

# **Tango Improves Balance, Mobility in Patients with Parkinson's Disease**

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By Beth Miller

Patients with Parkinson's disease who took part in regular tango dance classes for 20 sessions showed significant improvements in balance and mobility when compared to patients who did conventional exercise, a new study by researchers at Washington University School of Medicine in St. Louis shows.

Researchers Gammon M. Earhart, Ph.D., assistant professor of physical therapy, and Madeleine E. Hackney, a predoctoral trainee in movement science, compared the effects of Argentine tango dance classes to exercise classes on functional mobility in 19 patients with Parkinson's disease. The participants in the dance program showed significant improvement in several standard tests for patients with Parkinson's disease - the Unified Parkinson's Disease Rating Scale (UP-DRS) and the Berg Balance Scale.

Results appeared in the December 2007 issue of the *Journal of Neurologic Physical Therapy*.

Parkinson's disease is a disorder that affects nerve cells in a part of the brain that controls muscle movement. The nerve cells that make the neurotransmitter dopamine die or do not work properly, resulting in trembling of hands, arms, legs, jaw and face; stiffness of the arms, legs and trunk; slowness of movement and poor balance and coordination. Patients are also at greater risk for falls or freezing, the slowing or stopping of movement while walking.

The researchers randomly assigned 19 patients with Parkinson's disease to 20 one-hour sessions of tango dancing or group strength and flexibility exercise designed for patients with Parkinson's and the elderly. Each patient was assessed prior to starting the dance or exercise and after completing the sessions. All were similar in age and stage of Parkinson's disease.

The tango dance sessions included stretching, balance exercises, tango-style walking, footwork patterns, experimenting with timing of steps to music and dancing with and without a partner. The exercise classes included 40 minutes of seated exercise followed by standing exercises supported by a chair and core strengthening and stretching.

The participants in both groups showed significant improvement in the Unified Parkinson's Disease Rating Scale Motor Subscale 3, which measures overall disease severity with respect to movement. The tango participants showed much improvement on the Berg Balance Scale, which measures balance in a variety of positions, while the improvements in participants in the exercise group were not as pronounced. In addition, the participants in the tango group showed a trend toward improvement in the Timed Up and Go (TUG) test, which tests functional mobility rising from a chair, walking a short distance, turning and returning to the chair.

"Given these preliminary results, we think that tango is feasible for individuals with Parkinson's disease and may be an appropriate and effective form of group exercise for individuals with Parkinson's," Earhart said. "Although some participants were initially skeptical because they hadn't danced in years or thought they couldn't because of the disease, this study shows that dance can improve functional mobility."

The researchers said that while dance in general may be beneficial for patients with Parkinson's disease, tango uses several aspects of movement that may be especially relevant for these patients including dynamic balance, turning, initiation of movement, moving at a variety of speeds and walking backward.

"This type of therapy looks to be superior than what is currently offered," Hackney said. "The quality of life improved in these patients because of the social aspect of the dancing."

Earhart and Hackney said this is the first study of this type to systematically investigate and compare the effects of tango and strength/flexibility exercises and functional mobility in patients with Parkinson's and that further studies with larger groups of patients are needed to confirm their observations.

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Hackney ME, Kantorovich S, Levin R, Earhart GM. Effects of tango on functional mobility in Parkinson's disease: A Preliminary Study. *Journal of Neurological Physical Therapy*, Vol. 31, December 2007.

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