
Evidence Map of Tai Chi and Qigong: Update from 2014–2024

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PREFACE

The VA Evidence Synthesis Program (ESP) was established in 2007 to conduct timely, rigorous, and independent systematic reviews to support VA clinicians, program leadership, and policymakers improve the health of Veterans. ESP reviews have been used to develop evidence-informed clinical policies, practice guidelines, and performance measures; to guide implementation of programs and services that improve Veterans' health and wellbeing; and to set the direction of research to close important evidence gaps. Four ESP Centers are located across the US. Centers are led by recognized experts in evidence synthesis, often with roles as practicing VA clinicians. The Coordinating Center, located in Portland, Oregon, manages program operations, ensures methodological consistency and quality of products, engages with stakeholders, and addresses urgent evidence synthesis needs.

Nominations of review topics are solicited several times each year and submitted via the [ESP website](#). Topics are selected based on the availability of relevant evidence and the likelihood that a review on the topic would be feasible and have broad utility across the VA system. If selected, topics are refined with input from Operational Partners (below), ESP staff, and additional subject matter experts. Draft ESP reviews undergo external peer review to ensure they are methodologically sound, unbiased, and include all important evidence on the topic. Peer reviewers must disclose any relevant financial or non-financial conflicts of interest. In seeking broad expertise and perspectives during review development, conflicting viewpoints are common and often result in productive scientific discourse that improves the relevance and rigor of the review. The ESP works to balance divergent views and to manage or mitigate potential conflicts of interest.

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Operational Partners

Operational partners are system-level stakeholders who help ensure relevance of the review topic to the VA, contribute to the development of and approve final project scope and timeframe for completion, provide feedback on the draft report, and provide consultation on strategies for dissemination of the report to the field and relevant groups.

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Disclosures

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The findings and conclusions in this document are those of the author(s) who are responsible for its contents and do not necessarily represent the views of the Department of Veterans Affairs or the United States government. Therefore, no statement in this article should be construed as an official position of the Department of Veterans Affairs. The final research questions, methodology, and/or conclusions may not necessarily represent the views of contributing operational and content experts. No investigators have affiliations or financial involvement (eg, employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties) that conflict with material presented in the report.

Executive Summary

KEY FINDINGS

- ▶ We included 26 reviews of tai chi and qigong describing their effects on 21 health conditions in the evidence map. These conditions include breast cancer, cancer, chronic low back pain, chronic mechanical neck pain, chronic obstructive pulmonary disease, depression, diabetes, falls prevention, fibromyalgia, frailty in older adults, heart failure, hypertension, insomnia, knee osteoarthritis, mild cognitive impairment (cognitive function), osteoporosis, Parkinson's disease (cognitive function), post-stroke, rheumatoid arthritis, sarcopenia, and schizophrenia.
 - ▶ Two reviews concluded with high certainty of evidence that tai chi and qigong have a potential benefit for hypertension and osteoporosis.
 - ▶ Evidence about adverse events was collected by 18 of 26 (69%) reviews, with most reviews reporting no serious adverse events. One review about tai chi and falls prevention did report moderate certainty of evidence for small harms from any adverse event.
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Tai chi and qigong are popular and widely accepted complementary and integrative health (CIH) modalities for treatment of certain adult health conditions. Despite their popularity and long history in practice, evidence of beneficial effect of tai chi or qigong remains limited.

METHODS

Data Sources and Searches

Search strategies were developed in consultation with a medical librarian who is expert in literature reviews. We used a combination of MeSH keywords (*eg, tai ji, qigong*) and conducted searches from January 2014 to March 2024 in bibliographic databases (Allied and Complementary Medicine Database [AMED], Cumulated Index to Nursing and Allied Health Literature [CINAHL], Cochrane Database of Systematic Reviews [CDSR], Ovid MEDLINE, PsychINFO, and Scopus).

Study Selection

Eligible publications were systematic reviews of studies that examined the efficacy or effectiveness of tai chi or qigong in adult health conditions. In general, any intervention described as “tai chi” or “qigong” was considered eligible; these included Traditional Chinese Exercises, mind-body exercise, baduanjin, *etc.* Studies were required to compare tai chi or qigong to a sham/placebo, usual care, or other active therapies (*eg, exercise, health education, etc.*). An active therapy is defined as a therapy intended to have an intervention-specific effect that is not sham or placebo. Further details about the study selection process are described in the main report.

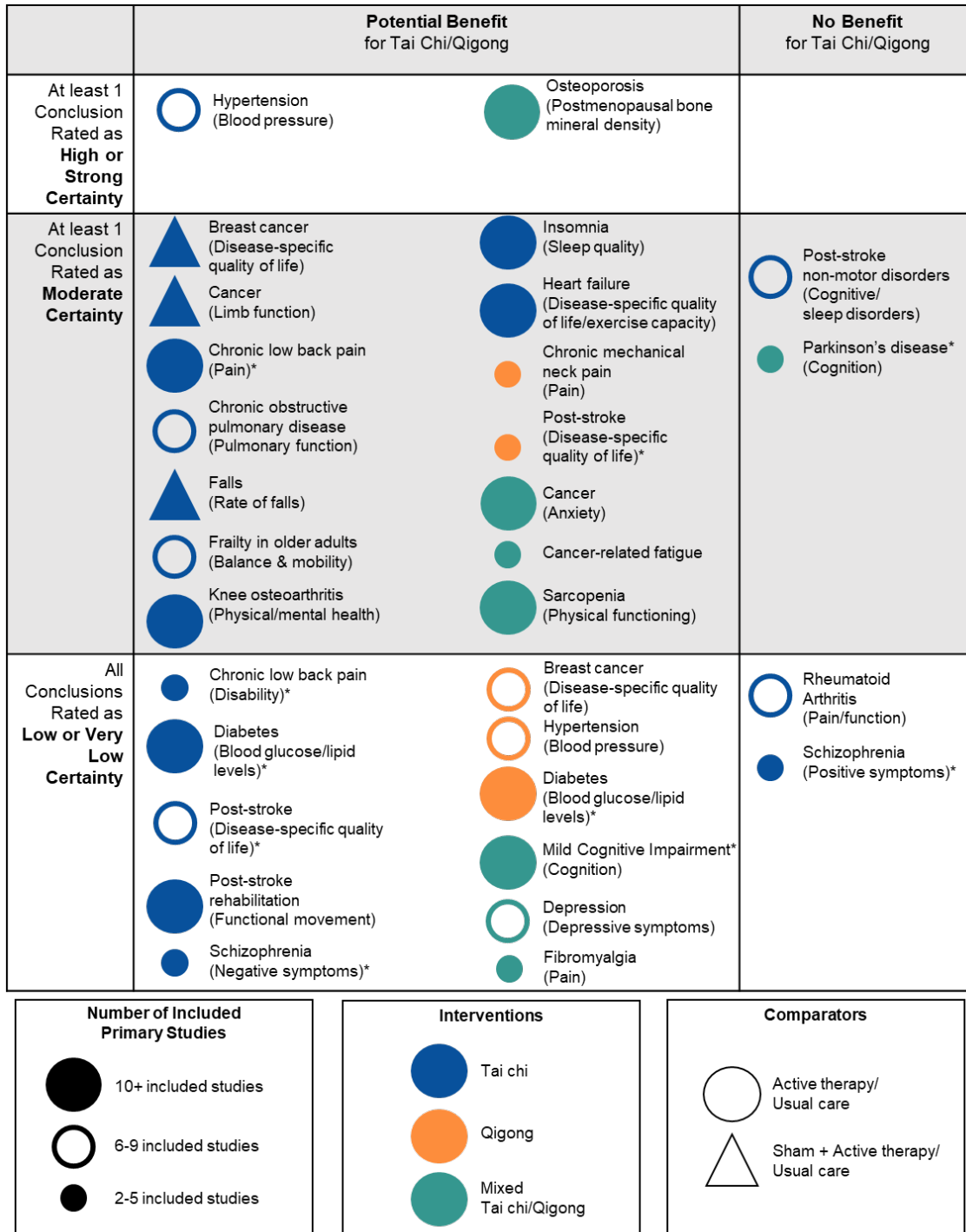
Data Abstraction and Presentation

Each included systematic review had data abstracted by 1 reviewer and verified by a second reviewer. Abstracted data included number of studies included in the review that had tai chi or qigong as the intervention, treated condition, type of tai chi or qigong, comparators, certainty of evidence rating, and certainty of evidence conclusion(s) relevant to the effect of tai chi or qigong on an adult health condition. Our evidence mapping process resulted in a visual depiction of the evidence for tai chi and qigong, as well as an accompanying narrative with an ancillary figure and table.

RESULTS

We identified 1,052 potentially relevant citations. A total of 460 publications were retained for further review and potential inclusion on the map. We included 26 publications (see ES Figure). In this map, bubble color denotes intervention type, shape denotes type of comparator, and size of shape indicates the number of primary studies included in the review.

ES Figure. Evidence Map



*This review included distinct conclusions about separate conditions and comparators, and so it appears in this map more than once.

Three high-level observations can be made from the evidence mapping process to suggest that there is a stronger evidence base for the potential benefit of tai chi or qigong for some adult health conditions since the last synthesis of literature.

- 1) Our update search identified 2 reviews describing conditions with high certainty of evidence and 16 reviews with moderate certainty of evidence of potential benefit of tai chi or qigong from reviews published since 2014. This is different from the last review, where tai chi or qigong had either no effect or unclear evidence of effect in most conditions.
- 2) More than half of the 15 conditions identified to have high or moderate certainty of evidence conclusions for benefit of tai chi and qigong had included more than 10 primary studies as the basis for their conclusions.
- 3) Every review compared tai chi or qigong with another active therapy comparator. There were conditions or topic areas included in the last evidence map that had included reviews that did not have information about comparators.

Evidence about adverse events was collected by 69% of the included reviews and no serious adverse events were reported. While 18 of 26 reviews mentioned adverse events, only 2 reviews included certainty of evidence conclusions for adverse events. One review about tai chi and falls prevention reported moderate certainty of evidence for small harms from any adverse event.

DISCUSSION

Key Findings

Our evidence map includes 26 new systematic reviews published since July 2014, and from these, 2 reviews reported high certainty of evidence and 16 reviews reported moderate certainty of evidence for beneficial effect of tai chi or qigong. While many of these conditions were also represented in the previous evidence map, our search identified reviews with higher certainty of evidence conclusions of effect of tai chi or qigong on several adult health conditions. This represents a stronger evidence base for the use of tai chi or qigong in health care settings since 2014.

Future Research

Although more conclusions with high or moderate certainty of evidence were identified in the current search, signaling a stronger evidence base for tai chi or qigong, 21 conditions were represented by 26 reviews, indicating that the most critical research need is for more high-quality primary studies about tai chi or qigong to be conducted about a wider range of conditions. Moreover, it is critical to examine the effect of different styles of tai chi or qigong, as well as the effect of duration of practice. More research on long-term effects will also increase the evidence base for tai chi and qigong. For conditions of priority to the VA that currently do not have at least moderate-certainty evidence supporting use of tai chi or qigong, new studies that address limitations of existing research are needed.

Conclusions

This evidence map about tai chi and qigong included reviews published since 2014 and showed that tai chi and qigong's benefit on a few conditions is strong, but remains relatively sparse for others. More high-quality randomized controlled trials (RCT) are needed to provide an even stronger evidence base to assess the effect of tai chi and qigong on a wider range of adult health conditions.

Main Report

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ABBREVIATIONS TABLE

Abbreviation	Definition
AHRQ	Agency for Healthcare Research & Quality
CIH	Complementary and integrative health
CINeMA	Confidence in network meta-analysis
EPC	Evidence Practice Center
ESP	Evidence Synthesis Program
GRADE	Grading of Recommendations, Assessment, Development and Evaluation
TCC	Tai chi chuan

BACKGROUND

Tai chi (also “tai chi chuan,” “taijiquan,” or “taiji”) and qigong (also “baduanjin,” “yi jing jing,” “liu zi jue”) are mind-body exercises that originated from China. Tai chi and qigong have been part of Veterans’ standard medical benefits package under VHA Directive 1137.¹ The VA internal SharePoint for tai chi and qigong includes these definitions:

- “Tai Chi is a mind-body exercise combining slow-flowing intentional movements with breathing, awareness and visualization. Rooted in the Asian traditions of martial arts, Chinese medicine and philosophy, Tai chi enhances relaxation, vitality, focus, posture, balance, strength, flexibility, and mood.”
- “Qigong is an ancient Chinese healing art, older than, and similar to tai chi, with a focus of cultivating the body’s vital energy or qi. It involves the coordination of the breath, posture, awareness, visualization and focused movements. Qigong may be a stationary or moving meditation.”

Interest in tai chi and qigong among Veterans has been growing, and this interest is expected to continue to grow as the VA continues to expand the program by hiring more instructors. An evidence map of research on tai chi and qigong published in 2014 was widely used to assist referring providers in their medical decision-making regarding when to offer tai chi or qigong for certain conditions or wellbeing. VHA’s Office of Patient Centered Care & Cultural Transformation, Integrative Health Coordinating Center was interested in new evidence since publication of the earlier map; thus, we conducted an update of the previous report and present a new evidence map of tai chi and qigong. Findings from this report will be used by VA referring providers, site leadership, and policy makers to improve Veteran access to non-pharmacologic treatment approaches and improve outcomes for Veterans by utilizing evidence-based care pathways.

METHODS

TOPIC DEVELOPMENT

This topic was developed in response to a nomination from Juli Olson, DC, DACM, National Lead for Acupuncture, Integrative Health Coordinating Center; Alison Whitehead, MPH, C-IAYT, E-RYT200, National Lead, Integrative Health Coordinating Center; and Jonathan Loesch, BS, CTRS, National Tai Chi Lead for Integrative Health Coordinating Center. The scope was further developed with input from the topic nominator, the ESP Coordinating Center, and the review team. The scope of this report includes: 1) One or more evidence maps that provide a visual overview of the distribution of evidence for tai chi and qigong, and 2) an accompanying narrative that helps stakeholders interpret the state of the evidence to inform policy and clinical decision-making.

KEY QUESTIONS AND ELIGIBILITY CRITERIA

The aim of this synthesis is to develop evidence maps that provide a visual overview of the distribution of evidence for tai chi and qigong on various adult health conditions, with accompanying narrative that helps stakeholders interpret the state of the evidence to inform policy and clinical decision-making.

ELIGIBILITY CRITERIA

Study eligibility criteria are shown in the table below.

Domain	Eligibility Criteria
Population	Adults
Intervention	Tai chi or qigong
Comparator	Sham, active therapy/usual care/no treatment
Outcomes	Any
Study Design	Systematic reviews

SEARCHING AND SCREENING

Search strategies were developed in consultation with a medical librarian who is expert in literature reviews. We used a combination of MeSH keywords (*eg, tai ji, qigong*) and conducted searches from January 2014 to March 2024 in bibliographic databases (Allied and Complementary Medicine Database [AMED], Cumulated Index to Nursing and Allied Health Literature [CINAHL], Cochrane Database of Systematic Reviews [CDSR], OvidMEDLINE, PsychINFO, Scopus) (see [Appendix](#) for complete search strategies).

Four reviewers independently screened titles and abstracts in duplicate, with any discrepancies resolved by group discussion. All titles and abstracts were selected based on the eligibility criteria described in the section below.

We next restricted eligibility to reviews that used formal methods to assess the certainty (or strength or quality) of the evidence for conclusions. In most reviews, this involved use of the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) approach.² However, other formal methods were accepted, such as the approach developed by the Agency for Healthcare Research & Quality (AHRQ) Evidence-based Practice Center (EPC) program³ and confidence in network meta-

analysis (CINeMA).⁴ Certainty of evidence ratings assess the certainty or confidence in the estimates of the effect of an intervention:

- High certainty: We are very confident that the true effect lies close to that of the estimate of the effect.
- Moderate certainty: We are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
- Low certainty: Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
- Very low certainty: We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

For example, a finding for benefit of an intervention with a very low certainty rating means it is not very likely that the evidence of benefit is the true effect. Conversely, a finding for benefit of an intervention with high certainty of evidence means it is very likely that the beneficial effect of the intervention is the true effect.

To remain eligible, a systematic review had to 1) state or cite the method used to formally assess the certainty (or strength or quality) of included evidence, and 2) report the certainty (or strength or quality) of evidence for the effect of tai chi or qigong on an adult health condition.

After applying this restriction, we abstracted health conditions. Any conditions with only a single eligible systematic review were included in the map: Cancer-related symptoms, chronic low back pain, chronic mechanical neck pain, chronic obstructive pulmonary disease, diabetes, falls prevention, fibromyalgia, hypertension, osteoarthritis, osteoporosis, post-stroke rehabilitation/non-motor outcomes, and sarcopenia were the health conditions with multiple reviews meeting eligibility criteria. For these conditions, we first assessed whether the review differed in some other feature used to classify reviews on our map. For example, 1 systematic review on disease-specific quality of life of women with breast cancer employed tai chi as intervention⁵ and a second review also about disease-specific quality of life of women with breast cancer employed qigong.⁶ In such cases, we included both reviews in the map, with the appropriate designations for the interventions. If there were multiple reviews on the same condition and they did not differ in some other feature, we mapped the review that was judged as being most informative to stakeholders. In general, this was the most recent review or the review with the greatest number of included studies. Systematic reviews otherwise meeting eligibility criteria that were not included in the map for this reason are listed in the [Appendix](#).

DATA ABSTRACTION

Each included systematic review had data abstracted by 1 reviewer and verified by a second reviewer. Abstracted data included number of studies included in the review that had tai chi or qigong as the intervention, treated condition, type of tai chi or qigong, comparators, certainty of evidence rating, and certainty of evidence conclusion(s) relevant to the effect of tai chi or qigong on an adult health condition.

STUDY SELECTION

Eligible publications were systematic reviews of studies that examined the efficacy or effectiveness of tai chi or qigong in adult health conditions. In general, any intervention described as “tai chi” or “qigong” was considered eligible; these included Traditional Chinese Exercises, mind-body exercise, baduanjin.

Studies were required to compare tai chi or qigong to a sham/placebo, usual care, or other active therapies. An active therapy is defined as a therapy intended to have an intervention-specific effect that is not sham or placebo. Reviews that included studies of other interventions were eligible if results for tai chi or qigong were reported separately. Examples of such reviews are: *Effect of Exercise for Depression: Systematic Review and Network Meta-Analysis of Randomized Controlled Trials*⁷ or *Noninvasive Nonpharmacological Treatment for Chronic Pain: A Systematic Review Update*.⁸

SYNTHESIS

Our evidence mapping process resulted in a visual depiction of the evidence for tai chi or qigong, as well as an accompanying narrative with an ancillary figure and table. The visual depiction or evidence map uses a bubble plot format to display information on 4 dimensions: bubble size, bubble label, x-axis, and y-axis. This allowed us to provide the following types of information about each included systematic review, as follows:

Number of articles in systematic review (bubble size): The size of each bubble corresponds to the number of relevant primary research studies included in a systematic review. Relevant means studies contributing to the conclusions and certainty of evidence that were included on the map.

Condition (bubble label): Each bubble is labeled with the condition discussed by that systematic review.

Shapes and colors: Intervention characteristics for each condition are presented in the form of colors (type of intervention) and shapes (comparators). For type of intervention, blue for tai chi only, orange for qigong only, and green for mixed tai chi and qigong. Shapes are used to distinguish between the types of comparison treatments: circle for conclusions about comparisons to active therapy/usual care and triangle for conclusions about sham and active therapy/usual care.

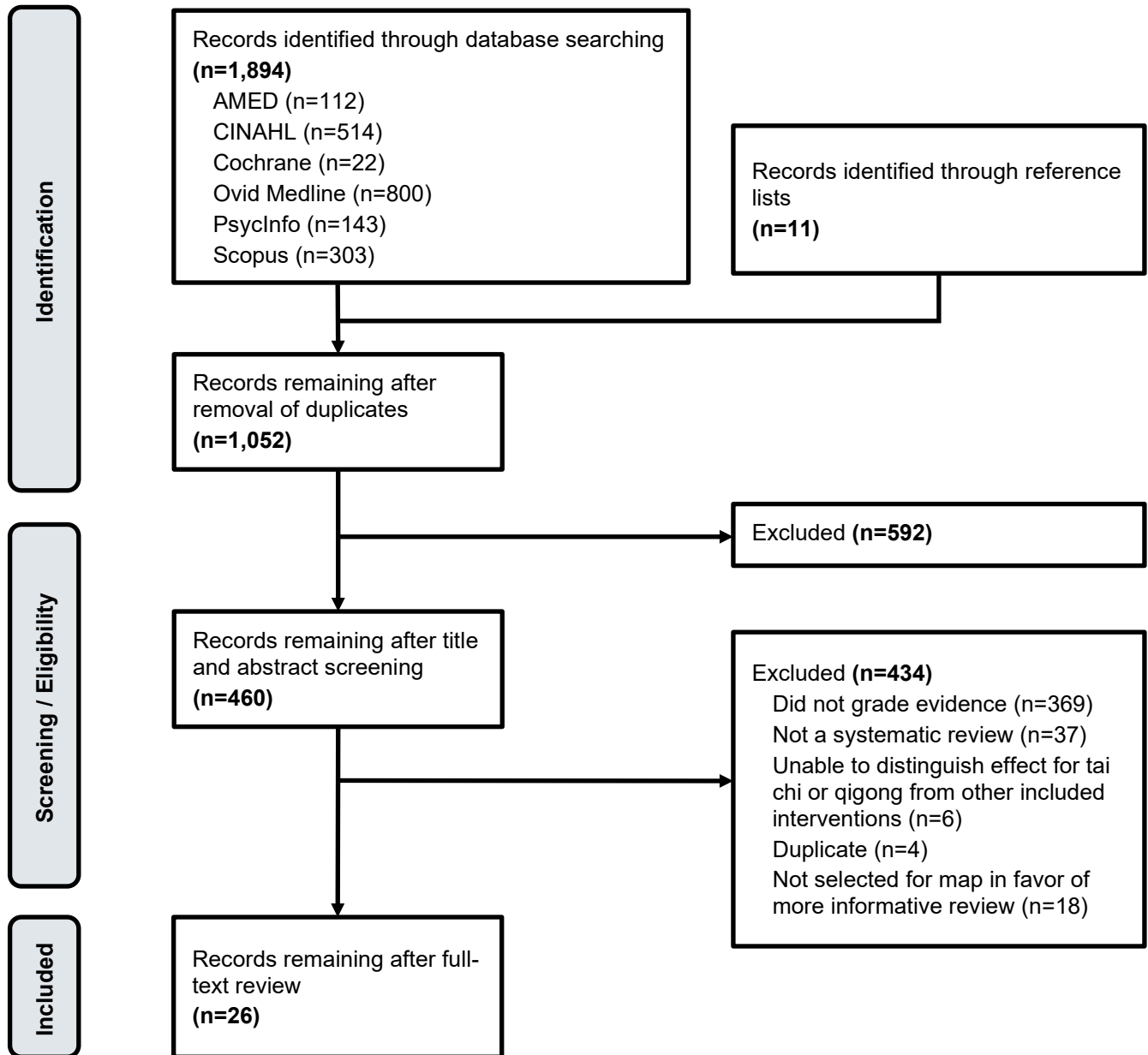
Strength of findings (rows): Each condition is plotted on the map based on the certainty of evidence statement as reported in the systematic review. We have 3 categories: “all conclusions are rated as low or very low certainty,” at least 1 conclusion is rated moderate certainty,” and “at least 1 conclusion is rated as high or strong certainty.”

Effect of tai chi or qigong (columns): Each condition is plotted in either “potential benefit” or “no benefit” as effect of tai chi or qigong based on conclusion of systematic review.

RESULTS

LITERATURE FLOW DIAGRAM

The literature flow diagram summarizes the results of the study selection process. A full list of excluded studies is provided in the [Appendix](#).



OVERVIEW OF INCLUDED STUDIES

We identified 1,894 potentially relevant citations from database searches. After deduplicating these titles and including 11 titles recommended by experts, we had a total of 1,052 titles for initial screening (see [Literature Flow Diagram](#)). We applied the inclusion and exclusion criteria to these titles and abstracts and excluded 591 publications. We reviewed 460 publications at full-text stage. A total of 434 publications were excluded at this stage for the following reasons: not a systematic review ($N = 37$), did not formally assess the certainty or strength or quality of the evidence ($N = 369$), unable to distinguish effect for tai chi or qigong from other included interventions ($N = 6$), duplicate ($N = 4$), and not selected for map in favor of more informative review ($N = 18$). See [Appendix](#) for a full list of excluded reviews and a list of reviews not selected for the map by condition. We included 26 publications in this map. See Table 1 for more details about the included reviews.

Table 1. Characteristics of Included Studies

Author, Year Country	Condition (Outcome)	Intervention Comparator Number of Included Studies	Certainty of Evidence Rating	Certainty of Evidence Conclusion
Li, 2023 ⁵ China	Breast cancer (Disease-specific quality of life)	Tai chi Sham, Active therapy/Usual care 15	Moderate	Compared to sham, active therapy, or usual care, "Tai chi Chuan-based exercise is helpful for improving QOL [quality of life], anxiety, and fatigue in patients with breast cancer."
Ye, 2022 ⁶ China, Iran, USA	Breast cancer (Disease-specific quality of life)	Qigong Active therapy/Usual care 7	Low/Very low	"Baduanjin is an effective exercise, which can significantly improve the quality of life and psychological health of breast cancer patients after operation."
Sun, 2024 ⁹ China	Cancer (Anxiety)	Mixed tai chi/qigong Active therapy/Usual care 11	Moderate	Compared to usual care or active therapy, "there was moderate certainty of evidence supporting the effect of tai chi/qigong on anxiety for adults with cancer."
Ni, 2019 ¹⁰ China, Australia	Cancer (Disease-specific quality of life)	Tai chi Sham, Active therapy/Usual care 22	Very low to moderate	"There is low-level evidence suggesting that Tai chi improves physical and mental dimensions of QOL [quality of life], and sleep. There is moderate-level evidence suggesting Tai chi reduces levels of cortisol...and improves limb function."
Bower, 2024 ¹¹ USA, Canada	Cancer-related fatigue	Mixed tai chi/qigong Active therapy/Usual care 5	Moderate	Tai chi and qigong "showed significant improvement in fatigue scores as compared to conventional care, waitlist controls, or light exercise groups in patients with a variety of cancer types."

Author, Year Country	Condition (Outcome)	Intervention Comparator Number of Included Studies	Certainty of Evidence Rating	Certainty of Evidence Conclusion
Kang, 2024 ¹² China	Chronic low back pain (Pain)	Tai chi Active therapy/Usual care 10	Moderate	Compared to routine care and active therapy, "tai chi can reduce the pain degree of patients with low back pain."
	Chronic low back pain (Disability)	Tai chi Active therapy/Usual care 4	Low	Compared to routine care and active therapy, "tai chi can reduce the pain degree of patients with low back pain [and] improve the lumbar disability...Tai chi is a relatively safe choice for patients with low back pain."
Gross, 2015 ¹³ USA, Canada, Netherlands	Chronic mechanical neck pain (Pain)	Qigong Active therapy/Usual care 2	Moderate	"Qigong exercises (Dantian Qigong) may improve pain and function slightly when compared with a wait list control at immediate and short-term follow-up" among patients with chronic mechanical neck pain.
Ngai, 2016 ¹⁴ China, Australia, Singapore	Chronic obstructive pulmonary disease (Pulmonary function)	Tai chi Active therapy/Usual care 7	Very low to moderate	"Evidence of very low to moderate quality suggests better functional capacity and pulmonary function in post-programme data for Tai chi versus usual care. When Tai chi in addition to other interventions was compared with other interventions alone, Tai chi did not show superiority and showed no additional effects on symptoms nor on physical and psychosocial function improvement in people with [chronic obstructive pulmonary disease]."
Noetel, 2024 ⁷ Australia, Spain, Denmark, Finland	Depression (Depressive symptoms)	Mixed tai chi/qigong Active therapy/Usual care 7	Low/Very low	"Compared with active controls, ... moderate reductions in depression were found... for tai chi or qigong."

Author, Year Country	Condition (Outcome)	Intervention Comparator Number of Included Studies	Certainty of Evidence Rating	Certainty of Evidence Conclusion
Wu, 2023 ¹⁵ China	Diabetes (Blood glucose/lipid levels)	Tai chi Active therapy/Usual care 13	Low/Very low	Compared to active therapy or usual care, "[Tai chi Chuan and Baduanjin] help to improve blood glucose and lipid levels in Type 2 Diabetes patients."
		Qigong Active therapy/Usual care 13	Low/Very low	Compared to usual care, baduanjin helped improve blood glucose and lipid levels in patients with type 2 diabetes.
Pillay, 2024 ¹⁶ Canada	Falls prevention (Rate of falls)	Tai chi Sham, Active therapy/Usual care 16	Moderate	Compared to sham, active therapy, or usual care, "long-duration tai chi interventions had some moderate certainty evidence [for benefit for falls]."
Skelly, 2020 ⁸ USA	Fibromyalgia (Pain)	Mixed tai chi/qigong Active therapy/Usual care 3	Low/Very low	For fibromyalgia, "qigong and tai chi were associated with moderately greater improvement in pain (0-10 scale) compared with waitlist and an attention control in the short term...[There] is slight improvement in function for qigong compared with waitlist and a large improvement for tai chi compared with attention control."
Buto, 2020 ¹⁷ Brazil	Frailty in older adults (Functional capacity/Quality of life)	Tai chi Active therapy/Usual care 8	Low to moderate	Compared to active therapy or usual care, "a very low to moderate level of evidence was found regarding the effectiveness of Tai Chi in terms of functional capacity (balance, mobility, gait speed, functional reach and lower limb muscle strength) and a low level of evidence was found regarding its effect on quality of life...among prefrail and frail older adults."

Author, Year Country	Condition (Outcome)	Intervention Comparator Number of Included Studies	Certainty of Evidence Rating	Certainty of Evidence Conclusion
Chen, 2020 ¹⁸ China, Sweden	Heart failure (Disease-specific quality of life/ Exercise capacity)	Tai chi Active therapy/Usual care 26	Moderate	"Evidence from RCTs indicated (with a moderate level of certainty) that the addition of Tai chi and Qigong Practices into routine management was associated with a better quality of life, improved exercise capacity, increased [Left ventricular ejection fraction] (LVEF), and reduced [Brain natriuretic peptide] (BNP) level" as compared [with routine management alone]. Low evidence certainty showed that Tai chi and Qigong Practices were associated with a larger improvement in the quality of life and exercise capacity than general exercise."
Ching, 2021 ¹⁹ Malaysia	Hypertension (Blood pressure)	Qigong Active therapy/Usual care 7	Low/Very low	"Significant reductions in [blood pressure] is seen with the use of qigong as compared with the control group."
Zhong, 2020 ²⁰ China	Hypertension (Blood pressure)	Tai chi Active therapy/Usual care 9	High	"The results demonstrated that Tai chi [versus active therapies] significantly reduced systolic blood pressure and diastolic blood pressure" in hypertensive patients.
Yang, 2023 ²¹ China	Insomnia (Sleep quality)	Tai chi Active therapy/Usual care 16	Very low to moderate	"Tai chi exercise has a good preventive and ameliorating effect on insomnia, which can relieve patients' depression and anxiety, simultaneously enhancing various functions of the body."
Hu, 2021 ²² China	Knee osteoarthritis (Physical/Mental health)	Tai chi Active therapy/Usual care 16	Low to moderate	"Tai chi exercise was beneficial for ameliorating physical and mental health of patients with knee osteoarthritis."

Author, Year Country	Condition (Outcome)	Intervention Comparator Number of Included Studies	Certainty of Evidence Rating	Certainty of Evidence Conclusion
Wang, 2022 ²³ China	Mild Cognitive Impairment (Cognitive function)	Mixed tai chi/qigong Active therapy/Usual care 23	Low/Very low	Compared to active therapy or usual care, "Tai chi and Qigong were effective interventions to improve cognition in patient with Parkinson's Disease [and] mild cognitive impairment."
	Parkinson's Disease (Cognitive function)	Mixed tai chi/qigong Active therapy/Usual care 2	Moderate	Compared to usual care or no intervention, tai chi or qigong had no effect on executive function of patients with Parkinson's disease.
Liu, 2024 ²⁴ China	Osteoporosis (Postmenopausal bone mineral density)	Mixed tai chi/qigong Active therapy/Usual care 32	Moderate to high	Compared with usual care or drug therapy, "Traditional Chinese fitness exercises can significantly improve the bone mineral density levels of postmenopausal women."
Su, 2024 ²⁵ China, USA, Czech Republic, Greece	Post-stroke (Disease-specific quality of life)	Tai chi Active therapy/Usual care 6	Low	Compared to usual care and active therapy, tai chi was "effective in improving quality of life for post-stroke patients."
		Qigong Active therapy/Usual care 3	Moderate	Compared to usual care and active therapy, qigong was "effective in improving quality of life for post-stroke patients."
Lyu, 2021 ²⁶ China	Post-stroke non-motor disorders (Cognitive/Sleep disorders)	Tai chi Active therapy/Usual care 6	Low to moderate	"Tai chi may alleviate post-stroke depression in stroke survivors but has no clear effects on post-stroke cognitive and sleep disorders."
Lyu, 2018 ²⁷ China	Post-stroke rehabilitation (Functional movement)	Tai chi Active therapy/Usual care 21	Low/Very low	"Tai chi has an overall beneficial effect on [activities of daily living], balance, limb motor function, and walking ability among stroke survivors, based on very low quality evidence, and may also improve sleep quality, mood, mental health, and other motor function."

Author, Year Country	Condition (Outcome)	Intervention Comparator Number of Included Studies	Certainty of Evidence Rating	Certainty of Evidence Conclusion
Mudano, 2019 ²⁸ USA, Canada	Rheumatoid arthritis (Pain/function)	Tai chi Active therapy/Usual care 7	Low/Very low	"It is uncertain whether Tai chi has any effect on clinical outcomes (joint pain, activity limitation, function) in rheumatoid arthritis."
Niu, 2022 ²⁹ China	Sarcopenia (Muscle strength/ Physical functioning)	Mixed tai chi/qigong Active therapy/Usual care 13	Low to moderate	Tai chi and/or qigong "had a greater clinical effect in improving the severity of sarcopenia compared with no training or health education."
Zheng, 2016 ³⁰ China	Schizophrenia (Negative symptoms)	Tai chi Active therapy/Usual care 5	Very low	Compared with active therapy, "Tai chi activity significantly improved negative symptoms" among patients with schizophrenia.
	Schizophrenia (Positive symptoms)	Tai Chi Active therapy/Usual care 4	Very low	Compared with active therapy, "Tai chi activity... had no obvious effects on positive symptoms" among patients with schizophrenia.

Characteristics of Included Reviews

The number of primary studies about tai chi and qigong in the included reviews ranged from 2 studies to 32 studies. Four reviews included 2 to 5 studies,^{8,11,13,30} 9 reviews included 6 to 9 studies,^{6,7,14,17,19,20,25,26,28} and 13 reviews included more than 10 studies.^{5,9,10,12,15,16,18,21-24,27,29}

The country of origin for reviews varied, with the largest number of reviews originating from China ($N = 13$),^{5,9,12,15,20-24,26,27,29,30} followed by the US ($N = 1$),⁸ Canada ($N = 1$),¹⁶ Brazil ($N = 1$),¹⁷ and Malaysia ($N = 1$).¹⁹ Nine reviews were conducted by authors from multiple countries: US and Canada ($N = 2$);^{11,28} China and Sweden;¹⁸ China and Australia;¹⁰ China, Australia, and Singapore;¹⁴ US, Canada, and the Netherlands;¹³ China, Iran, and US;⁶ China, US, Czech Republic, and Greece;²⁵ and Australia, Spain, Denmark, and Finland.⁷

Of the 26 included reviews, 14 reviews were focused on tai chi only;^{5,10,12,14,16-18,20-22,26-28,30} 3 reviews about qigong only,^{6,13,19} of which 1 review was about baduanjin;⁶ and 7 reviews about tai chi and/or qigong (*ie*, outcomes reported together),^{7-9,11,23,24,29} of which 2 reviews were about traditional Chinese exercises.^{24,29} Two reviews about post-stroke disease-specific quality of life²⁵ and diabetes¹⁵ reported outcomes for tai chi and qigong separately.

Every review included another active therapy as a comparator. Three reviews included sham in addition to active therapy/usual care as comparators.^{5,10,16} Examples of active therapy comparators included general exercises,¹⁸ health education,²⁰ and medication.³⁰

Over half of the included reviews reported the length of the intervention, from 6 weeks to 96 weeks. About one-third of reviews reported the frequency of sessions, from once a week to 18 sessions per week. A few reviews reported the duration of sessions, from 15 minutes to 90 minutes per session. Several reviews included details about the style of tai chi. For example, a review about knee osteoarthritis reported, “Yang style tai chi ($N = 7$, 43.75%), Sun style tai chi ($N = 3$, 18.75%), tai chi qigong ($N = 1$, 6.25%) and ambiguous style tai chi ($N = 5$, 31.25%).”²² Another review about the effects of tai chi chuan (TCC) training on the disease-specific quality of life and psychological wellbeing in female patients with breast cancer reported that the “included RCTs were different types of TCC (Yang-style TCC, Chen-style TCC, 24-form simplified TCC, 20-form TCC, 18-form TCC, 8-form TCC, and Tai chi Cloud Hands).”⁵

The included 26 reviews were categorized into the following 21 health conditions: breast cancer,^{5,6} cancer outcomes,⁹⁻¹¹ chronic low back pain,¹² chronic mechanical neck pain,¹³ chronic obstructive pulmonary disease,¹⁴ depression,⁷ diabetes,¹⁵ falls prevention,¹⁶ fibromyalgia,⁸ frailty in older adults,¹⁷ heart failure,¹⁸ hypertension,^{19,20} insomnia,²¹ knee osteoarthritis,²² mild cognitive impairment (cognitive function),²³ osteoporosis,²⁴ Parkinson’s disease (cognitive function),²³ post-stroke (non-motor disorders, rehabilitation, disease-specific quality of life),²⁵⁻²⁷ rheumatoid arthritis,²⁸ sarcopenia,²⁹ and schizophrenia.³⁰

Five reviews were mapped more than once.^{12,15,23,25,30} Wang et al discussed the effect of tai chi or qigong on mild cognitive impairment as well as Parkinson’s disease.²³ Diabetes was the focus of Wu et al’s review, and the authors reported outcomes for tai chi and qigong separately.¹⁵ Authors of a review about schizophrenia reported tai chi had a beneficial effect on negative symptoms, but found no difference for positive symptoms.³⁰ Kang et al’s review about chronic low back pain reported tai chi had a beneficial effect on pain and disability.¹² A review about post-stroke disease-specific quality of life reported outcomes for tai chi and qigong separately.²⁵

We mapped conclusion(s) for the effect of tai chi or qigong on conditions that were also included in the previous evidence map: cancer, chronic mechanical neck pain, chronic obstructive pulmonary disease, dementia, depression, diabetes, falls prevention, hypertension, insomnia, muscle strength (*ie*, sarcopenia), osteoarthritis, osteoporosis, Parkinson's disease, rheumatoid arthritis, and stroke rehabilitation (Table 2).

Table 2. Conditions or Topic Areas and Effects in 2014 and 2025 Evidence Maps

Condition (2014)	Effect (2014)	Condition (2025)	Effect (2025)
Chronic Obstructive Pulmonary Disease	Potential positive effect	Chronic Obstructive Pulmonary Disease	Potential benefit
Depression	Potential positive effect	Depression	Potential benefit
Falls - general	Potential positive effect	Falls prevention	Potential benefit
Hypertension	Potential positive effect	Hypertension	Potential benefit
Muscle strength	Potential positive effect	Sarcopenia (muscle strength)	No benefit
		Sarcopenia (physical functioning)	Potential benefit
Cancer	Unclear evidence	Cancer	Potential benefit
Dementia	Unclear evidence	Mild Cognitive Impairment - Cognitive function	Potential benefit
Fibromyalgia	Unclear evidence	Fibromyalgia	Potential benefit
Insomnia	Unclear evidence	Insomnia	Potential benefit
Osteoporosis	Unclear evidence	Osteoporosis	Potential benefit
Parkinson's disease	Unclear evidence	Parkinson's disease - cognitive function	No benefit
Rheumatoid arthritis	Unclear evidence	Rheumatoid arthritis	No benefit
Stroke rehabilitation	Unclear evidence	Post-stroke rehabilitation	Potential benefit
Diabetes	No effect	Diabetes	Potential benefit

We identified evidence for 11 new conditions in the updated search (Table 3).

Table 3. Newly Identified Conditions in 2025 Evidence Map

Condition	Effect
Breast cancer (disease-specific quality of life)	Potential benefit
Cancer (anxiety)	Potential benefit
Cancer-related fatigue	Potential benefit
Chronic low back pain (pain/disability)	Potential benefit
Chronic mechanical neck pain (pain)	Potential benefit
Frailty in older adults	Potential benefit
Heart failure (disease-specific quality of life/exercise capacity)	Potential benefit
Knee osteoarthritis (physical/mental health)	Potential benefit
Post-stroke (disease-specific quality of life)	Potential benefit
Post-stroke non-motor disorders (cognitive/sleep disorders)	No benefit
Schizophrenia (positive and negative symptoms)	No benefit

There were 18 conditions or topic areas in the previous evidence map that we did not identify evidence for in the 2025 evidence map (Table 4).

Table 4. Selected Conditions or Topic Areas in Previous Evidence Map Not in 2025 Evidence Map

Condition	Effect
Aerobic capacity	No effect
Life participation	No effect
Asthma	Unclear evidence
Cardiopulmonary	Unclear evidence
Cardiovascular disease	Unclear evidence
Chronic conditions	Unclear evidence
Cystic fibrosis	Unclear evidence
Health	Unclear evidence
Heart disease	Unclear evidence
Infections	Unclear evidence
Menopause	Unclear evidence
Metabolic syndrome	Unclear evidence
Multiple sclerosis	Unclear evidence
Pregnancy - anxiety	Unclear evidence
Psychological wellbeing	Unclear evidence
Post traumatic stress disorder	Unclear evidence
Urinary incontinence	Unclear evidence
Vestibulopathy	Unclear evidence

EVIDENCE MAP

In the evidence map, columns correspond to whether a conclusion of the review was that 1) there was a potential benefit of tai chi or qigong relative to a comparison treatment, or 2) there was no benefit of tai chi or qigong relative to the comparison treatment. Columns *are not* mutually exclusive: a review could have more than 1 conclusion for separate comparators or type of tai chi or qigong, and those conclusions could differ in the potential benefit of tai chi or qigong.

Rows correspond to GRADE ratings of certainty of evidence:

- High certainty: We are very confident that the true effect lies close to that of the estimate of the effect.
- Moderate certainty: We are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
- Low certainty: Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
- Very low certainty: We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

In contrast to columns, all rows *are* mutually exclusive. The top row indicates that at least 1 of the review's conclusions about tai chi or qigong as rated by its authors has high (or strong) certainty of evidence. The middle row indicates that at least 1 of the review's conclusions about tai chi or qigong was rated as moderate certainty of evidence (and none rated as high or strong, in which case it would be in the top row). The bottom row indicates that all of the review's conclusions about tai chi or qigong were rated as low or very low certainty of evidence. Since GRADE assesses certainty of evidence, it is possible for a body of evidence to demonstrate low or moderate estimates of effect but with high certainty of evidence; conversely, it is possible to have evidence with large effect sizes but with low certainty.

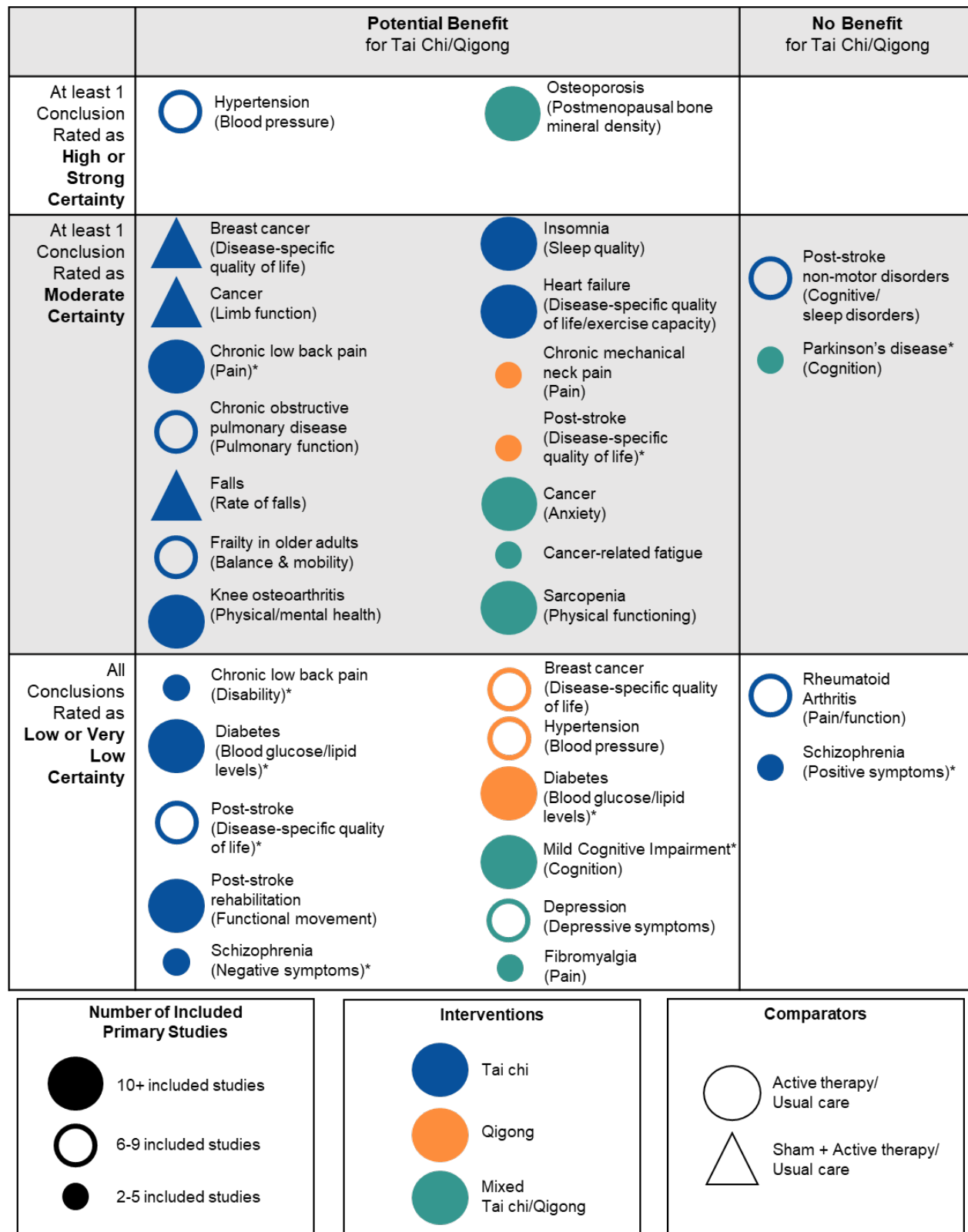
Each conclusion is then mapped onto this framework and identified by the name of the condition, *eg*, "chronic low back pain," "fibromyalgia," "schizophrenia," *etc*. Shapes are used to distinguish between the types of comparison treatments: circle for conclusions about comparisons to active therapy/usual care and triangle for conclusions about sham and active therapy/usual care. Colors are used to identify the conclusions specific to tai chi or qigong: blue for tai chi only, orange for qigong only (including baduanjin), and green for mixed tai chi and qigong (including Traditional Chinese Exercises).

The size of the bubble is used to indicate how many original research studies were included in the review about tai chi or qigong: the smallest bubble denotes reviews with 2–5 primary studies included, the medium bubble with a pattern of diagonal lines denotes reviews with 6–9 primary studies included, and the largest bubble denotes reviews with 10 or more primary studies included.

For example, in Figure 1, the medium-sized, blue open circle in the right column bottom row indicates that there is a review about rheumatoid arthritis that included 6 to 9 original studies and had a conclusion rated as low or very low certainty of evidence and that it is unclear whether tai chi has any effect on clinical outcomes for individuals with rheumatoid arthritis compared to active therapy or usual care. In the same figure, the large, green circle in the middle column of the middle row indicates a review about sarcopenia that included more than 10 original studies and had a conclusion rated as

moderate certainty of evidence that tai chi and/or qigong were better than the comparison treatment of active therapy or usual care.

Figure 1. Evidence Map



*This review included distinct conclusions about separate conditions and comparators, and so it appears in this map more than once.

There were 5 reviews with more than 1 conclusion about the effect of tai chi or qigong and they were mapped twice, denoted by an asterisk after the health condition.^{12,15,23,25,30}

In addition to this map, we collected all certainty of evidence conclusions about tai chi or qigong in Table 5. There are 2 systematic reviews that described conditions (*ie*, osteoporosis,²⁴ hypertension²⁰) that had high certainty of evidence conclusions for the potential benefit of tai chi or qigong rated by the original review authors. There are 16 systematic reviews that described conditions that had moderate certainty of evidence conclusions for the potential benefit of tai chi or qigong rated by the original review authors.^{5,9-14,16-18,21-23,25,26,29} All remaining conclusions were judged by the original authors as being low or very low certainty of evidence, meaning, “Our confidence in the effect estimate is limited. The true effect may be substantially different from the estimate of effect” or “We have very little confidence in the effect estimate.”

Table 5. Certainty of Evidence Conclusions from Systematic Reviews Included in the Evidence Map*High Certainty of Evidence Conclusions (N = 2)*

Author, Year	Condition	Certainty of Evidence Conclusion
Zhong, 2020 ²⁰	Hypertension	"The results demonstrated that Tai chi vs health education or no treatment...significantly reduced diastolic blood pressure" in hypertensive patients.
Liu, 2024 ²⁴	Osteoporosis	Compared to active therapy and usual care, "Traditional Chinese fitness exercises can significantly improve the bone mineral density levels of postmenopausal women."

Moderate Certainty of Evidence Conclusions (N = 16)

Author, Year	Condition	Certainty of Evidence Conclusion
Li, 2023 ⁵	Breast cancer (disease-specific quality of life)	Compared to sham, active therapy, or usual care, "Tai chi Chuan-based exercise is helpful for improving quality of life, anxiety, and fatigue in patients with breast cancer."
Ni, 2019 ¹⁰	Cancer (limb function)	Compared to sham, active therapy, and usual care, "there is moderate-level evidence suggesting Tai chi reduces levels of cortisol and improves limb function" among cancer survivors.
Sun, 2024 ⁹	Cancer (anxiety)	Compared to usual care or active therapy, "there was moderate certainty of evidence supporting the effect of tai chi/qigong on anxiety for adults with cancer."
Bower, 2024 ¹¹	Cancer-related fatigue	Tai chi and qigong "showed significant improvement in fatigue scores as compared to conventional care, waitlist controls, or light exercise groups in patients with a variety of cancer types."
Kang, 2024 ¹²	Chronic low back pain	Compared to routine care and active therapy, "tai chi can reduce the pain degree of patients with low back pain."
Gross, 2015 ¹³	Chronic mechanical neck pain	"Qigong exercises (Dantian Qigong) may improve pain and function slightly when compared with a wait list control at immediate and short-term follow-up" among patients with chronic mechanical neck pain.
Ngai, 2016 ¹⁴	Chronic obstructive pulmonary disease	"Participants in the Tai chi group, when compared to those in the usual care alone group, may have showed better pulmonary function" among patients with chronic obstructive pulmonary disease.
Pillay, 2024 ¹⁶	Falls prevention	Compared to sham, active therapy, or usual care, "long-duration tai chi interventions had some moderate certainty evidence [for benefit for falls prevention]."
Buto, 2020 ¹⁷	Frailty in older adults (balance and mobility)	Compared to active therapy, "a moderate level of evidence related to the effectiveness of Tai chi in improving balance and mobility" among prefrail and frail older adults.
Chen, 2020 ¹⁸	Heart failure (disease-specific quality of life)	Compared to active therapy, "the addition of Tai chi Qigong Practices was associated with a better quality of life, improved exercise capacity, increased [Left ventricular ejection fraction] (LVEF), and reduced [Brain natriuretic peptide] (BNP) level."
Yang, 2023 ²¹	Insomnia	"Tai chi exercise has a good preventive and ameliorating effect on insomnia, which can relieve patients' depression and anxiety, simultaneously enhancing various functions of the body."

Author, Year	Condition	Certainty of Evidence Conclusion
Hu, 2021 ²²	Knee osteoarthritis	Compared to active therapies or usual care/no treatment, “tai chi exercise was beneficial for ameliorating physical and mental health of patients with knee osteoarthritis.”
Wang, 2022 ²³	Parkinson’s disease (cognitive function)	Compared to usual care or no intervention, “Tai chi and Qigong were effective interventions to improve cognition in patients with Parkinson’s disease.”
Su, 2024 ²⁵	Post-stroke (disease-specific quality of life)	Compared to usual care and active therapy, qigong was “effective in improving quality of life for post-stroke patients.”
Lyu, 2021 ²⁶	Post-stroke non-motor disorders	Compared to active therapy, “there were no differences between Tai chi and conventional rehabilitation therapy in terms of improvements in post-stroke mental disorders.”
Niu, 2022 ²⁹	Sarcopenia	Compared with no training or health education, “Traditional Chinese Exercises has no significantly greater clinical effects in improving grip strength, but had significantly greater clinical effects in physical function” among patients with sarcopenia.

Three high-level observations can be made from the evidence mapping process to suggest that there is a stronger evidence base for the potential benefit of tai chi or qigong for some adult health conditions since the last synthesis of literature.

First, our update search identified 2 reviews describing conditions with high certainty of evidence and 16 reviews with moderate certainty of evidence of potential benefit of tai chi or qigong from reviews published since 2014. This is different from the last review, where tai chi or qigong had either no effect or unclear evidence of effect in most conditions.

Reviews with high certainty of evidence conclusions are for osteoporosis (bone mineral density) and hypertension (blood pressure). Reviews with moderate certainty of evidence conclusions are for breast cancer (disease-specific quality of life), cancer (anxiety), cancer (limb function), cancer-related fatigue, chronic low back pain (pain), chronic mechanical neck pain (pain), chronic obstructive pulmonary disease (pulmonary function), cognition - Parkinson’s disease, falls prevention (rate of falls), frailty in older adults (balance and mobility), heart failure (disease-specific quality of life/exercise capacity), insomnia (sleep quality), knee osteoarthritis (physical/mental health), post-stroke (disease-specific quality of life), post-stroke non-motor disorders (cognitive/sleep disorders), and sarcopenia (physical functioning).

Second, more than half of the 15 conditions identified to have high or moderate certainty of evidence conclusions for benefit of tai chi and qigong had included more than 10 primary studies as the basis for their conclusions.

Third, every review compared tai chi or qigong with another active therapy comparator. There were conditions or topic areas included in the last evidence map that had included reviews that did not have information about comparators. Lack of information about comparators significantly limits the ability to adequately interpret the effect of an intervention.

Adverse Events

Evidence about adverse events was collected by 18 of 26 (69%) reviews, with no serious adverse events reported. Two reviews included certainty of evidence for adverse events.^{8,16} The first review about falls prevention reported “moderate certainty for small harms (possibly 5-8 per 100 people) from any [adverse event], whereas there was low certainty for little-to-no harm for the more serious outcomes” in supervised, long-term group setting.¹⁶ Long term was defined in this review as “ ≥ 3 months or longer in duration.”¹⁶ The second review about fibromyalgia reported “2 adverse events (in 2 patients) judged to be possibly related to qigong practice: an increase in shoulder pain and plantar fasciitis” and “1 trial of tai chi reported no adverse events while the second trial reported that, across all intensities of tai chi versus aerobic exercise, there were no severe treatment-related adverse events and 5.3% (8/151) versus 5.3% (4/75) mild-moderate treatment-related adverse events.”⁸ Certainty of evidence for the first review was moderate and was insufficient for the second review.

Three other reviews provided additional details: One review about rheumatoid arthritis mentioned 2 primary studies provided “some narrative description of joint and muscle soreness and cramps; long-term adverse events were not reported.”²⁸ Another review about knee osteoarthritis reported “only 2 studies reported minor muscle soreness and lower extremity pain in individual patients during the first days of tai chi exercise.”²² The third review about chronic mechanical neck pain provided details about adverse events “reported by 23 patients in qigong group including: muscle soreness ($N = 17$), myogelosis ($N = 12$), vertigo ($N = 10$), other pain ($N = 4$), headache ($N = 3$), thirst ($N = 1$), engorged hands ($N = 1$), twinge in the neck ($N = 1$), urinary urgency ($N = 1$), bursitis of left shoulder ($N = 1$), nausea ($N = 2$), muscle tension ($N = 1$).”¹³

DISCUSSION

Our evidence map includes 26 systematic reviews published since January 2014, and from these, 2 reviews reported high certainty of evidence and 16 reviews reported moderate certainty of evidence for beneficial effect of tai chi or qigong. While many of these conditions were also represented in the previous evidence map, our search identified reviews with higher certainty of evidence conclusions of effect of tai chi or qigong on several adult health conditions. This represents a stronger evidence base for the use of tai chi or qigong in health care settings since 2014.

Strengths and Limitations

A strength of this evidence map compared to our prior map is that to be eligible for this map we required the authors of systematic reviews to formally assess the certainty (or strength) of their conclusions. Too many systematic reviews conclude with words to the effect that tai chi “may be an effective therapy for condition X, but more research is needed.” Such conclusions leave readers wondering how much certainty is contained in the word “may.” A strength of this map is that only reviews where certainty was formally assessed are included.

There are three main limitations. The first, common to all systematic reviews, is that we may not have identified all the potentially eligible evidence. If a systematic review was published in a journal not indexed in any of the 6 databases we searched, and we did not identify it as part of our search of references of included publications, then we would have missed it. Nevertheless, our search strategy did identify more than 450 publications about tai chi and qigong published since 2014, so we did not suffer from a lack of potential reviews to evaluate.

The second limitation, common to evidence maps, is that we did not independently reevaluate the primary studies included in eligible systematic reviews; in other words, we took the conclusions of the authors of included systematic reviews “at face value.” Particular to this application of the mapping process, for the health conditions that had more than 1 eligible review (*ie*, falls prevention, back pain), we only mapped the review we deemed most informative. This necessarily requires judgment, and others could disagree with that judgment. We included the citation for the review excluded from the map for this “overlap” reason in [Appendix](#), and interested readers can review it for additional information. As in all evidence-based products, and particularly in one such as this covering a large and complex evidence base, it is possible that there are errors of data extraction and compilation. We used dual review to minimize the chance of such errors, but if we are notified of errors, we will correct them.

Lastly, readers should note that the interpretation of the effect of tai chi or qigong for some health conditions may be limited by certain patient characteristics in some instances. For example, in the case of osteoporosis, it would appear that many studies were conducted in China, with Asian women as the focus of these studies. Since Asian women have different bone turnover metabolisms compared to other racial group/ethnicities (e.g., Caucasian, Hispanic, African American), findings may not be applicable and therefore should be interpreted with these differences in mind. Another example is falls prevention, with respect to applicability of findings to specific populations (*eg*, healthy ambulatory older adults, higher risk fallers, Parkinson’s disease, stroke, mild cognitive impairment, older adults living in assisted living facilities).

FUTURE RESEARCH

Although more conclusions with high or moderate certainty of evidence were identified in the current search, signaling a stronger evidence base for tai chi or qigong, 21 conditions were represented by 26 reviews, indicating that the most critical research need is for more high-quality primary studies about tai chi or qigong to be conducted about a wider range of conditions. For conditions of priority to the VA that currently do not have at least moderate-certainty evidence supporting use of tai chi or qigong, new studies that address limitations of existing research are needed.

More research on long-term effects will also increase the evidence base for tai chi and qigong. Moreover, it is critical to examine the effect of different styles of tai chi or qigong, as well as the effect of duration of practice. Since well-designed back-to-back comparisons of relative effectiveness of styles/forms are rare, it is unclear from the included reviews how readers are supposed to use or interpret findings in the context of style, and caution should be applied in interpreting statements of superiority of one form versus another. In addition, very few RCTs include formal protocols for systematically monitoring adverse events;³¹ thus, safety data should be interpreted cautiously. Future research should address these gaps.

CONCLUSIONS

This evidence map about tai chi and qigong included reviews published since 2014 and showed that tai chi and qigong's benefit on a few conditions is strong but remains relatively sparse for others. More high-quality randomized controlled trials are needed to provide an even stronger evidence base to assess the effect of tai chi and qigong on a wider range of adult health conditions.

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27. Lyu D, Lyu X, Zhang Y, et al. Tai Chi for Stroke Rehabilitation: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Front Physiol*. 2018 2018;9(101549006):983. doi:10.3389/fphys.2018.00983
28. Mudano AS, Tugwell P, Wells GA, Singh JA. Tai Chi for rheumatoid arthritis. *Cochrane Database of Systematic Reviews*. 2019 2019;(9)AI 1.0. doi:10.1002/14651858.CD004849.pub2
29. Niu K, Liu Y-L, Yang F, Wang Y, Zhou X-Z, Qu Q. Efficacy of traditional Chinese exercise for sarcopenia: A systematic review and meta-analysis of randomized controlled trials. *Front Neurosci*. 2022 2022;16(101478481):1094054. AI 0.9. doi:10.3389/fnins.2022.1094054
30. Zheng W, Li Q, Lin J, et al. Tai Chi for schizophrenia: A systematic review. [References].DP - 2016. *Shanghai Archives of Psychiatry*. 2016 2016;(4):185-194. AI 1.0.
31. 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. *Arch Phys Med Rehabil*. Dec 2014;95(12):2470-83. doi:10.1016/j.apmr.2014.05.005

Appendices

SEARCH STRATEGIES

Search Date: 03/21/24	Search Statement	Results
AMED	1 TI ((tai ji or tai chi or taiji or taijiquan or t'ai chi or t' ai chi or shadowbox* or shadow box*)) OR AB ((tai ji or tai chi or taiji or taijiquan or t'ai chi or t' ai chi or shadowbox* or shadow box*)) OR KW ((tai ji or tai chi or taiji or taijiquan or t'ai chi or t' ai chi or shadowbox* or shadow box*))	549
	2 TI ((qigong or qi gong or chi kung or ch'i kung or chigung or chi gung)) OR AB ((qigong or qi gong or chi kung or ch'i kung or chigung or chi gung)) OR KW ((qigong or qi gong or chi kung or ch'i kung or chigung or chi gung))	437
	3 S1 or S2	896
	4 CADTH CINAHL SR Filter – Removed MH and PT terms from beginning as they do not apply to this database	11560
	5 S3 and S4	153
	6 limit S5 to 2014-Current	122
CINAHL	1 (MH "Tai chi") OR TI ((tai ji or tai chi or taiji or taijiquan or t'ai chi or t' ai chi or shadowbox* or shadow box*)) OR AB ((tai ji or tai chi or taiji or taijiquan or t'ai chi or t' ai chi or shadowbox* or shadow box*))	2944
	2 (MH "Qigong") OR TI ((qigong or qi gong or chi kung or ch'i kung or chigung or chi gung)) OR AB ((qigong or qi gong or chi kung or ch'i kung or chigung or chi gung))	1258
	3 S1 or S2	3860
	4 CADTH CINAHL SR Filter	337253
	5 S3 AND S4	698
	6 limit 5 to 2014-Current	523
Cochrane	1 MeSH descriptor: [Tai Ji] this term only	577
	2 (tai ji or tai chi or taiji or taijiquan or t'ai chi or t' ai chi or shadowbox* or shadow box*):ti,ab,kw	2036
	3 MeSH descriptor: [Qigong] this term only	150
	4 (qigong or qi gong or chi kung or ch'i kung or chigung or chi gung):ti,ab,kw	814
	5 (or #1-#4)	2701
	6 limit #5 to reviews	28
	7 limit #6 to 2014-current	22
	8	
	9	
	10	
Ovid MEDLINE(R) Epub Ahead of Print and In-Process, In-Data-Review & Other Non-Indexed Citations	1 Tai Ji/ or (tai ji or tai chi or taiji or taijiquan or t'ai chi or t' ai chi or shadowbox* or shadow box*):ti,ab,kf.	2849
	2 Qigong/ or (qigong or qi gong or chi kung or ch'i kung or chigung or chi gung):ti,ab,kf.	1241
	3 1 or 2	3682

Search Date: 03/21/24	Search Statement	Results	
March 20, 2024	4 (systematic review or meta-analysis).pt. or meta-analysis/ or systematic review/ or systematic reviews as topic/ or meta-analysis as topic/ or "meta analysis (topic)"/ or "systematic review (topic)"/ or network meta-analysis/ or ((systematic* adj3 (review* or overview*)) or (methodologic* adj3 (review* or overview*)) or (quantitative adj3 (review* or overview* or syntheses*)) or (research adj3 (integrati* or overview*)) or (integrative adj3 (review* or overview*)) or (collaborative adj3 (review* or overview*)) or (pool* adj3 analy*) or data syntheses* or data extraction* or data abstraction* or handsearch* or hand search* or mantel haenszel or peto or der simonian or dersimonian or fixed effect* or latin square* or met analy* or metanaly* or technology assessment* or HTA or HTAs or technology overview* or technology appraisal* or meta regression* or metaregression* or (comparative adj3 (efficacy or effectiveness)) or (outcomes research or relative effectiveness) or ((indirect or indirect treatment or mixed-treatment or bayesian) adj3 comparison*) or (multi* adj3 treatment adj3 comparison*) or (mixed adj3 treatment adj3 (meta-analy* or metaanaly*)) or umbrella review* or (multi* adj2 paramet* adj2 evidence adj2 synthesis) or (multiparamet* adj2 evidence adj2 synthesis) or (multi-paramet* adj2 evidence adj2 synthesis)).ti,ab. or (meta-analysis or systematic review).md. or (meta-analy* or metaanaly* or systematic review* or biomedical technology assessment* or bio-medical technology assessment*).mp,hw. or (medline or cochrane or pubmed or medlars or embase or cinahl).ti,ab,hw. or (cochrane or (health adj2 technology assessment) or evidence report).jw.	803047	
	5 3 and 4	971	
	6 limit 5 to yr="2014-Current"	805	
	PsycINFO	1 (tai ji or tai chi or taiji or taijiquan or t'ai chi or t' ai chi or shadowbox* or shadow box*).ti,ab.	850
		2 (qigong or qi gong or chi kung or ch'i kung or chigung or chi gung).ti,ab.	407
		3 1 or 2	1125
4 (systematic review or meta-analysis).pt. or meta-analysis/ or systematic review/ or systematic reviews as topic/ or meta-analysis as topic/ or "meta analysis (topic)"/ or "systematic review (topic)"/ or network meta-analysis/ or ((systematic* adj3 (review* or overview*)) or (methodologic* adj3 (review* or overview*)) or (quantitative adj3 (review* or overview* or syntheses*)) or (research adj3 (integrati* or overview*)) or (integrative adj3 (review* or overview*)) or (collaborative adj3 (review* or overview*)) or (pool* adj3 analy*) or data syntheses* or data extraction* or data abstraction* or handsearch* or hand search* or mantel haenszel or peto or der simonian or dersimonian or fixed effect* or latin square* or met analy* or metanaly* or technology assessment* or HTA or HTAs or technology overview* or technology appraisal* or meta regression* or metaregression* or (comparative adj3 (efficacy or effectiveness)) or (outcomes research or relative effectiveness) or ((indirect or indirect treatment or mixed-		142962	

Search Date: 03/21/24	Search Statement	Results
	treatment or bayesian) adj3 comparison*) or (multi* adj3 treatment adj3 comparison*) or (mixed adj3 treatment adj3 (meta-analy* or metaanaly*)) or umbrella review* or (multi* adj2 paramet* adj2 evidence adj2 synthesis) or (multiparamet* adj2 evidence adj2 synthesis) or (multi-paramet* adj2 evidence adj2 synthesis)).ti,ab. or (meta-analysis or systematic review).md. or (meta-analy* or metaanaly* or systematic review* or biomedical technology assessment* or bio-medical technology assessment*).mp,hw. or (medline or cochrane or pubmed or medlars or embase or cinahl).ti,ab,hw. or (cochrane or (health adj2 technology assessment) or evidence report).jw.	
	5 3 and 4	179
	6 limit 5 to yr="2014-Current"	143
Scopus	1 TITLE-ABS-KEY ("tai ji" OR "tai chi" OR taiji OR taijiquan OR "t'ai chi" OR "t' ai chi" OR shadowbox* OR "shadow box" OR "shadow boxing")	5690
	2 TITLE-ABS-KEY(qigong or "qi gong" or "chi kung" or "ch'i kung" or chigung or "chi gung")	2208
	3 1 and 2	775
	4 CADTH Scopus SR Filter	1268254
	5 3 and 4	339
	6 limit 5 to 2014-Current	307
	Total	1894
	Total after deduplication	1041

STUDIES EXCLUDED DURING FULL-TEXT SCREENING

Citation	Exclude Reason
Cendoroglo, M. S. (2014). "Exercise programs for people with dementia." Sao Paulo medical journal = Revista paulista de medicina 132(3): 195-196.	Not a systematic review
Chang, W., W. Guo, R. Wang, X. Lin, S. Sun and Y. Shi (2021). "The effects on pain and disability of traditional Chinese non-pharmacological therapy for knee osteoarthritis: A protocol for systematic review and meta-analysis." Medicine 100(34): e27005.	Not a systematic review
Chen, G., Y. Lin, X. Zhao and B. Pu (2021). "Effects of Baduanjin on postoperative rehabilitation of patients with breast cancer: A protocol for systematic review and meta-analysis." Medicine 100(17): e25670.	Not a systematic review
Crew, A., J. Petrosky, K. Byrnes and R. Nelson (2015). "The Effects of Tai Chi on Physical Functioning in Older Adults with Parkinson's Disease." Therapeutic Recreation Journal 49(1): 80-83.	Not a systematic review
Dai, W., X. Wang, R. Xie, M. Zhuang, X. Chang, G. Yang, J. Yu and L. Zhu (2020). "Baduanjin exercise for cervical spondylotic radiculopathy: A protocol for systematic review and meta-analysis." Medicine 99(18): e0037s.	Not a systematic review
de Sire, A., L. Lippi, N. Marotta, A. Folli, D. Calafiore, S. Moalli, A. Turco, A. Ammendolia, N. Fusco and M. Invernizzi (2023). "Impact of Physical Rehabilitation on Bone Biomarkers in Non-Metastatic Breast Cancer Women: A Systematic Review and Meta-Analysis." International Journal of Molecular Sciences 24(2).	Not a systematic review
Dong, X., R. Zhang, Y. Guo, L. Chen and Y. Liu (2020). "The efficacy of Qigong exercises for post-stroke mental disorders and sleep disorders: Protocol for a systematic review and meta-analysis." Medicine 99(34): e21784.	Not a systematic review
Gholamalishahi, S., C. Okechukwu, G. La Torre and A. Mannocci (2022). "Effects of Tai Chi and Qigong on fatigue and quality of life in patients with breast cancer: A narrative review of systematic reviews and meta-analyses." Cancer Research, Statistics, and Treatment 5(4): 685-691.	Not a systematic review
Grooten, W. J. A., C. Boström, Å. Dederig, M. Halvorsen, R. P. Kuster, L. Nilsson-Wikmar, C. B. Olsson, G. Rovner, E. Tseli and E. Rasmussen-Barr (2022). "Summarizing the effects of different exercise types in chronic low back pain – a systematic review of systematic reviews." BMC Musculoskeletal Disorders 23(1).	Not a systematic review
Guo, Y., M. Xu, M. Ji, J. Zhang, Q. Hu, Z. Wei, J. Yan, Y. Chen, J. Lyu, X. Shao, Y. Wang, J. Guo and Y. Wei (2018). "Effect of Liuzijue Qigong on patients with chronic obstructive pulmonary disease: Protocol for a systematic review and meta-analysis." Medicine 97(40): e12659.	Not a systematic review
Huston, P. and B. McFarlane (2016). "Health benefits of tai chi: What is the evidence?" Canadian family physician Medecin de famille canadien 62(11): 881-890.	Not a systematic review
Imoto, A. M., F. F. Amorim, H. Palma, I. Lombardi Junior, A. L. Salomon, M. S. Peccin, H. E. C. d. Silva, E. S. B. Franco, L. Gottens and L. A. Santana (2021). "Evidence for the efficacy of Tai Chi for treating rheumatoid arthritis: an overview of systematic reviews." Sao Paulo medical journal = Revista paulista de medicina 139(2): 91-97.	Not a systematic review
Jiang, L.-L., Y. Meng, Q. Zhang and W. Pan (2020). "Effect of Tai Chi on psychological disorder in college students: A protocol of systematic review and meta-analysis." Medicine 99(23): e20409.	Not a systematic review

Citation	Exclude Reason
Langhorst, J., P. Heldmann, P. Henningsen, K. Kopke, L. Krumbein, H. Lucius, A. Winkelmann, B. Wolf and W. Hauser (2017). "[Complementary and alternative procedures for fibromyalgia syndrome : Updated guidelines 2017 and overview of systematic review articles]." <i>Komplementare und alternative Verfahren beim Fibromyalgiesyndrom : Aktualisierte Leitlinie 2017 und Übersicht von systematischen Übersichtsarbeiten</i> . 31(3): 289-295.	Not a systematic review
Leung, Y. L. (2018). "Effects of Tai Chi exercise for community-dwelling Chinese adults with metabolic syndrome.DP - 2018." <i>Dissertation Abstracts International: Section B: The Sciences and Engineering(1-B(E)): No-Pagination Specified</i> .	Not a systematic review
Li, J., J. Guo, X. Wang, X. Zhang, Y. Zhang, M. Bu, X. Yao and Y. She (2023). "Efficacy and safety of tai chi exercise on bone health: An umbrella review." <i>Osteoporosis international : a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA</i> 34(11): 1853-1866.	Not a systematic review
Li, X., X. Wang, L. Song, J. Tian, X. Ma, Q. Mao, H. Lin and Y. Zhang (2020). "Effects of Qigong, Tai Chi, acupuncture, and Tuina on cancer-related fatigue for breast cancer patients: A protocol of systematic review and meta-analysis." <i>Medicine</i> 99(45): e23016.	Not a systematic review
Lorenc, A., P. Ronan, A. Mian, S. Madge, S. B. Carr, P. Agent and N. Robinson (2015). "Cystic fibrosis-Children and adults Tai Chi study (CF CATS2): Can Tai Chi improve symptoms and quality of life for people with cystic fibrosis? Second phase study protocol." <i>Chinese journal of integrative medicine</i> (101181180).	Not a systematic review
Luo, X.-C., J. Zhou, Y.-G. Zhang, Y.-Y. Liu, J.-J. Li, Z. Zheng, F. Tong and F. Feng (2020). "Effects of Tai Chi Yunshou on upper limb function and balance in stroke survivors: A protocol for systematic review and meta analysis." <i>Medicine</i> 99(29): e21040.	Not a systematic review
Negrini, F. (2021). "Is Tai Chi beneficial for rheumatoid arthritis?-A Cochrane Review summary with commentary." <i>International journal of rheumatic diseases</i> 24(6): 855-857.	Not a systematic review
Ng, C. A. C. M., N. Fairhall, G. Wallbank, A. Tiedemann, Z. A. Michaleff and C. Sherrington (2019). "Exercise for falls prevention in community-dwelling older adults: trial and participant characteristics, interventions and bias in clinical trials from a systematic review." <i>BMJ open sport & exercise medicine</i> 5(1): e000663.	Not a systematic review
Rasmussen-Barr, E., M. Halvorsen, T. Bohman, C. Boström, Å. Dederig, R. P. Kuster, C. B. Olsson, G. Rovner, E. Tseli, L. Nilsson-Wikmar and W. J. A. Grooten (2023). "Summarizing the effects of different exercise types in chronic neck pain – a systematic review and meta-analysis of systematic reviews." <i>BMC Musculoskeletal Disorders</i> 24(1).	Not a systematic review
Sawynok, J. and M. Lynch (2014). "Qigong and Fibromyalgia: Randomized Controlled Trials and Beyond." <i>Evidence-based Complementary & Alternative Medicine (eCAM)</i> 2014: 1-14.	Not a systematic review
Shi, H., C. Dong, H. Chang, L. Cui, M. Xia, W. Li, D. Wu, B. Yu, G. Si and T. Yang (2022). "Evidence Quality Assessment of Tai Chi Exercise Intervention in Cognitive Impairment: An Overview of Systematic Review and Meta-Analysis." <i>Evidence-based complementary and alternative medicine : eCAM</i> 2022(101215021): 5872847.	Not a systematic review

Citation	Exclude Reason
Shi, H., T. Liu, C. Dong, K. Zhen, Y. Wang, P. Liu, G. Si, L. Wang and M. Wang (2022). "Scientific Evidence of Traditional Chinese Exercise (Qigong) for Chronic Obstructive Pulmonary Disease: An Overview of Systematic Reviews and Meta-Analyses." <i>BioMed research international</i> 2022(101600173): 7728973.	Not a systematic review
Takemura, N., D. S. T. Cheung, D. Y. T. Fong, D. Hui, A. W. M. Lee, T. C. Lam, J. C. Ho, T. Y. Kam, J. Y. K. Chik and C. C. Lin (2024). "Tai Chi and Aerobic Exercise on Cancer-Related Dyspnea in Advanced Lung Cancer Patients: A Randomized Clinical Trial." <i>J Pain Symptom Manage</i> 68(2): 171-179.	Not a systematic review
Taylor, J. R. (2018). "The effects of Tai Chi compared to structured interventions on the Berg Balance Scale in older adults: A meta-analysis.DP - 2018." <i>Dissertation Abstracts International: Section B: The Sciences and Engineering(10-B(E))</i> : No-Pagination Specified.	Not a systematic review
Wang, F.-F., Y. Yuan, Y.-J. Song, Y.-Q. Wu, Y. He, X.-X. Deng, S.-L. Wu, D.-M. Dai and M. Wang (2020). "Exercise or sport activities for patients with cancer: A protocol for overview of systematic reviews and meta-analyses." <i>Medicine</i> 99(20): e20084.	Not a systematic review
Wang, H., J. Wang, M. Han and X. Niu (2023). "Quality assessment of systematic reviews assessing the effects of traditional Chinese exercises in the control of diabetes mellitus." <i>Journal of Traditional Chinese Medical Sciences</i> 10(3): 339-352.	Not a systematic review
Wu, C. and C. Tang (2019). "Reply to: Qigong as a promising mind-body exercise for cognitive functioning. [References].DP - Jul 2019." <i>Journal of the American Geriatrics Society</i> (7): 1534-1535.	Not a systematic review
Wu, H.-Y., Y.-R. Wang, G.-W. Wen, Z.-Y. Tang, Y.-Q. Yu, J.-R. Zhang, P. Liu and J.-H. Wu (2020). "Tai Chi on bone mineral density of postmenopausal osteoporosis: A protocol for systematic review and meta-analysis." <i>Medicine</i> 99(36): e21928.	Not a systematic review
Xia, T., Y. Yang, W. Li, Z. Tang, Z. Li and Y. Guo (2019). "The effect of meditative movement for glucose control in patients with type 2 diabetes A protocol for systematic review and meta-analysis of controlled trails." <i>Medicine (United States)</i> 98(19).	Not a systematic review
Yang, G. Y., J. Hunter, J. Liu, F. L. Bu, W. L. Hao and M. H. Zhang (2021). "Determining the safety and effectiveness of Tai Chi: A critical overview of 210 systematic reviews." <i>Eur J Integr Med</i> 48.	Not a systematic review
Yang, G.-Y., L.-Q. Wang, J. Ren, Y. Zhang, M.-L. Li, Y.-T. Zhu, J. Luo, Y.-J. Cheng, W.-Y. Li, P. M. Wayne and J.-P. Liu (2015). "Evidence base of clinical studies on Tai Chi: a bibliometric analysis." <i>PloS one</i> 10(3): e0120655.	Not a systematic review
Yu, P., W. Li, H. Li, S. Ouyang, H. Cai, J. Wu, C. Tang and Q. Huang (2020). "The efficacy and safety of health qigong for anti-aging: Protocol for a systematic review and meta-analysis." <i>Medicine</i> 99(49): e22877.	Not a systematic review
Zhang, F., J. Zhao, N. Jiang, Q. Zhai, J. Hu and J. Zhang (2022). "Meta-Analysis of Tai Chi Chuan in Treating Lumbar Spondylosis and Back Pain." <i>Applied bionics and biomechanics</i> 2022(101208624): 2759977.	Not a systematic review
Zhang, W., Y. Liu, J. Yu, D. Li, Y. Jia, Q. Zhang, Y. Gao, Z. Wan and W. Wei (2022). "Exercise improves sleep quality in older adults: A protocol for a systematic review and meta-analysis." <i>BMJ Open</i> 12(1).	Not a systematic review

Citation	Exclude Reason
Chen B-L, Guo J-B, Liu M-S, et al. Effect of Traditional Chinese Exercise on Gait and Balance for Stroke: A Systematic Review and Meta-Analysis. PLoS ONE. 2015 2015;10(8):e0135932. AI 1.0. doi:10.1371/journal.pone.0135932	Unable to distinguish effect for Tai chi or Qigong from other included interventions
Chen R, Guo Y, Kuang Y, Zhang Q. Effects of home-based exercise interventions on post-stroke depression: A systematic review and network meta-analysis. International Journal of Nursing Studies. 2024;152(gs8, 0400675):104698. doi:10.1016/j.ijnurstu.2024.104698	Unable to distinguish effect for Tai chi or Qigong from other included interventions
Guo C-Y, Ma Y-J, Liu S-T, et al. Traditional Chinese Medicine and Sarcopenia: A Systematic Review. Frontiers in aging neuroscience. 2022 2022;14(101525824):872233. AI 0.9. doi:10.3389/fnagi.2022.872233	Unable to distinguish effect for Tai chi or Qigong from other included interventions
Kong L, Ren J, Fang S, et al. Effects of traditional Chinese mind-body exercises for patients with chronic fatigue syndrome: A systematic review and meta-analysis. J glob health. 2023;13(101578780):04157. doi:10.7189/jogh.13.04157	Unable to distinguish effect for Tai chi or Qigong from other included interventions
Wu Y-H-T, He W-B, Gao Y-Y, Han X-M. Effects of traditional Chinese exercises and general aerobic exercises on older adults with sleep disorders: A systematic review and meta-analysis. J integr med. 2021 2021;19(6):493-502. AI 1.0. doi:10.1016/j.joim.2021.09.007	Unable to distinguish effect for Tai chi or Qigong from other included interventions
Zhang Y, Li C, Zou L, Liu X, Song W. The Effects of Mind-Body Exercise on Cognitive Performance in Elderly: A Systematic Review and Meta-Analysis. Int J Environ Res Public Health. 2018;15(12) doi:10.3390/ijerph15122791	Unable to distinguish effect for Tai chi or Qigong from other included interventions
Chou R, Deyo R, Friedly J, et al. Noninvasive Treatments for Low Back Pain. 2016	Duplicate
Gross AR, Paquin JP, Dupont G, et al. Exercises for mechanical neck disorders: A Cochrane review update. Manual Ther. 2016;24(9610924, dh3):25-45. doi:10.1016/j.math.2016.04.005	Duplicate
Kay TM, Gross A, Goldsmith CH, et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2015/01// 2015;(1):N.PAG-N.PAG.	Duplicate
Skelly, A. C., R. Chou, J. R. Dettori, J. A. Turner, J. L. Friedly, S. D. Rundell, R. Fu, E. D. Brodt, N. Wasson, C. Winter and A. J. R. Ferguson (2018). "Noninvasive Nonpharmacological Treatment for Chronic Pain: A Systematic Review."	Duplicate
Chau J, Leung L, Liu X, et al. Effects of Tai chi on health outcomes among community-dwelling adults with or at risk of metabolic syndrome: A systematic review. Complement Ther Clin Pract. 2021/01/01/ 2021;44	Not selected for map in favor of more informative review
Chou, R., R. Deyo, J. Friedly, A. Skelly, R. Hashimoto, M. Weimer, R. Fu, T. Dana, P. Kraegel, J. Griffin, S. Grusing and E. D. Brodt (2017). "Nonpharmacologic Therapies for Low Back Pain: A Systematic Review for an American College of Physicians Clinical Practice Guideline." <u>Annals of internal medicine</u> 166 (7): 493-505.	Not selected for map in favor of more informative review
Dai L, Jiang Y, Wang P, Chen K. Effects of three traditional Chinese fitness exercises combined with antihypertensive drugs on patients with essential hypertension: A systematic review and network meta-analysis of randomized controlled trials. Evid Based Complement Alternat Med. 2021/01/01/	Not selected for map in favor of more informative review
del-Pino-Cassado R, Obrero-Gaitan E, Lomas-Vega R. The effect of Tai chi on reducing the risk of falling: A systematic review, and meta-analysis. American Journal of Chinese Medicine. 2016/01/01/ 2016;44(5):895-906.	Not selected for map in favor of more informative review

Citation	Exclude Reason
Feng F, Luo X, Chen Y, Li J, Kang H, Yan B. Effects of Tai chi Yunshou on upper-limb function and balance in stroke survivors: A systematic review and meta-analysis. <i>Complementary Therapies in Clinical Practice</i> . 2023;51(101225531):101741. doi:10.1016/j.ctcp.2023.101741	Not selected for map in favor of more informative review
Hall A, Copsey B, Richmond H, et al. Effectiveness of Tai chi for Chronic Musculoskeletal Pain Conditions: Updated Systematic Review and Meta-Analysis. <i>Physical Therapy</i> . 2017;97(2):227-238. doi:10.2522/ptj.20160246	Not selected for map in favor of more informative review
Kuo C, Wang C, Chang W, Liao T, Chen P, Tung T. Clinical effects of Baduanjin qigong exercise on cancer patients: A systematic review and meta-analysis on randomized controlled trials. <i>Evid Based Complement Alternat Med</i> . 2021/01/01/	Not selected for map in favor of more informative review
Liang H, Luo S, Chen X, Lu Y, Liu Z, Wei L. Effects of Tai chi exercise on cardiovascular disease risk factors and quality of life in adults with essential hypertension: A meta-analysis. <i>Heart Lung</i> . 2020;49(4):353-363. doi:10.1016/j.hrtlng.2020.02.041	Not selected for map in favor of more informative review
Lomas-Vega R, Obrero-Gaitan E, Molina-Ortega FJ, Del-Pino-Casado R. Tai chi for Risk of Falls. A Meta-analysis. <i>Journal of the American Geriatrics Society</i> . 2017;65(9):2037-2043.	Not selected for map in favor of more informative review
Shao B, Zhang X, Vernooij R, et al. The effectiveness of Baduanjin exercise for hypertension: a systematic review and meta-analysis of randomized controlled trials. <i>BMC Complement Med Ther</i> . 2020;20(1):304. doi:10.1186/s12906-020-03098-w	Not selected for map in favor of more informative review
Sherrington, C., N. Fairhall, W. Kwok, G. Wallbank, A. Tiedemann, Z. A. Michaleff, C. A. C. M. Ng and A. Bauman (2020). "Evidence on physical activity and falls prevention for people aged 65+ years: systematic review to inform the WHO guidelines on physical activity and sedentary behaviour." <i>The international journal of behavioral nutrition and physical activity</i> 17(1): 144.	Not selected for map in favor of more informative review
Sun Z, Chen H, Berger MR, Zhang L, Guo H, Huang Y. Effects of tai chi exercise on bone health in perimenopausal and postmenopausal women: a systematic review and meta-analysis. <i>Osteoporos Int</i> . 2016;27(10):2901-11. doi:10.1007/s00198-016-3626-3	Not selected for map in favor of more informative review
Winser S, Kannan P, Krishnamurthy K, Tsang W. Tai chi for Balance and Falls Incidence in Neurological Disorders: A Systematic Review and Meta-Analysis. <i>Archives of Physical Medicine & Rehabilitation</i> . 2017/10// 2017;98(10):e134-e134. doi:10.1016/j.apmr.2017.08.437	Not selected for map in favor of more informative review
Winser SJ, Tsang WW, Krishnamurthy K, Kannan P. Does Tai chi improve balance and reduce falls incidence in neurological disorders? A systematic review and meta-analysis. <i>Clinical rehabilitation</i> . 2018;32(9):1157-1168. doi:10.1177/0269215518773442	Not selected for map in favor of more informative review
Wu Y, Johnson BT, Chen S, Chen Y, Livingston J, Pescatello LS. Tai Ji Quan as antihypertensive lifestyle therapy: A systematic review and meta-analysis. <i>J Sport Health Sci</i> . 2021;10(2):211-221. doi:10.1016/j.jshs.2020.03.007	Not selected for map in favor of more informative review
Zhang Q, Xu X, Wu Q, et al. Effects of different traditional Chinese exercise in the treatment of essential hypertension: a systematic review and network meta-analysis. <i>Front cardiovasc med</i> . 2024;11(101653388):1300319. doi:10.3389/fcvm.2024.1300319	Not selected for map in favor of more informative review
Zhang Y, Chai Y, Pan X, Shen H, Wei X, Xie Y. Tai chi for treating osteopenia and primary osteoporosis: a meta-analysis and trial sequential analysis. <i>Clin Interv Aging</i> . 2019;14(101273480):91-104. doi:10.2147/CIA.S187588	Not selected for map in favor of more informative review

Citation	Exclude Reason
Zhao J, Chau JPC, Lo SHS, Choi KC, Liang S. The effects of sitting Tai chi on physical and psychosocial health outcomes among individuals with impaired physical mobility: A systematic review and meta-analysis. <i>International Journal of Nursing Studies</i> . 2021;118(gs8, 0400675):103911. doi:10.1016/j.ijnurstu.2021.103911	Not selected for map in favor of more informative review

REVIEWS MEETING ELIGIBILITY CRITERIA BUT NOT INCLUDED IN EVIDENCE MAP IN FAVOR OF A MORE INFORMATIVE REVIEW

Citation	Condition
Hall A, Copsey B, Richmond H, et al. Effectiveness of Tai chi for Chronic Musculoskeletal Pain Conditions: Updated Systematic Review and Meta-Analysis. <i>Physical Therapy</i> . 2017;97(2):227-238. doi:10.2522/ptj.20160246	Back pain
Kuo C, Wang C, Chang W, Liao T, Chen P, Tung T. Clinical effects of Baduanjin qigong exercise on cancer patients: A systematic review and meta-analysis on randomized controlled trials. <i>Evid Based Complement Alternat Med</i> . 2021/01/01/	Cancer-related symptoms/fatigue
Chou, R., R. Deyo, J. Friedly, A. Skelly, R. Hashimoto, M. Weimer, R. Fu, T. Dana, P. Kraegel, J. Griffin, S. Grusing and E. D. Brodt (2017). "Nonpharmacologic Therapies for Low Back Pain: A Systematic Review for an American College of Physicians Clinical Practice Guideline." <i>Annals of internal medicine</i> 166(7): 493-505.	Chronic low back pain
Zhao J, Chau JPC, Lo SHS, Choi KC, Liang S. The effects of sitting Tai chi on physical and psychosocial health outcomes among individuals with impaired physical mobility: A systematic review and meta-analysis. <i>International Journal of Nursing Studies</i> . 2021;118(gs8, 0400675):103911. doi:10.1016/j.ijnurstu.2021.103911	Depression
del-Pino-Cassado R, Obrero-Gaitan E, Lomas-Vega R. The effect of Tai chi on reducing the risk of falling: A systematic review, and meta-analysis. <i>American Journal of Chinese Medicine</i> . 2016/01/01/ 2016;44(5):895-906.	Falls prevention
Lomas-Vega R, Obrero-Gaitan E, Molina-Ortega FJ, Del-Pino-Casado R. Tai chi for Risk of Falls. A Meta-analysis. <i>Journal of the American Geriatrics Society</i> . 2017;65(9):2037-2043.	Falls prevention
Sherrington, C., N. Fairhall, W. Kwok, G. Wallbank, A. Tiedemann, Z. A. Michaleff, C. A. C. M. Ng and A. Bauman (2020). "Evidence on physical activity and falls prevention for people aged 65+ years: systematic review to inform the WHO guidelines on physical activity and sedentary behaviour." <i>The international journal of behavioral nutrition and physical activity</i> 17(1): 144.	Falls prevention
Winser S, Kannan P, Krishnamurthy K, Tsang W. Tai chi for Balance and Falls Incidence in Neurological Disorders: A Systematic Review and Meta-Analysis. <i>Archives of Physical Medicine & Rehabilitation</i> . 2017/10// 2017;98(10):e134-e134. doi:10.1016/j.apmr.2017.08.437	Falls prevention
Winser SJ, Tsang WW, Krishnamurthy K, Kannan P. Does Tai chi improve balance and reduce falls incidence in neurological disorders? A systematic review and meta-analysis. <i>Clinical rehabilitation</i> . 2018;32(9):1157-1168. doi:10.1177/0269215518773442	Falls prevention
Chau J, Leung L, Liu X, et al. Effects of Tai chi on health outcomes among community-dwelling adults with or at risk of metabolic syndrome: A systematic review. <i>Complement Ther Clin Pract</i> . 2021/01/01/ 2021;44	Hypertension
Dai L, Jiang Y, Wang P, Chen K. Effects of three traditional Chinese fitness exercises combined with antihypertensive drugs on patients with essential hypertension: A systematic review and network meta-analysis of randomized controlled trials. <i>Evid Based Complement Alternat Med</i> . 2021/01/01/	Hypertension
Liang H, Luo S, Chen X, Lu Y, Liu Z, Wei L. Effects of Tai chi exercise on cardiovascular disease risk factors and quality of life in adults with essential	Hypertension

Citation	Condition
hypertension: A meta-analysis. <i>Heart Lung</i> . 2020;49(4):353-363. doi:10.1016/j.hrtlng.2020.02.041	
Shao B, Zhang X, Vernooij R, et al. The effectiveness of Baduanjin exercise for hypertension: a systematic review and meta-analysis of randomized controlled trials. <i>BMC Complement Med Ther</i> . 2020;20(1):304. doi:10.1186/s12906-020-03098-w	Hypertension
Wu Y, Johnson BT, Chen S, Chen Y, Livingston J, Pescatello LS. Tai Ji Quan as antihypertensive lifestyle therapy: A systematic review and meta-analysis. <i>J Sport Health Sci</i> . 2021;10(2):211-221. doi:10.1016/j.jshs.2020.03.007	Hypertension
Zhang Q, Xu X, Wu Q, et al. Effects of different traditional Chinese exercise in the treatment of essential hypertension: a systematic review and network meta-analysis. <i>Front cardiovasc med</i> . 2024;11(101653388):1300319. doi:10.3389/fcvm.2024.1300319	Hypertension
Sun Z, Chen H, Berger MR, Zhang L, Guo H, Huang Y. Effects of tai chi exercise on bone health in perimenopausal and postmenopausal women: a systematic review and meta-analysis. <i>Osteoporos Int</i> . 2016;27(10):2901-11. doi:10.1007/s00198-016-3626-3	Osteoporosis
Zhang Y, Chai Y, Pan X, Shen H, Wei X, Xie Y. Tai chi for treating osteopenia and primary osteoporosis: a meta-analysis and trial sequential analysis. <i>Clin Interv Aging</i> . 2019;14(101273480):91-104. doi:10.2147/CIA.S187588	Osteoporosis
Feng F, Luo X, Chen Y, Li J, Kang H, Yan B. Effects of Tai chi Yunshou on upper-limb function and balance in stroke survivors: A systematic review and meta-analysis. <i>Complementary Therapies in Clinical Practice</i> . 2023;51(101225531):101741. doi:10.1016/j.ctcp.2023.101741	Post-stroke rehabilitation//non-motor outcome

PEER REVIEW COMMENTS AND RESPONSES

Are the objectives, scope, and methods for this review clearly described?

Comment #	Reviewer #	Comment	Author Response
1	1	Yes	Thank you.
2	2	Yes	Thank you.
3	3	Yes	Thank you.
4	4	Yes	Thank you.
5	5	<p>No - Page 9 Overview of Included Studies—not sufficient explanation</p> <p>Unclear methods for determining why the 22 were “not selected for map in favor of better review (N = 22)”. Line 14-15 What was the criteria for ‘better review.’ This is a large number, equal to the N of the included studies, so it is necessary to understand why half of the studies were excluded.</p> <p>Vast majority of studies 362 were excluded for: “Did not grade evidence” Page 8 flow diagram and Page 9, Line 9 “..did not include the method used to formally assess the certainty or strength or quality of the evidence.” Would be helpful to better understand this criteria and provide further details on this determination since it seems a significant proportion of the literature was excluded at this stage (~85%).</p>	<p>We have clarified that the criteria for selecting the more informative review included when the search was completed (<i>ie</i>, how up to date was the review is), and how many primary studies were included. We have also described the GRADE system and how we assessed whether it or something similar was used to grade evidence.</p>

Comment #	Reviewer #	Comment	Author Response
6	5	Another 40-50 systematic reviews appear to have been either missed or otherwise not included in the evidence map. This requires more explanation of criteria used to exclude—I believe many appear to be eligible for inclusion. Please see list below.	Of the 70 reviews suggested by reviewer #4 and #5, we have examined in detail all of the 70 publications. Of these 70, 1 review was actually included on the map; it must have been inadvertently overlooked by the reviewer; 1 was published before the current review’s search dates and was excluded because it did not grade evidence; 1 was excluded at title screening, 6 were excluded at abstracts screening (not a systematic review=2, outcomes for tai chi/qigong were not reported separately=4); 50 were excluded because they did not formally rate the certainty of evidence, which was an inclusion criterion; 2 were not in journals indexed in PubMed or did not use any indexing terms we searched on; and 9 we could not have found in our search because they were published after the end date of that search. We reviewed all 9 and excluded 4 publications, because they did not formally assess the certainty of the evidence. For the remaining 5, 1 was excluded for being a randomized controlled trial; 2 reviews were more recent, and more informative, than reviews already included on the map for chronic low back pain and falls prevention. We replaced these as included reviews. The certainty of evidence for the review about falls prevention remain moderate, but certainty of evidence for chronic low back pain has advanced from low to moderate. Lastly, we added 2 reviews to the map, one about cancer related fatigue and the second about anxiety.
7	7	Yes	Thank you.
8	8	Yes	Thank you.

Is there any indication of bias in our synthesis of the evidence?

Comment #	Reviewer #	Comment	Author Response
9	1	No	Thank you.
10	2	No	Thank you.

Comment #	Reviewer #	Comment	Author Response
11	3	No	Thank you.
12	4	No	Thank you.
13	5	No	Thank you.
14	7	No	Thank you.
15	8	No	Thank you.

Are there any published or unpublished studies that we may have overlooked?

Comment #	Reviewer #	Comment	Author Response
16	1	<p>Yes - Conclusions on Falls does not take into account multiple large scale trials, only some of which are including in now dated Sherrington Review.</p> <p>This review should probably cite in Discussion recent parallel attempts to synthesize state of tai chi evidence (e.g. Yang GY et al 2022 SR of 200+ SRs on Tai Chi), and perhaps discuss how your finding compare.</p>	<p>Because the Yang et al. publication is a review of reviews, and not a hybrid of reviews plus new evidence, a more recent publication which might have included multiple large-scale trials, would only be included in this report if the review graded evidence (ie, certainty or strength of evidence). There may have been newer and larger reviews about falls prevention but if these reviews did not include certainty of evidence rating, we would have excluded these reviews. A review published after our search date was suggested and we have included this newer review on the map (Pillay 2024).</p>
17	2	No	Thank you.
18	3	No	Thank you.
19	4	<p>Yes - TO: VA Evidence Synthesis Program</p> <p>RE: Review of Tai Chi Qigong for Health and Well-being.</p> <p>Thank you for the opportunity to review this Tai Chi and Qigong VA systematic review. I truly believe that Tai Chi and Qigong are evidence-based medicine for the 21st century.</p>	Thank you for your comments.

Comment #	Reviewer #	Comment	Author Response
20	4	<p>I have clustered my feedback leading with RE: headings for various topics.</p> <p>RE: Bubble maps (Figure 2) and search strategies Your previous rendition of the VA evidence map was much easier to read. I agree that the use of circles of different diameters is a great way to reveal number of articles for different topics (conditions).</p> <p>However, the use of 5 areas of evaluation and multiple colors/symbols makes reading the figure time intensive, rendering this evidence map much harder to quickly interpret. I would consider using format used in prior renditions OR if needed separate tai chi, qigong and others more distinctly, through a series of evidence bubbles by category of intervention.</p>	<p>Regarding the map, we have reduced the number of interventions to tai chi only, qigong only, and mix of tai chi and qigong. With fewer colors, it may improve readability of the map.</p> <p>We have also reordered the bubbles so that all tai chi only reviews are grouped together, all qigong are grouped together, and all mixed reviews are grouped together. Since our VA operational partners had requested an evidence map of tai chi and qigong, it would be best to keep both tai chi and qigong reviews on the same map.</p>
21	4	<p>It is my understanding that Qi gong, translated 'energy cultivation' is the larger umbrella term of which the other practices fall under. For this reason, 'qigong' literature is always more-broad, i.e., less homogeneous than say, 'Yang-style Tai Chi.' Does merging these two categories detract from analysis (or at least render it more difficult).</p>	<p>The scope of the project was determined in consultation with Operational Partners in the VA with expertise in the topic. It is under their direction that tai chi and qigong literature were reviewed in the same project. Since the purpose of this evidence map is to identify body of evidence for tai chi and/or qigong, merging these two categories did not detract from the current analysis.</p>
22	4	<p>RE: Literature Review Process</p> <p>Regarding the articles you excluded in this review, for the most part I think your team did very well. It seems reasonable that several excluded items were from before 2020 (more than 5 years out), and you found more relevant up-to-date data.</p> <p>Regarding the articles meeting eligibility, but not included in this review, your team did well. For example, I agree that the falls articles you excluded, while relatively favorable to tai chi, were all too old (i.e. 2016-2018). It was nice to see a follow up on conditions that were evaluated in the past review, as well as adding new topic areas. However, I feel that you downgraded level of evidence for some items. For example, most federal agencies (National Council on Aging, CDC and STEADI) would advocate that there is HIGH efficacy for tai chi for falls/balance, osteoarthritis, and Parkinson's.</p>	<p>We would like to clarify that we did not perform evidence rating and reported the certainty of evidence ratings directly from the respective reviews. Thus, we understand that the reviewer may disagree with how the authors of the original review labeled the certainty of evidence, but we are not able to change that.</p>

Comment #	Reviewer #	Comment	Author Response
23	4	<p>RE: Literature Review Process for Tai Chi and Health Promotion First, since you are referencing the article as Tai chi/Qigong for Health and Well-being, I found it curious there was no specific literature review ("Search") related to:</p> <ul style="list-style-type: none"> • "Tai chi and/or Qigong and Health Promotion" • "Tai chi and/or Qigong and Well-Being" • "Tai chi and/or Qigong and Health Benefits" <p>I've done these literature reviews several times as I teach a primary prevention course at the University of Wisconsin Doctor of Physical Therapy program.</p>	<p>Development of the search strategy was done with input from a librarian with expertise in systematic reviews. We understand that developing such search strategies is not a task which when performed by similarly skilled individuals will always result in exactly the same output, and thus acknowledge that there are other search strategies possible. But we cannot go back and change the search strategy now, but if there were some systematic reviews on those topics that we missed we would consider adding this information to the limitations.</p>
24	4	<p>Given that the VA utilizes the whole health approach, I would think a search with the above mesh terms may yield a more holistic view of the benefits of these mind-body interventions. Given that preventative care of noncommunicable diseases is a key part of healthcare, these scoping reviews of meta-analysis below may be highly relevant to your review process. All promote the view that "Tai Chi exercise is a feasible and effective method for preventing diseases and promoting health."</p>	<p>We have reviewed each one and found that our search had identified these 6 references, but all were excluded based on inclusion/exclusion stated in Methods.</p>

25	4	<p>As a mind-body exercise Tai Chi fights back on the diseases of aging and the top causes of morbidity/mortality. Below are my TOP articles that I think you missed for this review.</p>	
		<p>1. Easwaran K, Gopalasingam Y, Green DD, Lach V, Melnyk JA, Wan C, Bartlett DJ. Effectiveness of Tai Chi for health promotion for adults with health conditions: a scoping review of Meta-analyses. <i>Disabil Rehabil.</i> 2021 Oct;43(21):2978-2989. doi: 10.1080/09638288.2020.1725916. Epub 2020 Feb 18. PMID: 32070137</p> <p>ABSTRACT Purpose: To complete a scoping review of meta-analyses summarizing evidence of the effectiveness of Tai Chi for adults with health conditions. Materials and methods: Meta-analyses were retrieved from Medline, Embase, AMED, CINAHL, SPORTDiscus, PsychINFO, Web of Science, PubMed Health and the Cochrane Library from database inception to early September 2018. Multistage deduplication and screening processes identified full-length, unique, peer-reviewed meta-analyses. Two people independently appraised 42 meta-analyses based on the GRADE system and organized results into 3 appendices subsequently collated into heterogeneous, statistically significant, and statistically insignificant tables. Results: "High" and "moderate" quality evidence indicates that Tai Chi can significantly benefit adults with health conditions including cancers, chronic obstructive pulmonary disease, coronary heart disease, depression, heart failure, hypertension, low back pain, osteoarthritis, osteoporosis, Parkinson's Disease and stroke. Outcomes included significant improvements in activities of daily living, balance, exercise capacity, gait, mastery, mental health, mobility, motor function, participation in daily life, physical function, quality of life, range of motion, and strength; with reductions in blood pressure, body mass index, depression, disability, dyspnea, falls, fatigue, pain, stiffness, and waist circumference. Conclusions: Healthcare providers now have information to advise clients with health conditions on the effectiveness of Tai Chi for overall health promotion. IMPLICATIONS FOR</p>	<p>Excluded at title screening because it is a scoping review</p>

Comment #	Reviewer #	Comment	Author Response
		<p>REHABILITATION: Tai Chi is a form of safe, enjoyable, light-to-moderate aerobic physical activity for adults that is inexpensive to implement in diverse community settings. Adults with health conditions require physical activity for prevention of secondary impairments and over-all health promotion. This scoping review of meta-analyses elucidates "high" and "moderate" quality evidence of the effectiveness of Tai Chi in improving important outcomes for people with numerous health conditions. This information can be useful for healthcare providers who wish to recommend effective community-based physical activity to clients they are serving.</p> <p>Keywords: PubMed; Tai Ji; adults; health promotion; meta-analysis.</p>	
26	4	2. Yang FC, Desai AB, Esfahani P, Sokolovskaya TV, Bartlett DJ. Effectiveness of Tai Chi for Health Promotion of Older Adults: A Scoping Review of Meta-Analyses . Am J Lifestyle Med. 2021 Mar 24;16(6):700-716.	Excluded at abstract because it is a scoping review
27	4	3. Huang J, Wang D, Wang J. Clinical Evidence of Tai Chi Exercise Prescriptions: A Systematic Review. Evid Based Complement Alternat Med. 2021 Mar 10;2021:5558805.	Excluded at abstract (not about effectiveness)
28	4	4. Yang GY, Sabag A, Hao WL, Zhang LN, Jia MX, Dai N, Zhang H, Ayati Z, Cheng YJ, Zhang CH, Zhang XW, Bu FL, Wen M, Zhou X, Liu JP, Wayne PM, Ee C, Chang D, Kiat H, Hunter J, Bensoussan A. Tai Chi for health and well-being: A bibliometric analysis of published clinical studies between 2010 and 2020. Complement Ther Med. 2021 Aug;60:102748. doi: 10.1016/j.ctim.2021.102748. Epub 2021 Jun 10.PMID: 34118389 Free article. Review.	Excluded at full text (did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
29	4	5. Lee LY, Chu EC. Tai Chi as a Body-Mind Exercise for Promotion of Healthy Aging in Nursing Home Residents: Appropriateness, Feasibility, and Effectiveness. <i>Clin Interv Aging</i> . 2023 Nov 23;18:1949-1959. doi: 10.2147/CIA.S430968. eCollection 2023.PMID: 38020454 Free PMC article. Review.	Excluded at full text (did not grade evidence)
30	4	6. Taylor J, Walsh S, Kwok W, Pinheiro MB, de Oliveira JS, Hassett L, Bauman A, Bull F, Tiedemann A, Sherrington C. A scoping review of physical activity interventions for older adults. <i>Int J Behav Nutr Phys Act</i> . 2021 Jun 30;18(1):82. doi: 10.1186/s12966-021-01140-9.PMID: 34193157 Free PMC article.	Excluded at full text because it is a scoping review
31	5	Yes - Additional systematic reviews	<p>We have reviewed each of the suggested publications. 1 review cognition in neurological disorders is already included on the map, perhaps the reviewers had inadvertently missed it. One review that was published after our search date is a more informative review with more primary studies, and replaced the existing review about chronic low back pain that is already on the map.</p> <p>Below are the reasons for exclusion for the others:</p>
32	5	<p>Falls</p> <p>141. Zou L, Han J, Li C, et al. Effects of Tai Chi on Lower Limb Proprioception in Adults Aged Over 55: A Systematic Review and Meta-Analysis. <i>Arch Phys Med Rehabil</i>. Jun 2019;100(6):1102-1113. doi:10.1016/j.apmr.2018.07.425</p> <p>142. Wehner C, Blank C, Arvandi M, Wehner C, Schobersberger W. Effect of Tai Chi on muscle strength, physical endurance, postural balance and flexibility: a systematic review and meta-analysis. <i>BMJ Open Sport Exerc Med</i>. 2021;7(1):e000817. doi:10.1136/bmjsem-2020-000817</p>	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
33	5	142. Wehner C, Blank C, Arvandi M, Wehner C, Schobersberger W. Effect of Tai Chi on muscle strength, physical endurance, postural balance and flexibility: a systematic review and meta-analysis. <i>BMJ Open Sport Exerc Med.</i> 2021;7(1):e000817. doi:10.1136/bmjsem-2020-000817	Excluded at full text screening (Did not grade evidence)
34	5	Cognition 146. Wayne PM, Walsh JN, Taylor-Piliae RE, et al. Effect of tai chi on cognitive performance in older adults: systematic review and meta-analysis. <i>J Am Geriatr Soc.</i> Jan 2014;62(1):25-39. doi:10.1111/jgs.12611	Excluded at full text screening (Did not grade evidence)
35	5	154. Liu J, Shi H, T L. Qigong exercise and cognitive function in brain imaging studies: A systematic review of randomized controlled trials in healthy and cognitively impaired populations. <i>Brain Brahvir and Immunity Integrative.</i> 2023;3(100016)doi:doi.org/10.1016/j.bbii.2023.100016	Excluded at full text screening (Did not grade evidence)
36	5	155. Chen ML, Wotiz SB, Banks SM, Connors SA, Shi Y. Dose-Response Association of Tai Chi and Cognition among Community-Dwelling Older Adults: A Systematic Review and Meta-Analysis. <i>Int J Environ Res Public Health.</i> Mar 19 2021;18(6)doi:10.3390/ijerph18063179	Excluded at full text screening (Did not grade evidence)
37	5	156. Lim KH, Pysklywec A, Plante M, Demers L. The effectiveness of Tai Chi for short-term cognitive function improvement in the early stages of dementia in the elderly: a systematic literature review. <i>Clin Interv Aging.</i> 2019;14:827-839. doi:10.2147/CIA.S202055	Excluded at full text screening (Did not grade evidence)
38	5	157. Wang Y, Zhang Q, Li F, Li Q, Jin Y. Effects of tai chi and Qigong on cognition in neurological disorders: A systematic review and meta-analysis. <i>Geriatr Nurs.</i> Jul-Aug 2022;46:166-177. doi:10.1016/j.gerinurse.2022.05.014	INCLUDED IN MAP Parkinson's disease—cognition / mild cognitive impairment—cognition

Comment #	Reviewer #	Comment	Author Response
39	5	158. Wei L, Chai Q, Chen J, et al. The impact of Tai Chi on cognitive rehabilitation of elder adults with mild cognitive impairment: a systematic review and meta-analysis. <i>Disabil Rehabil.</i> Jun 2022;44(11):2197-2206. doi:10.1080/09638288.2020.1830311	Excluded at full text screening (Did not grade evidence)
40	5	163. Cai H, Zhang K, Wang M, Li X, Ran F, Han Y. Effects of mind-body exercise on cognitive performance in middle-aged and older adults with mild cognitive impairment: A meta-analysis study. <i>Medicine (Baltimore).</i> Aug 25 2023;102(34):e34905. doi:10.1097/MD.00000000000034905	Excluded at full text screening (Did not grade evidence)
41	5	Mental health 164. Liu F, Cui J, Liu X, Chen KW, Chen X, Li R. The effect of tai chi and Qigong exercise on depression and anxiety of individuals with substance use disorders: a systematic review and meta-analysis. <i>BMC Complement Med Ther.</i> May 29 2020;20(1):161. doi:10.1186/s12906-020-02967-8	Excluded at full text screening (Did not grade evidence)
42	5	165. Liu X, Clark J, Siskind D, et al. A systematic review and meta-analysis of the effects of Qigong and Tai Chi for depressive symptoms. <i>Complement Ther Med.</i> Aug 2015;23(4):516-34. doi:10.1016/j.ctim.2015.05.001	Excluded at full text screening (Did not grade evidence)
43	5	166. Choo YT, Jiang Y, Hong J, Wang W. Effectiveness of Tai Chi on quality of life, depressive symptoms and physical function among community-dwelling older adults with chronic disease: A systematic review and meta-analysis. <i>Int J Nurs Stud.</i> Nov 2020;111:103737. doi:10.1016/j.ijnurstu.2020.103737	Excluded at full text screening (Did not grade evidence)
44	5	167. Sani NA, Yusoff SSM, Norhayati MN, Zainudin AM. Tai Chi Exercise for Mental and Physical Well-Being in Patients with Depressive Symptoms: A Systematic Review and Meta-Analysis. <i>Int J Environ Res Public Health.</i> Feb 5 2023;20(4)doi:10.3390/ijerph20042828	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
45	5	168. Taylor-Piliae RE, Finley BA. Tai Chi exercise for psychological well-being among adults with cardiovascular disease: A systematic review and meta-analysis. <i>Eur J Cardiovasc Nurs.</i> Oct 2020;19(7):580-591. doi:10.1177/1474515120926068	Excluded at full text screening (Did not grade evidence)
46	5	169. Niles BL, Reid KF, Whitworth JW, et al. Tai Chi and Qigong for trauma exposed populations: A systematic review. <i>Ment Health Phys Act.</i> Mar 2022;22doi:10.1016/j.mhpa.2022.100449	Excluded at full text screening (Did not grade evidence)
47	5	172. Zhang Z, Chang X, Zhang W, Yang S, Zhao G. The Effect of Meditation-Based Mind-Body Interventions on Symptoms and Executive Function in People With ADHD: A Meta-Analysis of Randomized Controlled Trials. <i>J Atten Disord.</i> Apr 2023;27(6):583-597. doi:10.1177/10870547231154897	Excluded at abstract screening (Outcomes for interventions of interest not reported separately)
48	5	176. Yin J, Yue C, Song Z, Sun X, Wen X. The comparative effects of Tai chi versus non-mindful exercise on measures of anxiety, depression and general mental health: A systematic review and meta-analysis. <i>J Affect Disord.</i> Sep 15 2023;337:202-214. doi:10.1016/j.jad.2023.05.037	Excluded at full text screening (Did not grade evidence)
49	5	179. Zou L, Yeung A, Li C, et al. Effects of Meditative Movements on Major Depressive Disorder: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. <i>J Clin Med.</i> Aug 1 2018;7(8)doi:10.3390/jcm7080195	Excluded at abstract screening (Outcomes for interventions of interest not reported separately)
50	5	Immune 189. Morgan N, Irwin MR, Chung M, Wang C. The effects of mind-body therapies on the immune system: meta-analysis. <i>PLoS One.</i> 2014;9(7):e100903. doi:10.1371/journal.pone.0100903	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
51	5	Sleep 197. Ko LH, Hsieh YJ, Wang MY, Hou WH, Tsai PS. Effects of health qigong on sleep quality: A systematic review and meta-analysis of randomized controlled trials. <i>Complement Ther Med.</i> Dec 2022;71:102876. doi:10.1016/j.ctim.2022.102876	Excluded at full text screening (Did not grade evidence)
52	5	198. Li H, Chen J, Xu G, et al. The Effect of Tai Chi for Improving Sleep Quality: A Systematic Review and Meta-analysis. <i>J Affect Disord.</i> Sep 1 2020;274:1102-1112. doi:10.1016/j.jad.2020.05.076	Excluded at full text screening (Did not grade evidence)
53	5	199. Raman G, Zhang Y, Minichiello VJ, D'Ambrosio CM, Wang C. Tai Chi Improves Sleep Quality in Healthy Adults and Patients with Chronic Conditions: A Systematic Review and Meta-analysis. <i>J Sleep Disord Ther.</i> Oct 2013;2(6)doi:10.4172/2167-0277.1000141	Published before current review's search dates, reviewed and excluded (Did not grade evidence)
54	5	200. Si Y, Wang C, Yin H, et al. Tai Chi Chuan for Subjective Sleep Quality: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. <i>Evid Based Complement Alternat Med.</i> 2020;2020:4710527. doi:10.1155/2020/4710527	Excluded at full text screening (Did not grade evidence)
55	5	Hypertension 214. Yin Y, Yu Z, Wang J, Sun J. Effects of the different Tai Chi exercise cycles on patients with essential hypertension: A systematic review and meta-analysis. <i>Front Cardiovasc Med.</i> 2023;10:1016629. doi:10.3389/fcvm.2023.1016629	Excluded at full text screening (Did not grade evidence)
56	5	Cardiovascular risk 219. Liu T, Chan AW, Liu YH, Taylor-Piliae RE. Effects of Tai Chi-based cardiac rehabilitation on aerobic endurance, psychosocial well-being, and cardiovascular risk reduction among patients with coronary heart disease: A systematic review and meta-analysis. <i>Eur J Cardiovasc Nurs.</i> Apr 2018;17(4):368-383. doi:10.1177/1474515117749592	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
57	5	Heart Failure 220. Bao Q, Lei S, Guo S, et al. Effect of Traditional Chinese Exercises on Patients with Chronic Heart Failure (TCE-HF): A Systematic Review and Meta-Analysis. <i>J Clin Med</i> . Mar 9 2023;12(6)doi:10.3390/jcm12062150	Excluded at full text screening (Did not grade evidence)
58	5	COPD 227. Gendron LM, Nyberg A, Saey D, Maltais F, Lacasse Y. Active mind-body movement therapies as an adjunct to or in comparison with pulmonary rehabilitation for people with chronic obstructive pulmonary disease. <i>Cochrane Database Syst Rev</i> . Oct 10 2018;10(10):CD012290.	Excluded at abstract screening (Outcomes for interventions of interest not reported separately)
59	5	Pain 233. Kong LJ, Lauche R, Klose P, et al. Tai Chi for Chronic Pain Conditions: A Systematic Review and Meta-analysis of Randomized Controlled Trials. <i>Sci Rep</i> . Apr 29 2016;6:25325. doi:10.1038/srep25325	Excluded at full text screening (Did not grade evidence)
60	5	235. Zou L, Xiao T, Cao C, et al. Tai Chi for Chronic Illness Management: Synthesizing Current Evidence from Meta-Analyses of Randomized Controlled Trials. <i>Am J Med</i> . Feb 2021;134(2):194-205 e12. doi:10.1016/j.amjmed.2020.08.015	Excluded at abstract screening (Not a systematic review)
61	5	236. Qin J, Zhang Y, Wu L, et al. Effect of Tai Chi alone or as additional therapy on low back pain: Systematic review and meta-analysis of randomized controlled trials. <i>Medicine (Baltimore)</i> . Sep 2019;98(37):e17099. doi:10.1097/MD.00000000000017099	Excluded at full text screening (Did not grade evidence)
62	5	238. Girard J, Girard A. The effects of qigong on neck pain: A systematic review. <i>Complement Ther Clin Pract</i> . Feb 2019;34:23-29. doi:10.1016/j.ctcp.2018.10.013	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
63	5	239. Liu Z, Hu H, Wen X, et al. Baduanjin improves neck pain and functional movement in middle-aged and elderly people: A systematic review and meta-analysis of randomized controlled trials. <i>Front Med (Lausanne)</i> . 2022;9:920102. doi:10.3389/fmed.2022.920102	Excluded at full text screening (Did not grade evidence)
64	5	245. Ye J, Cai S, Zhong W, Cai S, Zheng Q. Effects of tai chi for patients with knee osteoarthritis: a systematic review. <i>J Phys Ther Sci</i> . Jul 2014;26(7):1133-7. doi:10.1589/jpts.26.1133	Excluded at full text screening (Did not grade evidence)
65	5	246. Chang WD, Chen S, Lee CL, Lin HY, Lai PT. The Effects of Tai Chi Chuan on Improving Mind-Body Health for Knee Osteoarthritis Patients: A Systematic Review and Meta-Analysis. <i>Evid Based Complement Alternat Med</i> . 2016;2016:1813979. doi:10.1155/2016/1813979	Excluded at full text screening (Did not grade evidence)
66	5	248. You Y, Liu J, Tang M, Wang D, Ma X. Effects of Tai Chi exercise on improving walking function and posture control in elderly patients with knee osteoarthritis: A systematic review and meta-analysis. <i>Medicine (Baltimore)</i> . Apr 23 2021;100(16):e25655. doi:10.1097/MD.00000000000025655	Excluded at full text screening (Did not grade evidence)
67	5	249. Kelley GA, Kelley KS, Callahan LF. Clinical relevance of Tai Chi on pain and physical function in adults with knee osteoarthritis: An ancillary meta-analysis of randomized controlled trials. <i>Sci Prog</i> . Apr-Jun 2022;105(2):368504221088375. doi:10.1177/00368504221088375	Excluded at full text screening (Did not grade evidence)
68	5	255. Wu H, Wang Q, Wen G, Wu J, Wang Y. The effects of Tai Chi on physical function and safety in patients with rheumatoid arthritis: A systematic review and meta-analysis. <i>Front Physiol</i> . 2023;14:1079841. doi:10.3389/fphys.2023.1079841	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
69	5	256. Kang H, Yang M, Li M, Xi R, Sun Q, Lin Q. Effects of different parameters of Tai Chi on the intervention of chronic low back pain: A meta-analysis. PLoS One. 2024;19(7):e0306518. doi:10.1371/journal.pone.0306518	Published after our search date, reviewed for eligibility and replaced current mapped review for Chronic Low Back Pain
70	5	257. Wang XQ, Xiong HY, Du SH, Yang QH, Hu L. The effect and mechanism of traditional Chinese exercise for chronic low back pain in middle-aged and elderly patients: A systematic review. Front Aging Neurosci. 2022;14:935925. doi:10.3389/fnagi.2022.935925	Excluded at full text screening (Did not grade evidence)
71	5	258. Kong L, Ren J, Fang S, He T, Zhou X, Fang M. Traditional Chinese Exercises on Pain and Disability in Middle-Aged and Elderly Patients With Neck Pain: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. Front Aging Neurosci. 2022;14:912945. doi:10.3389/fnagi.2022.912945	Excluded at full text screening (Did not grade evidence)
72	5	Cancer 263. Cheung DST, Takemura N, Smith R, et al. Effect of qigong for sleep disturbance-related symptom clusters in cancer: a systematic review and meta-analysis. Sleep Med. Sep 2021;85:108-122. doi:10.1016/j.sleep.2021.06.036	Excluded at full text screening (Did not grade evidence)
73	5	274. Oh B, Bae K, Lamoury G, et al. The Effects of Tai Chi and Qigong on Immune Responses: A Systematic Review and Meta-Analysis. Medicines (Basel). Jun 30 2020;7(7)doi:10.3390/medicines7070039	Excluded at full text screening (Did not grade evidence)
74	5	277. Yang L, Winters-Stone K, Rana B, et al. Tai Chi for cancer survivors: A systematic review toward consensus-based guidelines. Cancer Medicine. 2021;10(21):7447-7456. doi:https://doi.org/10.1002/cam4.4273	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
75	5	278. Meng T, Hu S-f, Cheng Y-q, et al. Qigong for women with breast cancer: An updated systematic review and meta-analysis. <i>Complementary Therapies in Medicine</i> . 2021/08/01/2021;60:102743. doi: https://doi.org/10.1016/j.ctim.2021.102743	Excluded at full text screening (Did not grade evidence)
76	5	280. Wayne PM, Lee MS, Novakowski J, et al. Tai Chi and Qigong for cancer-related symptoms and quality of life: a systematic review and meta-analysis. <i>Journal of Cancer Survivorship</i> . 2018/04/01 2018;12(2):256-267. doi:10.1007/s11764-017-0665-5	Excluded at full text screening (Did not grade evidence)
77	5	281. Sun F, Li L, Wen X, Xue Y, Yin J. The effect of Tai Chi/Qigong on depression and anxiety symptoms in adults with Cancer: A systematic review and meta-regression. <i>Complementary Therapies in Clinical Practice</i> . 2024/08/01/2024;56:101850. doi: https://doi.org/10.1016/j.ctcp.2024.101850	Published after our search date, reviewed for eligibility and added to map for Anxiety
78	7	Yes - There were numerous Tai Chi and Qigong reviews that were not cited. An example is "Chang PS, Knobf T, Oh B, et al. Physical, and psychological health outcomes of Qigong exercise in older adults: a systematic review and meta-analysis. <i>Am J Chin Med</i> . 2019;47(2):301-322."	We did identify this in our search but the review was excluded because the authors did not provide certainty of evidence ratings.

Additional suggestions:

Comment #	Reviewer #	Comment	Author Response
79	1	1. As noted above, the conclusions for Falls seems to under value the quality and quantity of research. Multiple large scale and rigorous trials (e.g. Fuzhong Li et al) add significantly to evidence base for Tai Chi and falls. Some new studies on cognitive function by this group also noteworthy. If these are not yet formally integrated into SRs that meet your inclusion criteria, might be worth mentioning in discussion that new data might change classification. There also are some newer large scale trials on insomnia worth mentioning.	Please see our response to comment 16 above.

Comment #	Reviewer #	Comment	Author Response
80	1	2. While I see some value is listing country of authors of SRs in synthesis table, what is more important is country in which (majority of) trials were conducted. Case in point is Osteoporosis. The vast majority of these studies were conducted in China. Because Asian women (focus of most studies) have different bone turnover metabolisms compared with Caucasian, Hispanic, and African Americans, we do not know how translatable this research is--not to mention cultural difference is perceptions of tai chi). This should be at least addressed in discussion.	We have added this in discussion.
81	1	3. Some mention on methods for reporting AEs should be elaborated on in discussion. Wayne et al 2014 and other have shown that very very few RCTs including formal protocols for systematically monitoring AEs in all intervention groups. So safety data needs to be interpreted cautiously.	We have added this in discussion.
82	1	4. I do not support a separate category of Baduanjin. While it has received a bit more attention than other forms of qigong, it is not particularly more or less important than any other 'style'. Of note, like tai chi, there is significant pluralism in what is taught as Baduanjin--different movements, names, etc. So I suggest simply folding it into 'Qigong' category.	Thank you for your comment. We have combined Baduanjin and qigong into one category on the map.
83	1	5. I have some concerns with definition and references for 'Qi' on page 4. I think there are better/less confusing definitions than "the body's natural airflow". Qi is a complex topic and whole books about definitions have been written (see Brief History of Qi--Huang and Rose). While the Chinese character 'breath' is sometimes misconstrued with Qi, natural airflow is definitely misleading. How does air flow through meridians--as noted in following phrase in this section? Some suggestions for wording can be found in Harvard Medical School Guide to Tai Chi.	Thank you for your comment. We have revised the introduction.
84	1	6. Pg 7--not sure why 'massage therapy' is mentioned?	We have made the change.

Comment #	Reviewer #	Comment	Author Response
85	1	7. In table 1, groupings potentially a bit confusing. While there is a section on Parkinson's, no mention is made on strong data for fall prevention. For Tai Chi and Falls in general, no distinction is made on populations--- healthy ambulatory older adults, higher risk fallers, PD, Stroke, MCI, those living in assisted living facilities. Benefits vary significantly depending on subgroups. Insomnia also good example of complexity. Insomnia shown helpful in cancer and with those with sleep disorders. How do you describe/convey these nuanced differences	Thank you for this comment. This problem is common to all "review of reviews" products such as this one, where we must accept how the authors of the included systematic review found, organized, and synthesized the studies included in their review. The only way we can include information about subgroups is if the original authors of the included review did those subgroup analyses. In the absence of these subgroup analyses, our only recourse is to perform a new systematic review ourselves of the original studies, with subgroup analyses of our choosing. Perhaps the reviewer would consider submitting a proposal to the Coordinating Center to suggest this as a topic for a future evidence review.
86	1	8. In characteristics of reviews, for some there is mention of how many of trials did one style (e.g. Yang 24) vs another (e.g. Chen). While it's ok to acknowledge/report this, not clear how readers are supposed to use/interpret this. Suggest adding in Discussion, since few well designed back-to-back comparisons of relative effectiveness of styles/forms/etc, caution should be applied in interpreting statements of superiority of one form vs another, and future research should address this gap.	We have added details in discussion.
87	2	There were a number of grammatical errors and typos that I am sure will be corrected in the final version. There are several areas where there are typos that need to be addressed. Also there needs to be a decision about what is capitalized. The document has "tai chi", "Tai chi" and "Tai Chi". Otherwise very good job on this review and the information will be valuable for the field.	Thank you for your comment. We have made revisions throughout the report.
88	3	There are several areas where there are typos that need to be addressed. One place has an artifact of Medical Massage Therapy. Also there needs to be a decision about what is capitalized. The document has "tai chi", "Tai chi" and "Tai Chi". Otherwise very good job on this review and the information will be valuable for the field.	We have made changes throughout report.

Comment #	Reviewer #	Comment	Author Response
89	4	<p>RE: Search engines used for your paper I am also curious about the databases you selected, specifically no PubMed: National Library of Medicine. I respect that this may be much too late in your writing process, but I respectfully think you might have missed some articles worth exploring. Out of curiosity I did my own search using similar methodology: “Tai chi and _____”, systematic reviews, last 5 years) in PubMed: National Library of Medicine. I specifically used many of your key topics. Below you will see some of the articles I think you may have missed or excluded.</p>	<p>Thank you for your comment. Ovid/Medline database includes results from PubMed. We would like to refer the reviewer to a previous response about any reviews that we may have missed.</p>
90	4	<p>Pub Med: “Tai Chi and Back Pain” (11 systematic reviews in last 5 years) • Li Y, Yan L, Hou L, Zhang X, et. al. Exercise intervention for patients with chronic low back pain: a systematic review and network meta-analysis. <i>Front Public Health</i>. 2023 Nov 17;11:1155225. doi: 10.3389/fpubh.2023.1155225. Conclusion: Compared with conventional rehabilitation and no intervention provided, tai chi, yoga, Pilates exercise, sling exercise, motor control exercise, and core or stabilization exercises significantly improved chronic low back pain (CLBP) in patients.</p>	<p>Excluded at full text screening (Did not grade evidence)</p>
91	4	<p>Pub Med: “Tai Chi and Cancer-related symptoms” (9 systematic reviews in last 5 years) • Bower JE, Lacchetti C, Alici Y, Barton DL, et. al. Management of Fatigue in Adult Survivors of Cancer: ASCO-Society for Integrative Oncology Guideline Update. <i>J Clin Oncol</i>. 2024 Jul 10;42(20):2456-2487. Recommendations: Clinicians should recommend exercise, CBT, mindfulness-based programs, and tai chi or qigong to reduce the severity of fatigue during cancer treatment.</p>	<p>Published after our search date, reviewed for eligibility and added to map for Cancer-related Fatigue.</p>

Comment #	Reviewer #	Comment	Author Response
92	4	<ul style="list-style-type: none"> • Casuso-Holgado MJ, Heredia-Rizo AM, Gonzalez-Garcia P, Muñoz-Fernández MJ, et. al. Mind-body practices for cancer-related symptoms management: an overview of systematic reviews including one hundred twenty-nine meta-analyses. <i>Support Care Cancer</i>. 2022 Dec;30(12):10335-10357. doi: 10.1007/s00520-022-07426-3. <p>Conclusions: Qigong, tai chi, and yoga could be effective approaches to relief cancer-related symptoms in adults with different cancer diagnoses. (N=38 articles, 134 distinct primary studies and 129 separate meta-analyses were included).</p>	Published after search date, reviewed and included on map for Cancer – Anxiety
93	4	<ul style="list-style-type: none"> • RCT: Takemura N, Cheung DST, Fong DYT, Hui D, et. al. Tai Chi and Aerobic Exercise on Cancer-Related Dyspnea in Advanced Lung Cancer Patients: A Randomized Clinical Trial. <i>J Pain Symptom Manage</i>. 2024 Aug;68(2):171-179. <p>Conclusion: Both TC and AE alleviate dyspnea severity in patients with advanced lung cancer, and continuous exercise can yield substantial improvements. Due to its multi-component nature, Tai Chi has a greater effect on dyspnea.</p>	Excluded at abstract screening (Not a systematic review)

Comment #	Reviewer #	Comment	Author Response
94	4	<p>PubMed: "Tai Chi and Cognition" (69 systematic reviews in the last 5 years)</p> <ul style="list-style-type: none"> • Li F, Wang L, Qin Y, Liu G. Combined Tai Chi and cognitive interventions for older adults with or without cognitive impairment: A meta-analysis and systematic review. <i>Complement Ther Med.</i> 2022 Aug;67:102833. doi: 10.1016/j.ctim.2022.102833. <p>Results: A total of 1524 records were generated and nine studies were included. The pooled results showed that combined TC and cognitive interventions showed significantly large gains on memory [standardised mean difference (SMD) = 0.87, 95% confidence interval (CI): (0.01, 1.74), P 0.05], moderate gains on cognition [SMD = 0.74, 95% CI:(0.19, 1.29), P 0.05], and small size effects on balance. No statistically significant difference was found in executive function, depression, risk of falls, or well-being.</p> <p>Conclusion: Combined TC and cognitive interventions have positive effects on improving cognition and balance in older adults, but their superiority over the single intervention, as well as their additional effects on the physical and psychological function, are required further investigation.</p>	Excluded at full text screening (Did not grade evidence)
95	4	<ul style="list-style-type: none"> • Park M, Song R, Ju K, Shin JC, et. al. Effects of Tai Chi and Qigong on cognitive and physical functions in older adults: systematic review, meta-analysis, and meta-regression of randomized clinical trials. <i>BMC Geriatr.</i> 2023 Jun 6;23(1):352. doi: 10.1186/s12877-023-04070-2. <p>Conclusion: This meta-regression of 17 randomized studies strongly suggests that TCQ has beneficial effects on physical and cognitive functions in older adults. The effect of TCQ on cognitive function remained significant after taking into account the significant effects of physical function as a moderator. The findings imply the potential health benefits of TCQ by promoting cognitive function in older adults directly and indirectly through enhancing physical function.</p>	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
96	4	<ul style="list-style-type: none"> Wang Y, Zhang Q, Li F, Li Q, Jin Y. Effects of tai chi and Qigong on cognition in neurological disorders: A systematic review and meta-analysis. <i>Geriatr Nurs</i>. 2022 Jul-Aug;46:166-177. doi: 10.1016/j.gerinurse.2022.05.014. <p>Conclusions: Tai chi and Qigong were effective interventions to improve cognition in patients with Parkinson's disease, stroke, mild cognitive impairment, dementia, and traumatic brain injury; however, no RCTs were performed for other neurological disorders. (N=40 RCTs with 2,754 subjects)</p>	Already included in map
97	4	<ul style="list-style-type: none"> Tsai FJ, Shen SW. Concepts of dementia prevention in the health promotion among older adults: A narrative review. <i>Medicine (Baltimore)</i>. 2022 Dec 16;101(50):e32172. doi: 10.1097/MD.00000000000032172.PMID: 36550862 Free PMC article. Review. 	Excluded at title screening
98	4	<p>PubMed: Tai Chi and Depression</p> <ul style="list-style-type: none"> Zhu F, Wang Y, Yin S, Liu J, Zhong Y, Li L. The effect of Tai Chi on elderly depression: a systematic review and meta-analysis of randomized controlled trials. <i>Front Psychol</i>. 2024 Nov 29;15:1489384. doi: 10.3389/fpsyg.2024.1489384. eCollection 2024.PMID: 39679159 Free PMC article. 	Published after search date, reviewed and excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
99	4	<p>PubMed: ‘Tai Chi and Falls’ (29 systematic reviews in last 5 years)</p> <ul style="list-style-type: none"> • Chen W, Li M, Li H, Lin Y, Feng Z. Tai Chi for fall prevention and balance improvement in older adults: a systematic review and meta-analysis of randomized controlled trials. <i>Front Public Health</i>. 2023 Sep 1;11:1236050. doi: 10.3389/fpubh.2023.1236050. <p>Results: Totally 24 RCTs were included for meta-analysis, and the results showed that Tai Chi can effectively reduce the risk of falls in older adults (RR: 0.76, 95% CI: 0.71 to 0.82) and decrease the number of falls (MD [95% CI]: -0.26 [-0.39, -0.13]). Tai Chi can also improve the balance ability of older adults, such as the timed up and go test (MD [95% CI]: -0.69 [-1.09, -0.29]) and the functional reach test (MD [95% CI]: 2.69 [1.14, 4.24]), as well as other balance tests such as single-leg balance test, Berg balance scale, and gait speed ($p < 0.05$). Subgroup analysis showed that Tai Chi is effective for both healthy older adults and those at high risk of falls ($p < 0.001$), and its effectiveness increases with the duration and frequency of exercise. In addition, the effect of Yang-style Tai Chi is better than that of Sun-style Tai Chi.</p> <p>Conclusion: Tai Chi is an effective exercise for preventing falls and improving balance ability in older adults, whether they are healthy or at high risk of falling. The effectiveness of Tai Chi increases with exercise time and frequency. Yang-style Tai Chi is more effective than Sun-style Tai Chi.</p>	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
100	4	<p>• Sherrington C, Fairhall N, Kwok W, Wallbank G, Tiedemann A, Michaleff ZA, Ng CACM, Bauman A. Evidence on physical activity and falls prevention for people aged 65+ years: systematic review to inform the WHO guidelines on physical activity and sedentary behaviour. <i>Int J Behav Nutr Phys Act.</i> 2020 Nov 26;17(1):144. doi: 10.1186/s12966-020-01041-3. Results: This review included 116 studies, involving 25,160 participants; nine new studies since the 2019 Cochrane Review. Exercise reduces the rate of falls by 23% (pooled rate ratio (RaR) 0.77, 95% confidence interval (CI) 0.71 to 0.83, 64 studies, high certainty evidence). Subgroup analysis showed variation in effects of different types of exercise ($p < 0.01$). Rate of falls compared with control is reduced by 24% from balance and functional exercises (RaR 0.76, 95% CI 0.70 to 0.82, 39 studies, high certainty evidence), 28% from programs involving multiple types of exercise (commonly balance and functional exercises plus resistance exercises, RaR 0.72, 95% CI 0.56 to 0.93, 15 studies, moderate certainty evidence) and 23% from Tai Chi (RaR 0.77, 95% CI 0.61 to 0.97, 9 studies, moderate certainty evidence). The effects of programs that primarily involve resistance training, dance or walking remain uncertain. Interventions with a total weekly dose of 3+ hours that included balance and functional exercises were particularly effective with a 42% reduction in rate of falls compared to control (Incidence Rate Ratio (IRR) 0.58, 95% CI 0.45 to 0.76). Subgroup analyses showed no evidence of a difference in the effect on falls on the basis of participant age over 75 years, risk of falls as a trial inclusion criterion, individual versus group exercise, or whether a health professional delivered the intervention. Conclusions: Given the strength of this evidence, effective exercise programs should now be implemented at scale.</p>	Excluded at full text in favor of a more informative review (falls prevention)

Comment #	Reviewer #	Comment	Author Response
101	4	<p>Falls prevention interventions for community-dwelling older adults: systematic review and meta-analysis of benefits, harms, and patient values and preferences.</p> <p>Pillay J, Gaudet LA, Saba S, Vandermeer B, Ashiq AR, Wingert A, Hartling L. <i>Syst Rev.</i> 2024 Nov 26;13(1):289. doi: 10.1186/s13643-024-02681-3. PMID: 39593159</p>	Published after our search date, reviewed for eligibility and added to map for falls prevention.
102	4	<p>PubMed; "Tai Chi and Falls, Parkinson's (6 systematic reviews in last 5 years)</p> <ul style="list-style-type: none"> • Aras B, Seyyar GK, Fidan O, Colak E. The effect of Tai Chi on functional mobility, balance and falls in Parkinson's disease: A systematic review and meta-analysis of systematic reviews. <i>Explore (NY).</i> 2022 Jul-Aug;18(4):402-410. doi: 10.1016/j.explore.2021. (N=601 studies up to Oct 2021, N=11 in review). <p>Results: According to our meta-analysis; there was a significant effect of Tai Chi on balance (SMD, -0.777 95% CI -0.921 to -0.633; p = 0.000), functional mobility (SMD, -0.719 95% CI -0.944 to -0.494; p = 0.000), and falls (SMD, -0.456 95% CI -0.668 to -0.245; p = 0.000) in PD.</p> <p>Conclusion: Our systematic review and meta-analysis found significant effects of Tai Chi on functional mobility, balance and falls in patients with PD.</p>	Excluded at full text screening (Did not grade evidence)
103	4	<p>PubMed: "Tai Chi and Hypertension" (21 systematic reviews in last 5 years)</p> <ul style="list-style-type: none"> • Zhang W, Wang H, Xiong Z, Li C. Efficacy of Tai Chi exercise in patients with hypertension: systematic review and meta-analysis. <i>Curr Probl Cardiol.</i> 2024 Nov;49(11):102798. doi: 10.1016/j.cpcardiol.2024.102798. <p>Conclusions: Tai Chi effectively lowers SBP levels in hypertension patients, however, did not show a statistically significant difference on DBP. (N=5 articles with 568 patients).</p>	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
104	4	<ul style="list-style-type: none"> • Guan Y, Hao Y, Guan Y, Wang H. Effects of Tai Chi on essential hypertension and related risk factors: A meta-analysis of randomized controlled trials. <i>J Rehabil Med.</i> 2020 May 11;52(5):jrm00057. doi: 10.2340/16501977-2683. <p>Conclusion: Tai chi is an effective physical exercise in treating essential hypertension compared with control interventions. (Requires duration \geq 12-weeks of tai chi training).</p>	Excluded at full text screening (Did not grade evidence)
105	4	<p>PubMed: "Tai Chi and Metabolic Syndrome" (latest systematic review for a major health condition!)</p> <ul style="list-style-type: none"> • Chau JPC, Leung LYL, Liu X, Lo SHS, Choi KC, Zhao J, Chiang HCY. Effects of Tai Chi on health outcomes among community-dwelling adults with or at risk of metabolic syndrome: A systematic review. <i>Complement Ther Clin Pract.</i> 2021 Aug;44:101445. doi: 10.1016/j.ctcp.2021.101445. <p>Results: Twenty RCTs were included. One study involved adults with MetS, and the other 19 studies involved adults with at least one risk factor for MetS. Tai Chi was found to reduce waist circumference and increase high-density lipoprotein cholesterol in obese adults. Tai Chi also reduces waist circumference, body mass index, blood glucose level, insulin resistance, and increases the quality of life (QoL) in adults with elevated blood glucose/type 2 diabetes (T2DM). Among participants with hypertension, Tai Chi improves blood pressure, lipid profiles, anxiety, depression, and physical QoL.</p> <p>Conclusions: Tai Chi may be effective for enhancing the physiological and psychosocial wellbeing of community-dwelling adults at risk of MetS.</p>	Excluded at full text screening (In favor of a more informative review - Hypertension)

Comment #	Reviewer #	Comment	Author Response
106	4	<p>PubMed: "Tai Chi and Osteoporosis" (6 systematic reviews in last 5 years)</p> <ul style="list-style-type: none"> Hou J, Mao H, Xie P, Cui Y, Rong M. The effect of different traditional Chinese exercises on bone mineral density in menopausal women: a systematic review and network meta-analysis. <i>Front Public Health</i>. 2024 Sep 12;12:1430608. doi: 10.3389/fpubh.2024. <p>Results: Regarding BMD of femoral neck: TC [SMD = 1.24 (0.70, 1.78)], BA [SMD = 3.77 (1.98, 5.56)] were superior in increasing BMD of femoral neck relative to NEI. Regarding BMD of ward's triangle: TC [SMD = 1.63 (1.09, 2.17)] was superior in increasing BMD of ward's triangle relative to NEI. Regarding BMD of greater trochanter: TC [SMD = 0.98 (0.28, 1.68)] were superior in increasing BMD of greater trochanter relative to NEI. TC topped the SUCRA with BMD of lumbar L2-L4: 53.8, femoral neck: 74.9, ward's triangle: 86.9 and greater trochanter: 77.7. Conclusion: Four traditional Chinese exercises [Tai Chi (TC), Baduanjin (BDJ), Wuqinxi (WQX), Yijinjing (YJJ)] are all effective in partially improving bone mineral density (BMD) indicators in postmenopausal women, while TC was effective on all four BMD indicators, which seems to be recommended as the most suitable exercise modality for postmenopausal women.</p>	Excluded at full text screening (Did not grade evidence)
107	4	<p>PubMed: "Tai Chi and Post-Stroke" (5 systematic reviews in the last 5 years)</p> <ul style="list-style-type: none"> Chen R, Guo Y, Kuang Y, Zhang Q. Effects of home-based exercise interventions on post-stroke depression: A systematic review and network meta-analysis. <i>Int J Nurs Stud</i>. 2024 Apr;152:104698. doi: 10.1016/j.ijnurstu.2024.104698. <p>Results: In mind-body exercise interventions, Tai Chi was the most effective way to improve post-stroke depression (SUCRA: 99.4 %, Hedges' g: -0.94, 95 % CI: -1.28 to -0.61). Conclusions: With mind-body exercises, Tai Chi, shows promise as an effective treatment, but multicenter RCTs comparing specific exercises to no intervention are crucial, assessing not only efficacy but also dose, reach, fidelity, and long-term effects for real-world optimization.</p>	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
108	4	<p>• Park M, Song R, Ju K, Seo J, Fan X, Ryu A, Li Y, Jang T. Effects of Tai Chi and Qigong on the mobility of stroke survivors: A systematic review and meta-analysis of randomized trials. PLoS One. 2022 Nov 17;17(11):e0277541. doi: 10.1371/journal.pone.0277541.</p> <p>Results: Meta-analysis of 27 randomized controlled trials with random-effects models indicated that Tai Chi (n=18) and Qigong (n=9) effectively improved mobility, specifically on the ability to walk (Hedges'g = 0.81), dynamic balance (Hedges'g = 1.04), and ADL (Hedges'g = 0.43). The effects of Tai Chi and Qigong were significant for short-term and long-term programs (Hedges'g 0.91 vs. 0.75), and when compared with active controls and no treatment group (Hedges'g 0.81 vs. 0.73).</p> <p>Conclusion: Tai Chi and Qigong performed for 12 weeks or less were effective in improving the mobility of stroke survivors.</p>	Excluded at full text screening (Did not grade evidence)
109	4	<p>PubMed: "Tai Chi and Sarcopenia" (3 systematic Reviews in last 5 years)</p> <p>• Huang CY, Mayer PK, Wu MY, Liu DH, Wu PC, Yen HR. The effect of Tai Chi in elderly individuals with sarcopenia and frailty: A systematic review and meta-analysis of randomized controlled trials. Ageing Res Rev. 2022 Dec;82:101747. doi: 10.1016/j.arr.2022.101747.</p> <p>Conclusions: Our results demonstrated that patients with frailty or sarcopenia who practiced Tai Chi exhibited improved physical performance in the 30-second chair stand test, the Timed up and go test, number of falls and fear of falling. However, there was no difference in muscle mass, grip strength, gait speed, or Short Physical Performance Battery score between the Tai Chi and control groups.</p>	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
110	4	<p>PubMed: Tai Chi and Safety (Adverse Events”)</p> <p>• Cui H, Wang QY, Pedersen M, Wang Q, Lv SJ, James D, Larkey L. The safety of tai chi: a meta-analysis of adverse events in randomized controlled trials. <i>Contemp Clin Trials</i>. 2019;82:85–92. doi: 10.1016/j.cct.2019.06.004.</p> <p>Conclusion: Findings indicate that TC does not result in more AEs than active and inactive control conditions, and produces fewer AEs than inactive control conditions for heart failure patients.</p>	Excluded at full text screening (Did not grade evidence)
111	4	<p>• Yang GY, Hunter J, Bu FL, Hao WL, Zhang H, Wayne PM, Liu JP. Determining the safety and effectiveness of Tai Chi: a critical overview of 210 systematic reviews of controlled clinical trials. <i>Syst Rev</i>. 2022 Dec 3;11(1):260. doi: 10.1186/s13643-022-02100-5.</p> <p>Conclusions: Tai Chi was found to be generally safe and can be practiced at various levels of intensity by healthy adults, frail older adults, and people with chronic diseases. There was some evidence of beneficial physical, psychological, and quality of life outcomes from Tai Chi for a wide range of conditions. Given its multisystem effects, Tai Chi might be a suitable choice for those seeking a single intervention to help with numerous problems and symptoms.</p>	Excluded at full text screening (Not a systematic review)
112	4	<p>PubMed: “Tai Chi and Sleep” (or Insomnia) (13 systematic reviews in last 5 years)</p> <p>• Hasan F, Tu YK, Lin CM, Chuang LP, et. al. Comparative efficacy of exercise regimens on sleep quality in older adults: A systematic review and network meta-analysis. <i>Sleep Med Rev</i>. 2022 Oct;65:101673. doi: 10.1016/j.smr.2022.</p> <p>Conclusion: The results of this study support the claim that exercise can improve sleep quality in this population (older adults).</p>	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
113	4	<p>• Li H, Chen J, Xu G, Duan Y, Huang D, Tang C, Liu J. The Effect of Tai Chi for Improving Sleep Quality: A Systematic Review and Meta-analysis. <i>J Affect Disord.</i> 2020 Sep 1;274:1102-1112. doi: 10.1016/j.jad.2020.05.076.</p> <p>Conclusions: Compared with non-therapeutic and other active treatments, Tai Chi has a positive effect on improving sleep quality. (N=20 RCTs with 1,703 patients)</p>	Excluded at full text screening (Did not grade evidence)
114	4	<p>• Liu H, Liu S, Xiong L, Luo B. Effects of traditional Chinese exercise on sleep quality: A systematic review and meta-analysis of randomized controlled trials. <i>Medicine (Baltimore).</i> 2023 Nov 3;102(44):e35767. doi: 10.1097/MD.00000000000035767.</p> <p>Conclusion: TCE can improve sleep quality in specific populations in specific populations clinical applications. Tai chi should be considered first to improve sleep quality. (N=20 studies with several subgroups noting better effects, i.e., “patients with fibromyalgia, normal older adults, and non-Hodgkin lymphoma, chronic fatigue syndrome-like illness, knee osteoarthritis, nasopharyngeal carcinoma, pausimonia, insomnia, TCE could improve sleep quality.”</p>	Excluded at full text screening (Did not grade evidence)

Comment #	Reviewer #	Comment	Author Response
115	4	<p>PubMed: "Tai Chi and Social Support" (NEW TOPIC: Top systematic reviews in last 5 years)</p> <p>• Koren Y, Leveille S, You T. Tai Chi Interventions Promoting Social Support and Interaction Among Older Adults: A Systematic Review. <i>Res Gerontol Nurs</i>. 2021 May-Jun;14(3):126-137. doi: 10.3928/19404921-20210325-02. (N = 10): PubMed, CINAHL, and PsycINFO databases were searched for studies eligible under the inclusion criteria: sample population aged ≥60 years and published between 1999 and 2019. Four articles reported on tai chi interventions with specific enhancements to promote social interaction and reported increased perceived social support ($p < 0.05$). Six studies evaluated social support outcomes of tai chi programs without specific modifications to promote social engagement. Four of the six traditional tai chi intervention studies reported improved social support ($p < 0.05$). Group tai chi interventions for older adults may increase social support and therefore further increase health benefits of tai chi exercise among this population.</p>	Excluded at full text screening (Did not grade evidence)
116	4	<p>PubMed: "Tai Chi and Stress"</p> <p>Kraft J, Waibl PJ, Meissner K. Stress reduction through taiji: a systematic review and meta-analysis. <i>BMC Complement Med Ther</i>. 2024 Jun 3;24(1):210. doi: 10.1186/s12906-024-04493-3.PMID: 38831412 Free PMC article</p>	Published after our search, reviewed and excluded at full text screening (Did not grade evidence)
117	5	<p>Page 18 Evidence Map- Is evidence map possibly misleading because the size of the bubbles corresponds to the number of included studies, but does not take into account the size of the included studies? I.e., evidence might look stronger for a condition with 6 smaller studies vs 5 large studies?</p>	Since we apply certainty of evidence ratings as an inclusion criteria to provide context for how readers should interpret the strength of evidence for a specific condition, the rating should have taken into account factors that affect strength of evidence such as size of included studies.

Comment #	Reviewer #	Comment	Author Response
118	7	<p>In the "Synthesis" section, there appeared to be an error in that "Effect of massage therapy" was written, and I don't think "massage" was meant to be there.</p> <p>I would have liked the Discussion section to include "Strengths" about the paper, as well as its Limitations.</p> <p>Some of the language in the "Limitations" section I found rather odd and questionable, with words like "suffer", and then just a blanket statement about "judgment" as the basis for they went about the review.</p>	<p>We have made the change.</p> <p>Thank you for your suggestion. We have added "strengths" to the discussion section.</p>
119	8	<p>pg ii line 57 Change- Jon Loesch to Jonathan Loesch</p> <p>pg 5 line 9 Change Jon Loesch to Jonathan Loesch</p> <p>pg 5 line 9-10 should Alison's name be before my name Jonathan Loesch for consistency with pg ii.</p>	<p>We have made the changes.</p>