Tests help predict falls in Parkinson's disease

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A group of tests may help predict which people with Parkinson's disease are more likely to fall, according to a study published in the June 23, 2010, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

"Falls are a major problem for people with Parkinson's disease and can lead to injuries and reduced mobility, which can result in increasing weakness, loss of independence and increased use of nursing homes," said study author Graham K. Kerr, PhD, of Queensland University of Technology in Brisbane, Australia. "Despite these issues and their impact on the health care system and society, little research has been done to help predict which people with Parkinson's disease are more likely to fall so we can try to prevent these falls."

For the study, 101 people with Parkinson's disease who were able to walk without any aids took a variety of tests evaluating their Parkinson's symptoms, balance and mobility. The participants then reported any falls that occurred over a six-month period.

Most participants were in the early stage of the disease, with an average of six years since the disease was diagnosed. The majority of the participants (77 percent) had the type of Parkinson's that is mainly affected by difficulty with voluntary movements, while 20 percent had tremors as the central symptom of the disease.

A total of 48 percent of the participants had a fall during the study and 24 percent had more than one fall. A total of 42 percent reported that

they had fallen in the year before the study started.

The tests that were the best predictors of whether a person was likely to fall included a test of overall Parkinson's symptoms, a questionnaire on how often people tended to "freeze" while walking, and a test of balance. When these tests were combined, the results produced a sensitivity of 78 percent and a specificity of 84 percent for predicting falls. Sensitivity is the percentage of actual positives that are correctly identified as positive, and specificity is the percentage of negatives that are correctly identified.

"These tests are easy to implement and take only a short time to complete," Kerr said. "Once we can identify those at risk of falling, we can take steps to try to prevent these falls." In the United States, it is estimated that about one million people have Parkinson's disease.

Provided by American Academy of Neurology