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Wii-Fit for Improving Activity, Gait and Balance in Alzheimer's Disease

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Falls among people with Alzheimer's disease are common and lead to fractures, acute hospitalizations and increased rate of institutionalization. Poor balance and gait abnormalities, commonly associated with Alzheimer's, are risk factors for falls. Improving balance and gait abnormalities through exercise is critical to prevent falls. Walking is the most commonly recommended exercise program, however, it is difficult to engage people with Alzheimer's in long-term exercise programs due to lack of motivation, poor engagement and external factors, such as the cost of physical therapy.

Wii-Fit—a Nintendo gaming console used for aerobics, strength training and balance activities—offers high level of engagement and is not limited by the constraint of a therapist's presence. Virtual trainers talk the user through the activity while tracking progress. Furthermore, visual and auditory feedback improves engagement. Exploratory studies have demonstrated success of using Wii-Fit in cognitively impaired individuals. In a case-control study of 34 nursing home residents, participants had improvement in balance, gait and activities of daily living in the group using Wii-Fit as an adjunct to physical therapy over those who used physical therapy alone.

Kalpana Padala, M.D., and colleagues will further examine the usefulness of Wii-Fit by comparing one group of individuals with Alzheimer's disease receiving the exercise program delivered by Wii-Fit system and the other group receiving a walking exercise program. Volunteers will participate for 30 minutes daily, five days a week for 8 weeks. Participants will have mild Alzheimer's, history of falling at least once during the year before the study (without serious injury) or a fear of a future fall, and have a caregiver and TV at home. A physical therapist will go to each subject's home to set and tailor the Wii-Fit/Walking program.

Berg Balance Scale will be the primary outcome measure along with biomechanical assessment of balance, gait and dual tasking. Quality of life, activities of daily living and the Mini Mental Status Examination will also be measured. Durability of the intervention effect will be assessed at 16 weeks (8 weeks after the intervention).