# INPLASY PROTOCOL

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**Review Stage at time of this submission:** **The review has not yet started.**

**Conflicts of interest:**
**None declared.**

# Acupuncture and related therapies for carpal tunnel syndrome: A protocol for systematic review and Bayesian network meta-analysis

Bian, Z[1]; Yu, J[2]; Tu, M[3]; Liao, B[4]; Huang, J[5]; Jiang, Y[6]; Fang, J[7].

**Review question / Objective:** **We aim to compare the efficacy and safety of different acupuncture and related therapies for carpal tunnel syndrome (CTS) using systematic review and network meta-analysis (NMA).**
**Condition being studied:** **CTS is a symptomatic condition caused by compression of the median nerve within the carpal tunnel. Patients with CTS typically report paresthesia or pain in distribution of median nerve distal to the wrist. Diverse non-surgical treatments and surgical decompression have been used in the management of CTS. Acupuncture, a prominent component of traditional Chinese medicine (TCM), has also been practiced when treating CTS as a complementary therapy. However, the relative treatment effects of different acupuncture methods for CTS are unclear.**

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 November 2021 and was last updated on 25 November 2021 (registration number INPLASY2021110094).

## INTRODUCTION

**Review question / Objective:** **We aim to compare the efficacy and safety of different acupuncture and related therapies for carpal tunnel syndrome (CTS) using systematic review and network meta-analysis (NMA).**

**Condition being studied:** **CTS is a symptomatic condition caused by compression of the median nerve within the carpal tunnel. Patients with CTS typically report paresthesia or pain in distribution of median nerve distal to the wrist. Diverse non-surgical treatments and**

surgical decompression have been used in the management of CTS. Acupuncture, a prominent component of traditional Chinese medicine (TCM), has also been practiced when treating CTS as a complementary therapy. However, the relative treatment effects of different acupuncture methods for CTS are unclear.

## METHODS

**Participant or population:** Patients diagnosed with CTS of any ages, sex or race. However, CTS patients who have been treated by surgical decompression will be excluded.

**Intervention:** Acupuncture and related therapies, combinations of different acupuncture therapies and combinations of acupuncture therapies with other conservative treatments will be included.

**Comparator:** Conservative treatments, different acupuncture therapies from intervention groups will be included.

**Study designs to be included:** Randomized controlled trials (RCTs) with a parallel-group design.

**Eligibility criteria:** We will only include clinical trials which meet the "PICOS" and are reported in English or Chinese.

**Information sources:** MEDLINE (via PubMed), EMBASE, Web of Science, Cochrane Library, Chinese Biomedical Database, China National Knowledge Infrastructure, VIP Database, Wanfang Database, WHO International Clinical Trials Registry Platform, ClinicalTrials.gov, Chinese Clinical Trial Register and OpenGrey will be searched from inception to November 2021.

**Main outcome(s):** 1.CTS related symptom and function status measured by the Boston carpal tunnel syndrome questionnaire (BCTQ) or other scales; 2.pain intensity measured by Visual Analogue Scale (VAS) or other scales.

**Additional outcome(s):** 1.response rate; 2.electrophysiological status of median nerve; 3.adverse events.

**Quality assessment / Risk of bias analysis:** We will assess the risk of bias of included trials using the Cochrane tool. The following domains will be evaluated: random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective reporting, and other sources of bias.

**Strategy of data synthesis:** We plan to perform standard pairwise meta-analysis and NMA will be conducted (if applicable) in STATA 15.1 software and Aggregate Data Drug Information System 1.16.8 software. $I^2$ statistic will be used to measure the statistical heterogeneity. The fixed-effects model or random-effects model will be fitted. In the pairwise meta-analysis, mean difference (MD) or standardized mean difference (SMD) on the change score with 95% confidence interval (CI) will be used for continuous outcome, and odds ratio (OR) with 95% CI will be used for dichotomous outcome. A Bayesian NMA using Markov Chain Monte Carlo (MCMC) simulation will be conduct. Four MCMC chains with 20,000 tuning iterations and 50,000 simulation iterations will be set. The relative treatment effects will be presented with 95% credible interval (CrI).

**Subgroup analysis:** We will explore the source of heterogeneity by conducting meta-regression or subgroup analysis. When no main source of sever heterogeneity could be identified, we will only provide a narrative summary.

**Sensitivity analysis:** We will perform sensitivity analysis by removing studies rated as high risk of bias to assess the robust of the result.

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

**Keywords:** carpal tunnel syndrome; acupuncture; network meta-analysis.

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