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## Tai Chi Helps People With Fibromyalgia

Tai chi may be a useful treatment for fibromyalgia, according to a study published in *The New England Journal of Medicine* (2010; 363, 743–54). Medical professionals recommend exercise for those with fibromyalgia; however, many sufferers live with chronic pain and are aerobically unfit, with little muscular strength and poor flexibility. The purpose of this study was to determine whether tai chi—a mind-body practice with slow and flowing movements, deep breathing and concentrated mental focus—would help people with fibromyalgia to reduce pain and to improve sleep quality, physical and psychological functioning and health-related quality of life.

Researchers from Tufts University School of Medicine in Boston randomized 66 patients with fibromyalgia to either a tai chi group or a control group. Tai chi participants practiced Yang-style tai chi for 60 minutes, twice a week, for 12 weeks. Control group subjects spent an equal amount of time receiving lectures on topics related to fibromyalgia and doing 20 minutes of supervised stretching.

Investigators collected data from participants on a variety of parameters. All subjects took the Fibromyalgia Impact Questionnaire [FIQ], the primary outcome measurement tool, at the beginning of the study and each week until it was over. Other assessments included pain status, physical performance,

the Pittsburgh Sleep Quality Index, and other scales and scores relating to depression, expectations for exercise, pain and components of physical and mental quality of life. All parameters were measured at baseline, after 12 weeks and again after 24 weeks, for follow-up. Researchers compared between-group changes and also the weekly FIQ scores from the first 12 weeks.

Data analysis showed that compared with the control group, tai chi participants experienced a clinically significant reduction in symptom severity over the 12 weeks and were still maintaining this reduction at the 24-week mark. The tai chi group improved in measurements of pain, sleep quality, depression and quality of life. Scientists do not know the mechanisms for why tai chi positively affects the symptoms of fibromyalgia.

Study authors hypothesized that the combination of physical exercise with a mind-body focus, controlled breathing and movement may help in both overcoming fear of pain and coping with the experience of pain. At the same time, tai chi practice may stimulate certain neurochemical and analgesic pathways, leading to an overall improvement in quality of life.

Limitations of the study included the fact that no true control group could be provided, as it was not possible to offer “sham” tai chi. Large-scale research trials were recommended.

## Exercise Maintains Cognitive Functioning in Older Adults

Older adults who participated in a moderate exercise program for 1 year improved cognitive functioning, according to a study published in *Frontiers in Aging Neuroscience* (2010; 2 [Article 32], 1–17; doi:10.3389/fnagi.2010.00032). To compare the cognitive effects of aerobic training with those of stretching, toning and balance (STB) training among older adults, researchers from the University of Illinois at Urbana-Champaign recruited 65 subjects ranging in age from 59 to 80 years. Subjects reported having engaged in very little physical activity in the previous 6 months. Investigators divided the subjects into two groups: a walking group and a control group that performed STB exercises. At baseline, during the study and at its conclusion, the researchers used MRI scans to examine structural and functional aspects of the brain, and exercise tests to measure physical fitness.



Over 1 year, walking group members worked up to 40 minutes of walking per session, completing three sessions per week. STB training group members performed a variety of exercises for the same amount of time. Data analysis after 1 year showed that participants in both the aerobic and nonaerobic training groups experienced improvements in functional connectivity between different cortices of the brain. Increased functional connectivity was associated with greater improvement in executive functions of the brain.

Researchers noted that the length of training was an important factor: walking group members displayed improvements after 12 months of training, but not after 6 months, whereas the STB group showed some changes in functional connectivity after 6 months. Researchers pointed out that this study provides evidence that exercise can slow the declines in brain functioning that are typically associated with aging. More research was recommended.