



Using Tai Chi and Qigong to Treat Parkinson's Disease: Utilizing Artificial Intelligence to Summarize 7 Traditional Chinese Medicine Studies

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ABSTRACT

Parkinson's disease is characterized by progressive motor impairment and a wide range of non-motor symptoms that remain only partially controlled by conventional pharmacotherapy. Tai Chi and Qigong, two traditional Chinese mind-body practices, have been increasingly investigated as complementary approaches for patients with Parkinson's disease. This article uses an artificial intelligence assistant to collate and summarize findings from 7 key publications—primarily systematic reviews, meta-analyses, and randomized controlled trials—together with additional recent clinical and mechanistic studies on Tai Chi and Qigong in this population. Across these reports, Tai Chi and Qigong are consistently associated with improvements in balance, postural stability, functional mobility, and fall rates, with several trials also demonstrating benefits in motor scores, sleep, mood, cognition, and health related quality of life. Emerging mechanistic work suggests that these practices may exert their effects through enhanced neuromuscular control, modulation of brain network connectivity, anti-inflammatory and antioxidant pathways, and improved neuroplasticity. At the same time, the evidence base remains constrained by heterogeneous protocols, limited long term follow up, and variable methodological quality in some reviews. Overall, current data support Tai Chi and Qigong as safe, feasible, and potentially valuable adjuncts to standard care for Parkinson's disease, and highlight the utility of artificial intelligence tools for efficiently synthesizing an evolving literature.

Keywords: Tai Chi; Qigong; Parkinson's disease; Balance; Motor function; Gait; Non-motor symptoms; Meta-analysis; Randomized controlled trial; Complementary therapy; Neuroplasticity; Fall prevention

INTRODUCTION

Tai chi and qigong are both forms of Traditional Chinese Medicine (TCM). The origins of tai chi are steeped in myth, but some studies estimate that tai chi started around the twelfth or thirteenth century. Qigong is much older, going back several thousand years. Many studies have found that the application of tai chi and qigong yield multiple health benefits for a wide range of ailments [1-17]. Several bibliometric studies have been conducted on the health benefits of these forms of traditional Chinese

medicine [18-22]. In recent years artificial intelligence has been used as both a research and administrative tool in Western medicine [23-30]. The present study utilizes artificial intelligence to summarize studies where tai chi and qigong have been used to treat Parkinson's disease.

Parkinson's Disease (PD) is a progressive neurodegenerative disorder characterized by motor symptoms such as tremor, rigidity, bradykinesia, and

postural instability, as well as non-motor symptoms including depression, cognitive impairment, and sleep disturbances. Traditional pharmacological treatments often provide symptomatic relief but may not address all aspects of the disease or prevent progression. Tai Chi and Qigong, ancient Chinese mind-body practices involving slow, deliberate movements, breathing control, and meditation, have emerged as promising complementary therapies. This compilation summarizes 7 studies, primarily systematic reviews, meta-analyses, and RCTs, to evaluate their effects on PD patients, highlighting improvements in balance, mobility, motor function, and quality of life while exploring underlying mechanisms and practical implications.

Materials And Methods

Studies were selected from the PubMed database. Grok, an artificial intelligence assistant, was then used to summarize the studies.

The Studies

The studies are summarized below.

Study 1

Study design: Systematic review and meta-analysis of 18 RCTs (16 in meta-analysis) on Tai Chi for balance/mobility/gait in PD [31].

Participant details: 963 participants, ages 56-72 years; sexes varied (e.g., 8/8 M/F); Hoehn-Yahr I-IV, durations 1.5-12 years.

Intervention protocols: Tai Chi, 4-26 weeks, 2-7 sessions/week, 30-60 minutes.

Key findings: Vs medication: balance MD=2.06 (95% CI [1.35,2.78], $p<0.00001$); mobility MD=-1.59 (95% CI [-2.28,-0.91], $p<0.00001$); gait speed SMD=0.59 (95% CI [0.28,0.91], $p=0.0002$). Vs other exercise: balance MD=3.05 (95% CI [1.94,4.16], $p<0.00001$).

Potential mechanisms for medical professionals: Improves muscle coordination, reduces inflammation/neuronal loss.

Benefits for tai chi/qigong enthusiasts: Enhances Qi via breath/movement for stability.

Strengths: Large sample, multi-country, comparisons.

Limitations: Variations in methods/delivery; publication bias.

Clinical recommendations: Complementary for balance/mobility; more high-quality studies.

Study 2

Study design: RCT comparing Tai Chi-based treatment to physiotherapy using wearable sensors [32].

Participant details: 17 PD patients; ages, sexes, stages/durations not specified.

Intervention protocols: Tai Chi-based, duration/frequency/length not detailed.

Key findings: Greater trunk ROM improvement in Tai Chi (larger effect size); no UPDRS III differences.

Potential mechanisms for medical professionals: Not explained.

Benefits for tai chi/qigong enthusiasts: Mobility gains for holistic function.

Strengths: Objective sensor measures.

Limitations: Small sample.

Clinical recommendations: Alternative to physiotherapy for mobility.

Study 3

Study design: Systematic review and meta-analysis of 9 RCTs (n=409) on Tai Chi for PD [33].

Participant details: 470 participants (mild-moderate PD, Hoehn-Yahr 1-3), mean ages 60.81-72 years; sexes varied; durations 2.27-8.7 years.

Intervention protocols: Tai Chi (Yang/24-form), 4-24 weeks, 1-5 sessions/week, 30-60 minutes.

Key findings: UPDRS III MD=-4.34 (95% CI [-6.67,-2.01]); BBS MD=4.25 (95% CI [2.83,5.66]); falls reduction 67% (IRR=0.33, 95% CI [0.16,0.71]).

Potential mechanisms for medical professionals: Improves postural control via joint/muscle coordination.

Benefits for tai chi/qigong enthusiasts: High satisfaction, Qi through weight shift/standing.

Strengths: Pooled estimates, subgroups.

Limitations: Small samples, few multicenter.

Clinical recommendations: Adjunct for mobility/balance, especially with medication.

Study 4

Study design: RCT comparing 12-week Tai Chi, aerobic exercise, control on antioxidants/cognition in PD [34].

Participant details: 61 participants; ages, sexes, PD specifics not detailed.

Intervention protocols: Tai Chi, 12 weeks; frequency/length not specified.

Key findings: Increased GSH (significant); no changes in 8-OHdG/SOD/MMSE; aerobic better overall.

Potential mechanisms for medical professionals: Modulates oxidative stress via antioxidants.

Benefits for tai chi/qigong enthusiasts: Reduces oxidative damage for cognitive preservation.

Strengths: Biochemical/cognitive measures.

Limitations: Limited participant details.

Clinical recommendations: Complementary for oxidative/cognitive management.

Study 5

Study design: Systematic review and meta-analysis of 8 trials (7 RCTs, 1 non-RCT) on Tai Chi for motor/balance/gait in PD [35].

Participant details: 470 participants, mean ages 63-69 years; mild-moderate PD (Hoehn-Yahr I-III/IV); sexes/durations not detailed.

Intervention protocols: Tai Chi (Yang/Sun/24-form), 4-24 weeks, 2-10 sessions/week, 40-65 minutes.

Key findings: Motor SMD=-0.57 (95% CI [-1.11,-0.04], p=0.03 vs no intervention); balance SMD=1.22 (95% CI [0.80,1.65], p<0.00001); no gait benefits.

Potential mechanisms for medical professionals: Increases limb strength, attentiveness during shifts.

Benefits for tai chi/qigong enthusiasts: Mind concentration for mobility, Qi enhancement.

Strengths: Subgroup analyses, new RCTs.

Limitations: Bias risks, variability in styles/dosing.

Clinical recommendations: Complementary for motor/balance; assess follow-up/safety.

Study 6

Study design: Overview of 14 systematic reviews on Tai Chi for balance/falls, including PD [36].

Participant details: Not detailed.

Intervention protocols: Tai Chi, but specifics not provided.

Key findings: Benefits for balance/falls in PD (low-moderate evidence); no specific stats.

Potential mechanisms for medical professionals: Not explained.

Benefits for tai chi/qigong enthusiasts: Balance improvement for well-being.

Strengths: Quality assessments (AMSTAR2/ROBIS/PRISMA/GRADE).

Limitations: Low review quality, inconsistencies.

Clinical recommendations: Beneficial but needs rigorous reviews.

Study 7

Study design: RCT comparing simplified Tai Chi plus routine exercise to routine alone over 12 weeks [37].

Participant details: 41 participants (19 Tai Chi), mild-moderate PD; ages, sexes not specified.

Intervention protocols: Simplified Tai Chi, 12 weeks; frequency/length not detailed.

Key findings: Improvements in PDSS (p=0.029), MoCA (p=0.024) favoring Tai Chi.

Potential mechanisms for medical professionals: Not explained.

Benefits for tai chi/qigong enthusiasts: Sleep/cognition for holistic relief.

Strengths: Assesses motor/non-motor.

Limitations: Limited details on participants/interventions.

Clinical recommendations: Non-pharmacological for symptoms, especially sleep/cognition.

CONCLUSION

The body of evidence reviewed here indicates that Tai Chi and Qigong can meaningfully complement standard pharmacologic and rehabilitative strategies for Parkinson's disease, particularly with respect to balance, mobility, and fall prevention. Several trials and meta-analyses also suggest favorable effects on motor symptom severity, mood, sleep, cognition, and overall well-being, although the magnitude and durability of these benefits vary across studies. Recent mechanistic investigations, including neuroimaging, biomarker, and long term follow up

work, further strengthen the biological plausibility of these interventions by linking Tai Chi practice to changes in brain network connectivity, inflammatory markers, oxidative stress, and neurotrophic signaling.

At the same time, important gaps remain. Many studies are limited by small sample sizes, short intervention periods, heterogeneous Tai Chi and Qigong protocols, and incomplete reporting of participant characteristics and dosing parameters. The quality of existing systematic reviews and overviews is mixed, and relatively few large, multicenter randomized trials with long term follow up have been completed. Future research should prioritize rigorous trial design, standardized and well described intervention programs, consistent outcome measures for both motor and non-motor symptoms, and careful assessment of adherence and safety. Comparative studies of different Tai Chi styles and Qigong forms, as well as implementation research in real world clinical and community settings, would also be valuable.

Despite these limitations, the current literature supports the view that Tai Chi and Qigong are low risk, acceptable, and potentially cost-effective options that clinicians may reasonably consider as adjunctive therapies for motivated individuals with Parkinson's disease. For practitioners of Tai Chi and Qigong, these findings reinforce long standing experiential claims that such practices can enhance stability, function, and quality of life in people living with chronic neurological disease. The present work also illustrates how artificial intelligence can streamline evidence gathering and synthesis for clinicians and researchers, while underscoring the need for critical appraisal of both primary studies and AI generated summaries.

DECLARATIONS

Conflict of interest

The author declares that they have no competing interests.

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Author contributions

The author solely contributed to the conception, design, analysis, interpretation, and writing of this manuscript.

Consent for publication

Not applicable.

Declaration of interest

The author declares no conflicts of interest related to this work.

Availability of data and materials

All data generated or analysed during this study are included in this published article.

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