

Wii-hab may enhance Parkinson's treatment

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Wii

The Nintendo Wii may help treat symptoms of Parkinson's disease, including depression, a Medical College of Georgia researcher says.

Parkinson's disease is a degenerative disease that impairs motor skills. Dr. Herz theorized that the popular computer game console, which simulates various sports and activities, could improve coordination, reflexes and other movement-related skills, but he found additional benefits as well.

"The Wii allows patients to work in a virtual environment that's safe, fun and motivational," says Dr. Ben Herz, program director and assistant

professor in the School of Allied Health Sciences Department of Occupational Therapy. "The games require visual perception, eye-hand coordination, figure-ground relationships and sequenced movement, so it's a huge treatment tool from an occupational therapy perspective."

In an eight-week pilot study, 20 Parkinson's patients spent an hour playing the Wii three times a week for four weeks. The patients, all in a stage of the disease in which both body sides are affected but with no significant gait disturbance yet, played two games each of tennis and bowling and one game of boxing—games entailing exercise, bilateral movement, balance and fast pace.

"By the middle of the study, we actually had a number of people who could [defeat] their opponent out in the first round, which amazed us," says Dr. Herz, who presented his preliminary findings at the fifth annual Games for Health Conference today in Boston.

The victories weren't the biggest surprise, however. Participants showed significant improvements in rigidity, movement, fine motor skills and energy levels. Perhaps most impressively, most participants' depression levels decreased to zero.

An estimated 45 percent of Parkinson's patients are reported to suffer from depression, though Dr. Herz suspects the actual figure is much higher.

Studies have shown that exercise and video games independently can increase the production of dopamine, a neurotransmitter deficient in Parkinson's patients. He suspects that's the case with the Wii's exercise effect. Dopamine also helps improve voluntary, functional movements, which Parkinson's patients "use or lose," Dr. Herz says.

Wii, which features simulated movements such as cracking an egg,

swinging a tennis racket and throwing a bowling ball, responds to a player's movements rather than cues from a controller, so players can do full body movements and see their progress on a screen.

"I think we're going to be using virtual reality and games a lot more because it provides a controlled physical environment that allows patients to participate in the activities they need or want to do. A patient doesn't have to go to a bowling alley and worry about environmental problems or distractions," Dr. Herz says.

Dr. Herz's research was funded by a \$45,000 grant from the National Parkinson's Foundation. Next he plans to test the Wii Fit balance board with Parkinson's patients and expand his studies to multiple sites.

"Game systems are the future of rehab," Dr. Herz says. "About 60 percent of the study participants decided to buy a Wii for themselves. That speaks volumes for how this made them feel."

Source: Medical College of Georgia

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