



Innovation > Sport & Fitness > Smart shoulder-pad opens up gamified exercise to the physically impaired

## SMART SHOULDER-PAD OPENS UP GAMIFIED EXERCISE TO THE PHYSICALLY IMPAIRED



SPORT & FITNESS

### The Fraunhofer Institute has developed a game for thalidomide victims which caters to their limitations and needs via a smart shoulder-pad

The potential for computer games to encourage physical activity is proving to be an exciting development for the entertainment industry. As well as mainstream fitness training platforms such as [Blue Goji](#), we have also seen developers exploring products and games that can gamify physical therapy, making it more diverse and appealing for the physically impaired. The [Valedo](#), from Switzerland, did exactly that for back pain sufferers and now [The Fraunhofer Institute](#) in Munich has developed a game for thalidomide victims which caters to their specific limitations and needs.

The game, which is as yet unnamed, motivates specific movements in the player which exercise motor functions, train concentration and coordination and improve overall fitness and stamina. The game is currently being used on test patients who control an on-screen avatar via the movements of their upper body. The controller for the game is actually worn by the player, as a pair of smart shoulder pads, which contain small sensors. These monitor the player's movements and transmit them via bluetooth to a tablet. A special seat cushion controls the game by means of weight shifts and the players can navigate menus via voice control.

The game was developed as part of the [acrobatic@home](#) project, in collaboration with thalidomide victims and therapists, designed to encourage users to unconsciously repeat recommended exercises, motivated by their in-game progress. [Nintendo](#) has previously undertaken similar work, developing a game on their Wii console for young cerebral palsy sufferers. Is there potential for other games to be adapted to include disability modes, which would open up gaming further to those who have previously been excluded?

16th February 2015

Website: [www.fraunhofer.de](http://www.fraunhofer.de)

Contact: [www.fraunhofer.de/en/contact](http://www.fraunhofer.de/en/contact)