

# INPLASY PROTOCOL

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## Effect of acupuncture on essential hypertension: A protocol for systematic review and meta-analysis

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

**Conflicts of interest:**  
None declared.

**Review question / Objective:** P: essential hypertension; I: Patients with acupuncture ; C: Patients with Sham acupuncture treatment; O: net changes in SBP and DBP and/or mean BP before and after acupuncture treatment as available; S: randomized controlled trials.

**Condition being studied:** Essential hypertension is one of the risk factors for early cardiovascular disease and a major preventable risk factor for premature death and disability worldwide. Patients with elevated blood pressure are at higher risk of myocardial infarction, stroke and congestive heart failure. Some kinds of antihypertensive drugs can not be treated because of their cost-effectiveness or side effects. Non-drug treatment for hypertension includes weight loss, salt restriction, smoking cessation and alcohol withdrawal, exercise, etc, but these methods are difficult to maintain and achieve. Therefore, many patients with hypertension need more effective, safe and individualized treatment. The purpose of this study was to investigate the efficacy and safety of acupuncture and moxibustion in the treatment of different types of essential hypertension, different grades and different risk stratification of essential hypertension.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 March 2021 and was last updated on 14 March 2021 (registration number INPLASY202130042).

### INTRODUCTION

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early cardiovascular disease and a major preventable risk factor for premature death and disability worldwide. Patients with elevated blood pressure are at higher risk of myocardial infarction, stroke and congestive heart failure. Some kinds of antihypertensive drugs can not be treated because of their cost-effectiveness or side effects. Non-drug treatment for hypertension includes weight loss, salt restriction, smoking cessation and alcohol withdrawal, exercise, etc, but these methods are difficult to maintain and achieve. Therefore, many patients with hypertension need more effective, safe and individualized treatment. The purpose of this study was to investigate the efficacy and safety of acupuncture and moxibustion in the treatment of different types of essential hypertension, different grades and different risk stratification of essential hypertension.

## METHODS

**Participant or population:** Essential hypertension.

**Intervention:** Patients with acupuncture.

**Comparator:** Patients with Sham acupuncture treatment.

**Study designs to be included:** Randomized controlled trials.

**Eligibility criteria:** 1.) Randomized controlled trials; 2.) The patient is clearly diagnosed with essential hypertension with systolic blood pressure  $\geq 140$  mmHg and diastolic blood pressure  $\geq 90$  mmHg, or is currently being treated with antihypertensive drugs; 3.) The experimental group received multiple types of routine acupuncture, electroacupuncture, Yaoluo acupuncture, ear acupuncture and so on, without limiting the number of acupoints and the time of acupuncture, and oral or not oral antihypertensive drugs; 4.) The control group received sham acupuncture or no treatment.

**Information sources:** PUBMED, EMBASE, CENTAL, LILACS, Clinical Trials databases

and Web of Science. This study regardless of the language and references of all the selected studies were checked as well as the gray literature.

**Main outcome(s):** Net changes in SBP and DBP and/or mean BP before and after acupuncture treatment as available.

**Quality assessment / Risk of bias analysis:** All included studies will be assessed for their methodological quality. The Cochrane Collaboration's risk of bias tool will be used (RevMan 5.3) for RCT studies. Observational studies used the Newcastle-Ottawa Scale (NOS) to evaluate the quality.

**Strategy of data synthesis:** The meta-analysis was performed using Review Manager 5.3 (Cochrane collaboration), STATA 16.0 and Meta-DiSc 1.4.

**Subgroup analysis:** A subgroup analysis was performed to identify predefined sources of heterogeneity: patient characteristics: age and gender, different risk stratification.

**Sensitivity analysis:** If necessary, an analysis of the sensitivity.

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

**Keywords:** essential hypertension, acupuncture, sham acupuncture treatment, outcome.

### Contributions of each author:

Author 1 - Jing Yu.

Author 2 - Yi Wei.

Author 3 - Yongli Gao.

Author 4 - Yang Jing.