INPLASY

Therapeutic effects of acupuncture in the treatment of knee meniscus injury: A meta-analysis of randomized controlled trials

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202650059

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 May 2026 and was last updated on 10 May 2026.

INTRODUCTION

Review question / Objective This study aimed to systematically evaluate the clinical efficacy and safety of acupuncture for knee meniscus injury.

Condition being studied Knee meniscus injury is a common musculoskeletal disorder in clinical practice, often leading to pain, joint locking, and limited mobility. Acupuncture, a traditional Chinese medicine therapy, is widely used for soft tissue injuries around the knee joint.

METHODS

Search strategy PubMed
#1 "Meniscus"[MeSH] OR "Tibial Meniscus Injuries"[MeSH] OR "meniscus injury"[tiab] OR "meniscal tear"[tiab] OR "knee meniscus"[tiab] OR "meniscal injury"[tiab] OR "meniscus tear"[tiab]

#2 "Acupuncture"[MeSH] OR "Acupuncture Therapy"[MeSH] OR "Electroacupuncture"[MeSH] OR "acupuncture"[tiab] OR "needling"[tiab] OR "warm needling"[tiab] OR "warm needling acupuncture"[tiab] OR "electroacupuncture"[tiab] OR "filiform needle"[tiab]

#3 "Exercise Therapy"[MeSH] OR "Resistance Training"[MeSH] OR "functional training"[tiab] OR "exercise therapy"[tiab] OR "rehabilitation"[tiab] OR "sports rehabilitation"[tiab] OR "neuromuscular facilitation"[tiab]

#4 "Platelet-Rich Plasma"[MeSH] OR "platelet-rich plasma"[tiab] OR "PRP"[tiab]

#5 #2 OR #3 OR #4

#6 "Randomized Controlled Trial"[Publication Type] OR "randomized"[tiab] OR "randomised"[tiab] OR "RCT"[tiab] OR "controlled clinical trial"[tiab]

#7 #1 AND #5 AND #6

#8 Filters: none (language, publication status, or region unrestricted)

EmBase
1 exp meniscus/ or exp knee meniscus/ or meniscus injury.ti,ab. or meniscal tear.ti,ab. or knee meniscus.ti,ab.
2 exp acupuncture/ or exp electroacupuncture/ or acupuncture.ti,ab. or needling.ti,ab. or warm needling.ti,ab. or electroacupuncture.ti,ab.
3 exp exercise/ or exp rehabilitation/ or functional training.ti,ab. or exercise therapy.ti,ab. or sports rehabilitation.ti,ab. or neuromuscular facilitation.ti,ab.
4 exp platelet rich plasma/ or platelet-rich plasma.ti,ab. or PRP.ti,ab.
5 2 or 3 or 4
6 exp randomized controlled trial/ or randomized.ti,ab. or randomised.ti,ab. or RCT.ti,ab.
7 1 and 5 and 6
8 limit 7 to (human)

Web of Science
#1 TS=(("meniscus injury" OR "meniscal tear" OR "knee meniscus" OR "meniscus tear" OR "tibial meniscus" OR "meniscal injury"))

#2 TS=(("acupuncture" OR "needling" OR "warm needling" OR "electroacupuncture" OR "filiform needle"))

#3 TS=(("functional training" OR "exercise therapy" OR "rehabilitation" OR "sports rehabilitation" OR "neuromuscular facilitation"))

#4 TS=(("platelet-rich plasma" OR "PRP"))

#5 #2 OR #3 OR #4

#6 TS=(("randomized controlled trial" OR "randomized" OR "randomised" OR "RCT" OR "controlled clinical trial"))

#7 #1 AND #5 AND #6

#8 Filters: Languages = (English or Chinese); Document Types = (Article)

Cochrane Library
#1 MeSH descriptor: [Meniscus] explode all trees
#2 (meniscus injury or meniscal tear or knee meniscus or meniscus tear):ti,ab,kw
#3 #1 or #2
#4 MeSH descriptor: [Acupuncture] explode all trees
#5 (acupuncture or needling or warm needling or electroacupuncture):ti,ab,kw
#6 (functional training or exercise therapy or rehabilitation or sports rehabilitation or neuromuscular facilitation):ti,ab,kw
#7 MeSH descriptor: [Platelet-Rich Plasma] explode all trees
#8 (platelet-rich plasma or PRP):ti,ab,kw
#9 #4 or #5 or #6 or #7 or #8
#10 (randomized or randomised or RCT):ti,ab,kw
#11 #3 and #9 and #10

China National Knowledge Infrastructure
#1 (SU='半月板损伤' OR SU='膝关节半月板损伤' OR SU='半月板撕裂' OR SU='半月板修补术后' OR 篇关摘='半月板损伤')

#2 (SU='针灸' OR SU='针刺' OR SU='温针灸' OR SU='电针' OR SU='毫针' OR 篇关摘='针灸')

#3 (SU='功能训练' OR SU='运动疗法' OR SU='康复训练' OR SU='运动康复' OR SU='神经肌肉促进' OR 篇关摘='功能训练')

#4 (SU='富血小板血浆' OR SU='PRP' OR 篇关摘='富血小板血浆')

#5 #2 OR #3 OR #4

#6 (SU='随机对照试验' OR SU='随机' OR SU='RCT' OR 篇关摘='随机')

#7 #1 AND #5 AND #6

#8 限定：发表时间=建库至2026年4月3日；文献类型=期刊论文、学位论文

VIP Chinese Science and Technology Periodical Database
#1 题名或关键词=半月板损伤 OR 膝关节半月板损伤 OR 半月板撕裂 OR 半月板修补术后

#2 题名或关键词=针灸 OR 针刺 OR 温针灸 OR 电针 OR 毫针

#3 题名或关键词=功能训练 OR 运动疗法 OR 康复训练 OR 运动康复 OR 神经肌肉促进

#4 题名或关键词=富血小板血浆 OR PRP

#5 #2 OR #3 OR #4

#6 题名或关键词=随机对照试验 OR 随机 OR RCT

#7 #1 AND #5 AND #6

#8 限定：时间范围=建库至2026年4月3日；期刊范围=全部期刊

Wanfang
#1 主题:(半月板损伤) 或 主题:(膝关节半月板损伤) 或 主题:(半月板撕裂) 或 主题:(半月板修补术后)

#2 主题:(针灸) 或 主题:(针刺) 或 主题:(温针灸) 或 主题:(电针) 或 主题:(毫针)

#3 主题:(功能训练) 或 主题:(运动疗法) 或 主题:(康复训练) 或 主题:(运动康复) 或 主题:(神经肌肉促进)

#4 主题:(富血小板血浆) 或 主题:(PRP)

#5 #2 OR #3 OR #4

#6 主题:(随机对照试验) 或 主题:(随机) 或 主题:(RCT)

#7 #1 AND #5 AND #6

#8 限定：发表日期=建库至2026年4月3日；文献类型=期刊论文、学位论文；语种=中文.

Participant or population Patients diagnosed with knee meniscus injury by magnetic resonance imaging (MRI) or arthroscopy, regardless of sex, age, disease duration, or injury type.

Intervention The experimental group received acupuncture therapy (including manual acupuncture, electroacupuncture, warm-needle acupuncture, or filiform needle), either alone or combined with conventional conservative treatment.

Comparator When the experimental group received acupuncture plus conventional treatment, the control group received the same conventional treatment alone to assess the additional effect of acupuncture.

Study designs to be included RCTs.

Eligibility criteria The inclusion criteria were defined based on the PICOS framework: (1) Population: patients diagnosed with knee meniscus injury by magnetic resonance imaging (MRI) or arthroscopy, regardless of sex, age, disease duration, or injury type; (2) Intervention: the experimental group received acupuncture therapy (including manual acupuncture, electroacupuncture, warm-needle acupuncture, or filiform needle), either alone or combined with conventional conservative treatment; (3) Comparison: when the experimental group received acupuncture plus conventional treatment, the control group received the same conventional treatment alone to assess the additional effect of acupuncture; (4) Outcomes: at least one of the following indicators was reported: clinical response rate, VAS score, Lysholm knee function score, ROM, time to resume normal daily activities, or degree of quadriceps muscle atrophy; (5) Study design: RCTs.

Information sources PubMed, EmBase, Web of Science, Cochrane Library, China National Knowledge Infrastructure (CNKI), VIP Chinese Science and Technology Periodical Database, and Wanfang Data Knowledge Service.

Main outcome(s) At least one of the following indicators was reported: clinical response rate, VAS score, Lysholm knee function score, ROM, time to resume normal daily activities, or degree of quadriceps muscle atrophy.

Quality assessment / Risk of bias analysis Cochrane risk of bias tool.

Strategy of data synthesis For dichotomous variables, the OR with 95% CI was used as the effect measure. For continuous variables, the WMD with 95% CI was used, as the measurement units of the outcome indicators were consistent across studies. A random-effects model was applied for all pooled analyses.

Subgroup analysis Subgroup analyses were conducted according to acupuncture type and treatment duration, and the interaction P test was used to compare differences between subgroups.

Sensitivity analysis Sensitivity analysis was performed by sequentially excluding each individual study and recalculating the pooled effect sizes to examine the stability of the results.

Language restriction No restriction.

Country(ies) involved China.

Keywords acupuncture; knee meniscus injury; therapeutic effects; systematic review;meta-analysis.

Contributions of each author
Author 1 - Xi Liang.
Author 2 - Yueming Deng.
Author 3 - Yi Wei.