



Subjective Visual Vertical (SVV)

Module tutorial



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1. GENERAL

1.1. Description

Subjective Visual Vertical (SVV) is an immersive 3D simulation software based on virtual reality technology, meaning a person can be immersed in a digitally created artificial world.

The **SVV** software is used to assess the perception of verticality without the influence of the visual field.

1.2. Required accessories

Headset. Xbox controller, Hive controller(s) or keyboard are all optional.

1.3. Patient setup

The principle of measuring patients' Subjective Visual Vertical is that they have no vertical or horizontal, visual or proprioceptive reference.

It is therefore recommended to take the measurements using the following installation:

- Patient seated (preferably on an upholstered seat, a swivel chair is ideal).
- Feet on a footrest, not on the ground.
- Keyboard, controller(s) or Xbox controller in hand so they can take the measurements themselves (if possible).

2. Settings

2.1. Session settings



The screenshot shows the SVV module interface. At the top, there are tabs for 'Presets', 'Default settings', and 'Create a new preset'. The 'Measures' panel on the left includes a 'Measure count' slider set to 6, a 'Pseudo-random values' button, and six input fields for measures: Measure 1 (10), Measure 2 (-30), Measure 3 (20), Measure 4 (-20), Measure 5 (-10), and Measure 6 (30). Below these is a 'Head angle' section with a 'Tilt mode' toggle. The 'Settings' panel on the right has a 'Mode' selector (Vertical/Horizontal), 'Sway referenced' and 'Show arrows' toggles, and a 'Rod type' selector (Rod/Image). At the bottom, the 'My session' section shows a 'Clear all' button and a 'Start the session' button.

The variable settings for this module are as follows:

2.1.1. Measures

This close-up screenshot focuses on the 'Measures' panel. It shows the 'Measure count' slider at 6, the 'Pseudo-random values' button, and the six measure input fields with their current values: Measure 1 (10), Measure 2 (-30), Measure 3 (20), Measure 4 (-20), Measure 5 (-10), and Measure 6 (30).

Used to define the value of the various measurements for the entire protocol.

There are many different protocols in the literature

It is often recommended to take:

- at least 6 measurements (6 to 12).
- Variable initial angle, same tilts to the right and left in random order.
- Alternating sequence.

**Measure count:**

Number of measures taken during the session.

Value: 4 to 24.

Pseudo-random values:

Defines pseudo-random values for measurements. Values are mirrored: they are tilted both to the right (positive values) and to the left (negative values).

2.1.2. Tilt mode

Tilt mode:

Checking this option unlocks the following parameters:

Tolerance threshold:

Modifies the tolerance threshold for the head tilt angle.

Value: 1.0 to 20.0.

Head angle:

Used to define head inclination values to be measured.

Delete or add measures by clicking on the “-” or “+” button.



2.1.3. Settings

Settings

Mode

Vertical Horizontal

Sway referenced

Show arrows

Mode:

Allows you to choose between vertical or horizontal measurements for the entire protocol.

Sway referenced:

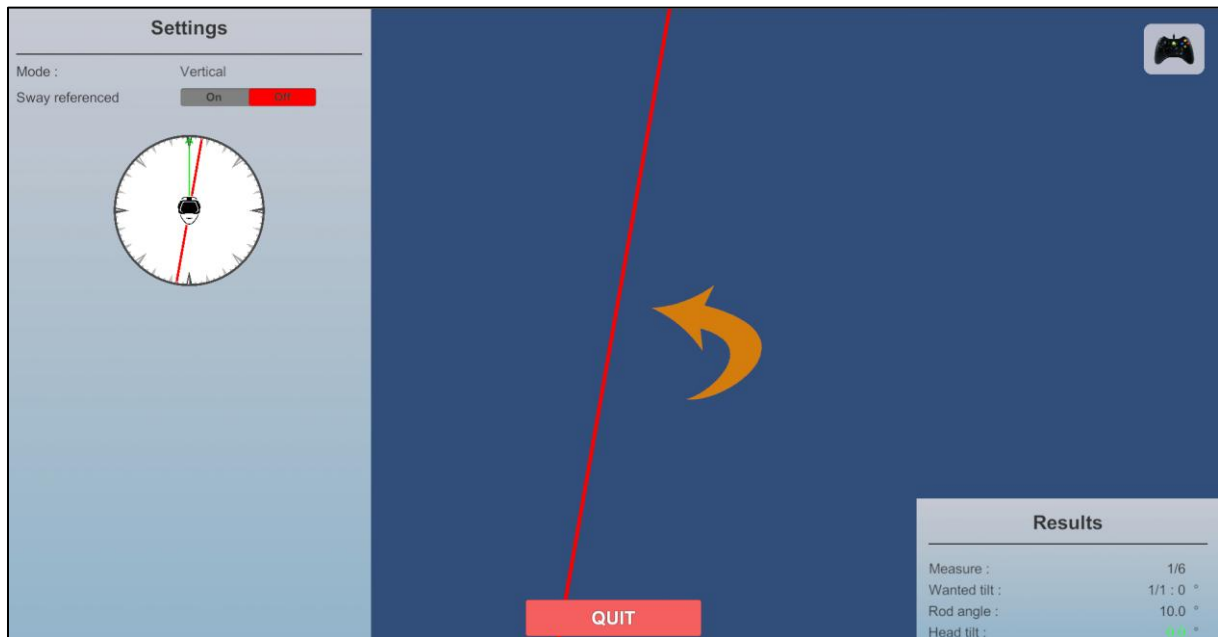
Check this option to have the image displayed in the VR headset matched to the patient's head movements.

If enabled, the bar is “fixed” in front of the patient, and tilts with the patient's own head tilts. Measured values are relative to the earth's vertical, without taking head tilt into account.

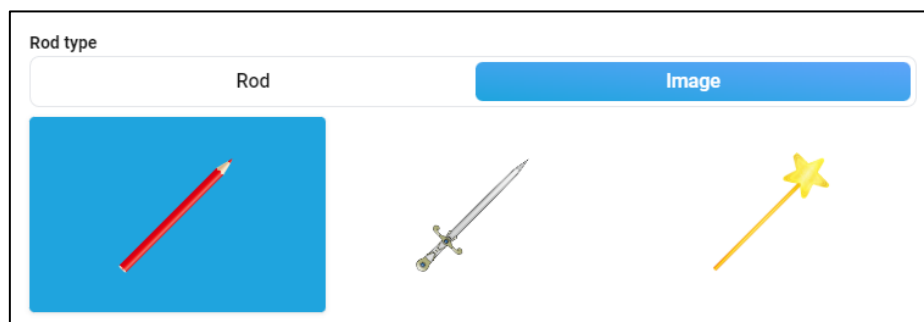
Otherwise, the bar is in “real conditions”, as if it were floating in the room. It is therefore unaffected by the patient's head movements.

Show arrows:

Check this option to make the arrows visible and help the patient visualize the direction of movement of the bar (right or left).



2.1.4. Rod type

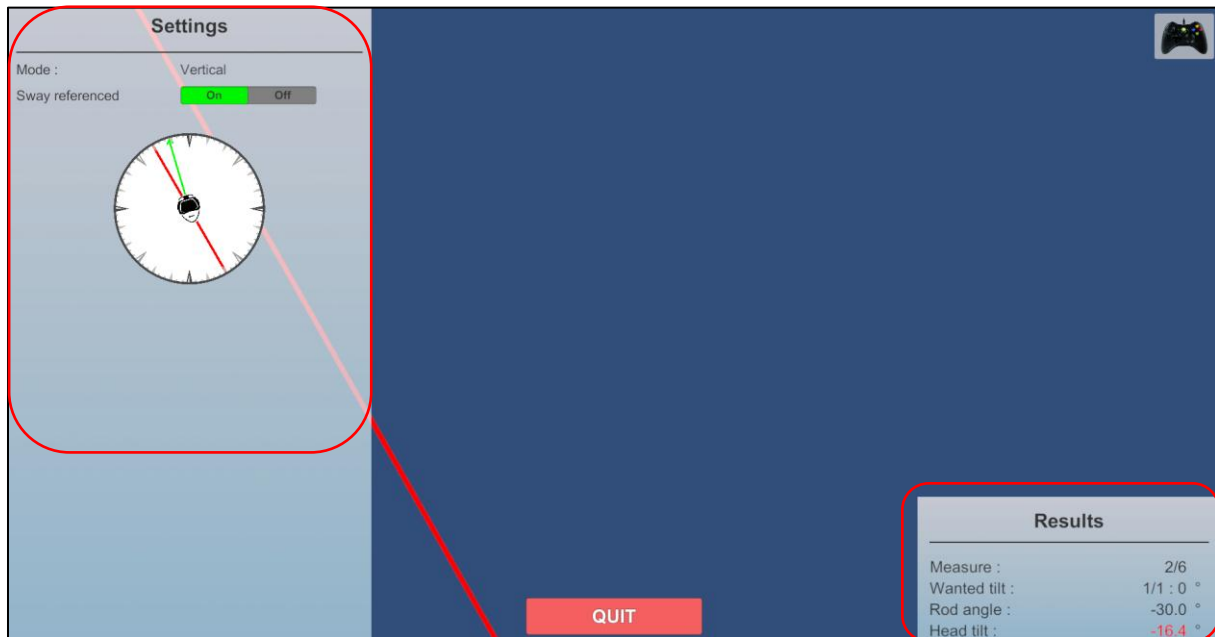


Changes the type of rod displayed on the screen.

3. Module

3.1. Session

Once the presets have been defined, click on the "**Start the session**" button.

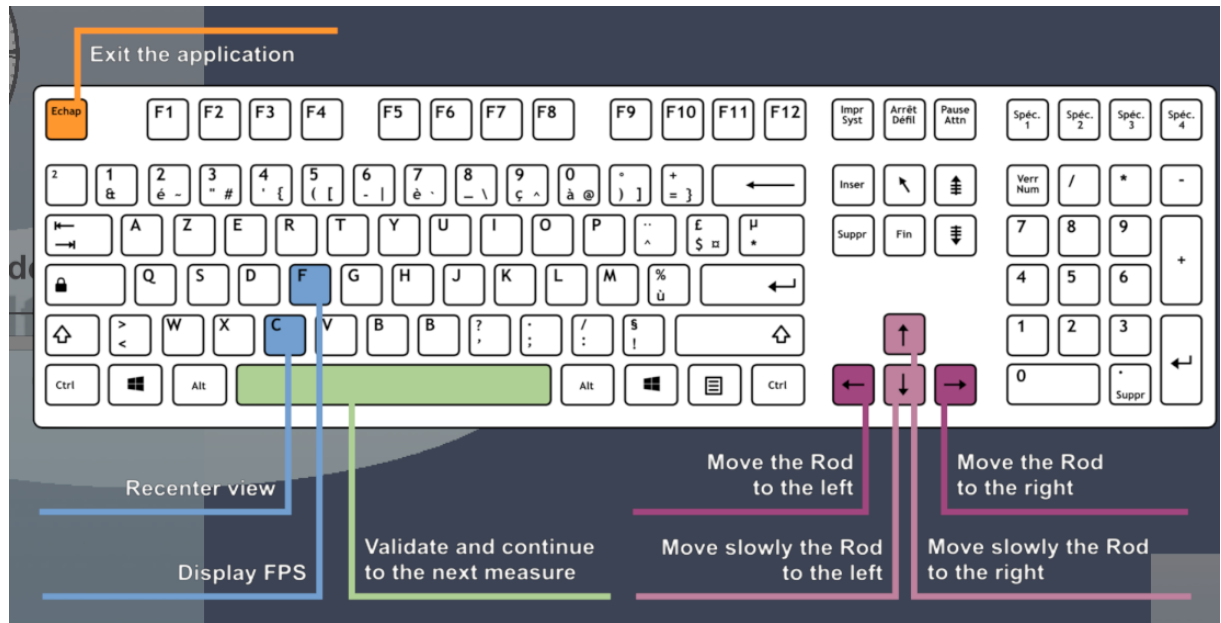


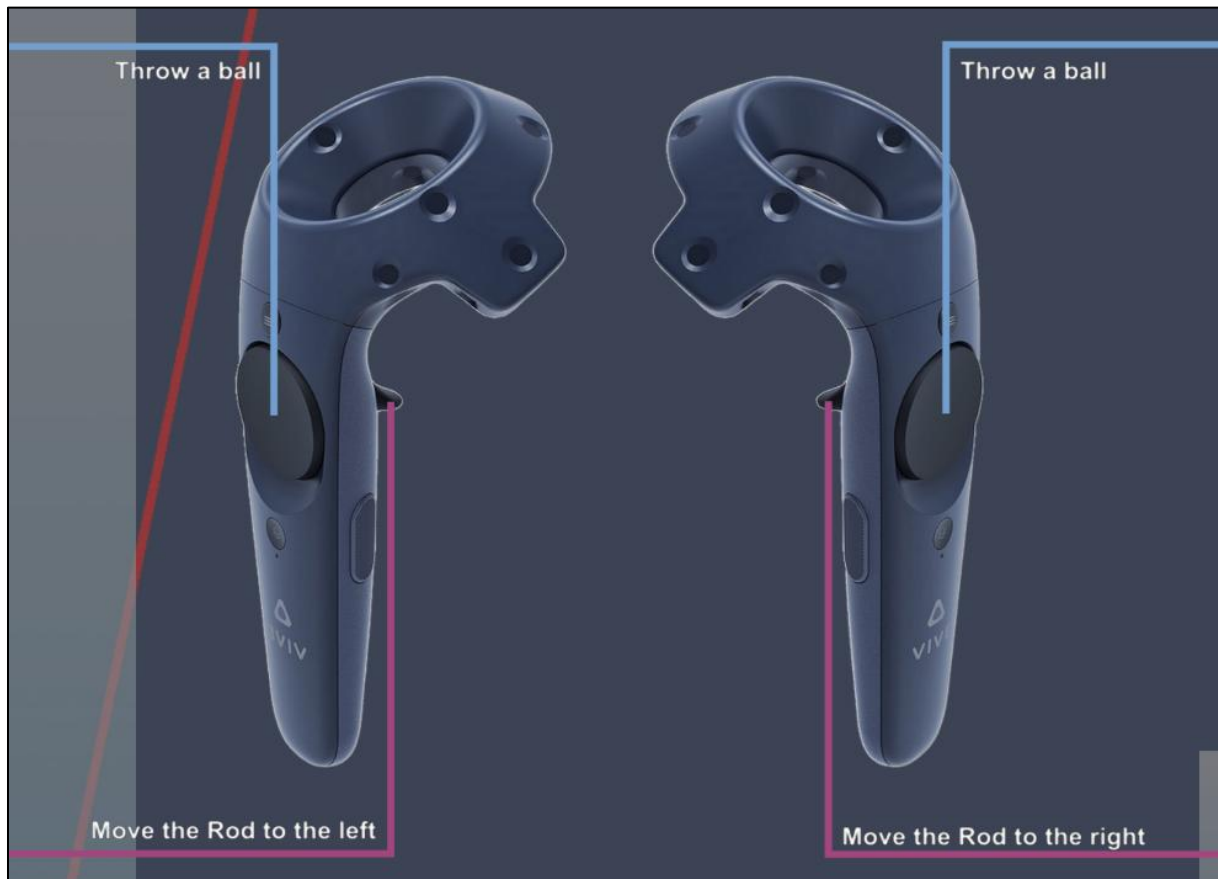
During the session, the user can modify the parameters from the **left side of the screen**. They are not visible to the patient.

In the bottom right corner of the screen, the user can view the results of the session in real time.

3.2. Shortcuts

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





3.3. Results

At the end of the session, the different head inclination values of the patient are displayed.



3.3.1. Summarized results

No summarized results are displayed at the end of the session.

3.3.2. Graphs and report

To find the detailed results and to generate a report, click on the histogram icon.

