



*Summary of  
Scientific Review Literature of the Efficacy of Taiji (T'ai Chi)*

*August 2008*

Several review articles have summarized evidence that Taiji practice yields health benefits for various age groups and patient populations<sup>1-7</sup>. Klein summarizes that controlled research evidence is now available to confirm the efficacy of Taiji practice with regard to improving:

- quality of life,
- physical function including activity tolerance and cardiovascular function,
- pain management,
- balance and risk of falls reduction,
- enhancing immune response, and
- improving flexibility, strength, and kinesthetic sense.<sup>8</sup>

Most recent review papers confirm the efficacy of Taiji for fall reductions and improving aerobic capacity, particularly among sedentary adults > or =55 years old.<sup>9, 10</sup>

Relatively few randomized controlled trials (RCTs—the gold standard of scientific design) have been completed and published. Review papers published to date cannot logistically include the most current studies, and because of experimental limitations in early studies most reviews conclude that further research is needed. The number of RCT's is increasing rapidly and clinical applications are varied.<sup>11</sup> Recent studies have begun to evaluate Taiji as a therapeutic intervention for various health concerns, including:

- postmyocardial infraction,
- coronary artery bypass surgery cardiac rehabilitation,
- hypertension,
- general cardiorespiratory function,
- multiple sclerosis,
- rheumatoid arthritis,
- osteoarthritis,
- microcirculation and endothelial function,
- immune function,
- dementia, and
- general stress management.<sup>6</sup>

## References

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- <sup>8</sup> Klein, P.J., & Adams, W.D. (2004). Comprehensive therapeutic benefits of Taiji—A critical review. *American Journal of Physical Medicine and Rehabilitation*. 83, 735–745.
- <sup>9</sup> Low, S., Ang, LW., Goh, KS., Chew, SK. A systematic review of the effectiveness of Tai Chi on fall reduction among the elderly. *Arch Gerontol Geriatr*. 2008 Apr 15. [Epub ahead of print].
- <sup>10</sup> Taylor-Piliae RE. The effectiveness of Tai Chi exercise in improving aerobic capacity: an updated meta-analysis. *Med Sport Sci*. 2008;52:40-53.
- <sup>11</sup> Personal communication with Penelope Klein, D'Youville College, Buffalo, New York August 2008.



*Abstracts of Recent  
Scientific Review Literature of the Efficacy of Taiji (T'ai Chi)*

*August 2008*

**Review #1. Comprehensive therapeutic benefits of Taiji: a critical review.**

Klein PJ, Adams WD.

*Am J Phys Med Rehabil. 2004 Sep;83(9):735-45.*

**Abstract**

This literature review offers physical rehabilitation professionals an update on the current breadth and strength of research evidence regarding comprehensive therapeutic benefits of Taiji practice. A critical analysis distinguishes between what is known from controlled clinical research and what is suggested in preliminary research. Of >200 published reports examined, 17 controlled clinical trials were judged to meet a high standard of methodological rigor. Controlled research evidence was found to confirm therapeutic benefits of Taiji practice with regard to improving quality of life, physical function including activity tolerance and cardiovascular function, pain management, balance and risk of falls reduction, enhancing immune response, and improving flexibility, strength, and kinesthetic sense. Preliminary research on implementation feasibility of Taiji programming exists for a variety of clinical populations. Further controlled clinical study is justified for a wide variety of clinical contexts.

**Review #2. The effect of Tai Chi on health outcomes in patients with chronic conditions: a systematic review.**

Wang C, Collet JP, Lau J.

*Arch Intern Med. 2004 Dec 13-27;164(22):2503; author reply 2504.*

**Abstract**

**OBJECTIVE:** To conduct a systematic review of reports on the physical and psychological effects of Tai Chi on various chronic medical conditions. **DATA SOURCES:** Search of 11 computerized English and Chinese databases. **STUDY SELECTION:** Randomized controlled trials, nonrandomized controlled studies, and observational studies published in English or Chinese. **DATA EXTRACTION:** Data were extracted for the study objective, population characteristics, study setting, type of Tai Chi intervention, study design, outcome assessment, duration of follow-up, and key results. **DATA SYNTHESIS:** There were 9 randomized controlled trials, 23 nonrandomized controlled studies, and 15 observational studies in this review. Benefits were reported in balance and strength, cardiovascular and respiratory function, flexibility, immune system, symptoms of arthritis, muscular strength, and psychological effects. **CONCLUSIONS:** Tai Chi appears to have physiological and psychosocial benefits and also appears to be safe and effective in promoting balance control, flexibility, and cardiovascular fitness in older patients with chronic conditions. However, limitations or biases exist in most studies, and it is difficult to draw firm conclusions about the benefits reported. Most indications in which Tai Chi was applied lack a theoretical foundation concerning the mechanism of benefit. Well-designed studies are needed.

**Review #3. A systematic review of the effectiveness of Tai Chi on fall reduction among the elderly.**

Low S, Ang LW, Goh KS, Chew SK.

*Arch Gerontol Geriatr. 2008 Apr 15. [Epub ahead of print]*

**Abstract**

Falls among the elderly is a major public health concern. There has been recent extensive research on the effects of Tai Chi in fall prevention among the elderly. As such, we undertook a systematic review to look for evidence on the effect of this intervention. There were seven randomized controlled trials, which met our objective and inclusion criteria. Our review has shown that Tai Chi has the potential to reduce falls or risk of falls among the elderly, provided that they are relatively young and non-frail. Further review is needed to look into the non-English studies, which assess the effectiveness of Tai Chi on fall reduction.

**Review #4. The effectiveness of Tai Chi exercise in improving aerobic capacity: an updated meta-analysis.**

Taylor-Piliae RE, Michael Reed, Scott A. Grubisich and Jeffrey A. Woods

*Med Sport Sci. 2008;52:40-53.*

**Abstract**

**PURPOSE:** To determine if Tai Chi exercise is effective in improving aerobic capacity. **METHODS:** A computerized search of seven databases was conducted using the mesh term 'Tai Ji', published between January 1, 2000, and June 1, 2007, in order to update a previous meta-analysis examining the effect of Tai Chi on aerobic capacity. Effect sizes (ESs) and 95% confidence intervals were calculated using D-STAT software. The ES for each study was weighted by the sample size and pooled variance. The effects of Tai Chi exercise on aerobic capacity were calculated including study design, gender, age, and type of comparison group. **RESULTS:** A total of 170 citations were obtained, with 7 new studies meeting the inclusion criteria and added to studies from the previous meta-analysis. Large significant effects of Tai Chi on aerobic capacity were found for subjects enrolled in the cross-sectional studies (ES = 1.33), in both women and men (1.09 and 0.86, respectively), among adults > or =55 years old (ES = 1.07), and when comparing sedentary subjects with those in Tai Chi exercise groups (ES = 0.99). Small to moderate effects, though nonsignificant, were found for subjects enrolled in the experimental studies (ES = 0.38), adults <55 years old (ES = 0.16), and when comparing subjects participating in other physical activity with those in Tai Chi exercise groups (ES = 0.45). **CONCLUSIONS:** Tai Chi exercise is effective in improving aerobic capacity when practiced long term. Middle-aged and older women and men benefit most, with greater gains seen among those initially sedentary. Tai Chi can be recommended as an alternative aerobic exercise, particularly among sedentary adults > or =55 years old.