The use of Virtual Reality in rehabilitation for neurologically involved patients is on the rise and – by the sheer volume of emerging research – growing rapidly. The available literature primarily addresses the stroke survivor, and targets both upper extremity and lower extremity function.

A variety of equipment used to create virtual environments with differing skills and purposes is discussed in the literature, but the essentials include:

- Computer system offering advanced imaging capabilities
- Digital camera technology used to place the patient in the 3D environment without the use of hand controllers or specialized platforms
- High resolution monitors that enable the patient to view their own movement in an interactive virtual environment
- Advanced software and hardware applications that can monitor, measure and challenge the patient in the virtual environment

The literature alludes to various key requirements and advantages of incorporating virtual reality augmented therapy technology into a rehabilitation pathway:

- Interaction that motivates the patient including visual and auditory feedback
- Ability of the therapist to tailor treatment sessions focusing on specific patient needs at a complexity level appropriate to their functional ability
- Exercise applications offering various functional tasks for the upper and lower extremity
- Virtual reality can reduce the patient’s pain and discomfort during exercise
- Virtual reality allows the patient to “focus” on the exercise rather than their impairment, which makes the exercise more enjoyable, and is more likely to be repeated over many trials to facilitate plastic changes in the nervous system

The following literature review covers a spectrum of research articles related to virtual reality augmented therapy including positive, as well as more critical voices.

**Recent Reviews on Virtual Reality in Rehabilitation - 2012:**

1. **Virtual reality games for movement rehabilitation in neurological conditions: how do we meet the needs and expectations of the users?** Lewis GN, Rosie JA. Source Health and Rehabilitation Research Institute, AUT University, Auckland, New Zealand. Disability Rehabilitation. 2012 Apr 5


**Virtual Reality in Rehabilitation – Meta Analysis and Systematic Reviews:**


**Virtual Reality in Stroke Rehabilitation:**


**Stroke – Upper Extremity:**


continued


**Stroke – Lower Extremity:**


**Traumatic Brain Injury (TBI):**


**Cognitive:**

1. Virtual reality games for movement rehabilitation in neurological conditions: how do we meet the needs and expectations of the users? Lewis GN, Rosie JA. Source Health and Rehabilitation Research Institute, AUT University, Auckland, New Zealand. Disability Rehabilitation. 2012 Apr 5


**Cardiac Rehabilitation:**


**Multiple Sclerosis:**


**Parkinson's Disease:**


**Pain Control:**


