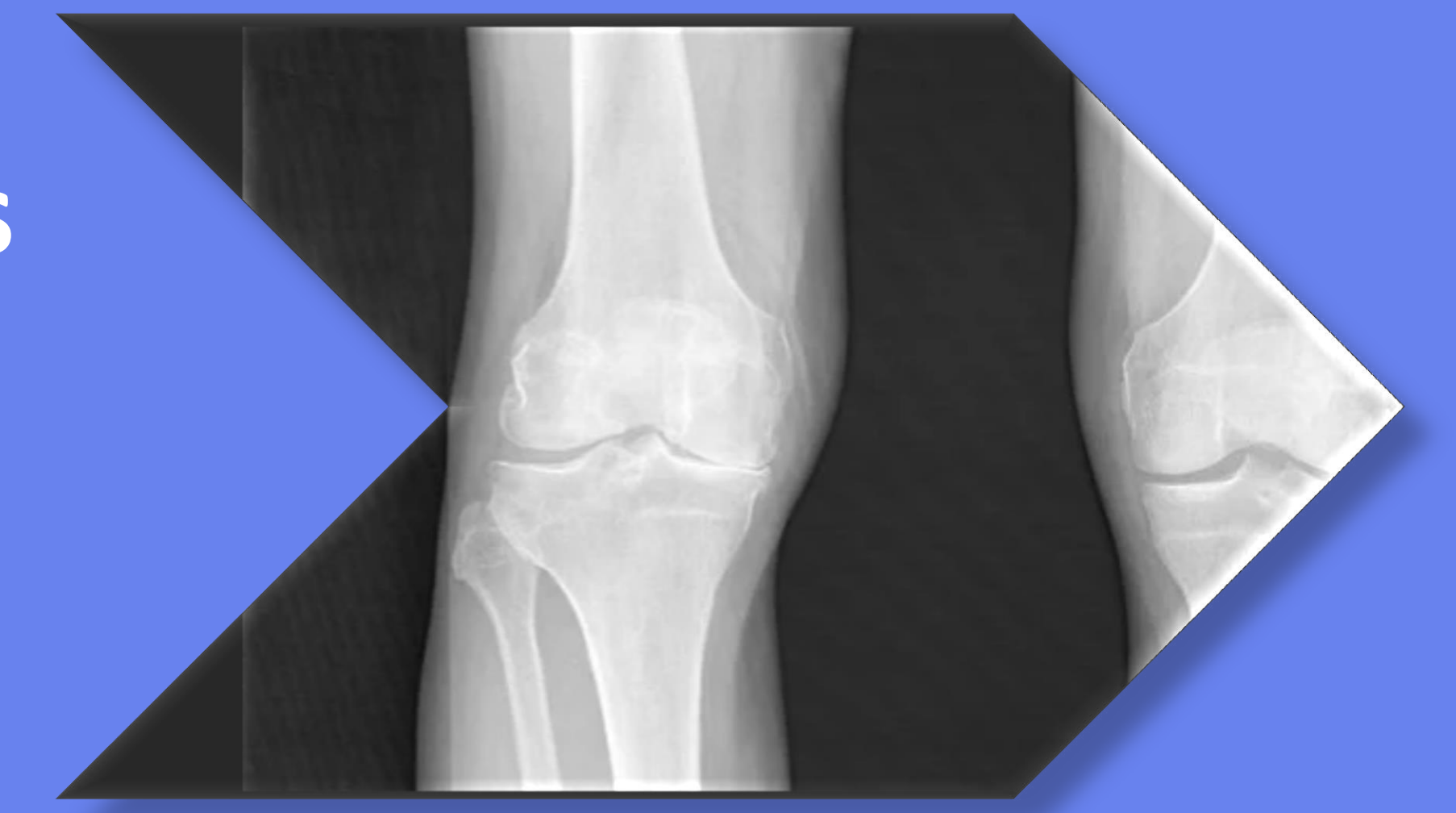


# Acupuncture Treatment in the Reduction of Knee Pain Due to Osteoarthritis

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## Background & Purpose

Knee osteoarthritis (KOA) is a very common, progressive, irreversible, and painful disease that affects many as they age.<sup>1</sup> Patients can be advised to exercise, control their weight, use anti-inflammatory medications, wear braces, get injections, or undergo the definitive treatment of a total knee replacement.<sup>2</sup> As all of these carry their respective risks or limitations, treatment modalities to alleviate symptoms are important to explore.<sup>3</sup> Traditional Chinese Medicine has been using acupuncture therapy for over 2500 years in chronic pain management of various conditions.<sup>4</sup> This work investigates acupuncture as a treatment for patients with knee pain secondary to osteoarthritis.

## PICOT

In patients with knee pain due to osteoarthritis, does treatment with acupuncture result in reduction of pain and increased joint functioning when compared with no treatment over the course of at least 4 weeks?

## Design & Methods

**Keywords:** knee osteoarthritis, joint, traditional Chinese medicine, acupuncture, pain, needle

**Inclusion:** studies in English, sample minimum 10, KOA diagnosed, traditional/conventional acupuncture at least 4 weeks, control/sham/placebo comparison, report outcome measures

**Exclusion:** other simultaneous treatment modality, no data for acupuncture alone, animal studies, main therapy not conventional acupuncture, not within 5 years

## Summary of Evidence Search

Database	Yielded	Reviewed	Included in Analysis
Google Scholar	134,830	150	6
Valpo Library	500	8	2
<b>Total:</b>	<b>135,330</b>	<b>158</b>	<b>8</b>

## Synthesis of Evidence

Source	Applicable Trials within Paper	Outcome Measures
Tu- Randomized controlled trial (included in Tian)	1	Response rate (pain from 1-10 and the WOMAC function subscale). <sup>5</sup>
Lam- Randomized Controlled Trial acupuncture vs sham	1	Visual analogue scale (primary), WOMAC and short form health survey (secondary). <sup>6</sup>
Zhang- systematic review and meta-analysis of acupuncture for chronic knee pain	11	WOMAC (pain subscale) and visual analogue scale. <sup>7</sup>
Tian- Systematic Review of RCT with Meta Analyses and Trial Sequential Analyses	11	Pain score, WOMAC (Western Ontario and McMaster Universities Arthritis Index) function, WOMAC stiffness. <sup>4</sup>
Liu- Network metanalysis of randomized controlled trials	12	WOMAC (pain score, stiff, daily activity); visual analogue, adverse events. <sup>8</sup>
Chen- Overview of Systematic Reviews	4	Effective rate, cure rate, WOMAC, visual analog. <sup>9</sup>
Li- Overview of systematic reviews for effectiveness and safety of acupuncture for KOA	4	Benefit outcomes, patient reported outcomes, objective outcomes, structural outcomes, chemical biomarkers, and adverse effects. <sup>10</sup>
Jia- Cross sectional survey of quality of reporting in RCT of acupuncture for KOA	318	Adherence to Consolidated Standards of Reporting Trials (CONSORT) checklists and STandards for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA). <sup>11</sup>

## Results:

Source	Conclusions
Tu et al.	Intensive manual acupuncture had no benefit for KOA at week 8, but benefits at later follow up (week 16 and 26). <sup>5</sup>
Lam et al.	4 weeks of acupuncture therapy is not beneficial compared to a sham treatment, and could not confirm acupuncture can be an efficacious for treatment of KOA. <sup>6</sup>
Zhang et al.	Due to heterogeneity and methodological limitations, no strong conclusions can be drawn about the effectiveness and safety of acupuncture on painful knees. <sup>7</sup>
Tian et al.	True acupuncture had significant effects on pain intensity and function when compared to sham at 6-13 weeks. <sup>4</sup>
Liu et al.	Overall found that fire needle > warm needle and electro acupuncture, while warm and electro > conventional acupuncture, western medicine, and sham treatments. <sup>8</sup>
Chen et al.	None of the studies reported evidence of high quality, with all having limitation and publication biases. <sup>9</sup>
Li et al.	Acupuncture may have some advantages in patients with KOA, but the risk of bias and reporting deficiencies needs to improve. <sup>10</sup>
Jia et al.	Reporting in randomized controlled trials of acupuncture for KOA poor- trials with authors having experience in epidemiology/ statistics, publications in English, or inclusion of patients from multiple centers tended to have better reporting. <sup>11</sup>

## Best Practice

Most studies indicate consensus that acupuncture therapy is beneficial for KOA when done for periods of longer than 4 weeks, however many are concerned with limitations in existing studies regarding variability between execution of trials and quality of reporting. Future studies should be consistent in treatment duration and measurement of outcomes, report all biases, and adhere to established checklists for reporting results, especially in randomized controlled trials.<sup>10,11</sup>

## Conclusion:

Further research is needed to confirm acupuncture benefits and to determine the optimal frequency, duration, and mode of acupuncture treatment for KOA so that providers can recommend it as a truly effective treatment option for patients.

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