

## Brain-Motor Disablement: Using Virtual Reality-Based Therapeutic Simulations

**Authors :** Vince Macri, Jakub Petioky, Paul Zilber

**Abstract :** Virtual-reality-based technology, i.e. video-game-like simulations (collectively, VRSims) are used in therapy for a variety of medical conditions. The purpose of this paper is to contribute to a discussion on criteria for selecting VRSims to augment treatment of survivors of acquired brain injury. Specifically, for treatments to improve or restore brain motor function in upper extremities affected by paresis or paralysis. Six uses of virtual reality are reviewed video games for entertainment, training simulations, unassisted or device-assisted movements of affected or unaffected extremities displayed in virtual environments and virtual anatomical interactivity.

**Keywords :** acquired brain injury, brain-motor function, virtual anatomical interactivity, therapeutic simulations

**Conference Title :** ICMBE 2015 : International Conference on Medical and Biomedical Engineering

**Conference Location :** Prague, Czechia

**Conference Dates :** March 23-24, 2015