



Two Exercises Help Older People Stay on Their Feet

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Two Chinese exercise techniques - the ancient martial art of tai chi and exercising by walking on cobblestones - may improve the balance of older people and help prevent falls, according to two new studies.

In the tai chi study, published in the July issue of *The Journal of Advanced Nursing*, 59 men and women with an average age of 78 were divided into two groups, one participating in a 12-week tai chi course, the other maintaining its usual activities without exercise classes.

The tai chi group members did 10 minutes of warm-up followed by 20 minutes of walking while moving the hands and arms. Then they did moderate range-of-motion exercises for the neck, shoulders, trunk, hip, knees and ankles. The classes were held three times a week.

Rhayun Song, the senior author on the study and an assistant professor of nursing at Chungnam National University in Daejeon, South Korea, said that keeping joints and muscles moving was essential for older people, and that "tai chi can do it without causing pain and stiffness since it's slow circular movements without external impact."

Tai chi's breathing elements, called qi-gong, are also important, Dr. Song said. "We emphasize breathing exercise during the movements so that individuals maintain aerobic metabolism in their body during exercise," she added.

Measures of muscle strength showed that the physical fitness of the exercise group improved significantly. Balance, as calculated by how long a person could stand on one foot with her eyes open, also improved by the end of the program.

Thirty-one percent of the people in the tai chi exercise group experienced falls during the period, compared with 50 percent of the non-exercisers, although this difference was not statistically significant.

The other study, a randomized trial that was published online last month and will appear in a future issue of *The Journal of the American Geriatrics Association*, involved two groups of 54 healthy men and women age 60 and older.

Each group participated in an exercise session consisting of 30 minutes of walking 3 times a week for 16 weeks. One group walked on a flat surface while the other walked on mats that replicated the uneven pattern of cobblestones that are common on walkways in Chinese parks. The intensity of the exercise was carefully tracked to make sure members of the two groups were using the same amount of energy.

Participants in each group improved on several measures of physical health.

But compared with those in the ordinary walking group, the mat walkers had better balance (tested by several different standing and reaching tasks), lower blood pressure and faster times in walking 50 feet at the end of the exercise program. They also did better in a test of how fast they could rise from a chair, walk 10 feet and then sit down.

K. John Fisher, a research scientist at the Oregon Research Institute and a co-author of the article, said that people had to get used to walking on the mats, and that a few participants experienced some discomfort at the beginning of the training.

But few people dropped out, and there were no exercise-related injuries, suggesting that the program is suitable and safe for older adults.

Even though walking on the cobblestone mats proved the more beneficial exercise, Fuzhong Li, the lead author on the study and a senior research scientist at the Oregon Research Institute, said he did not recommend that older people give up ordinary walking in favor of the cobblestone program.

"Regular walking is the most popular physical activity in this country," Dr. Li said, "and it has multiple health benefits. Cobblestone mat walking may provide additional physical and physiological benefits."