# INPLASY PROTOCOL

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## Efficacy of Traditional Chinese Exercise in the Treatment of Knee Osteoarthritis: A protocol for a Systematic Review and Meta-Analysis

Huang, R[1]; Zhang, S[2]; Guo, G[3]; Li, J[4]; Zhu, Q[5]; Fang, M[6].

**Review question / Objective:** To evaluate the efficacy of Traditional Chinese Exercises (TCEs) in the treatment of knee osteoarthritis.
**Information sources:** The following databases will be searched comprehensively from the construction to April 1, 2022.It includes three English databases, that is, PubMed, Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE. At the same time,one Chinese databases should be involved, which is China National Knowledge Infrastructure (CNKI).
**Main outcome(s):** The primary outcome measure was the content of pain on the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) scale, with stiffness and physical function as secondary outcome measures.

## INTRODUCTION

**Review question / Objective:** To evaluate the efficacy of Traditional Chinese Exercises (TCEs) in the treatment of knee osteoarthritis.

**Rationale:** Osteoarthritis (OA) is one of the main causes of joint pain and dysfunction in the elderly, among that, knee osteoarthritis (KOA) has the highest proportion. According to the World Health

Organization report on the global burden of disease, it has become the fourth most common disease, which can cause disabled in the world . There is a survey showed that the prevalence of symptomatic knee osteoarthritis was 8.1% in China, and it will increase with the patients get aged . Generally, Severe body dysmorphic disorder can occur in about 15 years, which brings a heavy mental and economic burden of disease to society.It is beneficial to carry out reasonable exercise and weight loss programs for the disease .Therefore, more and more Complementary and Alternative Medicine (CAM) has been used to treat knee osteoarthritis. Traditional Chinese exercises (TCEs) were an important part of non-drug therapy, including Taijiquan, Baduanjin, Wuqinxi and Yijinjing are applied to improve physical and mental health management. There are defined as low-to moderate-intensity aerobic exercises that can improve the strength and overall health of the limbs.

**Condition being studied:** However, some studies on the effects of traditional exercise therapy intervention on pain, stiffness, dysfunction and other symptoms in patients with knee osteoarthritis are still controversial , and further research is needed. Therefore, this study conducted a meta-analysis of traditional exercise therapy for knee osteoarthritis, and comprehensively evaluated the efficacy of various traditional exercises.

## METHODS

**Search strategy:** #1 Intervention: (("Qigong"[Mesh]) OR ((((((((((((((Qi Gong[Title/Abstract]) OR (Ch'i Kung[Title/Abstract])) OR (Traditional Chinese exercises[Title/Abstract])) OR (daoyin[Title/Abstract])) OR (gongfa[Title/Abstract])) OR (Taijiquan[Title/Abstract])) OR (Tai Chi[Title/Abstract])) OR (Tai-ji[Title/Abstract])) OR (Chi, Tai[Title/Abstract])) OR (Ji Quan, Tai[Title/Abstract])) OR (Quan, Tai Ji[Title/Abstract])) OR (Tai Chi Chuan[Title/Abstract])) OR (Wuqinxi[Title/Abstract])) OR (Baduanjin[Title/Abstract])) OR (Yijinjing[Title/Abstract])) OR (Liuzijue[Title/Abstract])))).

#2 Participant: ("Osteoarthritis, Knee"[Mesh]) AND (((((((((Knee Osteoarthritides) OR Knee Osteoarthritis) OR Osteoarthritides, Knee) OR Osteoarthritis Of Knee) OR Knee, Osteoarthritis Of) OR Knees, Osteoarthritis Of) OR Osteoarthritis Of Knees) OR Knee, pain)OR Knee ,disorder))

#3 Study desgin: (randomized controlled trial [pt] OR controlled clinical trial [pt] OR randomized [tiab] OR placebo [tiab] OR clinical trials as topic [mesh: noexp] OR randomly [tiab] OR trial [ti]) NOT (animals [mh] NOT humans [mh])

#4 #1 AND #2 AND #3.

**Participant or population:** We will include studies on patients diagnosed with KOA regardless of sex, age, race, or severity and duration of disease. Patients with KOA caused by infection, metastatic disease, tumor or fracture are excluded. Patients with KOA associated with serious illnesses such as cancer, liver disease, or kidney disease are also excluded.

**Intervention:** We included studies using TCEs as the intervention group.

**Comparator:** For control interventions, we will include (i.e., strength exercise, physiotherapy, healthy education or drug) or that did not undergo any intervention. If other therapies are both used in the experimental and control groups, then the combination of TCEs and other therapies will be included. In addition, there is no limitation to the intervention duration and frequency.

**Study designs to be included:** We will include only randomized controlled trials (RCTs) of TCEs for KOA in the treatment groups. Whether or not the expression "randomization" is mentioned with the randomization methods, it will be included in this review. Other designs such as animal experiment, case reports, and retrospective studies will be excluded.

**Eligibility criteria:** Other designs such as animal experiment, case reports, and retrospective studies will be excluded.

**Information sources:** The following databases will be searched comprehensively from the construction to April 1, 2022.It includes three English databases, that is, PubMed, Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE. At the same time,one Chinese databases should be involved, which is China National Knowledge Infrastructure (CNKI).

**Main outcome(s):** The primary outcome measure was the content of pain on the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) scale, with stiffness and physical function as secondary outcome measures.

**Quality assessment / Risk of bias analysis:** Two independent reviewers will separately assess methodological quality utilizing the Cochrane risk of bias tool[15], Which include the bellowing option: sequence generation; allocation concealment; blinding of participants; blinding of outcome assessment; incomplete outcome data;selective outcome reporting; and other issues. According to these areas, each trial will be classified into low risk, high risk and ambiguous risk respectively. Any disagreement will be negotiated with the third author to achieve consulation.

**Strategy of data synthesis:** Review Manager version 5.3 software will be used to execute the data analysis and synthesis.But, heterogeneity will be evaluated by I2 statistic before the data synthesis.In the meta-analyses, we will use a random effects model when the heterogeneity is significant (I2 ≥50%), while a fixed effects model will be used when the heterogeneity is non-significant(I2 <50%). Standardized mean differences (SMDs) and the corresponding 95% confidence interval (CIs) will be used for continuous data.

**Subgroup analysis:** If the necessary data are available, we will conduct a subgroup analysis according to the following criteria31: (1) the treatment period, (2) the different traditional Chinese exercise intervention.

**Sensitivity analysis:** We can exclude the studies to identify the robustness of the meta-analysis, which with high risks of bias or outcomes that are seriously distant from the rest of the data. This evaluation refers to sensitivity analyses.

**Country(ies) involved:** China.

**Keywords:** knee osteoarthritis, protocol, systematic review, traditional Chinese Exercises.

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