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Movement therapies: Tai chi for Chronic Pain

Systematic Reviews and Meta-analysis

Fifteen studies were identified included people with osteoarthritis (80%), back pain (13%), and headache (7%). Using the GRADE approach, moderate-quality evidence was found that tai chi was more effective than no treatment or usual care at short term on pain.

Hall A, Copsey B, Richmond H, et al. Effectiveness of Tai Chi for Chronic Musculoskeletal Pain Conditions: Updated Systematic Review and Meta-Analysis. *Physical therapy.* 2016.

18 randomized controlled trials indicated that Tai Chi showed positive evidence on immediate relief of chronic pain from osteoarthritis with duration of effect lasting more than 5 weeks. There is some evidence on immediate relief of chronic low back pain from low back.

Kong LJ, Lauche R, Klose P, et al. Tai Chi for Chronic Pain Conditions: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Scientific reports.* 2016;6:25325.

A 2016 evidence map that analyzed 107 systematic reviews of Tai Chi on health outcomes confirmed the potential of Tai Chi to benefit pain and osteoarthritis.

Solloway MR, Taylor SL, Shekelle PG, et al. An evidence map of the effect of Tai Chi on health outcomes. 2016;5(1):126

A 2013 meta-analysis examining pain, stiffness and function in patients with osteoarthritis found twelve-week course of Tai Chi was beneficial for improving arthritis symptoms.

Yan JH, Gu WJ, Sun J, Zhang WX, Li BW, Pan L. Efficacy of Tai Chi on pain, stiffness and function in patients with osteoarthritis: a meta-analysis. *PloS one.* 2013;8(4):e61672.

A 2012 systematic review of Tai Chi for osteoarthritis of the knee found Tai Chi was an effective way of relieving pain and improving physical function.

Ye J, Cai S, Zhong W, Cai S, Zheng Q. Effects of tai chi for patients with knee osteoarthritis: a systematic review. *J J Physical Therapy Science.* 2014;26(7):1133-1137

Clinical Guidelines Low Back Pain.

The **2017 Clinical Guidelines of the American College of Physicians** for acute, subacute, and chronic low back pain recommend that for chronic low back pain, clinicians and patients should select nonpharmacologic treatments as a first line of care with Tai Chi included as one option.

Chou R, Deyo R, Friedly J, et al. Nonpharmacologic Therapies for Low Back Pain: A Systematic Review for an American College of Physicians Clinical Practice Guideline. *Ann Intern Med.* 2017.

Qaseem A, Wilt TJ, McLean RM, Forciea M, for the Clinical Guidelines Committee of the American College of P. Noninvasive treatments for acute, subacute, and chronic low back pain: A clinical practice guideline from the American College of Physicians. *Ann of Intern Med.* 2017.

The 2016 review by the U.S. Department of Health and Human Services Agency for Healthcare Research and Quality (AHRQ) found for chronic low back pain, effective therapies versus placebo, sham, no treatment, usual care, or wait list included Tai Chi.

Chou R, Deyo R, Friedly J, Skelly A, Hashimoto R, Weimer M, et al. Noninvasive Treatments for Low Back Pain Agency for Healthcare Research and Quality (US) (AHRQ) Comparative Effectiveness Reviews. 2016;Number 169(Report No.: 16-EHC004-EF).

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Clinical Guidelines Osteoarthritis including Knee OA

In 2016 the NIH NCCIH recommended Tai chi for osteoarthritis of the knee

Nahin RL, Boineau R, Khalsa PS, Stussman BJ, Weber WJ. Evidence-Based Evaluation of Complementary Health Approaches for Pain Management in the United States. *Mayo Clinic proceedings.* 2016;91(9):1292-1306.

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Additional Randomized Trials

Neck Pain

In a comparative 12-week trial, Tai Chi exercises and conventional neck exercises were more effective than no care and equally effective in improving pain and quality of life therefore representing beneficial interventions for neck pain.

Lauche R, Stumpe C, Fehr J, et al. The Effects of Tai Chi and Neck Exercises in the Treatment of Chronic Nonspecific Neck Pain: A Randomized Controlled Trial; *Pain: Official Journal of the American Pain Society.* 2016;17(9):1013-1027.

Knee OA

A 2016 RCT showed Tai Chi produced beneficial effects similar to those of a standard course of physical therapy in the treatment of **knee osteoarthritis** with improvement in depression for Tai chi not seen with physical therapy.

Wang C, Schmid CH, Iversen MD, et al. Comparative Effectiveness of Tai Chi Versus Physical Therapy for Knee Osteoarthritis: A Randomized Trial. *Ann Intern Med.* 2016;165(2):77-86.

Pain older adults

In a 2007 structured review of studies on mind/body interventions in **older adults** found Tai chi along with yoga, hypnosis, and progressive muscle relaxation were significantly associated with pain reduction.

Morone NE, Greco CM. Mind-body interventions for chronic pain in older adults: a structured review. *Pain Med.* 2007;8(4):359-375.

Headache

A 15-week tai chi class was more effective in reducing headache impact and improving some aspects of physical and mental health compared to a wait-list control group. Mind/body therapies may be more effective in treating headaches compare to no treatment or in combination with standard care.

Wahbeh H, Elsas SM, Oken BS. Mind-body interventions: applications in neurology. *Neurology.* 2008;70(24):2321-2328.

Fibromyalgia

Tai chi has been studied and reviewed for fibromyalgia with consistently positive results but methodological flaws limit definitive conclusions.

Lauche R, Cramer H, Hauser W, Dobos G, Langhorst J. A Systematic Overview of Reviews for Complementary and Alternative Therapies in the Treatment of the Fibromyalgia Syndrome. *Evid Based Complement Alternat Med.* 2015;2015:610615.

Tai chi Safety: Risks/Adverse events

Risks of adverse events are low with Tai Chi. Minor and anticipated musculoskeletal aches and pains are reported in trials, including knee strain. Reports of minor musculoskeletal pain related to Tai Chi training are consistent with AEs reported in other exercise studies. However, generally poor and inconsistent reporting of AEs in trials greatly limits the conclusions that can be drawn regarding the safety of Tai Chi.

Wayne PM, Berkowitz DL, Litrownik DE, Buring JE, Yeh GY. What do we really know about the safety of tai chi? A systematic review of adverse event reports in randomized trials. *Archives of physical medicine and rehabilitation.* 2014;95(12):2470-2483.

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