstacles are enabled).

2.4. Shortcuts

During the session, the shortcut list is found by clicking on the Xbox controller icon in the upper right corner of the screen.



2.5. Results

At the end of the exercise, the user obtains a score representing the distance covered, the average speed (in km/h), the number of obstacles avoided and the total number of obstacles (if the option is activated), as well as the number of checkpoints passed.

2.1. Data processing

Data retrieval and analysis uses the Patient Management software (see dedicated user manual).