

Virtual Reality in Stroke Rehabilitation

eTable 2.

Analysis of Intervention Setup and VR Content in Balance Intervention Studies^a

Study	Frequency	Intervention Setup	VR Content
Givon et al, ⁵² 2016	24 sessions, 60 min/day, 2×/wk, for 12 wk	Combination of Microsoft Xbox Kinect, Sony PlayStation 2 EyeToy, Sony PlayStation 3 MOVE, Nintendo Wii Fit, and SeeMe VR system	Alternately whole body, upper extremity, and lower extremity exercises, including weight shifting and trunk control.
Lee et al, ⁵⁵ 2015	18 sessions, 30 min/d, 3×/wk, for 6 wk	Nintendo Wii Fit with balance board and television	Seven exercises: sitting posture, knee bend and other leg knee extension, walking a tightrope, penguin teeter-totter, balance skiing, rolling marble board, and balance Wii.
Lee et al, ⁵⁶ 2015	18 sessions, 45 min/d, 3×/wk, for 6 wk	BioRescue platform and monitor	Three exercise games: city walking (left-right weight shift), hot air balloon (up-down weight shift), and bubble (total weight shift).
Lloréns et al, ⁴⁹ 2015	20 sessions, 30 min/d, 5×/wk, for 4 wk	VR environment displayed on a video system in which the participants' feet were represented by 2 shoes that mimicked their movement in real life	Tasks consisting of reaching items with one foot while maintaining the other foot within a circle.
Song et al, ⁵³ 2015	40 sessions, 30 min/d, 5×/wk, for 8 wk	Microsoft Xbox Kinect	Exercise games, including 10-pin bowling, skiing, golf, ground walking, walking over obstacles, and climbing stairs.
Hung et al, ³³ 2014	24 sessions, 30 min/d, 2×/wk, for 12 wk	Nintendo Wii Fit with balance board and television	Seven exercise games: table tilt, ski slalom, soccer heading, balance bubble, penguin slide, basic step, and warrior.
Morone et al, ⁵¹ 2014	12 sessions, 20 min/d, 3×/wk, for 4 wk	Nintendo Wii Fit game system with balance board and television	Three exercise games: hula hoop, bubble blower, and sky slalom.
Song et al, ⁵⁰ 2014	9 sessions, 25 min/d, 3×/wk, for 3 wk	IREX VR system including gloves by which patients are recognized as markers for the tasks	Five tasks that required the patient to move in such a way that the COP was directed outside the feet.
Barcala et al, ²⁹ 2013	10 sessions, 30 min/d, 2×/wk for 5 wk	Nintendo Wii Fit game system with balance board and television	Three exercise games: penguin slide, table tilt, and tightrope tension.
Park et al, ⁴⁸ 2013	12 sessions, 30 min/d, 3×/wk for 4 wk	VR program by which participants can alter their posture by watching their actual motion on an HMD	Exercises and visual feedback on the posture of the participant while executing the exercises included trunk stability and pelvic tilting in supine, sitting, and standing positions; lower extremity strengthening; and weight-bearing tasks under maintenance of trunk stability.
Rajaratnam et al, ³⁰ 2013	15 sessions, 20 min	Nintendo Wii Fit or Microsoft Kinect game console system with balance board and television	Nintendo Wii Fit: shifting weight during standing in response to the game Microsoft Kinect: changing center of mass while standing or sitting.
Cho et al, ⁵⁴ 2012	6 sessions, 30 min/d, 1×/wk for 6 wk	Nintendo Wii Fit game system with balance board and television	Six exercise games: balance bubble, ski slalom, ski jump, soccer heading, table tilting, and penguin slide.
Kim et al, ¹⁶ 2009	16 sessions, 30 min/d, 4×/wk for 4 wk	IREX VR system in which participants improve ambulation skills by manipulating objects in the virtual environment that is projected on a screen	Three exercise games: stepping up and down, sharkbait (capture stars while avoiding sharks and eels by means of weight shifting, stepping, squatting, and jumping), and snowboard game (jumping with the snowboard while avoiding obstacles).

^aVR=virtual reality, HMD=head-mounted device, 3D=3-dimensional, COP=center of pressure.