

# Move over, Mario: Researchers use Wii games to help Parkinson's patients

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The games force players to think while they stand on a balance board

A pair of Purdue University professors are using the popular Nintendo Wii gaming system to help people with Parkinson's disease. Jessica Huber and Jeff Haddad from the College of Health and Human Sciences are studying how playing specially created games can improve a patient's movement, speech and overall quality of life.

By having [study participants](#) stand on a [balance board](#) and move a cursor to a specific target on a monitor, the researchers can study how [brain activity](#) and body movement are connected, which often comes into play in seemingly simple everyday tasks like walking and talking, which can be difficult for people with Parkinson's.

"We're looking at being able to do things in their house that may be challenging, like put away groceries when you have to stand on your toes and reach for cabinets, or to cook and communicate at the same time" said Haddad, an associate professor in the Department of Health and Kinesiology. "All these things that people, when they're younger, take for granted that get more difficult to perform as they get older, and even more so if they have some sort of neuromuscular disease."

Haddad says a pilot study done in collaboration with researchers at Purdue, Indiana University and the University of Calgary, and using Parkinson's patients along with otherwise healthy older adults, revealed that the games, when utilized for a prescribed period of time, tended to show more positive outcomes in gait and balance than traditional Parkinson's treatments.

Huber, a professor of speech, language and hearing sciences, believes game play is also having positive impacts on participants speech patterns.

"As speakers, we typically take pauses at set locations - a major thought, a minor thought, not really in the middle of a thought," Huber said.

"After therapy with this, their pauses were more typically placed. They didn't pause as often in unexpected locations."

While the exact reasoning for these positive outcomes is not known, researchers plan to expand their research with a full, randomized study. Huber says current Medicare rules make it difficult for Parkinson's patients to get both physical and verbal therapies covered, so the pair

have an eventual goal of making the technology home-based.

"The therapist can check in on the patient wirelessly and they can see if they're doing their exercises, they can see how they're doing, they can call them back if they seem to be falling behind," Huber said. "I also think, when you have a population with a mobility impairment, treating them in the home is critical"

While accessibility is a positive outcome that is key, so is enjoyment. With participants doing three sessions a week for eight weeks, Haddad says researchers must make things fun for the men and women taking part.

"We've learned some things that we'll try to implement to make it more exciting," Haddad said. "More games, and eventually being home-based, will probably make this more enjoyable than going to a physical therapy clinic, just not as fun as going and partying with their friends."

Provided by Purdue University

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