

Tai Chi for the Elderly

STUDIES SHOW EXERCISE RELIEVES PAIN, IMPROVES MOBILITY IN SENIORS

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Once practiced almost exclusively in China, *tai chi* has grown to become one of the most recognizable forms of exercise in existence. A cross between yoga and meditation, *tai chi* consists of a series of movements and breathing exercises designed to build strength, restore balance and increase flexibility while helping a person attain a heightened state of being.

Although it is practiced by people of all ages, *tai chi* is particularly popular among the elderly. A pair of new studies involving older populations - one conducted at the Case Western Reserve University in Cleveland, Ohio,¹ the other at the Oregon Research Institute² - have found that *tai chi* can reduce pain levels in people with arthritis and increase mobility and physical functioning in otherwise sedentary senior citizens.

Easing Arthritis Pain

In the Case Western study, 16 men and women with chronic arthritis pain aged 68 to 87 were randomly assigned to a *tai chi* group or a control group. Those in the *tai chi* group attended 10 weekly one-hour *tai chi* classes. The control subjects, meanwhile, maintained normal daily activity.

Subjects in the *tai chi* classes were instructed in a series of movements from the first circle of the *wu*-style form of *tai chi*. The number of movements was gradually increased so that by the ninth session, participants were using a total of 16 movements. In addition to *tai chi*, they also performed warmup exercises and took a short break before participating in class, and were encouraged to practice daily (but not to worry about remembering or practicing every movement).

To measure the pain and general health levels of the subjects, the researchers used two instruments: a short-form pain questionnaire and a 36-item health survey. Each week, all of the participants were required to report their current pain on a scale of 0-10 (10 being the worst possible pain), as well as any changes in activity and medication use.

While no significant differences were found in overall health and the use of analgesics, pain scores for patients in the *tai chi* group decreased substantially, from an average of 3.25 at the start of the study to 1.75 after 10 weeks of exercise. Moreover, those who did not learn *tai chi* actually reported a slight increase in pain after 10 weeks.

The small sample size precluded the researchers from recommending *tai chi* as a form of pain relief, saying instead that more research should be conducted before a firm conclusion could be made. However, in an interview with Reuters Health,³ the researchers explained that *tai chi* may reduce pain by increasing circulation, which could help stimulate the repair of damaged joints and joint surfaces.

"In addition, it stabilizes joint structure by strengthening the soft tissue support of the joint," said Patricia Adler, the study's lead author.

Because *tai chi* requires little strain on the body and is relatively inexpensive to learn, they also believed it could increase activity levels in otherwise sedentary seniors.

"Often, older people will not come to class because they're afraid they are going to fall, they're afraid their needs won't be met, and they're afraid of the pain," Adler continued. "But when they see that *tai chi* is a gentle exercise that can help their pain, they become interested."

Staying Active Through *Tai Chi*

In the Oregon study, meanwhile, a team of researchers led by Dr. Fuzhong Li examined 94 seniors aged 65-96. All of the subjects were considered healthy, but were physically inactive at the start of the study. One group of 49 patients attended an hour-long *tai chi* program twice a week for six months; the others were asked to maintain their normal activities and were promised a four-week *tai chi* program at the end of the study.

The *tai chi* sessions consisted of a 15 minute warmup; 30 minutes of *yang-style tai chi* (involving a total of 24 movements); and a 15 minute cooldown period. The subjects were led by a certified *tai chi* instructor and replicated his motions and postures. They were also encouraged to practice the movements at home.

Just prior to (and just after completion of) the study, six areas of physical functioning were measured in each participant: "vigorous" activities, such as running or lifting heavy weights; "moderate" activities, such as carrying groceries or bowling; walking or climbing; bending, stooping or lifting; walking one block; and activities of daily living, such as eating, dressing or using the toilet. Participants were then asked to respond whether they felt limited in their ability to perform the activities in each area.

Table I: Number of patients reporting "limited" in areas of physical function.			
Group/Condition	Baseline	End of Study	% Improved
<i>Tai Chi</i> group			
Vigorous activities	30	13	57%
Moderate activities	24	10	58%
Walking/climbing	20	9	55%
Bending/stooping/lifting	20	6	70%
Walking one block	11	4	64%
Daily living activities	12	2	83%
Control group			
Vigorous activities	32	28	13%
Moderate activities	20	14	30%
Walking/climbing	22	18	18%
Bending/stooping/lifting	17	14	18%
Walking one block	9	6	33%
Daily living activities	11	9	18%

The investigators found that significantly more people from the *tai chi* group reported an improvement in physical functioning compared to those who remained inactive. Across-the-board improvements were seen in each area of physical functioning for seniors who participated in the *tai chi* class, from 55% in the ability to walk and climb to 83% in everyday activities.

The *tai chi* program was also found to be quite cost-effective. The main direct costs associated with the study were for instructor compensation. However, because *tai chi* classes are already offered at many local recreation centers and other community organizations - often for little or no fee - the exercise could prove an "efficient and cost-effective" preventive health service.

Of particular interest to the researchers was the fact that significant improvements were noted in the moderate and vigorous activity categories, criteria that are not always examined in *tai chi* studies. This led them to suggest that the benefits of such exercise extend "beyond basic activities of daily living" and may have a greater impact on one's overall health than first thought.

Li's team did point out some inconsistencies in the design of the study. For instance, an overwhelming majority of those who participated were white females, which may not give an accurate reflection of the elderly population in the U.S. In addition, since the sample was comprised of people who volunteered to take part in the study, Li theorized that those people might have been "more highly motivated to participate in physical activity" compared to the average senior citizen.

Nevertheless, they concluded that *tai chi* classes appear to be a "desirable activity" compared to other community-base activities such as walking or water aerobics, delivering low-impact, high-quality health benefits while increasing one's chances for social interaction.

"This study demonstrates the benefits of *tai chi* practice for older adults and the value and cost-effectiveness of a targeted community-based exercise program that promoted strength, balance, and improved overall physical functioning," they wrote. "· Given that the sample consisted of inactive individuals, we believe that favorable treatment effects are likely to be of great interest not only to older individuals with limitations in physical functioning, but to healthcare providers and practitioners as well."

References

1. Adler P, Good M, Roberts B, et al. The effects of *tai chi* on older adults with chronic arthritis pain. *Journal of Nursing Scholarship* 2000;32(4):377.
2. Li F, Harmer P, McAuley E, et al. An evaluation of the effects of *tai chi* exercise on physical function among older persons: a randomized controlled trial. *Annals of Behavioral Medicine* 2001;23(2):139-46.
3. *Tai chi* may ease arthritis pain in elderly. Reuters Health, March 19, 2001.

AUGUST 2001